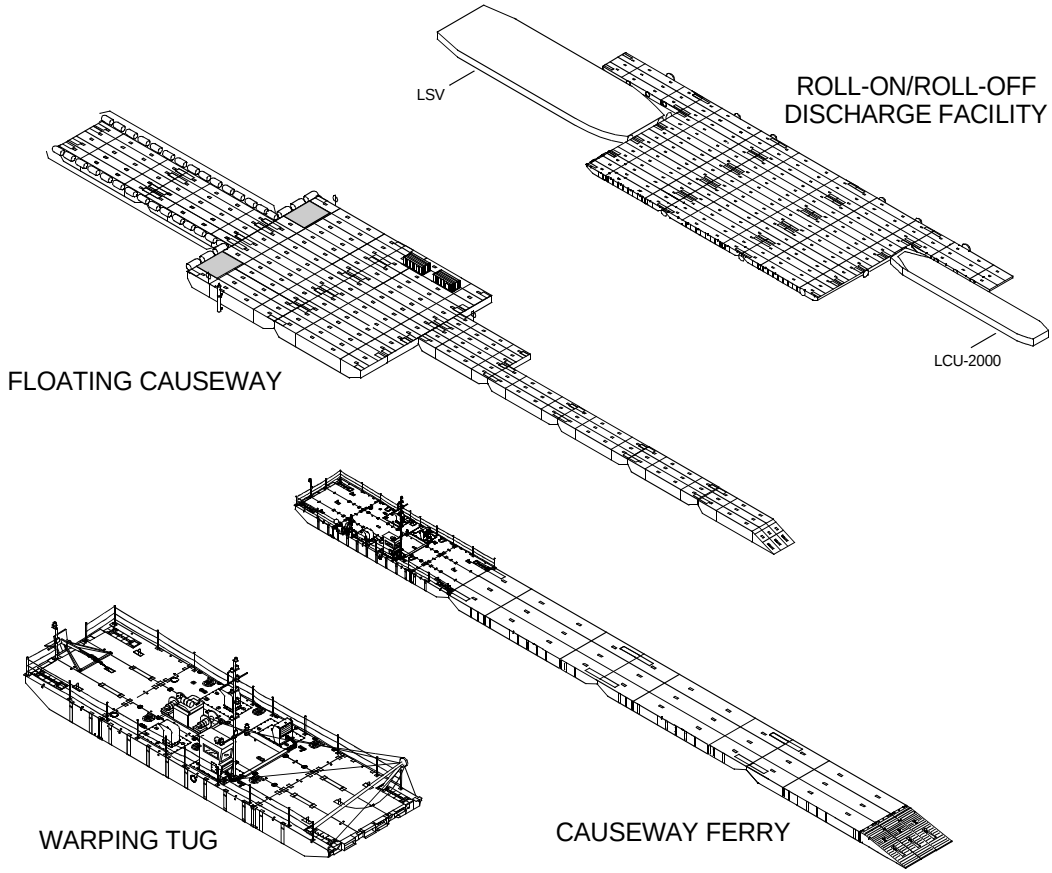
TM 55-1945-205-24-4

TECHNICAL MANUAL

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL FOR

MODULAR CAUSEWAY SYSTEM (MCS)
FLOATING CAUSEWAY (FC)
FC-1
NSN 1945-01-473-2162



This manual supersedes TM 55-1945-205-24-4 dated 29 August 1997 including all changes.

DISTRIBUTION STATEMENT A - Approved for public release, distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY
15 MAY 2002

WARNING SUMMARY

NO SMOKING
Smoking is prohibited aboard this vessel.

JEWELRY
Remove rings, bracelets, wristwatches, and neck chains before working around or on a unit.

HEAVY OBJECTS
Handling heavily weighted objects can cause bodily injury. Do not lift materials or equipment over 50 lbs without using appropriate material handling equipment.

BATTERIES
Do not smoke around batteries. Personnel must wear goggles and chemical resistant gloves when adding electrolyte and cleaning up spills.

HAZARD REPORTING
Report all hazards. It is your responsibility to report hazards through your chain-of-command.

HIGH VOLTAGE
Use extreme caution when checking energized circuits. Always place power off warning tags on power supply switches so that no one will apply power while performing maintenance.

NUCLEAR, BIOLOGICAL OR CHEMICAL
In the event equipment has been exposed to Nuclear, Biological or Chemical warfare, the equipment shall be handled with extreme caution and decontaminated in accordance with FM 3-5, instructions for Immediate, Operational and Through decon procedures adapted for the marine environment. Unprotected personnel can experience injury or death if residual toxic agents or radioactive material are present. If equipment is exposed to radioactive, biological or chemical agents, personnel must wear protective mask, hood, protective overgarments, chemical gloves and chemical boots in accordance with MOPP - level prescribed by the OIC or NCOIC.

FUELS
Personnel must wear chemical resistant gloves when handling fuels. Promptly wash exposed skin and change fuel-soaked clothing.

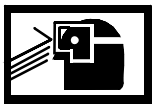
COOLANTS
Before opening coolant system, allow time to cool and wear effective hand, eye and skin protection.

HAND-HELD FIRE EXTINGUISHER
Evacuate the personnel shelter after discharging the dry chemical fire extinguisher. Personnel must wear dust masks, hand, eye and skin protective equipment before re-entering the shelter to clean up residue.

NOISE
Single hearing protection must be worn when inside the generator shelter container (15 kW TQG) when generator is operating and during all rolling cargo movements.

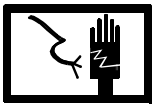
ICE BUILDUP
Cold weather operations could create ice buildup on exposed surfaces producing hazardous footing conditions. Use extreme care when operating under icing conditions; death or serious injury to personnel could occur.

SAFETY WARNING ICONS



EYE PROTECTION

EAR PROTECTION - Headphones over ears shows that noise level will harm ears.

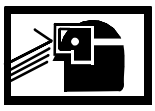


ELECTRICAL

ELECTRICAL - Electrical wire to hand with electricity symbol running through hand shows that shock hazard is present.

ELECTRICAL

ELECTRICAL 2 - Electrical wire to arm with electricity symbol running through hand shows that shock hazard is present.

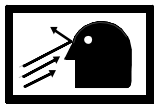


EYE PROTECTION

EYE PROTECTION - Person with goggles shows that the material will injure the eyes.

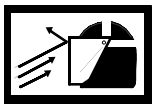
FALLING PARTS

FALLING PARTS - Arrow bouncing off human shoulder and head shows that falling parts present a danger to life or limb.



FLYING PARTICLES

FLYING PARTICLES - Arrows bouncing off face shows that particles flying through the air will harm face.



FLYING PARTICLES

FLYING PARTICLES 2 - Arrows bouncing off face with face shield shows that particles flying through the air will harm face.

HEAVY OBJECTS

HEAVY OBJECTS - Human figure stooping over heavy object shows physical injury potential from improper lifting technique.

HEAVY PARTS

HEAVY PARTS - Foot with heavy object on top shows that heavy parts can crush and harm.

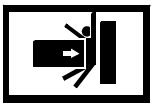
SAFETY WARNING ICONS - CONTINUED

HEAVY PARTS

HEAVY PARTS 2 - Hand with heavy object on top shows that heavy parts can crush and harm.

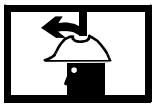
HEAVY PARTS

HEAVY PARTS 3 - Heavy object on human figure shows that heavy parts present a danger to life or limb.



HEAVY PARTS

HEAVY PARTS 4 - Heavy object pushed up against human figure shows that heavy parts present a danger to life or limb.

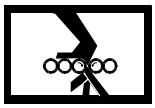


HELMET PROTECTION

HELMET - Arrow bouncing off head with helmet shows that falling parts present a danger.

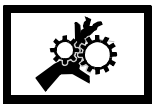
HOT AREA

HOT AREA - Hand over object radiating heat shows that part is hot and can burn.



MOVING PARTS

MOVING PARTS - Hand with fingers caught between rollers shows that the moving parts of the equipment present a danger to life or limb.

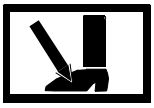


MOVING PARTS

MOVING PARTS 2 - Hand with fingers caught between gears shows that the moving parts of the equipment present a danger to life or limb.

MOVING PARTS

MOVING PARTS 3 - Human figure with an arm caught between gears shows that the moving parts of the equipment present a danger to life or limb.



SHARP OBJECT

SHARP OBJECT - Pointed object in foot shows that a sharp object presents a danger to limb.

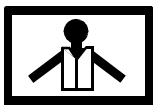
SAFETY WARNING ICONS - CONTINUED

SHARP OBJECT

SHARP OBJECT 2 - Sharp object on hand shows that a sharp object presents a danger to limb.

SLICK FLOOR

SLICK FLOOR - Wavy line on floor with legs prone shows that slick floor presents a danger for falling.



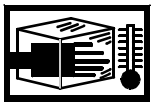
VEST

VEST - Life preserver on human figure shows life preserver must be worn to prevent drowning.

HAZARDOUS MATERIAL WARNING ICONS

CHEMICAL

CHEMICALS - Drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.



CRYOGENIC

CRYOGENICS - Hand in block of ice shows that the material is extremely cold and can injure human skin or tissue.

EXPLOSION

EXPLOSION - Rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition or high pressure.

FIRE

FIRE - Flame shows that a material may ignite and cause burns.

POISON

POISON - Skull and crossbones shows that a material is poisonous or is a danger to life.

VAPOR

VAPOR - Human figure in a cloud shows that material vapors present a danger to life or health.

LIST OF EFFECTIVE PAGES / WORK PACKAGES

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 15 MAY 2002

TECHNICAL MANUAL

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL FOR

MODULAR CAUSEWAY SYSTEM (MCS)
FLOATING CAUSEWAY (FC)
FC-1
NSN 1945-01-473-2162

Current as of 15 MAY 2002

This manual supersedes TM 55-1945-205-24-4 dated 29 August 1997 including all changes.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028-2 (Recommended Changes to Equipment Technical Publications), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is http://aeps.ria.army.mil. If you need a password, scroll down and click on "ACCESS REQUEST FORM". The DA Form 2028 is located in the ONLINE FORMS PROCESSING section of the AEPS website. Fill out the form and click on "SUBMIT". Using this form on the AEPS website will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, E-mail or fax your letter, DA Form 2028, or DA Form 2028-2 directly to: Commander, U.S. Army Tank-Automotive and Armaments Command, ATTN: AMSTA-LC-CIP-WT, Rock Island, IL 61299-7630. The E-mail address is TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

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HOW TO USE THIS MANUAL

This manual contains certain features to improve the convenience of using this manual and increase the user's efficiency. These features include:

a. Accessing Information

Information is accessed by referring to the Table of Contents, located in the front of this manual, or by looking in the Alphabetical Index, located in the back of this manual.

b. Illustrations

Various methods are used to locate and repair components. Locator illustrations in Controls and Indicator tables, PMCS tables, exploded views and cut-away diagrams make the information in the manual easier to understand and follow.

c. Using This Manual

When using this manual, read and understand the entire maintenance action before performing the task. Also, read and understand all warnings, cautions and notes as well as general safety precautions that apply to the task to be performed. The warning summary will inform personnel of hazards associated with the equipment to be worked on. However, the summary is not all inclusive and personnel should be aware at all times of hazardous conditions that may arise.

Prior to starting the procedures in this manual, the initial setup requirements are located directly above each procedure. The information is given to ensure all materials, expendables, tools and any other equipment necessary are readily available for use. The initial setup will be accomplished prior to starting the actual steps of each maintenance procedure.

Locating Major Components

Obtain the manual for the system to be worked on. Open to the Table of Contents located in the front of this manual. Find Chapter 1, *Description and Theory of Operation*. Under the chapter title you will find the work package titled *Location and Description of Major Components*. Turn to the work package indicated. This work package will give a brief description of the major components, and show an illustration of what the component looks like and its location.

The Alphabetical Index, located in the back of this manual, contains an alphabetical list of all sections of this manual. *Location and Description of Major Components* is found in section L. The work package is found on the right side of the title where the *Location and Description of Major Components* is located. Turn to the work package indicated to find the description and location of each component.

Troubleshooting Procedures

The Table of Contents or Alphabetical Index may be used to locate sections within this manual. To locate a particular troubleshooting procedure, open the manual to the Table of Contents located in the front of this manual. Find Chapter 2, *Troubleshooting Procedures.* Under this section, find a work package titled *Troubleshooting Index*. Turn to the work package indicated, which lists all of the troubleshooting procedures. Look down the list until you find the appropriate work package for the problem you are trying to solve. To the right side of the procedure will be a work package number. Turn to the work package indicated and follow the steps to complete the troubleshooting procedure. The procedures list the malfunction, symptom and the corrective action. The corrective action will indicate which maintenance procedure to go to for the repair of the symptom or what level of maintenance is capable of repair of the problem. Follow the procedures indicated to complete the task. At the top of the task you will have a section called INITIAL SETUP. There are five basic headings listed under INITIAL SETUP.

Test Equipment: Lists all test equipment (standard or special) required to troubleshoot, test and inspect the equipment covered in this manual. The test equipment is identified with an item number and work package number from the *Tool Identification List* located in Chapter 4, *Supporting Information*.

Tools: Lists all tools (standard or special) required to perform the task. Tools are identified with an item number and work package number from the *Tool Identification List* located in Chapter 4, *Supporting Information.*

Personnel Required: Lists all personnel necessary to perform the task.

Equipment Condition: Notes the conditions that must exist before starting the task. The equipment condition will also include any prerequisite maintenance tasks to be performed with reference to the work package number or to the TM number.

References: Includes any other manuals necessary to complete the task. When there are no references listed, all steps necessary to complete the task are contained within this manual. A listing of reference materials is contained in the work package *References* in Chapter 4, *Supporting Information*.

Maintenance Instructions

To locate a maintenance procedure, open the manual to the Table of Contents located in the front of this manual. Find Chapter 3, *Maintenance Instructions.* Look down the list and find the maintenance procedure to be accomplished. On the right side of the maintenance procedure will be a work package number. Turn to the work package indicated. Before beginning the maintenance task, look through the procedure to familiarize yourself with the entire maintenance procedure. At the top of the task you will have a section called INITIAL SETUP. There are five basic headings listed under INITIAL SETUP.

Tools: Lists all tools (standard or special) required to perform the task. Tools are identified with an item number and work package number from the *Tool Identification List* located in Chapter 4, *Supporting Information.*

Materials/Parts: Lists all parts or materials necessary to perform the task. Expendable and durables are identified with an item number from the applicable work package located in Chapter 4, *Supporting Information*.

Personnel Required: Lists all personnel necessary to perform the task.

References: Includes any other manuals necessary to complete the task. When there are no references listed, all steps necessary to complete the task are contained within this manual. A listing of reference materials is contained in the work package *References* in Chapter 4, *Supporting Information*.

Equipment Condition: Notes the conditions that must exist before starting the task. The equipment condition will also include any prerequisite maintenance tasks to be performed with reference to the work package number or to the TM number.

Test Equipment: Lists all test equipment (standard or special) required to troubleshoot, test and inspect the equipment covered in this manual. The test equipment is identified with an item number and work package number from the *Tool Identification List* located in Chapter 4, *Supporting Information*.

Repair Parts and Special Tools List

Refer to TM 55-1945-205-10-4 when requisitioning parts, special tools and equipment.

Identify the mandatory repair parts required to perform this task listed at the top of the work package in the INITIAL SET UP. Using the part number provided, refer to the part number index work package in TM 55-1945-205-10-4. Look up the part number in the part number column and identify the figure and item number where the part is located. Turn to the figure and locate the item number listed. Verify that the item is correct.

CHAPTER 1

DESCRIPTION AND THEORY OF OPERATION
FOR
MODULAR CAUSEWAY SYSTEM (MCS)
FLOATING CAUSEWAY (FC)

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERAL INFORMATION

SCOPE

This manual contains descriptions and instructions for the Floating Causeway.

Type of Manual: Unit, Direct Support and General Support Maintenance.

Purpose of Equipment: The system provides the capability to move rolling cargo from a sealift vessel to lighters for movement ashore.

MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS); and AR 700-138, Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If any component in your system needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368, Product Quality Deficiency Report. Mail it to the address specified in DA PAM 738-750, or as specified by the contracting activity. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

CPC of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling or breaking of the materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report. Use of key words, such as “corrosion”, “rust”, “deterioration” or “cracking”, will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA PAM 738-750, Functional Users Manual for The Army Maintenance Management System (TAMMS).

OZONE DEPLETING SUBSTANCES (ODS)

The continued use of ODS has been prohibited by Executive Order 12856 of 3 August 1993.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

The procedures for destruction of Army materiel to prevent enemy use are contained in TM 750-244-6.

PREPARATION FOR STORAGE AND SHIPMENT REFERENCE

Reference TM 55-1945-205-10-4 for preparation of storage or shipment of the Floating Causeway system.

LIST OF ABBREVIATIONS/ACRONYMS

Abbreviation/Acronym	Name
AC	Alternating Current
AEPS	Army Electronic Product Support
AF	Audio Frequency
AOAP	Army Oil Analysis Program
ASSY	Assembly
BII	Basic Issue Items
C	Centigrade
CAGEC	Commercial and Government Entity Code
cm	Centimeters
CO2	Carbon Dioxide
COEI	Components of End Item
CPC	Corrosion Prevention Control
D	Depth
DA PAM	Department of the Army Pamphlet
dB	Decibels
DC	Direct Current
Deg	Degrees
E-mail	Electronic mail
EIR	Equipment Improvement Recommendations
F	Fahrenheit
FC	Floating Causeway
FCAMS	Floating Causeway Anchor Mooring System
fl	Fluid
ft	Feet
ft lbs	Foot Pounds
FWD	Forward
GAL	Gallon
GFI	Ground Fault Indicator
GFCI	Ground Fault Circuit Interrupter
GPH	Gallons Per Hour
H	Height
HP	Horse Power
hrs	Hours
hz	Hertz
in.	Inches
in. lbs	Inch Pounds
ISO	International Standards Organization
ISOPAK	International Standards Organization Package
lbs	Pounds
kg	Kilograms
khz	Kilohertz
KW	Kilowatt
LCU	Landing Craft Utility
LH	Left Hand
LOTS	Logistics Over The Shore
LSV	Logistics Support Vessel
m	Meters
ma	Milliampere
MCS	Modular Causeway System
mhz	Megahertz
ml	Milliliters
MTBE	Methyl Tertiary Butyl Ether

LIST OF ABBREVIATIONS/ACRONYMS (CONT'D)

Abbreviation/Acronym	Name
MTO&E	Modified Table of Organization and Equipment
NEMA	National Electric Manufacturers Association
Ni-cd	Nickel Cadmium
N-m	Newton-Meters
NOAA	National Oceanic and Atmospheric Administration
ODS	Ozone Depleting Substance
oz	Ounces
PMCS	Preventive Maintenance Checks and Services
PSI	Pounds Per Square Inch
PTT	Push To Talk
Rcv	Receive
RF	Radio Frequency
RH	Right Hand
RPM	Revolutions Per Minute
RPSTL	Repair Parts and Special Tools List
RTCH	Rough Terrain Container Handler
SINAD	Signal (plus) Noise And Distortion
SOLAS	Safety of Life at Sea
SS	Sea State
TAMMS	The Army Maintenance Management System
TO&E	Table of Organization and Equipment
Tx	Transmit
uv	Ultra Violet
VAC	Volts Alternating Current
VDC	Volts Direct Current
VHF/FM	Very High Frequency/Frequency Modulation
W	Width

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

The Floating Causeway (FC) is a floating platform used during Logistics Over The Shore (LOTS) operations. The FC consists of three major sections, trident pierhead extension, trident pierhead and causeway. Each major section consists of non powered floating modules that are assembled into module strings and intermediate sections.

The trident pierhead extension is the five string wide set of modules that run from the trident pierhead out to sea. This trident pierhead extension will be used by the lighter vessels to moor to the floating causeway. The overall dimensions of the trident pierhead extension is 40 ft wide by 160 ft long.

The trident pierhead is a combination of intermediate sections. Individual modules connect together by means of male and female connector assemblies located around the perimeter of each module. These sections are assembled to other sections by means of flexor connectors. The trident pierhead consists of ten intermediate modular sections. Intermediate sections consist of three center modules and six end rake modules (two center rake modules, two right hand rake modules and two left-hand rake modules). The overall dimensions of the trident pierhead are 160 ft long by 120 ft wide.

The causeway consists of one or more intermediate sections connected length wise, with one end connected to the trident pierhead and the other end connected to a combination beach/sea end section. The overall dimension is determined by adding the total length of intermediate sections to the length of the combination beach/sea end section. The causeway length depends on how far offshore the causeway must extend to give the required water depth. The overall width of the causeway is 24 ft wide.

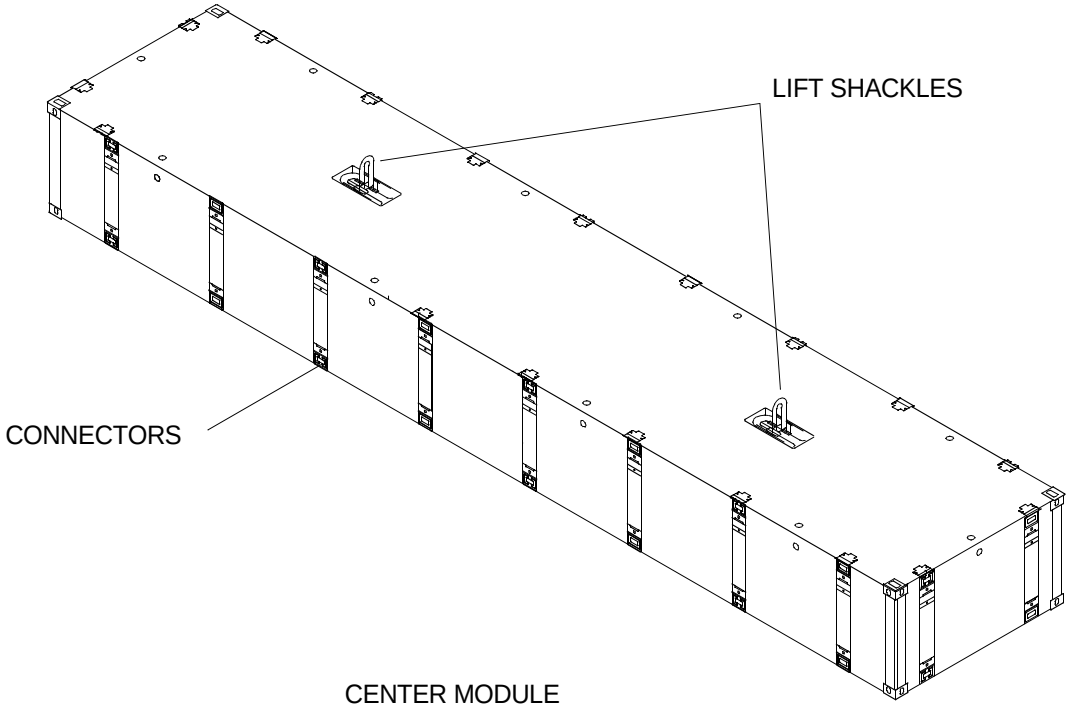
The FC shall operate in sea conditions ranging from Sea State 0 up to and including Sea State 2 (see table 1), in surf conditions up to 5 ft with along-shore currents up to 2 knots, and in beach gradients up to 1:200. The FC system shall survive Sea State 4 conditions and be capable of being put back into service within 48 hours of the higher Sea State.

Table 1. Sea State (SS) Conditions.

SS	SIGNIFICANT WAVE HEIGHTS (FT)	MODAL WAVE PERIODS (SECONDS)
0	0.0 - 0.5	0.3 - 1.3
1	0.5 - 1.5	0.8 - 3.8
2	1.5 - 3.0	1.3 - 6.0
3	3.5 - 5.0	2.0 - 7.7
4	6.0 - 7.5	2.7 - 9.4
5	8.0 - 12.0	3.1 - 11.9

Other major components of the FC are the personnel shelter and generator shelter, the trailer-mounted light towers, the lifeline subsystem, communications equipment and the off shore and onshore anchor mooring system.

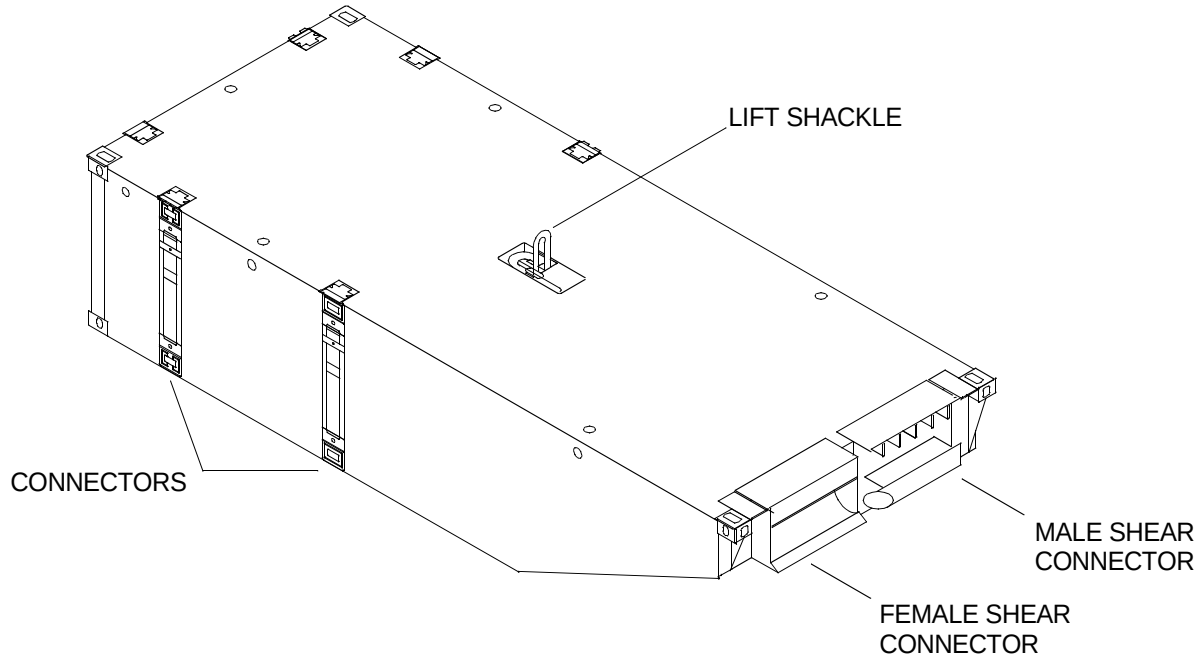
The FC is maneuvered into place by warping tugs.



CENTER MODULE

INTERMEDIATE MODULAR CAUSEWAY SECTION

The intermediate section is made up of three center modules (non-powered) and six end rake modules. The center module is 8 ft wide and 40 ft long. Each end rake is 8 ft wide and 20 ft long. All of the modules have a depth of 4 ft 6 in. All end rakes are compatible with U. S. Navy flexor attachments and shear connectors are fully compatible with ISO-container standards. The complete assembled intermediate section weighs approximately 142,500 lbs.



END RAKE MODULE, CENTER

PERSONNEL SHELTER

The personnel shelter is a 20 ft ISO container which has been outfitted with insulation, interior bulkheads, fluorescent lighting, electrical power distribution, table, benches, heating/cooling unit, communications equipment, electrical outlets, emergency lighting and a rest room with an electrically powered incinerator toilet.

DIESEL GENERATOR SET

The skid mounted, tactical quiet, 10 KW or 15 KW diesel generator set, is provided to power electrical loads in the personnel shelter. It is contained in a 20 ft ISO container which will be located near the personnel shelter. It is equipped with controls, instruments, fire suppression system and accessories necessary for operation. The generator set consists of a diesel engine, brushless generator, excitation system, speed governing system, 1000 gallon fuel system, 24 volts DC starting system, control system and fault system. A power cable with a plug end, stored in the personnel shelter, is used to connect to the generator set. Refer to TM 9-6115-642-10 for additional information on the 10 KW tactical quiet generator. Refer to TM 9-6115-643-10 for additional information on the 15 KW tactical quiet generator.

LIGHTING SYSTEM

The FC lighting system consists of two trailer-mounted light towers which are stowed in two 20 ft ISO containers. Each light tower is powered by a 6 KW diesel generator and supports four metal-halide lamps. Each lamp delivers 1000 watts of light intensity. Lamps are a high pressure sodium with a NEMA 6 design for large area coverage. The aluminum reflector housings have tempered impact resistant glass lenses. The lamps come with weather resistant twist-lock connections for connecting floodlights to the light tower.

The light tower is a three-section telescoping mast which extends from 12 ft to 30 ft and has a rotation range of 360^{o} with a position lock. The mast is easily extended with dual hand-operated winches that incorporate an automatic safety brake. The tower retracts and stows horizontally for travel.

The light system comes with a 30 gallon translucent polyethylene fuel tank, single point lifting bail, forklift slots, heavy-duty outriggers, leveling indicator and removable drawbar. The control panel comes with one Ground Fault Interrupter (GFI) protected 120 volts 20 amp duplex receptacle, one 240 volts 25 amp receptacle, individual lamp switches, and a non-resettable hour meter to track records for periodic maintenance.

The overall length is (in./cm) 174/442, width is (in./cm) 79/201, height is (in./cm) 89/226 (travel position), standard tower height (ft/M) 30/9 and shipping weight is (lb/kg) 2010/912.

LIFE RING STANCHIONS AND LIFE RINGS

Life ring stanchions are installed in turn-tube fittings of the section modules. Life rings, nylon rope and strobe lights are installed on the inboard side of the life ring stanchions.

COMMUNICATIONS EQUIPMENT

The communications equipment consists of four VHF/FM handheld transceivers. The transceivers have a frequency range of 156.025 to 163.275 mHz. All channels currently allocated in the USA, Canadian and International channels are available for use, plus ten weather channels.

The VHF/FM handheld transceiver has an RF power output with the CNB350 battery of 5.0 watts (high) and 1.0 watts (low). The operating voltage is 7.2 volts DC. The current drain in standby mode is 40 mA, in receive mode 200 mA, in the transmit mode 1.8 amps (high power) and 0.7 amps (low power). The battery life (5% Tx, 5% Rcv, 90% Standby) is approximately 10 hrs (high) and 15 hrs (low).

The dimensions of the unit are 5.51 in. H X 2.17 in. W X 1.50 in. D. The weight is 1.0 lb.

The transmitter has a conducted spurious emissions of 65 dB (high) and 55 dB (low). The audio response is within +2/-8 of 6 dB/octave pre-emphasis characteristic from 300 Hz to 3000 Hz. The AF harmonic distortion of the transmitter is 3%. The transmitter has a hum and noise rating of 37 dB and a frequency stability (-20 Deg. to +50 Deg. C) of ± 0.0005%.

The receiver has a sensitivity rating of 20 dB quieting at 0.35 uv and 12 dB SINAD at 0.30 uv. The squelch sensitivity (threshold) is 0.20 uv. Modulation acceptance bandwidth is ± 4.5 kHz. Receiver selectivity: spurious and image rejection 60 dB, inter modulation regulation 60 dB and channel spacing 25 kHz selectivity.

DECK MATTING

The deck matting is used as dunnage and is placed where the cargo ramps of the sealift vessel and the lighters will land on the FC deck. The individual mats are a high density polyethylene material and are approximately 10 ft long by 4 ft wide and 1½ in. thick. Each mat weighs 300 lbs.

DECK CLEAT AND D-RING/CLOVER LEAF FITTINGS

The modular sections are provided with deck fittings to meet various operational needs. These fittings have a 15,000 lbs load capacity and are inserted into the tube turns. There are ten tube turns per non-powered module and five per end rake.

MOORING BITT

The mooring bitts provide securing points on the trident pierhead for lighters and for fenders. They attach to the platform at the module connector locks. The bitts are designed for up to a 6 in. circumference mooring line. The mooring bitts are lifted and installed using the forklift adapter. Each bitt weighs 235 lbs and is 6 ft 5 in. long. Eight mooring bitts are provided with the FC system.

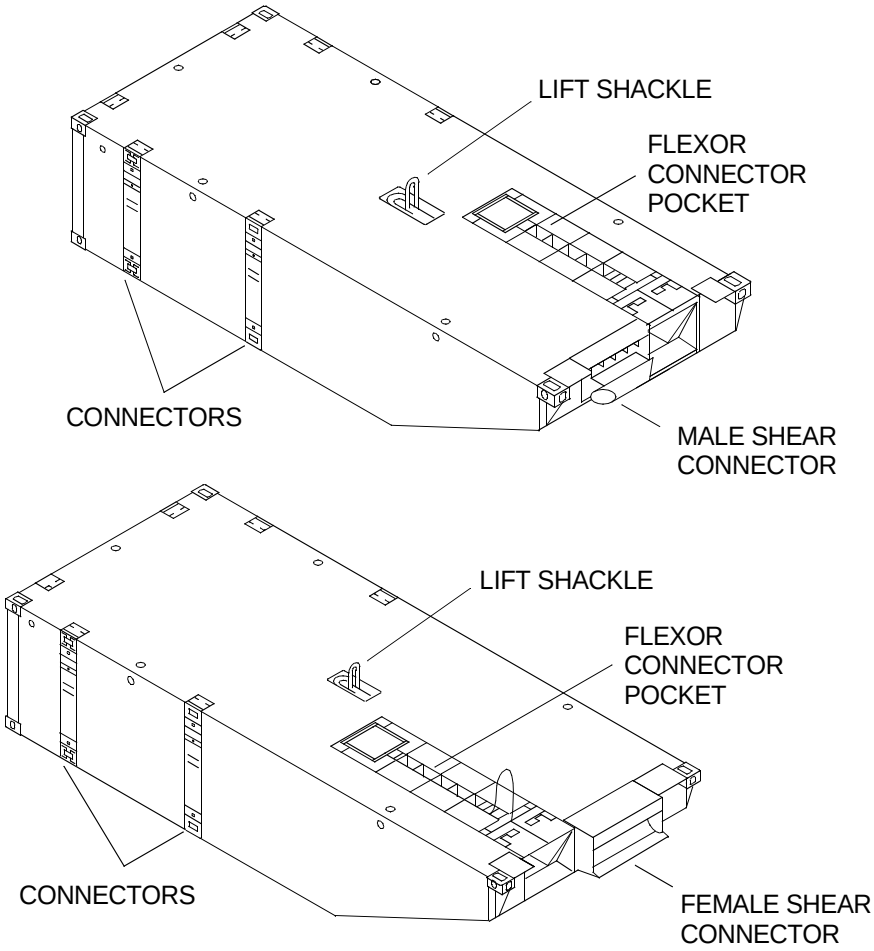
FENDERS (WITH ATTACHMENT CHAINS)

Three sizes of tubular-shaped fenders are components of the FC. The 4 ft X 12 ft fender weighs approximately 1450 lbs. The 3 ft X 5 ft fender weighs approximately 300 lbs. The 5 ft X 10 ft fender weighs approximately 1500 lbs.

FLOATING CAUSEWAY ANCHOR MOORING SYSTEM (FCAMS)

The FCAMS is designed to hold the floating causeway during Logistics Over The Shore (LOTS) operations in sea conditions up to Sea State 3. The offshore mooring leg is designed to perform in soft soils and sand. The onshore mooring leg is designed to perform in soft soils, sand and competent rock.

In addition to Sea State, the capability of the FCAMS to hold the floating causeway in position is highly dependent on the alongshore current speed and number and type of vessels mooring to the floating causeway. It is also dependent on the water depth at the vessel’s location. The complete system, which has 16 offshore mooring legs and four onshore mooring legs, is required for a full floating causeway that is 1500 ft long. The following table shows the estimated current speeds for the FCAMS to hold the floating causeway in place when one or two lighters are moored alongside the five string wide trident pierhead extension of the floating causeway.



END RAKE MODULES, LEFT HAND AND RIGHT HAND

Table 2. Floating Causeway Anchor Mooring System.

MOORED VESSEL(S)	WATER DEPTH	LIMITING CURRENT CAPACITY (KNOTS)
1 LCU-2000	10 ft	2
1 LCU-2000	15 ft	2.8
1 LCU-2000	20 ft	3.5
2 LCU-2000	10 ft	1.5
2 LCU-2000	15 ft	2.2
2 LCU-2000	20 ft	2.7
1 LSV	15 ft	1.1
1 LSV	20 ft	1.5
2 LSV	15 ft	0.9
2 LSV	20 ft	1.1

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
DESCRIPTION AND DATA

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

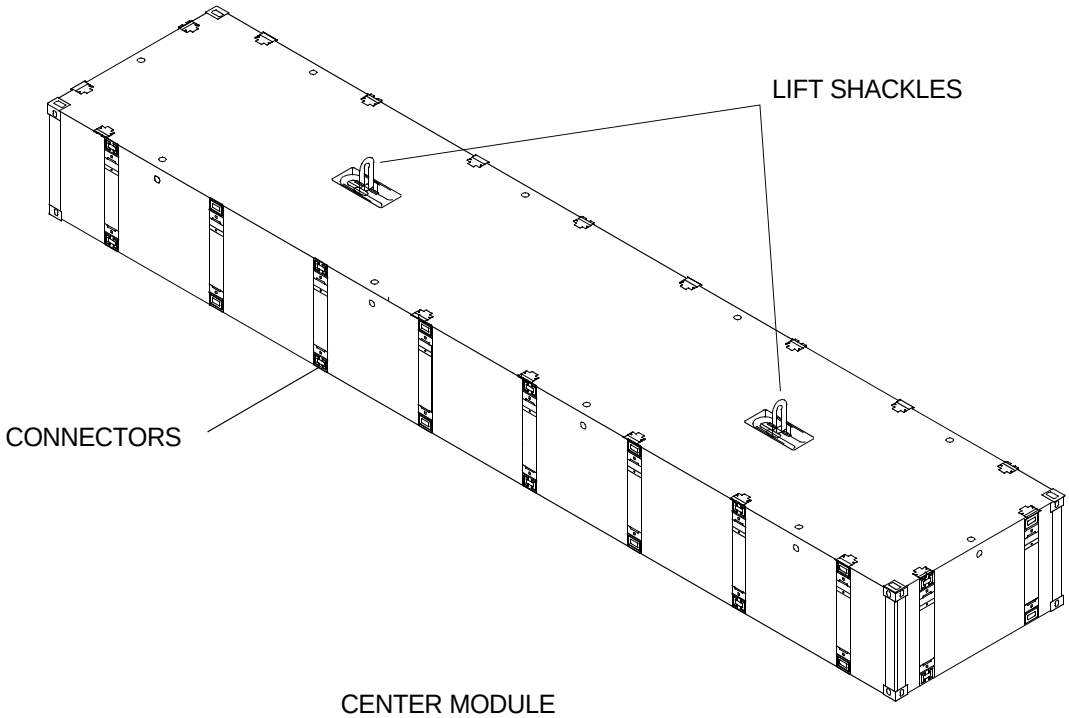
CENTER MODULE

Location

The center modules are located between, and attached to, the end rake modules.

Description

The center module is an empty container. Nominal dimensions of the center module are 8 ft wide, 40 ft long and 4 ft 6 in. deep. Each center module has two 25 ton capacity lifting shackles, which are flush mounted in the deck. The textured deck and smooth bottom are free of any protrusions that might obstruct packing. Access for internal leak detection of each compartment is provided by three recessed threaded plugs. Alternating male and female connectors are equally spaced along both sides and ends of the module. These lock assemblies are stowed flush with the surface and, when deployed, they connect modules with minimum clearance. Weight of the center module is approximately 22,500 lbs.



CENTER MODULE

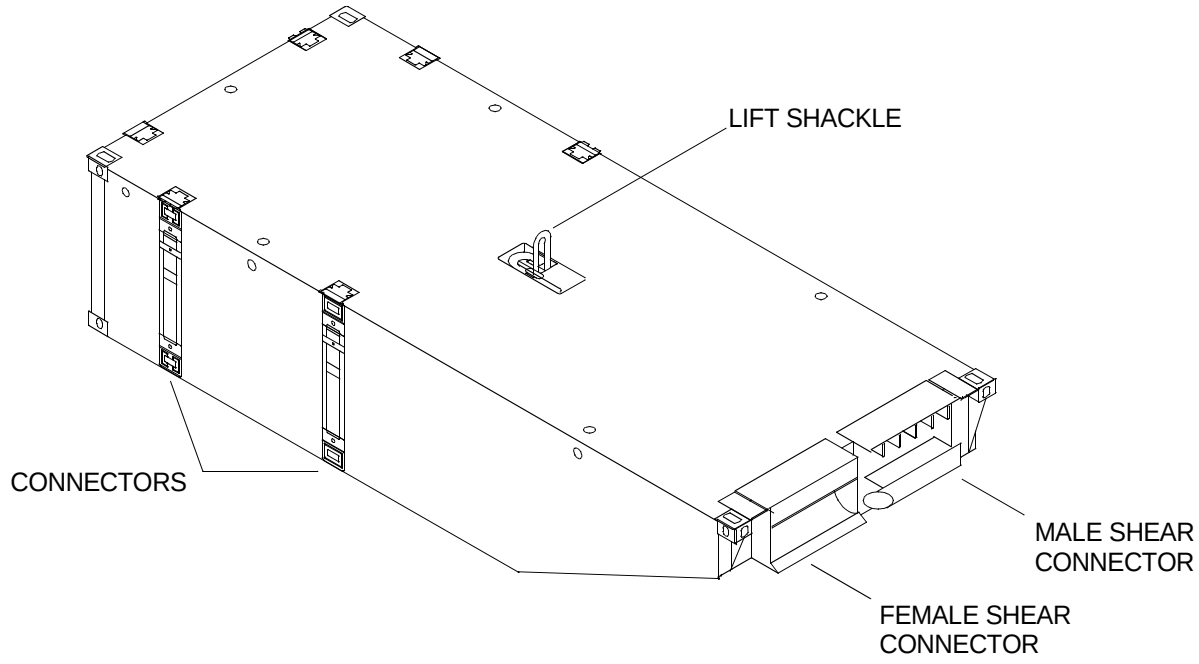
CENTER END RAKE MODULE

Location

The center end rake modules are attached to the center module.

Description

The center end rake module is an empty container. Nominal dimensions of the center end rake module are 8 ft wide, 20 ft long and 4 ft 6 in. deep. Each center end rake module has one 25 ton capacity lifting shackle, which is flush mounted in the deck. The textured deck and smooth bottom are free of any protrusions that might obstruct packing. Access for internal leak detection of each compartment is provided by a recessed threaded plug. Weight of the center end rake module is approximately 12,500 lbs.



END RAKE MODULE, CENTER

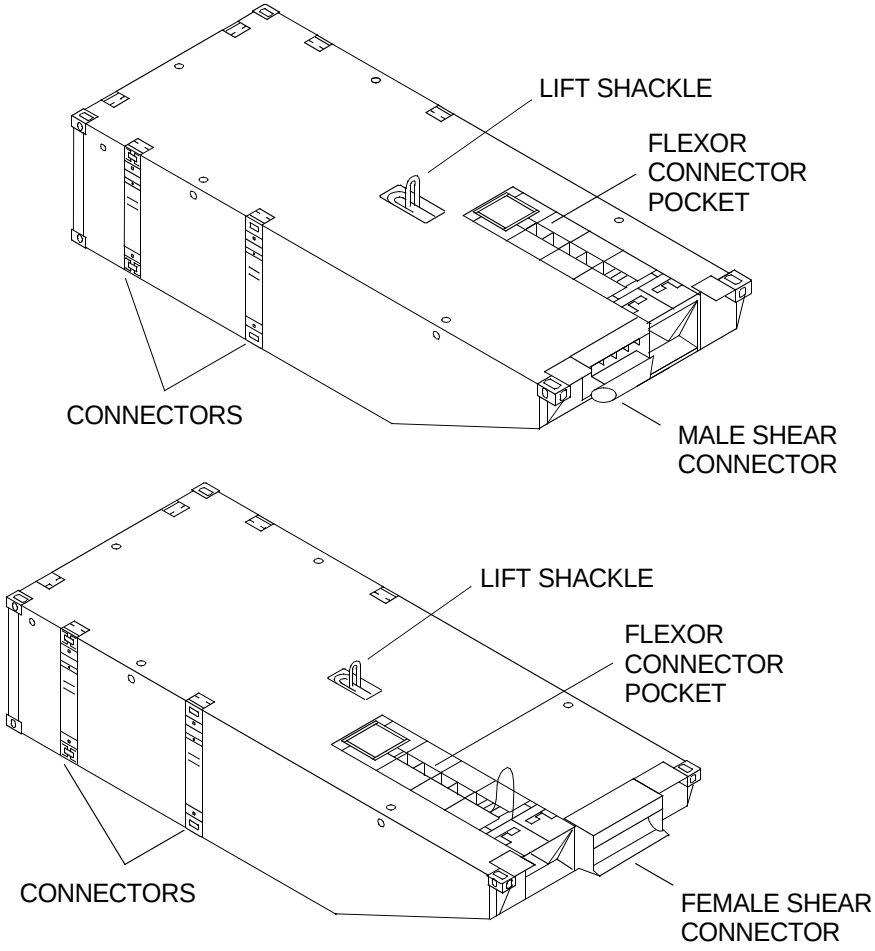
LEFT AND RIGHT END RAKE MODULES

Location

The left and right end rake modules are attached to the center module.

Description

The left and right end rake modules are empty containers. Nominal dimensions of the left and right end rake modules are 8 ft wide, 20 ft long and 4 ft 6 in. deep. Each left and right end rake module has one 25 ton capacity lifting shackle, which is flush mounted in the deck. The textured deck and smooth bottom are free of any protrusions that might obstruct packing. Access for internal leak detection of each compartment is provided by a recessed threaded plug. The left end rake has a flexor connector pocket for flexor connector installation in the left forward corner of the module. The right end rake has a flexor connector pocket for flexor connector installation in the right forward corner of the module. Weight of the left and right end rake modules is approximately 12,500 lbs.



END RAKE MODULES, LEFT HAND AND RIGHT HAND

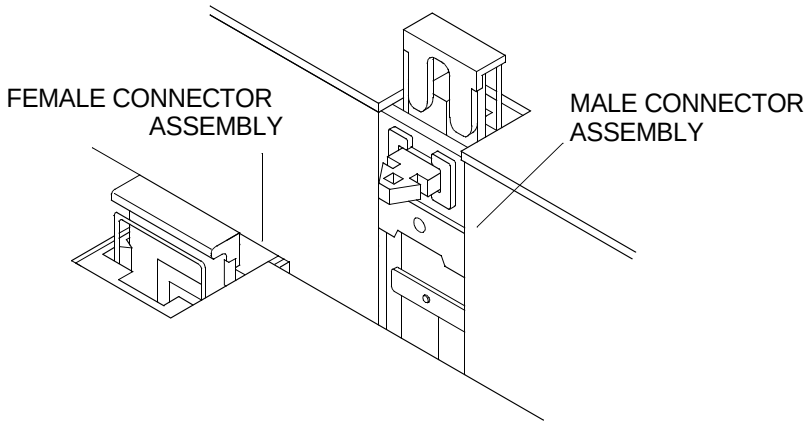
MALE AND FEMALE CONNECTOR ASSEMBLIES

Location

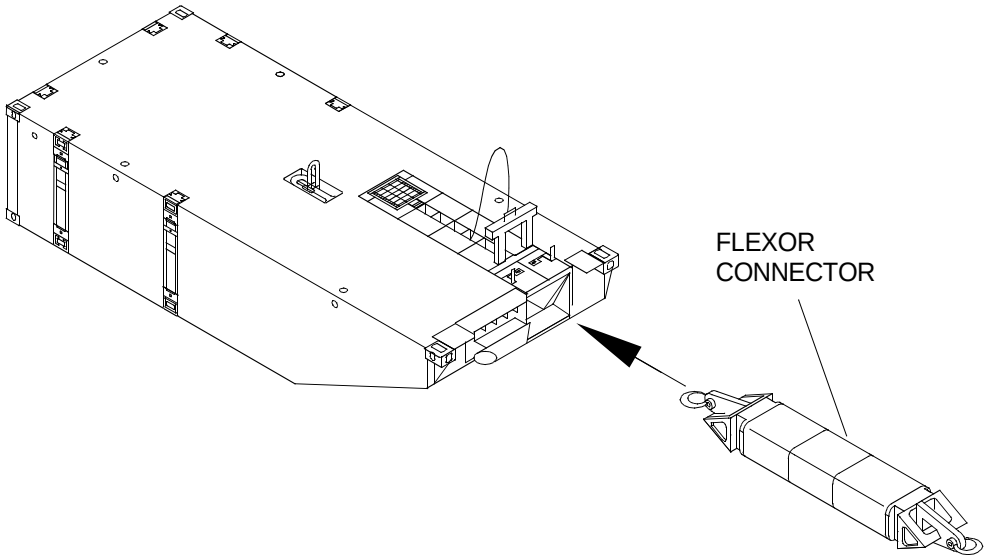
The male and female connectors are attached to the sides of the modules. The flexor connectors are attached to the ends of the left and right end rake modules.

Description

Two types of connectors are used in the assembly of the FC platform. A male/female vertical connector is used to connect modules to modules. Flexor connectors are used to connect sections to sections.



MALE/FEMALE CONNECTOR ASSEMBLY



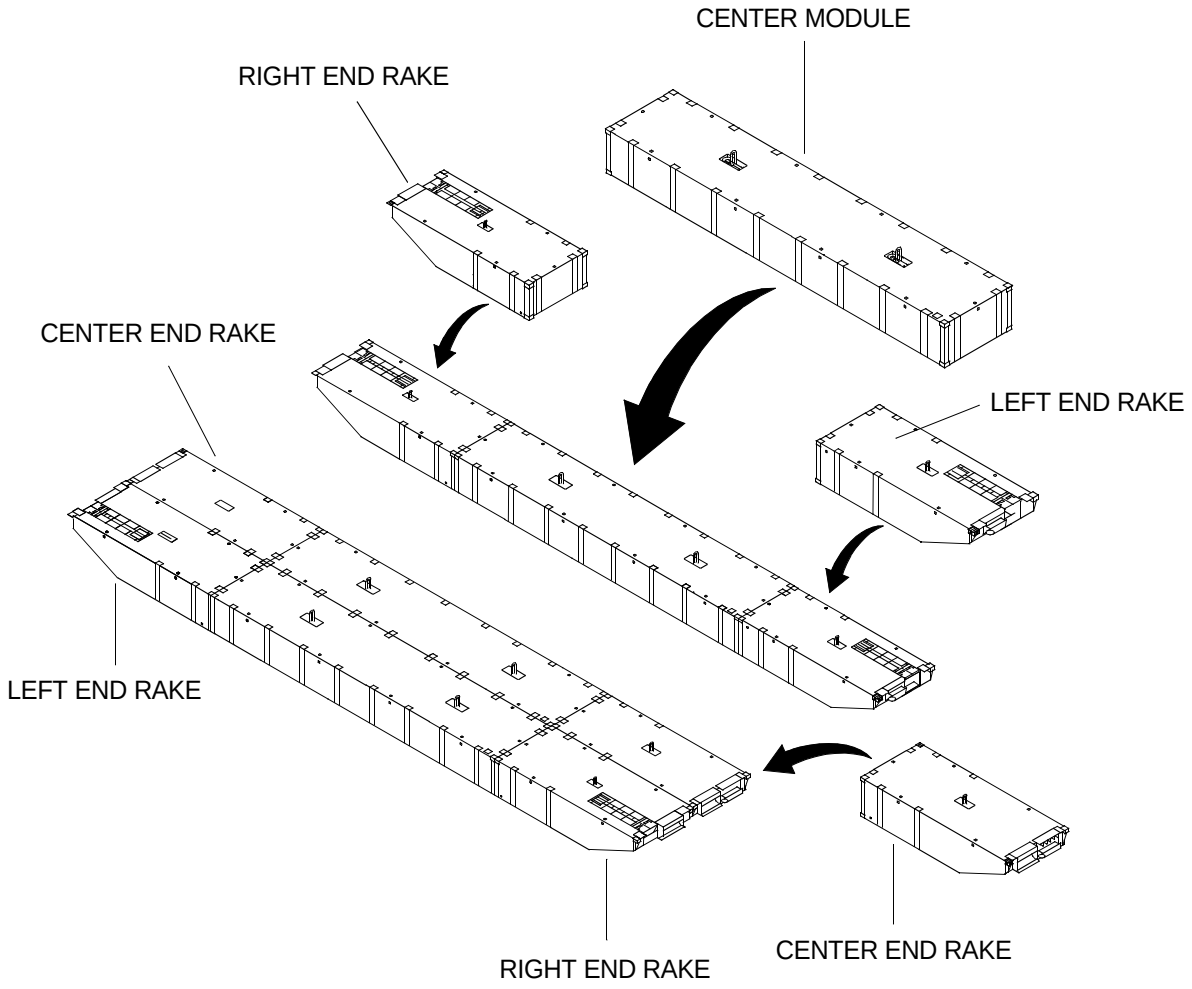
FC STRING

Location

The module string is attached to other strings to make up an intermediate section.

Description

The module string may be assembled in two different configurations: a center module with two center end rake modules and a center module with one left end rake module and one right end rake module. A center module with two end rake modules weighs 47,500 lbs. A string is 8 ft wide, 80 ft long and 4 ft 6 in. deep.



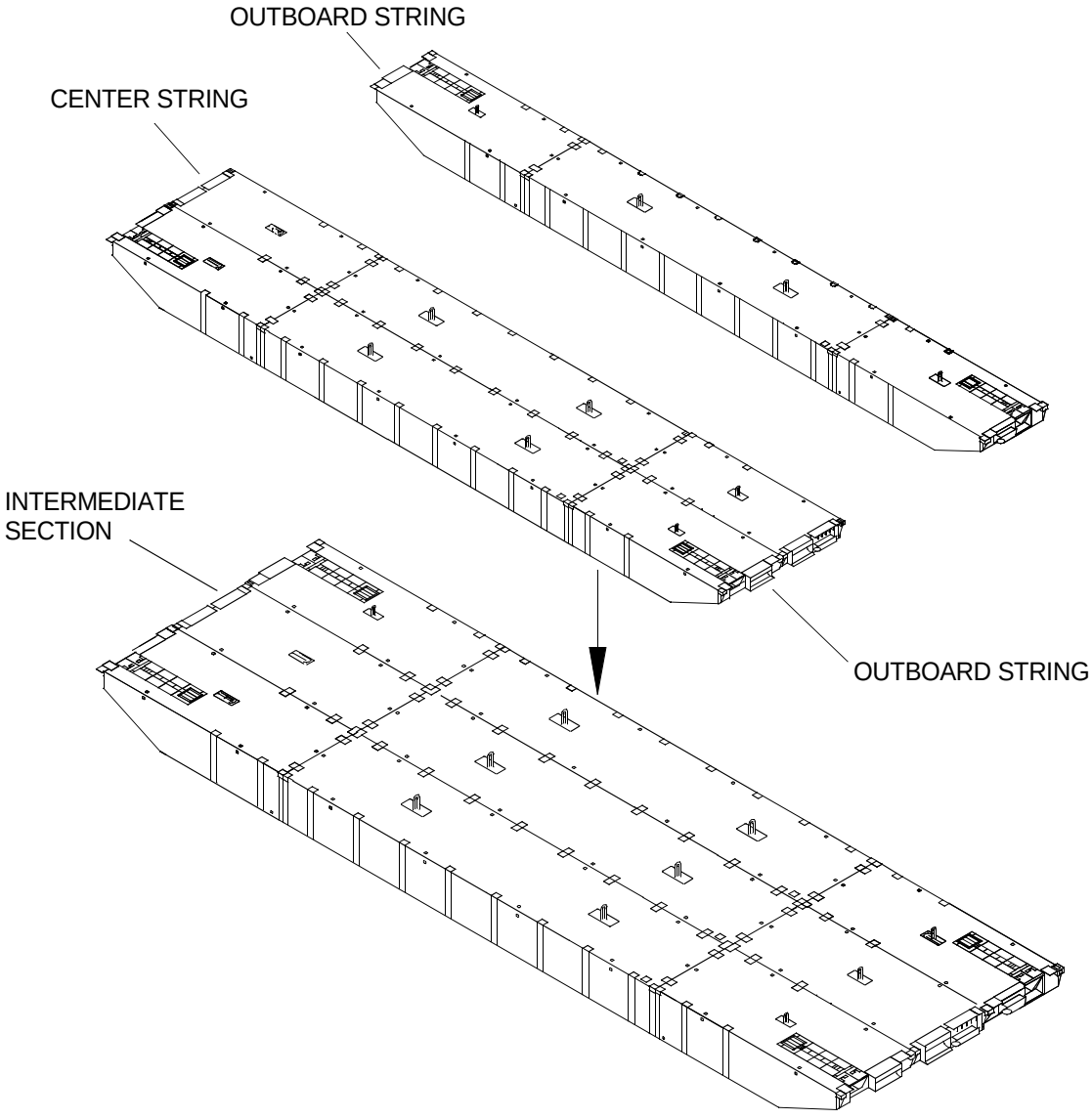
FC INTERMEDIATE SECTION

Location

The intermediate section is attached to other intermediate sections to construct an FC segment.

Description

An intermediate section is composed of three strings: two outboard strings and a center string. he two outboard strings consist of a center module, left end rake module and right end rake module. The center string consists of a center module and two center end rake modules. Strings are connected using male and female connectors.



The intermediate section is lifted with the intermediate module lifting sling. The intermediate module lifting sling consists of a spreader beam with a 2½ in. safety anchor shackle in the top center lifting eye along with 1¾ in. diameter 6 X 37 IWRC two leg and wire rope bridles with 2¼ in. X 8 in. X 16 in. master links attached to bottom lift eyes of the spreader beam using 1¾ in. safety shackles. Bridle IWRC legs are 22 ft, pull to pull, with thimbles on each end. One 1¾ in. screw pin anchor shackle is attached to the lift end of each bridle leg.

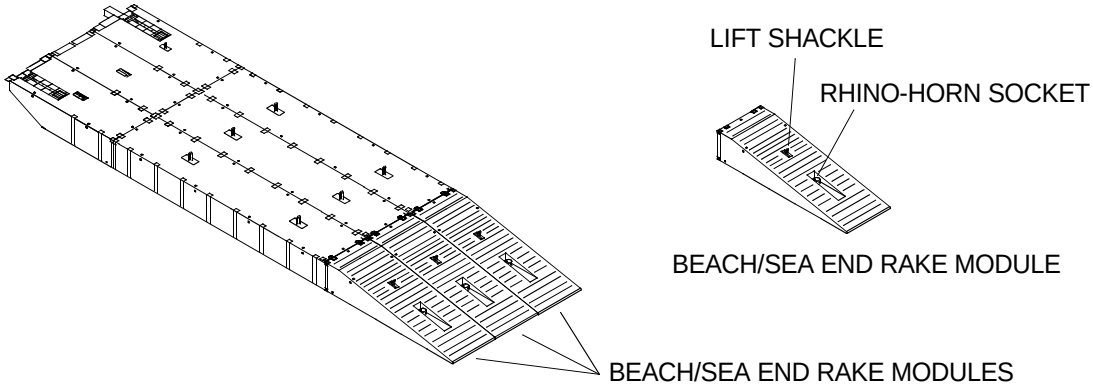
BEACH/SEA END RAKE MODULE

Location

The beach/sea end rake module is attached to the center module of the combination beach/ sea end section.

Description

The beach/sea end rake module is 8 ft wide, 25 ft long, 4 ft 6 in. deep with a ramp slope of 10^{o} and weighs approximately 4500 lbs.



COMBINATION BEACH/SEA END RAKE SECTION

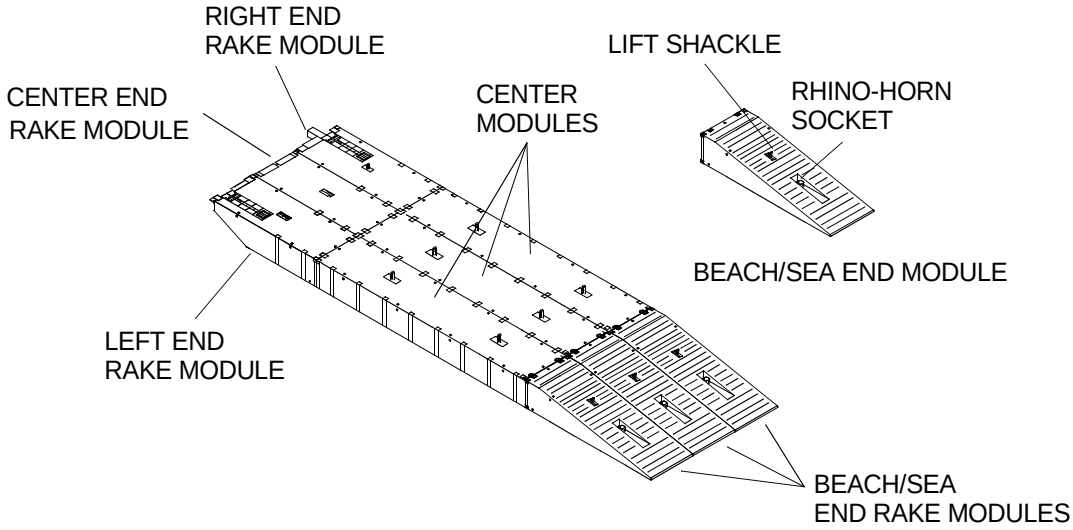
BEACH/SEA END SECTION

Location

The combination beach/sea end section is attached to the last intermediate section of the beachward end of the causeway.

Description

The combination beach/sea end section is made up of three center modules (non-powered), three end rake modules (left, center, and right) and three beach/sea end rake modules. All end rakes are compatible with U. S. Navy flexor attachments and shear connectors are fully compatible with ISO-container standards. The complete assembled combination beach/sea end section is 85 ft long, 24 ft wide and weighs approximately 141,900 lbs.



COMBINATION BEACH/SEA END SECTION

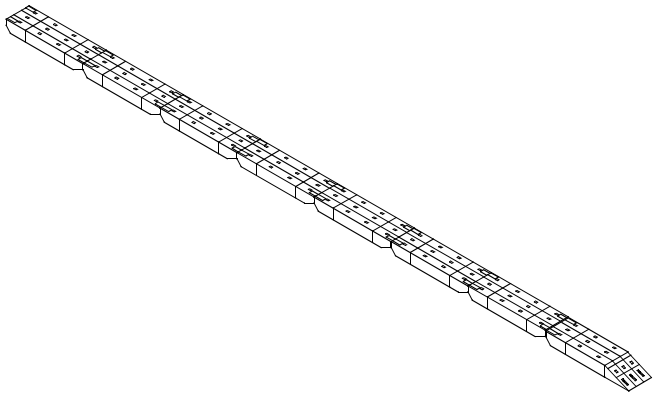
CAUSEWAY

Location

The causeway extends from the beach seaward to the trident pierhead.

Description

The causeway is made up of one or more intermediate sections and one combination beach/sea section interconnected end-to-end to form a floating platform from the trident pierhead to the beach. The overall length is determined by adding the total length of intermediate sections to the length of the combination beach/sea end section configuration used. The overall width of the causeway is 24 ft wide.



CAUSEWAY

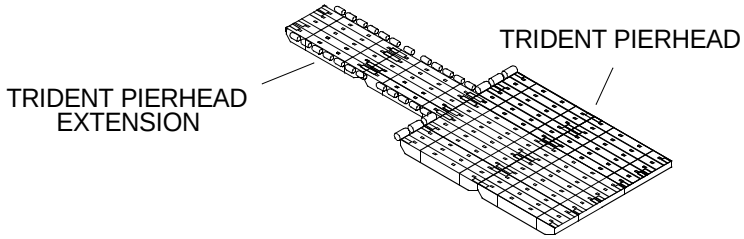
TRIDENT PIERHEAD

Location

The trident pierhead is located at the seaward end of the causeway.

Description

The trident pierhead is a floating platform for loading and unloading ocean-going sealift vessels. The trident pierhead consists of two sections: a floating platform which is made up of 10 intermediate modular sections that are assembled by connecting two segments of 5 wide, making the overall dimensions of the trident pierhead 160 ft long by 120 ft wide, and a trident pierhead extension which is made up of 10 module strings, two segments of 5 wide connected end to end run from the trident pierhead out to sea. This trident pierhead extension will be used by the lighter vessels to moor to the floating causeway. The overall dimensions of the trident pierhead extension is 40 ft wide by 160 ft long. The trident pierhead is capable of supporting two M-1 Abrams tanks and one sealift vessel's cargo ramp foot on the platform surface. The trident pierhead will withstand cargo loading through Sea State 2 conditions.



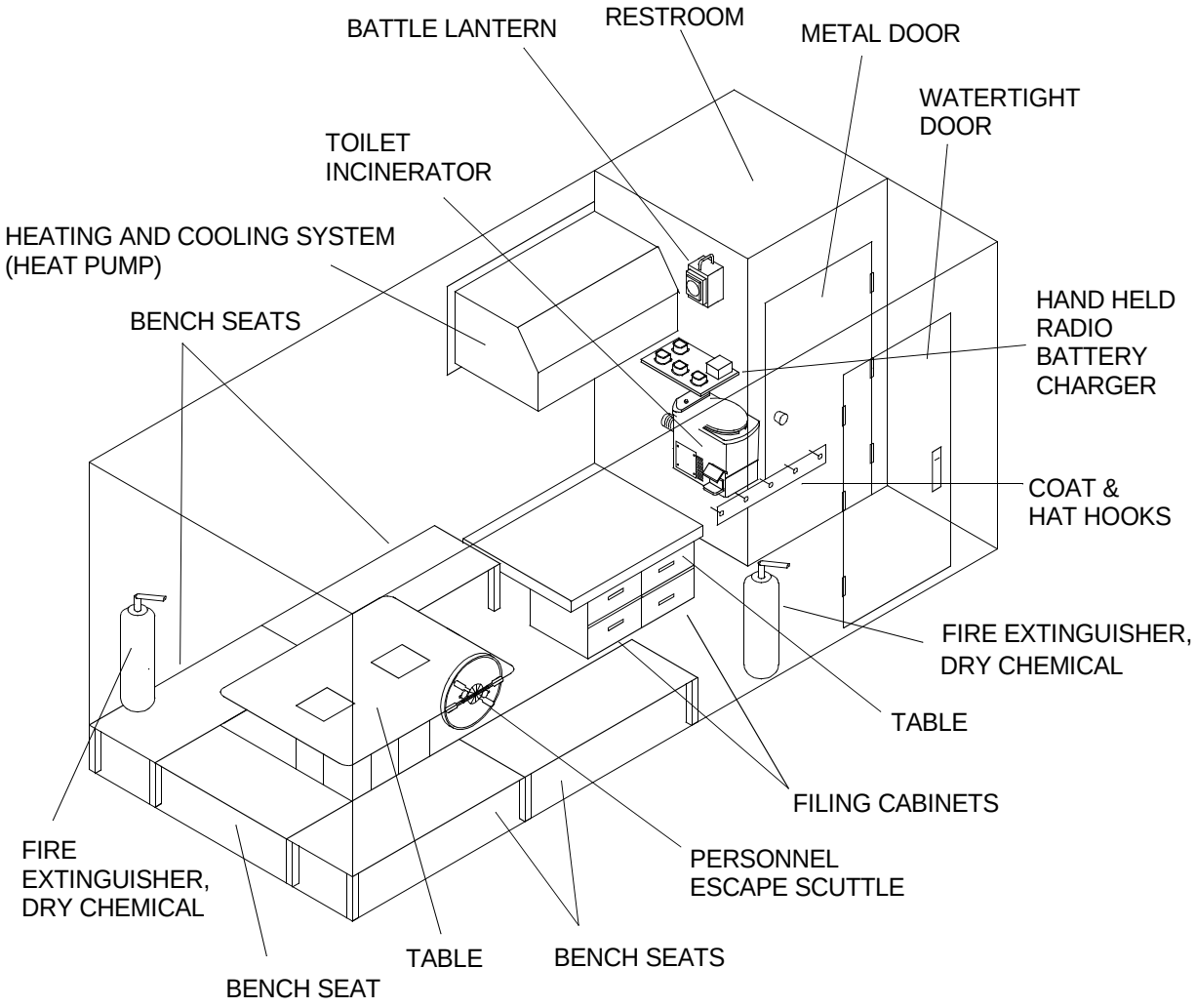
PERSONNEL SHELTER

Location

The personnel shelter is located on the deck of the FC platform.

Description

The personnel shelter provides a controlled environment for soldiers supporting the FC platform. The personnel shelter equipment is contained in a 20 ft ISO container. The shelter is equipped with a heating and cooling system (heat pump), incinerator toilet, AC lighting system, portable fire extinguishers, a battle lantern, bench seating for personnel, a table and a personnel escape scuttle located in the wall over the bench seat. The personnel shelter receives electrical power from the 10 KW or 15 KW tactical quiet generator. The personnel shelter weighs 9000 lbs.



PERSONNEL SHELTER

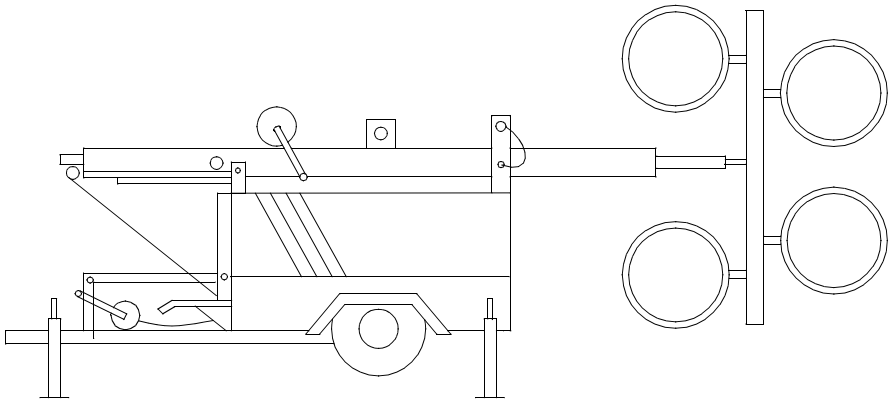
LIGHT TOWERS

Location

The light towers are positioned on the FC platform to provide lighting during night operations. The light towers are positioned by the operators as desired.

Description

The light towers are commercially available, self contained lighting systems. The light towers provide 6 KW of light using four 1000 watt lights. The light towers are powered by a 6 KW diesel engine. The light towers are stored in a 20 ft ISO container when not in use.The light tower container, with light towers, weights 19,000 lbs.



TACTICAL QUIET GENERATOR AND ISO CONTAINER

Location

The tactical quiet generator is located in the generator 20 ft ISO container. The ISO container is located on the FC platform.

Description

There are two types of tactical quiet generators authorized for use on the FC, 10 KW and 15 KW. The description and specifications for the 15 KW tactical quiet generator may be found in TM 9-6115-643-10 and the description and specifications for the 10 KW tactical quiet generator may be found in TM 9-6115-642-10.

The tactical quiet generator is supplied with fuel by the generator mounted day fuel tank. A 1000 gallon base fuel tank is mounted in the ISO container. Fuel is transferred to the day fuel tank utilizing an electric fuel transfer pump. A hand operated fuel transfer pump is provided in case of electric fuel transfer pump failure. A fuel gauge on the generator instrument panel aids in the refueling of the day tank. The 1000 gallon fuel tank may be refueled inside or outside the container. Fuel level indicator lights are mounted on the inside and outside of the container to aid in refueling the 1000 gallon fuel tank.

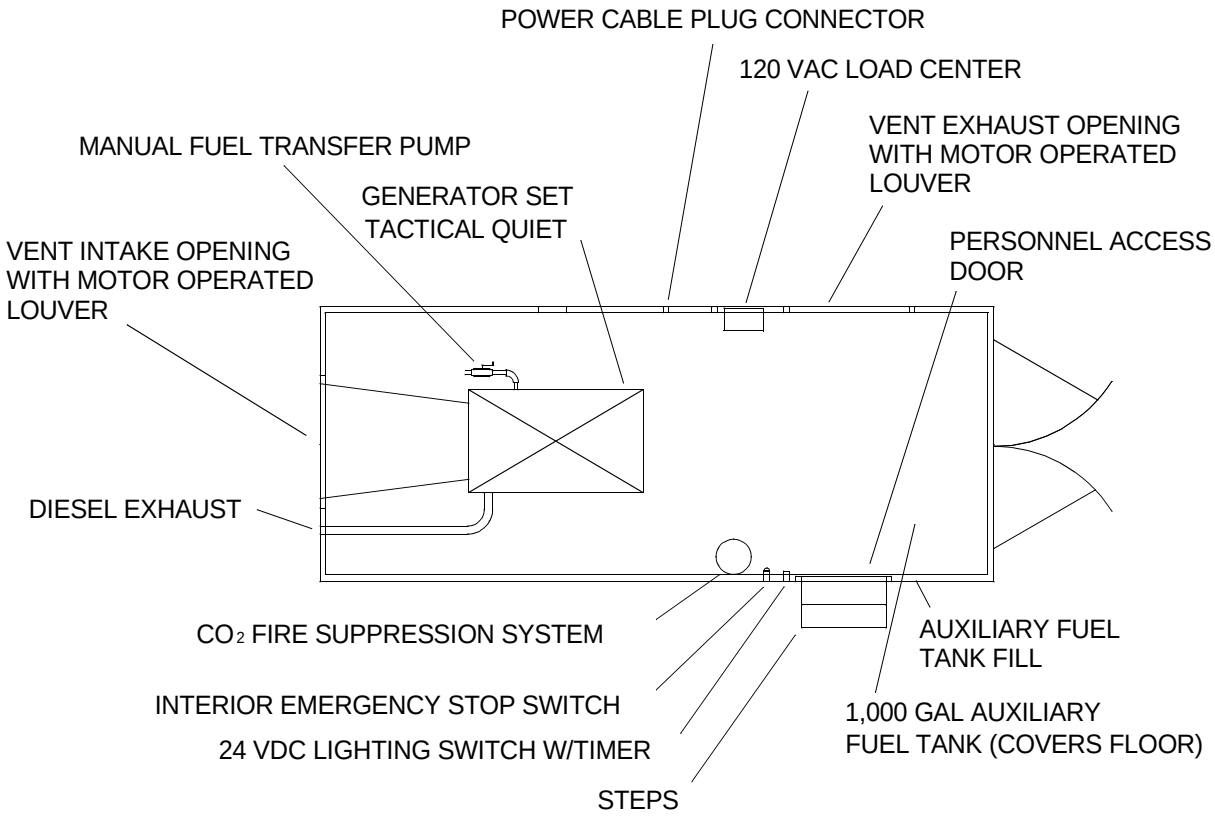
Stainless steel motorized louvers provides air to the generator for cooling. Generator exhaust is routed outside of the container. A stainless steel motorized vent provides ventilation for the generator shelter. Aluminum covers are used while in storage to protect the louvers from the elements.

The ISO container is equipped with a CO2 fire suppression system. The fire suppression system may be operated automatically or manually. In the automatic mode, a linear detection wire activates the fire suppression system when the temperature exceeds 356°F. The system may be operated in the manual mode using the manual pull station when electrical power is available or by pulling the pin and pressing the actuator knob when electrical power is not available.

The CO2 fire suppression system is controlled by the control module. Upon sensing that a fire is present, the control module activates the fire suppression sequence. A time delay between the initial alarm condition and operation of the shutdown relay occurs. This delay may be programmed for 5, 10, 20 or 30 seconds by the user. The shutdown relay shuts down the generator and allows personnel time to vacate the shelter. After the delay sequence is completed, a second delay before actuation of the fire extinguishing agent occurs. This second delay may be programmed for 5, 10, 20 or 30 seconds by the user. When using the manual pull station, the delays used in the automatic mode are implemented by the control module.

The shelter is equipped with Alternating Current (AC) fluorescent light fixtures. A load center is used to control the alternating current system. A Direct Current (DC) lighting system, comprised of a spring wound timer switch and light fixtures, supply light when AC lighting is not available.

An EMERGENCY STOP button is mounted inside the ISO container personnel access door. When pressed, the EMERGENCY STOP button stops the generator.



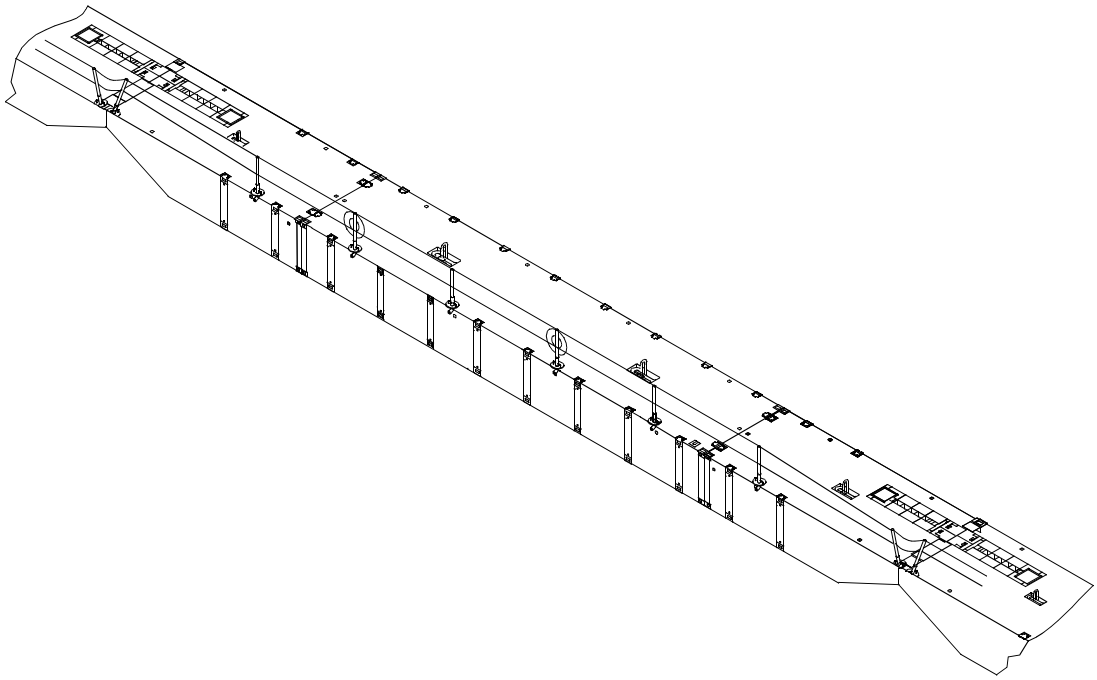
LIFELINE AND LIFE RING SUBSYSTEM

Location

The lifeline subsystem is installed along the sides of the FC platform to protect personnel from falling overboard. The stanchions for the lifelines are installed in the turn-tube fittings and ISO corner fittings of the modules. Chain is used to span the gap between section openings. The lifeline arrangement will vary depending on FC configuration. The life rings, nylon rope and strobe lights are attached to the life ring stanchions.

Description

The components of the lifeline subsystem consist of stanchions (two types), deck fittings (two types) and chain to span the spaces between sections. The components of the life ring subsystem consist of a donut shaped flotation device, nylon rope and strobe light.



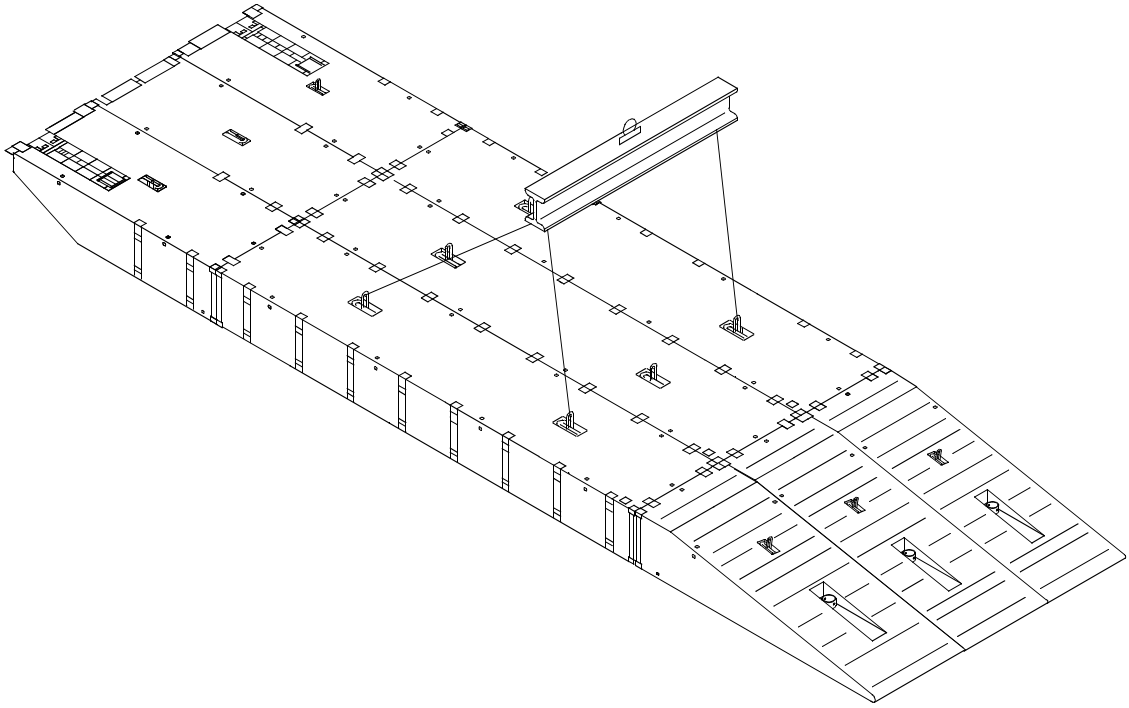
LIFTING SLING

Location

Lifting slings are located in the BII container.

Description

The lifting sling consists of a spreader beam with a 2½ in. safety anchor shackle in the top center lifting eye along with 1¾ in. diameter 6 X 37 IWRC two leg and wire rope bridles with 2¼ in. X 8 in. X 16 in. master links attached to bottom lift eyes of the spreader beam using 1¾ in. safety shackles. Bridle IWRC legs are 22 ft, pull to pull, with thimbles on each end. One 1¾ in. screw pin anchor shackle is attached to the lift end of each bridle leg.



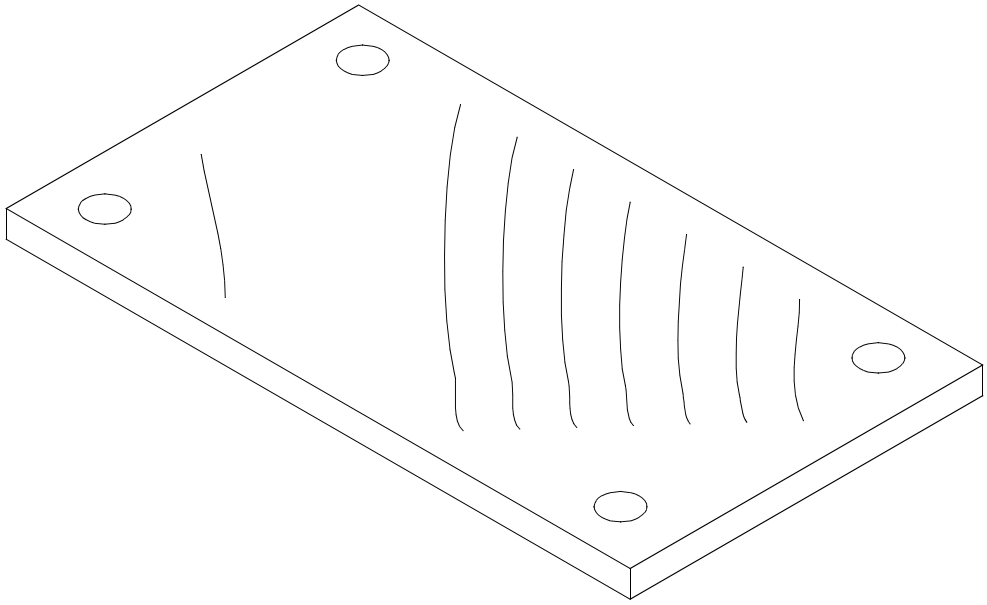
DUNNAGE MATS

Location

Individual dunnage mats are attached to a module ISO corner fitting and are placed where the cargo ramps of the sealift vessel and the lighters will land on the FC. When not in use, the mats are stacked horizontally on a pallet in the 20 ft ISO storage containers.

Description

Each dunnage mat is approximately 4 ft wide X 10 ft long X 1½ in. thick and made of high density polyethylene material. Each mat weighs 300 lbs and has a hole near each corner that is used for securing the mat to the ISO corner fittings.



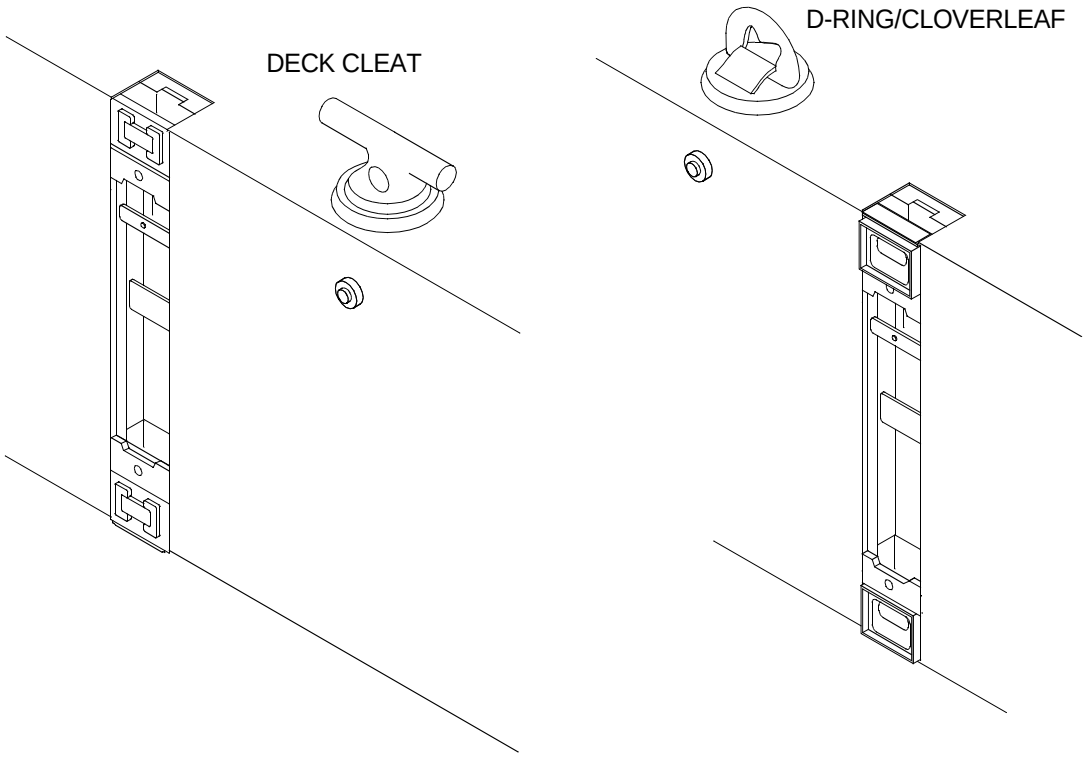
D-RING/CLOVERLEAF FITTINGS AND DECK CLEAT FITTINGS

Location

The D-ring/cloverleaf fittings and deck cleat fittings are located on the deck of the FC platform.

Description

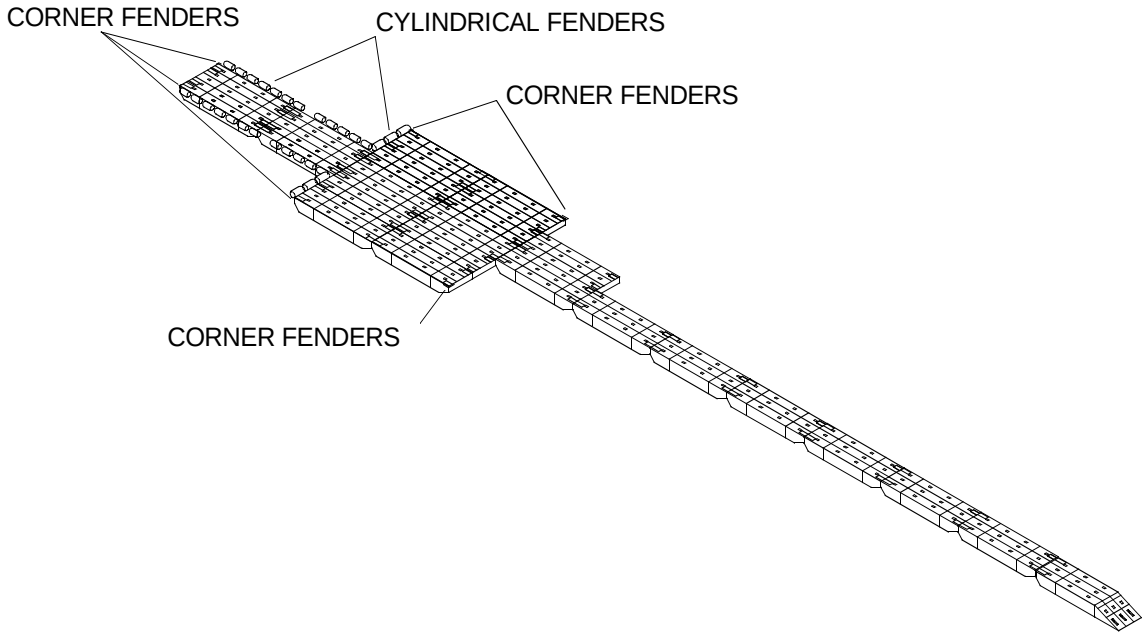
These fittings have a 15,000 lb load capacity. There are ten tube turns per center module and five per end rake.



FENDERS

Location

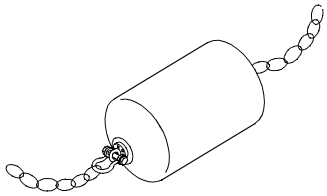
The corner fenders are installed on protruding seaward corners of the trident pierhead, while the cylindrical fenders are installed around the seaward perimeter of the trident pierhead and on the two sides of the trident pierhead extension. The configuration depicting all fenders is shown below.



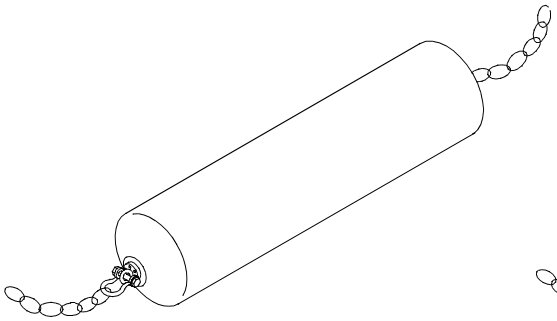
Description

There are two types of fenders which are components of the FC. These fenders are cylindrical type and corner type.

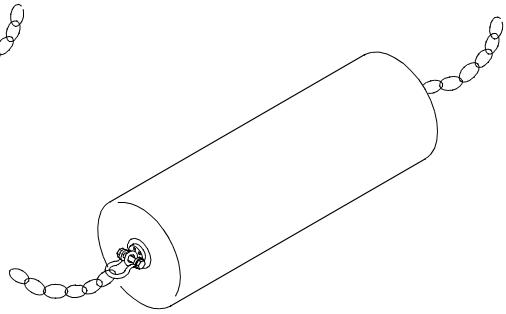
Cylindrical Type: There are three sizes of cylindrical shaped fenders that are components of the FC. The cylindrical fenders are constructed of rubber and are used for stand-off from the FC. The three sizes are 3 ft diameter by 5 ft long (3 ft X 5 ft), 4 ft diameter by 12 ft long (4 ft X 12 ft), 5 ft diameter by 10 ft long (5 ft X 10 ft). The fenders each have 25 ft of ½ in. chain attached at each end for securing to the trident pierhead modules.



3 FT X 5 FT LIGHTER FENDER

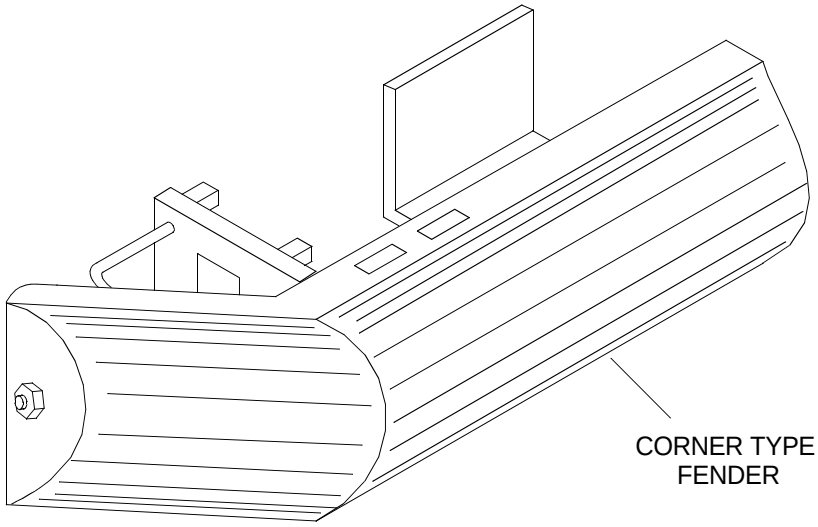


4 FT X 12 FT LIGHTER FENDER



5 FT X 10 FT LIGHTER FENDER

Corner Type: The corner fenders are installed on protruding corners of the FC. The corner fender assembly has two parts and is installed on the ISO corner fittings. An example of a corner fitting is shown below.



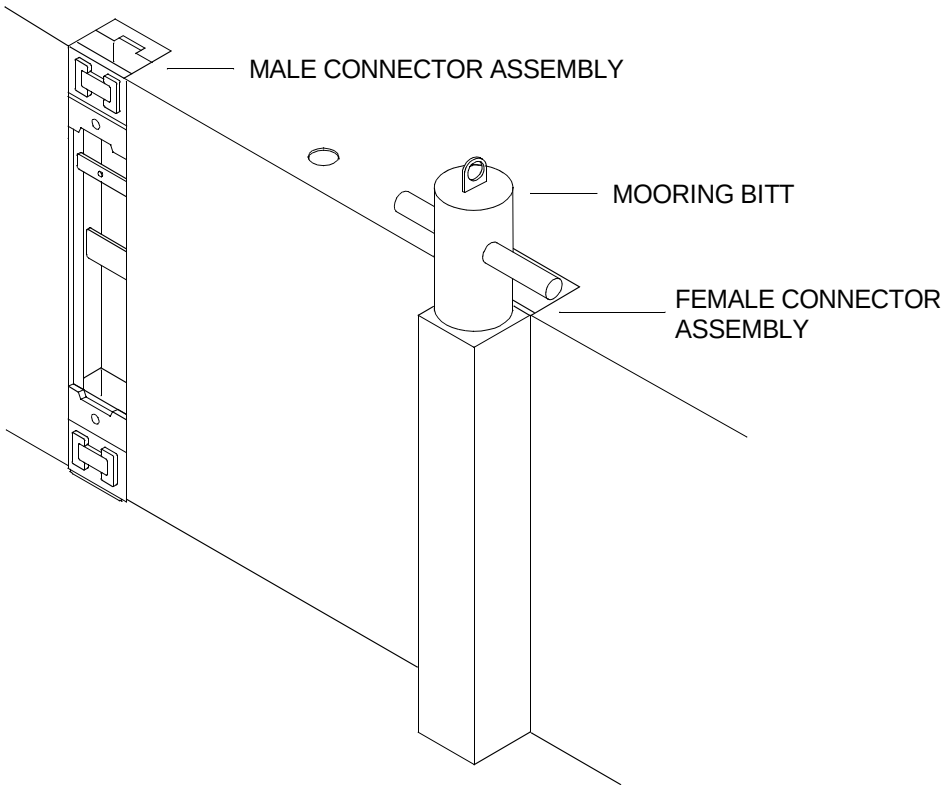
MOORING BITTS

Location

Mooring bitts can be installed on any side of the FC that is exposed to the sea and accessible for mooring.

Description

Mooring bitts incorporate two mounting connector pins that can only be installed into female module connector assemblies.



TOWING BRIDLE, TOWING INTERFACE AND TOWING LIGHTS

Location

The towing bridle is attached to flexor receiver inserts. It is stowed in the BII container when not in use.

The towing interface is attached to the FC end rakes. It is stowed in the BII container when not in use.

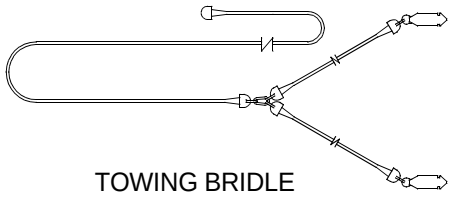
The towing lights are attached to the left side (red lens), right side (green lens), front center (white lens) and the aft end (amber lens) when towing the FC. The lights are stowed in the BII container when not in use.

Description

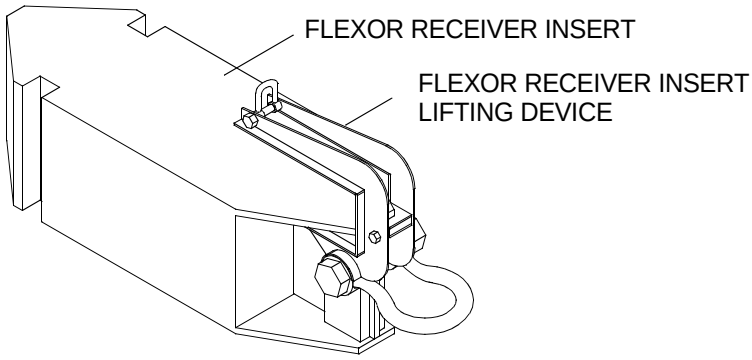
The towing bridle consists of a 500 ft, 10 in. circumference nylon line with a two leg, 10 in. circumference nylon bridle designed to tow the FC up through Sea State 5 conditions. It has shackles at each end used to attach it to the flexor receiver inserts at the FC and a warping tug at the other end.

The towing interface is used along with the towing bridle to tow the FC up through Sea State 5 conditions. A flexor receiver insert and a flexor receiver insert lifting device is used to install the insert for towing.

There are four types of towing lights used during towing of the FC. The towing lights are identified by the color of the lens, which are white, green, red and amber. The lenses are interchangeable and are adjustable for aiming purposes during towing operations. These lights are battery operated and have magnetic bases so no adapters are needed for installation.



TOWING BRIDLE



TOWING INTERFACE

OFFSHORE ANCHOR MOORING LEGS

Location

The offshore mooring legs are attached to the FC causeway and located on alternate sections of the causeway.

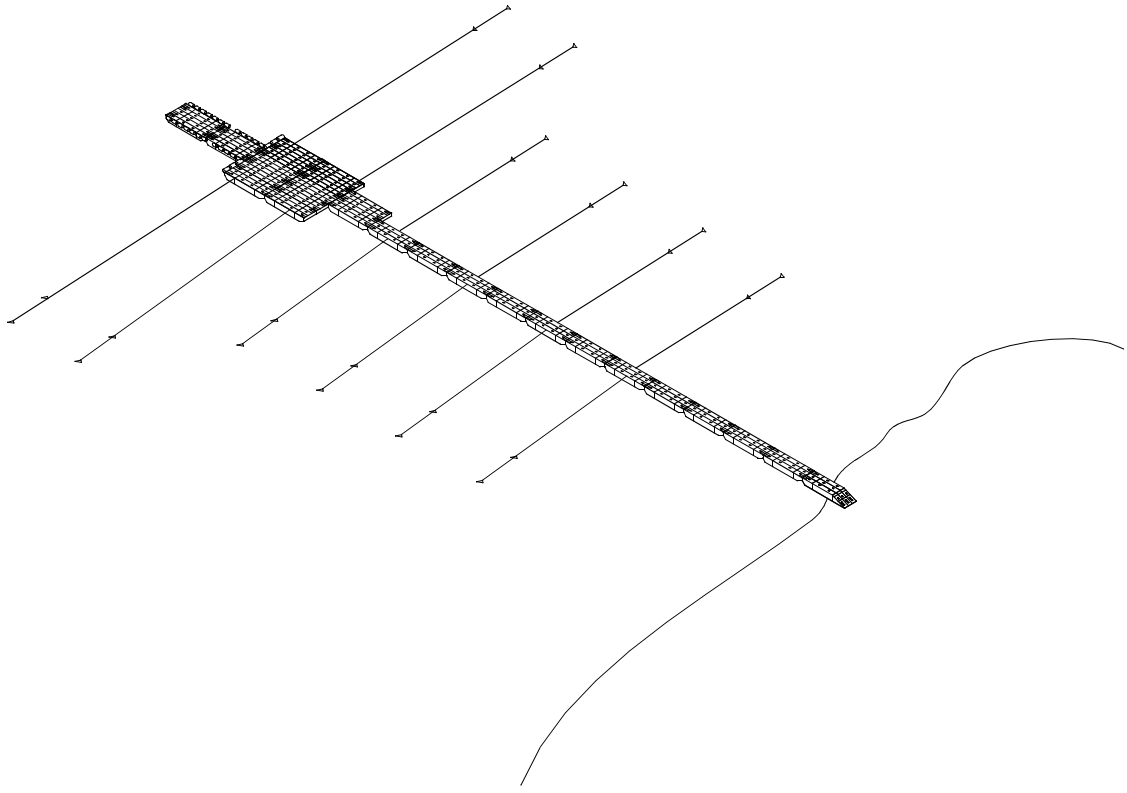
Description

Sixteen offshore mooring legs secure the causeway from drifting. The offshore mooring leg container is a 20 ft full access ISO container that provides stowage for two anchor mooring legs and supports the installation of the mooring legs from the deck of the floating causeway.

An offshore mooring leg contains the following items:

- Two 2400 lb NAVMOOR anchors.
- Two 150 ft lengths of 1 1/4 in. wire rope.
- One vertical padeye.
- Two 30 ft lengths of 1 1/4 in. wire rope.
- One mooring buoy.
- One 1 1/2 in. swivel.
- Eight 13 1/8 in. bolt type anchor shackles.

The offshore mooring container is placed on the floating causeway, transverse to the causeway's axis, when preparing to set the anchor legs. The anchor leg components are stowed in the container in a way that allows an entire mooring leg to be pulled from each end of the container and set by a warping tug. After the mooring legs are set, the container is removed from the floating causeway to the beach.



ONSHORE MOORING LEGS

Location

The onshore mooring legs are attached to the FC causeway and located on the third and fifth intermediate sections from the beach.

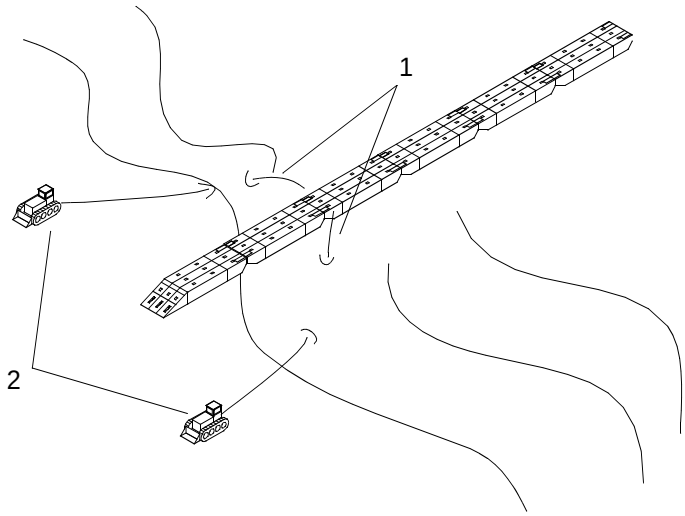
The onshore mooring legs secure the shoreward end of the floating causeway to the beach. The four onshore legs for a floating causeway are stowed and transported in a 20 ft full access ISO container. The onshore mooring leg is designed to perform in soft soils, sand and competent rock.

An onshore mooring leg contains the following items:

- Four 120 lb NAVMOOR anchors.
- One or more 1 in. wire rope assembly that is 300 ft long.
- One horizontal padeye.
- One 1 3/8 in. bolt type anchor shackle.
- Two carpenter stop assemblies.
- One snatch block.
- One hoist hook cable.
- One griphoist.
- One master link.
- Five 1 in. shackles.
- One flounder plate.
- Two anchor bridles.
- Four 7/8 in. shackles.

Description

The onshore mooring container is placed on the deck of the first floating causeway raft. Once the raft is beached, the wire rope assemblies, padeyes and necessary shackles for the first two onshore legs (1) can be assembled and brought ashore for attachment to bulldozers (2). The remainder of the container contents can be assembled with the container on the floating causeway or the container may be moved to the beach before the remaining contents are assembled.



UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
DESCRIPTION AND DATA

EQUIPMENT DATA

The following tables provides data applicable to major component levels.

Table 1. FC Equipment Data.

ITEM CHARACTERISTIC	DESCRIPTION
CENTER MODULE	
Width	8 ft
Length	40 ft
Depth	4 ft 6 in.
Weight	22,500 lbs
ISO Compatible	Yes
Sea State Operation	SS 2
END RAKE MODULE	
Width	8 ft
Length	20 ft
Depth	4 ft 6 in.
Weight	12,500 lbs
ISO Compatible	Yes
Sea State Operation	SS 2
BEACH/SEA END MODULE	
Width	8 ft
Length	25 ft
Depth	4 ft 6 in.
Weight	13,600 lbs
ISO Compatible	Yes
Sea State Operation	SS 2
INTERMEDIATE SECTION	
Center Modules (3 Per Section)	Non-Powered
Width	8 ft

Table 1. FC Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
Length	40 ft
Depth	4 ft 6 in.
End Rake Modules (6 Per Section)	Compatible with U.S. Navy flexor attachments and shear connectors
Width	8 ft
Length	20 ft
Depth	4 ft 6 in.
Weight of Assembled Intermediate Section	142,500 lbs
ISO Compatible	Yes
Sea State Operation	SS 2
COMBINATION BEACH/SEA END SECTION	
Center Modules (3 Per Section)	Non-Powered
Width	8 ft
Length	40 ft
Depth	4 ft 6 in.
End Rake Modules (3 Per Section)	Compatible with U.S. Navy flexor attachments and shear connectors
Width	8 ft
Length	20 ft
Depth	4 ft 6 in.
Beach/Sea End Modules (3 Per Section)	
Width	8 ft
Length	25 ft
Depth	4 ft 6 in.
Weight of Assembled Combination Beach/Sea End Section	145,800 lbs
ISO Compatible	Yes
Sea State Operation	SS 2

Table 1. FC Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
FLOATING CAUSEWAY	
Trident Pierhead	A combination of intermediate section.
Width	120 ft
Length	160 ft
Trident Pierhead Extension	A set of modules that is five strings wide. It runs from the trident pierhead out to sea.
Width	40 ft
Length	160 ft
Causeway	Consists of one or more intermediate sections and a combination beach/sea end section.
Width	24 ft
Length	Length depends on how far offshore, away from the beach, the causeway must extend to give the required water depth.
PERSONNEL SHELTER	
Width	8 ft
Length	20 ft
Depth	8.5 ft
Weight	9000 lbs
ISO Compatible	Yes
GENERATOR CONTAINER	
Width	8 ft
Length	20 ft
Depth	8.5 ft
Weight	15,000 lbs
ISO Compatible	Yes
DIESEL GENERATOR SET	
10 KW Generator Set	Refer to TM 9-6115-642-10
15 KW Generator Set	Refer to TM 9-6115-643-10
ISO Compatible	Yes

Table 1. FC Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
LIGHT TOWERS	
Width	79 in.
Length	174 in.
Depth	89 in. in travel position, 30 ft in assembled position
Weight	2010 lbs
Weight of Pallet	2600 lbs
Weight of ISO Container, Including Light Towers	19,000 lbs
ISO Compatible	Yes
FLOATING CAUSEWAY ANCHOR MOORING SYSTEM (FCAMS)	
ISO Containers	Staged on the FC and are stored on the beach once they are emptied.
Width	8 ft
Length	20 ft
Depth	8.5 ft
Onshore Mooring Legs	4
Offshore Mooring Legs	12
COMMUNICATIONS EQUIPMENT	
Communications Equipment	The equipment consists of four VHF/FM handheld transceivers that are stored in the personnel shelter.
DUNNAGE MATS	
Mats	Made of high density polyethylene material
Width	4 ft
Length	00 ft
Depth	1 ½ in.
Weight	300 lbs
Weight of Mat Pallet	13,100 lbs

Table 1. FC Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
Weight of Dunnage Mat ISO Container With Dunnage Mats	24,000 lbs
ISO Compatible	Yes
MOORING BITTS	
Length	6 ft 5 in.
Weight	235 lbs
Weight of Top Mooring Bitt Pallet (4 Bitts Per Pallet)	1800 lbs
Weight of Middle and Lower Mooring Bitt Pallets (3 Bitts Per Pallet)	1600 lbs each
Weight of ISO Container With Mooring Bitts	27,000 lbs
ISO Compatible	Yes
5 ft X 10 ft FENDERS	
Weight	1500 lbs
Weight of Fender Pallet	2400 lbs
ISO Compatible	Yes
4 ft X 12 ft FENDERS	
Weight	1450 lbs
Weight of Fender Pallet	3800 lbs
Weight of ISO Container with Fenders	25,200 lbs
ISO Compatible	Yes
3 ft X 5 ft FENDERS	
Weight	300 lbs
Weight of Fender Pallet	3000 lbs
Weight of ISO Container with Fenders	25,200 lbs
ISO Compatible	Yes
CORNER FENDERS	
Corner Fenders	The corner fenders are installed on protruding corners of the FC. The corner fender assembly has two parts and is installed on the ISO corner fittings.

Table 1. FC Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
FLEXOR CONNECTORS	
Weight	1400 lbs
Weight of Flexor Connector Pallet	2700 lbs

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
THEORY OF OPERATION

SYSTEM OPERATION

The Floating Causeway (FC) is a floating platform used during Logistics Over The Shore (LOTS) operations. The FC consists of three major sections; trident pierhead extension, trident pierhead, and causeway. Each major section consists of non-powered floating modules that are assembled into module strings and intermediate sections connected together using the Navy flexor and shear connector system which forms a hinge joint between them. The width of the FC is 120 ft at the widest point which is the trident pierhead. The length of the FC depends on how far the causeway must be extended from the beach to give the required water depth for LOTS operations. The FC is held in place during LOTS operations by the Floating Causeway Anchor Mooring System (FCAMS). The structure of the FC will withstand cargo loading and unloading through Sea State 2 conditions.

TRIDENT PIERHEAD EXTENSION

The trident pierhead extension is a floating platform for loading and unloading ocean-going sealift vessels. The trident pierhead extension consists of 10 module strings, two segments of five wide connected end to end. The overall dimensions of the trident pierhead extension is 160 ft long by 40 ft wide. The trident pierhead extension connects to the trident pierhead for loading and unloading. The trident pierhead extension will withstand cargo loading through Sea State 2 conditions.

TRIDENT PIERHEAD

The trident pierhead is a floating platform for loading and unloading ocean-going sealift vessels. The trident pierhead consists of 10 intermediate modular sections. The intermediate modular sections are assembled by connecting two segments of five wide. The overall dimensions of the trident pierhead is 160 ft long by 120 ft wide. The trident pierhead is connected between the trident pierhead extension and the causeway for loading and unloading. The trident pierhead will withstand cargo loading through Sea State 2 conditions.

CAUSEWAY

The causeway is a floating platform for loading and unloading ocean-going sealift vessels. The causeway consists of one or more intermediate sections connected length wise, with one end connected to the trident pierhead and the other end connected to a combination beach/sea end section. The causeway is connected between the trident pierhead and the beach for loading and unloading. The overall dimension is determined by adding the total length of intermediate sections to the length of the combination beach/sea end section configuration and the width is 24 ft. The causeway length depends on how far offshore the causeway must extend to give the required water depth. The causeway will withstand cargo loading through Sea State 2 conditions.

FORCE OPENING FLOATING CAUSEWAY

The force opening floating causeway is an administrative pier used to get to fifteen feet of water depth. The causeway is a floating platform for loading and unloading ocean-going sealift vessels. The causeway consists of one or more intermediate sections connected length wise and connected to a combination beach/sea end section. The causeway length depends on how far offshore the causeway must extend to give the required water depth. The force opening floating causeway does not use a trident pierhead. The force opening floating causeway operating conditions are: Sea State 2 with five foot waves and a current of two knots.

10 KW 0R 15 KW SKID MOUNTED TACTICAL QUIET GENERATOR

Refer to TM 9-6115-642-10 for the theory of operation of the 10 KW diesel generator set.

Refer to TM 9-6115-643-10 for the theory of operation of the 15 KW diesel generator set.

PERSONNEL SHELTER

The personnel shelter is contained in a 20 ft ISO container. Power is supplied to the shelter from the tactical quiet generator through a power cable stored in the shelter and connected from a 100 amp connector on the backside of the shelter to a 100 amp connector on the generator. The power provided by the generator supplies power to the electrical distribution panel, which is cabled to the incinerator toilet, heating and cooling unit, lighting, fire suppression system and to the GFI receptacles in the personnel shelter.

6 KW TRAILER MOUNTED LIGHT TOWER

The lighting system consists of a self-contained, trailer mounted, 6 KW diesel generator which provides 6 KW of power at 60 hz to four high pressure sodium, 1000 watt lamps. The power to each lamp is controlled by individual switches on a control panel. The power is received from a 120 VAC - 2 phase alternator which is cabled through two 25 amp circuit breakers, to the switches, to a ballast box and connected by quick disconnects to the lights.

VHF/FM TRANSCEIVER

The VHF/FM handheld transceiver is utilized for communicating between personnel during loading and unloading operations on the FC. The transceiver has a frequency range of 156.025 to 163.275 mhz, plus 10 weather channels. The transceiver has an RF power output with the CNB350 battery of 5.0 watts (high) and 1.0 watts (low). The operating voltage is 7.2 volts DC. Current drain in standby mode is 40 ma, in receive mode 200 ma, in the transmit mode 1.8 A (high power) and 0.7 A (low power). The battery life (5% Tx, 5% Rcv, 90% standby) is approximately 10 hrs (high mode) and 15 hrs (low mode). The audio response is within +2/-8 of 6 dB/octave pre-emphasis characteristic from 300 hz to 3000 hz. The AF harmonic distortion of the transmitter is 3%. The transmitter has a hum and noise rating of 37 dB and a frequency stability (-20° to +50° C) of $\pm$ 0.0005%. The receiver has a sensitivity rating of 20 dB, quieting at 0.35 uv and 12 dB SINAD at 0.30 uv. The squelch sensitivity (threshold) is 0.20 uv. Modulation acceptance bandwidth is $\pm$ 4.5 khz.

INCINERATOR TOILET

Refer to TM 55-1925-257-14&P for the theory of operation of the incinerator toilet.

FLOATING CAUSEWAY ANCHOR MOORING SYSTEM (FCAMS)

The FCAMS is designed to hold the floating causeway during logistics over the shore (LOTS) operations in sea conditions up to Sea State 3. The offshore mooring leg is designed to perform in soft soils and sand. The onshore mooring leg is designed to perform in soft soils, sand and competent rock. In addition to Sea State, the capability of the FCAMS to hold the floating causeway in position is highly dependent on the alongshore current speed and number and type of vessels mooring to the floating causeway. It is also dependent on the water depth at the vessel's location. The complete system, which has 16 offshore mooring legs and four onshore mooring legs, is required for a full floating causeway that is 1500 ft long.

CHAPTER 2

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT TROUBLESHOOTING PROCEDURES FOR MODULAR CAUSEWAY SYSTEM (MCS) FLOATING CAUSEWAY (FC)

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
TROUBLESHOOTING PROCEDURES INDEX

MALFUNCTION/SYMPTOM	TROUBLESHOOTING PROCEDURE
GENERATOR CONTAINER	
Base Tank Fuel Level Indication System is Inoperative	WP 0040 00
DC Lights Will Not Operate	WP 0042 00
Electric Fuel Transfer Pump Inoperative	WP 0047 00
Fire Suppression System Inoperative	WP 0043 00
Manual Fuel Transfer Pump Leaks	WP 0046 00
Manual Fuel Transfer Pump Pumps Slowly	WP 0045 00
Manual Fuel Transfer Pump Will Not Prime	WP 0044 00
VHF/FM TRANSCEIVER	
Transceiver Does Not Receive	WP 0024 00
Transceiver Does Not Transmit	WP 0025 00
Transceiver Has No Power	WP 0023 00
HEATING AND AIR CONDITIONING SYSTEM	
Compressor Cycles Off (Not on Overload)	WP 0030 00
Compressor Starts and Runs, But Cycles on the Overload	WP 0026 00
Compressor Starts After Cycling the Overload Several Times	WP 0027 00
Compressor Will Not Start	WP 0029 00
Compressor Will Not Start, Hums and Cycles on the Overload	WP 0028 00
Fan Does Not Operate When Electrical Power is Supplied to Shelter	WP 0032 00
Fan Motor Hums, But Does Not Start	WP 0034 00
Fan Motor Makes No Noise and Does Not Start	WP 0035 00
Fan Motor Runs On One Speed	WP 0038 00
Fan Motor Starts, But Runs Slow	WP 0037 00

MALFUNCTION/SYMPTOM	TROUBLESHOOTING PROCEDURE
HEATING AND AIR CONDITIONING SYSTEM (CONTINUED)	
Fan Motor Starts, But Stops After a Short Time	WP 0036 00
Heater Does Not Produce Warm Air	WP 0031 00
Thermostat Does Not Operate System	WP 0033 00
INCINERATOR TOILET	
Incinerator Toilet Malfunctions	WP 0039 00
LIGHT TOWER	
Lights Will Not Illuminate	WP 0007 00
Engine Battery Discharged	WP 0019 00
Engine Has Insufficient Output	WP 0018 00
Engine is Difficult to Start	WP 0017 00
Engine Fails to Shutdown	WP 0010 00
Engine Oil Lamp Lights Up During Operation	WP 0021 00
Engine Overheats	WP 0022 00
Engine RPM is Down	WP 0008 00
Engine Shuts Down	WP 0009 00
Engine Will Not Start/Run	WP 0012 00
Excessive Engine Vibration	WP 0011 00
Fluctuating Generator Frequency/Voltage and /or Oscillating Engine Speed	WP 0016 00
High/Low Generator Frequency Output	WP 0015 00
High/Low Generator Output Voltage	WP 0014 00
Large Quantity of Black Smoke From Engine Exhaust	WP 0020 00
No Generator Output Voltage	WP 0013 00
TACTICAL QUIET GENERATOR	
Tactical Quiet Generator Malfunctions	WP 0041 00

OPERATOR MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

LIGHTS WILL NOT ILLUMINATE

SYMPTOM

Light(s) on tower assembly do not illuminate.

MALFUNCTION

Lamp bulb(s) is defective.

CORRECTIVE ACTION

Replace lamp bulb. (WP 0153 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Light tower junction box electrical cable is damaged or defective.

CORRECTIVE ACTION

Use a multimeter to check continuity of wiring of junction box electrical cable. If continuity is not present, replace light tower junction box electrical cable. (WP 0133 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Lamp optical/socket assembly is damaged or defective.

CORRECTIVE ACTION

Repair lamp optical/socket assembly. (WP 0155 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Light tower electrical system junction box is damaged or defective.

CORRECTIVE ACTION

Replace light tower electrical system junction box. (WP 0134 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Open circuit between 125V receptacle located on front end panel and ballast box.

CORRECTIVE ACTION

Using a multimeter, check for 120 VDC at 125V receptacle.

If 120 VDC is present, use a multimeter to check continuity of wiring between 125V receptacle and ballast(s) in ballast box. If continuity is not present, repair/replace wiring as necessary. (WP 0246 00)

If 120 VDC is not present, replace defective ballast(s). (WP 0159 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Open circuit between ballast(s) and LAMP toggle switch(s).

CORRECTIVE ACTION

Using a multimeter, check for 120 VDC at LAMP toggle switch(s).

If 120 VDC is present, use a multimeter to check continuity of wiring between LAMP toggle switch(s) and ballast(s). If continuity is not present, repair/replace wiring as necessary. (WP 0246 00)

If 120 VDC is not present, replace LAMP toggle switch(s) on control panel. (WP 0149 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Open circuit between LAMP toggle switch(s) and MAIN BREAKER circuit breaker.

CORRECTIVE ACTION

Using a multimeter, check for 120 VDC at LAMP toggle switch(s).

If 120 VDC is present, use a multimeter to check continuity of wiring between LAMP toggle switch(s) and MAIN BREAKER circuit breaker. If continuity is not present, repair/replace wiring as necessary. (WP 0246 00)

If 120 VDC is not present, replace MAIN BREAKER circuit breaker on control panel. (WP 0148 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Open circuit between MAIN BREAKER circuit breaker and light tower generator.

CORRECTIVE ACTION

Using a multimeter, check for 120 VDC at MAIN BREAKER circuit breaker.

If 120 VDC is present, use a multimeter to check continuity of wiring between MAIN BREAKER circuit breaker and generator. If continuity is not present, repair/replace wiring as necessary. (WP 0246 00)

If 120 VDC is not present, replace light tower generator. Contact Specialized Repair Activity (SRA).

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Light tower light(s) still will not illuminate.

CORRECTIVE ACTION

Contact Specialized Repair Activity (SRA).

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE RPM IS DOWN

SYMPTOM

Engine RPM is lower than normal (less than 1800 RPM).

MALFUNCTION

Engine speed RPM incorrectly adjusted.

CORRECTIVE ACTION

Adjust engine speed RPM. Contact depot maintenance.

MALFUNCTION

Engine electrical output overloading.

CORRECTIVE ACTION

Reduce external electrical load.

Adjust engine electrical output. Contact depot maintenance.

MALFUNCTION

Engine fuel filter(s) is clogged.

CORRECTIVE ACTION

Drain fuel filter bowl. (WP 0164 00)

Replace fuel filter element. (WP 0165 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Air filter element is dirty.

CORRECTIVE ACTION

Inspect and clean air filter element. (WP 0172 00)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE SHUTS DOWN.

SYMPTOM

Engine stops running

MALFUNCTION

Engine fuel filter(s) are contaminated with water or debris.

CORRECTIVE ACTION

Drain fuel filter bowl. (WP 0164 00)

Replace fuel filter element. (WP 0165 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Air in the fuel system.

CORRECTIVE ACTION

Check for loose couplings, cap nuts, screws and fittings and repair as necessary.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Loose wire connections.

CORRECTIVE ACTION

Check for any loose wire connections and tighten as required.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine fuse blown.

CORRECTIVE ACTION

Replace engine fuse. Contact depot maintenance.

MALFUNCTION

Fuel injection nozzle has thick carbon build-up.

CORRECTIVE ACTION

Clean or replace fuel injection nozzle. Contact depot maintenance.

MALFUNCTION

Fuel injection nozzle not operating properly.

CORRECTIVE ACTION

Replace fuel injection nozzle. Contact depot maintenance.

MALFUNCTION

Defective oil pressure sending unit.

CORRECTIVE ACTION

Replace engine oil pressure switch. (WP 0140 00)

MALFUNCTION

Defective coolant temperature sending unit.

CORRECTIVE ACTION

Replace coolant temperature sending unit. (WP 0143 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Defective shutdown solenoid.

CORRECTIVE ACTION

Replace shutdown solenoid. (WP 0152 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE FAILS TO SHUT DOWN

SYMPTOM

Engine cannot be shut down.

MALFUNCTION

Faulty control panel key switch.

CORRECTIVE ACTION

Replace control panel key switch. (WP 0151 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Faulty engine oil pressure switch.

CORRECTIVE ACTION

Replace defective oil pressure switch. (WP 0140 00).

MALFUNCTION

Defective shutdown solenoid.

CORRECTIVE ACTION

Replace shutdown solenoid. (WP 0152 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

EXCESSIVE ENGINE VIBRATION

SYMPTOM

Light tower engine has excessive vibration.

MALFUNCTION

Engine rubber mounts are damaged.

CORRECTIVE ACTION

Replace rubber engine mounts. Contact depot maintenance.

MALFUNCTION

Fan belt loose or broken.

CORRECTIVE ACTION

Tighten or replace fan belt. (WP 0180 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

The fan is defective (blades bent or broken).

CORRECTIVE ACTION

Replace fan. (WP 0181 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

The drive coupling is defective.

CORRECTIVE ACTION

Replace drive coupling. Contact depot maintenance.

MALFUNCTION

Failure of the engine/generator mounting isolator.

CORRECTIVE ACTION

Replace engine/generator mounting isolator. Contact depot maintenance.

MALFUNCTION

Engine fuel filter clogged.

CORRECTIVE ACTION

Drain fuel filter bowl. (WP 0164 00)

Replace fuel filter element. (WP 0165 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

The engine governor is defective.

CORRECTIVE ACTION

Replace defective engine governor. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE WILL NOT START/RUN

SYMPTOM

Light tower engine will not start/run.

MALFUNCTION

Engine fuel filter(s) are clogged.

CORRECTIVE ACTION

Drain engine fuel filter bowl. (WP 0164 00)

Replace fuel filter element. (WP 0165 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Loose wire connections.

CORRECTIVE ACTION

Check all wire connections and tighten as required.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Battery connections are corroded.

CORRECTIVE ACTION

Clean battery terminals and connectors. (WP 0138 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Battery voltage appears to be low.

CORRECTIVE ACTION

Inspect and service battery as necessary. (WP 0139 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Battery voltage still appears to be low.

CORRECTIVE ACTION

Replace battery. (WP 0139 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine fuse is blown.

CORRECTIVE ACTION

Replace fuse. Contact depot maintenance.

MALFUNCTION

Fan belt is loose or broken.

CORRECTIVE ACTION

Tighten or replace fan belt. (WP 0180 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Starter relay is defective.

CORRECTIVE ACTION

Replace starter relay. Contact depot maintenance.

MALFUNCTION

Shutdown solenoid is defective.

CORRECTIVE ACTION

Replace shutdown solenoid. (WP 0156 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Starter is defective.

CORRECTIVE ACTION

Replace starter. (WP 0142 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Defective control panel key switch.

CORRECTIVE ACTION

Replace control panel key switch. (WP 0151 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE HAS NO GENERATOR OUTPUT VOLTAGE

SYMPTOM

No generator output voltage.

MALFUNCTION

Loose or intermittent wire connections.

CORRECTIVE ACTION

Check all wire connections and tighten as required.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Low engine power.

CORRECTIVE ACTION

Check and adjust engine RPM. Contact depot maintenance.

MALFUNCTION

Generator is defective.

CORRECTIVE ACTION

Replace defective generator. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

HIGH/LOW GENERATOR OUTPUT VOLTAGE

SYMPTOM

Generator output voltage is too high or low (normal is 120 VAC).

MALFUNCTION

Engine is oscillating during operation.

CORRECTIVE ACTION

Adjust engine speed as required. Contact depot maintenance.

MALFUNCTION

Engine power is low.

CORRECTIVE ACTION

Adjust engine power as required. Contact depot maintenance.

MALFUNCTION

Electrical output is unstable.

CORRECTIVE ACTION

Make electrical load adjustments as required. Contact depot maintenance.

MALFUNCTION

Loose wire connections.

CORRECTIVE ACTION

Check for loose connections and tighten as necessary.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

HIGH/LOW GENERATOR FREQUENCY OUTPUT

SYMPTOM

Generator frequency/voltage is too high or low.

MALFUNCTION

Engine is oscillating during operation (normal 120 VAC at 60 Hertz).

CORRECTIVE ACTION

Adjust engine speed as required. Contact depot maintenance.

MALFUNCTION

Engine power is low.

CORRECTIVE ACTION

Adjust engine power as required. Contact depot maintenance.

MALFUNCTION

Electrical load is unstable.

CORRECTIVE ACTION

Make electrical load adjustments as required. Contact depot maintenance.

MALFUNCTION

Electrical output is overloaded.

CORRECTIVE ACTION

Reduce electrical load. Contact depot maintenance.

MALFUNCTION

Loose wire connections exist.

CORRECTIVE ACTION

Check for loose wire connections and tighten as required.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FLUCTUATING GENERATOR FREQUENCY/VOLTAGE AND/OR OSCILLATING ENGINE SPEED

SYMPTOM

Fluctuating generator frequency/voltage and/or oscillating engine speed.

MALFUNCTION

Ambient temperature is greater than 125° Fahrenheit (52° Celsius).

CORRECTIVE ACTION

Do not operate light tower unit.

MALFUNCTION

There is an electrical output overload.

CORRECTIVE ACTION

Reduce electrical load.

MALFUNCTION

Electrical output is unstable.

CORRECTIVE ACTION

Adjust electrical output as required. Contact depot maintenance.

MALFUNCTION

Engine fuel filters are clogged.

CORRECTIVE ACTION

Drain engine fuel filter bowl. (WP 0164 00)

Replace fuel filter element. (WP 0165 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine air filter element is dirty.

CORRECTIVE ACTION

Clean engine air filter element. (WP 0172 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Loose wire conditions.

CORRECTIVE ACTION

Check for loose wire connections and tighten as required.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine speed oscillating during operation.

CORRECTIVE ACTION

Adjust engine speed as required. Contact depot maintenance.

MALFUNCTION

Engine power is low.

CORRECTIVE ACTION

Adjust engine power as required. Contact depot maintenance.

MALFUNCTION

Generator is defective.

CORRECTIVE ACTION

Replace defective generator. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE IS DIFFICULT TO START

SYMPTOM

Engine is difficult to start.

MALFUNCTION

Air in the fuel system.

CORRECTIVE ACTION

Inspect for loose couplings, cap nuts, screws and fittings and repair as necessary.

MALFUNCTION

Engine does not have proper quantity of oil installed.

CORRECTIVE ACTION

Check oil quantity and add oil as required. (WP 0162 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine fuel filter(s) are contaminated with water or other debris.

CORRECTIVE ACTION

Drain engine fuel filter bowl. (WP 0164 00)

Replace engine fuel filter element. (WP 0162 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Battery is not properly charged.

CORRECTIVE ACTION

Charge battery or replace as required. (WP 0138 00, WP 0139 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Fuel injection nozzle has carbon build-up.

CORRECTIVE ACTION

Clean or replace fuel injection nozzle. Contact depot maintenance.

MALFUNCTION

Fuel injection nozzle functioning improperly.

CORRECTIVE ACTION

Replace fuel injection nozzle. Contact depot maintenance.

MALFUNCTION

Valve clearance is not adjusted properly.

CORRECTIVE ACTION

Adjust valve(s) to proper clearance. Contact depot maintenance.

MALFUNCTION

Engine has low compression.

CORRECTIVE ACTION

Replace internal parts as required. Contact depot maintenance.

MALFUNCTION

Valve(s) are leaking.

CORRECTIVE ACTION

Clean and grind valve(s) as required. Contact depot maintenance.

MALFUNCTION

Fuel injection timing not properly adjusted.

CORRECTIVE ACTION

Adjust fuel injection timing as required. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE HAS INSUFFICIENT OUTPUT

SYMPTOM

Engine has little or no power.

MALFUNCTION

Air in the fuel system.

CORRECTIVE ACTION

Inspect for loose couplings, cap nuts, screws and fittings and repair as necessary.

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine fuel filter bowl is contaminated with water or debris.

CORRECTIVE ACTION

Drain engine fuel filter bowl. (WP 0164 00)

Replace fuel filter element. (WP 0165 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine has low compression.

CORRECTIVE ACTION

Replace rings and other internal parts as necessary. Contact depot maintenance.

MALFUNCTION

Carbon deposits build up in fuel injection nozzle orifice.

CORRECTIVE ACTION

Clean or replace fuel injection nozzle. Contact depot maintenance.

MALFUNCTION

Fuel injection nozzle not operating properly.

CORRECTIVE ACTION

Replace fuel injection nozzle. Contact depot maintenance.

MALFUNCTION

Valve clearance improperly adjusted.

CORRECTIVE ACTION

Adjust valves to proper clearance. Contact depot maintenance.

MALFUNCTION

Engine valves leaking.

CORRECTIVE ACTION

Clean and grind valves as required. Contact depot maintenance.

MALFUNCTION

Fuel injection timing out of adjustment.

CORRECTIVE ACTION

Adjust fuel injection timing. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE BATTERY DISCHARGED

SYMPTOM

Light tower has no DC power.

MALFUNCTION

Battery electrolyte insufficient.

CORRECTIVE ACTION

Replenish distilled water and charge. (WP 0138 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Fan belt slips.

CORRECTIVE ACTION

Replace fan belt. (WP 0180 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Alternator defective.

CORRECTIVE ACTION

Replace alternator. (WP 0135 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Battery defective.

CORRECTIVE ACTION

Replace battery. (WP 0139 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Rectifier defective.

CORRECTIVE ACTION

Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

LARGE QUANTITY OF BLACK SMOKE FROM ENGINE EXHAUST

SYMPTOM

Large quantity of black smoke from engine exhaust.

MALFUNCTION

Poor quality of fuel.

CORRECTIVE ACTION

Refuel tank. (TM 55-1945-205-10-4)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Fuel is contaminated.

CORRECTIVE ACTION

Refuel tank. (TM 55-1945-205-10-4)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine fuel filter(s) are contaminated.

CORRECTIVE ACTION

Drain water from fuel filter. (WP 0164 00)

Replace fuel filter element. (WP 0165 00)

Replace in line fuel filter. (WP 0168 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Valve clearance improperly adjusted.

CORRECTIVE ACTION

Adjust valves to proper clearance. Contact depot maintenance.

MALFUNCTION

Engine valve(s) leaking.

CORRECTIVE ACTION

Clean and grind valve(s) as required. Contact depot maintenance.

MALFUNCTION

Fuel injection nozzle not operating properly.

CORRECTIVE ACTION

Clean fuel injection nozzle and replace as necessary. Contact depot maintenance.

MALFUNCTION

Fuel injection timing not adjusted properly.

CORRECTIVE ACTION

Adjust fuel injection timing as required. Contact depot maintenance.

MALFUNCTION

Fuel governor not operating properly.

CORRECTIVE ACTION

Adjust or replace fuel governor as necessary. Contact depot maintenance.

MALFUNCTION

Engine has low compression.

CORRECTIVE ACTION

Replace internal parts as required. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE OIL LAMP LIGHTS UP DURING OPERATION

SYMPTOM

Engine oil lamp lights during operation.

MALFUNCTION

Oil filter contaminated with debris.

CORRECTIVE ACTION

Replace engine oil filter element. (WP 0163 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine oil filter base gasket deteriorated or worn.

CORRECTIVE ACTION

Replace engine oil filter element. (WP 0163 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine oil pressure sending unit is defective.

CORRECTIVE ACTION

Replace defective engine oil pressure sending unit. Contact depot maintenance.

MALFUNCTION

Engine oil system relief valve is defective.

CORRECTIVE ACTION

Replace defective engine oil system relief valve. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

ENGINE OVERHEATS

SYMPTOM

Engine overheats.

MALFUNCTION

Fuel is of poor quality.

CORRECTIVE ACTION

Refuel tank. (TM 55-1945-205-10-4)

Perform operational check on engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine radiator coolant has incorrect antifreeze mixture.

CORRECTIVE ACTION

Check antifreeze mixture and service engine radiator coolant system as required. (WP 0174 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine radiator fins are clogged.

CORRECTIVE ACTION

Inspect radiator fins and remove obstruction. (WP 0176 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Interior of engine radiator is clogged or corroded.

CORRECTIVE ACTION

Flush cooling system. (WP 0176 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine radiator is defective.

CORRECTIVE ACTION

Replace engine radiator. (WP 0184 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Engine is leaking water.

CORRECTIVE ACTION

Ensure radiator drain cocks are securely closed. (TM 55-1945-205-10-4)

Check cooling hoses and fittings. Replace as necessary. (WP 0177 00, WP 0178 00)

Check radiator for punctures. Replace as necessary. (WP 0184 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Fan belt is loose or broken.

CORRECTIVE ACTION

Tighten or replace fan belt. (WP 0180 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Fan is defective.

CORRECTIVE ACTION

Replace defective fan. (WP 0181 00)

Perform operational check of light tower engine. (TM 55-1945-205-10-4)

MALFUNCTION

Thermostat is defective.

CORRECTIVE ACTION

Replace defective thermostat. Contact depot maintenance.

MALFUNCTION

Temperature gauge is defective.

CORRECTIVE ACTION

Replace defective temperature gauge. Contact depot maintenance.

MALFUNCTION

Temperature sensor is defective.

CORRECTIVE ACTION

Replace defective temperature sensor. Contact depot maintenance.

MALFUNCTION

Fuel injection timing improperly adjusted.

CORRECTIVE ACTION

Adjust fuel injection timing. Contact depot maintenance.

MALFUNCTION

Head gasket is defective.

CORRECTIVE ACTION

Replace defective head gasket. Contact depot maintenance.

MALFUNCTION

Engine has electrical overload.

CORRECTIVE ACTION

Reduce electrical load. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
VHF/FM TRANSCEIVER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

VHF/FM TRANSCEIVER HAS NO POWER

SYMPTOM

Transceiver has no power.

MALFUNCTION

Transceiver batteries are discharged.

CORRECTIVE ACTION

Charge the batteries. (TM 55-1945-205-10-4)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Transceiver battery charger is defective.

CORRECTIVE ACTION

Replace battery charger. (WP 0129 00)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Transceiver battery charger power supply is defective.

CORRECTIVE ACTION

Replace battery charger power supply. (WP 0130 00)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Transceiver batteries are defective.

CORRECTIVE ACTION

If batteries are rechargeable, replace rechargeable battery pack. (WP 0127 00)

If batteries are alkaline, replace alkaline battery pack. (WP 0128 00)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Transceiver is defective.

CORRECTIVE ACTION

Replace transceiver.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
VHF/FM TRANSCEIVER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

VHF/FM TRANSCEIVER DOES NOT RECEIVE

SYMPTOM

Transceiver does not receive.

MALFUNCTION

Transceiver antenna is damaged or missing.

CORRECTIVE ACTION

Replace or install antenna. (WP 0125 00)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Low battery indicator is displayed on transceiver.

CORRECTIVE ACTION

Charge the batteries. (TM 55-1945-205-10-4)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Transceiver is defective.

CORRECTIVE ACTION

Replace transceiver.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
VHF/FM TRANSCEIVER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

VHF/FM TRANSCEIVER DOES NOT TRANSMIT

SYMPTOM

Transceiver does not transmit.

MALFUNCTION

Transceiver antenna is damaged or missing.

CORRECTIVE ACTION

Replace antenna. (WP 0125 00)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Low battery indicator is displayed on transceiver.

CORRECTIVE ACTION

Charge the batteries. (TM 55-1945-205-10-4)

Perform operational test on transceiver. (TM 55-1945-205-10-4)

MALFUNCTION

Transceiver is defective.

CORRECTIVE ACTION

Replace transceiver.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

COMPRESSOR STARTS AND RUNS, BUT CYCLES ON THE OVERLOAD

SYMPTOM

Compressor runs, but cycles on the overload.

MALFUNCTION

Indoor air filter is dirty or plugged.

CORRECTIVE ACTION

Clean and replace the indoor air filter as required. (WP 0097 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Vent air filter is dirty or plugged.

CORRECTIVE ACTION

Clean and replace the vent air filter as required. (WP 0099 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The condenser and coil fins are dirty or plugged.

CORRECTIVE ACTION

Clean and replace condenser and coil fins as required. (WP 0106 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Compressor system wiring is defective.

CORRECTIVE ACTION

Repair/replace wiring as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Compressor system has low voltage running to it.

CORRECTIVE ACTION

Using multimeter, check continuity between compressor motor black wire and other compressor wires. If continuity is not present, repair/replace wiring as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The system overload protector is defective.

CORRECTIVE ACTION

Test the overload protector. (WP 0107 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The system capacitor is defective.

CORRECTIVE ACTION

Replace the capacitor. (WP 0108 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The fan motor is defective.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The fan blade or blower wheel is defective or stuck.

CORRECTIVE ACTION

Free the fan blade or blower wheel by cleaning it. (WP 0102 00)

Perform operational test on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The capillary tube and strainer are restricted or plugged.

CORRECTIVE ACTION

Clean or replace the capillary tube and strainer as required. (WP 0103 00)

Perform operational test on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The system is overcharged.

CORRECTIVE ACTION

Service the air conditioning system. Contact depot maintenance.

MALFUNCTION

The system is undercharged.

CORRECTIVE ACTION

Service the air conditioning system. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

COMPRESSOR STARTS AFTER CYCLING THE OVERLOAD SEVERAL TIMES

SYMPTOM

Compressor starts only after cycling the overload.

MALFUNCTION

The compressor requires start assist.

CORRECTIVE ACTION

NOTE

Providing starting assistance for the compressor is an immediate, but temporary, solution. Eventually, the compressor will need to be replaced or repaired.

Provide start assist for the compressor. Contact depot maintenance.

MALFUNCTION

Compressor system has low voltage running to it.

CORRECTIVE ACTION

Using multimeter, check continuity between compressor motor black wire and other compressor wires. If continuity is not present, repair/replace wiring as necessary. (WP 0246 00, WP 0248 00)

Perform operational test on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The system capacitor is defective.

CORRECTIVE ACTION

Replace the capacitor. (WP 0108 00)

Perform operational test on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The fan motor is defective.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational test on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The capillary tube and strainer are restricted or plugged.

CORRECTIVE ACTION

Clean or replace the capillary tube and strainer as required. (WP 0103 00)

Perform operational test on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Air is in the system.

CORRECTIVE ACTION

Service air conditioning system. Contact depot maintenance.

MALFUNCTION

Pressure in the system is not equalized.

CORRECTIVE ACTION

Service the air conditioning system. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

COMPRESSOR WILL NOT START, HUMS AND CYCLES ON THE OVERLOAD

SYMPTOM

Compressor will not start, but hums and cycles on the overload.

MALFUNCTION

The compressor is defective.

CORRECTIVE ACTION

Replace compressor. Contact depot maintenance.

MALFUNCTION

Compressor system has low voltage running to it.

CORRECTIVE ACTION

Using multimeter, check continuity between compressor motor black wire and other compressor wires. If continuity is not present, repair/replace wiring as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Compressor system wiring is defective or incorrectly wired.

CORRECTIVE ACTION

Using multimeter, check continuity of wiring. If continuity is not present, repair/replace wiring as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Compressor is grounding (shorting) out.

CORRECTIVE ACTION

Repair ground (short) in the compressor or replace compressor as required. Contact depot maintenance.

MALFUNCTION

The system overload protector is defective.

CORRECTIVE ACTION

Test overload protector. (WP 0107 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The system capacitor is defective.

CORRECTIVE ACTION

Replace the capacitor. (WP 0108 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The compressor motor is defective.

CORRECTIVE ACTION

Replace compressor motor. Contact depot maintenance.

MALFUNCTION

Pressure is not equalized in the system.

CORRECTIVE ACTION

Service air conditioning system. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

COMPRESSOR WILL NOT START AND MAKES NO NOISE

SYMPTOM

Compressor makes no noise and will not start.

MALFUNCTION

Thermostat is set too high or low.

CORRECTIVE ACTION

Adjust thermostat switch to required setting. (TM 55-1945-205-10-4)

MALFUNCTION

Compressor has no power.

CORRECTIVE ACTION

Position power switch to AUTO, FAN, COOL or HEAT.

Check that power cord is connected.

On personnel shelter electrical distribution panel, check circuit breaker A to be sure it is turned on. (TM 55-1945-205-10-4)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Thermostat contacts are open.

CORRECTIVE ACTION

Adjust thermostat to close contacts or replace thermostat as required. (WP 0104 00)

Perform operational check on heating and air conditioning system.
(TM 55-1945-205-10-4)

MALFUNCTION

Selector switch is defective.

CORRECTIVE ACTION

Replace selector switch. Contact depot maintenance.

MALFUNCTION

Compressor system wiring is defective.

CORRECTIVE ACTION

Using multimeter, check continuity of wiring to compressor. Replace wiring as necessary.
(WP 0248 00)

Perform operational check on heating and air conditioning system.
(TM 55-1945-205-10-4)

MALFUNCTION

System overload protector is open or defective.

CORRECTIVE ACTION

Test the overload protector. (WP 0107 00)

Perform operational check on heating and air conditioning system.
(TM 55-1945-205-10-4)

MALFUNCTION

The fan motor is defective.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system.
(TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

COMPRESSOR CYCLES OFF (NOT ON OVERLOAD)

SYMPTOM

Compressor cycles off.

MALFUNCTION

Compressor system wiring is defective.

CORRECTIVE ACTION

Repair/replace wiring in the system as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Compressor system has low voltage running to it.

CORRECTIVE ACTION

Using a multimeter, check the continuity of wiring to the compressor motor: RUN wire (black) from the capacitor, the START wire (blue) from the capacitor and the COMMON wire (yellow). If continuity is not present, repair/replace wiring as necessary. (WP 0246 00, WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The system capacitor is defective.

CORRECTIVE ACTION

Replace the capacitor. (WP 0108 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The compressor motor is defective.

CORRECTIVE ACTION

Replace compressor motor. Contact depot maintenance.

MALFUNCTION

The fan blade or blower wheel is defective or stuck.

CORRECTIVE ACTION

Free the fan blade or blower wheel and replace as required. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan blade motor is defective.

CORRECTIVE ACTION

Replace the fan blade motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The capillary tube and strainer are restricted or plugged.

CORRECTIVE ACTION

Clean and replace the capillary tube and strainer as required. (WP 0103 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Pressure is not equalized in the system.

CORRECTIVE ACTION

Service air conditioning system. Contact depot maintenance.

MALFUNCTION

The system is overcharged.

CORRECTIVE ACTION

Service the air conditioning system. Contact depot maintenance.

MALFUNCTION

The system is undercharged.

CORRECTIVE ACTION

Service the air conditioning system. Contact depot maintenance.

MALFUNCTION

Air flow is not recirculating through the evaporator.

CORRECTIVE ACTION

Clean and replace system vent air filter as required. (WP 0099 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Compressor still cycles off.

CORRECTIVE ACTION

Replace compressor. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

TROUBLESHOOTING PROCEDURE

HEATER DOES NOT PRODUCE WARM AIR

SYMPTOM

The heater is not producing warm air.

MALFUNCTION

The primary limit switch is not operating properly.

CORRECTIVE ACTION

Replace primary limit switch. Contact depot maintenance.

MALFUNCTION

The heater coils are broken.

CORRECTIVE ACTION

Replace the heater assembly. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FAN DOES NOT OPERATE WHEN POWER IS SUPPLIED TO SHELTER

SYMPTOM

Fan does not operate continuously when electrical power is supplied to personnel shelter.

MALFUNCTION

No power applied to the heating and air conditioning system.

CORRECTIVE ACTION

Using multimeter, verify 24 VDC is being received through the shore tie interconnect cable. If voltage is not present, replace the cable. (TM 55-1945-205-10-4)

Perform operational check on heating and air conditioning system.
(TM 55-1945-205-10-4)

If voltage is present at the shore tie interconnect cable, use multimeter to check continuity of wiring between the external shore tie connection and the electrical distribution panel. If continuity is not present, repair/replace wiring as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system.
(TM 55-1945-205-10-4)

If voltage present at the circuit breaker panel, use multimeter to check continuity of wiring the electrical distribution panel and the air conditioner. If continuity is not present, repair/ replace wiring as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system.
(TM 55-1945-205-10-4)

If voltage is present at the air conditioner, replace the air conditioner. (WP 0248 00)

Perform operational check on heating and air conditioning system. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

THERMOSTAT DOES NOT OPERATE SYSTEM

SYMPTOM

Thermostat does not operate heating and cooling system.

MALFUNCTION

Circuit breaker to heating and air conditioning system has been tripped.

CORRECTIVE ACTION

Reset circuit breaker A on personnel shelter electrical distribution panel the ON position. (TM 55-1945-205-10-4)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Thermostat is defective.

CORRECTIVE ACTION

Replace thermostat. (WP 0104 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FAN MOTOR HUMS, BUT DOES NOT START

SYMPTOM

Fan motor will hum, but does not start.

MALFUNCTION

Low line voltage to the fan motor is present.

CORRECTIVE ACTION

Using multimeter, check continuity of the wiring between fan motor black wire and other fan motor wires. If continuity is not present, repair/replace wiring as necessary. (WP 0246 00, WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Broken wires to the fan motor are present.

CORRECTIVE ACTION

Repair/replace wiring as necessary. (WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor is wired incorrectly.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor winding is grounding out.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor winding has an open condition.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor has a defective capacitor.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan blade is stuck or damaged.

CORRECTIVE ACTION

Free fan blade and replace as required. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan blade motor bearing is defective.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FAN MOTOR MAKES NO NOISE AND DOES NOT START

SYMPTOM

Fan motor makes no noise and will not start.

MALFUNCTION

There is no power to the fan motor.

CORRECTIVE ACTION

Position power switch to AUTO, FAN, COOL or HEAT.

Check that power cord is connected.

On personnel shelter electrical distribution panel, check circuit breaker A to be sure it is turned on. (TM 55-1945-205-10-4)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Internal thermostat is stuck open.

CORRECTIVE ACTION

Replace thermostat. (WP 0104 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor switch is defective.

CORRECTIVE ACTION

Replace switch. Contact depot maintenance.

MALFUNCTION

Wiring to fan motor is broken.

CORRECTIVE ACTION

Using multimeter, check continuity of the wiring to fan motor. If continuity is not present, repair/replace wiring as necessary. (WP 0246 00, WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor is wired incorrectly.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor winding is grounding out.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor winder has an open condition.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEMS
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 31, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FAN MOTOR STARTS, BUT STOPS AFTER A SHORT TIME

SYMPTOM

Fan motor starts and then stops after a short time.

MALFUNCTION

Low line voltage to the fan motor is present.

CORRECTIVE ACTION

Repair/replace wiring as necessary. (WP 0246 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Broken wires to the fan motor are present.

CORRECTIVE ACTION

Repair/replace wiring as necessary. (WP 0246 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor is wired incorrectly.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor winding has an open condition.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The fan motor has a defective capacitor.

CORRECTIVE ACTION

Replace the fan motor capacitor. (WP 0108 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The fan blade motor bearing is defective.

CORRECTIVE ACTION

Replace the fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FAN MOTOR STARTS, BUT RUNS SLOW

SYMPTOM

The fan motor will start, but runs slow.

MALFUNCTION

Low line voltage to the fan motor is present.

CORRECTIVE ACTION

Repair/replace wiring as necessary. (WP 0246 00, WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

The fan blade motor bearing is defective.

CORRECTIVE ACTION

Replace the fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FAN MOTOR RUNS ON ONE SPEED

SYMPTOM

The fan motor only runs on one speed.

MALFUNCTION

The fan motor switch is defective.

CORRECTIVE ACTION

Replace switch. Contact depot maintenance.

MALFUNCTION

Wires to the fan motor are broken.

CORRECTIVE ACTION

Repair/replace wiring as necessary. (WP 0246 00, WP 0248 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor is miswired.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor wiring is grounding out.

CORRECTIVE ACTION

Replace the fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

MALFUNCTION

Fan motor wiring has an open condition.

CORRECTIVE ACTION

Replace fan motor. (WP 0105 00)

Perform operational check on heating and air conditioning system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
INCINERATOR TOILET
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1925-257-14&P

TROUBLESHOOTING PROCEDURE

INCINERATOR TOILET MALFUNCTIONS

For troubleshooting procedures for the incinerator toilet, reference Incinerator Toilet/Urinal Galley/Water Heater Manual. (TM 55-1925-257-14&P)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4
TM 9-6115-642-10
TM 9-6115-643-10

TROUBLESHOOTING PROCEDURE

BASE TANK FUEL LEVEL INDICATION SYSTEM IS INOPERATIVE

SYMPTOM

Base tank fuel level indication system is inoperative.

MALFUNCTION

Fuel level indication system fuse is blown.

CORRECTIVE ACTION

Replace fuse. Contact depot maintenance.

MALFUNCTION

Fuel level sensor inoperable.

CORRECTIVE ACTION

Replace fuel level sensor. (WP 0071 00)

Perform operational test on fuel level indication system. (TM 55-1945-205-10-4)

MALFUNCTION

System relay(s) faulty.

CORRECTIVE ACTION

Replace faulty relay(s). (WP 0072 00)

Perform operational test on fuel level indication system.
(TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump/motor not operating.

CORRECTIVE ACTION

Replace transfer pump/motor. (TM 9-6115-642-10, TM 9-6115-643-10)

Perform operational test on fuel level indication system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
TACTICAL QUIET GENERATOR
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 9-6115-642-10
TM 9-6115-643-10

TROUBLESHOOTING PROCEDURE

TACTICAL QUIET GENERATOR MALFUNCTIONS

For troubleshooting procedures for the 10 KW tactical quiet generator, refer to TM 9-6115-642-10 for 10 KW Tactical Quiet Generator Operating Instructions.

For troubleshooting procedures for the 15 KW tactical quiet generator, refer to TM 9-6115-643-10 for 15 KW Tactical Quiet Generator Operating Instructions.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 31, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

DC LIGHTS WILL NOT OPERATE

SYMPTOM

DC lights will not illuminate.

MALFUNCTION

Light bulb(s) burned out.

CORRECTIVE ACTION

Replace light bulb(s). (WP 0086 00)

Perform operational check on DC lighting. (TM 55-1945-205-10-4)

MALFUNCTION

Broken or loose connectors in the DC wiring system.

CORRECTIVE ACTION

Tighten or replace connectors as necessary.

Perform operational check on DC lighting. (TM 55-1945-205-10-4)

MALFUNCTION

DC power source battery appears to be low or discharged.

CORRECTIVE ACTION

Replace battery. (WP 0069 00)

Perform operational check on DC lighting. (TM 55-1945-205-10-4)

MALFUNCTION

Damaged electrical wires.

CORRECTIVE ACTION

Repair/replace wiring as required. (WP 0246 00, WP 0248 00)

Perform operational check on DC lighting. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 31, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

FIRE SUPPRESSION SYSTEM INOPERATIVE

SYMPTOM

Fire suppression system does not work.

MALFUNCTION

Control module alarm LED indicator not lit.

CORRECTIVE ACTION

Use multimeter to determine faulty component(s) in the fire suppression system. Repair or replace defective components. Contact depot maintenance.

MALFUNCTION

DC power source battery not supplying power to the system.

CORRECTIVE ACTION

Replace battery. (WP 0087 00)

Perform operational check on fire suppression system. (TM 55-1945-205-10-4)

MALFUNCTION

Control module is not supplying power to the linear detection wire.

CORRECTIVE ACTION

Replace control module. Contact depot maintenance.

MALFUNCTION

Linear detection wire is damaged or broken.

CORRECTIVE ACTION

Replace linear detection wire. Contact depot maintenance.

MALFUNCTION

No electrical continuity to the squib.

CORRECTIVE ACTION

Using multimeter, check continuity of wiring to the squib. If continuity is not present, repair/replace wiring as necessary. (WP 0246 00, WP 0248 00)

Perform operational check on fire suppression system. (TM 55-1945-205-10-4)

MALFUNCTION

Defective squib.

CORRECTIVE ACTION

Replace squib. Contact depot maintenance.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

MANUAL FUEL TRANSFER PUMP WILL NOT PRIME

SYMPTOM

Manuel fuel transfer pump will not prime.

MALFUNCTION

Transfer pump intake screen clogged.

CORRECTIVE ACTION

Clean intake screen. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump gasket is leaking.

CORRECTIVE ACTION

Replace inlet transfer pump gasket. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump vanes or rotors sticking.

CORRECTIVE ACTION

Repair pump. Replace damage parts. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump vanes or rotors have excessive wear.

CORRECTIVE ACTION

Repair pump. Replace damage parts. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump defective.

CORRECTIVE ACTION

Repair pump. Replace damage parts. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

MANUAL FUEL TRANSFER PUMP, PUMPS SLOWLY

SYMPTOM

Manual fuel transfer pump supplies fuel slowly.

MALFUNCTION

Transfer pump intake screen dirty or clogged.

CORRECTIVE ACTION

Replace screen. (WP 0074 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump vanes or rotors sticking.

CORRECTIVE ACTION

Repair pump. Replace damage parts. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Rotors or vanes have excessive wear.

CORRECTIVE ACTION

Repair pump. Replace damage parts. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump defective.

CORRECTIVE ACTION

Repair pump. Replace damaged parts. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

TROUBLESHOOTING PROCEDURE

MANUAL FUEL TRANSFER PUMP LEAKS

SYMPTOM

Manual fuel transfer pump is leaking.

MALFUNCTION

Transfer pump seal is defective.

CORRECTIVE ACTION

Repair or replace transfer pump as necessary. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

MALFUNCTION

Transfer pump gasket is leaking.

CORRECTIVE ACTION

Tighten covers and joints and repair or replace transfer pump as necessary. (WP 0075 00)

Perform operational check on manual transfer pump. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4
TM 9-6115-642-10
TM 9-6115-643-10

TROUBLESHOOTING PROCEDURE

ELECTRIC FUEL TRANSFER PUMP INOPERATIVE

SYMPTOM

Fuel transfer pump is inoperative.

MALFUNCTION

No power to fuel transfer pump.

CORRECTIVE ACTION

Using a multimeter, verify 24 VDC power to the pump. If present, replace pump. (TM 9-6115-642-10, TM 9-6115-643-10)

If voltage to the pump is not present, use multimeter to verify continuity of the wiring between the pump and the circuit breaker panel. If continuity is not present, repair/replace wiring as necessary. (WP 0248 00)

Perform operational check of electric fuel pump. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

CHAPTER 3

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS FOR MODULAR CAUSEWAY SYSTEM (MCS) FLOATING CAUSEWAY (FC)

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
SERVICE UPON RECEIPT OF MATERIEL

INITIAL SETUP:

Personnel Required
Engineer 88L

References
DA PAM 738-750
SF 361
TM 55-1945-205-10-4

GENERAL INFORMATION

This work package shall contain information required for the user to ensure that the equipment will be adequately inspected, serviced and operationally tested before it is subjected to use.

CHECK UNPACKED EQUIPMENT

Table 1. Inspection Criteria for Packaging.

COMPONENT	ACCEPTABLE	REPAIRABLE	NONREPARABLE
Dunnage Mat ISO Container			
Exterior	Minor rust, cracks, indentations or splits that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Items within the container have remained in stowed position. No broken, dented, or cracked equipment.	Broken or missing hardware or handles.	Damage to pallets that would prevent storage of dunnage mats.
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.
Fender Container			
Exterior	Minor rust, cracks, indentations, splits or tears in fabric container covering that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Items within the container have remained in stowed position. No broken, dented, or cracked equipment.	Broken or damaged pallets.	Damage that will not allow storage of fenders.

Table 1. Inspection Criteria for Packaging. (Continued)

COMPONENT	ACCEPTABLE	REPAIRABLE	NONREPARABLE
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.
Generator Container			
Exterior	Minor rust, cracks, indentations or splits that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Items within the container have remained in stowed position. No broken, dented or cracked equipment.	Broken or damaged fire suppression system, inoperative tactical quiet generator, broken or damaged louvers.	None.
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.
Light Tower Container			
Exterior	Minor rust, cracks, indentations or splits that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Equipment within the container remains stowed position. No broken, dented or cracked equipment.	Minor dents or broken nails, screws and fasteners that can be replaced or properly sealed.	Damage that requires disassembly of the entire light tower.
Hardware	Operative and tight.	Inoperative or lose.	None.
	Nails, screws, and fasteners present and in good condition.	Nails, screws and fasteners that can be replaced or properly sealed.	None.
Mooring Bitt Container			
Exterior	Minor rust, cracks, indentations or splits that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Equipment within the container remains stowed position. No broken, dented or cracked equipment.	Minor dents or broken nails, screws and fasteners that can be replaced or properly sealed.	Damage that will not allow for the stowage of mooring bitts.

Table 1. Inspection Criteria for Packaging. (Continued)

COMPONENT	ACCEPTABLE	REPAIRABLE	NONREPARABLE
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.
Onshore Container			
Exterior	Minor rust, cracks, indentations or splits that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Items within the container have remained in stowed position. No broken, dented or cracked equipment.	None.	None.
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.
Offshore Container			
Exterior	Minor rust, cracks, indentations or splits that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Items within the container have remained in stowed position. No broken, dented or cracked equipment.	None.	None.
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.
Personnel Shelter			
Exterior	Minor rust, cracks, indentations or splits that would not impair water proofing or serviceability of containers.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Interior	Items within the container have remained in stowed position. No broken, dented or cracked equipment.	Dents or bending that does not affect access door operation.	Damage or bending that will not allow doors to open.
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.

Table 1. Inspection Criteria for Packaging. (Continued)

COMPONENT	ACCEPTABLE	REPAIRABLE	NONREPARABLE
Rigid Hull Inflatable Boat (RHIB)			
Exterior	No tears, cuts or gouges.	Small tears no longer than one inch that can be easily patched.	Perforations, excessive tears, closer than one inch to closure or through all impregnated layers.
Hardware	Hardware is operative and tight.	Hardware is inoperative or loose.	None.

Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 361, Transportation Discrepancy Report.

Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with applicable service instructions (e.g., for Army instructions, see DA PAM 738-750).

Check to see whether the equipment has been modified.

PROCESS UNPACKED EQUIPMENT

Refer to TM 55-1945-205-10-4, Operators Manual for Modular Causeway System (MCS) Floating Causeway, for instructions to process unpacked equipment. The referenced manual will provide information regarding special skills required by processing personnel, caustic and/or toxic material with applicable warnings that may be used during processing, instructions for safe disposal of waste products, and the estimated man-hour requirements to process the equipment.

INSTALL EQUIPMENT

Refer to TM 55-1945-205-10-4, Operators Manual for Modular Causeway System (MCS) Floating Causeway. The referenced manual will identify any connectors, wiring diagrams, or instructions to aide in the installation of such equipment.

ASSEMBLY OF EQUIPMENT

Refer to TM 55-1945-205-10-4, Operators Manual for Modular Causeway System (MCS) Floating Causeway. Instructions include preparing equipment for use that has been shipped disassembled. As applicable, power requirements, connections, and initial control settings needed for installation purposes shall be included.

PRELIMINARY SERVICING OF EQUIPMENT

Refer to TM 55-1945-205-10-4, Operators Manual for Modular Causeway System (MCS) Floating Causeway for information on preliminary servicing of equipment.

PRELIMINARY CALIBRATION OF EQUIPMENT

No calibration of equipment is required on the Floating Causeway.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
PROCEDURES INTRODUCTION

INTRODUCTION

General

Preventive Maintenance Checks and Services (PMCS) are performed to keep the FC equipment in operating condition. The checks are used to find, correct or report problems.

If you find something wrong when performing PMCS, fix it if you can, using troubleshooting procedures and/or maintenance procedures.

The right-hand column of the PMCS table lists conditions that make the vessel not fully mission capable. Write up items not fixed on DA Form 2404. For further information on how to use this form, see DA PAM 738-750.

Leakage Definition

CAUTION

Equipment operation is allowed with minor leakages (Class I or II) except for fuel leaks. Of course, consideration must be given to the fluid capacity of the item or system being checked. When in doubt, ask your supervisor.

When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS.

Class III leaks should be reported immediately to your supervisor.

It is necessary to know how fluid leakage affects the status of the equipment. The following are definitions of the classes of leakage an operator or crew member needs to know to be able to determine the condition of the leak. Learn and then be familiar with them, and REMEMBER - WHEN IN DOUBT, ASK YOUR SUPERVISOR.

Leakage definitions for Unit, Direct Support and General Support PMCS.

CLASS I - Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

CLASS II - Leakage of fluid great enough to form drops, but not enough to cause drops to drip from item being checked.

CLASS III - Leakage of fluid great enough to form drops that fall from the item being checked.

Inspection

Look for signs of a problem or trouble. Senses help here. You can feel, smell, hear or see many problems. Be alert when on the equipment.

Inspect to see if items are in good condition. Are they correctly assembled, stowed, secured, excessively worn, leaking, corroded or properly lubricated? Correct any problems found or notify your supervisor.

There are some common items to check all over the equipment. These include the following:

1. Bolts, clamps, nuts and screws: Continuously check for looseness. Look for chipped paint, bare metal, rust or corrosion around bolt and screw heads and nuts. Tighten them when you find them loose.

2. Welds: Many items on the equipment are welded. To check these welds, look for chipped paint, rust, corrosion or gaps.

3. Electrical wires, connectors and harnesses: Tighten loose connectors. Look for cracked or broken insulation, bare wires and broken connectors. If any are found, notify your supervisor.

4. Hoses and fluid lines: Look for wear, damage and leaks, and make sure clamps and fittings are tight. Wet spots mean a leak. A stain by a fitting or connector can also mean a leak. When you find a leak, notify your supervisor.

Lubrication Service Intervals - Normal Conditions

For safer, more trouble free operations, make sure that your equipment is serviced when it needs it. For the proper lubrication and service intervals, see the PMCS section of this manual.

Lubrication Service Intervals - Unusual Conditions

Your equipment will require extra service and care when you operate under unusual conditions. High or low temperatures, long periods of hard use, or continued use in sand, mud or snow will break down the lubricant, requiring you to add or change lubricant more often.

Lubrication Symbols

The following lubrication symbols are used in the PMCS table:

GAA - Grease, Automotive and Artillery (Item XX, WP 0252 00)

Interval Symbols

The following lubrication symbols are used in the PMCS table:

W - weekly	M - monthly
Q - quarterly	S - semiannually
A - annually	B - biennially
H - hours operated	

Oil Filters

Oil filters shall be serviced/cleaned/changed, as applicable, at prescribed hard time intervals.

Army Oil Analysis Program (AOAP)

The components of the FC are not enrolled in the Army Oil Analysis Program. Hardtime intervals apply.

Warranty Information

For equipment under manufacturer’s warranty, hard time oil service intervals shall be followed. Intervals shall be shortened if lubricants are known to be contaminated or if operation is under adverse conditions, such as longer than usual operating hours, extended idling period or extreme dust.

CLEANING AND LUBRICATION

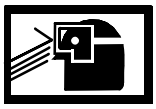
CAUTION

Follow all cleaning and lubrication instructions carefully, failure to do so can result in damage to equipment.

1. Thoroughly wash all equipment exposed to salt spray with clean, fresh water.
2. Ensure proper cleaning and lubrication are completed to aid in avoiding possible problems or trouble.

WARNING

CHEMICAL



EYE PROTECTION

3. Lubricate all equipment at conclusion of the operation before equipment storage.

Generator Container Cleaning

1. For cleaning of the 10 KW tactical quiet generator, refer to TM 9-6115-642-10.
2. For cleaning of the 15 KW tactical quiet generator, refer to TM 9-6115-643-10.
3. Clean the exterior of the shelter with clean water and soap.
4. Clean the interior of the shelter with a broom and vacuum cleaner.

Light Tower Cleaning

WARNING

CHEMICAL

EXPLOSION

POISON

VAPOR

Do not use petroleum products (solvents, fuel oils or gasoline) under high pressure as this can penetrate the skin and result in serious illness.

Cleaning with degreaser or mineral spirits should only be performed in a well ventilated area away from all heat flame, or spark producing equipment. No smoking within 25 ft of the area. Mineral spirits are potentially explosive and explosion could cause severe injury or death.

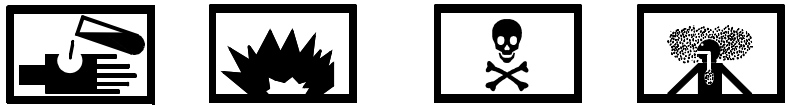
Exercise extreme caution when spraying mineral spirits or other solvents. If the pressure is too high and the spray is allowed to come in contact with the skin, penetration and poisoning could result.

CAUTION

Do not use high pressure water, steam or solvent on the exterior finish of the unit housing. This could result in damage to equipment.

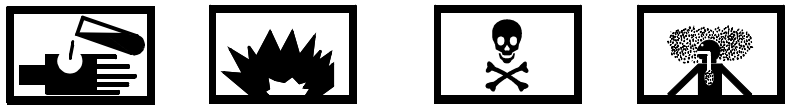
1. Wash the exterior of the light tower with water and a mild soap.

WARNING



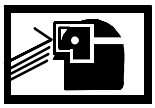
2. Prior to cleaning the engine and generator, cover the air cleaner intake, generator air intake, exhaust opening, the rear of the control panel box, the generator output electrical connection box and the battery charging alternator with plastic and seal with tape.

WARNING



3. Wash the exterior of the engine and generator with a quality degreasing product, such as mineral spirits.

WARNING



4. Rinse the engine and generator with water at a moderate pressure.

5. Dry engine and generator with compressed air.

6. Remove all plastic and tape installed to seal out water and solvents.

7. Start engine and run until normal operating temperature is reached.

8. Clean the generator control box.

WARNING

The following steps should only be performed in a well ventilated area. Failure to do so could result in serious injury or death to personnel.

a. Disconnect the battery cables at the light tower battery.

b. Open the top of the generator control box and vacuum interior.

NOTE

The cleaner must have an evaporative carrier agent which leaves no residue after application.

c. Spray all switch contacts with a quality commercial electrical contact cleaner.

d. Cycle the switches through all possible positions spraying at each position.

e. Leave control box open until completely dry.

f. Close the top of the generator control box.

g. Connect battery cables.

Personnel Shelter

WARNING

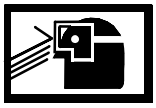

CHEMICAL


EYE PROTECTION

1. Clean the exterior of the shelter with clean water and soap.
2. Clean the VHF/FM transceivers with a soft bristled brush to remove all dirt.
3. Clean surface of heating and air conditioning unit with a clean cloth.

WARNING

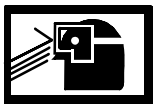

CHEMICAL


EYE PROTECTION

4. Clean benches and table with clean water and soap.

WARNING


CHEMICAL


EYE PROTECTION

5. Clean incinerator toilet with clean water and soap.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion is typically associated with rusting of metals or galvanic corrosion which produces a white powder. The category of corrosion also includes deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling or breaking of the materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report. Use of key words, such as “corrosion”, “rust”, “deterioration” or “cracking”, will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA PAM 738-750.

Preventive maintenance checks and services for the FC 10 KW tactical quiet generator will be accomplished using TM 9-6115-642-10.

Preventive maintenance checks and services for the RRDF 15 KW tactical quiet generator will be accomplished using TM 9-6115-643-10.

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
AND LUBRICATION PROCEDURES

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Personnel Required
Seaman 88K
Engineer 88L

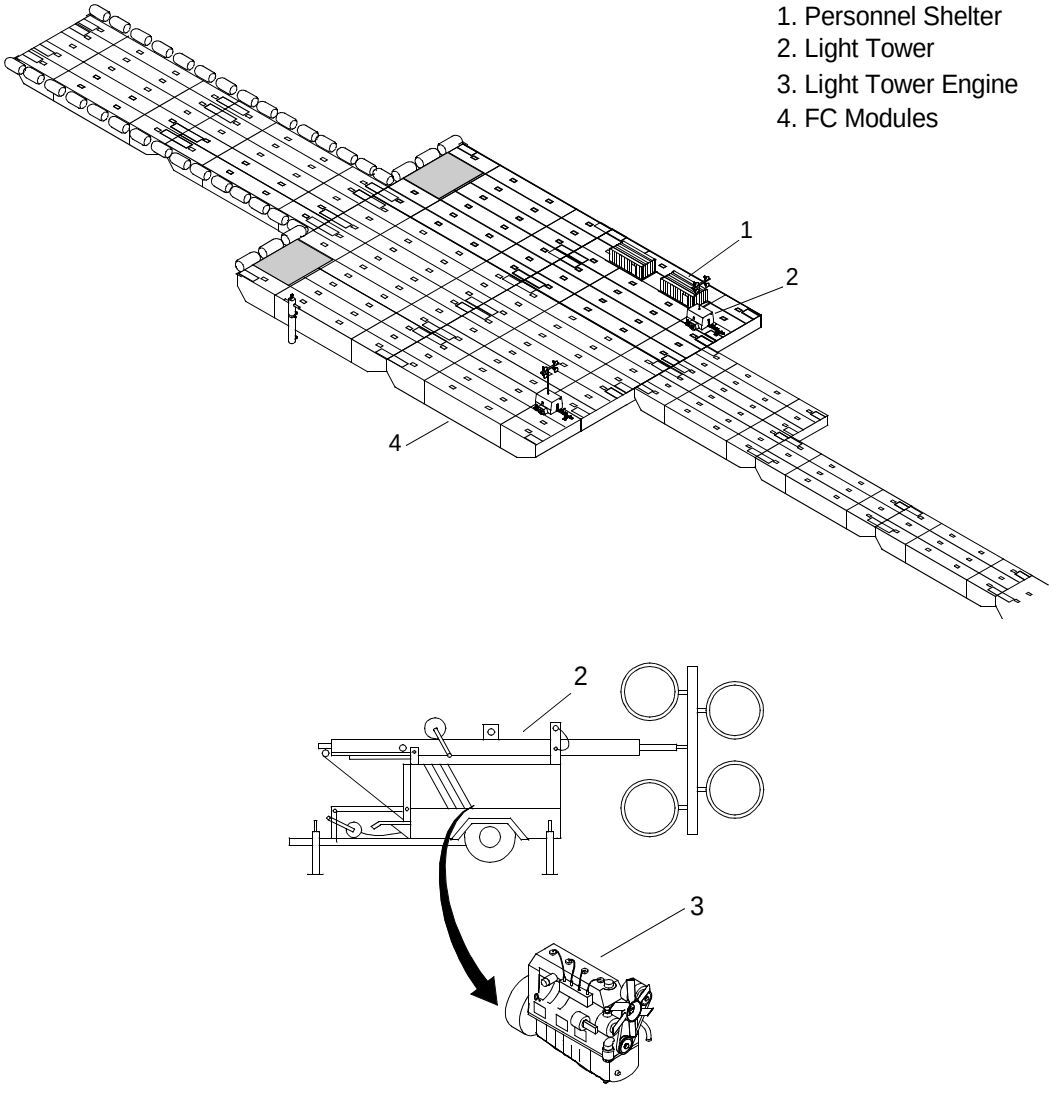


Table 1. Preventive Maintenance Checks and Services.

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Monthly	.2	Personnel Shelter	1. Clean heating and air conditioning system indoor air filter. (WP 0097 00) 2. Clean heating and air conditioning system vent air filter. (WP 0099 00)	
4	Quarterly	29.0	FC Modules	Inspect for water inside all modules. (WP 0053 00) (WP 0059 00)	
2	Quarterly 100 Hours	.1	Light Tower	Quarterly or every 100 operating hours replace the fuel tank in-line fuel filter. (WP 0168 00)	
1	Annually	.2	Personnel Shelter	Clean heating and air conditioning system internal components. (WP 0102 00, WP 0103 00, WP 0106 00)	
3	Annually	.2	Light Tower Engine	1. Replace air filter element. (WP 0172 00) 2. Perform functional test of engine oil pressure switch in the protection shutdown system. Contact depot maintenance. Contact Specialized Repair Activity (SRA).	
4	Annually 2,400 Operating Hours	1.0	FC Modules	Annually or every 2,400 hours of operation, pressure test modules and repair leaks, cracks and corrosion. (WP 0054 00, WP 0060 00)	Leaks present or structural damage which interferes with operation.
3	Biennially	3.0	Light Tower Engine	1. Drain cooling system, flush cooling system and install new coolant. (WP 0175 00, WP 0176 00) 2. Replace all coolant hoses and clamps. (WP 0177 00, WP 0178 00) 3. Replace all fuel hoses and clamps. Contact Specialized Repair Activity (SRA). 4. Replace battery. (WP 0139 00)	
3	50 Operating Hours	.2	Light Tower Engine	1. After the first 50 hours of operation, change the engine oil. (WP 0162 00)	

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
3	50 Operating Hours	.2	Light Tower Engine (Cont'd)	2. After the first 50 hours of operation, replace the engine oil filter. (WP 0163 00)	
3	100 Operating Hours	.5	Light Tower Engine	Remove and clean air filter element. (WP 0172 00)	
3	200 Operating Hours	.5	Light Tower Engine	Change engine oil. (WP 0162 00)	
3	250 Operating Hours	.3	Light Tower Engine	Repack wheel bearings and replace grease seals. (WP 0191 00)	
3	400 Operating Hours	.3	Light Tower Engine	1. Replace engine oil filter. (WP 0163 00) 2. Replace engine fuel filter. (WP 0165 00)	
3	500 Operating Hours	3.0	Light Tower Engine	1. Drain cooling system, flush cooling system and install new coolant. (WP 0175 00, WP 0176 00) 2. Replace fan belt. (WP 0180 00)	

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
INTERMEDIATE SECTION NON-POWERED MODULE
MARINE GROWTH REMOVAL

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 15, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Hose, Assembly, Nonmetallic (Item 21, WP 0253 00)
Cleaner, Power Washer (Item 6, WP 0253 00)
Scraper, Ship (Item 43, WP 0253 00)

Personnel Required

Seaman 88K

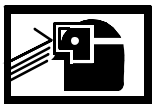
Equipment Condition

Intermediate Section Non-Powered Module Dry-Docked.

REMOVE INTERMEDIATE SECTION NON-POWERED MODULE MARINE GROWTH

1. Connect hose to power washer.

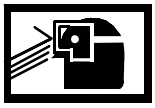
WARNING



EYE PROTECTION

2. Remove marine growth using a plastic scraper.

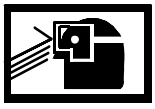
WARNING



EYE PROTECTION

3. Remove marine growth debris from the surface of the module using a hose with directed water spray.

WARNING



EYE PROTECTION

4. Remove marine growth from male and female connectors in both the extended and retracted position using a hose with directed water spray.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
INTERMEDIATE SECTION NON-POWERED MODULE
CLEANING AND PAINTING

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)

Materials/Parts

Brush, Paint (Item 6, WP 0252 00)
Paint, Amercoat (Item 31, WP 0252 00)
Paint, Amercoat (Item 32, WP 0252 00)
Paint, Amercoat (Item 33, WP 0252 00)
Paper, Abrasive (Item 34, WP 0252 00)
Roller Kit, Paint (Item 36, WP 0252 00)
Tape, Pressure Sensitive Adhesive (Item 42, WP 0252 00)
Cloth, Cleaning (Item 12, WP 0252 00)

Personnel Required

Seaman 88K

References

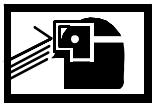
SSPC SP-2
DOD-PRF-24648
MIL-PRF-23236

Equipment Condition

Intermediate Section Non-Powered Module Dry-Docked.
Intermediate Section Non-Powered Module Marine Growth Removed. (WP 0051 00)

PREPARE AND CLEAN INTERMEDIATE SECTION NON-POWERED MODULE FOR PAINTING

WARNING



EYE PROTECTION

This task is typical for exterior of modules. Power tools are not authorized for use when preparing modules for spot painting. Preparation procedures are in accordance with Steel Structures Painting Council, SP-2 Hand Tool Cleaning (SSPC SP-2).

NOTE

The following steps will be preformed prior to module surface painting. Upon completion of rust and paint removal, the substrate metal should have a faint metallic sheen and be free of oil, grease, dust, soil, salts and other contaminants.

1. Remove all rust scale, mill scale, loose rust and loose paint to the degree specified by hand wire brushing, hand sanding, hand scraping, hand chipping or other hand impact tools or a combination of these methods.

2. Using clean lint-free cloth, wipe area clean.

PAINT INTERMEDIATE SECTION NON-POWERED MODULE EXTERIOR STEEL SURFACES

1. Mask off areas to be painted.

WARNING

POISON **CHEMICAL** **EYE PROTECTION** **VAPOR** **FIRE**

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc., during the drying period.

2. Using brush, apply one coat of Amercoat 385 PA oxide red primer paint, Type I, Class I, Composition B in accordance with procedures contained in DOD-PRF-24648.

NOTE

Cold temperatures or high humidity will retard drying time.

3. Allow primer paint to air dry to touch, approximately 2 hours at 70°F.

WARNING

NOTE

Amercoat 385 #27 haze grey is supplied in two parts.

4. Stir base paint (Amercoat 385 #27) and hardener containers separately.

5. Combine hardener with base paint and stir well.

WARNING

6. Apply one coat of Amercoat 385 #27 haze gray epoxy paint (topcoat) in accordance with procedures outlined in MIL-PRF-23236.

NOTE

Cold temperatures or high humidity will retard drying time.

7. Allow topcoat to air dry hard, approximately 16 hours at 70°F.

APPLY DECK GRIP COATING TO INTERMEDIATE SECTION NON-POWERED MODULE EXTERIOR STEEL SURFACES

1. Mask off area to coated.

WARNING

CAUTION

Do not apply anti-skid coating to air test plug ports, lift castings and shackles and connector castings.

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc., during the drying period.

2. Using nylon roller, paint tray and brush, apply one coat of Amercoat 385 AS anti-skid coating to deck surface.

3. Back roll each coat while wet at a 90° angle to evenly spread the texture.

NOTE

Cold temperatures or high humidity will retard drying time.

4. Allow to dry tack free, approximately 3 hours at 70°F.

WARNING

POISON CHEMICAL EYE PROTECTION VAPOR FIRE

CAUTION

Do not apply anti-skid coating to air test plug ports, lift castings and shackles and connector castings.

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc., during the drying period.

5. Apply a second coat of anti-skid coating, after the first coat is completely tack free.

NOTE

Cold temperatures or high humidity will retard drying time.

6. Allow anti-skid coating to dry 96 hours before heavy traffic or equipment is used on it.

PAINT INTERMEDIATE SECTION NON-POWERED MODULE CLEATS, D-RINGS, GUILLOTINE CONNECTORS AND FLEXOR ASSEMBLIES

CAUTION

Do not prime or paint rubber surfaces of flexor assemblies.

1. Mask off areas to be painted.

WARNING

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc. during the drying period.

2. Using brush, apply one coat of Amercoat 385 PA oxide red primer paint, Type I, Class I, Composition B in accordance with procedures contained in DOD-PRF-24648.

NOTE

Cold temperatures or high humidity will retard drying time.

3. Allow primer paint to air dry to touch, approximately 2 hours at 70°F.

WARNING

NOTE

Amercoat 385 #27 haze grey is supplied in two parts.

4. Stir base paint (Amercoat 385 #27) and hardener containers separately.

WARNING

5. Combine hardener with base paint and stir well.

WARNING

POISON CHEMICAL EYE PROTECTION VAPOR FIRE

CAUTION

Do not apply anti-skid coating to air test plug ports, lift castings and shackles and connector castings.

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc. during the drying period.

6. Apply one coat of Amercoat 385 #27 haze gray epoxy paint (topcoat) in accordance with procedures outlined in MIL-PRF-23236.

NOTE

Cold temperatures or high humidity will retard drying time.

7. Allow topcoat to air dry hard, approximately 16 hours at 70°F.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
INTERMEDIATE SECTION NON-POWERED MODULE
INSPECTION FOR WATER

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Sling, 53,000 lbs (Brown) (Item 47, WP 0253 00)
Socket Wrench Set (Item 62, WP 0253 00)
Socket, Socket Wrench (Item 63, WP 0253 00)
Key, Socket Head Screw (Allen Wrench) (Item 64, WP 0253 00)

Materials/Parts

Antiseize Compound (Item 4, WP 0252 00)

Personnel Required

Seaman 88K

Equipment Condition

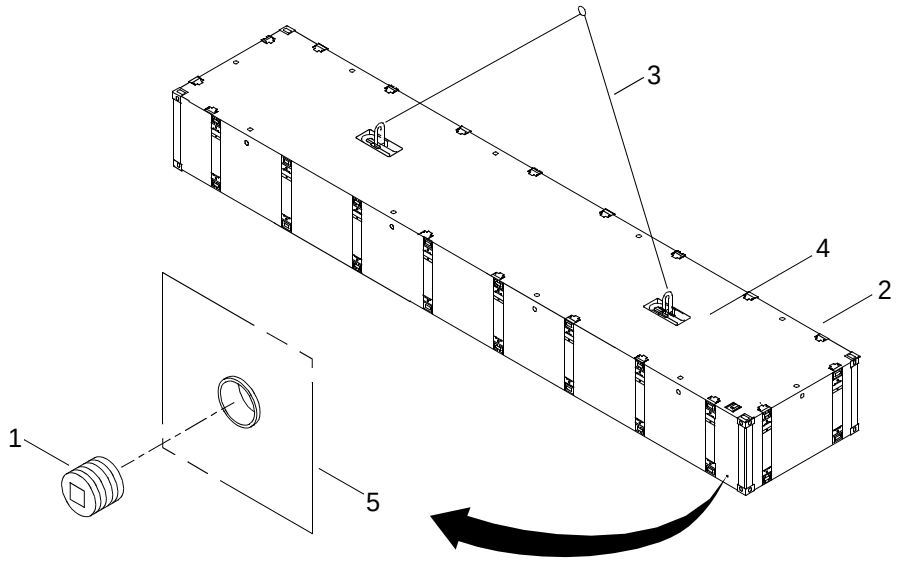
Intermediate Section Non-Powered Module Dry-Docked.

INSPECT INTERMEDIATE SECTION NON-POWERED MODULE FOR WATER

NOTE

The following procedure is typical for inspecting non-powered modules for water and machine plug location.

1. Using breaker bar, socket and allen wrench, remove the machine plug (1) from the module (2).



WARNING

HEAVY PARTS

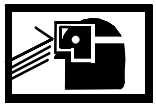
2. Using crane, attach a sling (3) to the lifting shackles (4) on the module (2) and tilt module to the side where the machine plug opening (5) is at its lowest point.

3. Using breaker bar, socket and allen wrench, remove machine plug (1). If water is present, allow to drain.

4. If water is found, pressure test the intermediate section non-powered module (2). (WP 0054 00)

WARNING

CHEMICAL



EYE PROTECTION

5. Apply antiseize compound to threads of machine plug (1).

6. Using breaker bar, socket and allen wrench, install plug (1) into module (2) and tighten.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
INTERMEDIATE SECTION NON-POWERED MODULE
PRESSURE TEST

INITIAL SETUP:

Test Equipment
Test Set, Compartment Air (Item 50, WP 0253 00)

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Compressor, Unit, Reciprocating, Power Driver (Item 8, WP 0253 00)
Socket Wrench Set (Item 62, WP 0253 00)
Socket, Socket Wrench (Item 63, WP 0253 00)
Key, Socket Head Screw (Allen Wrench) (Item 64, WP 0253 00)

Materials/Parts
Sealing Compound (Item 37, WP 0252 00)

Personnel Required
Seaman 88K

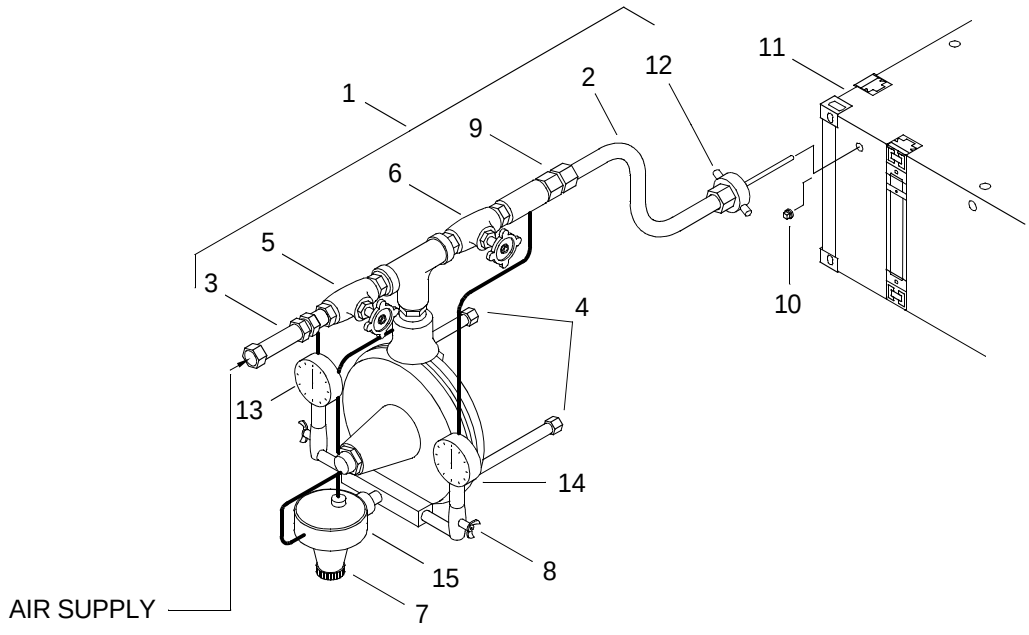
Equipment Condition
Intermediate Section Non-Powered Module Dry-Docked.

PRESSURE TEST INTERMEDIATE SECTION NON-POWERED MODULE

NOTE

The following procedure is typical for pressure testing all non-powered modules and for pipe plug location.

1. Remove test set (1), sensing line (2) and charging line extension hose (3) from storage box.



2. Attach two extension legs (4).

3. Verify inlet (5) and outlet valves (6), set pressure knob (7) and gage pet cocks (8) are closed.

4. Connect sensing line (2) to the outlet coupling fitting (9).

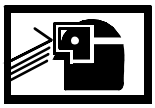
5. Using breaker bar, socket and allen wrench, remove pipe plug (10) from one of three locations at side of module (11).

6. Install test set sensing line (2) into module (11) through chosen pipe plug (10) opening.

7. Using pipe to hose adapters (12), as required, connect sensing line (2) to pipe plug (10) opening.

8. Adjust length of legs (4) to position test set (1) on module (11).

WARNING



EYE PROTECTION

Do not operate air compressor without first reading the operating manual. Failure to comply may result in injury or death to personnel.

9. Connect 100 PSI air supply to inlet valve (3) connector.

10. Rotate set pressure knob (7) counterclockwise eight turns.

11. Open both gage pet cocks (8).

12. Open air supply valve, applying input pressure.

13. Open test set inlet valve (5).

WARNING

EXPLOSION

A module pressure must be regulated to 2 PSI pressure. Higher pressures may cause explosion. Failure to comply may result in serious injury or death to personnel.

14. Observe input pressure gage (13) and rotate set pressure knob (7) clockwise until gage reads 2 PSI.

15. When input pressure gage (13) is stable at 2 PSI, open outlet valve (6).

16. When output pressure gage reads 2 PSI, close outlet valve (6).

17. Observe any pressure drop on output pressure gage (14).

CAUTION

Leaky joints must be sealed or welded before use. Water leaking into FC structure may cause corrosion and metal deterioration.

18. Inspect all seams for evidence of leakage and mark observed leakage areas. Report any leakage to the next higher maintenance level.

19. Seams must be welded watertight before proceeding with assembly for mission.

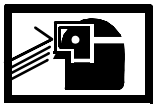
20. To hold pressure while isolating a leak, open outlet valve (6) to allow regulator (15) to control air loss at a rate dependent upon the volume of the module and rate of leakage.

21. To shut down the test set (1), close air supply valve and remove charging line extension hose (3).

22. Remove test set sensing line (2) from pipe plug (10) opening and remove test set (1).

WARNING

CHEMICAL



EYE PROTECTION

23. Apply sealing compound on plug (10) threads.

24. Using breaker bar, socket and allen wrench, install plug (10) on the module (11) test location and tighten.

25. Close inlet (5) and outlet (6) valves, gage pet cocks (8) and rotate set pressure knob (7) clockwise to end of travel.

26. Remove leg extensions (4) and stow in storage box.

27. Remove adapter (12), if used, and stow in storage box.

28. With valve handles (5 and 6) facing down, place test set (1) in storage box.

29. Coil sensing line (2) and charging line extension hose (3) in storage box.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
INTERMEDIATE SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS
INSPECTION, REPAIR, LUBRICATION AND ADJUSTMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Crowbar (Item 9, WP 0253 00)
Brush, Wire Scratch (Item 5, WP 0253 00)

Materials/Parts

Paint, Amercoat (Item 33, WP 0252 00)
Grease, General Purpose (Item 20, WP 0252 00)
Sponge (Item 40, WP 0252 00)
Block, Shoring (Item 5, WP 0252 00)

Personnel Required

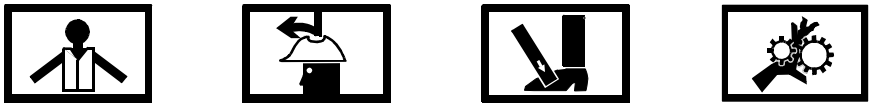
Seaman 88K

References

TM 55-1945-205-10-4

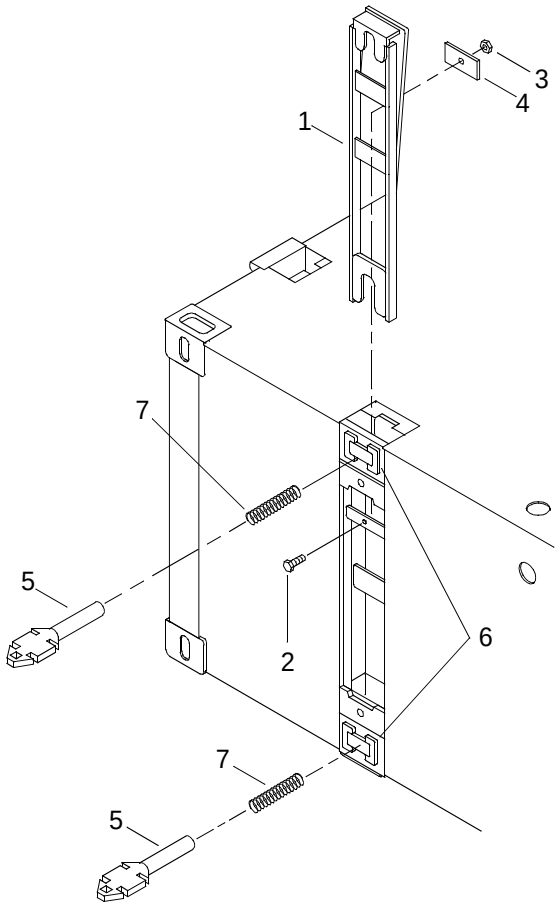
DISASSEMBLY OF INTERMEDIATE SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

WARNING



All personnel must wear a personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Disassemble the male guillotine connector assembly.

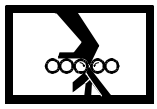


a. Remove the guillotine connector bar (1).

{1} Remove bolt (2), nut (3) and friction plate (4).

{2} Pry up on guillotine connector bar (1) using a crowbar.

WARNING



MOVING PARTS

Failure to block guillotine bar in up position when removing pins and springs could result in personal injury or death.

{3} Place a block of wood under the upper “lip” of the guillotine connector bar (1) after it is raised to hold it in the up position.

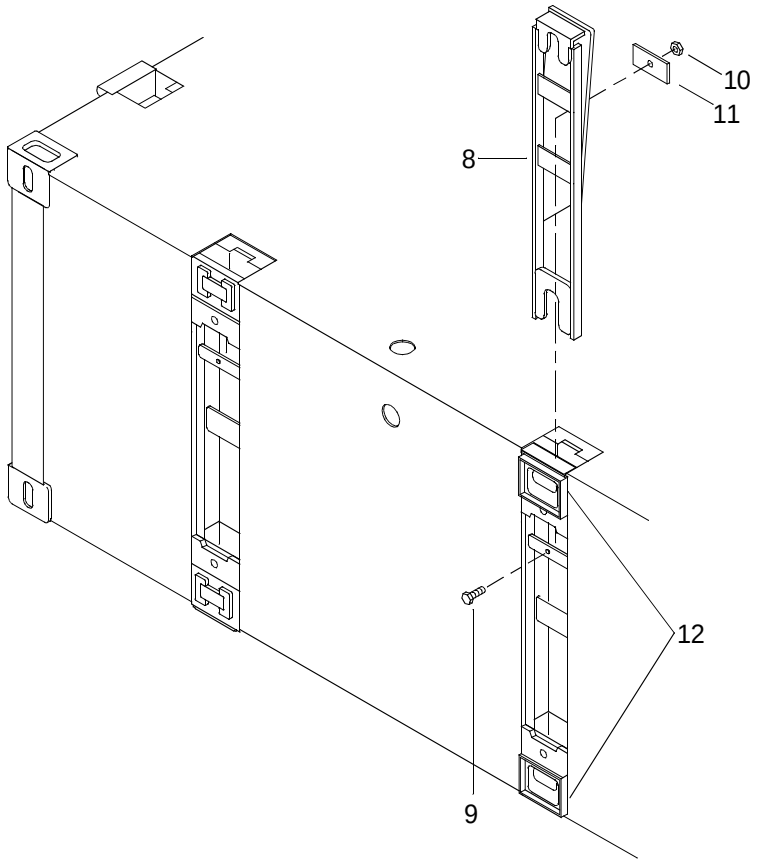
b. Push up on the retainer located on the underside of the male connector pins (5).

c. Remove male connector pins (5) from the guillotine connector lock housings (6).

d. Remove deployment springs (7).

e. Remove guillotine connector bar (1) from guillotine lock housings (6).

2. Disassemble the female guillotine connector assembly.



a. Remove guillotine connector bar (8).

{1} Remove bolt (9), nut (10) and friction plates (11).

{2} Pry up on the guillotine connector bars (8) using a crowbar.

b. Remove guillotine connector bars (8) from guillotine lock housings (12).

INSPECT AND REPAIR/REPLACE INTERMEDIATE SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Inspect male connector pins (5) for cracks, cuts or corrosion. If damaged, replace connector pins.

2. Inspect deployment springs (7) for cracks, cuts or corrosion. If damaged, replace deployment springs.

3. Inspect guillotine connector bars (1, 8) for cracks, cuts or corrosion. If damaged, repair or replace guillotine connector bars (1, 8).

4. Inspect guillotine connector male and female lock housings (6, 12) for cracks, cuts or corrosion. If damaged, replace guillotine connector lock housings (6, 12).

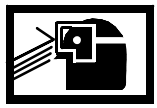
5. Inspect guillotine connector assembly friction plates (4, 11) for cracks, cuts or corrosion. If damaged, replace friction plates (4, 11).

LUBRICATE INTERMEDIATE SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Lubricate guillotine connector assemblies.

WARNING

CHEMICAL

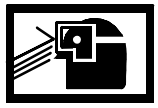


EYE PROTECTION

   a. Lubricate connector bar assemblies with a light coat of grease.

WARNING

CHEMICAL

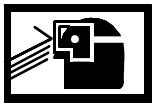


EYE PROTECTION

   b. Lubricate deployment springs (7) with a light coat of grease.

2. Clean and/or paint exposed or rusty surfaces. (WP 0052 00)

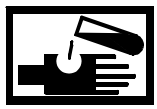
WARNING



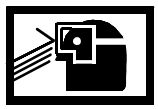
EYE PROTECTION

   a. Use wire brush to clean exposed or rusting surfaces.

WARNING



CHEMICAL



EYE PROTECTION

   b. Spot paint exposed surfaces with Haze Grey Amercoat 385 #27 paint.

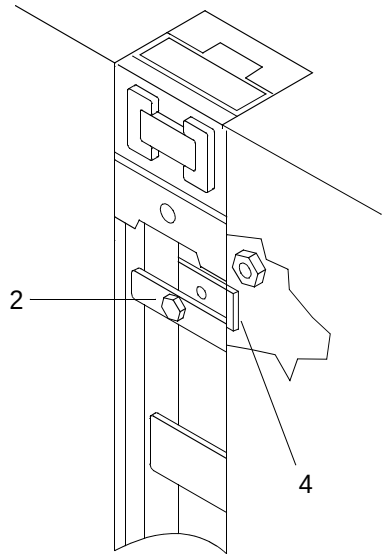
3. Remove standing water with a sponge from the guillotine connector assemblies.

ASSEMBLY OF INTERMEDIATE SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Assemble the female guillotine connector assembly.
   a. Install guillotine connector bar (8) into guillotine lock housing (12).
   b. Install bolt (9) through friction plate (11) and nut (10).
2. Assemble the male guillotine connector assembly.
   a. Install guillotine connector bar (1) into guillotine lock housing (6).
   b. Install deployment spring (7) on male connector pin (5).
   c. Install male connector pin (5) into guillotine connector lock housing (6) by pushing down on the retainer located on the underside of the male connector pin (5) to lock pin in place.
   d. Install bolt (2) through friction plate (4) and nut (3).

ADJUST INTERMEDIATE SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Locate the friction plate (4) on the guillotine connector assembly.



CAUTION

Overtightening friction plate causes difficult operation of the guillotine. Failure to comply may result in damage to equipment.

2. Tighten bolt (2) using two standard wrenches.
3. Remove block of wood.
4. Perform operational check of the guillotine connectors. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
INTERMEDIATE SECTION NON-POWERED MODULE
FLEXOR ASSEMBLY
INSPECTION

INITIAL SETUP:

Tools

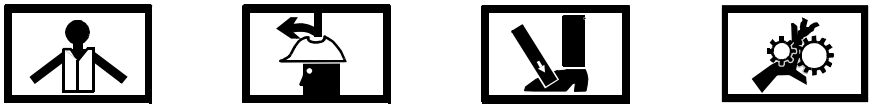
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Personnel Required

Seaman 88K

INSPECT INTERMEDIATE SECTION NON-POWERED MODULE FLEXOR ASSEMBLY

WARNING

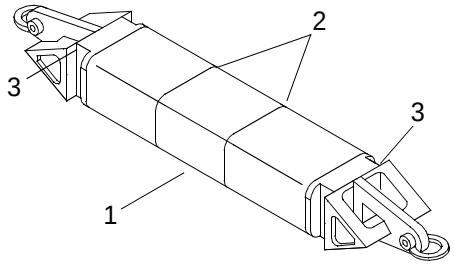


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for all flexors.

1. Inspect uninstalled flexors (1) for separation of the polyurethane material (2) in the center. If, found replace flexor (1).



2. Inspect uninstalled flexors (1) for cracks in the external weldments (3) on the ends. If found, replace flexor (1).

3. Inspect installed flexors (1) for separation of the polyurethane material (2) in the center. If found, replace flexor (1) after the exercise or operation is completed.

4. Inspect installed flexors (1) for cracks in the external weldments (3) on the ends. If found, replace flexor (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
COMBINATION BEACH/SEA END SECTION
NON-POWERED MODULE
MARINE GROWTH REMOVAL

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Hose Assembly, Nonmetallic (Item 21, WP 0253 00)
Cleaner, Power Washer (Item 6, WP 0253 00)
Scraper, Ship (Item 43, WP 0253 00)

Personnel Required

Seaman 88K

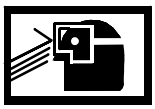
Equipment Condition

Combination Beach/Sea End Section Non-Powered Module Dry-Docked.

REMOVE COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE MARINE GROWTH

1. Connect hose to power sprayer.

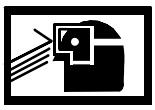
WARNING



EYE PROTECTION

2. Remove marine growth using a plastic scraper.

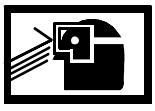
WARNING



EYE PROTECTION

3. Remove marine growth debris from the surface of the module using a hose with directed water spray.

WARNING



EYE PROTECTION

4. Remove marine growth from male and female connectors in both the extended and retracted position using a hose with directed water spray.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
COMBINATION BEACH/SEA END SECTION
NON-POWERED MODULE
CLEANING AND PAINTING

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 43, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

Brush, Paint (Item 6, WP 0252 00)
Cloth, Cleaning (Item 12, WP 0252 00)
Paint, Amercoat 385 #27 Haze Grey (epoxy) (Item 31, WP 0252 00)
Paint, Amercoat 385 #27 Haze Grey (anti-skid) (Item 32, WP 0252 00)
Paint, Amercoat 385 PA, (oxide red) (Item 33, WP 0252 00)
Paper, Abrasive (Item 34, WP 0252 00)
Roller Kit, Paint (Item 36, WP 0252 00)
Tape, Pressure Sensitive Adhesive (Item 42, WP 0252 00)

Personnel Required

Seaman 88K

References

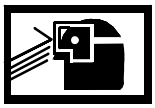
SSPC SP-2
DOD-PRF-24648
MIL-PRF-23236

Equipment Condition

Combination Beach/Sea End Section Non-Powered Module Dry-Docked.

PREPARE AND CLEAN COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE FOR PAINTING

WARNING



EYE PROTECTION

This task is typical for exterior of modules. Power tools are not authorized for use when preparing modules for spot painting. Preparation procedures are in accordance with Steel Structures Painting Council, SP-2 Hand Tool Cleaning (SSPC SP-2).

NOTE

The following steps will be preformed prior to module surface painting. Upon completion of rust and paint removal the substrate metal should have a faint metallic sheen and be free of oil, grease, dust, soil, salts and other contaminants.

1. Remove all rust scale, mill scale, loose rust and loose paint to the degree specified by hand wire brushing, hand sanding, hand scraping, hand chipping or other hand impact tools or a combination of these methods.

2. Using clean lint-free cloth, wipe area clean.

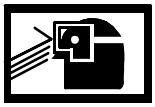
PAINT COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE EXTERIOR STEEL SURFACES

1. Mask off areas to be painted.

WARNING

POISON

CHEMICAL



EYE PROTECTION

VAPOR

FIRE

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc., during the drying period.

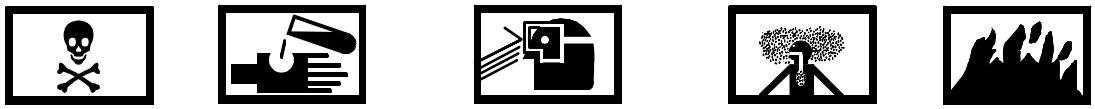
2. Using brush, apply one coat of Amercoat 385 PA oxide red primer paint, Type I, Class I, Composition B in accordance with procedures contained in DOD-PRF-24648.

NOTE

Cold temperatures or high humidity will retard drying time.

3. Allow primer paint to air dry to touch, approximately 2 hours at 70°F.

WARNING



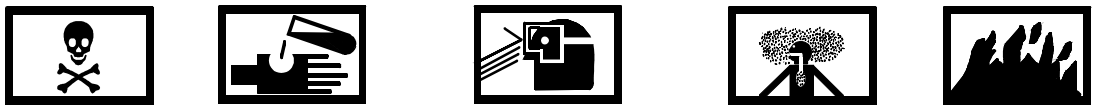
NOTE

Amercoat 385 #27 haze grey is supplied in two parts.

4. Stir base paint (Amercoat 385 #27) and hardener containers separately.

5. Combine hardener with base paint and stir well.

WARNING



6. Apply one coat of Amercoat 385 #27 haze gray epoxy paint (topcoat) in accordance with procedures outlined in MIL-PRF-23236.

NOTE

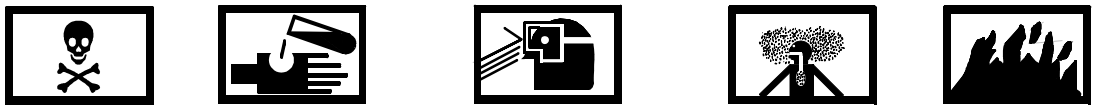
Cold temperatures or high humidity will retard drying time.

7. Allow topcoat to air dry hard, approximately 16 hours at 70°F.

APPLY DECK GRIP COATING TO COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE EXTERIOR STEEL SURFACES

1. Mask off area to coated.

WARNING



CAUTION

Do not apply anti-skid coating to air test plug ports, lift castings and shackles and connector castings.

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc., during the drying period.

2. Using nylon roller, paint tray and brush, apply one coat of Amercoat 385 AS anti-skid coating to deck surface.

3. Back roll each coat while wet at a 90° angle to evenly spread the texture.

NOTE

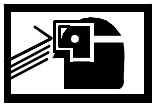
Cold temperatures or high humidity will retard drying time.

4. Allow to dry tack free, approximately 3 hours at 70°F.

WARNING


POISON


CHEMICAL


EYE PROTECTION


VAPOR


FIRE

CAUTION

Do not apply anti-skid coating to air test plug ports, lift castings and shackles and connector castings.

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc., during the drying period.

5. Apply a second coat of anti-skid coating, after the first coat is completely tack free.

NOTE

Cold temperatures or high humidity will retard drying time.

6. Allow anti-skid coating to dry 96 hours before heavy traffic or equipment is used on it.

PAINT COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE CLEATS, D-RINGS, GUILLOTINE CONNECTORS, RHINO HORNS, AND FLEXOR ASSEMBLIES

CAUTION

Do not prime or paint rubber surfaces of flexor assemblies.

1. Mask off areas to be painted.

WARNING

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc. during the drying period.

2. Using brush, apply one coat of Amercoat 385 PA oxide red primer paint, Type I, Class I, Composition B in accordance with procedures contained in DOD-PRF-24648.

NOTE

Cold temperatures or high humidity will retard drying time.

3. Allow primer paint to air dry to touch, approximately 2 hours at 70°F.

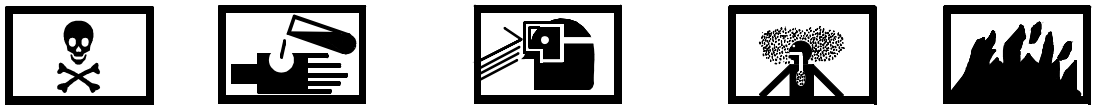
WARNING

NOTE

Amercoat 385 #27 haze grey is supplied in two parts.

4. Stir base paint (Amercoat 385 #27) and hardener containers separately.

WARNING



5. Combine hardener with base paint and stir well.

WARNING

POISON CHEMICAL EYE PROTECTION VAPOR FIRE

CAUTION

Do not apply anti-skid coating to air test plug ports, lift castings and shackles and connector castings.

NOTE

Application temperature range limits are 40° - 120°F.

No coating should be done if the surface is likely to be damaged by rain, fog, dew or dust, etc. during the drying period.

6. Apply one coat of Amercoat 385 #27 haze gray epoxy paint (topcoat) in accordance with procedures outlined in MIL-PRF-23236.

NOTE

Cold temperatures or high humidity will retard drying time.

7. Allow topcoat to air dry hard, approximately 16 hours at 70°F.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
COMBINATION BEACH/SEA END SECTION
NON-POWERED MODULE
INSPECTION FOR WATER

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Sling, 53,000 lbs (Brown) (Item 47, WP 0253 00)
Socket Wrench Set (Item 62, WP 0253 00)
Socket, Socket Wrench (Item 63, WP 0253 00)
Key, Socket Head Screw (Allen Wrench) (Item 64, WP 0253 00)

Materials/Parts

Antiseize Compound (Item 3, WP 0252 00)

Personnel Required

Seaman 88K

Equipment Condition

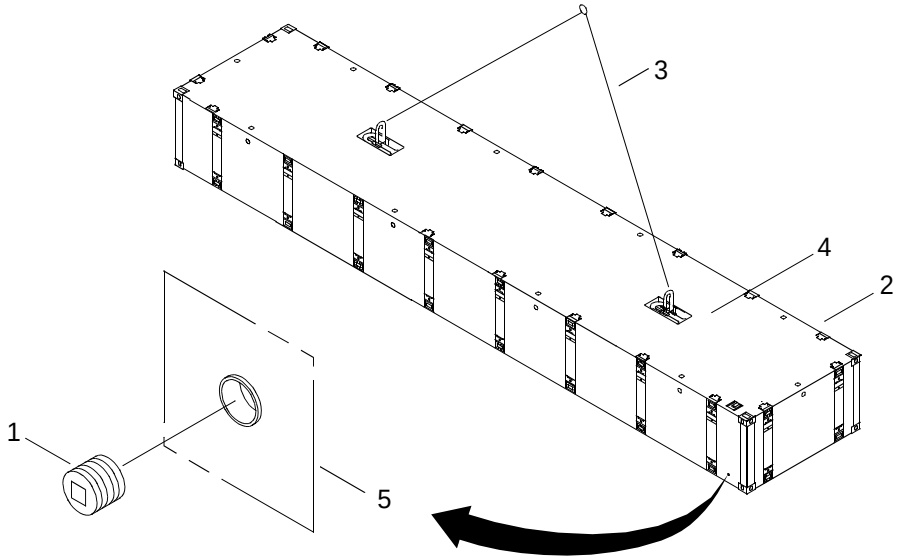
Combination Beach/Sea End Section Non-Powered Module Dry-Docked.

INSPECT COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE FOR WATER

NOTE

The following procedure is typical for inspecting non-powered modules for water and machine plug location.

1. Using breaker bar, socket and allen wrench, remove machine plug (1) from the module (2).



WARNING

HEAVY PARTS

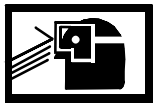
2. Using crane, attach a sling (3) to the lifting shackles (4) on the module (2) and tilt module to the side where the machine plug opening (5) is at its lowest point.

3. Using breaker bar, socket and allen wrench, remove machine plug (1). If water is present, allow to drain.

4. If water is found, pressure test the combination beach/sea end section non-powered module (2). (WP 0060 00)

WARNING

CHEMICAL



EYE PROTECTION

5. Apply antiseize compound to threads of machine plug (1).

6. Using breaker bar, socket and allen wrench, install plug (1) into module (2) and tighten.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
COMBINATION BEACH/SEA END SECTION
NON-POWERED MODULE
PRESSURE TEST

INITIAL SETUP:

Test Equipment
Test Set, Compartment Air (Item 50, WP 0253 00)

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Compressor, Unit, Reciprocating, Power Driver (Item 8, WP 0253 00)
Socket Wrench Set (Item 62, WP 0253 00)
Socket, Socket Wrench (Item 63, WP 0253 00)
Key, Socket Head Screw (Allen Wrench) (Item 64, WP 0253 00)

Materials/Parts
Compound, Sealing (Item 37, WP 0252 00)

Personnel Required
Engineer 88L

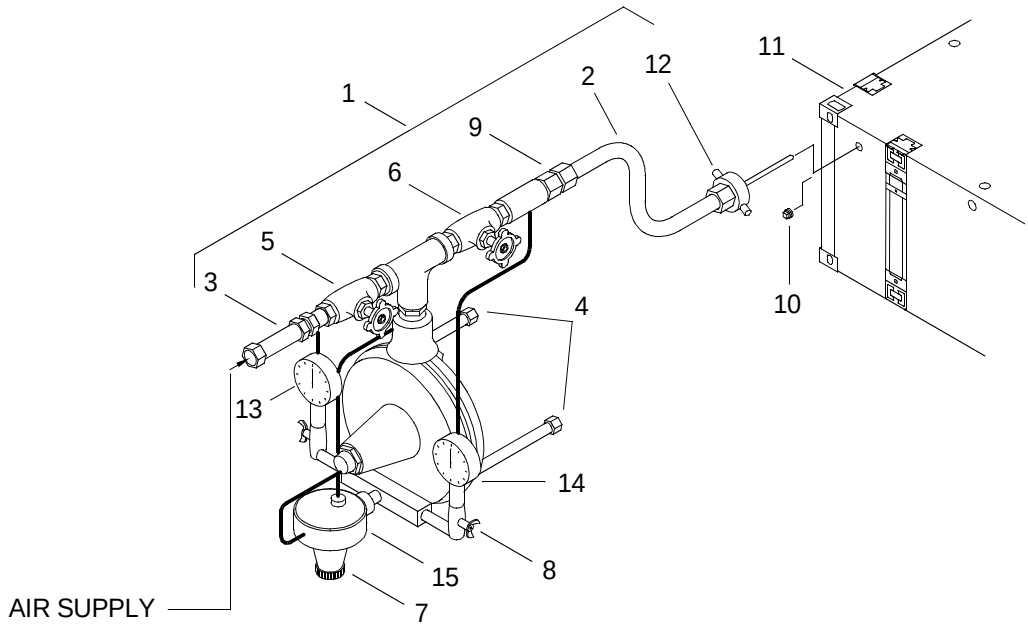
Equipment Condition
Combination Beach/Sea End Section Non-Powered Module Dry-Docked.

PRESSURE TEST COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE

NOTE

The following procedure is typical for pressure testing all non-powered modules and for pipe plug location.

1. Remove test set (1), sensing line (2) and charging line extension hose (3) from storage box.



2. Attach two extension legs (4).

3. Verify inlet (5) and outlet valves (6), set pressure knob (7) and gage pet cocks (8) are closed.

4. Connect sensing line (2) to the outlet coupling fitting (9).

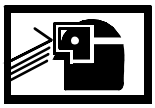
5. Using breaker bar, socket and allen wrench, remove pipe plug (10) from one of three locations at side of module (11).

6. Install test set sensing line (2) into module (11) through chosen pipe plug (10) opening.

7. Using pipe to hose adapters (12), as required, connect sensing line (2) to pipe plug (10) opening.

8. Adjust length of legs (4) to position test set (1) on module (11).

WARNING



EYE PROTECTION

Do not operate air compressor without first reading the operating manual. Failure to comply may result in injury or death to personnel.

9. Connect 100 PSI air supply to inlet valve (3) connector.

10. Rotate set pressure knob (7) counterclockwise eight turns.

11. Open both gage pet cocks (8).

12. Open air supply valve, applying input pressure.

13. Open test set inlet valve (5).

WARNING

EXPLOSION

A module pressure must be regulated to 2 PSI pressure. Higher pressures may cause explosion. Failure to comply may result in serious injury or death to personnel.

14. Observe input pressure gage (13) and rotate set pressure knob (7) clockwise until gage reads 2 PSI.

15. When input pressure gage (13) is stable at 2 PSI, open outlet valve (6).

16. When output pressure gage reads 2 PSI, close outlet valve (6).

17. Observe any pressure drop on output pressure gage (14).

CAUTION

Leaky joints must be sealed or welded before use. Water leaking into FC structure may cause corrosion and metal deterioration.

18. Inspect all seams for evidence of leakage and mark observed leakage areas. Report any leakage to the next higher maintenance level.

19. Seams must be welded watertight before proceeding with assembly for mission.

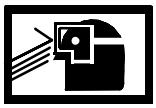
20. To hold pressure while isolating a leak, open outlet valve (6) to allow regulator (15) to control air loss at a rate dependent upon the volume of the module and rate of leakage.

21. To shut down the test set (1), close air supply valve and remove charging line extension hose (3).

22. Remove test set sensing line (2) from pipe plug (10) opening and remove test set (1).

WARNING

CHEMICAL



EYE PROTECTION

23. Apply sealing compound on plug (10) threads.

24. Using breaker bar, socket and allen wrench, install plug (10) to the module (11) test location and tighten.

25. Close inlet (5) and outlet (6) valves, gage pet cocks (8) and rotate set pressure knob (7) clockwise to end of travel.

26. Remove leg extensions (4) and stow in storage box.

27. Remove adapter (12), if used, and stow in storage box.

28. With valve handles (5 and 6) facing down, place test set (1) in storage box.

29. Coil sensing line (2) and charging line extension hose (3) in storage box.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE
MALE AND FEMALE GUILLOTINE CONNECTORS
INSPECTION, REPAIR, LUBRICATION AND ADJUSTMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Crowbar (Item 9, WP 0253 00)
Brush, Wire Scratch (Item 5, WP 0253 00)

Materials/Parts

Grease, General Purpose (Item 20, WP 0252 00)
Paint, Amercoat 385 #27 Haze Gray, Epoxy (Item 31, WP 0252 00)
Sponge, Rectangular (Item 40, WP 0252 00)
Wedge, Wood (Item 44, WP 0252 00)

Personnel Required

Seaman 88K

References

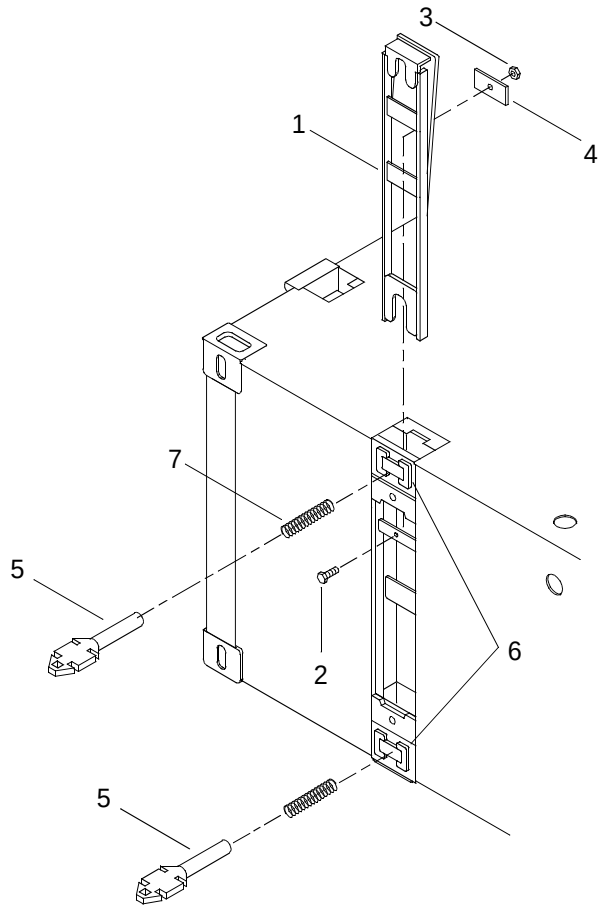
TM 55-1945-205-10-4

DISASSEMBLY OF COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

WARNING

All personnel must wear a personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Disassemble the male guillotine connector assembly.

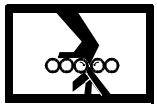


a. Remove the guillotine connector bar (1).

{1} Remove bolt (2), nut (3) and friction plate (4).

{2} Pry up on the guillotine connector bar (1) using a crowbar.

WARNING



MOVING PARTS

Failure to block guillotine bar in up position when removing pins and springs could result in personal injury or death.

{3} Place a block of wood under the upper “lip” of the guillotine connector bar (1) after it is raised to hold it in the up position.

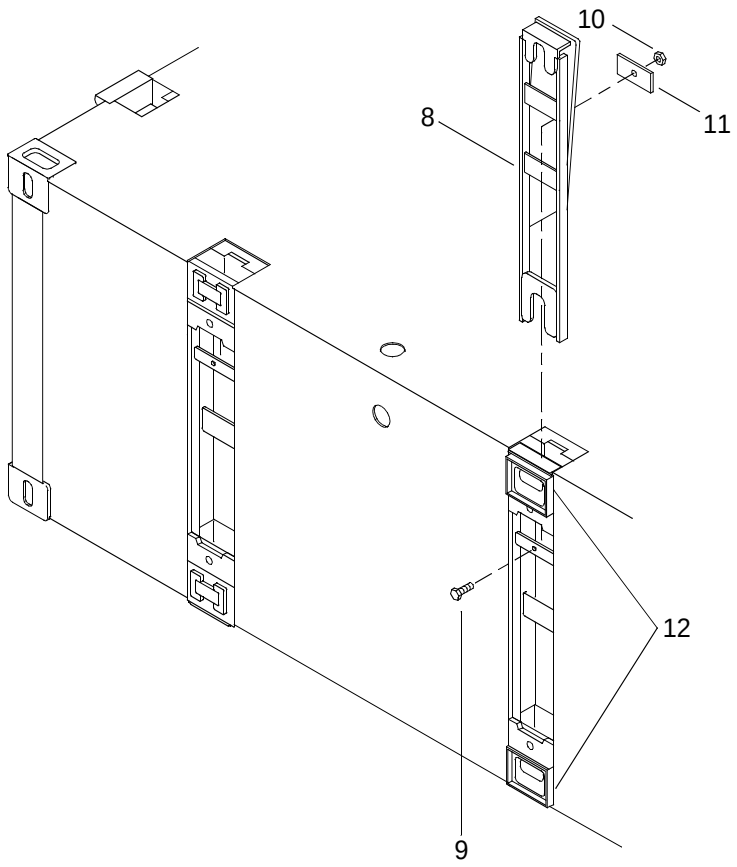
b. Push up on the retainer located on the underside of the male connector pins (5).

c. Remove male connector pins (5) from the guillotine connector lock housings (6).

d. Remove deployment springs (7).

e. Remove guillotine connector bar (1) from guillotine lock housings (6).

2. Disassemble the female guillotine connector assembly.



a. Remove the guillotine connector bar (8).

{1} Remove bolt (9), nut (10) and friction plate (11).

{2} Pry up on the guillotine connector bar (8) using a crowbar.

b. Remove guillotine connector bar (8) from guillotine lock housings (12).

INSPECT AND REPAIR/REPLACE COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Inspect male connector pin (5) for cracks, cuts or corrosion. If damaged, replace connector pin.

2. Inspect deployment spring (7) for cracks, cuts or corrosion. If damaged, replace deployment spring.

3. Inspect guillotine connector bars (1, 8) for cracks, cuts or corrosion. If damaged, repair or replace guillotine connector bars (1, 8).

4. Inspect guillotine connector male and female lock housings (6, 12) for cracks, cuts or corrosion. If damaged, replace or replace guillotine connector lock housings (6, 12).

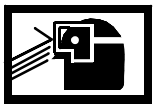
5. Inspect guillotine connector assembly friction plates (4, 11) for cracks, cuts or corrosion. If damaged, replace friction plates (4, 11).

LUBRICATE COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Lubricate guillotine connector assemblies.

WARNING

CHEMICAL

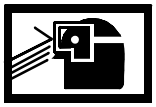


EYE PROTECTION

   a. Lubricate connector bar assemblies with a light coat of grease.

WARNING

CHEMICAL

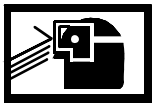


EYE PROTECTION

   b. Lubricate deployment spring (7) with a light coat of grease.

2. Clean and/or paint exposed or rusty surfaces (WP 0058 00).

WARNING

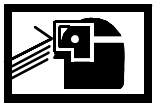


EYE PROTECTION

   a. Use wire brush to clean exposed or rusting surfaces.

WARNING

CHEMICAL



EYE PROTECTION

   b. Spot paint exposed surfaces with Haze Grey Amercoat 385 #27 paint.

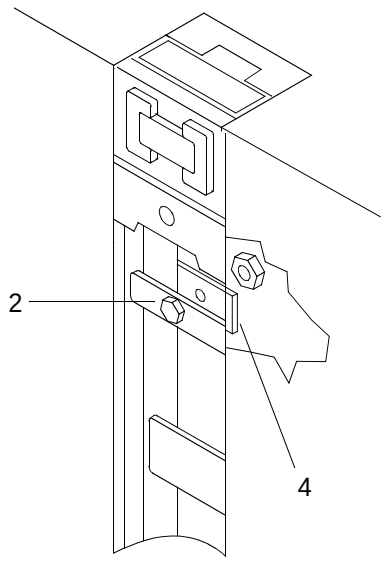
3. Remove standing water with a sponge from the guillotine connector assemblies.

ASSEMBLY OF COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Assemble the female guillotine connector assembly.
   a. Install guillotine connector bar (8) into guillotine lock housing (12).
   b. Install bolt (9) through friction plate (11) and nut (10).
2. Assemble the male guillotine connector assembly.
   a. Install guillotine connector bar (1) into guillotine lock housing (6).
   b. Install deployment spring (7) on male connector pin (5).
   c. Install male connector pin (5) into guillotine connector lock housing (6) by pushing down on the retainer located on the underside of the male connector pin (5) to lock pin in place.
   d. Install bolt (2) through friction plate (4) and nut (3).

ADJUST COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE MALE AND FEMALE GUILLOTINE CONNECTORS

1. Locate the friction plate (4) on the guillotine connector assembly.



CAUTION

Overtightening friction plate causes difficult operation of the guillotine. Failure to comply may result in damage to equipment.

2. Tighten bolt (2) using two standard wrenches.
3. Remove block of wood.
4. Perform operational check of guillotine connectors. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
COMBINATION BEACH/SEA END SECTION NON-POWERED
MODULE FLEXOR ASSEMBLY
INSPECTION

INITIAL SETUP:

Tools

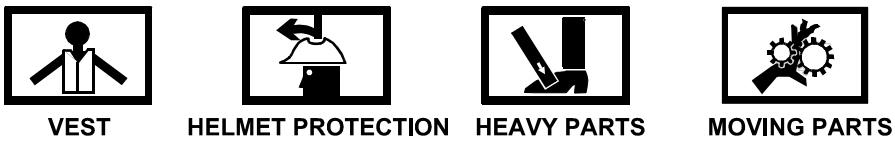
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Personnel Required

Seaman 88K

INSPECT COMBINATION BEACH/SEA END SECTION NON-POWERED MODULE FLEXOR ASSEMBLY

WARNING

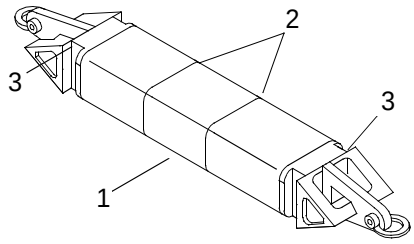


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for all flexors.

1. Inspect uninstalled flexors (1) for separation of the polyurethane material (2) in the center. If found, replace flexor (1).



2. Inspect uninstalled flexors (1) for cracks in the external weldments (3) on the ends. If found, replace flexor (1).

3. Inspect installed flexors (1) for separation of the polyurethane material (2) in the center. If found, replace flexor (1) after the exercise or operation is completed.

4. Inspect installed flexors (1) for cracks in the external weldments (3) on the ends. If found, replace flexor (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER EXTERIOR DOOR LOCKSET REPLACEMENT

INITIAL SETUP:

Tools

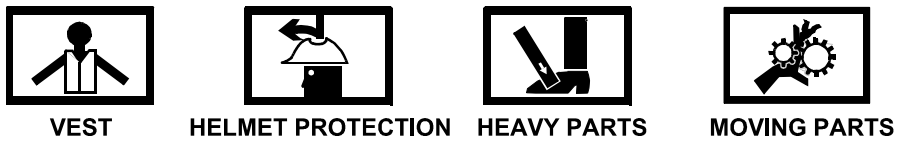
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Personnel Required

Engineer 88L

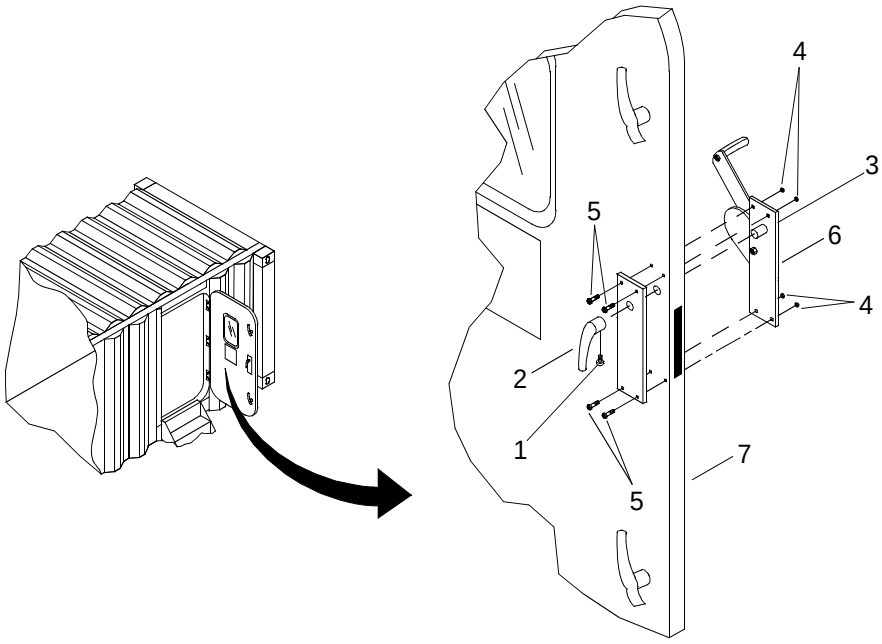
REMOVE GENERATOR CONTAINER EXTERIOR DOOR LOCKSET

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Using an allen wrench, remove set screw (1) securing the outer door handle (2) to the lockset shaft (3).



2. Remove four cap nuts (4) and bolts (5) securing the lockset (6) to the door (7).

3. Remove the lockset (6) and discard.

INSTALL GENERATOR CONTAINER EXTERIOR DOOR LOCKSET

1. Position the new lockset (6) into the hole in the door (7).

2. Install four bolts (5) and cap nuts (4) to secure the lockset (6) to the door (7) Tighten cap nuts (4).

3. Position the outer door handle (2) over the lockset shaft (3) and secure with the set screw (1). Tighten set screw (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER EXTERIOR DOOR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

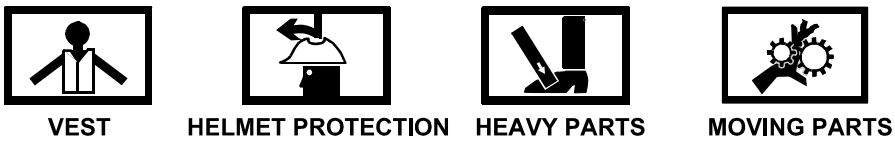
Door, Weathertight
(81340)
PN FC-621-001-2

Personnel Required

Engineer 88L (2)

REMOVE GENERATOR CONTAINER EXTERIOR DOOR

WARNING

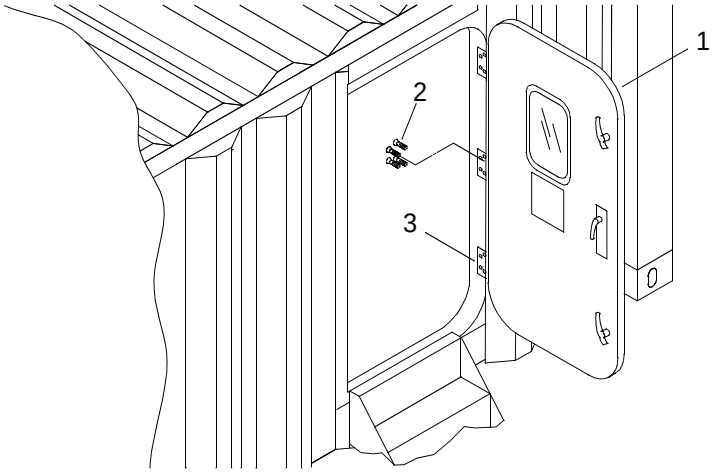


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The hinges will remain on the door frame during door replacement.

1. Supporting the weight of the door (1), remove four screws (2) from three door hinges (3) on the door side.



2. Remove door (1).

INSTALL GENERATOR CONTAINER EXTERIOR DOOR

1. Position new door (1) on the hinges (3).

2. Install four screws (2) in each of the hinges (3) and tighten screws.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER EXTERIOR DOOR DOGS
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

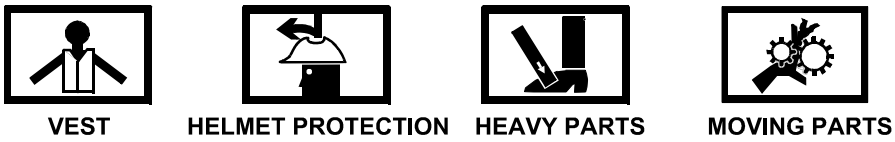
Set, Dog
(81340)
PN FC-621-001-2-DOG

Personnel Required

Engineer 88L

REMOVE GENERATOR CONTAINER EXTERIOR DOOR DOGS

WARNING

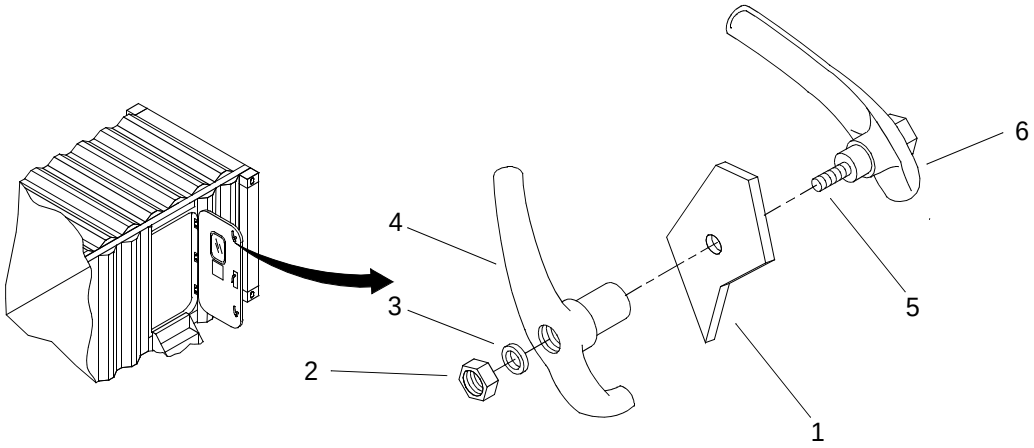


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of door dogs.

1. On the interior of door (1), remove nut (2) and washer (3) securing the inner dog (4) to the outer dog bolt (5).



2. Remove outer door dog (6) with attached bolt (5) from door (1) and discard.

INSTALL GENERATOR CONTAINER EXTERIOR DOOR DOGS

1. Position new outer door dog (6) with attached bolt (5) into door (1).
2. Position inner dog (4) onto outer dog bolt (5).
3. Install washer (3) and nut (2) on outer dog bolt (5) and tighten nut (2).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER HAND LANTERN MOUNTING BRACKET REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 53, WP 0253 00)

Materials/Parts

Assembly, Bracket
(81349)
PN M16377-53-003
NSN 6230-00-968-7831

Holder, Light
(81349)
PN M16377/54-2438
NSN 6230-00-578-7401

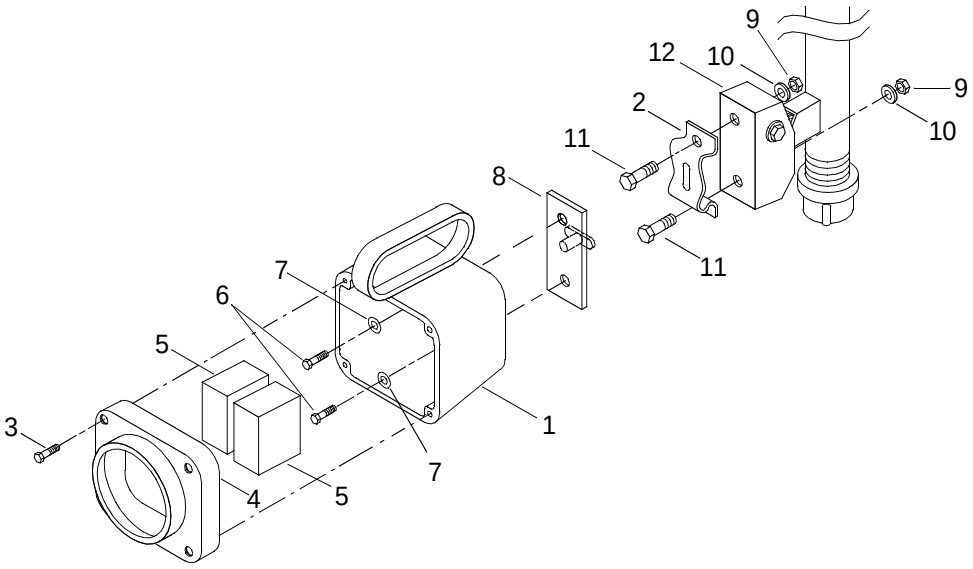
O-Ring
(96906)
PN MS28775-001
NSN 5331-00-582-2133
Qty 2

Personnel Required

Engineer 88L

REMOVE GENERATOR CONTAINER HAND LANTERN MOUNTING BRACKET

1. Rotate hand lantern (1) 90° and remove from mounting bracket (2).



2. Loosen four captive screws (3) on cover (4).

3. Remove cover (4).

4. Place hand lantern (1) face up on the work bench.

5. Remove batteries (5).

6. Remove two hex head bolts (6) and o-rings (7) from bracket (8).

7. Discard o-rings (7) and bracket (8).

8. Remove two hex nuts (9), lock washers (10) and hex head bolts (11) securing mounting bracket (2) to the mounting plate (12).

9. Discard mounting bracket (2).

INSTALL GENERATOR CONTAINER HAND LANTERN MOUNTING BRACKET

1. Position new mounting bracket (2) on mounting plate (12).

2. Install two hex head bolts (11), lock washers (10) and hex nuts (9) to secure mounting bracket (2) on mounting plate (12). Tighten hex nuts (9).

3. Position new bracket (8) on the back of hand lantern (1).

4. Install two hex head bolts (6) and new o-rings (7) through hand lantern (1) into bracket (8).

5. Tighten hex head bolts (6).

6. Install batteries (5).

7. Position cover (4) on hand lantern (1).

8. Tighten four captive screws (3).

9. Position hand lantern (1) on mounting bracket (2) and rotate 90°.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER SHORE TIE PENETRATION HINGED COVER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Cover, Access
(81340)
PN MCSFC-99-310-001-104

Personnel Required

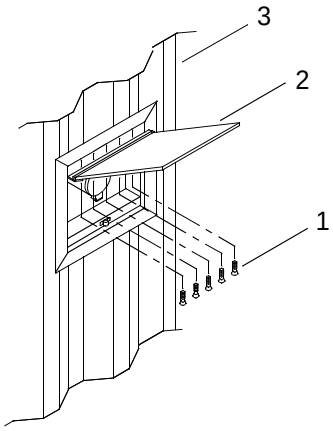
Engineer 88L

REMOVE GENERATOR CONTAINER SHORE TIE PENETRATION HINGED COVER

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove five cover hinge screws (1) securing cover (2) to the generator container exterior wall (3).



2. Remove cover (2) and discard.

INSTALL GENERATOR CONTAINER SHORE TIE PENETRATION HINGED COVER

1. Position new cover (2) on the generator container exterior wall (3).

2. Install five hinge cover screws (1) securing hinge (2) to wall (3) and tighten.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER SHORE TIE FEMALE ELECTRICAL CONNECTOR REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Electrical Connector
(81340)
PN 33-91167-2707-HP

Personnel Required

Engineer 88L

References

TM 55-1945-205-10-4

Equipment Condition

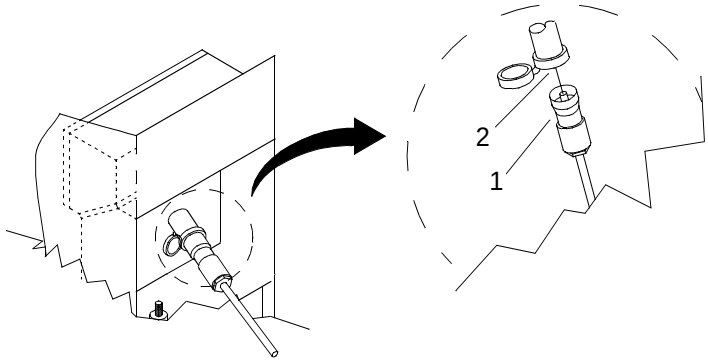
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER SHORE TIE FEMALE ELECTRICAL CONNECTOR

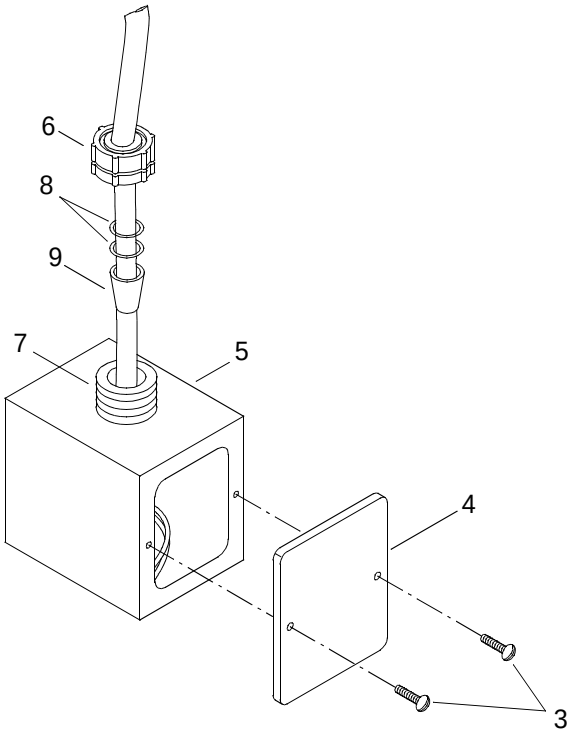
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rotate power cable connector (1) counterclockwise ¼ turn and disconnect from generator container shore tie female electrical connector (2).



2. Inside generator container, remove two screws (3) from generator container shore tie junction box cover (4).

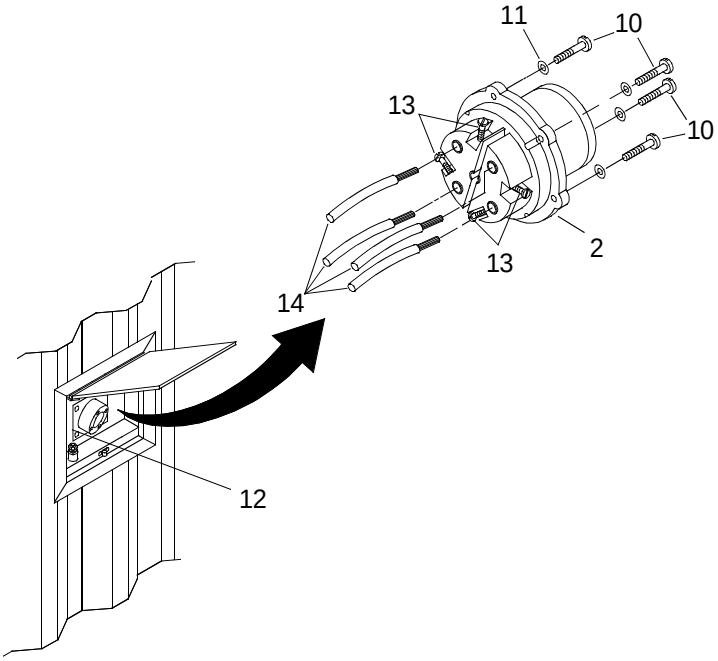


3. Remove generator container shore tie junction box cover (4) from junction box (5).

4. Rotate stuffing tube packing retainer cap (6) counterclockwise and slide away from nylon stuffing tube (7).

5. Slide plastic packing washers (8) and stuffing tube packing (9) away from nylon stuffing tube (7).

6. Remove four screws (10) and plastic washers (11) from generator container shore tie female connector (2).



7. Pull generator container shore tie female connector (2) outward from shore tie recess pocket (12).
8. Loosen four screws (13) on back of generator container shore tie female connector (2).
9. Tag and remove wires (14) from generator container shore tie female connector (2).
10. Remove generator container shore tie female connector (2) and discard.

INSTALL GENERATOR CONTAINER SHORE TIE FEMALE ELECTRICAL CONNECTOR

1. Install wires (14) in new generator container shore tie female connector (2) and remove tags.
2. Tighten four screws (13) on back of generator container shore tie female connector (2).
3. Position generator container shore tie female connector (2) in shore tie recess pocket (12).
4. Install four plastic washers (11) and screws (10) in generator container shore tie female connector (2) and tighten.
5. Slide the stuffing tube packing (9) and plastic packing washers (8) into nylon stuffing tube (7).
6. Slide stuffing tube packing retainer cap (6) onto nylon stuffing tube (7).
7. Rotate stuffing tube packing retainer cap (6) clockwise and tighten.
8. Position generator container shore tie junction box cover (4) on junction box (5), install two screws (3) and tighten.
9. Perform operational check of generator. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
TACTICAL QUIET GENERATOR
REPAIR

INITIAL SETUP:

Personnel Required
Seaman 88K

References
TM 9-6115-642-10
TM 9-6115-643-10

REPAIR TACTICAL QUIET GENERATOR

Refer to TM 9-6115-642-10 for 10 KW Tactical Quiet Generator Operating Instructions.

Refer to TM 9-6115-643-10 for 15 KW Tactical Quiet Generator Operating Instructions.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER FUEL TANK CONTROL FUSE REPLACEMENT

INITIAL SETUP:

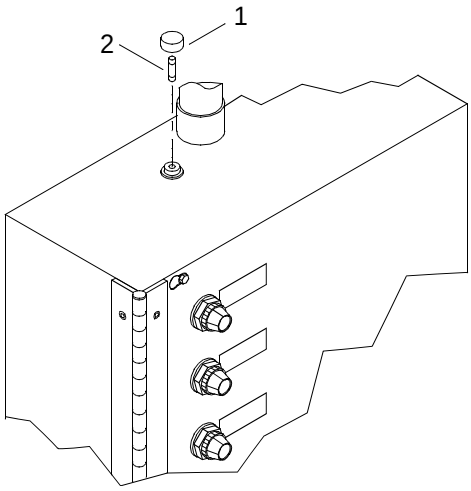
Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Personnel Required
Seaman 88K

Equipment Condition
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER FUEL TANK CONTROL FUSE

1. Loosen fuse holder cap (1) and remove.



2. Remove fuse (2) from fuse holder cap and discard.

INSTALL GENERATOR CONTAINER FUEL TANK CONTROL FUSE

1. Install new fuse (2) in fuse holder cap (1).

2. Tighten fuse holder cap (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL SENSORS REPLACEMENT

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Personnel Required
Engineer 88L

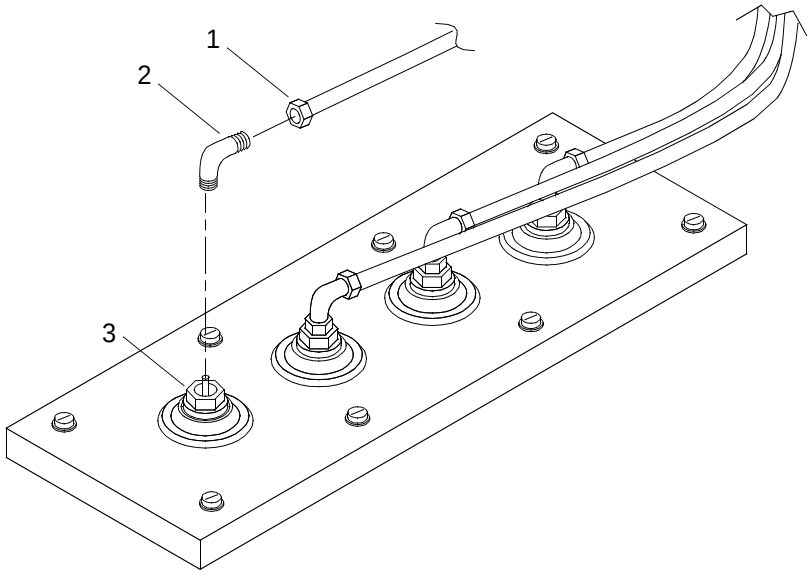
Equipment Condition
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL SENSORS

NOTE

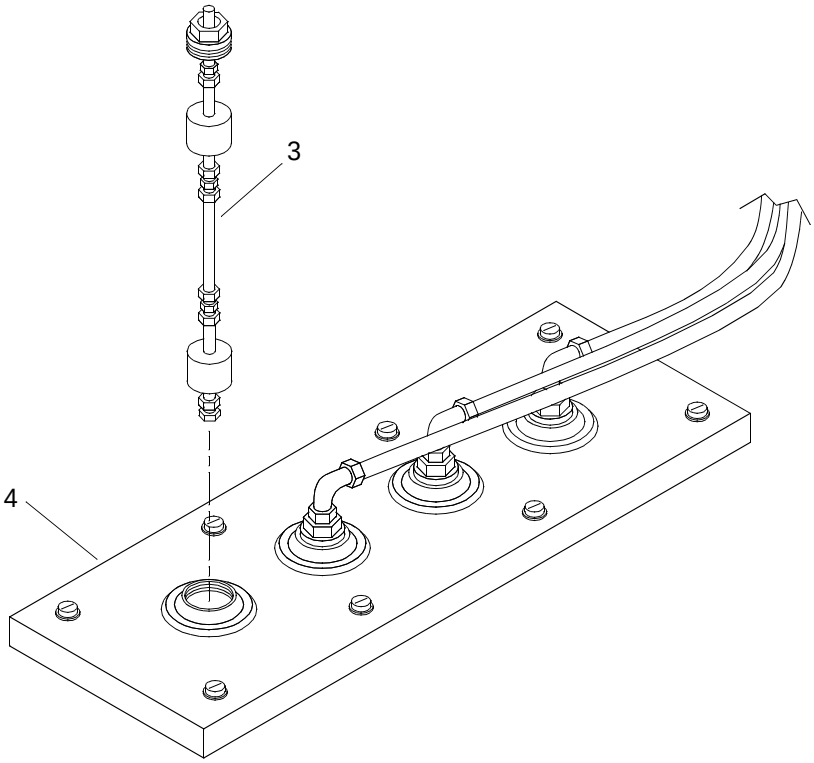
The following procedure is typical for the removal and installation of all fuel level sensors.

1. Remove nut (1) from elbow (2).



2. Remove elbow (2) from sensor (3).

3. Unscrew sensor (3) from fuel tank (4) and discard.



INSTALL GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL SENSORS

1. Screw new sensor (3) into fuel tank (4).
2. Install elbow (2) on sensor (3) and tighten.
3. Install nut (1) on elbow (2) and tighten.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL RELAY
REPLACEMENT

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Personnel Required
Engineer 88L

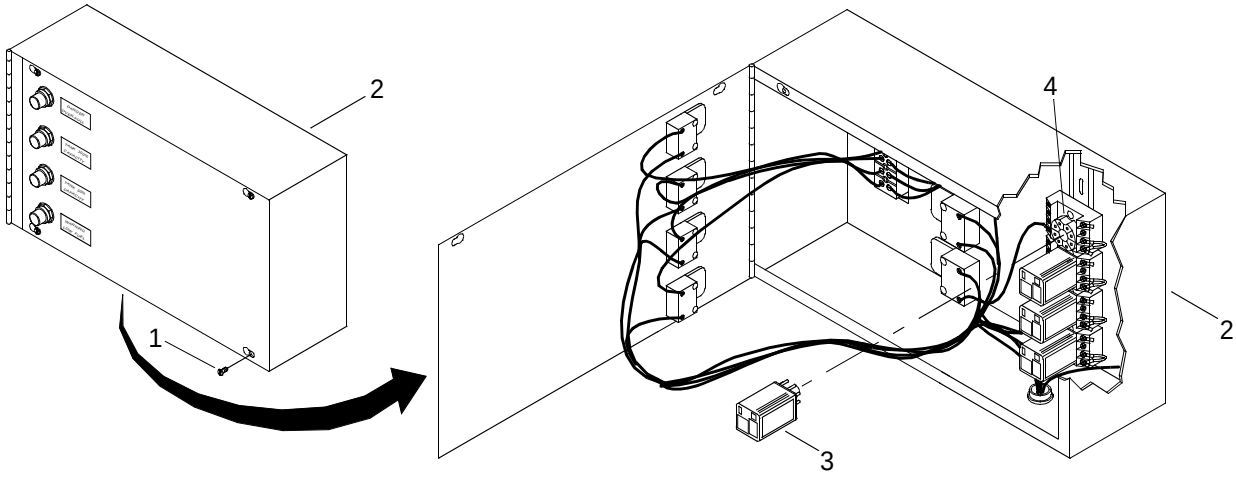
Equipment Condition
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL RELAY

NOTE

The following procedure is typical for the removal and installation of all fuel level relays.

1. Remove four screws (1) from relay housing (2).



2. Open door of housing (2) and locate defective relay (3).

3. Remove relay (3) from socket (4) and discard.

INSTALL GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL RELAY

1. Install new relay (3) into socket (4).

2. Close door of housing (2).

3. Install four screws (1) and tighten.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL INDICATING SYSTEM LIGHT BULBS REPLACEMENT

INITIAL SETUP:

Personnel Required
Seaman 88K

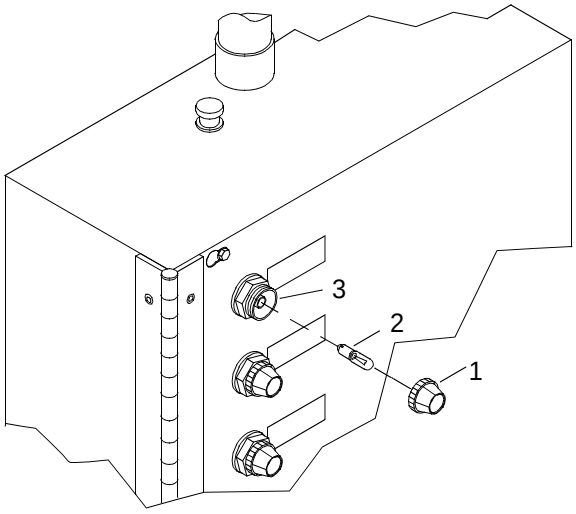
Equipment Condition
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL INDICATING SYSTEM LIGHT BULBS

NOTE

The following procedure is typical for the removal and installation of both interior and exterior fuel level indicating system light bulbs.

1. Remove plastic lens cap (1).



2. Push in on bulb (2), turn in a counterclockwise direction and discard bulb (2).

INSTALL GENERATOR CONTAINER 1,000 GALLON FUEL TANK FUEL LEVEL INDICATING SYSTEM LIGHT BULBS

1. Insert new light bulb (2) into receptacle (3).

2. Push in on bulb (2) and turn in a clockwise direction to lock in place.

3. Install lens cap (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL
FUEL PUMP
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Inlet Gasket
(08915)
PN 100F0790
Screen
(08915)
PN 100f0760
Sealing Compound (Item 37, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

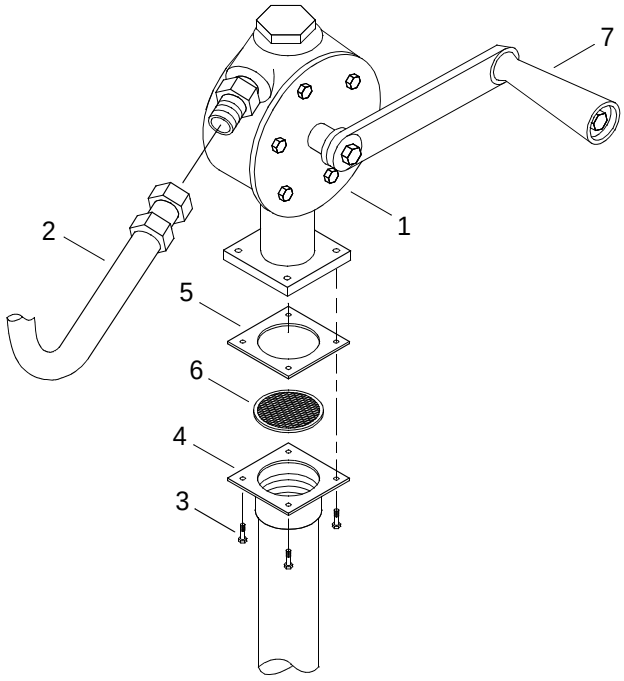
Seaman 88K

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL FUEL PUMP

1. Position drain pan beneath manual fuel pump (1).



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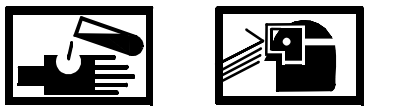
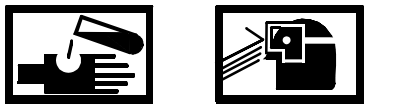


CHEMICAL EYE PROTECTION

2. Disconnect hose (2) from fuel pump (1).

WARNING

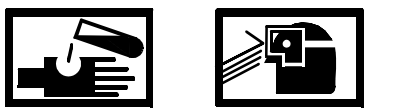


CHEMICAL EYE PROTECTION

3. Drain residual diesel fuel from hose (2) into drain pan.

4. Remove four hex head screws (3) from inlet flange (4).

WARNING

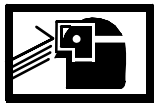


CHEMICAL EYE PROTECTION

5. Remove pump (1), inlet gasket (5) and screen (6) from inlet flange (4).

6. Discard inlet gasket (5) and screen (6).

WARNING

CHEMICAL EYE PROTECTION

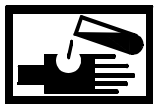
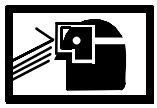
7. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL FUEL PUMP

1 Position new screen (6), new inlet gasket (5) and fuel pump (1) on inlet flange (4).

2. Install four hex head screws (3) in inlet flange (4) and tighten.

WARNING

CHEMICAL EYE PROTECTION

3. Apply sealing compound to male threads on pump (1).

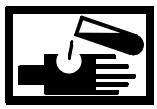
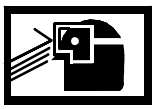
4. Connect hose (2) to pump (1).

5. Inspect for leaks.

   a. Rotate pump handle (7) clockwise.

   b. Tighten connections as required.

WARNING


CHEMICAL EYE PROTECTION SLICK FLOOR

6. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL FUEL PUMP
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 43, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

Seal Washer
(08915)
PN 100F0820
O-ring
(08915)
PN 100F2061
O-ring
(08915)
PN 100F0801
Sealing Compound (Item 37, WP 0252 00)
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

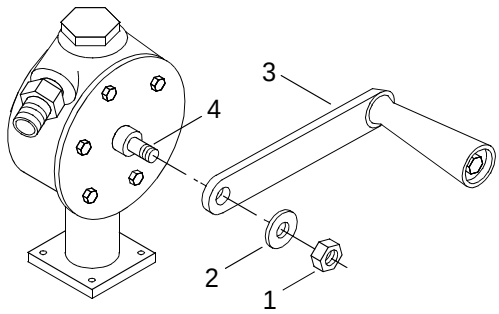
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
1,000 Gallon Fuel Tank Manual Fuel Pump Removed. (WP 0074 00)

DISASSEMBLE GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL FUEL PUMP

NOTE

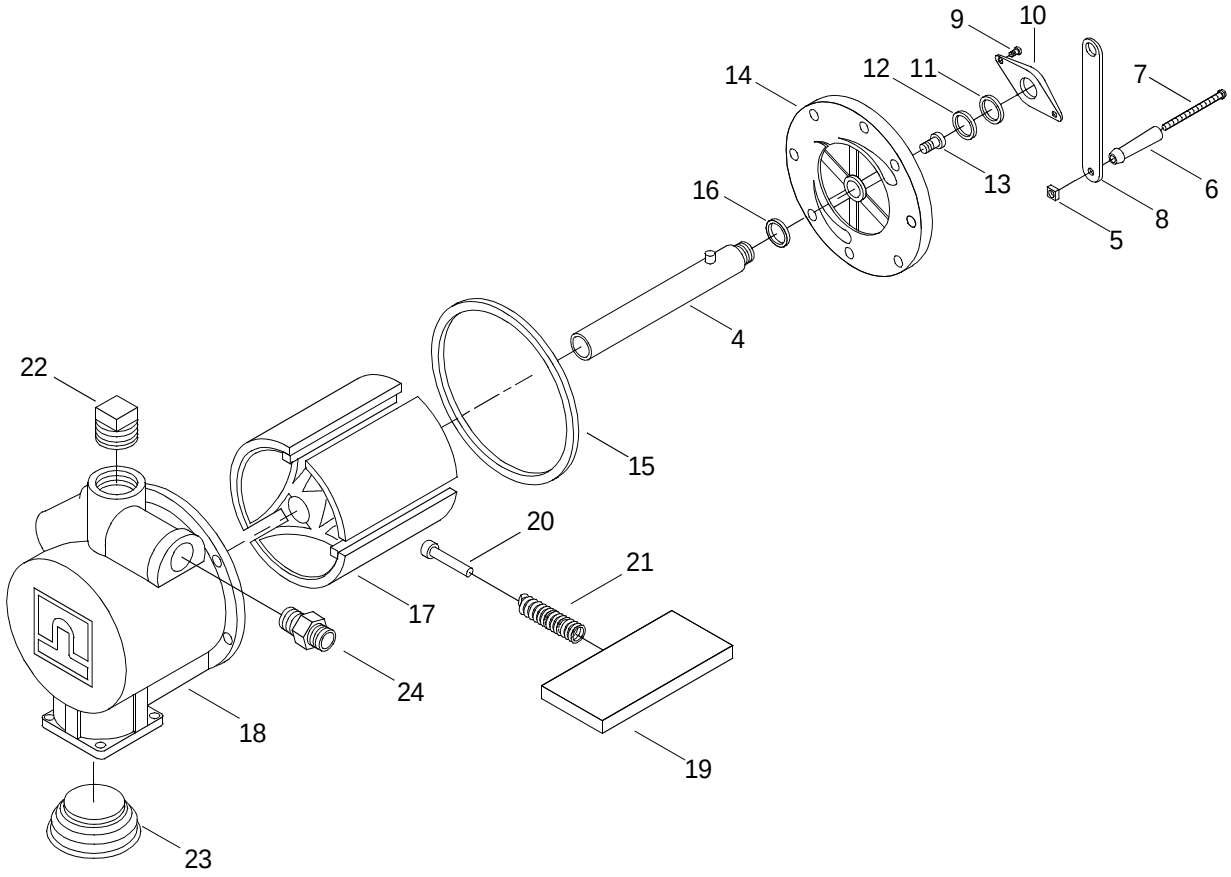
Repair is limited to the replacement of defective parts.

1. Remove hex nut (1) and lock washer (2).



2. Remove handle assembly (3) from shaft (4).

3. Remove square nut (5), wood grip (6) and round head screw (7) from crank (8).



4. Remove two pan head screws (9), bearing plate (10), seal washer (11) and o-ring (12).

5. Discard seal washer (11) and o-ring (12).

6. Remove eight hex head screws (13), cover (14), o-ring (15) and washer (16).

7. Discard o-ring (15).

8. Remove shaft (4) from rotor (17).

9. Remove rotor (17) from pump body (18).

10. Remove three vanes (19), spring pins (20) and vane springs (21) from rotor (17).

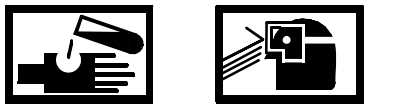
11. Remove vacuum breaker (22) from pump body (18).

12. Remove check valve assembly (23) from pump body (18).

13. Remove fitting (24) from pump body (18).

CLEAN GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL FUEL PUMP

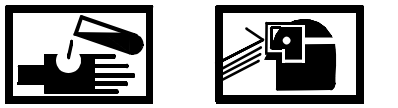
WARNING



CHEMICAL EYE PROTECTION

1. Using wiping rags soaked with cleaner, remove debris from external components.

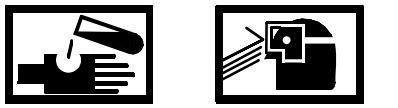
WARNING



CHEMICAL EYE PROTECTION

2. Using wiping rags soaked with cleaner, remove debris from internal components.

WARNING



CHEMICAL EYE PROTECTION

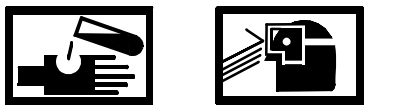
3. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL FUEL PUMP

1. Inspect all items for cracks and bending. Replace damaged items.
2. Inspect for stripped threads. Replace damaged items.

ASSEMBLE GENERATOR CONTAINER 1,000 GALLON FUEL TANK MANUAL FUEL PUMP

WARNING



CHEMICAL EYE PROTECTION

1. Apply sealing compound to male threads of fitting (24), check valve assembly (23) and vacuum breaker (22).
2. Install fitting (24) in pump body (18) and tighten.
3. Install check valve assembly (23) in pump body (18) and tighten.
4. Install vacuum breaker (22) in pump body (18) and tighten.

5. Install three vane springs (21), spring pins (20) and vanes (19) in rotor (17).
6. Position rotor (17) in pump body (18).
7. Install shaft (4).
8. Install washer (16), new o-ring (15), cover (14) and eight hex head screws (13).
9. Tighten eight hex head screws (13).
10. Install new o-ring (12), new seal washer (11), bearing plate (10) and two pan head screws (9).
11. Tighten two pan head screws (9).
12. Install round head screw (7), wood grip (6) and square nut (5) on crank (8).
13. Position handle assembly (3) on shaft (4).
14. Install lock washer (2) and hex nut (1).
15. Tighten hex nut (1).
16. Install generator container 1,000 gallon fuel tank manual fuel pump. (WP 0074 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER COOLING LOUVERS
CLEANING

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Brush, Wire Scratch (Item 5, WP 0253 00)

Materials/Parts

Rag, Wiping (Item 35, WP 0252 00)
Cleaner (Item 7, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

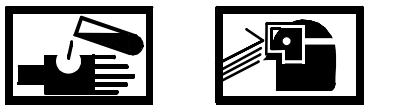
CLEAN GENERATOR CONTAINER COOLING LOUVERS

WARNING

All personnel must wear a personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove debris from the louvers with a wire brush.

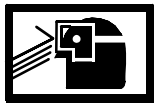
WARNING



2. Apply cleaner to rag and remove all dirt, dust and foreign matter from inside area of louvers, using cleaner sparingly.

WARNING

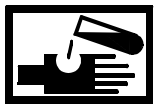
CHEMICAL



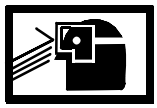
EYE PROTECTION

3. If necessary, use a wire brush and cleaner to remove salt water deposits and corrosion that may have accumulated on the louvers.

WARNING



CHEMICAL



EYE PROTECTION

4. Dispose of contaminated wiping rags in accordance with local procedures.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER COOLING DAMPER AND MOTOR REPLACEMENT

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

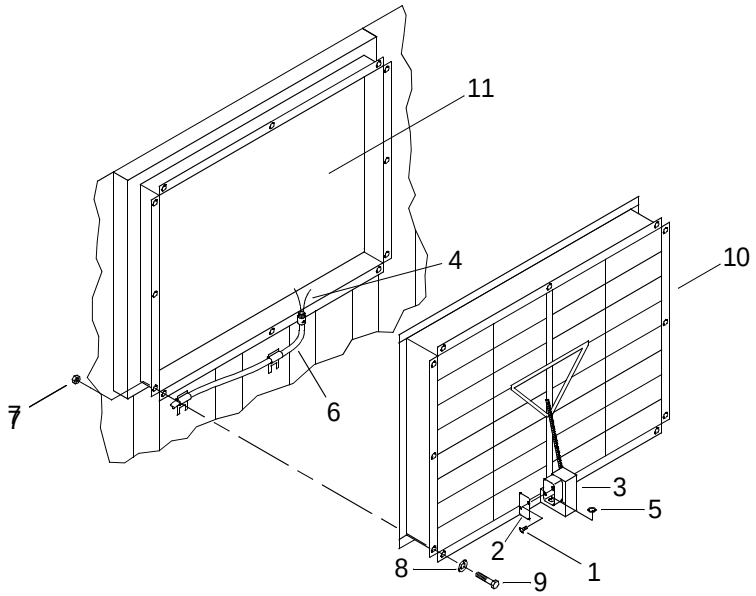
Equipment Condition
Generator Shut Down. (TM 9-6115-642-10,TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER COOLING DAMPER AND MOTOR

NOTE

The following procedure is typical for the removal and installation of all generator container cooling dampers and motors.

1. Remove two screws (1) from louver motor cover (2).



2. Remove louver motor cover (2) from louver motor (3).

3. Tag and disconnect wires (4) from louver motor (3).

4. Remove conduit nut (5) from conduit (6).

5. Remove twelve lock nuts (7), washers (8) and bolts (9) from louver (10).

WARNING

HEAVY PARTS

6. Remove louver (10) from louver opening (11) and discard.

INSTALL GENERATOR CONTAINER COOLING DAMPER AND MOTOR

WARNING

HEAVY PARTS

1. Position new cooling louver (10) in louver opening (11).
2. Install twelve bolts (9), washers (8) and lock nuts (7) in louver (10) and tighten nuts (7).
3. Remove two screws (1) from new louver motor cover (2).
4. Remove louver motor cover (2) from louver motor (3).
5. Connect wires (4) to louver motor (3) and remove tags.
6. Install conduit nut (5) on conduit (6) and tighten nut (5).
7. Position louver motor cover (2) on louver motor (3).
8. Install two screws (1) in louver motor cover (2) and tighten screws (1).
9. Perform operational check of generator container cooling louver. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER FLUORESCENT LIGHT BULBS REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Electrical (Item 15, WP 0253 00)

Materials/Parts

Bulb, Fluorescent
NSN 6240-01-456-7015
(58536)
PN A50597-1

Personnel Required

Seaman 88K

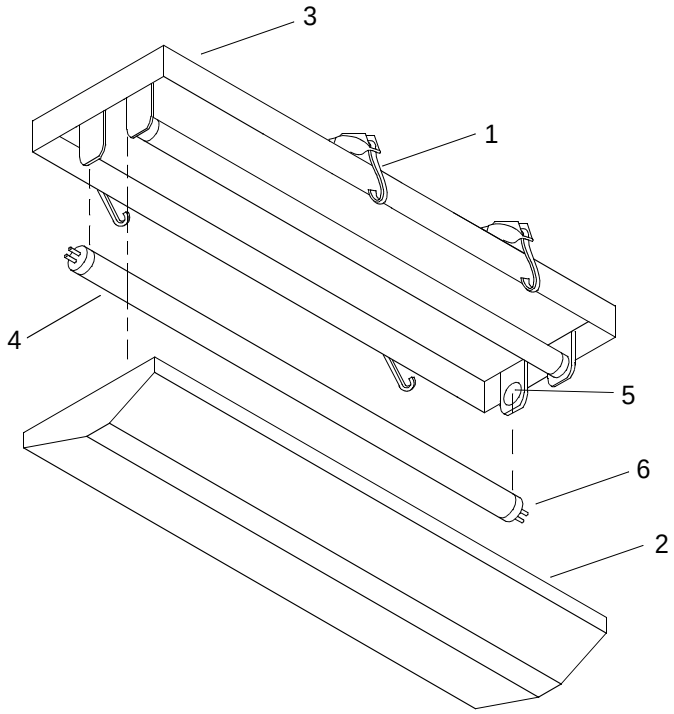
REMOVE GENERATOR CONTAINER FLUORESCENT LIGHT BULBS

NOTE

The following procedure is typical for the removal and installation of all generator shelter fluorescent light bulbs.

1. Verify light switch is in off position.

2. Disengage four latches (1) holding light cover (2) on light fixture (3).



3. Remove light cover (2).

WARNING

HOT AREA

4. Grasp light tube (4) and turn 90° clockwise.
5. Pull down on light bulb (4) and remove from receptacle (5).

INSTALL GENERATOR CONTAINER FLUORESCENT LIGHT BULBS

1. Position new light bulb (4) near receptacle (5).
2. Slide light bulb pins (6) into receptacle (5).
3. Turn light bulb (4) 90° until tube clicks into place.
4. Position light cover (2) over light fixture (3).
5. Engage four latches (1).
6. Turn light switch on and verify light bulb illuminates.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER HOSPITAL GRADE STRAIGHT BLADE ELECTRICAL RECEPTACLE REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Receptacle
(74545)
PN 8200

Personnel Required

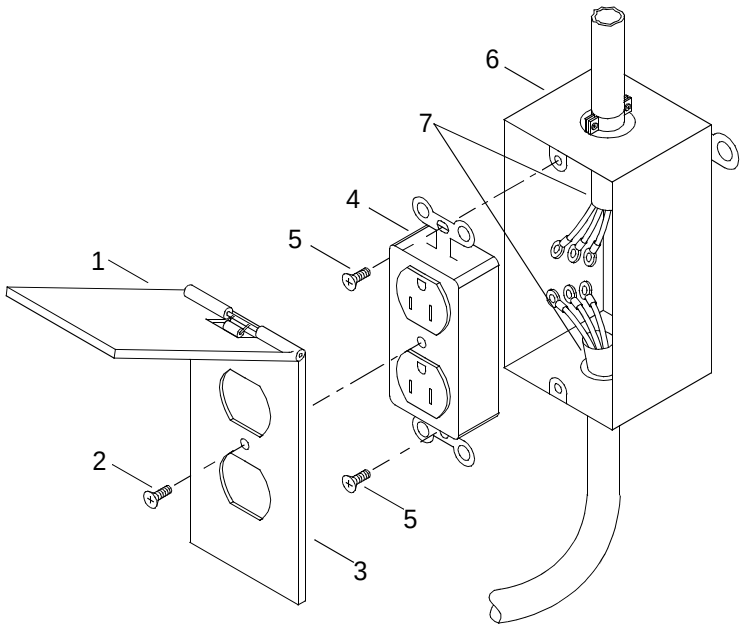
Engineer 88L

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER HOSPITAL GRADE STRAIGHT BLADE ELECTRICAL RECEPTACLE

1. Lift weather cover (1).



2. Remove screw (2) securing receptacle cover (3) to receptacle (4).
3. Remove two screws (5) securing receptacle (4) to circuit box (6).
4. Tag and disconnect wiring (7) from receptacle (4).
5. Discard receptacle (4).

INSTALL GENERATOR CONTAINER HOSPITAL GRADE STRAIGHT BLADE ELECTRICAL RECEPTACLE

1. Connect wiring (7) to new receptacle (4) and remove tags.
2. Install two screws (5) securing receptacle (4) to circuit box (6) and tighten screw (5)
3. Install screw (2) securing receptacle cover (3) to receptacle (4) and tighten screw (2)
4. Close weather cover (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Interrupter, Ground
(74545)
NSN 5925-01-128-6284
PN GF-5352

Personnel Required

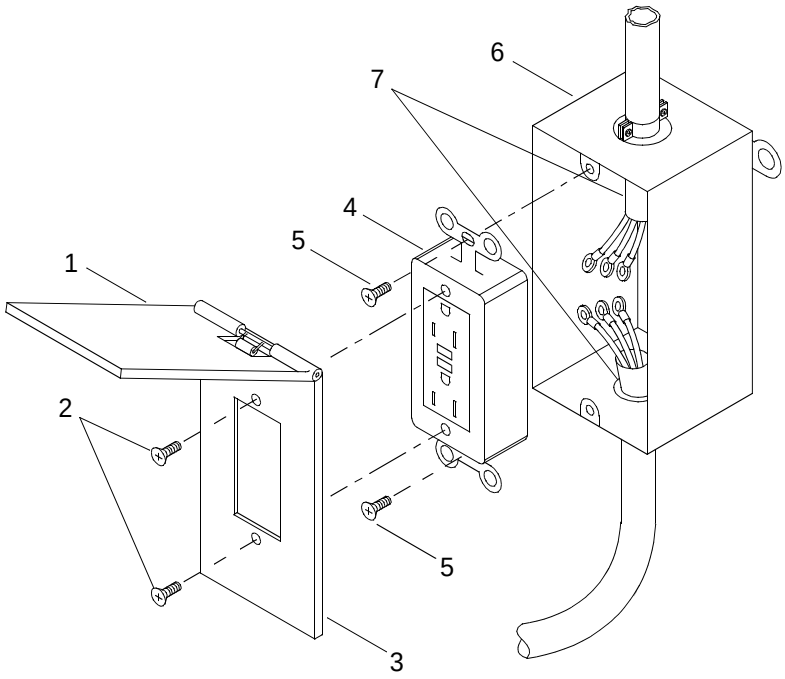
Engineer 88L

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE

1. Lift weather cover (1).



2. Remove two screws (2) securing receptacle cover (3) to GFCI receptacle (4).

3. Remove two screws (5) securing GFCI receptacle (4) to circuit box (6).

4. Tag and disconnect wiring (7) from GFCI receptacle (4).

5. Discard GFCI receptacle (4).

INSTALL GENERATOR CONTAINER GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE

1. Connect wiring (7) to new GFCI receptacle (4) and remove tags.

2. Install two screws (5) securing GFCI receptacle (4) to circuit box (6) and tighten screws (5).

3. Install two screws (2) securing receptacle cover (3) to GFCI receptacle (4) and tighten screws (2).

4. Close weather cover (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER OUTLET BOX
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Conduit, Outlet
(81703)
NSN 5975-01-064-6415
PN 30203

Personnel Required

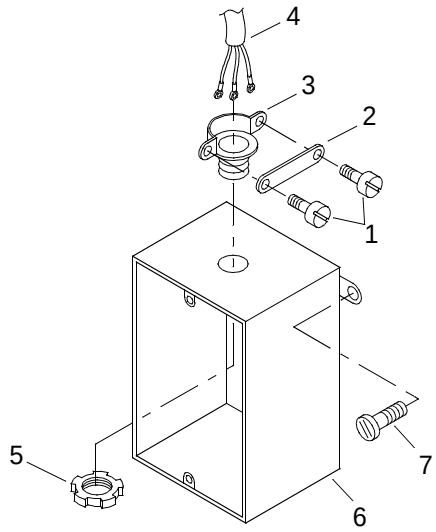
Engineer 88L

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
Hospital Grade Straight Blade Electrical Receptacle Removed. (WP 0079 00)
Ground Fault Circuit Interrupter Receptacle Removed. (WP 0080 00)

REMOVE GENERATOR CONTAINER OUTLET BOX

1. Remove two screws (1) and clamp (2) from strain relief (3).



2. Pull wiring harness (4) out through strain relief (3).
3. Remove spanner nut (5) from strain relief (3).
4. Remove strain relief (3) from junction box (6).
5. Remove two screws (7) securing junction box (6) to bulkhead.
6. Discard junction box (6).

INSTALL GENERATOR CONTAINER OUTLET BOX

1. Position new junction box (6) on bulkhead.
2. Install two screws (7) in junction box (6) and tighten.
3. Install strain relief (3) in junction box (6).
4. Install spanner nut (5) on strain relief (3) and tighten.
5. Push wiring harness (4) through strain relief (3).
6. Install two screws (1) and clamp (2) on strain relief (3), tighten screws (1).
7. Install generator container ground fault circuit interrupter receptacle. (WP 0080 00)
8. Install generator container hospital grade straight blade electrical receptacle. (WP 0079 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER ROTARY BRASS LIGHT SWITCH
REPLACEMENT

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

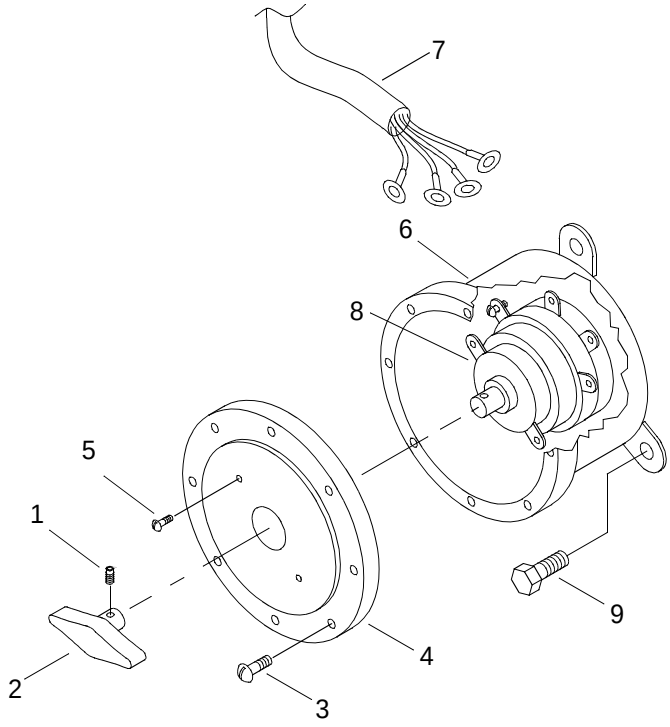
Materials/Parts
Switch, Brass Rotary Snap Type
(81349)
NSN 5930-00-296-5290
PN M157431-002

Personnel Required
Engineer 88L

Equipment Condition
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER ROTARY BRASS LIGHT SWITCH

1. Remove allen head screw (1) from light switch knob (2).



2. Remove eight pan head screws (3) from light switch cover (4).

3. Remove two pan head screws (5) from light switch cover (4).

4. Remove light switch cover (4) from light switch enclosure (6).

5. Tag and disconnect wiring (7) from light switch assembly (8).
6. Remove wiring harness (7) from light switch enclosure (6).
7. Remove three hex head bolts (9) securing light switch enclosure (6) to the wall.
8. Discard light switch enclosure (6).

INSTALL GENERATOR CONTAINER ROTARY BRASS LIGHT SWITCH

1. Position new light switch enclosure and install three hex head bolts (9). Tighten bolts (9).
2. Install wiring harness (7) in light switch enclosure (6).
3. Connect wiring (7) and remove tags on light switch assembly (8).
4. Install light switch cover (4) on enclosure (6).
5. Install two pan head screws (5) in light switch cover (4) and tighten.
6. Install eight pan head screws (3) in light switch cover (4) and tighten.
7. Install switch knob (2) on light switch (8).
8. Install allen head screw (1) in light switch knob (2) and tighten.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER ELECTRICAL LOAD DISTRIBUTION
PANEL ACCESS COVER
REMOVAL AND INSTALLATION

INITIAL SETUP:

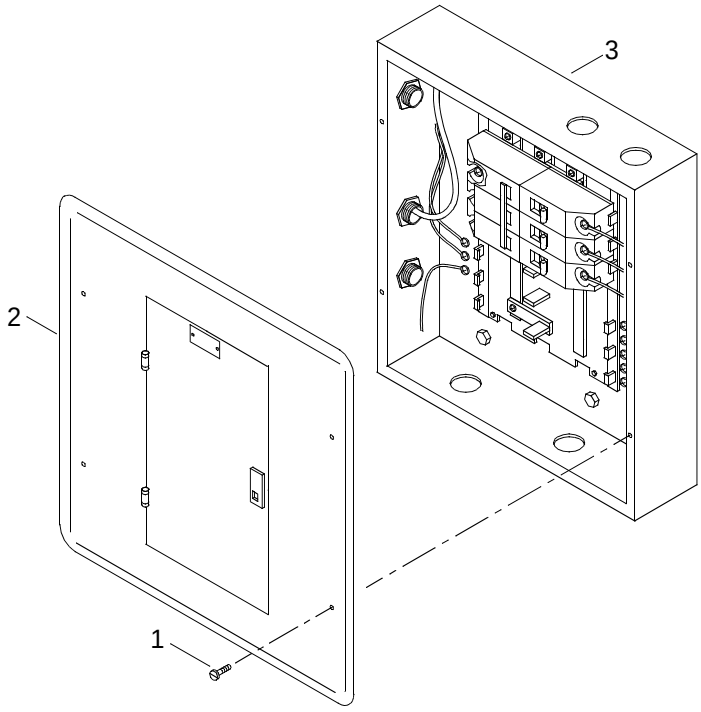
Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Personnel Required
Engineer 88L

Equipment Condition
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE GENERATOR CONTAINER ELECTRICAL LOAD DISTRIBUTION PANEL ACCESS COVER

1. Remove four screws (1) from panel (2).



2. Remove panel (2) from load distribution box (3).

INSTALL GENERATOR CONTAINER ELECTRICAL LOAD DISTRIBUTION PANEL ACCESS COVER

1. Position panel (2) on load distribution box (3).

2. Install four screws (1) through panel (2) and tighten.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER ELECTRICAL LOAD DISTRIBUTION PANEL SINGLE POLE CIRCUIT BREAKER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 16, WP 0253 00)

Materials/Parts

Circuit Breaker
(81340)
NSN 5925-00-967-9874
PN Q0B220
Grease, Silicone Insulated Electric Motor (Item 23, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

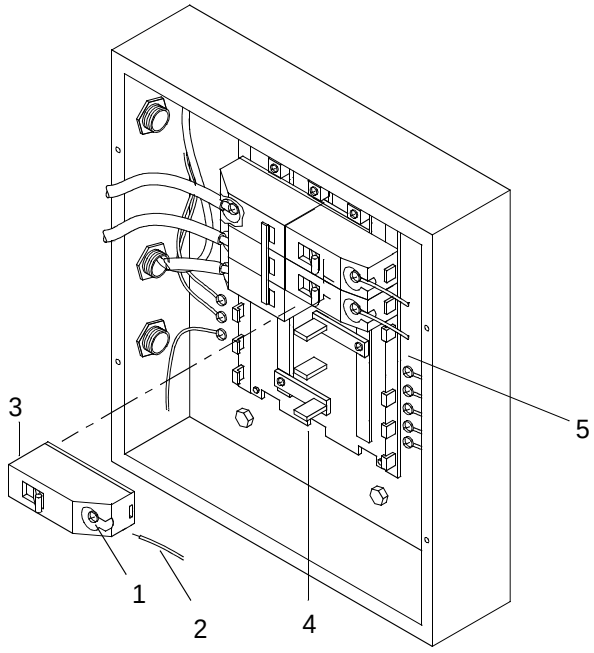
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
Generator Container Electrical Load Distribution Panel Access Cover Removed. (WP 0083 00)

REMOVE GENERATOR CONTAINER ELECTRICAL LOAD DISTRIBUTION PANEL SINGLE POLE CIRCUIT BREAKER

NOTE

The following procedure is typical for the removal and installation of all generator single pole circuit breakers.

1. Loosen screw (1).



2. Tag and pull wire (2) straight out of circuit breaker (3).

3. Firmly grasp circuit breaker (3) at the midline of the load bank (4) and rotate circuit breaker (3) outward from mounting cleat (5) and discard.

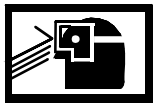
INSTALL GENERATOR CONTAINER ELECTRICAL LOAD DISTRIBUTION PANEL SINGLE POLE CIRCUIT BREAKER

1. Install the back side of the new circuit breaker (3) into mounting cleat (5).

2. Rotate circuit breaker (3) onto the midline of the load bank (4) until it snaps into position.

WARNING

CHEMICAL



EYE PROTECTION

3. Coat wire (2) with dielectric grease.

4. Remove tag and install wire (2) into circuit breaker (3) and remove tags.

5. Tighten screw (1).

6. Install generator container electrical load distribution panel access cover. (WP 0083 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER ELECTRICAL DISTRIBUTION PANEL
THREE POLE CIRCUIT BREAKER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 32, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

Circuit Breaker
(81340)
PN Q0B220SWN
Grease, Silicone Insulated Electric Motor (Item 23, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

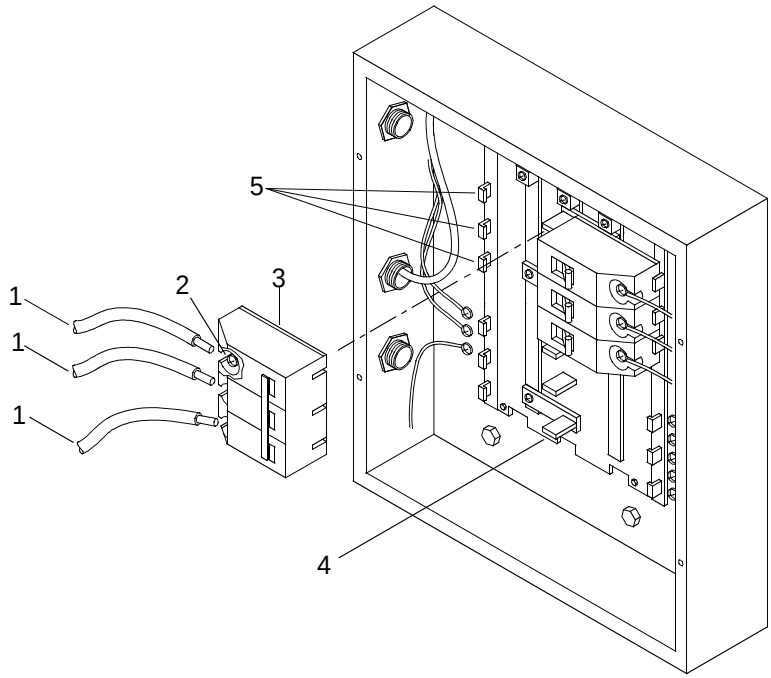
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
Generator Container Electrical Load Distribution Panel Access Cover Removed. (WP 0083 00)

REMOVE GENERATOR CONTAINER ELECTRICAL DISTRIBUTION PANEL THREE POLE CIRCUIT BREAKER

NOTE

The following procedure is typical for the removal and installation of generator container three pole circuit breakers.

1. Tag three wires (1).



2. Loosen three screws (2).

3. Pull wires (1) straight out of circuit breaker (3).

4. Firmly grasp circuit breaker (3) at the midline of the load bank (4), rotate circuit breaker (3) outward and discard.

INSTALL GENERATOR CONTAINER ELECTRICAL DISTRIBUTION PANEL THREE POLE CIRCUIT BREAKER

1. Install the back side of the new circuit breaker (3) into mounting cleats (5).

2. Rotate circuit breaker (3) onto the midline of the load bank (4), until it snaps into position.

WARNING

CHEMICAL **EYE PROTECTION**

3. Coat wires (1) with silicone grease.

4. Install wires (1) into circuit breaker (3) and remove tags.

5. Tighten screws (2).

6. Install generator container electrical load distribution panel access cover. (WP 0083 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER DIRECT CURRENT (DC) LIGHT BULBS REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)

Personnel Required

Seaman 88K

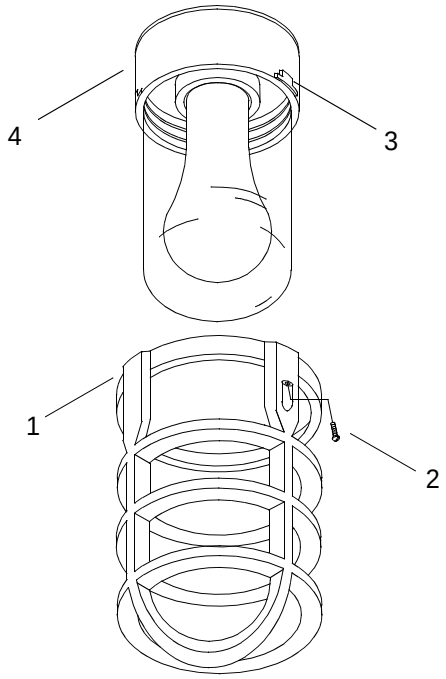
REMOVE GENERATOR CONTAINER DIRECT CURRENT (DC) LIGHT BULBS

NOTE

The following procedure is typical for the removal and installation of all generator direct current light bulbs.

1. Verify light switch is in the off position.

2. Hold globe protective cage (1) and remove screw (2).

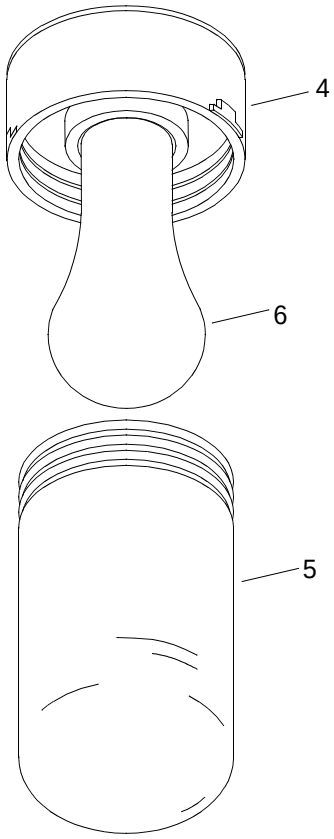


3. Turn globe protective cage (1) counterclockwise until cover is freed from protrusion (3) on base of light fixture (4) and slowly remove.

WARNING

HOT AREA

4. Turn globe (5) counterclockwise until threads are clear of fixture (4).



5. Slowly remove globe (5) from fixture (4).

6. Remove DC light bulb (6) and discard.

INSTALL GENERATOR CONTAINER DIRECT CURRENT (DC) LIGHT BULBS

1. Install new DC light bulb (6) in light fixture (4) and tighten.

2. Slowly slide globe (5) over DC light bulb (6).

3. Turn globe (5) clockwise and tighten.

4. Slowly slide globe protective cage (1) over globe (5).

5. Turn globe protective cage (1) clockwise until protrusions (3) on fixture (4) are not visible and screw holes are aligned.

6. Place screw (2) in hole and tighten hand tight.

7. Turn light switch to on position and verify DC light bulb illuminates.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
GENERATOR CONTAINER FIRE SUPPRESSION SYSTEM BATTERY REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Materials/Parts

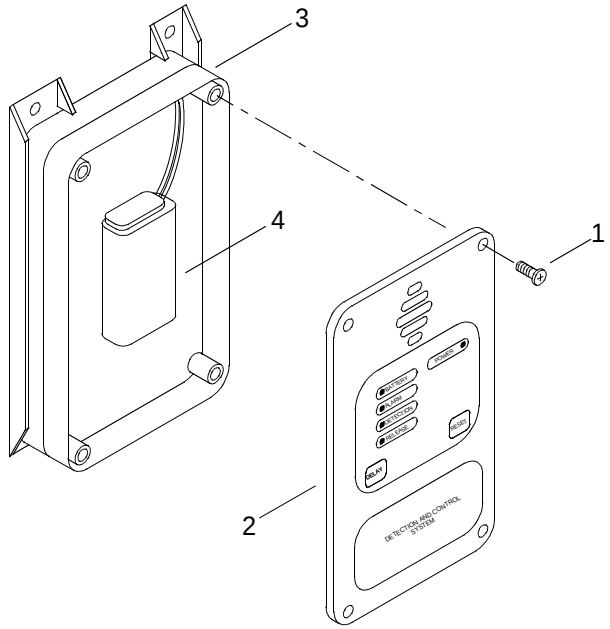
Battery, Non-rechargeable
(51215)
NSN 6135-01-301-8776
PN VE 461-5013-0001

Personnel Required

Seaman 88K

REMOVE GENERATOR CONTAINER FIRE SUPPRESSION SYSTEM BATTERY

1. Remove four screws (1) from cover (2) of module (3).



2. Remove cover (2) from module (3).

3. Remove battery (4) from module (3) and discard.

INSTALL GENERATOR CONTAINER FIRE SUPPRESSION SYSTEM BATTERY

1. Install new battery (4) in module (3).

2. Position cover (2) on module (3).

3. Install four screws (1) in cover (2) of module (3) and tighten.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER SHORE TIE PENETRATION HINGED COVER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

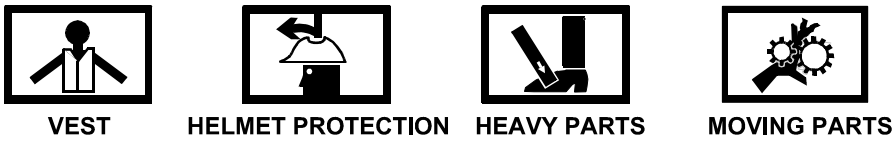
Cover, Assembly
(81340)
PN FC-621-001-128

Personnel Required

Engineer 88L

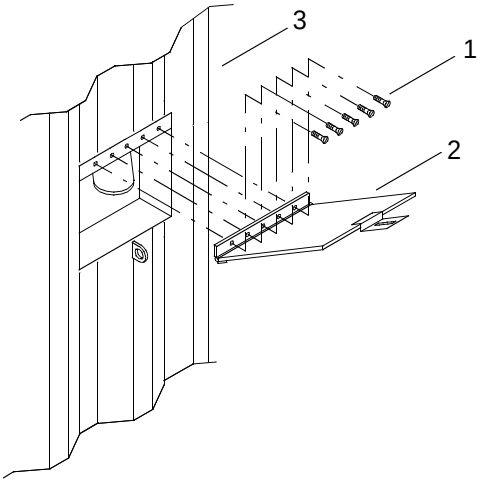
REMOVE PERSONNEL SHELTER SHORE TIE PENETRATION HINGED COVER

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove five cover hinge screws (1) securing the cover (2) to the personnel shelter exterior wall (3).



2. Remove cover (2) and discard.

INSTALL PERSONNEL SHELTER SHORE TIE PENETRATION HINGED COVER

1. Position new cover (2) on the personnel shelter exterior wall (3).

2. Install five screws (1) to secure the hinge (2) to wall (3) and tighten screws.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER INTERIOR DOOR LOCKSET AND HASP REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 43, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Hasp
(81340)
PN 1912A17
Lockset, Door
(81340)
PN Yale LF5302

Personnel Required

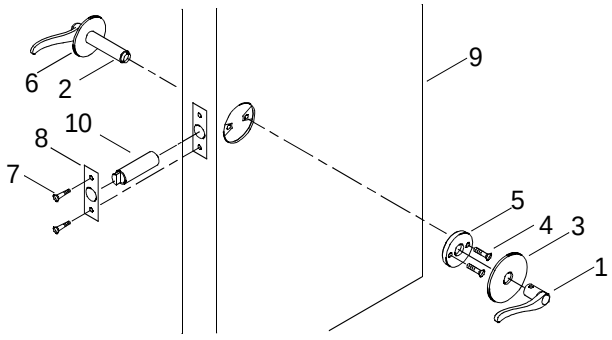
Engineer 88L

REMOVE PERSONNEL SHELTER INTERIOR DOOR LOCKSET

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Using a scribe, release the inner door handle (1) from the lockset (2).



2. Using a screwdriver, pry off the inner cover plate (3).

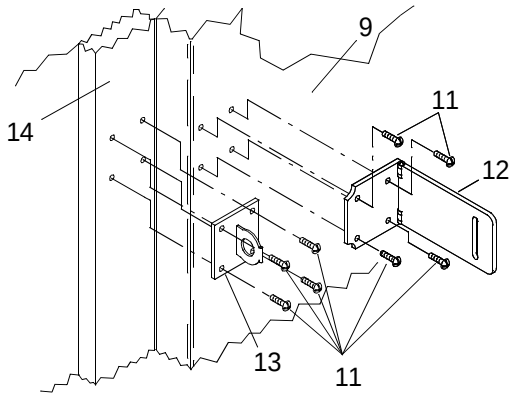
3. Remove two screws (4) securing the interior door plate (5) to the exterior door plate (6) and discard.

4. Remove two screws (7) securing the retaining plate (8) to the side of the door (9).

5. Remove the bolt assembly (10) and lockset (2) from door (9) and discard lockset (2).

REMOVE PERSONNEL SHELTER INTERIOR DOOR HASP

1. Remove four screws (11) from the base of the hinged hasp (12).



2. Remove hasp (12) from interior door (9) and discard.

3. Remove four screws (11) from the base of the lockring (13).

4. Remove lockring (13) from interior door frame (14).

INSTALL PERSONNEL SHELTER INTERIOR DOOR LOCKSET

1. Install new lockset (2) and bolt assembly (10) into the holes in the interior door (9).

2. Install retaining plate (8) over the bolt assembly and secure with two screws (7). Tighten screws (7).

3. Install interior door plate (5) over the lockset (2) and secure to the exterior plate (6) with two screws (4). Tighten screws (4).

4. Snap inner cover plate (3) onto the interior door plate (5).

5. Push interior door handle (1) onto the lockset until it locks in place.

INSTALL PERSONNEL SHELTER INTERIOR DOOR HASP

1. Position new hasp (12) on interior door (9).

2. Install four screws (11) through hasp (12) and into interior door (9) and tighten screws (11).

3. Position lockring (13) on interior door frame (14).

4. Install four screws (11) in base of lockring (13) and into interior door frame (14). Tighten screws (11).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER INTERIOR DOOR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

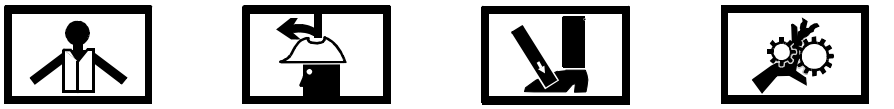
Door, Interior
(81340)
PN FC-621-001-4

Personnel Required

Engineer 88L (2)

REMOVE PERSONNEL SHELTER INTERIOR DOOR

WARNING

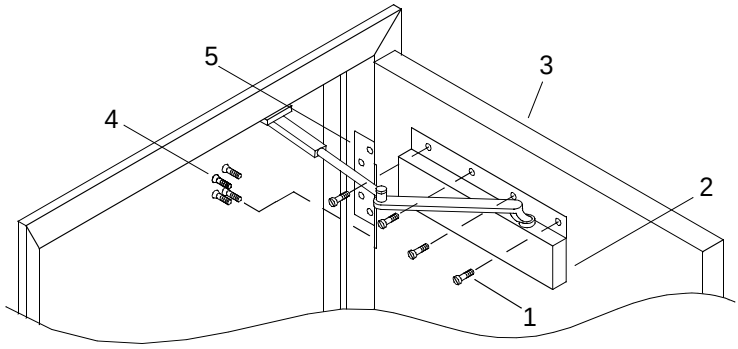


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The door hinges will remain on the door frame during door replacement.

1. Remove four screws (1) securing hydraulic actuator (2) to door (3).



WARNING

HEAVY OBJECTS

2. Using assistant to support weight of door (3), remove four screws (4) on each of three door hinges (5) on door side.

WARNING

HEAVY OBJECTS

3. Remove door (3) and discard.

INSTALL PERSONNEL SHELTER INTERIOR DOOR

WARNING

HEAVY OBJECTS

1. Using assistant to support weight of new door (3), position door (3) on hinges (5).
2. Install four screws (4) in each of hinges (5) and tighten screws.
3. Install four screws (1) to secure hydraulic actuator to door (3) and tighten screws.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER EXTERIOR DOOR HASP REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

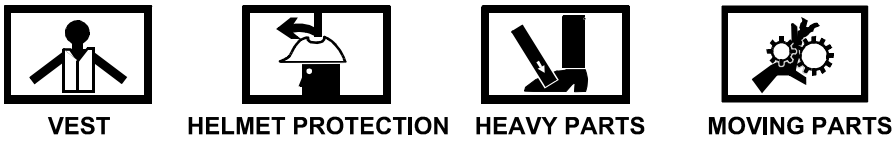
Hasp, Door
(81340)
PN 1912A17

Personnel Required

Engineer 88L

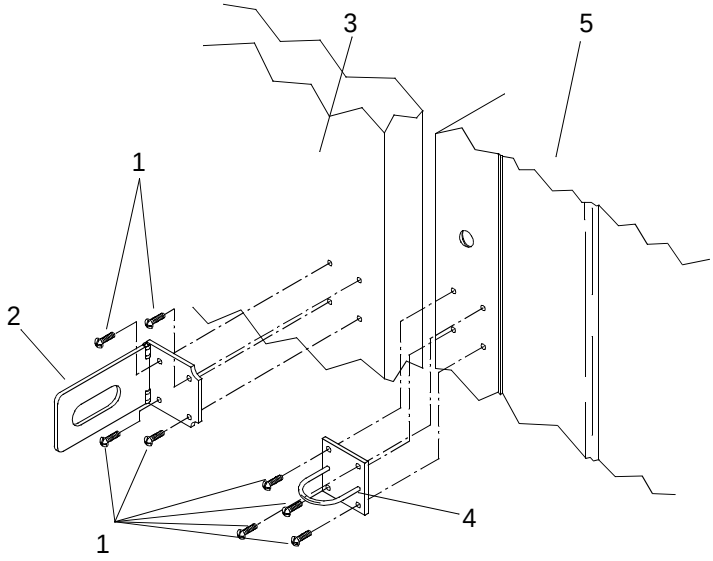
REMOVE PERSONNEL SHELTER EXTERIOR DOOR HASP

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove four screws (1) from base of hinged hasp (2).



2. Remove hinged hasp (2) from door (3) and discard.
3. Remove four screws (1) from lockring (4).
4. Remove lockring (4) from door frame (5).

INSTALL PERSONNEL SHELTER EXTERIOR DOOR HASP

1. Position hinged hasp (2) on door (3).
2. Install four screws (1) in base of hinged hasp (2) and tighten screws (1).
3. Position lockring (4) on door frame (5).
4. Install four screws (1) in base of lockring (4) and tighten screws (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER EXTERIOR DOOR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Door, Weathertight
(06101)
PN FC-621-001-2

Personnel Required

Engineer 88L (2)

Equipment Condition

Personnel Shelter Exterior Door Hasp Removed. (WP 0091 00)

REMOVE PERSONNEL SHELTER EXTERIOR DOOR

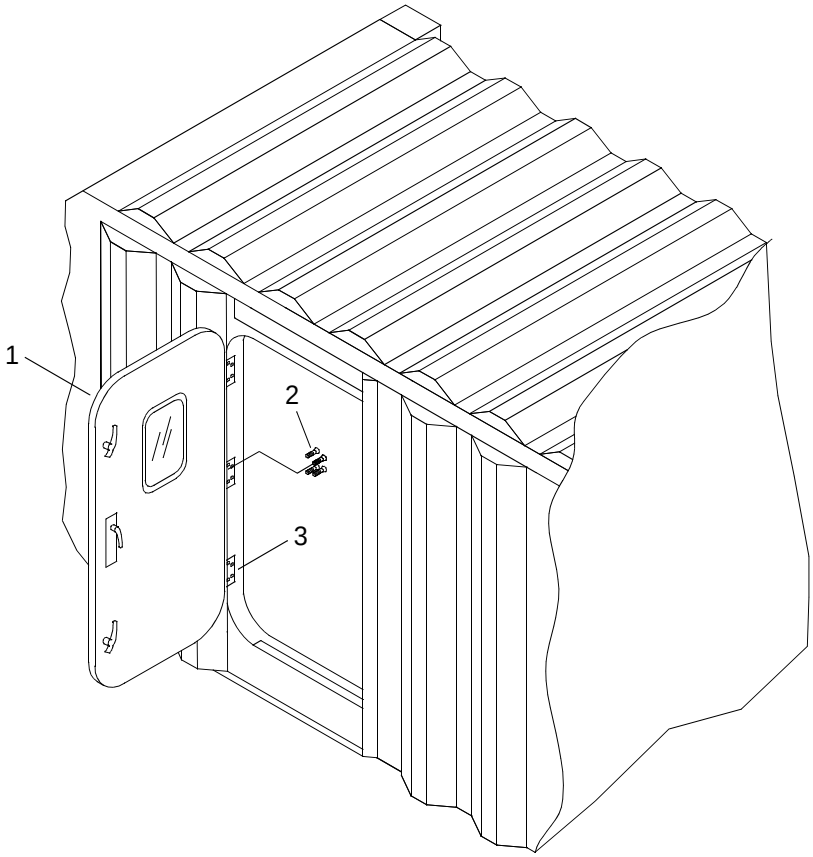
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The hinges will remain on the door frame during door replacement.

1. Using assistant to support weight of door (1), remove four screws (2) on each of three door hinges (3) on door side.



WARNING

HEAVY OBJECTS

2. Remove door (1) and discard.

INSTALL PERSONNEL SHELTER EXTERIOR DOOR

WARNING

HEAVY OBJECTS

1. Position new door (1) on the hinges (3).
2. Install four screws (2) in each of the hinges (3) and tighten.
3. Install personnel shelter exterior door hasp. (WP 0091 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER EXTERIOR DOOR DOGS
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

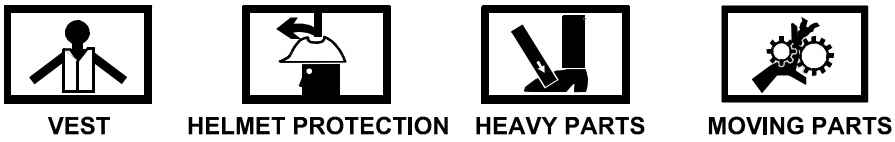
Set, Dog
(06101)
PN FC-621-001-2-DOG

Personnel Required

Engineer 88L

REMOVE PERSONNEL SHELTER EXTERIOR DOOR DOGS

WARNING

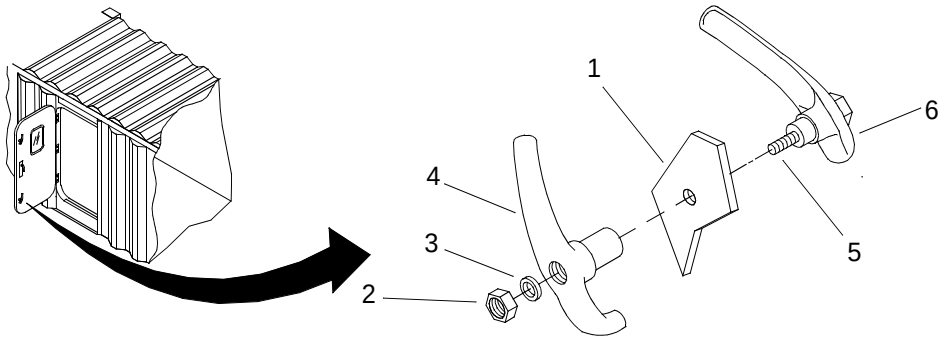


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during CF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of door dogs.

1. On the interior of door (1), remove nut (2) and washer (3) securing the inner dog (4) to the outer dog bolt (5).



2. Remove outer door dog (6) with attached bolt (5) from door (1) and discard.

INSTALL PERSONNEL SHELTER EXTERIOR DOOR DOGS

1. Position new outer door dog (6) with attached bolt (5) into door (1).
2. Position inner dog (4) onto outer dog bolt (5).
3. Install washer (3) and nut (2) on outer dog bolt (5) and tighten nut (2).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER HAND LANTERN MOUNTING BRACKET
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Materials/Parts

Assembly, Bracket
(81349)
PN M16377-53-003
NSN 6230-00-968-7831

Holder, Light
(81349)
PN M16377/54-2438
NSN 6230-00-578

O-Ring
(96906)
PN MS28775-001
NSN 5331-00-582-2133
Qty 2

Personnel Required

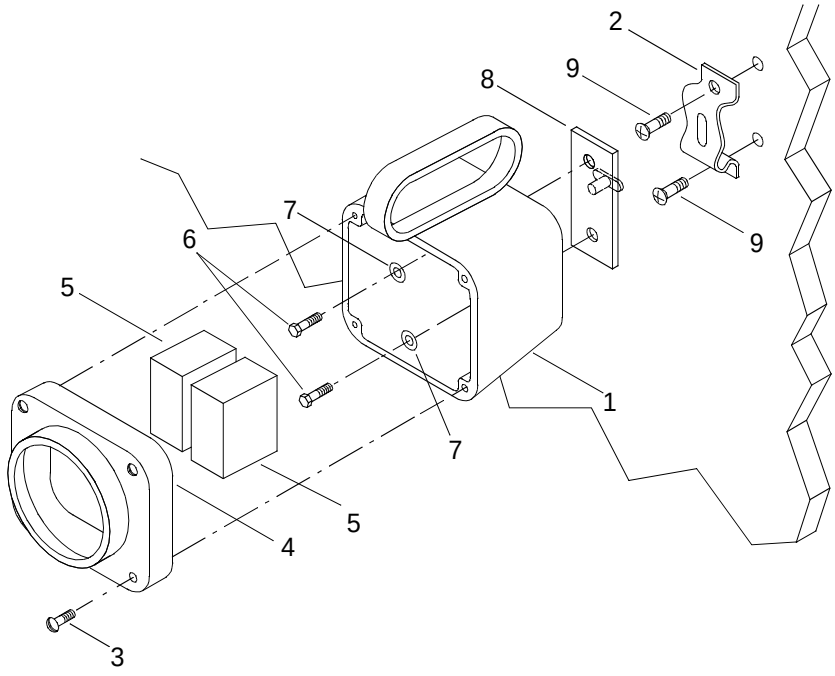
Engineer 88L

REMOVE PERSONNEL SHELTER HAND LANTERN MOUNTING BRACKET

NOTE

The following procedure is typical for all personnel shelter hand lantern mounting brackets.

1. Rotate hand lantern (1) 90° and remove from mounting bracket (2).



2. Loosen four captive screws (3) on cover (4).
3. Remove cover (4).
4. Place hand lantern (1) face up on the work bench.
5. Remove batteries (5).
6. Remove two hex head bolts (6) and o-rings (7) from bracket (8).
7. Discard o-rings (7) and bracket (8).
8. Remove two screws (9) securing mounting bracket (2) to bulkhead.
9. Discard mounting bracket (2).

INSTALL PERSONNEL SHELTER HAND LANTERN MOUNTING BRACKET

1. Position new mounting bracket (2) on bulkhead.
2. Install two screws (9) securing mounting bracket (2) to the wall
3. Tighten screws (9).
4. Position new bracket (8) on the back of hand lantern (1).
5. Install two hex head bolts (6) and new o-rings (7) through hand lantern (1) into bracket (8).
6. Tighten hex head bolts (6).
7. Install batteries (5).
8. Position cover (4) on hand lantern (1).
9. Install four screws (3) through cover (4) and into hand lantern (1).
10. Tighten four captive screws (3).
11. Position hand lantern (1) on mounting bracket (2) and rotate 90°.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER SHORE TIE MALE ELECTRICAL CONNECTOR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Connector, Male
(0FDK5)
PN 33-91167-2707-HP

Personnel Required

Engineer 88L (2)

Equipment Condition

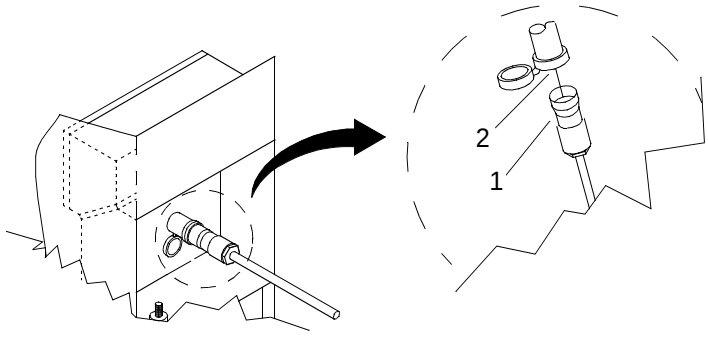
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE PERSONNEL SHELTER SHORE TIE MALE ELECTRICAL CONNECTOR

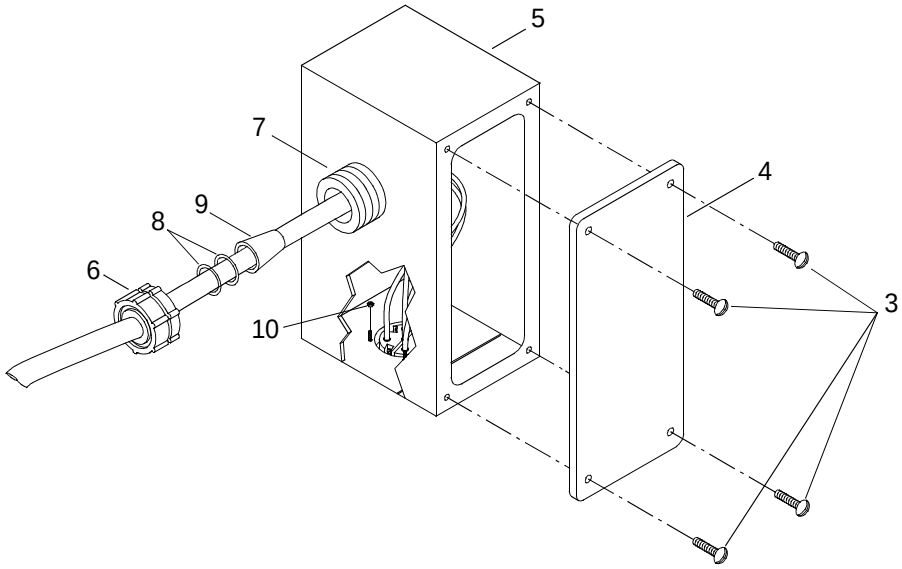
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rotate power cable connector (1) counterclockwise ¼ turn and disconnect from personnel shelter shore tie male electrical connector (2).



2. Inside personnel shelter, remove four screws (3) from shore tie junction box cover (4).



3. Remove shore tie junction box cover (4) from junction box (5).

4. Rotate stuffing tube packing retainer cap (6) counterclockwise and slide away from nylon stuffing tube (7).

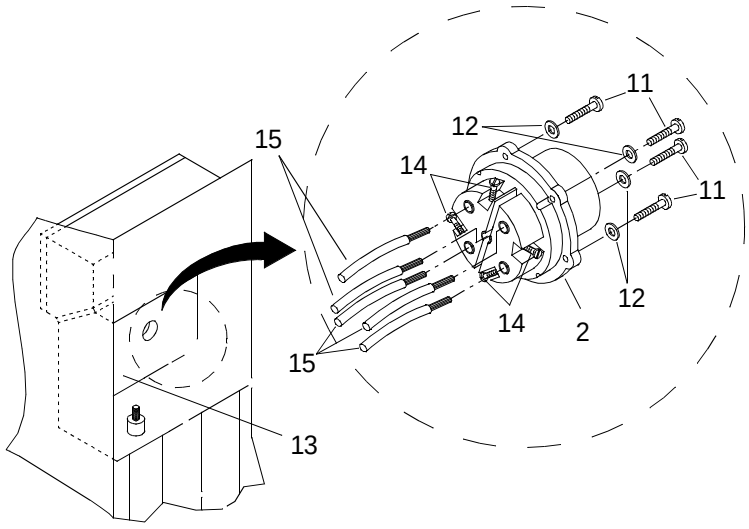
5. Slide plastic packing washers (8) and stuffing tube packing (9) away from nylon stuffing tube (7).

NOTE

Due to mounting arrangement of personnel shelter shore tie male connector, two persons will be required to perform this step.

6. Remove four nuts (10) from junction box (5).

7. Remove four screws (11) and plastic washers (12) from personnel shelter shore tie male connector (2).



8. Pull personnel shelter shore tie male connector (2) outward from shore tie recess pocket (13).

9. Loosen five screws (14) on back of personnel shelter shore tie male connector (2).

10. Tag and remove wires (15) from personnel shelter shore tie male connector (2).

11. Remove personnel shelter shore tie male connector (2) and discard.

INSTALL PERSONNEL SHELTER SHORE TIE MALE ELECTRICAL CONNECTOR

1. Install wires (15) in new personnel shelter shore tie male connector (2) and remove tags.

2. Tighten five screws (14) on back of personnel shelter shore tie male connector (2).

3. Position personnel shelter shore tie male connector (2) in shore tie recess pocket (13).

4. Install four plastic washers (12) and screws (11) in personnel shelter shore tie male connector (2).

5. Inside personnel shelter, install four nuts (10) in junction box (5) and tighten.

6. Slide stuffing tube packing (9) and plastic packing washers (8) into nylon stuffing tube (7).

7. Slide stuffing tube packing retainer cap (6) onto nylon stuffing tube (7).

8. Rotate retainer cap (6) clockwise and tighten.

9. Position personnel shore tie junction box cover (4) on junction box (5), install four screws (3). Tighten screws (3).

10. Rotate power cable connector (1) clockwise ¼ turn and connect to personnel shelter shore tie male electrical connector (2).

END OF WORK PACKAGE

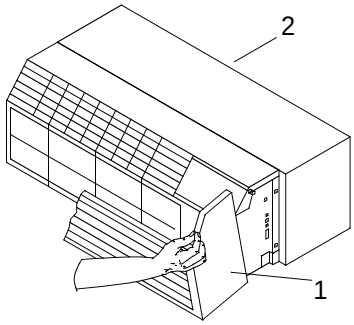
UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM FRONT COVER
REMOVAL AND INSTALLATION

INITIAL SETUP:

Personnel Required
Engineer 88L

REMOVE HEATING AND AIR CONDITIONING SYSTEM FRONT COVER

1. Verify air conditioning switch is in the off position.
2. Grasp front cover (1) firmly near the top of each side.



NOTE

It is not necessary to use excessive force when removing the front cover.

3. Lift upward and pull outward to remove the front cover (1) from heating and air conditioning unit (2).

INSTALL HEATING AND AIR CONDITIONING SYSTEM FRONT COVER

1. Grasp front cover (1) firmly near the top of each side.

NOTE

It is not necessary to use excessive force when installing the front cover.

2. Align front cover (1) with the bottom mounting edge of heating and air conditioning unit (2) and push inward until cover snaps into place.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM INDOOR AIR FILTER
REMOVAL, CLEANING, INSPECTION AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Brush Stencil, Soft Bristle (Item 4, WP 0253 00)
Cleaner, Vacuum, Electric (Item 7, WP 0253 00)

Materials/Parts

Cleaner (Item 7, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

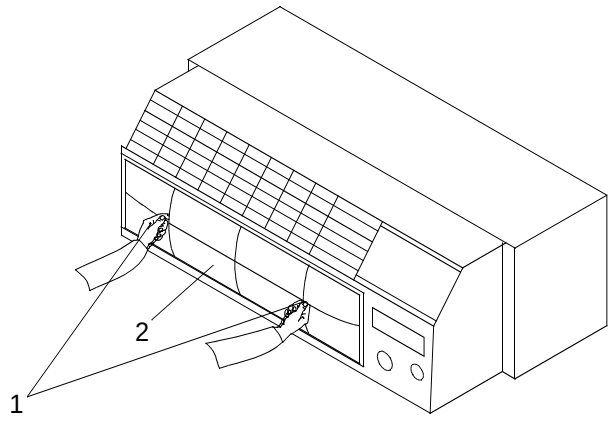
Heating And Air Conditioning System Front Cover Removed. (WP 0096 00)

REMOVE HEATING AND AIR CONDITIONING SYSTEM INDOOR AIR FILTER

NOTE

Do not use excessive force when removing or installing the air filter.

1. Gently grasp the two air filter tabs (1).

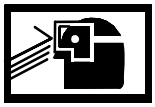


2. Push downward and pull outward to remove the air filter (2).

CLEAN HEATING AND AIR CONDITIONING SYSTEM INDOOR AIR FILTER

1. With air filter removed from unit, use vacuum cleaner to remove any dust or debris from filter.

WARNING

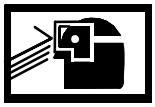


EYE PROTECTION

CHEMICAL

2. If necessary, use cleaner type II and a soft bristle brush to gently wash filter.

WARNING



EYE PROTECTION

CHEMICAL

3. Remove cleaner residue with a gentle flow of water.

4. Allow filter to air dry.

INSPECT HEATING AND AIR CONDITIONING SYSTEM INDOOR AIR FILTER

1. Inspect filter for holes. None allowed. If found, replace filter.

2. Inspect filter for tears. None allowed. If found, replace filter.

INSTALL HEATING AND AIR CONDITIONING SYSTEM INDOOR AIR FILTER

1. Gently grasp the two air filter tabs (1).

2. Align the air filter (2) with the bottom mounting edge and push inward until the air filter snaps into place.

3. Install heating and air conditioning system front cover. (WP 0096 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM CHASSIS
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Personnel Required

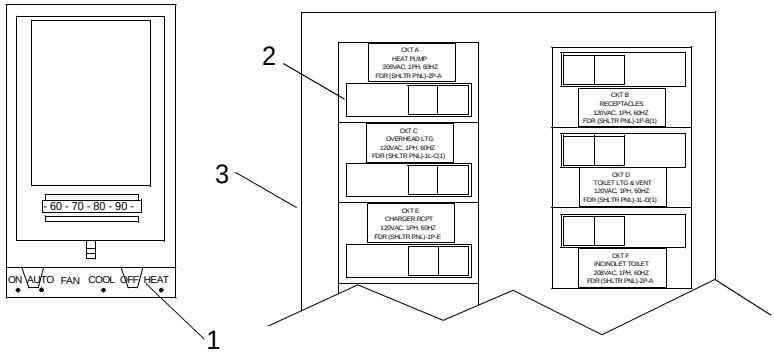
Engineer 88L (2)

Equipment Condition

Heating And Air Conditioning System Front Cover Removed. (WP 0096 00)
Heating And Air Conditioning System Indoor Air Filter Removed. (WP 0097 00)

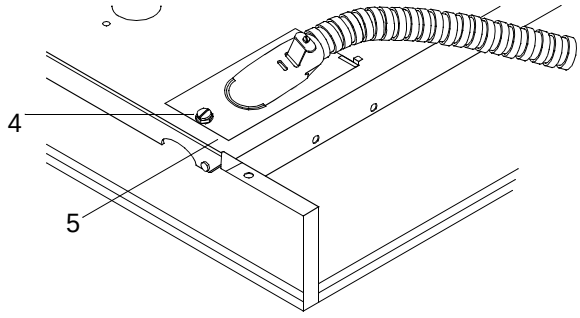
REMOVE HEATING AND AIR CONDITIONING SYSTEM CHASSIS

1. Switch mode selector switch (1) to OFF position.



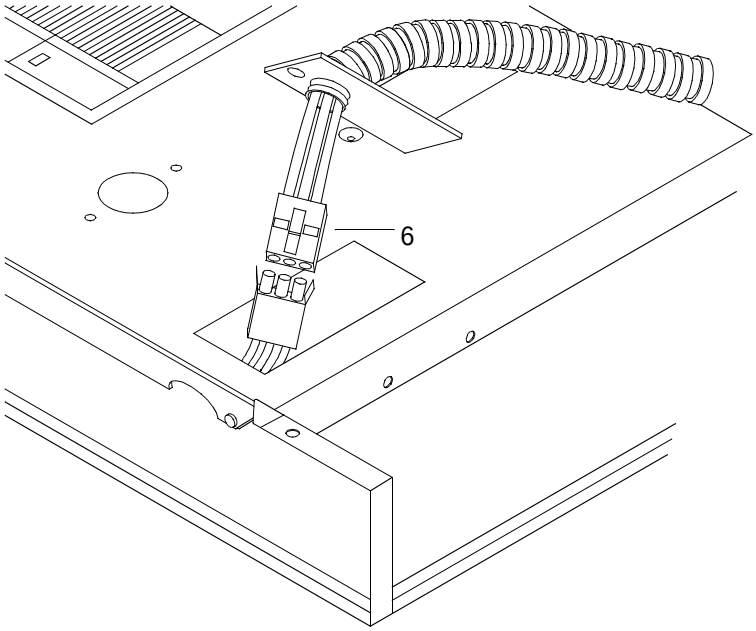
2. Open CKT A HEAT PUMP circuit breaker (2) in shelter electrical distribution panel (3).

3. Remove screw (4) from access cover (5).



4. Remove access cover (5).

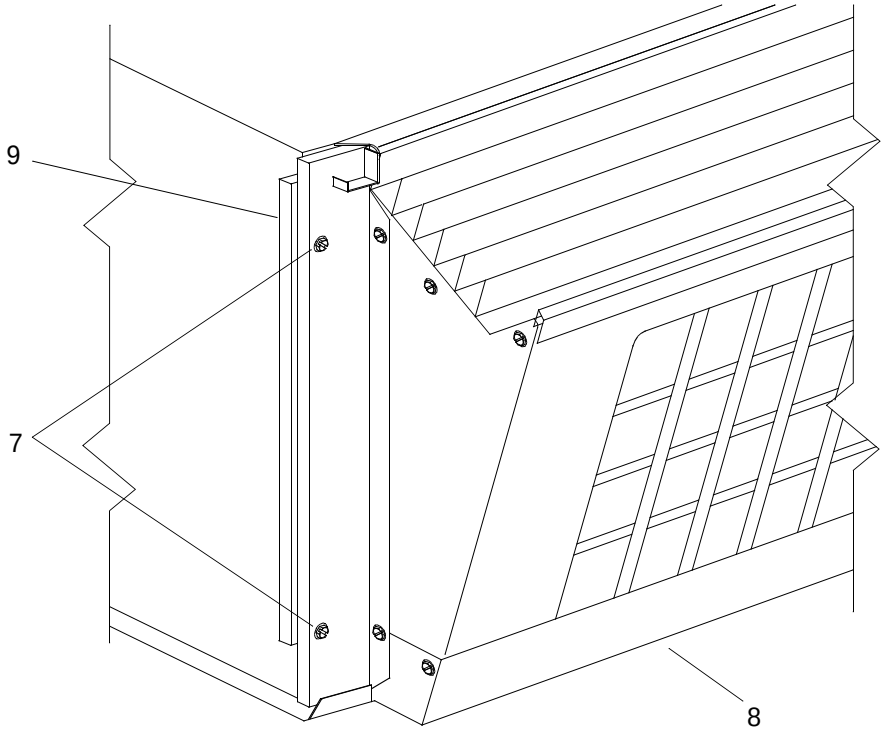
5. Pull out the plug assembly (6) and disconnect.



WARNING

HEAVY OBJECTS

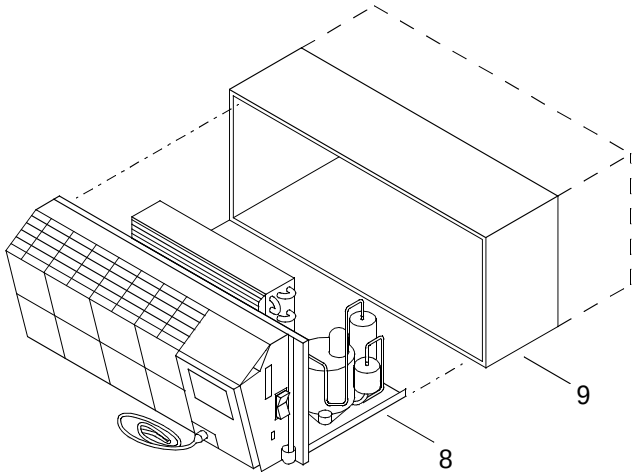
6. Remove the four 1¾ in. mounting screws (7) that secure the unit chassis (8) to the wall sleeve (9).



WARNING

HEAVY OBJECTS

7. Grasp the sides of the unit chassis (8) and slide it from the wall sleeve (9).



INSTALL HEATING AND AIR CONDITIONING SYSTEM CHASSIS

WARNING

HEAVY OBJECTS

1. Grasp the sides of the unit chassis (8) and slide into wall sleeve (9).
2. Install four 1¾ in. mounting screws (7) that secure the unit chassis (8) to the wall sleeve (9).
3. Connect power plug assembly (6) and stow.
4. Align access cover (5) and install screw (4) in access cover (5).
5. Tighten screw (4).
6. Install heating and air conditioning system indoor air filter. (WP 0097 00)
7. Install heating and air conditioning system front cover. (WP 0096 00)
8. Close CKT A HEAT PUMP circuit breaker (2) in personnel shelter electrical load distribution panel (3).
9. Move mode selector switch (1) to desired position.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM VENT AIR FILTER
REMOVAL, CLEANING, INSPECTION AND INSTALLATION

INITIAL SETUP:

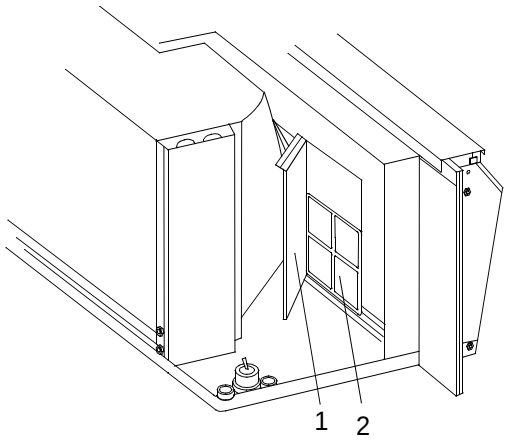
Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Brush, Stencil (Soft Bristle) (Item 4, WP 0253 00)

Materials/Parts
Cleaner (Item 7, WP 0252 00)

Personnel Required
Engineer 88L

REMOVE HEATING AND AIR CONDITIONING SYSTEM VENT AIR FILTER

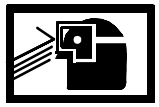
1. Pull vent door (1) open.



2. Remove vent air filter (2) by gently pushing on the filter slot.

CLEAN HEATING AND AIR CONDITIONING SYSTEM VENT AIR FILTER

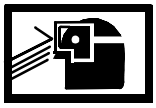
WARNING


EYE PROTECTION


CHEMICAL

1. Clean air vent filter (2) using a soft bristle brush and cleaner.

WARNING



EYE PROTECTION

CHEMICAL

2. Remove detergent residue with clean fresh water and allow vent air filter (2) to air dry.

INSPECT HEATING AND AIR CONDITIONING SYSTEM VENT AIR FILTER

1. Inspect air vent filter for debris. If found, repeat cleaning steps.

2. Inspect air vent filter for tears or deterioration. If found, replace air vent filter.

INSTALL HEATING AND AIR CONDITIONING SYSTEM VENT AIR FILTER

1. Install vent air filter (2) in track behind vent door (1) by engaging filter slot.

2. Close vent door (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM SIDE ANGLE
REMOVAL AND INSTALLATION

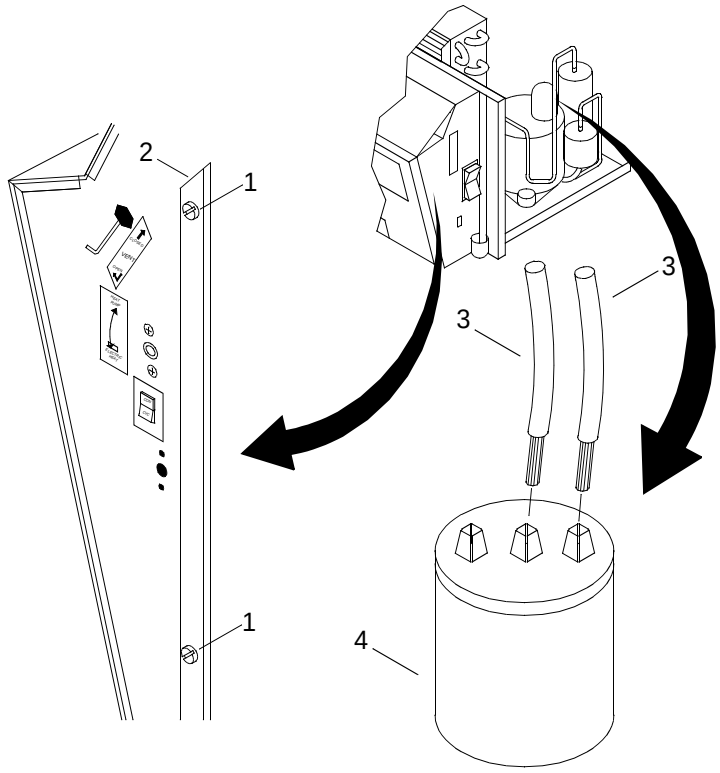
INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Personnel Required
Utilities Equipment Repairer 52C

REMOVE HEATING AND AIR CONDITIONING SYSTEM SIDE ANGLE

1. Remove two screws (1) from each side angle (2).



2. Remove side angle (2) from chassis.

3. Tag and disconnect wires (3) from capacitor (4).

INSTALL HEATING AND AIR CONDITIONING SYSTEM SIDE ANGLE

1. Connect wires (3) to capacitor (4) and remove tags.

2. Position side angle (2) on chassis.

3. Install two screws (1) through each side angle (2) and secure to chassis. Tighten screws (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM DISCHARGE DECK
REMOVAL AND INSTALLATION

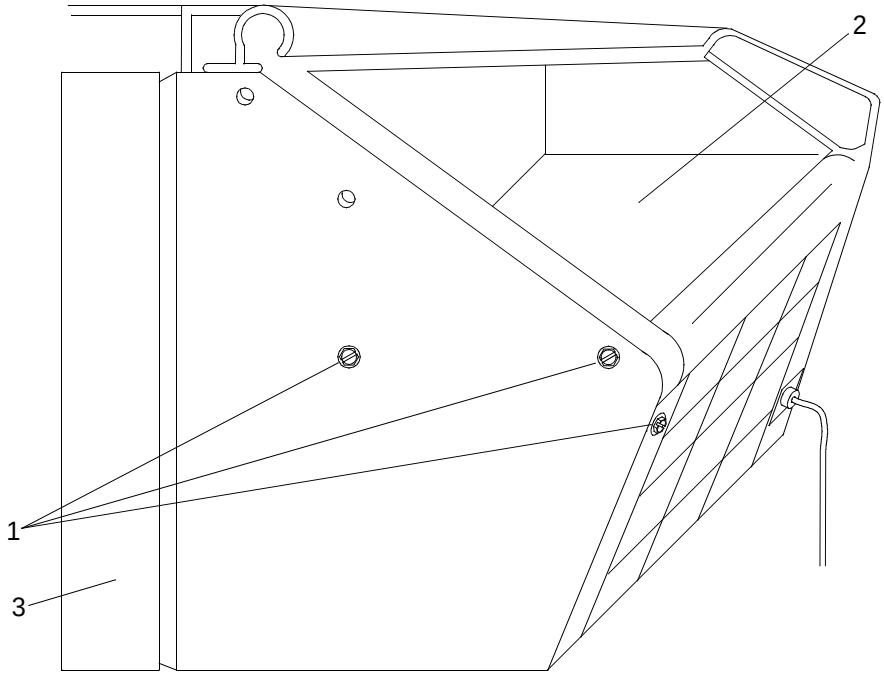
INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP WP 0253 00)

Personnel Required
Engineer 88L (2)

REMOVE HEATING AND AIR CONDITIONING SYSTEM DISCHARGE DECK

1. Remove six screws (1) mounting discharge deck (2) to chassis (3).



WARNING

HEAVY OBJECTS

NOTE

The discharge deck is awkward. Two persons may be required for its removal.

2. Remove discharge deck (2) from chassis (3) by lifting discharge deck (2) straight up and out.

INSTALL HEATING AND AIR CONDITIONING SYSTEM DISCHARGE DECK

WARNING

HEAVY OBJECTS

NOTE

The discharge deck is awkward. Two persons may be required for its installation.

1. Position discharge deck (2) in chassis (3).
2. Install six screws (1) and tighten.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM FAN AND STATOR
CLEANING AND INSPECTION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Brush, Stencil (Soft Bristle) (Item 4, WP 0253 00)
Sprayer, Pesticide (Item 49, WP 0253 00)

Materials/Parts

Cloth, Cleaning (Item 12, WP 0252 00)
Hydrogen Peroxide, Topical Solution (Item 26, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

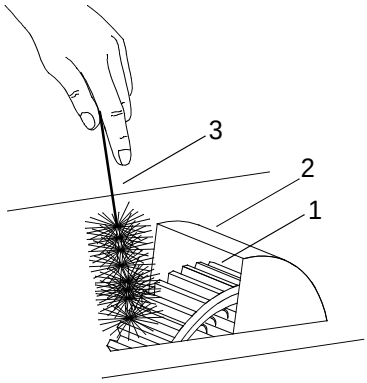
Equipment Condition

Heating And Air Conditioning System Side Angle Removed. (WP 0100 00)
Heating And Air Conditioning System Discharge Deck Removed. (WP 0096 00)

CLEAN HEATING AND AIR CONDITIONING SYSTEM FAN AND STATOR

1. Clean fan blower wheel (1).

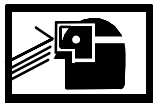
   a. Place wiping rag between the fan blower wheel (1) and opening (2) to catch any debris that may fall through the cracks.



   b. Use soft bristle brush (3) to clean between fan blower wheel (1).

WARNING

CHEMICAL

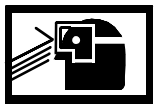


EYE PROTECTION

c. Fill spray bottle (4) with a solution of 3% hydrogen peroxide and water.

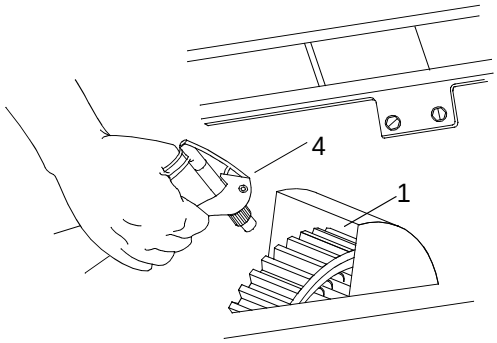
WARNING

CHEMICAL



EYE PROTECTION

d. Use a spray bottle (4) to lightly coat the fan blower wheel (1) with the solution.

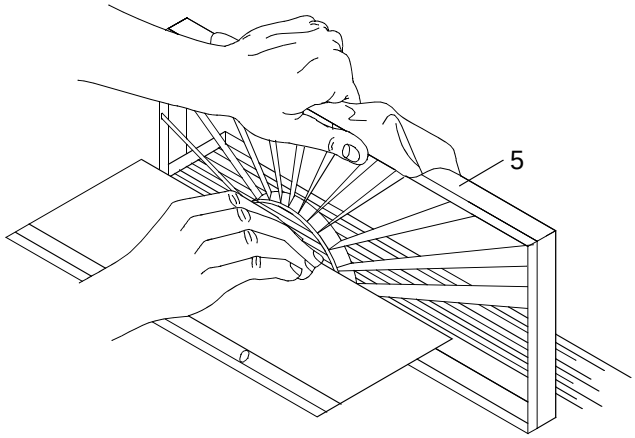


e. Use cloth to clean fan blower wheel (1) and to wipe up any excess solution.

f. Remove wiping rag and discard.

2. Clean stator (5).

a. Using cloth, wipe dirt and debris from stator (5).



b. Flush with clean fresh water and wipe dry.

INSPECT HEATING AND AIR CONDITIONING SYSTEM FAN AND STATOR

1. Inspect fan assembly for broken blower wheel blades (1). Replace damaged items.
2. Inspect stator (5) for cracked or broken vanes. None are allowed. Replace damaged items.
3. Inspect stator (5) for pitting or deterioration. None are allowed. Replace damaged items.
4. Install heating and air conditioning system discharge deck. (WP 0096 00)
5. Install heating and air conditioning system side angles. (WP 0100 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM
CAPILLARY TUBE AND STRAINER
CLEANING AND INSPECTION

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

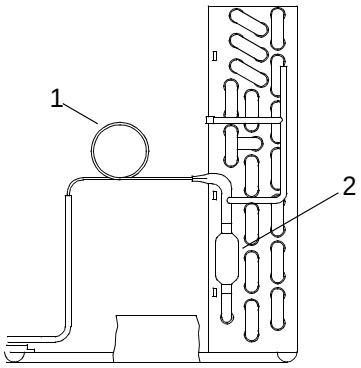
Materials/Parts
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required
Utilities Equipment Repairer 52C

Equipment Condition
Heating And Air Conditioning System Front Cover Removed. (WP 0096 00)
Heating And Air Conditioning System Indoor Air Filter Removed. (WP 0097 00)
Heating And Air Conditioning System Chassis Removed From Wall Sleeve. (WP 0098 00)

CLEAN HEATING AND AIR CONDITIONING SYSTEM CAPILLARY TUBE AND STRAINER

1. Using rag, wipe dirt and debris from capillary tube (1) and strainer (2) area.



2. Flush with clean, fresh water and wipe dry using a rag.

INSPECT HEATING AND AIR CONDITIONING SYSTEM CAPILLARY TUBE AND STRAINER

1. Inspect capillary tube (1) and strainer (2) area for evidence of leaking, excessive bend, kinking, bulging, corrosion or other damage.

2. Contact general support maintenance if visual inspection uncovers evidence of leaking, excessive bend, kinking, bulging, corrosion or other damage.

3. Install heating and air conditioning system chassis removed in wall sleeve. (WP 0098 00)

4. Install heating and air conditioning system indoor air filter. (WP 0097 00)

5. Install heating and air conditioning system front cover. (WP 0096 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER THERMOSTAT
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Level, Spirit (Item 24, WP 0253 00)

Materials/Parts

Switch, Thermostatic
(10855)
NSN 5930-01-411-9735
PN HH01AD045

Personnel Required

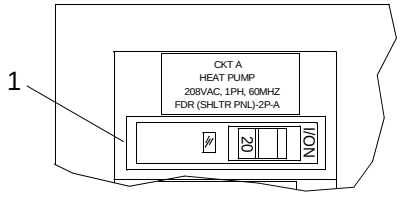
Engineer 88L

References

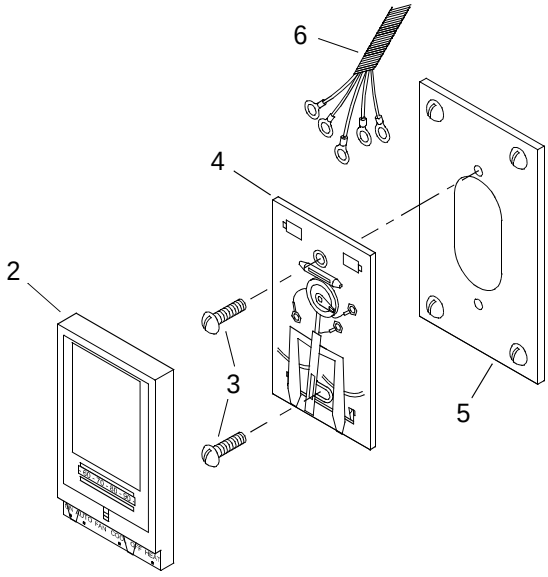
TM 55-1945-205-10-4

REMOVE PERSONNEL SHELTER THERMOSTAT

1. Position circuit breaker A (1) on the electrical distribution panel board to OFF.



2. Remove cover (2) and discard.



3. Remove two screws (3) from thermostat (4).
4. Remove thermostat (4) from mounting surface (5).
5. Tag wires (6) and disconnect from thermostat (4).
6. Dispose of thermostat (4) in accordance with local procedures.

INSTALL PERSONNEL SHELTER THERMOSTAT

1. Connect wires (6) to new thermostat (4) and remove tags.
2. Position thermostat (6) on mounting surface (5).
3. Install two screws (3) in thermostat (4).
4. Using a spirit level, verify that thermostat (4) is level.
5. Tighten screws (3).
6. Install new cover (2).
7. Position circuit breaker A (1) on the electrical distribution panel board to ON.
8. Perform operational check of personnel shelter thermostat. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM FAN MOTOR
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)

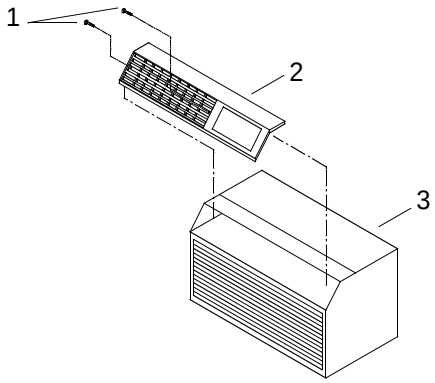
Personnel Required
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

Equipment Condition
Heating And Air Conditioning System Front Cover Removed. (WP 0096 00)

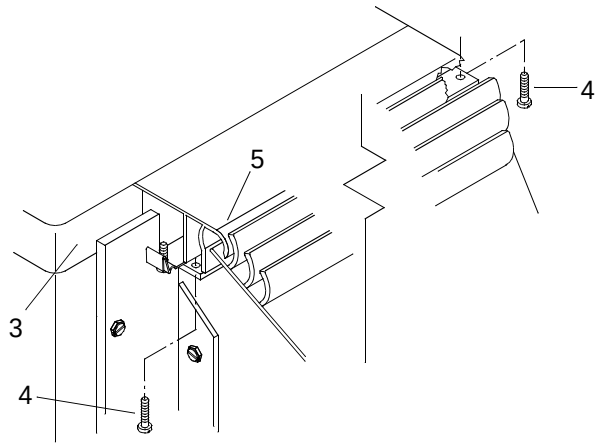
REMOVE HEATING AND AIR CONDITIONING SYSTEM FAN MOTOR

1. Remove two screws (1) from air discharge grille (2).



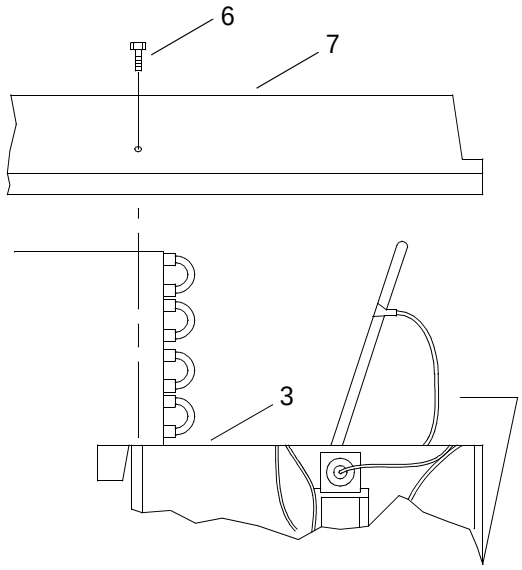
2. Remove air discharge grille (2) from chassis (3).

3. Remove two screws (4) from top panel (5).



4. Remove top panel (5) from chassis (3).

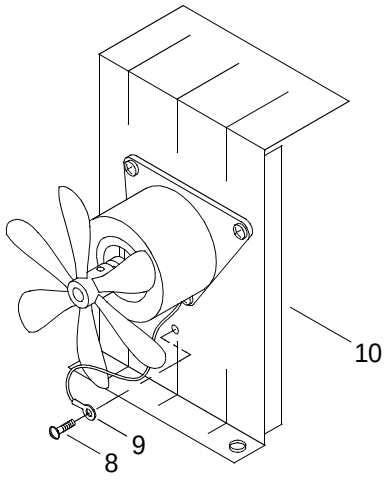
5. Remove screw (6) from top cover (7).



6. Remove top cover (7) from chassis (3).

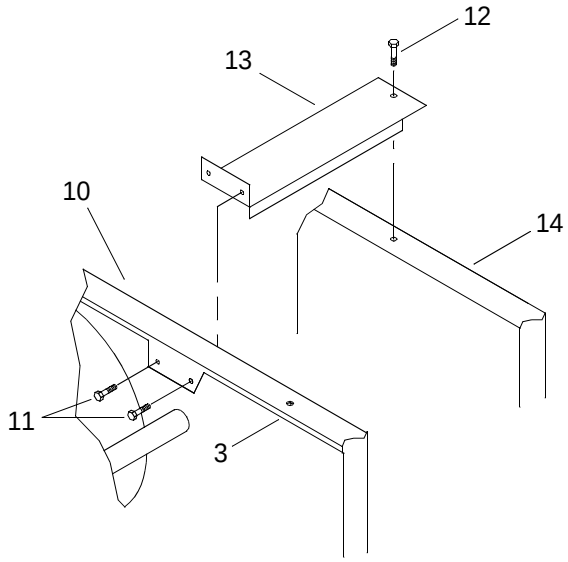
7. Remove heating and air conditioning system discharge deck. (WP 0101 00)

8. Remove screw (8) from fan motor ground wire (9).



9. Remove fan motor ground wire (9) from partition (10).

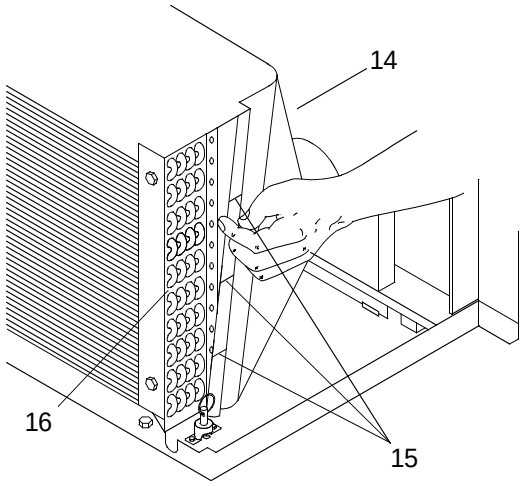
10. Remove two screws (11) from partition (10).



11. Remove screw (12) from gusset (13).

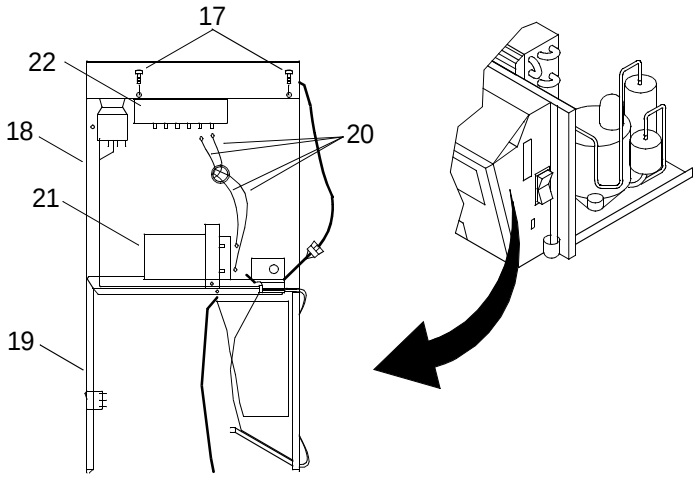
12. Remove gusset (13) from condenser cover (14).

13. Using screwdriver, pry condenser cover tabs (15) from coil (16).



14. Pull condenser cover (14) away from coil (16).

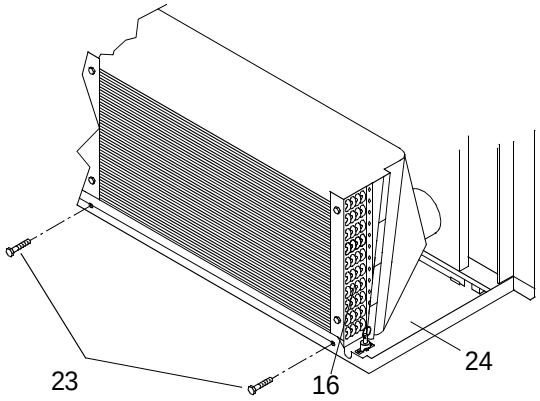
15. Remove two screws (17) on the front of control box (18).



16. Open hinged cover (19) downward.

17. Disconnect fan motor wires (20) from capacitor (21) and switch (22).

18. Remove two screws (23) from base pan (24).



WARNING

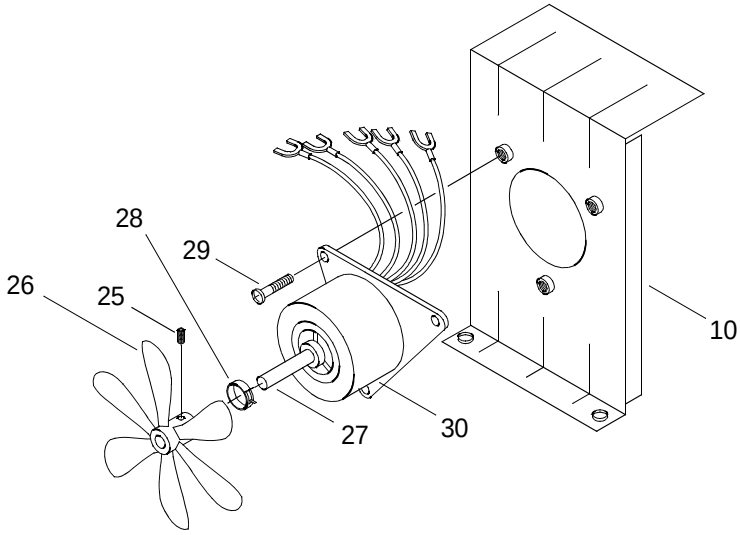
SHARP OBJECT

CAUTION

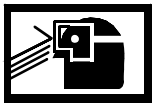
Care must be exercised when handling coil. Failure to comply could result in damage to equipment.

19. Remove coil (16) from base pan (24).

20. Loosen screw (25) securing fan (26) to fan motor shaft (27).



WARNING



EYE PROTECTION

21. Remove spring clip (28).

22. Using two screwdrivers, remove fan (26) from fan motor shaft (27).

23. Remove three bolts (29) from fan motor (30) and partition (10).

24. Remove fan motor (30) from partition (10).

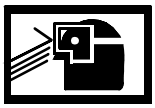
INSTALL HEATING AND AIR CONDITIONING SYSTEM FAN MOTOR

1. Position fan motor (30) on partition (10).

2. Install three bolts (29) in fan motor (30) and partition (10) and tighten bolts (30).

3. Position fan (26) on fan motor shaft (27).

WARNING



EYE PROTECTION

4. Install spring clip (28).

5. Tighten screw (25) securing fan (26) to fan motor shaft (27).

WARNING

SHARP OBJECT

CAUTION

Care must be exercised when handling coil. Failure to comply could result in damage to equipment.

6. Position coil (16) on base pan (24).
7. Install two screws (23) in base pan (24) and tighten screws (23).
8. Connect fan motor wires (20) to capacitor (21) and switch (22).
9. Close hinged cover (19) upward.
10. Install two screws (17) in the front control box (18) and tighten screws (17).
11. Position condenser cover (14) on coil (16).
12. Install condenser cover tabs (15) on coil (16).
13. Position gusset (13) on condenser cover (14).
14. Install screw (12) in gusset (13) and tighten screw (12).
15. Install two screws (11) in partition (10) and tighten screws (11).
16. Position fan motor ground wire (9) on partition (10).
17. Install screw (8) in fan motor ground wire (9) and tighten screw (8).
18. Install heating and air conditioning system discharge deck. (WP 0101 00)
19. Position top cover (7) on chassis (3).
20. Install screw (6) in top cover (7) and tighten screw (6).
21. Position top panel (5) on chassis (3).
22. Install two screws (4) in top panel (5) and tighten screws (4).
23. Position air discharge grille (2) on chassis (3).
24. Install two screws (1) in air discharge grille (2) and tighten screws (1).
25. Install heating and air conditioning system front cover. (WP 0096 00)
26. Perform operational check of heating and air conditioning system fan motor. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM CONDENSER AND COIL FINS
CLEANING AND INSPECTION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)
Sprayer, Pesticide (Item 49, WP 0253 00)
Brush, Stencil (Soft Bristle) (Item 4, WP 0253 00)

Materials/Parts

Cleaner, Condenser Coil (Item 8, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

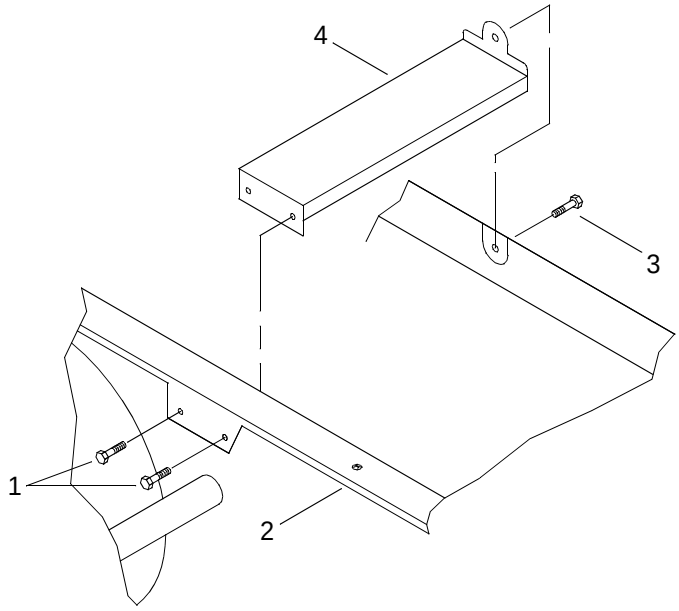
Utilities Equipment Repairer 52C

Equipment Condition

Heating And Air Conditioning System Side Angles Removed. (WP 0100 00)

CLEAN HEATING AND AIR CONDITIONING SYSTEM CONDENSER AND COIL FINS

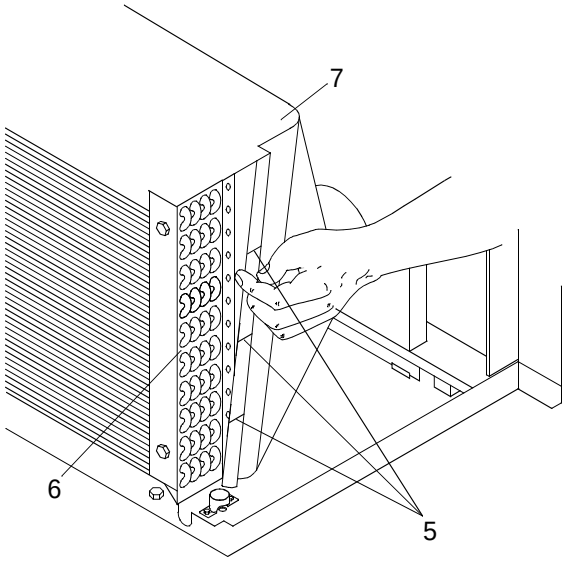
1. Remove two screws (1) from partition (2).



2. Remove screw (3) from gusset (4).

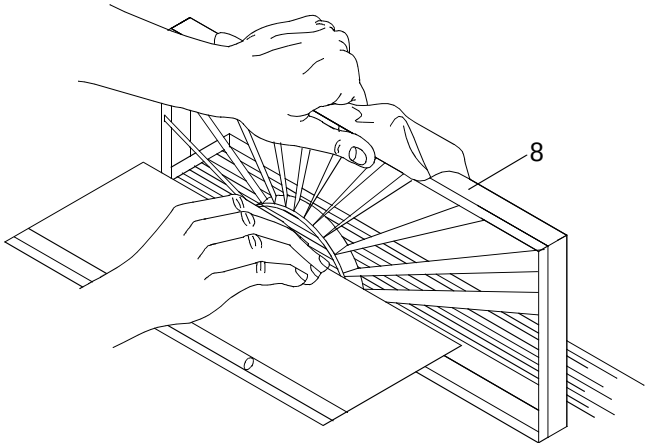
3. Remove gusset (4).

4. Using screw driver, pry condenser cover tabs (5) from condenser coils (6).



5. Pull condenser cover (7) away from coils (6).

6. Remove stator (8).



WARNING

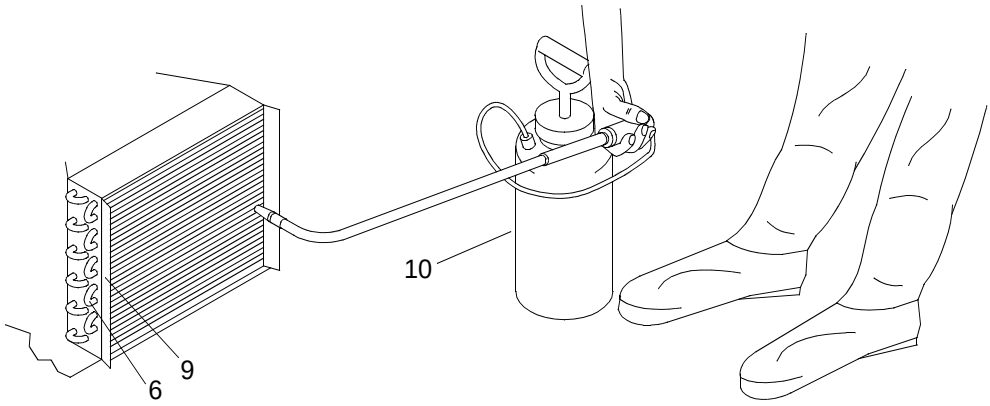
HEAVY OBJECTS

7. Place unit in drain pan.

CAUTION

Care must be taken to apply brush in same direction of fins. Failure to comply could result in damage to the equipment.

8. Using a soft bristle brush, clean coils (6) and fins (9).



WARNING

EYE PROTECTION **CHEMICAL** **VAPOR**

9. Fill spray tank (10) with coil cleaning solution.

WARNING

EYE PROTECTION **CHEMICAL** **VAPOR**

10. Using spray tank (10), apply coil cleaning solution uniformly on both front and back of coils (6).

WARNING

EYE PROTECTION CHEMICAL VAPOR

CAUTION

Do not use high pressure water source. Failure to comply could result in damage to equipment.

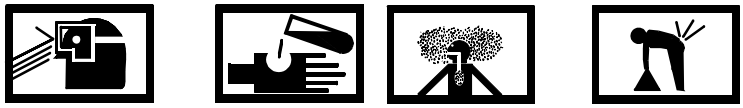
NOTE

Allow condenser coil cleaner to stand for ten minutes so that foam will have sufficient time to dissolve dirt and debris.

11. Rinse coils (6) thoroughly with clean water.

12. Repeat steps 4 and 5.

WARNING

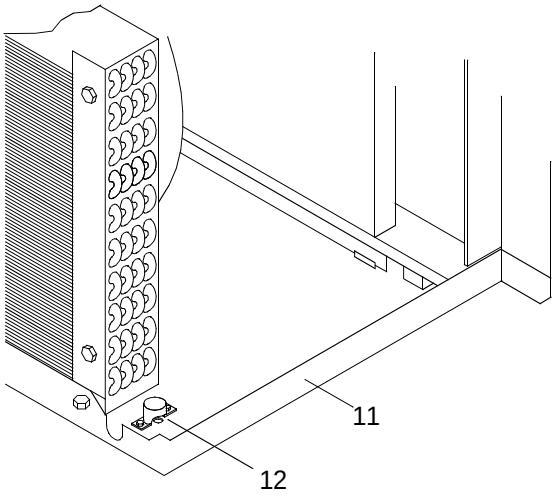


EYE PROTECTION CHEMICAL VAPOR HEAVY OBJECTS

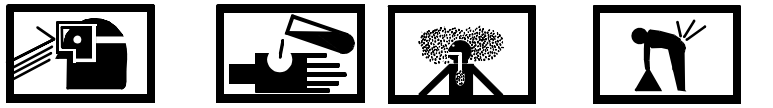
CAUTION

Do not set unit on its side. Failure to comply could result in serious damage to equipment.

13. Tilt unit and drain cleaning solution and water from base pan (11).



WARNING



14. Remove unit from drain pan.

WARNING

15. Remove drain pan and dispose of contents in accordance with local procedures.

WARNING

16. Place unit in drain pan.

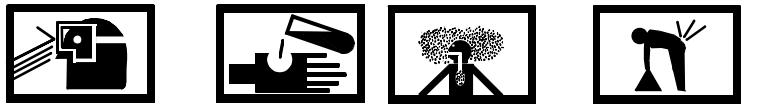
WARNING

17. Rinse base pan (11) and drain valve (12) with clean water.

WARNING

18. Remove any debris from drain valve (12).

WARNING



19. Tilt unit and drain water and residual cleaning solution from base pan (11).

WARNING

20. Remove unit from drain pan.

WARNING

21. Remove drain pan and dispose of contents in accordance with local procedures.

22. Air dry unit.

WARNING

23. Dispose of remaining cleaning solution in spray tank (10) in accordance with local procedures.

WARNING

24. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

INSPECT HEATING AND AIR CONDITIONING SYSTEM CONDENSER AND COIL FINS

1. Inspect coils for crimping. Replace damaged item.
2. Inspect coils for breaks and cracks. Replace damaged item.
3. Inspect condenser cover for cracks and holes. Replace damaged item.
4. Install stator (8).
5. Position condenser cover (7) on coil (6).
6. Install condenser cover tabs (5) on coil (6).
7. Position gusset (4) on condenser cover (5) and partition (2).
8. Install screw (3) in gusset (4). Tighten screw (3).
9. Install two screws (1) in partition (2). Tighten two screws (1).
10. Install heating and air conditioning system side angles. (WP 0100 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM OVERLOAD PROTECTOR
TESTING

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

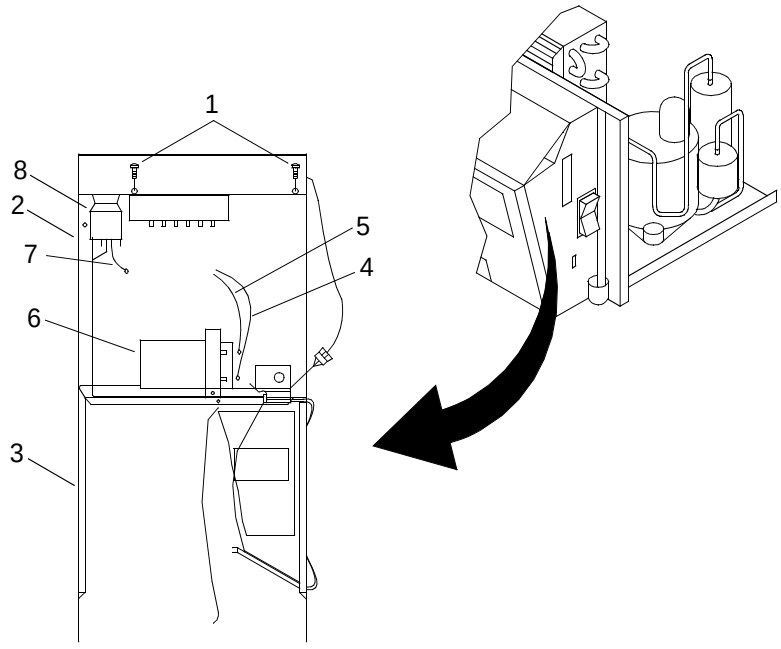
Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Personnel Required
Utilities Equipment Repairer 52C

Equipment Condition
Heating And Air Conditioning Side Angles Removed. (WP 0100 00)

TEST HEATING AND AIR CONDITIONING SYSTEM OVERLOAD PROTECTOR

1. Remove two screws (1) from front of control box (2).



2. Open hinged cover (3) downward.

3. Tag and disconnect black RUN wire (4) and blue START wire (5) from capacitor (6).

4. Tag and disconnect yellow COMMON wire (7) from indoor thermostat (8).

5. Set digital multimeter to measure resistance.

NOTE

If readings are infinite, overload protector is defective.

6. Using digital multimeter, verify resistance between blue START wire (5) and yellow COMMON wire (7) is 3 Ω.
7. Using digital multimeter, verify resistance between black RUN wire (4) and yellow COMMON wire (7) is 1 Ω.
8. Using digital multimeter, verify resistance between black RUN wire (4) and blue START wire (5) is 4 Ω.
9. Connect yellow COMMON wire (7) to indoor thermostat (8) and remove tag.
10. Connect black RUN wire (4) and blue START wire (5) to capacitor (6) and remove tags.
11. Close hinged cover (3) upward.
12. Install two screws (1) to front of control box (2).
13. Install heating and air conditioning system side angles. (WP 0100 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
HEATING AND AIR CONDITIONING SYSTEM CAPACITOR REPLACEMENT

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

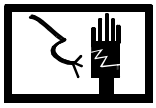
Personnel Required
Utilities Equipment Repairer 52C

References
TM 55-1945-205-10-4

Equipment Condition
Heating And Air Conditioning Side Angles Removed. (WP 0100 00)

REMOVE HEATING AND AIR CONDITIONING SYSTEM CAPACITOR

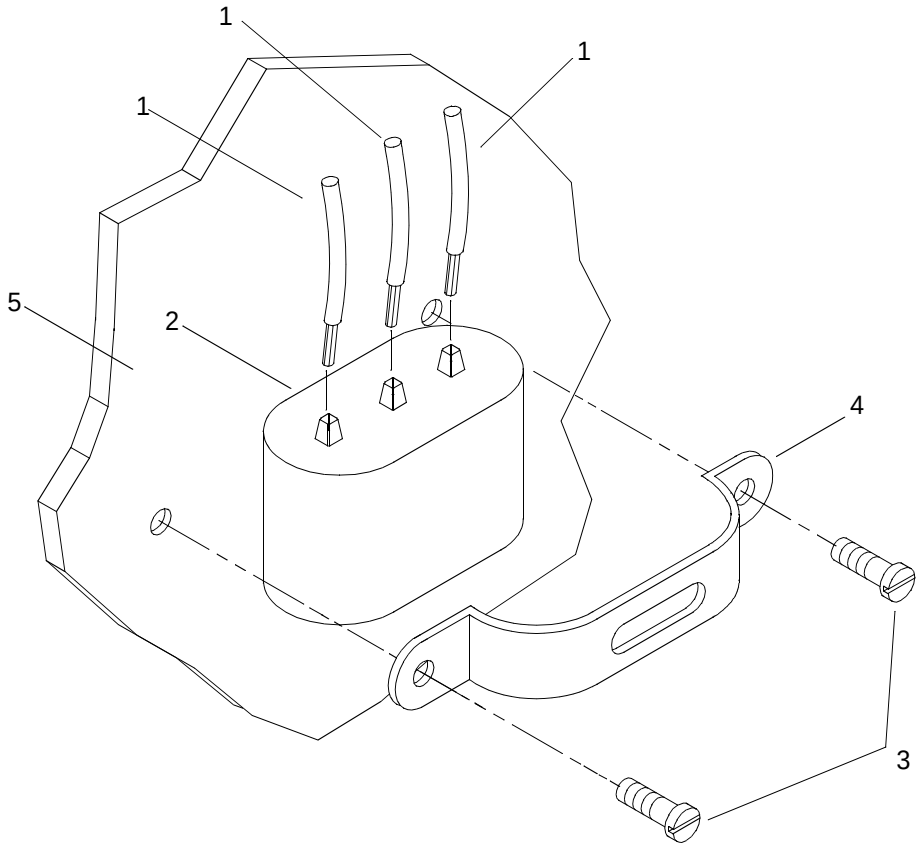
WARNING



ELECTRICAL

High voltage capacitors may hold a charge long after power is turned off. Always discharge capacitors before preforming maintenance. Failure to discharge capacitors could result in injury or death to personnel.

1. Tag and disconnect wires (1) from capacitor (2).



2. Remove two screws (3) from capacitor clamp (4).
3. Remove capacitor clamp (4) from chassis (5).
4. Remove capacitor (2) from capacitor clamp (4) and discard capacitor.

INSTALL HEATING AND AIR CONDITIONING SYSTEM CAPACITOR

1. Install new capacitor (2) in capacitor clamp (4).
2. Position capacitor clamp (4) on chassis (5).
3. Install two screws (3) in capacitor clamp (4) and tighten two screws (3).
4. Connect wires (1) to capacitor (2) and remove tags.
5. Install heating and air conditioning system side angles. (WP 0100 00)
6. Perform operational check of heating and air conditioning system. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
INCINERATOR TOILET
REPAIR

INITIAL SETUP:

Personnel Required
Engineer 88L

References
TM 55-1925-257-14&P

REPAIR INCINERATOR TOILET

Refer to TM 55-1925-257-14&P Incinerator Toilet/Urinal Galley/Water Heater.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER INCINERATOR TOILET
EXHAUST FLEXIBLE COUPLINGS
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Materials/Parts

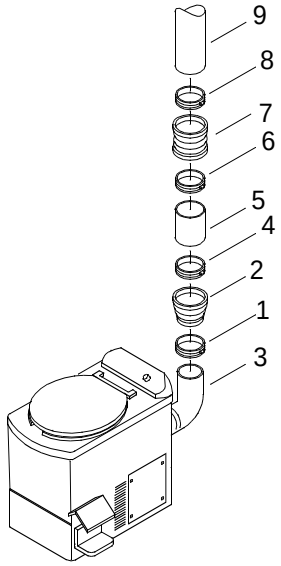
Coupling, Pipe
(81340)
PN 4511K81
Coupling, Pipe
(81340)
PN 4511K82
Qty 2
Pipe, Plastic
(81340)
PN 93908

Personnel Required

Utilities Equipment Repairer 52C

REMOVE PERSONNEL SHELTER INCINERATOR TOILET EXHAUST FLEXIBLE COUPLINGS

1. Loosen stainless steel band (1) between the flex reducing coupling (2) and the incinerator toilet 90° elbow (3) and slide band (1) onto elbow (3).



2. Loosen stainless steel band (4) between the flex reducing coupling (2) and the straight 3 in. PVC pipe (5) and slide band (4) onto pipe (5).

3. Remove flex reducing coupling (2) and discard.

4. Loosen stainless steel band (6) between the straight 3 in. PVC pipe (5) and the flex straight coupling (7) and slide band (6) onto pipe (5).

5. Remove and retain straight 3 in. PVC pipe (5) with two bands (4, 6) for installation.

6. Loosen stainless steel band (8) between the flex straight coupling (7) and the straight exhaust PVC pipe (9) and slide onto pipe (9).

7. Remove flex straight coupling (7) and discard.

INSTALL PERSONNEL SHELTER INCINERATOR TOILET EXHAUST FLEXIBLE COUPLINGS

1. Position stainless steel band (8) between the new flex straight coupling (7) and the straight exhaust PVC pipe (9) and tighten band (8).

2. Position stainless steel band (6) between the straight 3 in. PVC pipe (5) and the flex straight coupling (7) and tighten band (6).

3. Position stainless steel band (4) between the new flex reducing coupling (2) and the straight 3 in. PVC pipe (5) and tighten band (4).

4. Position stainless steel band (1) between the flex reducing coupling (2) and the incinerator toilet 90° elbow (3) and tighten band (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER FLUORESCENT LIGHT BULBS REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Mittens, Heat Protective (Item 28, WP 0253 00)

Materials/Parts

Bulb, Fluorescent
(58536)
NSN 6280-01-456-7015
PN A50597-1

Personnel Required

Seaman 88K

References

TM 55-1945-205-10-4

REMOVE PERSONNEL SHELTER FLUORESCENT LIGHT BULBS

NOTE

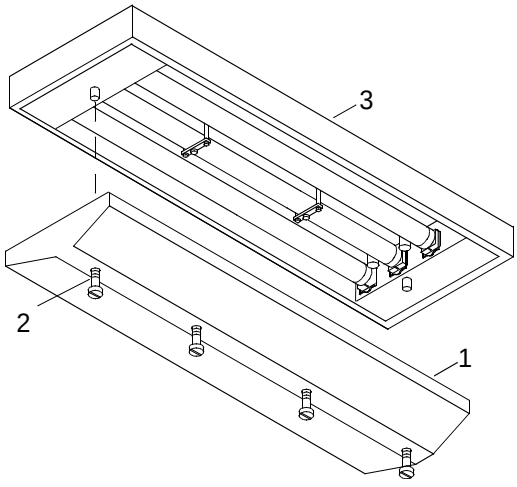
The following procedure is typical for the removal and installation of all personnel shelter fluorescent light bulbs.

1. Verify light switch is in the off position.

WARNING

HOT AREA

2. Remove light cover (1).

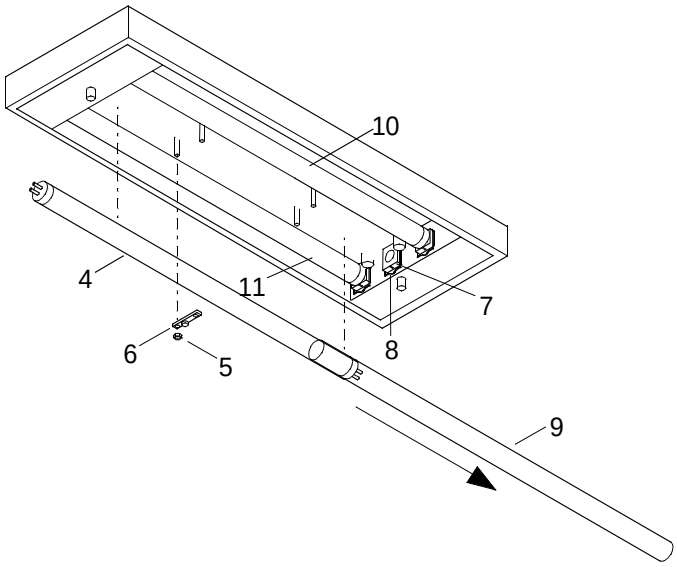


a. Loosen four captive screws (2) holding light cover (1) on light fixture (3).

b. Remove light cover (2).

3. Remove middle light bulb (4).

a. Loosen screws (5) from brackets (6) on middle light bulb (4).



b. Remove brackets (6).

c. Disengage light bulb lock (7) from each end of light bulb (4) that requires replacement.

d. Grasp light bulb (4) and turn 90°° clockwise.

e. Pull down on light bulb (4) and remove from receptacle (8).

NOTE

If middle light bulb is to be replaced, the red sleeve will be reused.

4. Remove sleeve (9) from light bulb (4).

5. Remove outer light bulbs (10 and 11).

a. Disengage light bulb lock (7) from each end of light bulb (4) that requires replacement.

b. Grasp light bulb (4) and turn light bulb 90° clockwise.

c. Pull down on light bulb (4) and remove from receptacle (8).

INSTALL PERSONNEL SHELTER FLUORESCENT LIGHT BULBS

1. Install middle light bulbs (4).
    a. Slide sleeve (9) onto light bulb (4).
    b. Position light bulb (4) near receptacle (8).
2. Slide light bulb pins (12) into receptacle (5).
3. Turn light bulb (4) 90° until bulb clicks into place.
4. Install brackets (6) and screws (5) over middle light bulb (4).
5. Install outer light bulbs (10) and (11).
    a. Position light bulb (4) near receptacle (8).
    b. Slide light bulb pins (12) into receptacle (8).
    c. Turn light bulb (4) 90° until bulb clicks into place.
6. Position light cover (1) over light fixture (3).
7. Tighten four captive screws (2) hand tight.
8. Perform operational check of personnel shelter fluorescent light bulb. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER HEAD FLUORESCENT LIGHT BULBS REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Materials/Parts

Bulb, Fluorescent
(58536)
NSN 6280-01-456-7015
PN A50597-1

Personnel Required

Seaman 88K

References

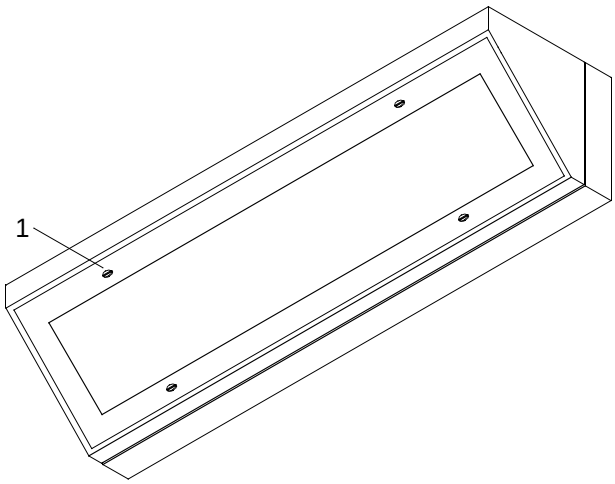
TM 55-1945-205-10-4

REMOVE PERSONNEL SHELTER HEAD FLUORESCENT LIGHT BULBS

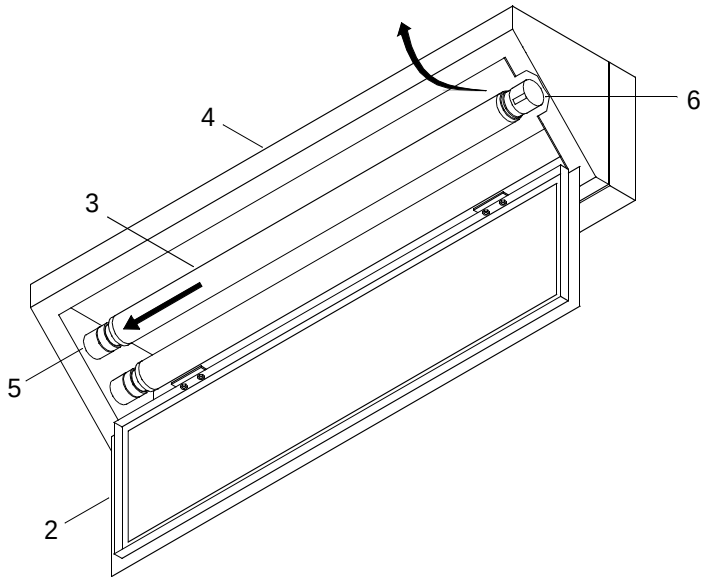
NOTE

The following procedure is typical for the removal and installation of all personnel shelter head fluorescent light bulbs.

1. Verify light switch is in the off position.
2. Loosen four captive screws (1).



3. Lower lens frame (2) to expose fluorescent bulb (3).



4. Remove fluorescent bulbs (3) from light fixture (4).
    a. Move bulb (3) toward electrical socket (5) to release one end from electrical socket (6).
    b. Remove bulb (3) from electrical socket (5).

INSTALL PERSONNEL SHELTER HEAD FLUORESCENT LIGHT BULBS

1. Install fluorescent bulb (3) in light fixture (4).
    a. Install one end of bulb (3) in electrical socket (5).
    b. Move bulb (3) toward electrical socket (5) to install opposite end of bulb (3) in electrical socket (6).
2. Raise lens frame (2).
3. Tighten four captive screws (1).
4. Perform operational check of personnel shelter head fluorescent light bulbs. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER VENT FAN
CLEANING AND INSPECTION

INITIAL SETUP:

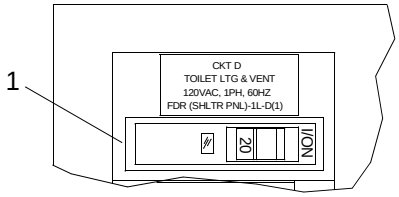
Tools
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Brush, Stencil (Soft Bristle) (Item 4, WP 0253 00)

Materials/Parts
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

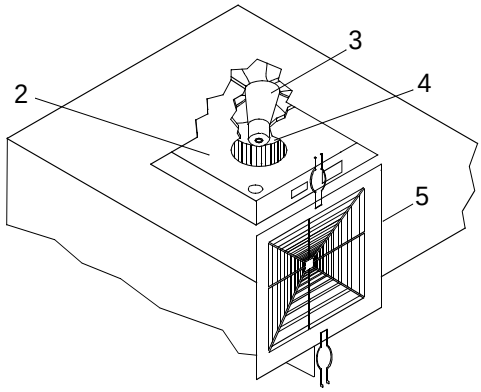
Personnel Required
Seaman 88K

CLEAN PERSONNEL SHELTER VENT FAN

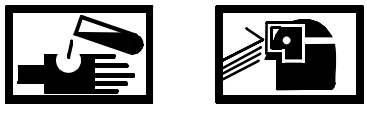
1. Position circuit breaker D (1) on the personnel shelter electrical distribution board to the off position.



2. Pull down personnel shelter vent fan cover (2) located in incinerator toilet compartment overhead to open.

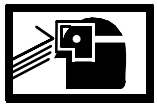


WARNING



3. Using soft bristle brush and cleaner, clean fan blades (3) and vent cavity (4).

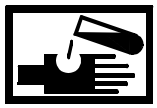
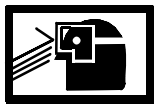
WARNING

CHEMICAL EYE PROTECTION

4. Using wiping rag and cleaner, clean debris from vent fan cover (2) and surface of vent fan panel (5).

WARNING

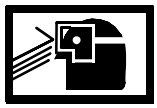



CHEMICAL EYE PROTECTION

5. Remove cleaner residue from vent cover (2), fan blades (3) and vent cavity (4) with damp wiping rag.

6. Allow fan blades (3), vent cavity (4) and surface of vent fan panel (5) to air dry.

WARNING

CHEMICAL EYE PROTECTION

7. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT PERSONNEL SHELTER VENT FAN

1. Inspect fan blades for cracks. Replace defective part.

2. Inspect fan for ease of movement. Replace defective part.

3. Close personnel shelter vent fan cover (2).

4. Move circuit breaker D (1) on the personnel shelter electrical distribution board to the on position.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER VENT FAN
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 43, WP 0253 00)

Materials/Parts

Fan, Vent
(25795)
PN 5C187

Personnel Required

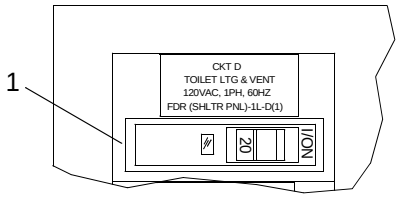
Engineer 88L

References

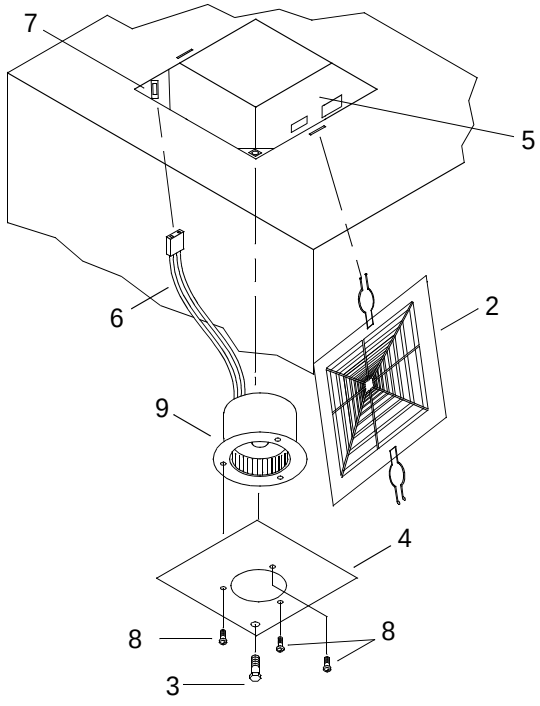
TM 55-1945-205-10-4

REMOVE PERSONNEL SHELTER VENT FAN

1. Position circuit breaker D (1) on the personnel shelter electrical distribution board to OFF.



2. Pull down personnel shelter vent fan cover (2) located in incinerator toilet compartment overhead to open and remove.



3. Remove hex head machine screw (3) from vent fan panel (4).
4. Remove vent fan panel (4) from vent fan enclosure (5).
5. Disconnect vent fan wiring harness (6) from plug (7).
6. Remove three round head screws (8) from vent fan panel (4).
7. Remove vent fan (9) and discard.

INSTALL PERSONNEL SHELTER VENT FAN

1. Position new vent fan (9) on vent fan panel (4).
2. Install three round head screws (8) and tighten.
3. Connect vent fan wiring harness (6) to plug (7).
4. Position vent fan panel (4) on vent fan enclosure (5).
5. Install hex head machine screw (3) in vent fan panel (4) and tighten.
6. Position and push upward to install and close personnel shelter vent fan cover (2).
7. Position circuit breaker D (1) on the personnel shelter electrical distribution board to ON.
8. Perform operational check of personnel shelter vent fan. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER LOAD DISTRIBUTION PANEL ACCESS COVER
REMOVAL AND INSTALLATION

INITIAL SETUP:

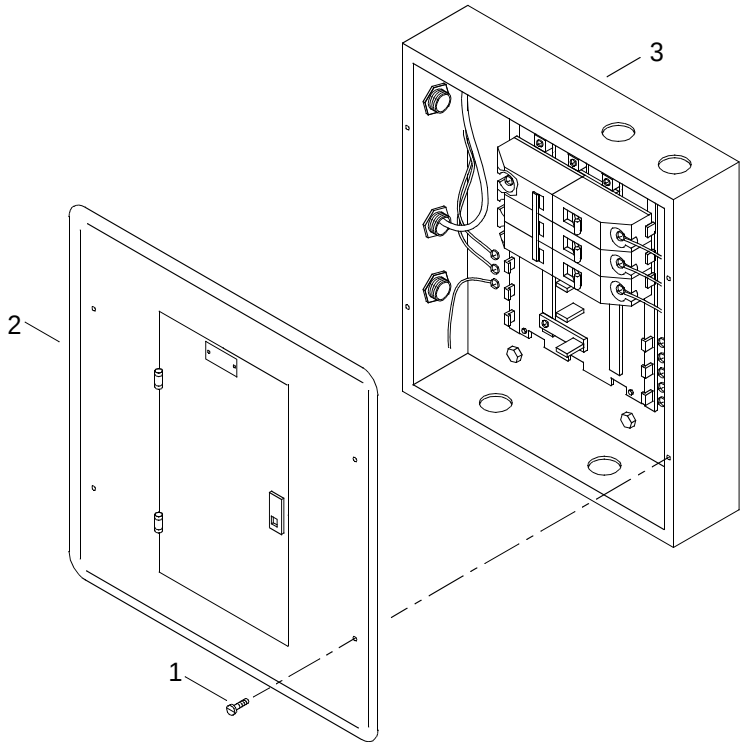
Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Personnel Required
Engineer 88L

Equipment Condition
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE PERSONNEL SHELTER LOAD DISTRIBUTION PANEL ACCESS COVER

1. Remove four screws (1) from panel (2).



2. Remove panel (2) from load distribution box (3).

INSTALL PERSONNEL SHELTER LOAD DISTRIBUTION PANEL ACCESS COVER

1. Position panel (2) on load distribution box (3).

2. Install four screws (1) through panel (2) and tighten.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL
THREE POLE CIRCUIT BREAKER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

Circuit Breaker
(56365)
PN Q0B215SWN
Grease, Silicone Insulated (Item 23, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

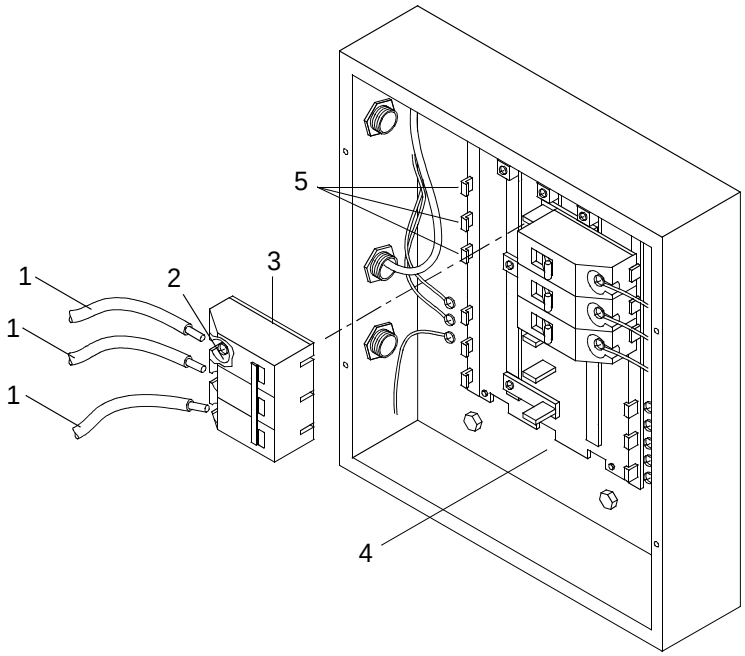
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
Personnel Shelter Load Distribution Panel Access Cover Removed. (WP 0115 00)

REMOVE PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL THREE POLE CIRCUIT BREAKER

NOTE

The following procedure is typical for the removal and installation of all personnel shelter three pole circuit breakers.

1. Tag three wires (1).



2. Remove three screws (2).

3. Pull wires (1) straight out of circuit breaker (3).

4. Firmly grasp circuit breaker (3) at the midline of the load bank (4), rotate circuit breaker (3) outward and discard.

INSTALL PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL THREE POLE CIRCUIT BREAKER

1. Install the back side of the new circuit breaker (3) into mounting cleats (5).

2. Rotate circuit breaker (3) onto the midline of the load bank (4) until it snaps into position.

WARNING

CHEMICAL EYE PROTECTION

3. Coat wires (1) with dielectric grease.

4. Remove tags and install wires (1) into circuit breaker (3).

5. Install three screws (2) and tighten.

6. Install personnel shelter load distribution panel access cover. (WP 0115 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL TWO POLE CIRCUIT BREAKER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

Circuit Breaker
(56365)
PN Q0B225
Grease, Silicone Insulated (Item 23, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

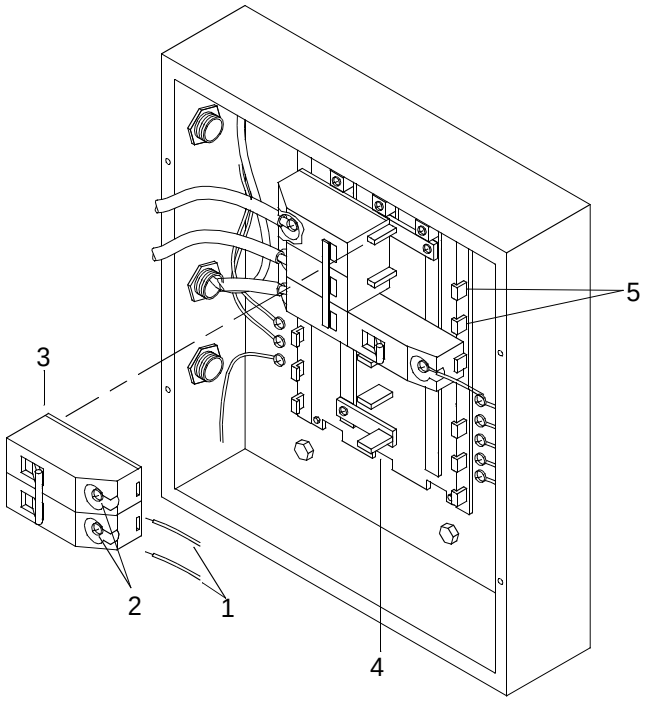
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
Personnel Shelter Load Distribution Panel Access Cover Removed. (WP 0115 00)

REMOVE PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL TWO POLE CIRCUIT BREAKER

NOTE

The following procedure is typical for the removal and installation of all personnel shelter two pole circuit breakers.

1. Tag two wires (1).



2. Loosen two screws (2).

3. Pull wires (1) straight out of circuit breaker (3).

4. Firmly grasp circuit breaker (3) at the midline of the load bank (4) rotate circuit breaker (3) outward from mounting cleats (5) and discard.

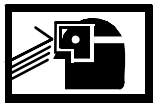
INSTALL PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL TWO POLE CIRCUIT BREAKER

1. Install the back side of the new circuit breaker (3) into mounting cleats (5).

2. Rotate circuit breaker (3) onto the midline of the load bank (4) until it snaps into position.

WARNING

CHEMICAL



EYE PROTECTION

3. Coat wires (1) with dielectric grease.

4. Remove tags and install wires (1) into circuit breaker (3) and tighten two screws (2).

5. Install personnel shelter load distribution panel access cover. (WP 0115 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL
SINGLE POLE CIRCUIT BREAKER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

Circuit Breaker
(56365)
PN Q0215
Grease, Silicone Insulated Electric Motor (Item 23, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

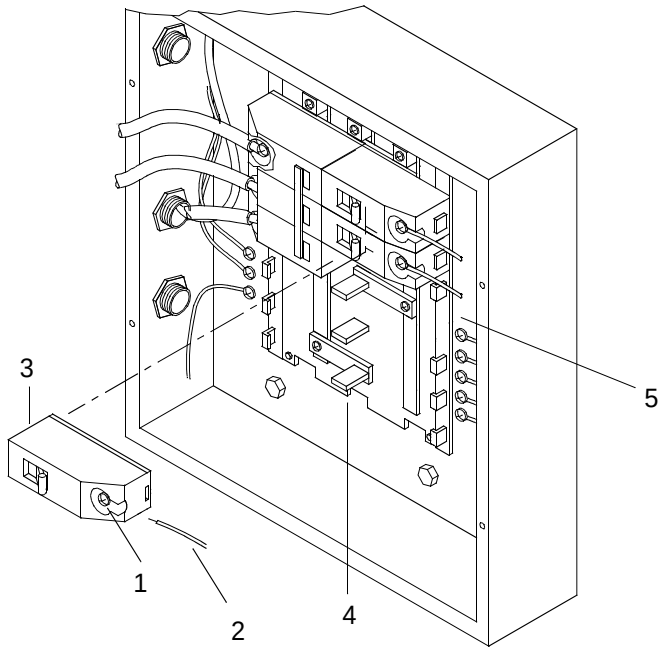
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
Personnel Shelter Load Distribution Panel Access Cover Removed. (WP 0115 00)

REMOVE PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL SINGLE POLE CIRCUIT BREAKER

NOTE

The following procedure is typical for the removal and installation of all personnel shelter single pole circuit breakers.

1. Loosen screws (1).



2. Tag and pull wire (2) straight out of circuit breaker (3)

3. Firmly grasp circuit breaker (3) at the midline of the load bank (4), rotate circuit breaker (3) outward and discard.

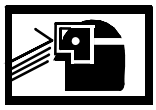
INSTALL PERSONNEL SHELTER ELECTRICAL DISTRIBUTION PANEL SINGLE POLE CIRCUIT BREAKER

1. Install the back side of the new circuit breaker (3) into mounting cleat (5).

2. Rotate circuit breaker (3) onto the midline of the load bank (4) until it snaps into position.

WARNING

CHEMICAL



EYE PROTECTION

3. Coat wire (2) with dielectric grease.

4. Install wire (2) into circuit breaker (3) and remove tag and tighten screws (1).

5. Install personnel shelter load distribution panel access cover. (WP 0115 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER HEAD ELECTRICAL JUNCTION BOX
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

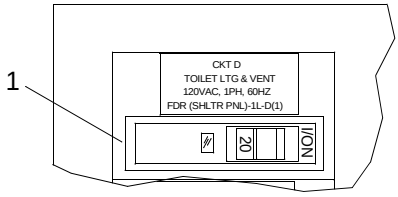
Personnel Required
Engineer 88L

REMOVE PERSONNEL SHELTER HEAD ELECTRICAL JUNCTION BOX

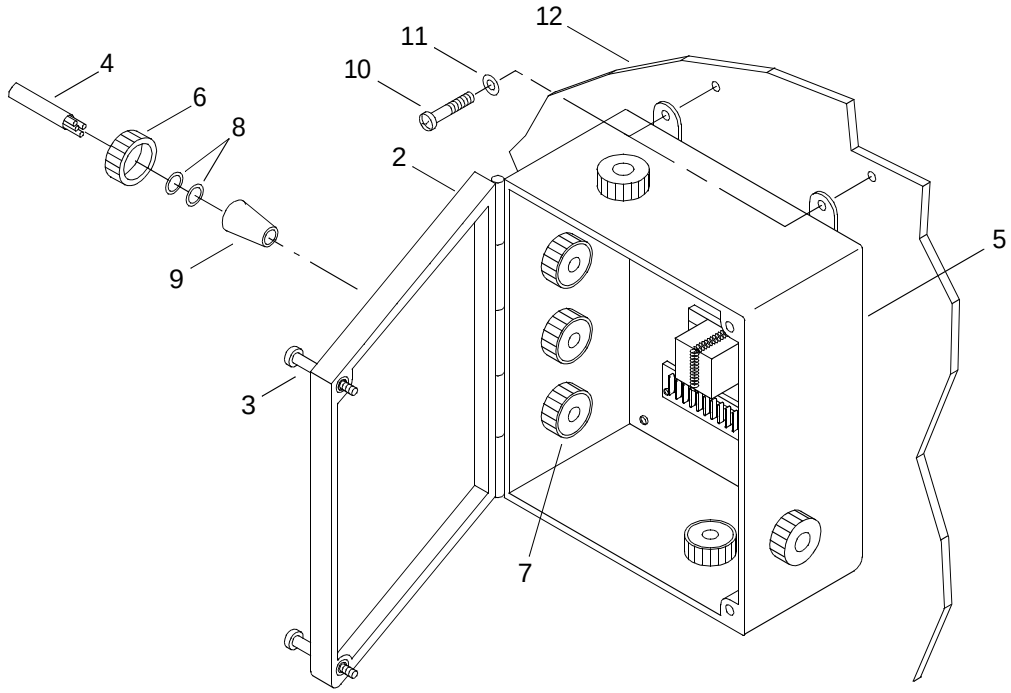
NOTE

The following procedure is typical for the removal and installation of the personnel shelter head electrical junction box.

1. Position circuit breaker D (1) on the personnel shelter electrical distribution board to OFF.



2. Open enclosure cover (2) by loosening two screws (3).



3. Remove wiring (4) from junction box (5).

    a. Tag and disconnect electrical wiring.

    b. Unscrew stuffing tube cap (6) from the stuffing tube (7).

    c. Remove wiring (4) from the stuffing tube (7) and retain the cap (6), plastic washers (8) and preformed packing (9) on the end of the wiring (4).

4. Remove four screws (10) and washers (11) securing the junction box (5) to the wall (12).

5. Remove the junction box (5).

INSTALL PERSONNEL SHELTER HEAD ELECTRICAL JUNCTION BOX

1. Position the junction box (5) on the wall (12) and secure with four screws (10) and washers (11). Tighten screws (10).

2. Install cable and wires (4) in junction box (5).

    a. Slide wiring (4) into stuffing tube (7) and into junction box (5).

    b. Tighten stuffing tube cap (6), plastic washers (8) and preformed packing (9) onto end of the stuffing tube (7) until secure.

    c. Connect electrical wiring and remove tags.

3. Close enclosure cover (2) and secure by tightening two screws (3).

4. Position circuit breaker D (1) on the personnel shelter electrical distribution board to ON.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER HEAD ELECTRICAL JUNCTION BOX
REPAIR

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)

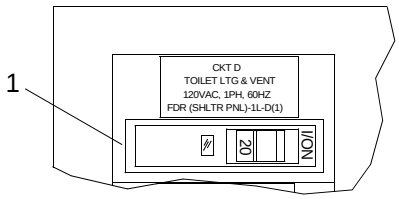
Personnel Required
Engineer 88L

REPAIR PERSONNEL SHELTER HEAD ELECTRICAL JUNCTION BOX

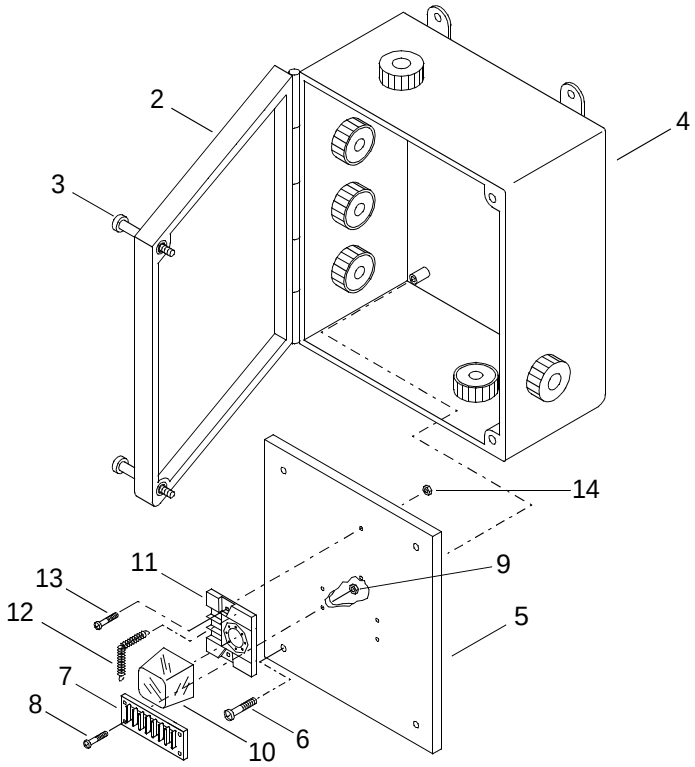
NOTE

Repair is limited to the replacement of damaged components.

1. Position circuit breaker D (1) on the personnel shelter electrical distribution board to OFF.



2. Open enclosure cover (2) by loosening two screws (3).



3. Tag and disconnect internal electrical wiring within junction box (4).

4. Remove panel (5) from junction box (4).
    a. Remove four screws (6) securing panel (5) to junction box (4).
    b. Remove panel (5).
5. Remove terminal block (7) from panel (5).
    a. Remove two screws (8) and nuts (9) securing terminal block (7) to panel (5).
    b. Remove terminal block (7).
6. Remove relay (10) from relay socket (11).
    a. Remove spring (12) securing relay (10) to relay socket (11).
    b. Remove relay (10) from relay socket (11) by pulling outwards.
7. Remove relay socket (11) from panel (5).
    a. Remove two screws (13) and nuts (14) securing relay socket (11) to panel (5).
    b. Remove relay socket (11).
8. Install relay socket (11) on panel (5).
    a. Position relay socket (11) on panel (5).
    b. Install two screws (13) and nuts (14) to secure relay socket (11) to panel (5). Tighten nuts (14).
9. Install relay (10) in relay socket (11).
    a. Position relay (10) in relay socket (12) by pushing inwards.
    b. Install spring (12) to hold relay (10) in relay socket (11).
10. Install terminal block (7) on panel (5).
    a. Position terminal block (7) on panel (5).
    b. Install two screws (8) and nuts (9) to secure terminal block (7) to panel (5). Tighten nuts (9).
11. Install panel (5) in junction box (4).
    a. Position panel (5) in junction box (4).
    b. Install four screws (6) to secure panel (5) to junction box (4). Tighten screws (6).
12. Connect internal electrical wiring within junction box (4) and remove tags.
13. Close enclosure cover (2) and secure by tightening two screws (3).
14. Position circuit breaker D (1) on the personnel shelter electrical distribution board to ON.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER HOSPITAL GRADE STRAIGHT BLADE ELECTRICAL RECEPTACLE
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Receptacle, Duplex
(74545)
PN 8200

Personnel Required

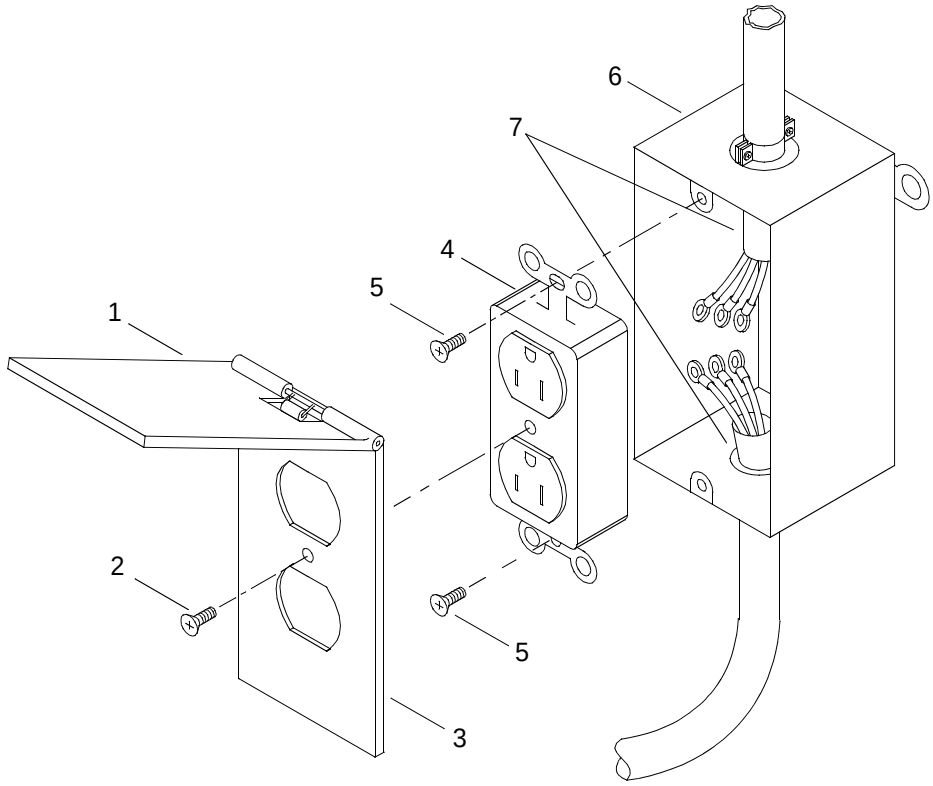
Engineer 88L

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE PERSONNEL SHELTER HOSPITAL GRADE STRAIGHT BLADE ELECTRICAL RECEPTACLE

1. Lift weather cover (1).



2. Remove screw (2) securing receptacle cover (3) to receptacle (4).

3. Remove two screws (5) securing receptacle (4) to circuit box (6).

4. Tag and disconnect wiring (7) from receptacle (4).

5. Discard receptacle (4).

INSTALL PERSONNEL SHELTER HOSPITAL GRADE STRAIGHT BLADE ELECTRICAL RECEPTACLE

1. Connect wiring (7) to new receptacle (4) and remove tags.

2. Install two screws (5) securing receptacle (4) to circuit box (6). Tighten screws (5).

3. Install screw (2) securing receptacle cover (3) to receptacle (4). Tighten screw (2).

4. Close weather cover (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Interrupter, Ground
(74545)
PN GF-5352

Personnel Required

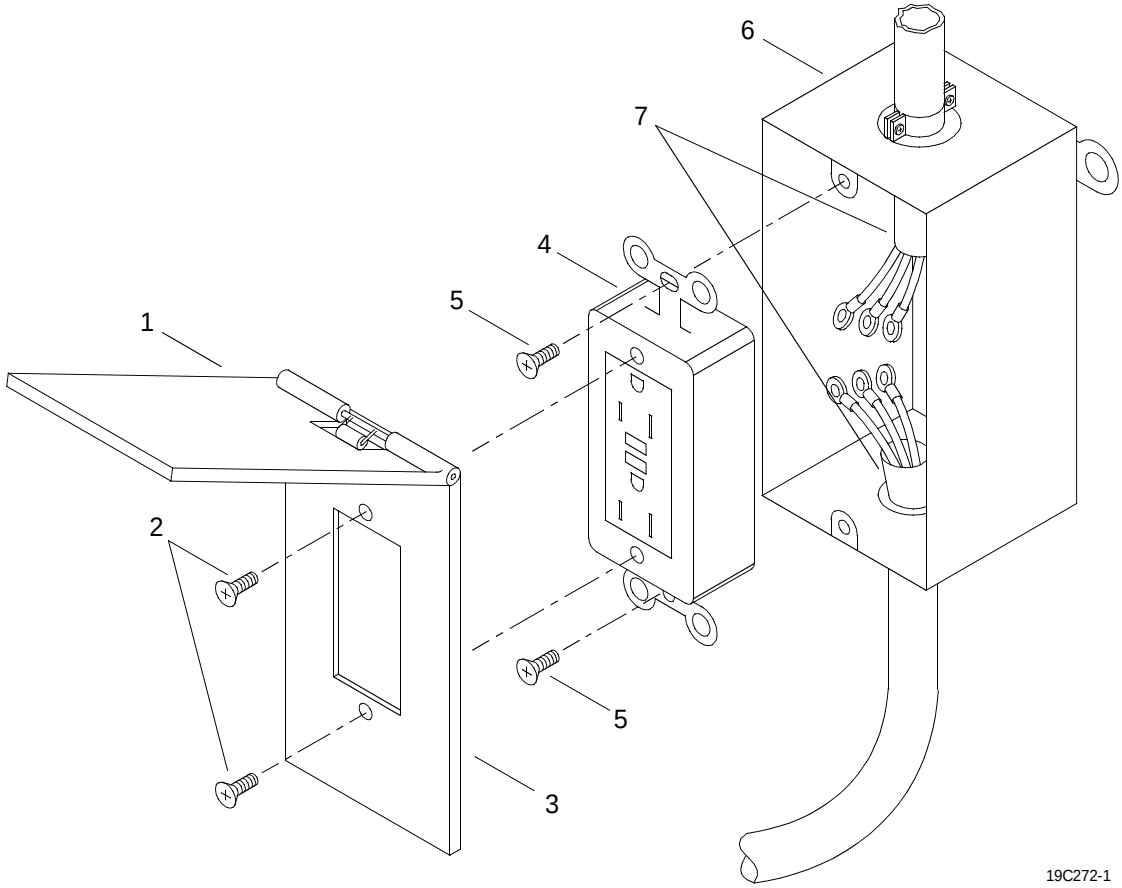
Engineer 88L

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE PERSONNEL SHELTER GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE

1. Lift weather cover (1).



2. Remove two screws (2) securing receptacle cover (3) to (GFCI) receptacle (4).
3. Remove two screws (5) securing (GFCI) receptacle (4) to circuit box (6).
4. Tag and disconnect wiring (7) from (GFCI) receptacle (4).
5. Discard (GFCI) receptacle (4).

INSTALL PERSONNEL SHELTER GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE

1. Connect wiring (7) to new (GFCI) receptacle (4) and remove tags.
2. Install two screws (5) securing (GFCI) receptacle (4) to circuit box (6). Tighten screws (5).
3. Install two screws (2) securing receptacle cover (3) to (GFCI) receptacle (4). Tighten screws (2).
4. Close weather cover (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER OUTLET BOX
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Conduit, Outlet
(81703)
PN 30203

Personnel Required

Engineer 88L

Equipment Condition

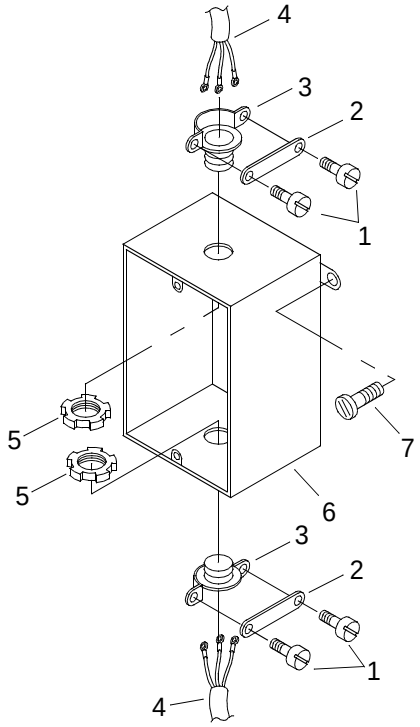
Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)
Personnel Shelter Hospital Grade Straight Blade Electrical Receptacle Removed. (WP 0121 00)
Personnel Shelter Ground Fault Circuit Interrupter Receptacle Removed. (WP 0122 00)

REMOVE PERSONNEL SHELTER OUTLET BOX

NOTE

This task is typical for both the hospital grade straight blade and ground fault circuit interrupter receptacle boxes.

1. Remove two screws (1) and clamp (2) from each strain relief (3).



2. Pull wiring harness (4) out through strain relief (3).

3. Remove spanner nuts (5) from strain relief (3).
4. Remove strain relief (3) from junction box (6).
5. Remove two screws (7) securing junction box (6) to bulkhead and discard junction box (6).

INSTALL PERSONNEL SHELTER OUTLET BOX

1. Position new junction box (6) on bulkhead.
2. Install two screws (7) in junction box (6) and secure to bulkhead. Tighten screws (7).
3. Install strain relief (3) in junction box (6).
4. Install spanner nuts (5) on strain relief (3) and tighten.
5. Push wiring harness (4) through strain relief (3).
6. Install two screws (1) and clamp (2) on strain relief (3). Tighten screws (1).
7. Install personnel shelter ground fault circuit interrupter receptacle. (WP 0122 00)
8. Install personnel shelter hospital grade straight blade electrical receptacle. (WP 0121 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
PERSONNEL SHELTER ROTARY BRASS LIGHT SWITCH
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Switch, Rotary
(81349)
NSN 5930-00-296-5290
PN M15743/3-002

Personnel Required

Engineer 88L

References

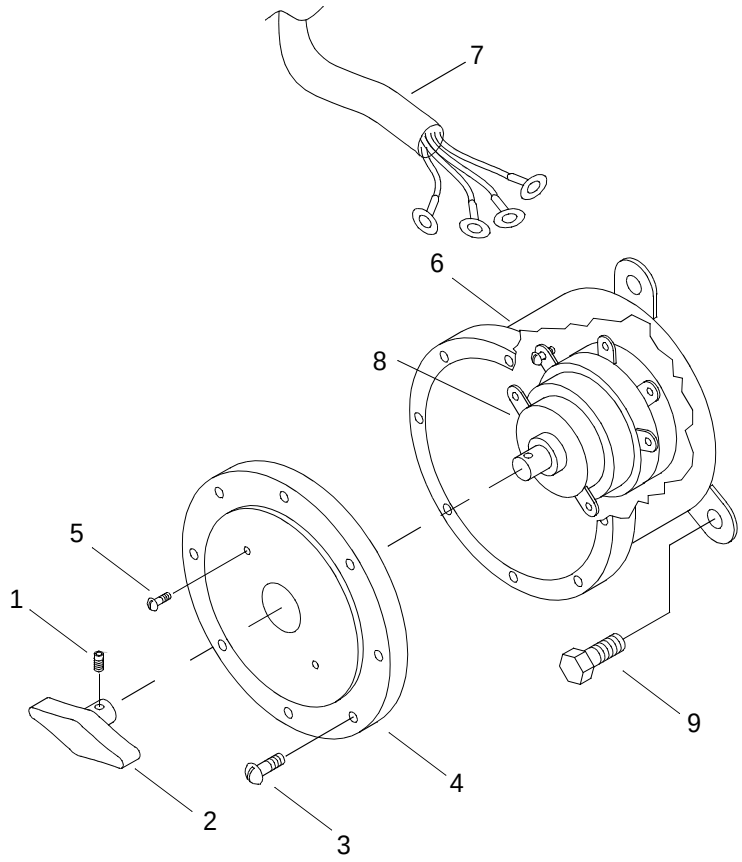
TM 55-1945-205-10-4

Equipment Condition

Generator Shut Down. (TM 9-6115-642-10, TM 9-6115-643-10)

REMOVE PERSONNEL SHELTER ROTARY BRASS LIGHT SWITCH

1. Remove allen head screw (1) from light switch knob (2).



2. Remove four pan head screws (3) from light switch cover (4).
3. Remove two pan head screws (5) from light switch cover (4).
4. Remove switch cover (4) from light switch enclosure (6).
5. Tag and disconnect wiring (7) from light switch assembly (8).
6. Remove wiring harness (7) from light switch enclosure (6).
7. Remove three hex head bolts (9) securing light switch enclosure (6) to the wall.
8. Discard light switch enclosure (6).

INSTALL PERSONNEL SHELTER ROTARY BRASS LIGHT SWITCH

1. Position and install three hex head bolts (9) to secure light switch enclosure (6) to the wall. Tighten bolts (9).
2. Install wiring harness (7) in light switch enclosure (6).
3. Connect wiring (7) and remove tags on light switch assembly (8).
4. Install switch cover (4) on light switch enclosure (6).
5. Install two pan head screws (5) in light switch cover (4). Tighten pan head screws (5).
6. Install four pan head screws (3) in light switch cover (4). Tighten pan head screws (3).
7. Install switch knob (2) on light switch (8).
8. Install allen head screw (1) in light switch knob (2). Tighten allen head screw (1).
9. Perform operational check of personnel shelter rotary brass light switch. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
VHF/FM HANDHELD TRANSCEIVER ANTENNA
REPLACEMENT

INITIAL SETUP:

Materials/Parts
VHF/FM Transceiver Antenna
(0JDM6)
PN 21-200006

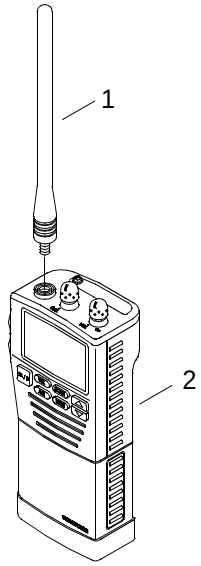
Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

Equipment Condition
VHF/FM Handheld Transceiver Power Off.

REMOVE VHF/FM HANDHELD TRANSCEIVER ANTENNA

1. Turn antenna (1) counterclockwise.



2. Remove antenna (1) from transceiver (2).

INSTALL VHF/FM HANDHELD TRANSCEIVER ANTENNA

1. Align antenna (1) with antenna connector.
2. Turn antenna (1) clockwise and tighten.
3. Perform operational check of VHF/FM handheld transceiver. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
VHF/FM HANDHELD TRANSCEIVER CONTROL KNOBS
REPLACEMENT

INITIAL SETUP:

Materials/Parts
VHF/FM Transceiver Control Knob
(0JDM6)
PN 210010

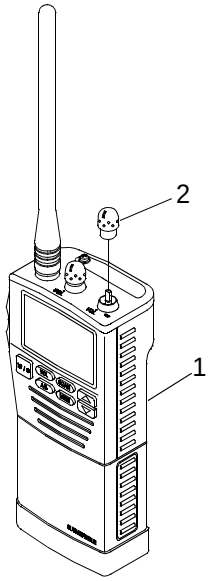
Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

Equipment Condition
VHF/FM Handheld Transceiver Power Off.

REMOVE VHF/FM HANDHELD TRANSCEIVER CONTROL KNOBS

1. On the top of VHF/FM handheld transceiver (1), grasp knob (2) and pull straight up.



2. Remove knob (2) from VHF/FM transceiver (1).

INSTALL VHF/FM TRANSCEIVER CONTROL KNOBS

1. Align transceiver control knob (2) with half-moon shaped control knob shaft on top of VHF/FM transceiver (1).

2. Gently insert knob (2) onto shaft until seated.

3. Perform operational check of VHF/FM handheld transceiver. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
VHF/FM HANDHELD TRANSCEIVER RECHARGEABLE BATTERY PACK REPLACEMENT

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Materials/Parts
CNB350 Rechargeable Battery Pack
(0JDM6)
PN 21-200015

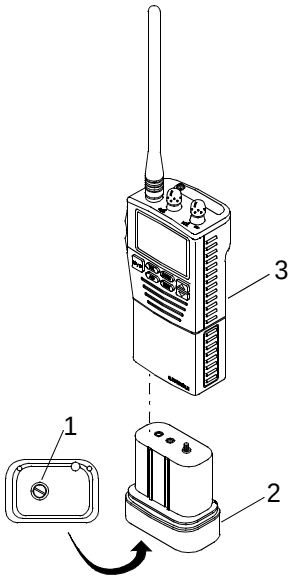
Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

Equipment Condition
VHF/FM Handheld Transceiver Power Off.

REMOVE VHF/FM HANDHELD TRANSCEIVER RECHARGEABLE BATTERY PACK

1. Loosen lock screw (1) by turning counterclockwise.



2. Grasp the battery pack (2), pull out from radio (3).

INSTALL VHF/FM HANDHELD TRANSCEIVER RECHARGEABLE BATTERY PACK

NOTE

Battery pack can only be installed one way.

1. Align battery pack (2) with slots in battery cavity.
2. Slide battery pack (2) into battery cavity of VHF/FM transceiver (3) until fully inserted.
3. Tighten lock screw (1) by turning clockwise until snug.
4. Perform operational check of VHF/FM handheld transceiver. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
VHF/FM HANDHELD TRANSCEIVER ALKALINE BATTERY PACK
REPLACEMENT

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Materials/Parts
Alkaline Battery Pack
(0JDM6)
PN 21-200014

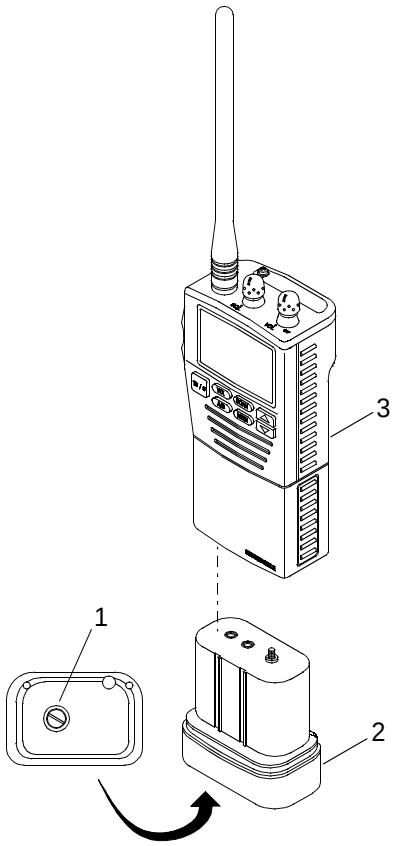
Personnel Required
Seaman 88K

References
TM 55-1945-205-10-4

Equipment Condition
VHF/FM Handheld Transceiver Power Off.

REMOVE VHF/FM HANDHELD TRANSCEIVER ALKALINE BATTERY PACK

1. Loosen battery lock screw (1) by turning counterclockwise.



2. Grasp the battery pack (2), pull out from radio (3).

INSTALL VHF/FM HANDHELD TRANSCEIVER ALKALINE BATTERY PACK

NOTE

Battery pack can only be installed one way.

1. Align battery pack (2) with slots in battery cavity.
2. Slide battery pack (2) into battery cavity of VHF/FM transceiver (3).
3. Tighten battery lock screw (1) by turning clockwise until snug.
4. Perform operational check of VHF/FM handheld transceiver. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
VHF/FM HANDHELD TRANSCEIVER BATTERY CHARGER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)

Materials/Parts

Adapter, Charger
(0JDM6)
PN 21-200016

Personnel Required

Engineer 88L

References

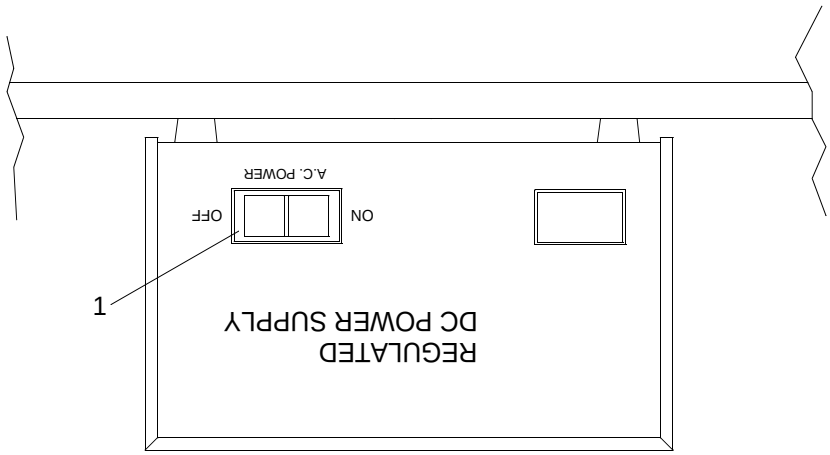
TM 55-1945-205-10-4

REMOVE VHF/FM HANDHELD TRANSCEIVER BATTERY CHARGER

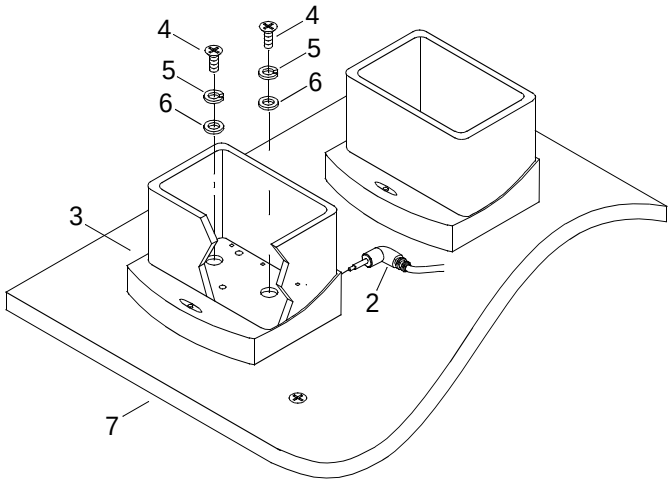
NOTE

The following procedure is typical for the removal and installation of all VHF/FM handheld transceiver battery chargers.

1. Turn off DC power supply switch (1).



2. Disconnect power supply cord (2) from rear of battery charger (3).



3. Remove two screws (4), two lock washers (5) and two washers (6) holding battery charger (3) onto mounting plate (7).

4. Remove battery charger (3).

INSTALL VHF/FM HANDHELD TRANSCEIVER BATTERY CHARGER

1. Align battery charger holes with holes in mounting plate (7).

2. Install battery charger (3) on mounting plate (7) with two screws (4), two lock washers (5) and two washers (6). Tighten screws (4).

3. Connect DC power supply cord (2) into rear of battery charger (3).

4. Turn on DC power supply power switch (1).

5. Perform operational check of VHF/FM handheld transceiver. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
VHF/FM HANDHELD TRANSCEIVER BATTERY CHARGER POWER SUPPLY
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 53, WP 0253 00)
Drill, Electric, Portable (Item 11, WP 0253 00)
Drill Set, Twist (Item 10, WP 0253 00)

Materials/Parts

Power Supply
(0JDM6)
PN STEED-7

Personnel Required

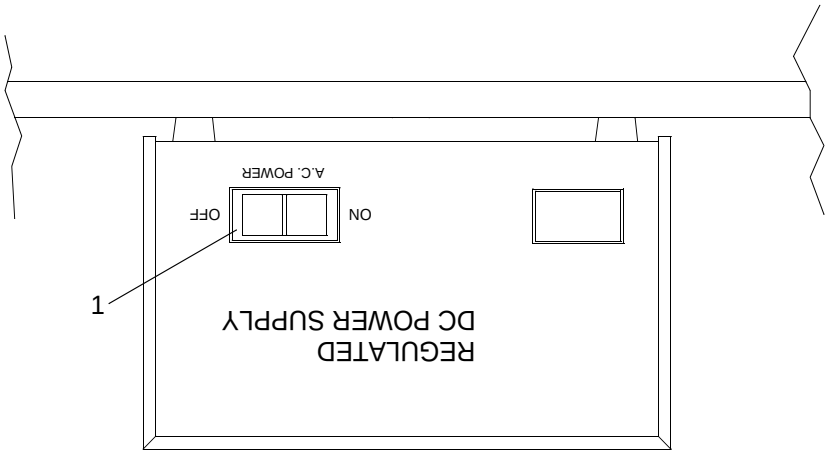
Engineer 88L

References

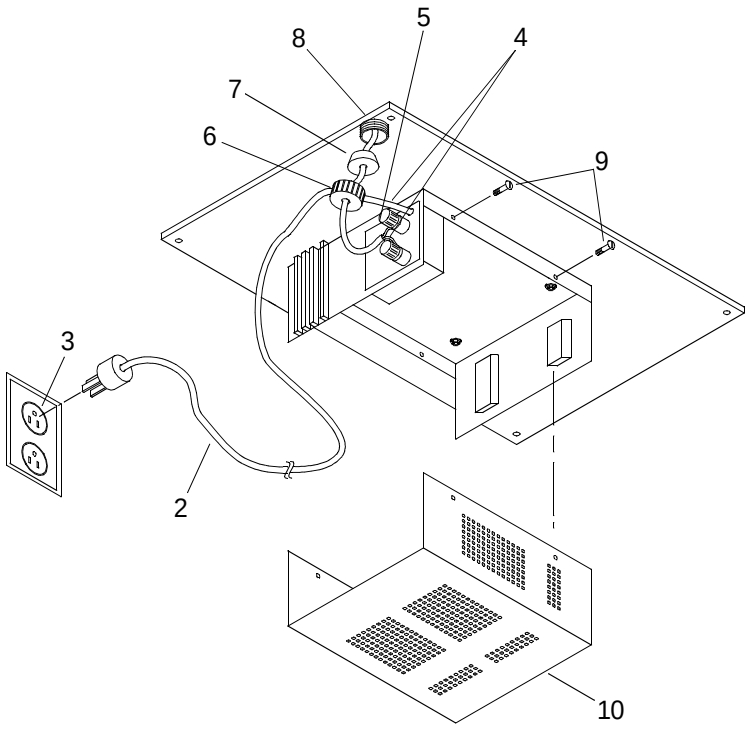
TM 55-1945-205-10-4

REMOVE VHF/FM HANDHELD TRANSCEIVER BATTERY CHARGER POWER SUPPLY

1. Position DC power supply switch (1) to the off position.



2. Unplug power cord (2) from AC outlet (3).



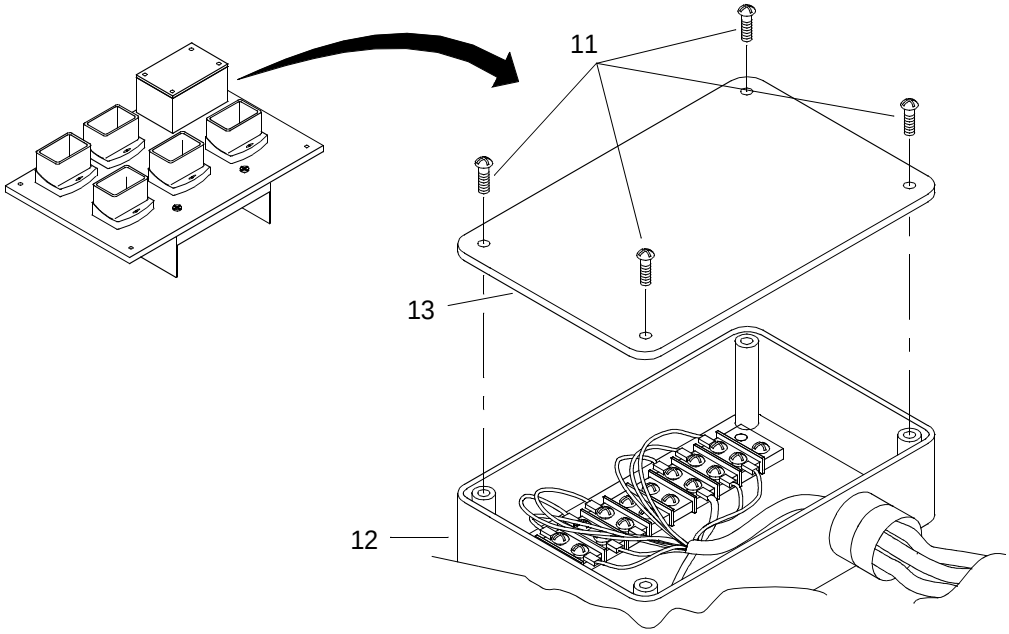
3. Loosen two plastic nuts (4) and disconnect wires (5).

4. Loosen retaining nut (6) and rubber packing (7) from nylon stuffing tube (8).

5. Remove four screws (9) from power supply cover (10).

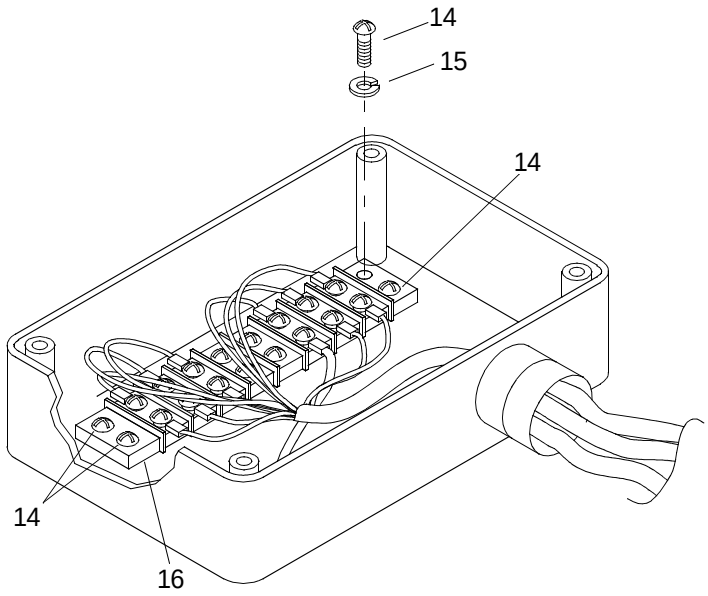
6. Remove power supply cover (10).

7. Remove four screws (11) from terminal box (12) and terminal box cover (13).

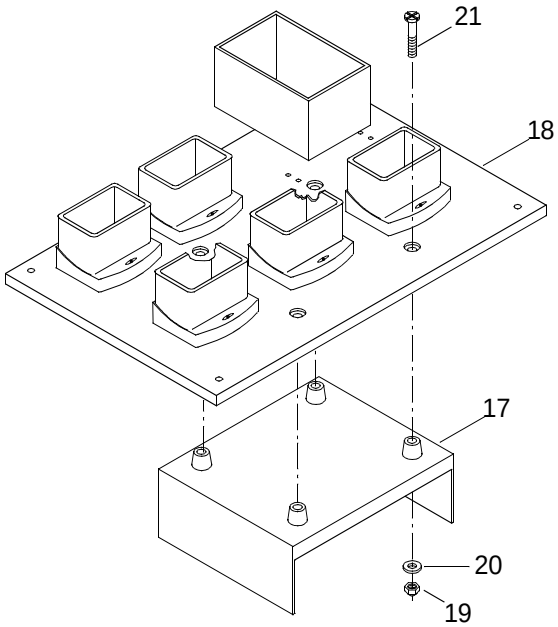


8. Remove terminal box cover (13) from terminal box (12).

9. Remove four screws (14) and four lock washers (15) from terminal strip (16).



10. Hold DC power supply box (17) while removing it from under mounting plate (18).



NOTE

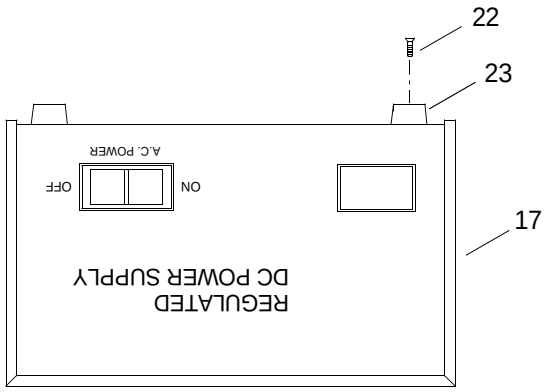
Three of the four screws that need to be removed to release the power supply box are seen. The fourth screw is located under the terminal box, which must be rotated 90° in order to gain access for removal.

11. Remove four lock nuts (19), washers (20) and screws (21), releasing DC power supply box (17).

12. Remove DC power supply box (17).

INSTALL VHF/FM HANDHELD TRANSCEIVER BATTERY CHARGER POWER SUPPLY

1. Remove four small screws (22) from four rubber foot pads (23) on new DC power supply box (17). Discard four small screws (22).



2. Remove four screws (9) from new power supply cover (10).
3. Remove new power supply cover (10).
4. On new power supply box (17), use a drill and 3/16 drill bit to enlarge holes where the four small screws (22) were removed.
5. Position new DC power supply box (17) under mounting plate (18).
6. Firmly hold the DC power supply box (17) while installing it under mounting plate (18).
7. Install four screws (21) through mounting plate (18), rubber foot pads (23) and new DC power supply box (17). Tighten four screws (21).
8. Install four washers (20) and lock nuts (19) on four screws (21). Tighten lock nuts (19).
9. Rotate terminal box (12) 90°.
10. Install four lock washers (15) and screws (14) on terminal strip (16). Tighten screws (14).
11. Position terminal box cover (13) over terminal box (12).
12. Install four screws (11) through terminal box cover (13) and into terminal box (12). Tighten four screws (11).
13. Position power supply cover (10) on power supply box (17).
14. Install four screws (9) through power supply cover (10). Tighten four screws (9).
15. Push rubber packing (7) into nylon stuffing tube (8).
16. Install retaining nut (6) on nylon stuffing tube (8). Tighten retaining nut (6).

17. Connect wires (5) and tighten two plastic nuts (4).

18. Plug power cord (2) into AC outlet (3).

19. Position DC power supply switch (1) to the on position.

20. Perform operational check of VHF/FM handheld transceiver battery charger power supply. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BATTERY NEGATIVE LEAD TERMINAL
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools

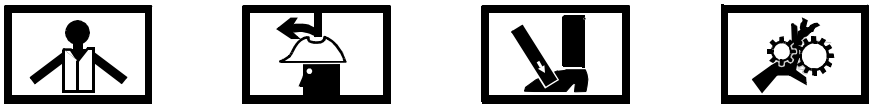
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Puller, Battery Terminal (Item 37, WP 0253 00)

Personnel Required

Engineer 88L

REMOVE LIGHT TOWER BATTERY NEGATIVE LEAD TERMINAL

WARNING

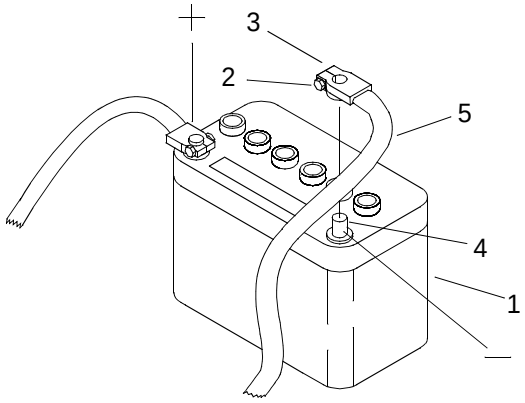


All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The negative battery post is identified by a raised negative sign stamped on the battery.

1. Open starboard light tower door.



2. On battery (1), loosen hex nut (2) on negative lead terminal (3).

3. Using a battery terminal puller, remove negative lead terminal (3) from negative post (4).

4. Position negative lead (5) out of the way to prevent contact between negative lead terminal (3) and negative post (4).

INSTALL LIGHT TOWER BATTERY NEGATIVE LEAD TERMINAL

1. Position negative lead terminal (3) over negative post (4).
2. Carefully press negative lead terminal (3) down on negative post (4).
3. Tighten negative lead terminal hex nut (2).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ELECTRICAL SYSTEM BUS BAR ASSEMBLY REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Assembly, Bus Bar
(33968)
PN 36787265

Personnel Required

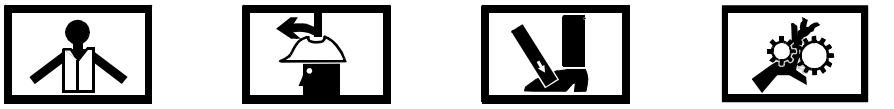
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

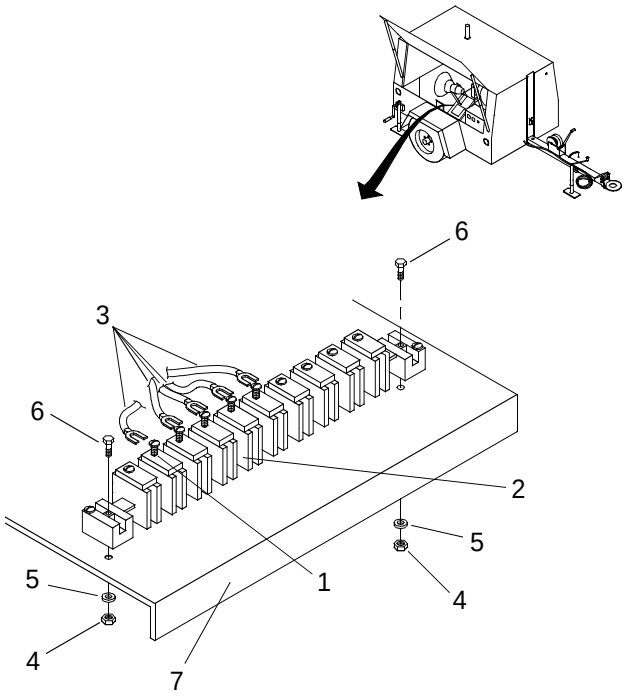
REMOVE LIGHT TOWER ELECTRICAL SYSTEM BUS BAR ASSEMBLY

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Loosen five screws (1) on bus bar assembly (2).



2. Tag and disconnect wires (3) from bus bar assembly (2).
3. Remove two nuts (4), lock washers (5) and screws (6) from bus bar assembly (2).
4. Remove bus bar assembly (2) from chassis (7) and discard.

INSTALL LIGHT TOWER ELECTRICAL SYSTEM BUS BAR ASSEMBLY

1. Position new bus bar assembly (2) on chassis (7).
2. Install two screws (6), lock washers (5) and nuts (4) in bus bar assembly (2) and tighten nuts (4).
3. Connect wires (3) to bus bar assembly (2) and remove tags.
4. Tighten five screws (1) on bus bar assembly (2).
5. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ELECTRICAL SYSTEM JUNCTION BOX
ELECTRICAL CABLE
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Curly Cord (With Strain Relief)
(33968)
PN 36848729

Personnel Required

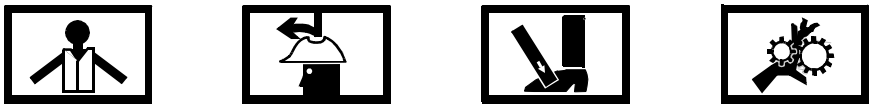
Engineer 88L

Equipment Condition

Tower Assembly Lowered. (TM 55-1945-205-10-4)
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

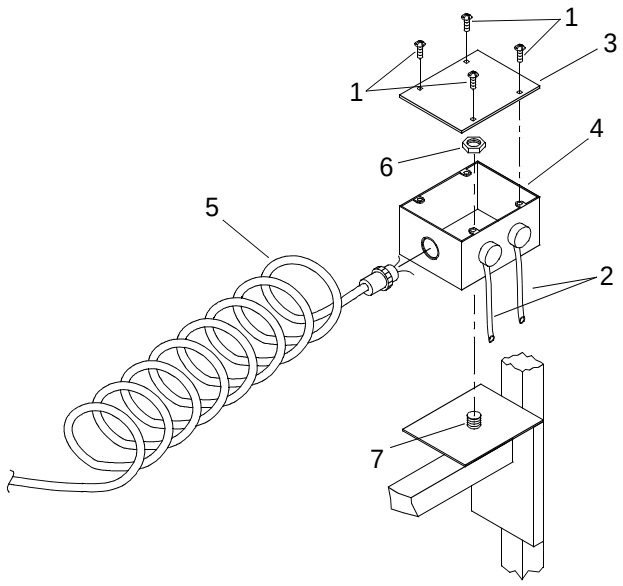
REMOVE LIGHT TOWER ELECTRICAL SYSTEM JUNCTION BOX ELECTRICAL CABLE

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove four screws (1) securing receptacle plug cover lanyards (2) and cover (3) to junction box (4).



2. Remove cover (3).

3. Disconnect junction box electrical cable (5).

4. Remove light tower electrical cable shroud. (WP 0212 00)

5. Remove electrical cable (5) and discard.

INSTALL LIGHT TOWER ELECTRICAL SYSTEM JUNCTION BOX ELECTRICAL CABLE

1. Connect new junction box electrical cable (5).

2. Position cover (3) on junction box (4).

3. Install four screws (3) through the receptacle plug cover lanyards (2) ends and into cover (3) to secure the cover (3) to the junction box (4). Tighten screws (3).

4. Install light tower electrical cable shroud. (WP 0212 00)

5. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ELECTRICAL SYSTEM JUNCTION BOX REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Box, Junction
(33968)
PN 36779353

Personnel Required

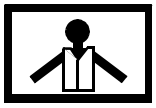
Engineer 88L

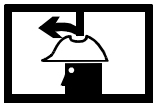
Equipment Condition

Tower Assembly Lowered. (TM 55-1945-205-10-4)
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

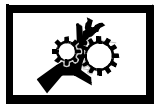
REMOVE LIGHT TOWER ELECTRICAL SYSTEM JUNCTION BOX

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

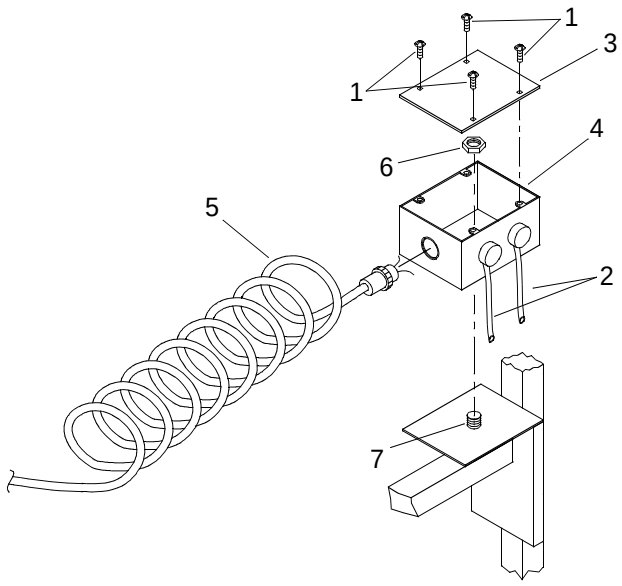

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of light tower junction boxes.

1. Remove four screws (1) securing receptacle plug cover lanyards (2) and cover (3) to junction box (4).



2. Remove cover (3).
3. Tag and disconnect junction box electrical cable (5) from junction box (4).
4. Remove large nut (6) inside junction box (4) from mounting stud (7).
5. Remove junction box (4) and discard.

INSTALL LIGHT TOWER ELECTRICAL SYSTEM JUNCTION BOX

1. Position new junction box (4) on mounting stud (7).
2. Install large nut (6) on mounting stud (7). Tighten nut (6).
3. Install junction box electrical cable (5) in junction box and remove tags.
4. Position cover (3) on junction box (4).
5. Install four screws (1) through receptacle plug cover lanyards (2) ends and into cover (3) to secure cover (3) to junction box (4). Tighten screws (1).
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE ALTERNATOR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Alternator
(33968)
PN 36888170

Personnel Required

Engineer 88L

References

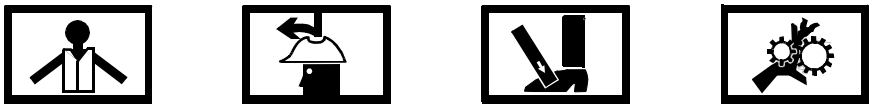
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Fan Belt Removed. (WP 0180 00)

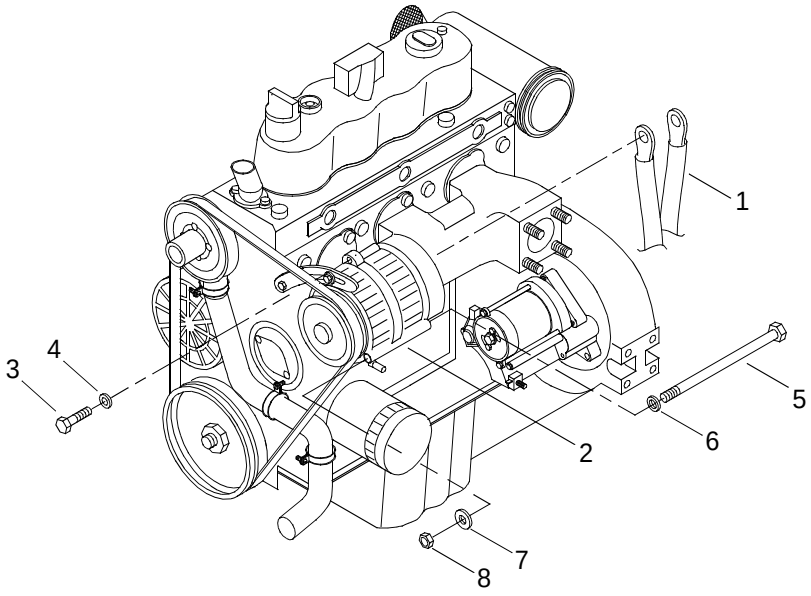
REMOVE LIGHT TOWER ENGINE ALTERNATOR

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Tag and disconnect wiring (1) from the alternator (2).



2. Remove alternator adjusting bolt (3) and flat washer (4) from alternator (2).
3. Remove alternator pivot bolt (5), lock washers (6 and 7) and hex nut (8) from alternator (2).
4. Remove alternator (2) and discard.

INSTALL LIGHT TOWER ENGINE ALTERNATOR

1. Install the new alternator (2) on the engine.
2. Install alternator pivot bolt (5), lock washers (6 and 7) and hex nut (8) on alternator (2).
3. Install alternator adjusting bolt (3) and flat washer (4) on alternator (2).
4. Install light tower engine fan belt. (WP 0180 00)
5. Connect all wiring (1) as previously tagged.
6. Connect light tower battery negative lead terminal. (WP 0131 00)
7. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE GLOW PLUGS
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Plug, Glow
(33968)
PN 16261-6551-0
Qty 3

Personnel Required

Engineer 88L

References

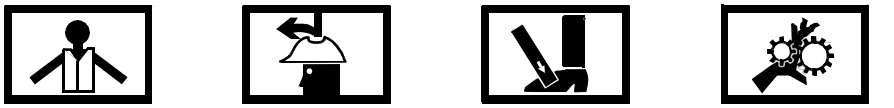
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER ENGINE GLOW PLUGS

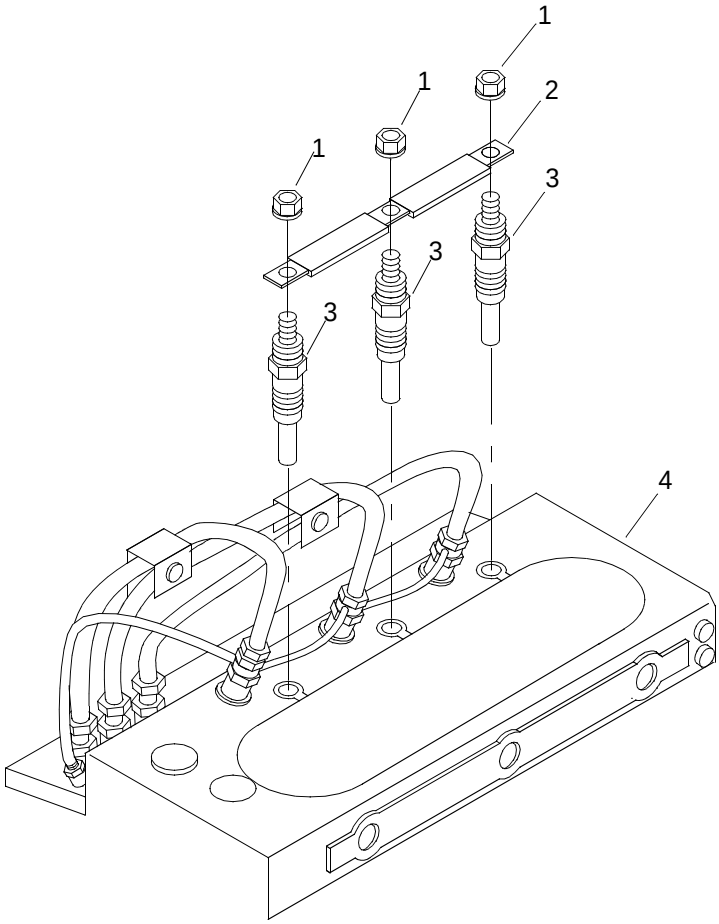
WARNING



VEST HELMET PROTECTION HEAVY PARTS MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove three hex nuts (1) from cord assembly (2).



2. Remove cord assembly (2) from glow plugs (3).
3. Remove three glow plugs (3) from cylinder head (4).

INSTALL LIGHT TOWER ENGINE GLOW PLUGS

1. Install three new glow plugs (3) in cylinder head (4).
2. Install cord assembly (2) on three glow plugs (3).
3. Install three hex nuts (1) securing cord assembly (2). Tighten hex nuts (1).
4. Install light tower battery negative lead terminal. (WP 0131 00)
5. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE GLOW PLUGS
TESTING

INITIAL SETUP:

Test Equipment
Multimeter (Item 30, WP 0253 00)

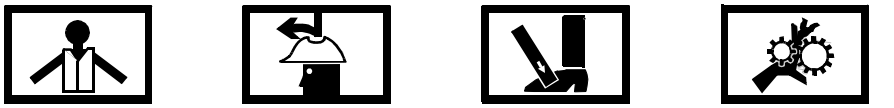
Tools
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Personnel Required
Engineer 88L

Equipment Condition
Light Tower Engine Glow Plugs Removed. (WP 0136 00)

TEST LIGHT TOWER ENGINE GLOW PLUGS

WARNING

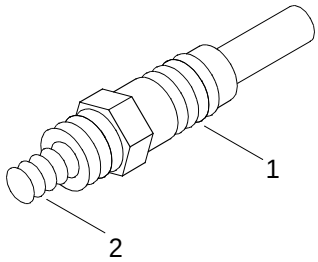


All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following steps apply to glow plugs with serial numbers 488290 and below.

1. Set multimeter to measure resistance (Ω).
2. Attach multimeter negative lead to glow plug threaded case (1).



3. Attach multimeter positive lead to glow plug terminal (2).
4. Verify a resistance of 1.0 - 1.2 Ω.

5. Remove multimeter negative lead from glow plug threaded case (1).
6. Remove multimeter positive lead from glow plug terminal (2).
7. If resistance is not 1.0 - 1.2 Ω, discard glow plug.

NOTE

The following steps apply to glow plugs with serial numbers 488291 and above.

8. Set multimeter to measure resistance (Ω).
9. Attach multimeter negative lead to glow plug threaded case (1).
10. Attach multimeter positive lead to glow plug terminal (2).
11. Verify a resistance of 0.9 Ω.
12. Remove multimeter negative lead from glow plug threaded case (1).
13. Remove multimeter positive lead from glow plug terminal (2).
14. If resistance is not 0.9 Ω, discard glow plug.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BATTERY
SERVICE AND INSPECTION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Brush, Soft Bristle (Item 4, WP 0253 00)

Materials/Parts

Rag, Wiping (Item 35, WP 0252 00)
Water, Reagent Distilled (Item 43, WP 0252 00)

Personnel Required

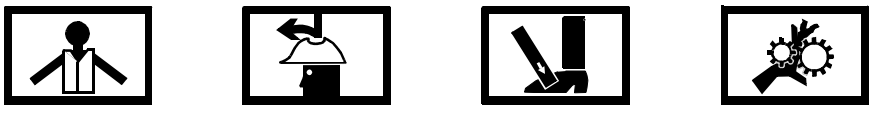
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

SERVICE LIGHT TOWER BATTERY

WARNING



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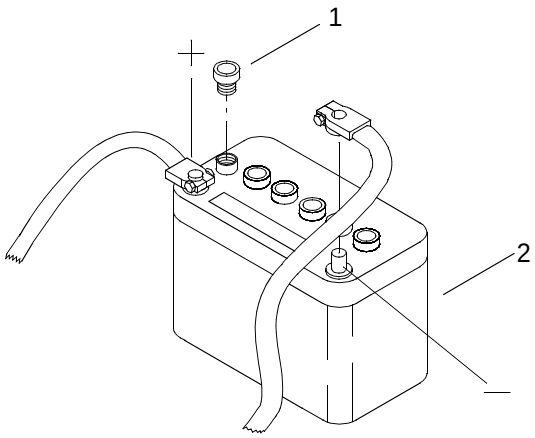
CAUTION

Ensure only distilled water is added when levels drop below acceptable limits. Failure to comply could result in equipment damage.

1. Remove battery caps (1) covering the water reservoirs of battery (2).

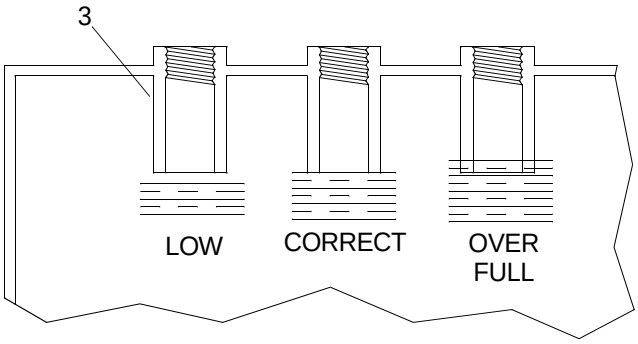


WARNING

EYE PROTECTION CHEMICAL VAPOR

Do not overfill the battery. Too much fluid can cause excess pressure in the battery and cause battery acid to overflow through the vents and release harmful fumes into the air. Failure to comply could result in serious injury or death to personnel.

2. Add distilled water to each of the reservoirs in the battery (2) to the bottom of the fill ring (3).



3. Using rag, remove any dirt or debris from each battery cap (1).

4. Install all battery caps (1) on the battery (2).

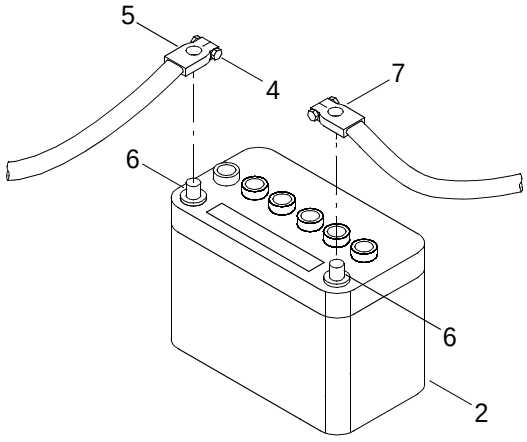
INSPECT LIGHT TOWER BATTERY

1. Inspect the battery (2) for wear and cracks. If cracks are found or the outer housing shows excessive wear, the battery should be replaced. (WP 0139 00)

2. On battery (2), loosen hex nut (4) on the positive battery lead (5).

3. Remove positive battery lead (5).

4. Inspect the battery posts (6), positive battery lead (5) and negative battery lead (7) for excessive buildup of corrosion. If found, remove corrosion with a soft bristle brush.



5. Position positive battery lead (5) on battery (2).

6. Tighten hex nut (4) on the positive battery lead (5).

7. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BATTERY
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Puller, Battery Terminal (Item 37, WP 0253 00)

Materials/Parts

Battery, 12 volt
(33968)
PN 36844967

Personnel Required

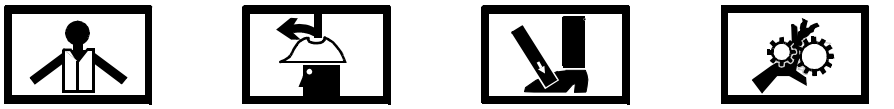
Engineer 88L

References

TM 55-1945-205-10-4

REMOVE LIGHT TOWER BATTERY

WARNING



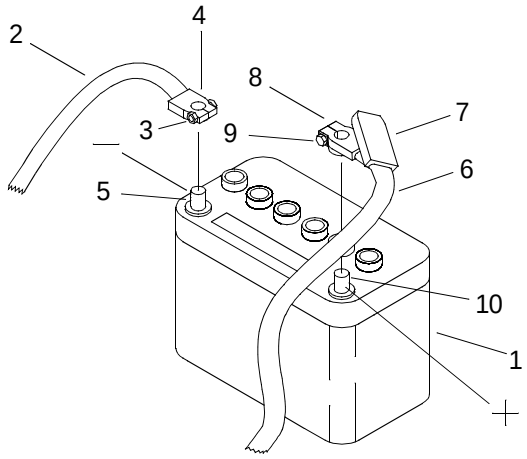
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The battery posts are identified by raised plus and minus signs stamped on the battery.

1. Open light tower starboard door to access battery (1).

2. Remove negative lead (2) from battery (1).



a. Loosen hex nut (3) of the negative lead terminal (4).

b. Using a battery terminal puller, remove the negative lead terminal (4) from negative post (5).

3. Remove positive lead (6) from battery (1).

a. Lift rubber terminal cover (7) off positive lead terminal (8).

b. Loosen hex nut (9) of the positive lead terminal (8).

c. Using a battery terminal puller, remove the positive lead terminal (8) from positive post (10).

WARNING

4. Remove battery (1) and discard in accordance with local procedures.

INSTALL LIGHT TOWER BATTERY

WARNING

1. Position new battery (1) on its mounting surface.

2. Install positive lead (6) on battery (1).
    a. Position the positive lead terminal (8) over positive post (10).
    b. Carefully press positive lead terminal (8) down on positive post (10).
    c. Tighten positive lead terminal hex nut (9).
    d. Install rubber terminal cover (7) over positive lead terminal (8).
3. Install negative lead (2) on battery (1).
    a. Position negative lead terminal (4) over negative post (5).
    b. Carefully press negative lead terminal (4) down on negative post (5).
    c. Tighten negative lead terminal hex nut (3).
4. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE OIL PRESSURE SWITCH
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Brush, Wire Scratch (Item 5, WP 0253 00)

Materials/Parts

Switch, Pressure
(33968)
PN 36757581
Sealing Compound (Item 37, WP 0252 00)

Personnel Required

Engineer 88L

References

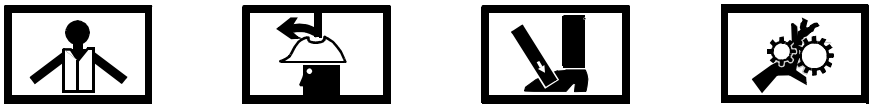
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

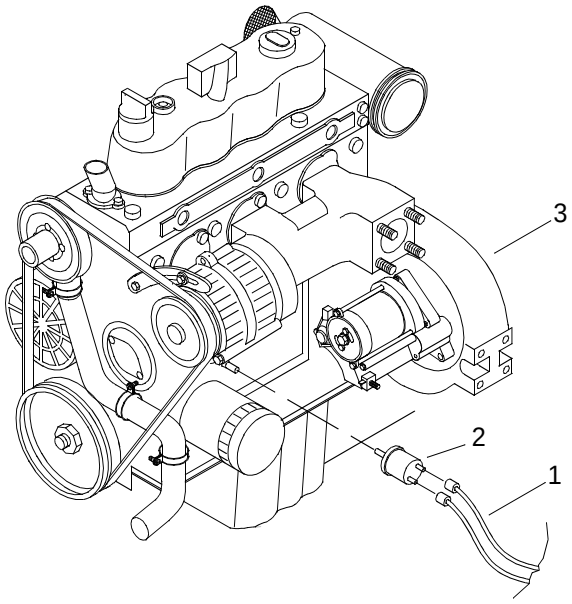
REMOVE LIGHT TOWER ENGINE OIL PRESSURE SWITCH

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

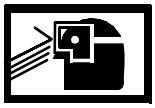
1. Tag and disconnect two wires (1) from oil pressure switch (2).



2. Unscrew oil pressure switch (2) from engine block (3) and discard.

WARNING


CHEMICAL

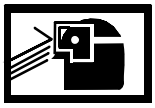

EYE PROTECTION

3. Using wire brush, remove sealing compound from engine block (3).

INSTALL LIGHT TOWER ENGINE OIL PRESSURE SWITCH

WARNING


CHEMICAL


EYE PROTECTION

1. Apply sealing compound to oil pressure switch (2).
2. Screw new oil pressure switch (2) into engine block (3).
3. Connect two wires (1) on new oil pressure switch (2) and remove tags.
4. Install light tower battery negative lead terminal. (WP 0131 00)
5. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE STARTER
TESTING

INITIAL SETUP:

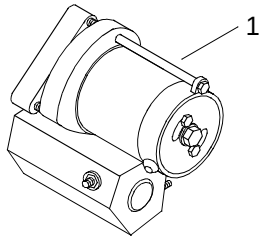
Tools
Vise, Machinists (Item 55, WP 0253 00)
Battery, 6 Volt (Item 3, WP 0253 00)
Jumper Cable, Battery (Item 23, WP 0253 00)
Qty 2

Personnel Required
Engineer 88L

Equipment Condition
Light Tower Engine Starter Removed. (WP 0142 00)

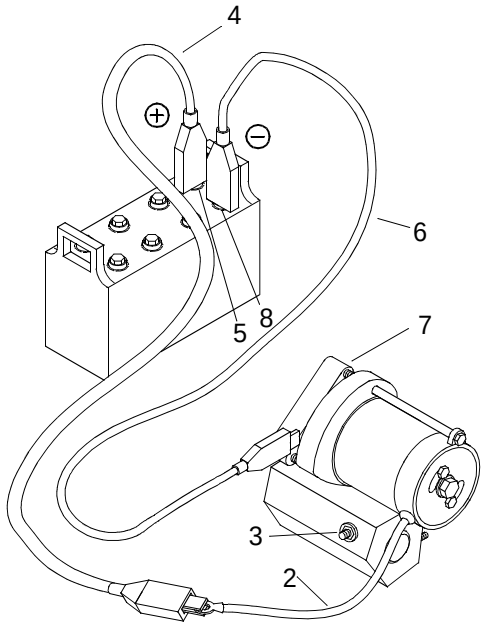
TEST LIGHT TOWER ENGINE STARTER

1. Secure light tower engine starter (1) in vise.



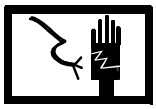
2. Test light tower engine starter motor function.

   a. Disconnect starter motor connecting lead (2) from common terminal (3).



b. Connect jumper lead (4) to starter motor connecting lead (2) and positive battery terminal (5).

WARNING

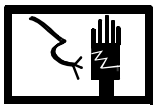


ELECTRICAL

c. Connect jumper lead (6) to starter body (7) and negative battery terminal (8).

d. Verify starter motor operates.

WARNING



ELECTRICAL

e. Disconnect jumper lead (6) from negative battery terminal (8) and starter body (7).

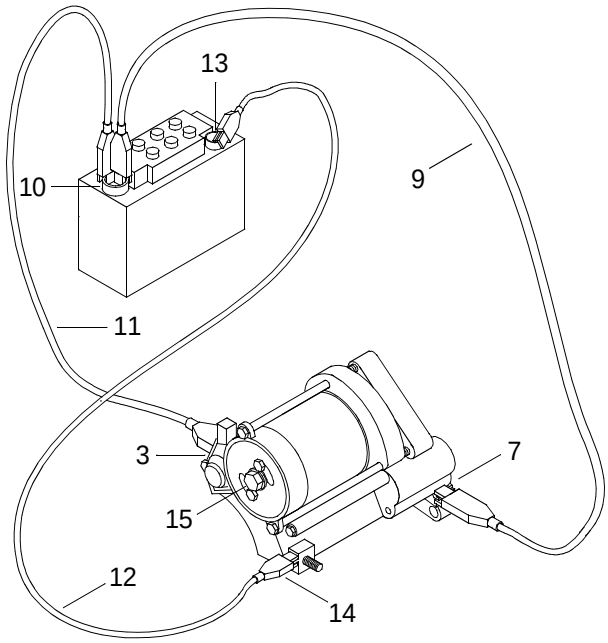
f. Disconnect jumper lead (4) from positive battery terminal (5) and starter motor connecting lead (2).

g. If starter motor does not operate, discard light tower engine starter.

h. If starter motor operates, test magnetic switch.

3. Test light tower engine starter magnetic switch function.

a. Connect jumper lead (9) to negative battery terminal (10) and starter body (7).



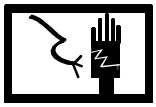
b. Connect jumper lead (11) to negative battery terminal (10) and common terminal (3).

c. Connect jumper lead (12) to positive battery terminal (13) and magnetic switch terminal (14).

d. Verify pinion gear (15) engages.

e. If pinion gear (15) does not engage, discard light tower engine starter.

WARNING



ELECTRICAL

f. If pinion gear (15) engages, remove jumper lead (11) from common terminal (3).

g. Verify pinion gear (15) remains engaged.

h. If pinion gear (15) does not remain engaged, discard light tower engine starter.

4. Install light tower engine starter. (WP 0142 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE STARTER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Starter
(33968)
PN 3688818

Personnel Required

Engineer 88L

References

TM 55-1945-205-10-4

Equipment Condition

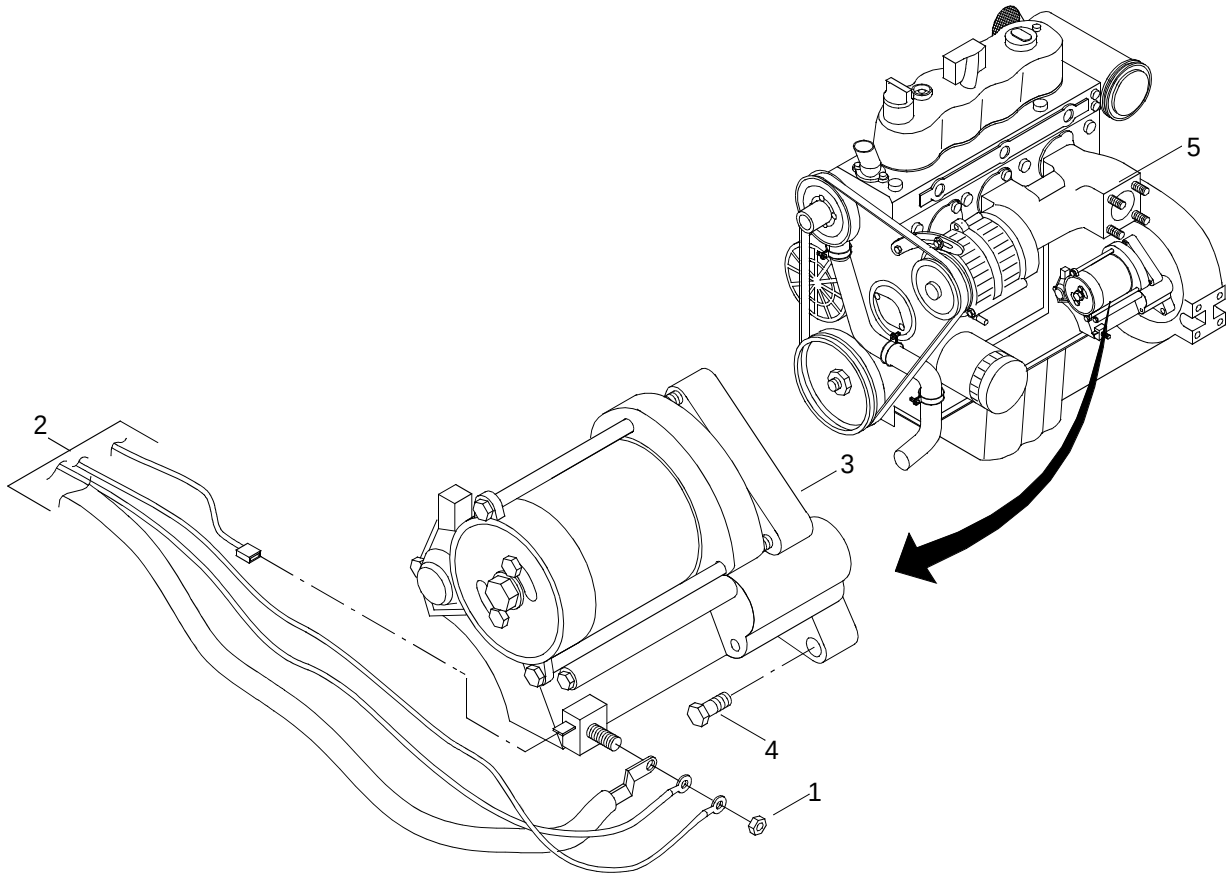
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER ENGINE STARTER

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove hex nut (1) securing starter wiring (2) to starter (3).



2. Tag and disconnect wiring (2) from starter (3).
3. Remove two hex head mounting bolts (4) from starter (3).
4. Remove starter (3) from engine block (5).

INSTALL LIGHT TOWER ENGINE STARTER

1. Position new starter (3) against engine block (5).
2. Install two hex head mounting bolts (4) in starter (3) and tighten.
3. Connect wiring (2) to starter (3) and remove tags
4. Install hex nut (1) over starter wiring (2) and tighten.
5. Install light tower battery negative lead terminal. (WP 0131 00)
6. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE COOLANT TEMPERATURE SENDING UNIT
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Drain Pan (Item 33, WP 0253 00)

Materials/Parts

Switch, Engine Temperature
(33968)
PN 36868479
Sealing Compound (Item 37, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

Engineer 88L

References

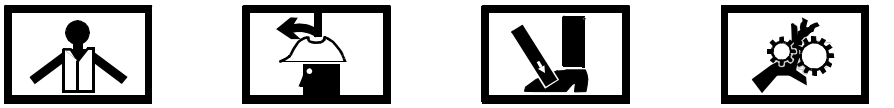
TM 55-1945-205-10-4

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal. (WP 0131 00)

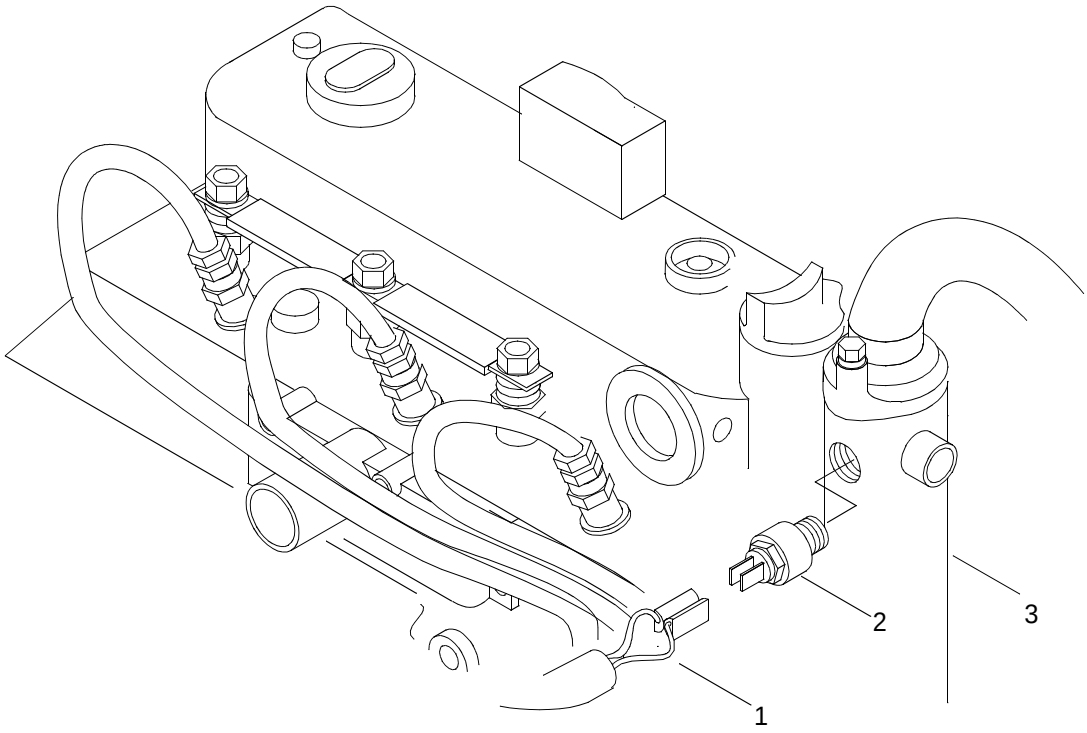
REMOVE LIGHT TOWER ENGINE TEMPERATURE SENDING UNIT

WARNING



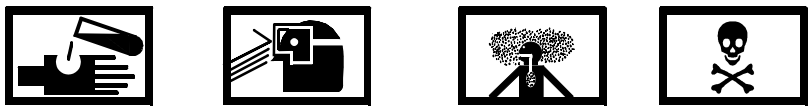
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Tag and disconnect two wires (1) from temperature sending unit (2).



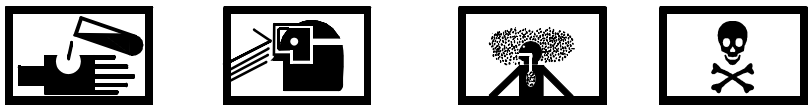
2. Position drain pan under thermostat housing (3).

WARNING



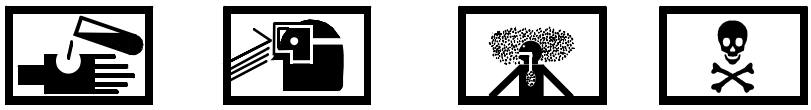
3. Unscrew temperature sending unit (2) from thermostat housing (3) and discard.

WARNING



4. Remove sealing compound from thermostat housing (3) with a putty knife.

WARNING



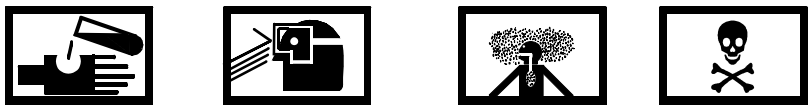
5. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE TEMPERATURE SENDING UNIT

WARNING

1. Apply sealing compound to temperature sending unit (2).

WARNING



2. Screw new temperature sending unit (2) into thermostat housing (3).
3. Connect two wires (1) on new temperature sending unit (2) and remove tags.
4. Service light tower engine cooling system. (WP 0174 00)

WARNING

5. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.
6. Install light tower battery negative lead terminal. (WP 0131 00)
7. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL HOUR METER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Hour Meter
(33968)
PN 36841245

Personnel Required

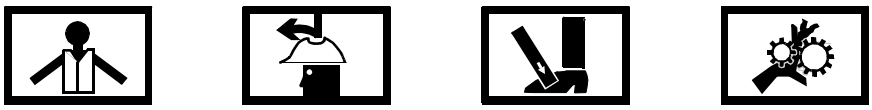
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

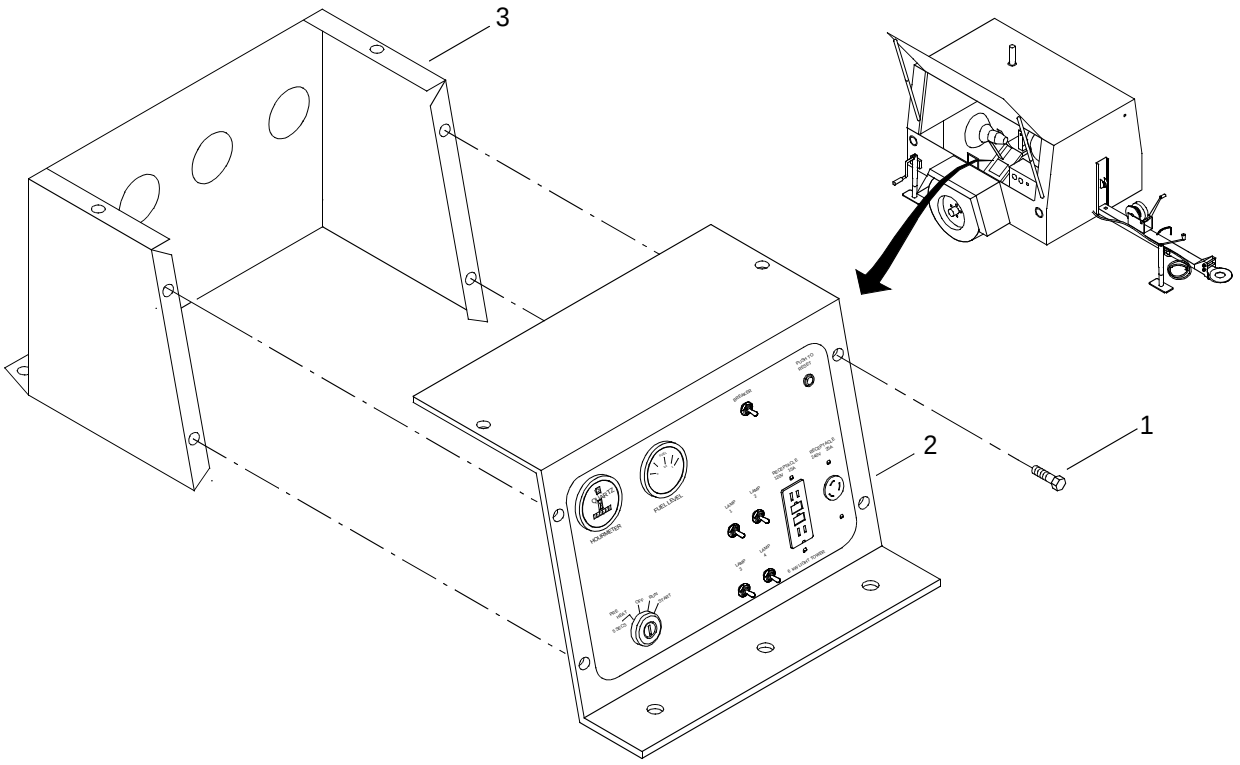
REMOVE LIGHT TOWER CONTROL PANEL HOUR METER

WARNING



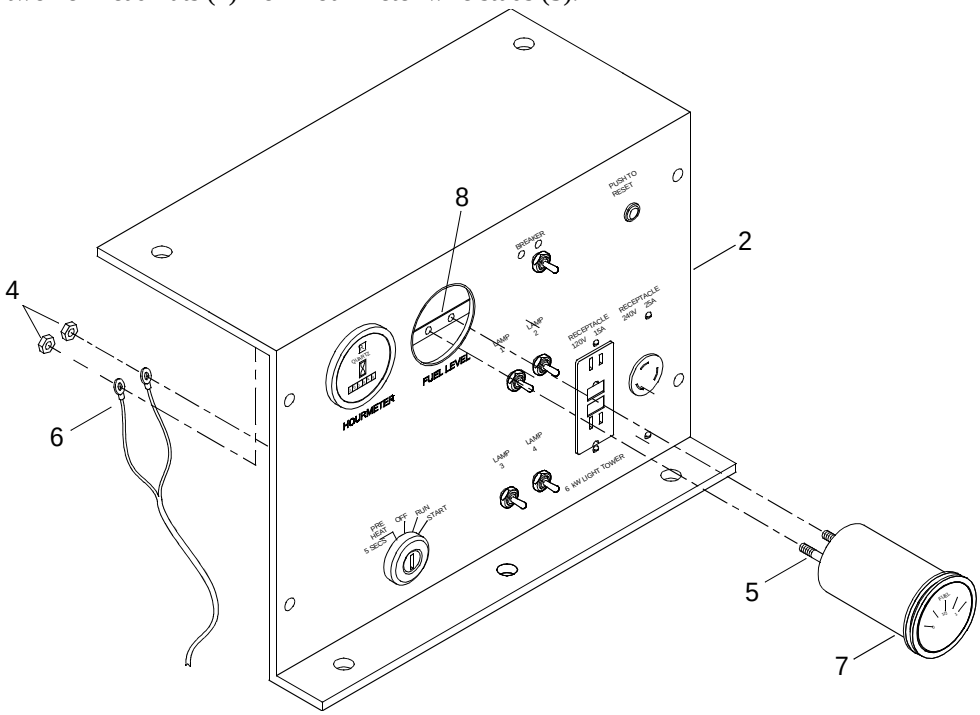
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Remove two hex head nuts (4) from hour meter wire studs (5).



4. Tag and remove wires (6) from hour meter wire studs (5).

5. Remove hour meter (7) with gasket (8) from mounting bracket (9) through front of control panel (2).

6. Discard hour meter (7) and gasket (8).

INSTALL LIGHT TOWER CONTROL PANEL HOUR METER

1. Install new gasket (8) on new hour meter (7).
2. Position hour meter (7) through front of control panel (2) until hour meter wire studs (5) project through mounting bracket (9).
3. Install wires (6) on hour meter wire studs (5) and remove tags.
4. Install two hex head nuts (4) on hour meter wire studs (5). Tighten nuts (4).
5. Connect wires (4) to hour meter (5) and remove tags.
6. Install nine hex head bolts (1) and tighten.
7. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL FUEL GAGE
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Fuel Gage Option
(33968)
PN 36011765

Personnel Required

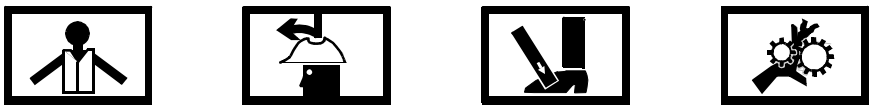
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

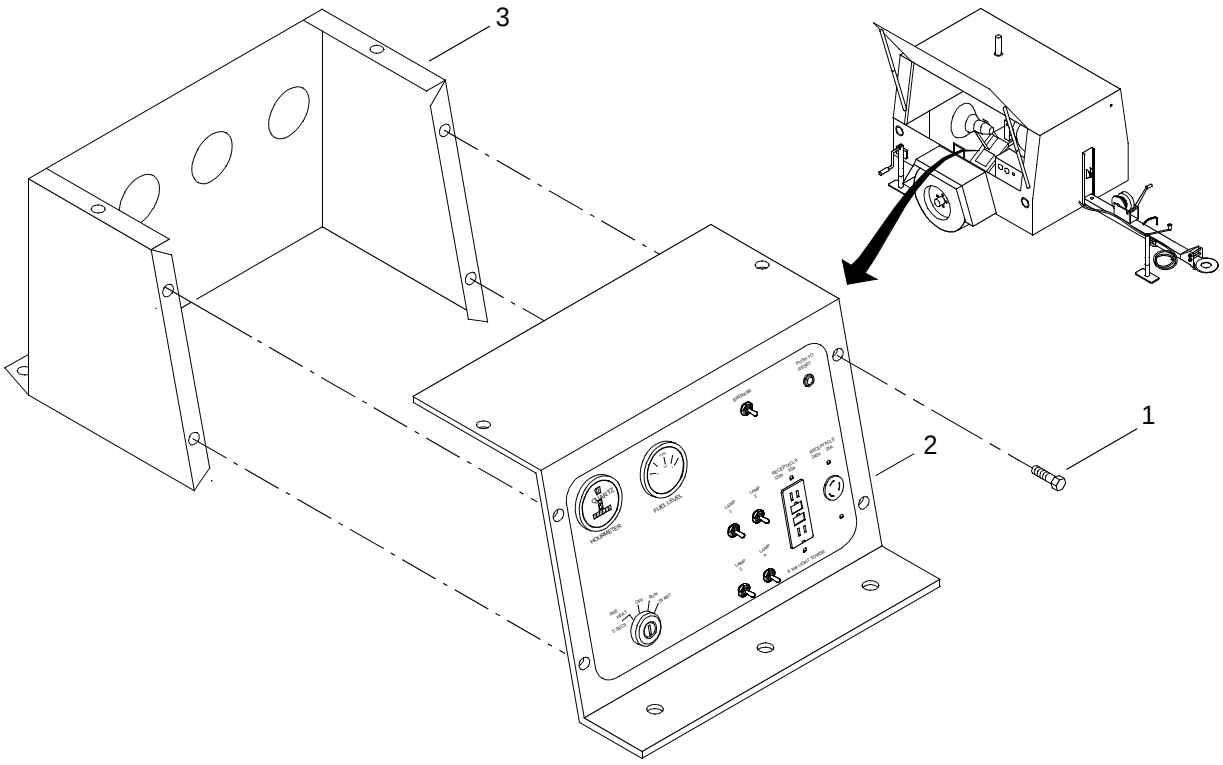
REMOVE LIGHT TOWER CONTROL PANEL FUEL GAGE

WARNING



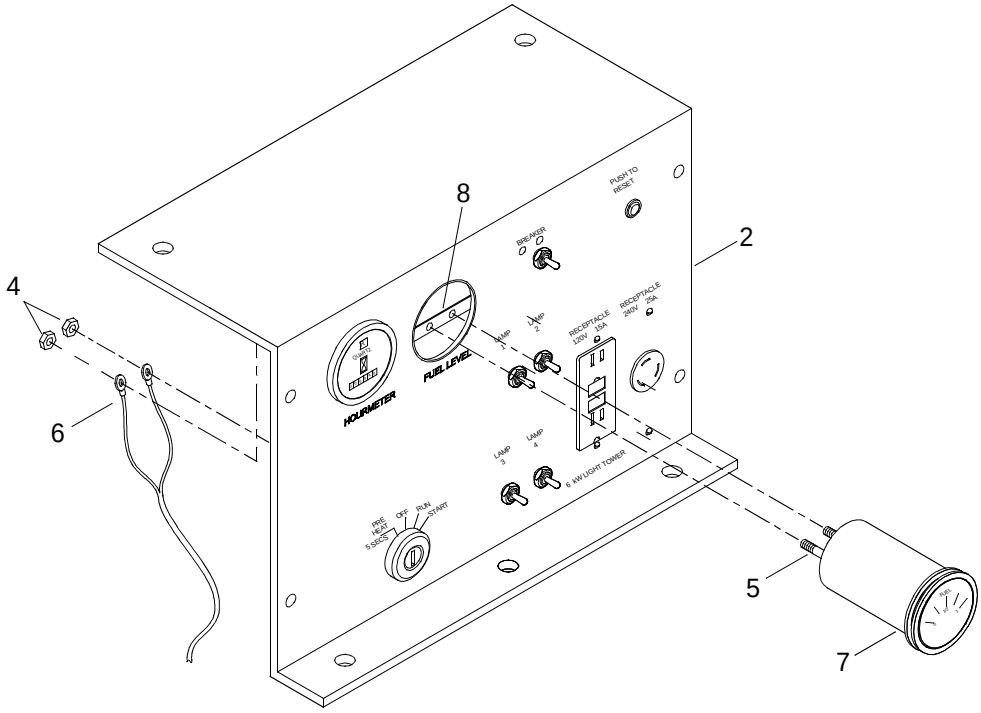
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Remove two hex head nuts (4) from fuel gage wire studs (5).



4. Tag and remove wires (6) from fuel gage wire studs (5).

5. Remove fuel gage (7) from mounting bracket (8) through front on control panel (2).

6. Discard fuel gage (7).

INSTALL LIGHT TOWER CONTROL PANEL FUEL GAGE

1. Position fuel gage (7) through front of control panel (2) until fuel gage wire studs (5) project through mounting bracket (8).
2. Install wires (6) on fuel gage wire studs (5) and remove tags.
3. Install two hex head nuts (4) on fuel gage wire studs (5). Tighten nuts (4).
4. Position control panel (2) over cover (3).
5. Install nine hex head bolts (1) and tighten.
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL DUPLEX OUTLET REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Outlet, Duplex
(33968)
PN 36848745

Personnel Required

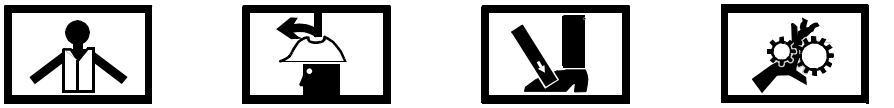
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

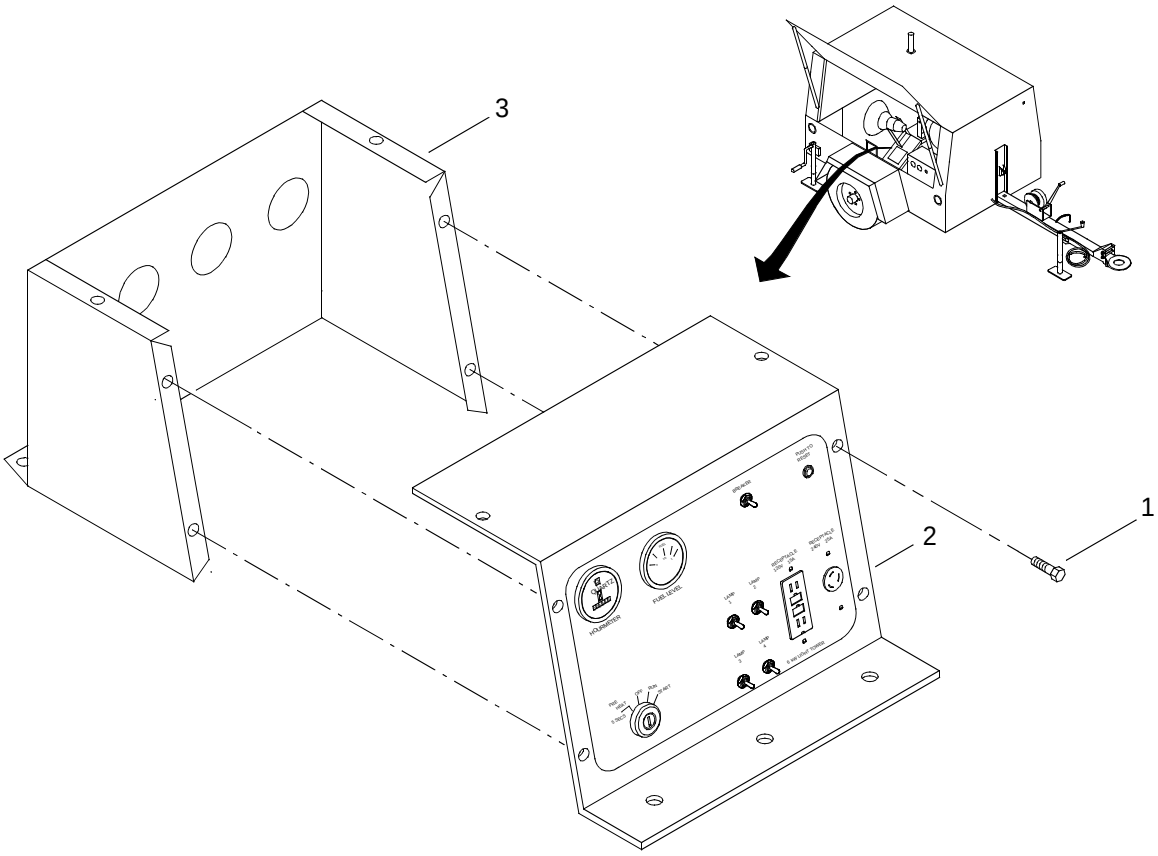
REMOVE LIGHT TOWER CONTROL PANEL DUPLEX OUTLET

WARNING



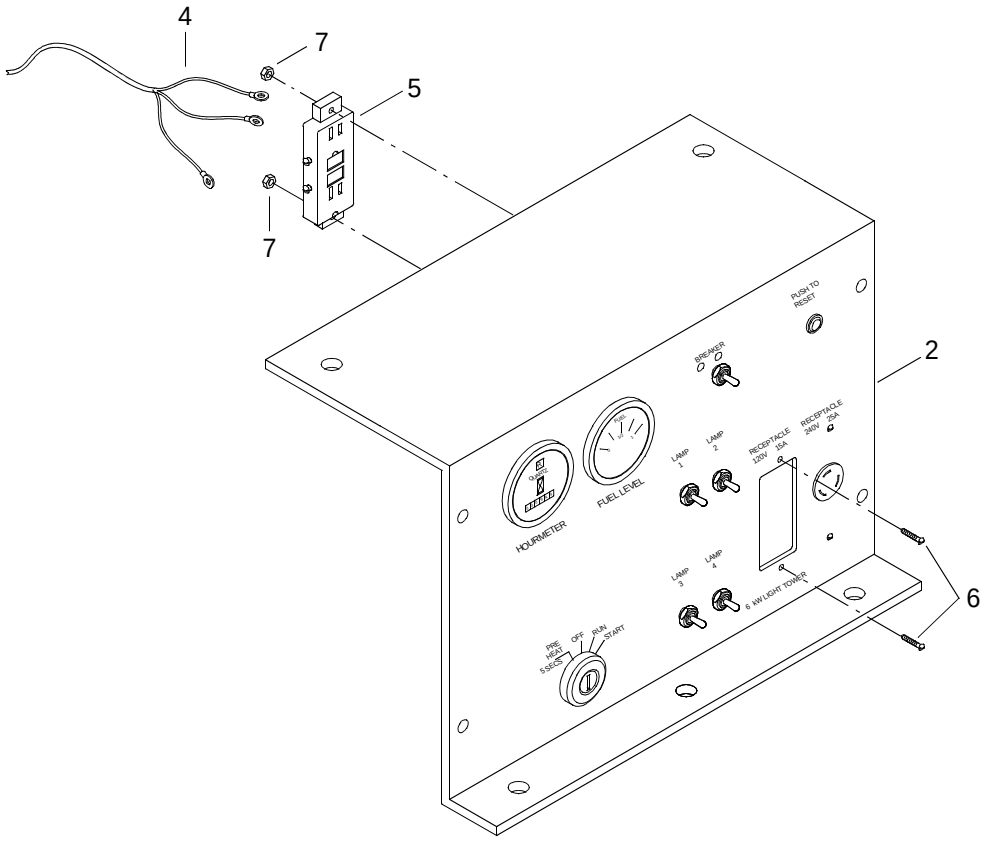
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Tag and disconnect wires (4) from duplex outlet (5).



4. Remove two pan head screws (6) and nuts (7) securing duplex outlet (5) to control panel (2).

5. Remove duplex outlet (5) from the back of the control panel (2) and discard.

INSTALL LIGHT TOWER CONTROL PANEL DUPLEX OUTLET

1. Position new duplex outlet (5) through the back of the control panel (2).

2. Install two pan head screws (6) and nuts (7) to secure duplex outlet (5) to control panel (2). Tighten nuts (7).

3. Connect wires (4) to duplex outlet (5) and remove tags.

4. Position control panel (2) over cover (3).

5. Install nine hex head bolts (1) and tighten.

6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL TWIST LOCK OUTLET
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Outlet, Twist Lock
(33968)
PN 36848752

Personnel Required

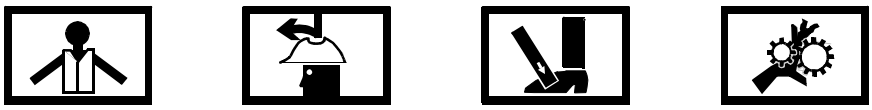
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

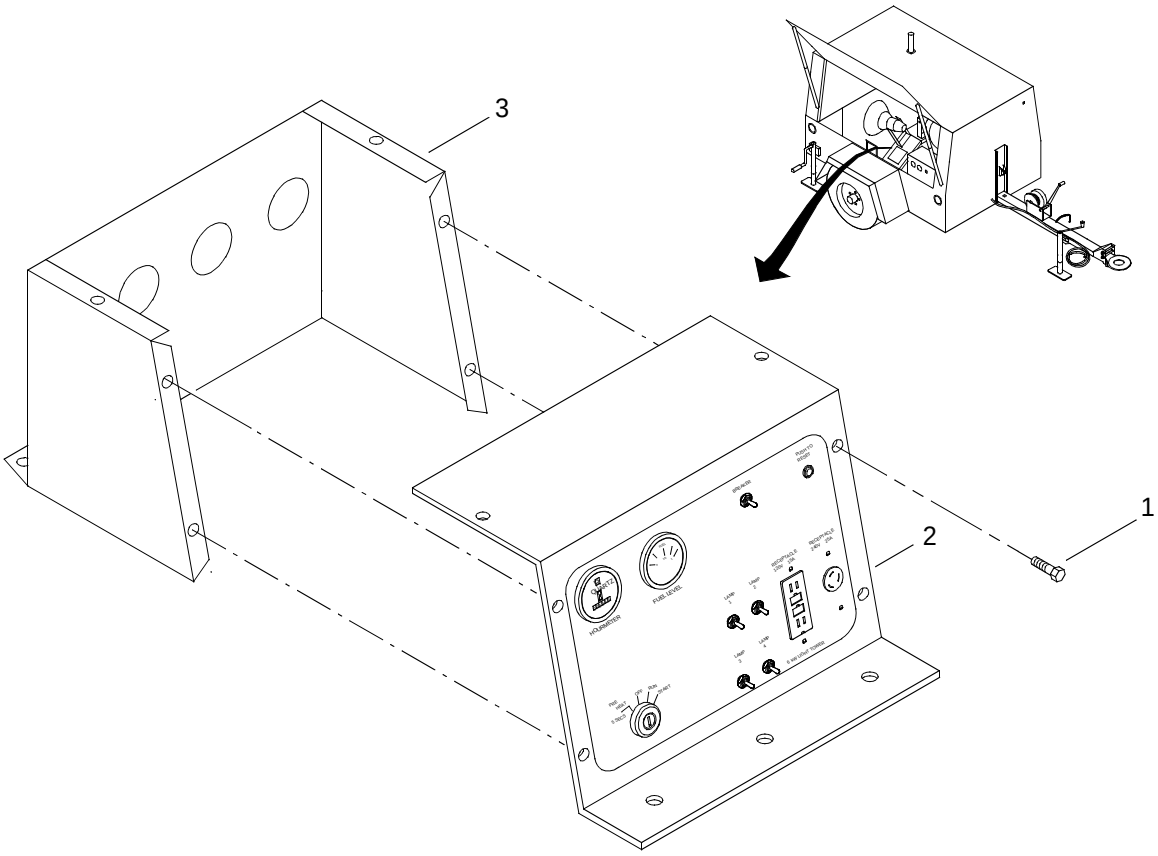
REMOVE LIGHT TOWER CONTROL PANEL TWIST LOCK OUTLET

WARNING



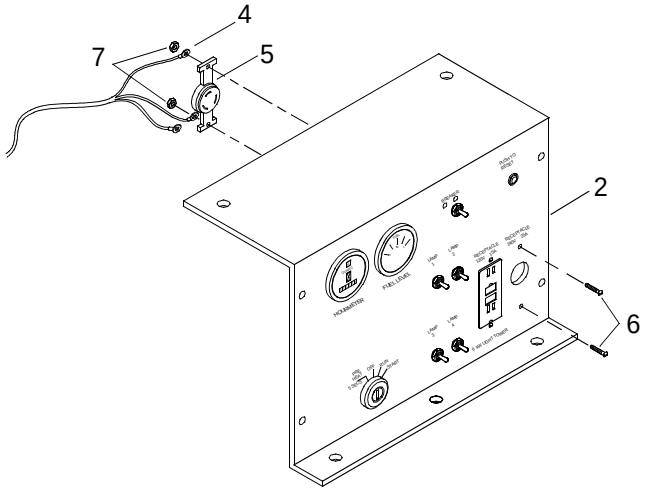
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Tag wires (4) and disconnect from twist lock outlet (5).



4. Remove two pan head screws (6) and nuts (7) securing twist lock outlet (5) to control panel (2).

5. Remove twist lock outlet (5) from the back of the control panel (2) and discard.

INSTALL LIGHT TOWER CONTROL PANEL TWIST LOCK OUTLET

1. Position new twist lock outlet (5) through the back of the control panel (2).
2. Install two pan head screws (6) and nuts (7) to secure twist lock outlet (5) to control panel (2). Tighten nuts (7).
3. Connect wires (4) to twist lock outlet (5) and remove tags.
4. Position control panel (2) over cover (3).
5. Install nine hex head bolts (1) and tighten.
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL MAIN CIRCUIT BREAKER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Breaker, Main
(33968)
PN 36780278

Personnel Required

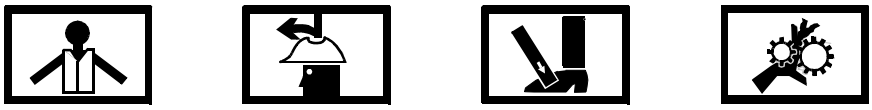
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

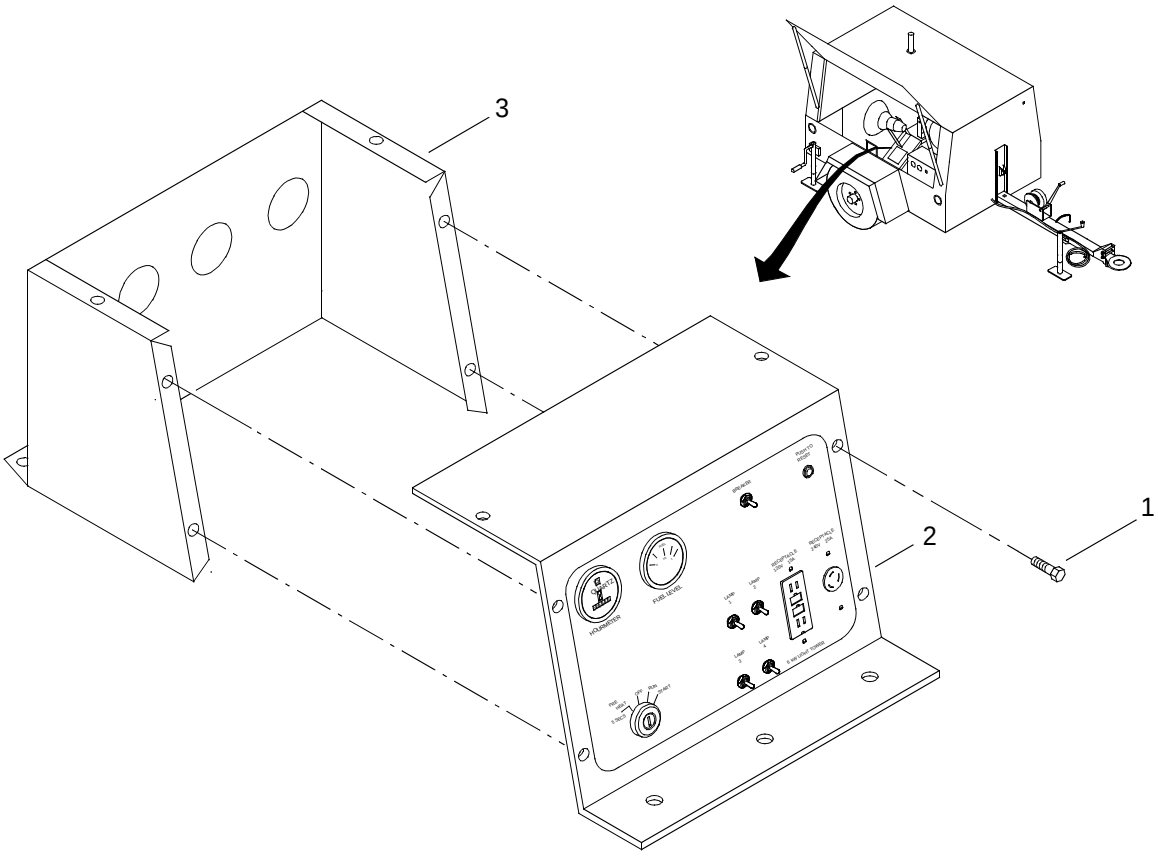
REMOVE LIGHT TOWER CONTROL PANEL MAIN CIRCUIT BREAKER

WARNING



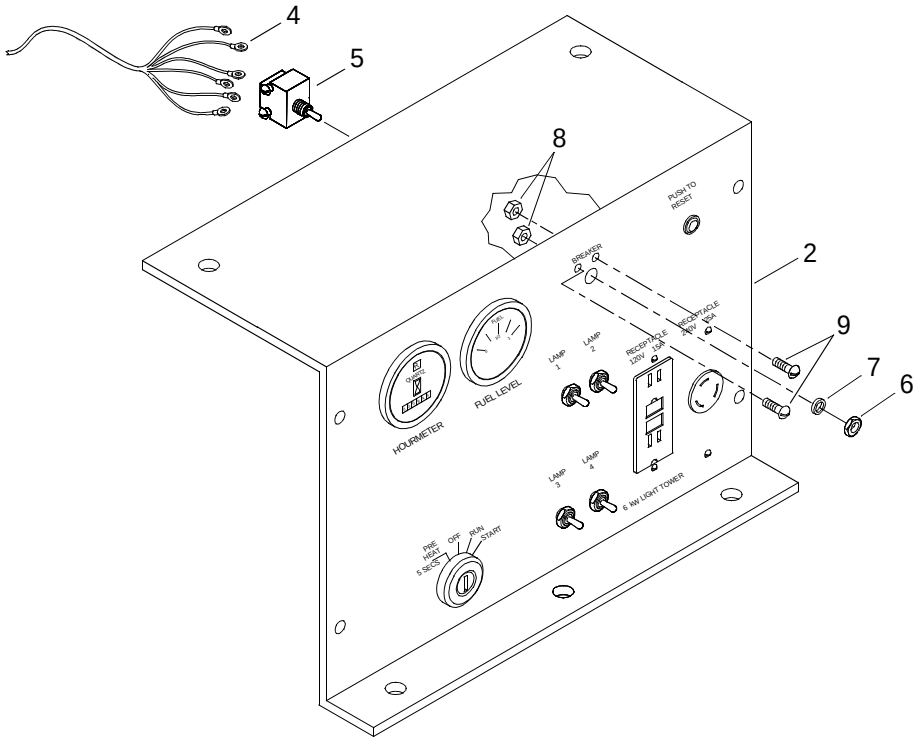
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Tag and disconnect wires (4) from main circuit breaker (5).



4. Remove nut (6) and washer (7) from control panel (2).
5. Remove nuts (8) and screws (9) from control panel (2).
6. Remove main circuit breaker (5) from back of control panel (2) and discard.

INSTALL LIGHT TOWER CONTROL PANEL MAIN CIRCUIT BREAKER

1. Position new main circuit breaker (5) through back of control panel (2).
2. Install screws (9) and nuts (8) into control panel (2). Tighten nuts (8).
3. Install washer (7) and nut (6) into front of control panel (2). Tighten nut (6).
4. Connect wires (4) to main circuit breaker (5) and remove tags.
5. Position control panel (2) over cover (3).
6. Install nine hex head bolts (1) and tighten.
7. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL TOGGLE SWITCH REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Switch, Toggle
(33968)
PN 35337435

Personnel Required

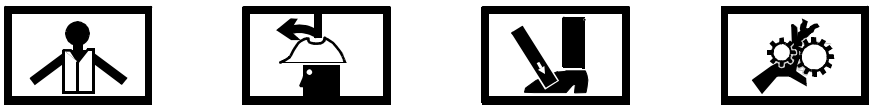
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER CONTROL PANEL TOGGLE SWITCH

WARNING



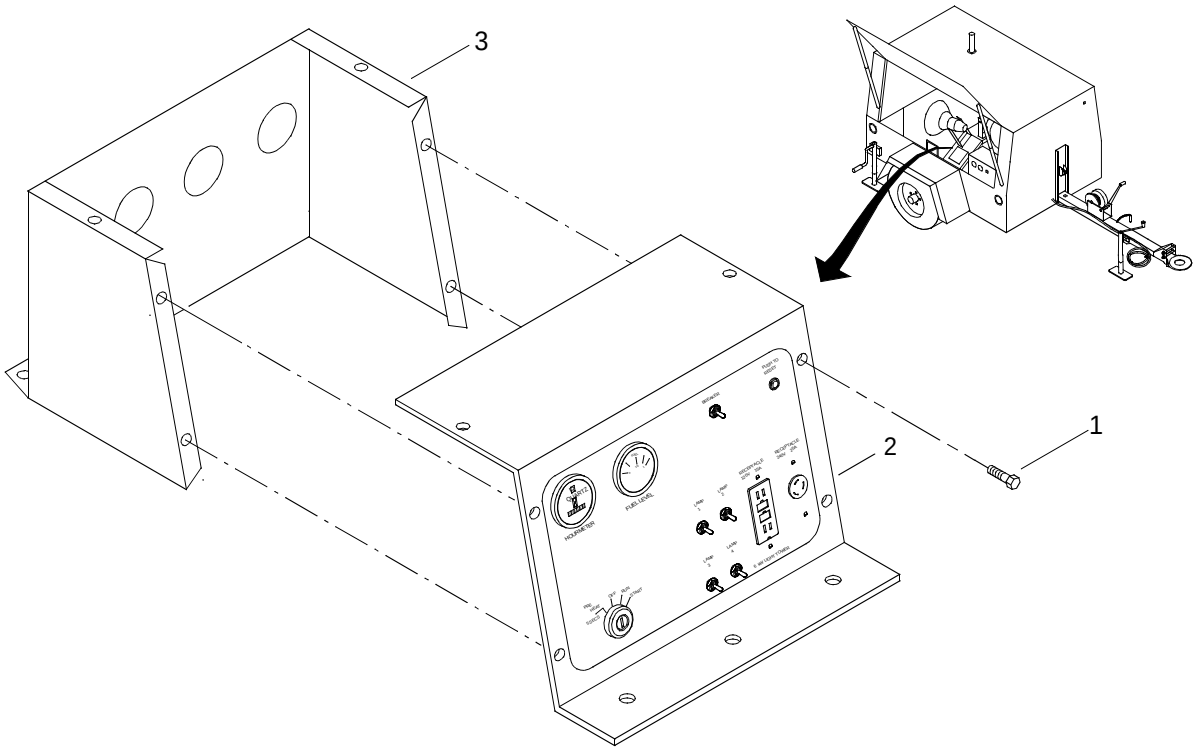
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of all toggle switches in the light tower control panel.

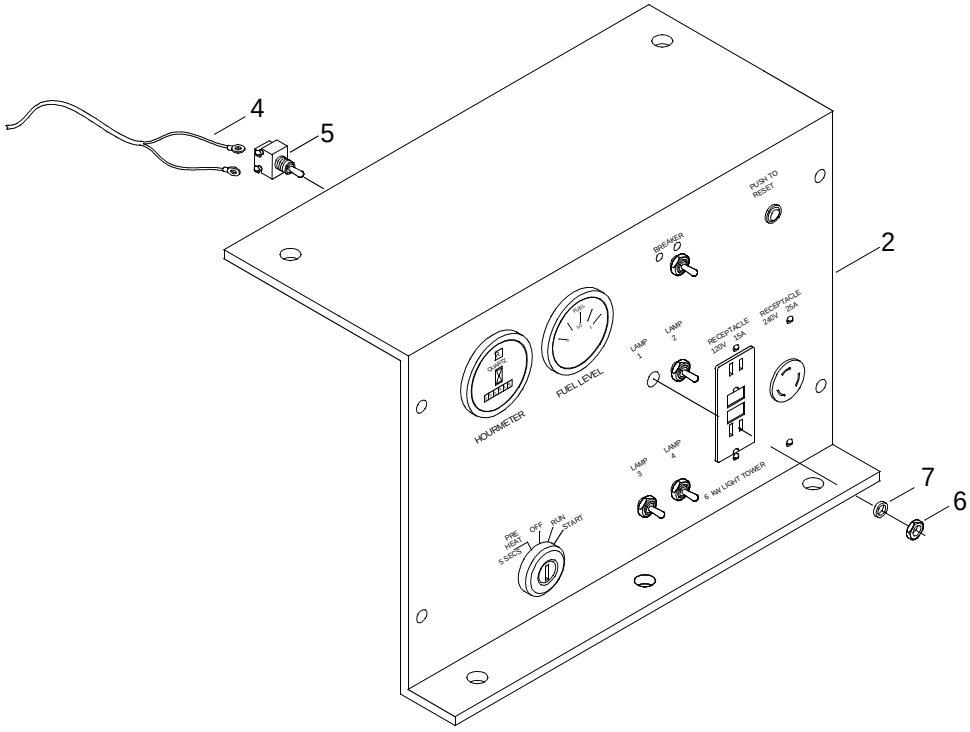
Toggle switches for lights 1 and 2 have three wires and toggle switches for lights 3 and 4 have two wires.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Tag and disconnect wires (4) from toggle switch (5).



4. Remove nut (6) and washer (7) from control panel (2).
5. Remove toggle switch (5) from the back of the control panel (2) and discard.

INSTALL LIGHT TOWER CONTROL PANEL TOGGLE SWITCH

1. Position new toggle switch (5) through the back of the control panel (2).
2. Install washer (7) and nut (6) into the front of the control panel (2) and tighten.
3. Connect wires (4) to toggle switch (5) and remove tags.
4. Position control panel (2) over cover (3).
5. Install nine hex head bolts (1) and tighten.
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL 125 VOLT CIRCUIT BREAKER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Breaker, 125 Volt
(33968)
PN 35371772

Personnel Required

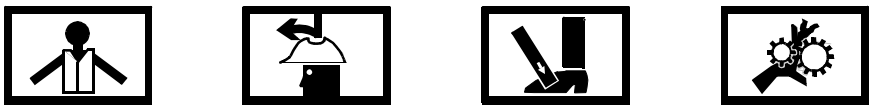
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

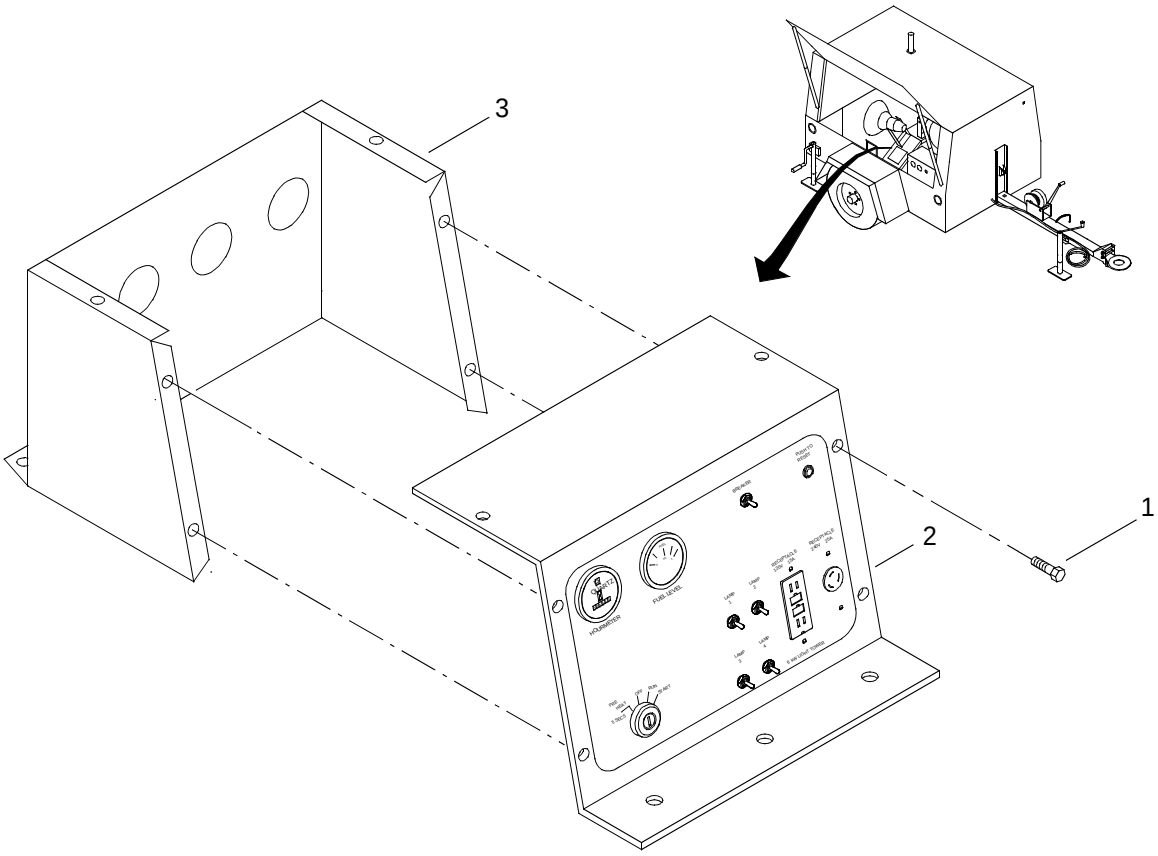
REMOVE LIGHT TOWER CONTROL PANEL 125 VOLT CIRCUIT BREAKER

WARNING



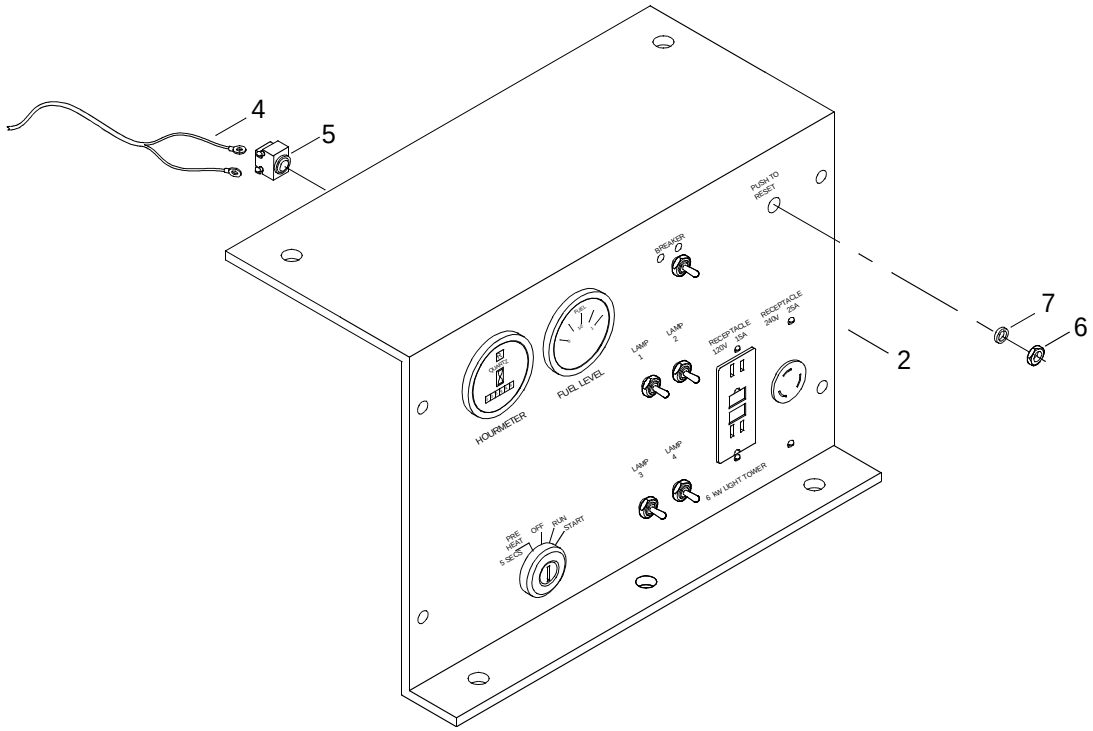
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Tag wires (4) and disconnect from 125 volt breaker (5).



4. Remove nut (6) and washer (7) from control panel (2).
5. Remove 125 volt breaker (5) from the back of the control panel (2) and discard.

INSTALL LIGHT TOWER CONTROL PANEL 125 VOLT CIRCUIT BREAKER

1. Position new 125 volt breaker (5) through the back of the control panel (2).
2. Install washer (7) and nut (6) into the front of the control panel (2) and tighten.
3. Connect wires (4) to 125 volt breaker (5) and remove tags.
4. Position control panel (2) over cover (3).
5. Install nine hex head bolts (1) and tighten.
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL PANEL KEY SWITCH
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Switch, Key
(33968)
PN 36786457

Personnel Required

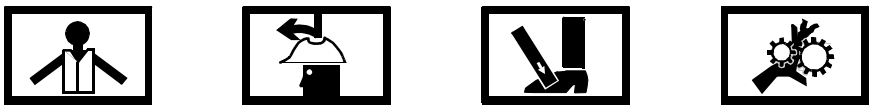
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

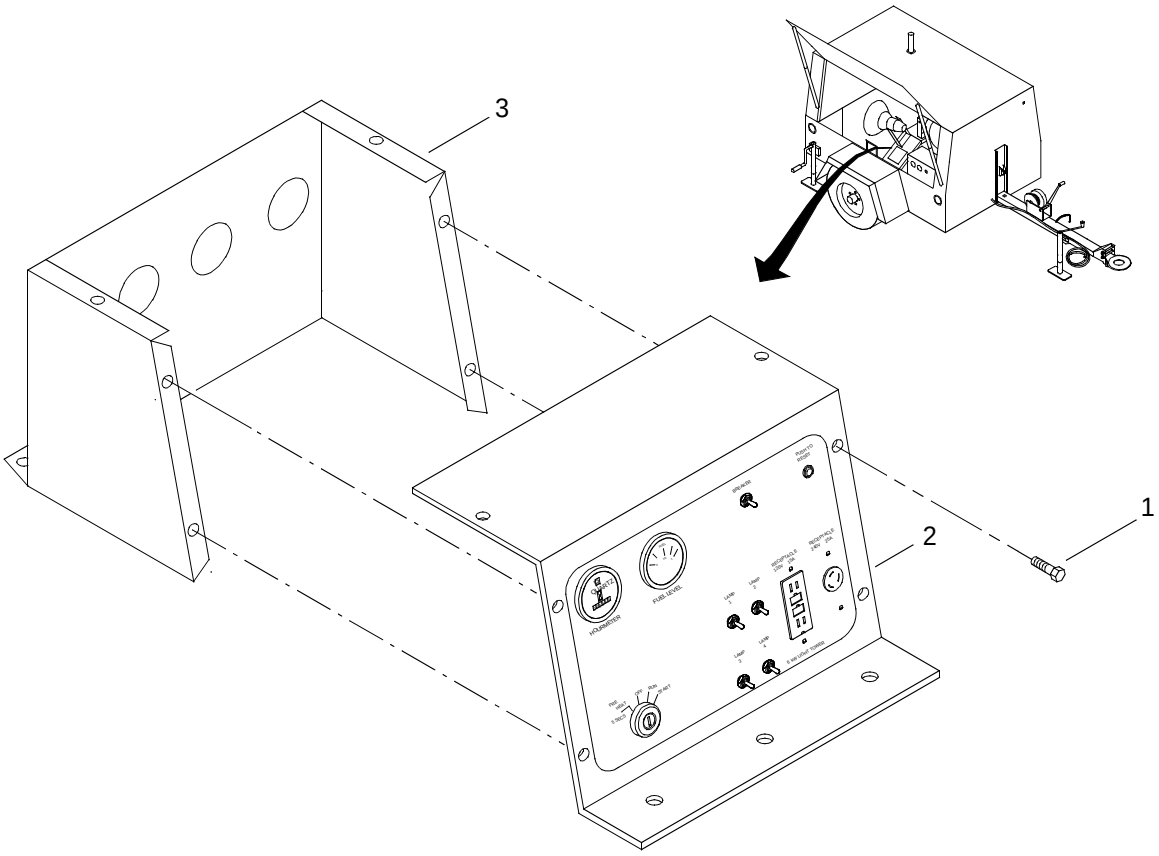
REMOVE LIGHT TOWER CONTROL PANEL KEY SWITCH

WARNING



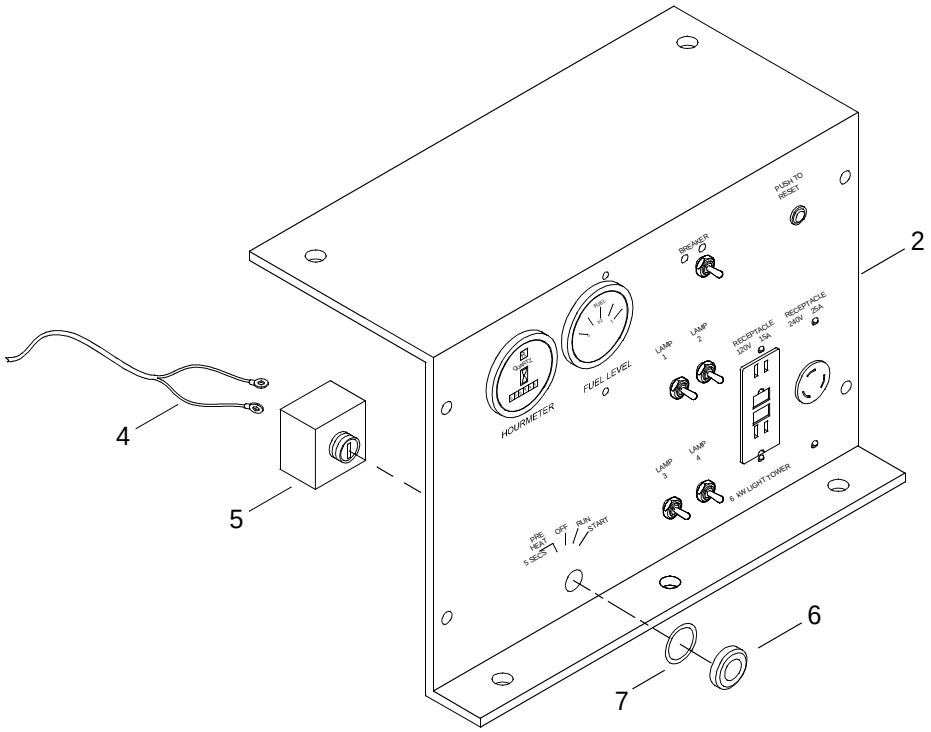
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from control panel (2).



2. Slide control panel (2) away from cover (3).

3. Tag and disconnect wires (4) from key switch (5).



4. Remove key coupling (6) and gasket (7) from key switch (5).
5. Remove key switch (5) from the back of the control panel (2) and discard.

INSTALL LIGHT TOWER CONTROL PANEL KEY SWITCH

1. Position new key switch (5) through the back of the control panel (2).
2. Install gasket (7) and key coupling (6) on key switch (5). Tighten key coupling (6).
3. Connect wires (4) to key switch (5) and remove tags.
4. Position control panel (2) over cover (3).
5. Install nine hex head bolts (1) and tighten.
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER SHUTDOWN SOLENOID
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Solenoid, Shutdown
(33968)
PN 36878189

Personnel Required

Engineer 88L

References

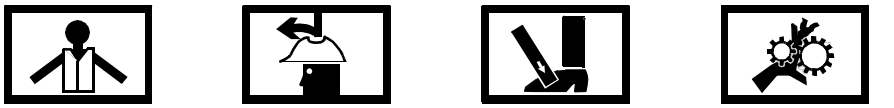
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

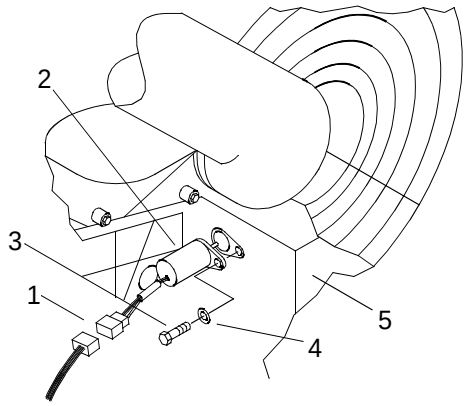
REMOVE LIGHT TOWER SHUTDOWN SOLENOID

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Tag and disconnect electrical plug (1) supplying power to shutdown solenoid (2), located on forward starboard side of light tower engine.



2. Remove two hex head bolts (3) and washers (4) securing shutdown solenoid to engine (5).

3. Remove shutdown solenoid (2) and discard.

INSTALL LIGHT TOWER SHUTDOWN SOLENOID

1. Position new shutdown solenoid (2) on engine (5).

2. Install two hex head bolts (3) and washers (4) to secure shutdown solenoid (2) to engine (5) and tighten bolts (3).

3. Connect electrical plug (1) and remove tags.

4. Install light tower battery negative lead terminal. (WP 0131 00)

5. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BULBS
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Bulb, Light, High Pressure Sodium, 6 Watt
(33968)
PN 36043669
Gloves, Cotton (Item 15, WP 0252 00)

Personnel Required

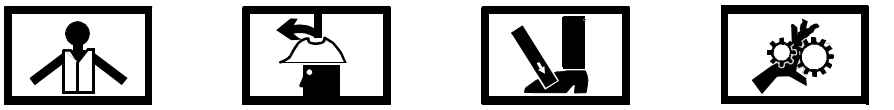
Engineer 88L

Equipment Condition

Light Tower Lamps Cool To Touch.
Light Tower Tower Lowered. (TM 55-1945-205-10-4)
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

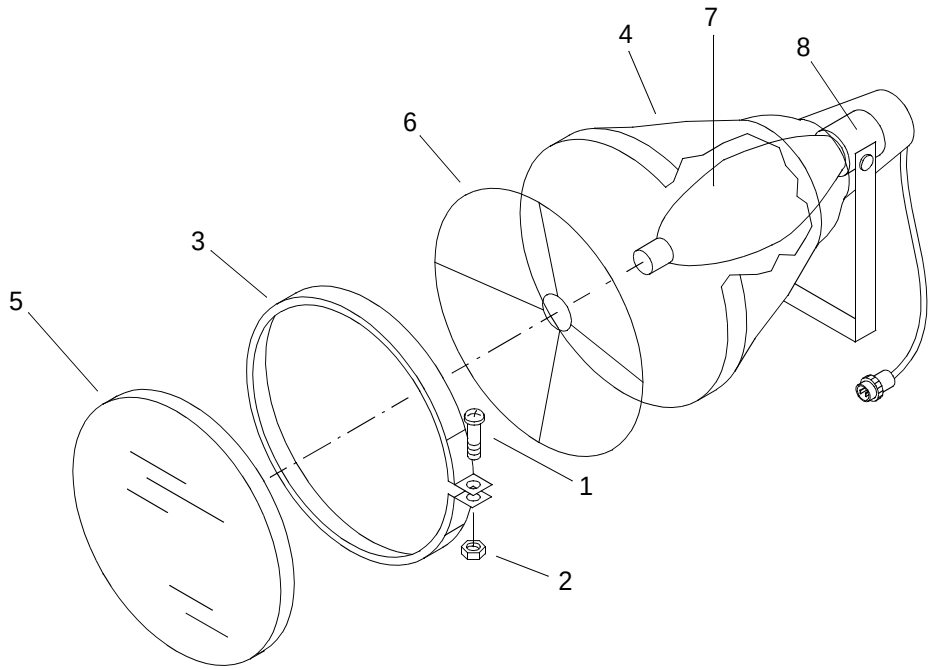
REMOVE LIGHT TOWER BULBS

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove bolt (1) and nut (2) from retainer ring (3).



2. Remove retainer ring (3) from reflector (4).
3. Remove lens (5).
4. Remove lamp support (6).
5. Unscrew lamp (7) from socket (8) and discard defective lamp (7).

INSTALL LIGHT TOWER BULBS

CAUTION

Clean cotton gloves must be worn when installing lamps. Failure to comply will result in damage to lamps.

1. Carefully screw new lamp (7) into socket (8).
2. Install lamp support (6).
3. Install lens (5).
4. Install retainer ring (3) on reflector (4).
5. Install nut (2) on bolt (1) and tighten nut (2).
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER OPTICAL/SOCKET ASSEMBLY
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Optical/Socket Assembly
(33968)
PN 36885226

Personnel Required

Engineer 88L

References

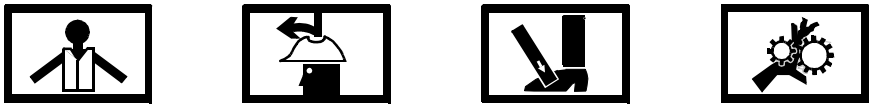
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

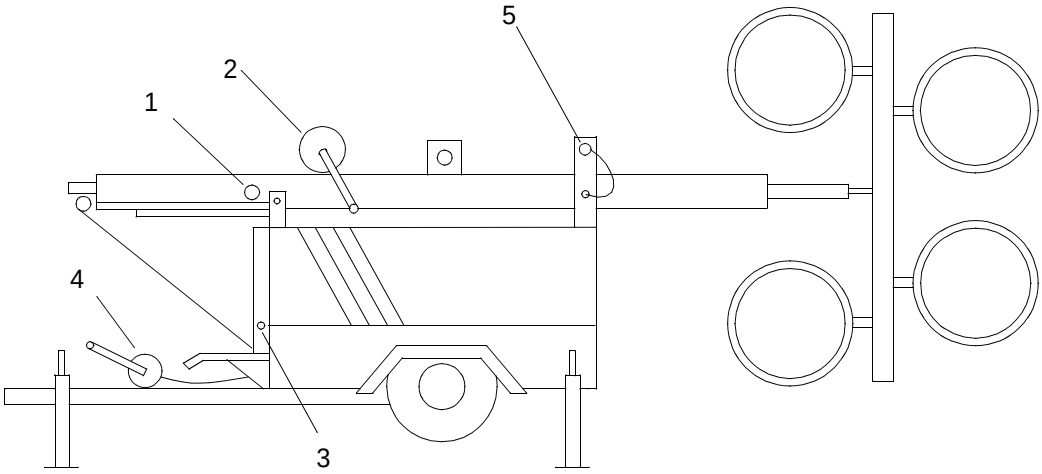
REMOVE LIGHT TOWER OPTICAL/SOCKET ASSEMBLY

WARNING

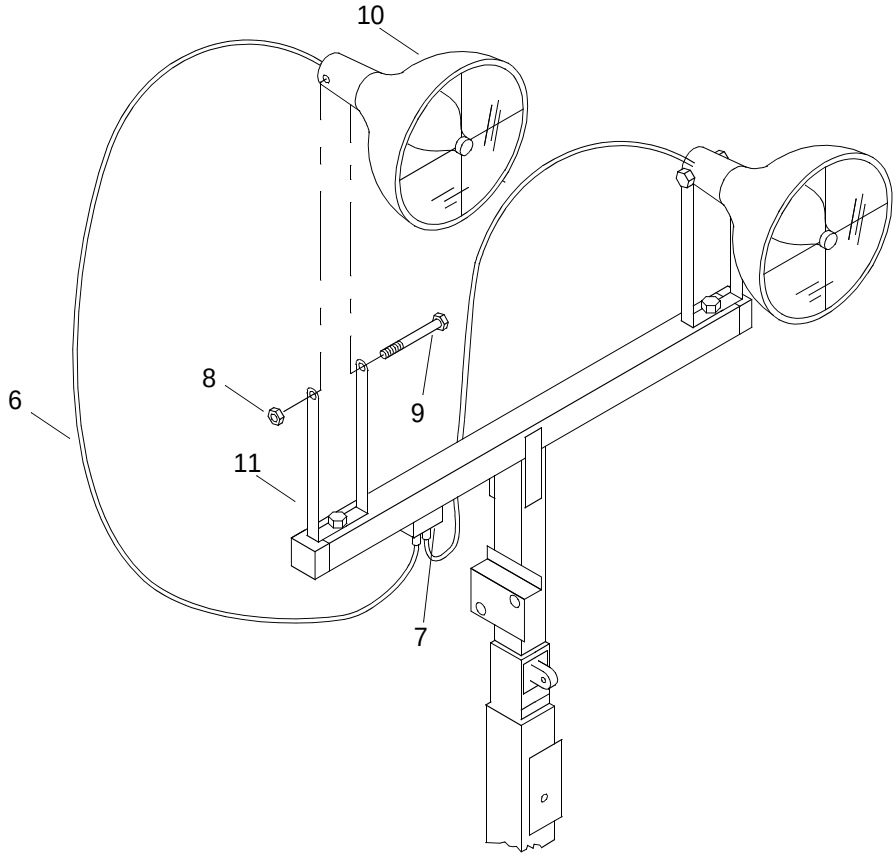


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Loosen eye bolt (1).



2. With tower in upright position, operate winch (2) to retract tower.
3. Remove lock pin (3) securing tower in upright position.
4. Operate winch (4) to lower tower.
5. Insert and lock pin (5) to secure tower in the lowered position.
6. Disconnect cord (6) from receptacle (7).



7. Remove nut (8) and bolt (9).

WARNING

HEAVY OBJECTS

8. Remove optical/socket assembly (10) from trunnion (11).

INSTALL LIGHT TOWER OPTICAL/SOCKET ASSEMBLY

WARNING

HEAVY OBJECTS

1. Position optical/socket assembly (10) on trunnion (11).
2. Install bolt (9) and nut (8) and tighten nut (8).
3. Connect cord (6) to receptacle (7).
4. Remove lock pin (5) to secure tower in lowered position.
5. Operate winch (4) to raise tower.
6. Insert and lock pin (3) to secure tower in the raised position.

NOTE

Do not extend mast tower past upright mark on tower.

7. With tower in upright position, operate winch (2) to extend tower to 28 ft above collar. Do not extend past upright mark on tower.
8. Loosen eye bolt (1) to rotate tower.
9. Tighten eye bolt (1) after rotating tower.
10. Install light tower battery negative lead terminal. (WP 0131 00)
11. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER OPTICAL/SOCKET ASSEMBLY
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

Gasket, Lens
(33968)
PN 36885309
Gasket, Housing
(33968)
PN 36885325
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)
Cloth, Cleaning (Item 12, WP 0252 00)

Personnel Required

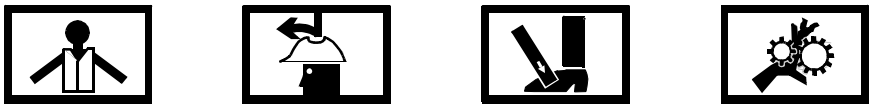
Interior Electrician 51R

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Optical/Socket Assembly Removed. (WP 0154 00)

DISASSEMBLE LIGHT TOWER OPTICAL/SOCKET ASSEMBLY

WARNING

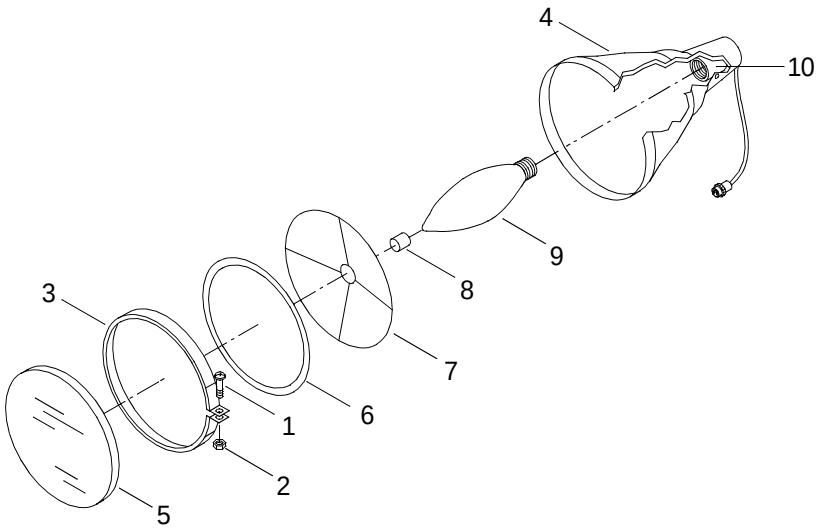


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

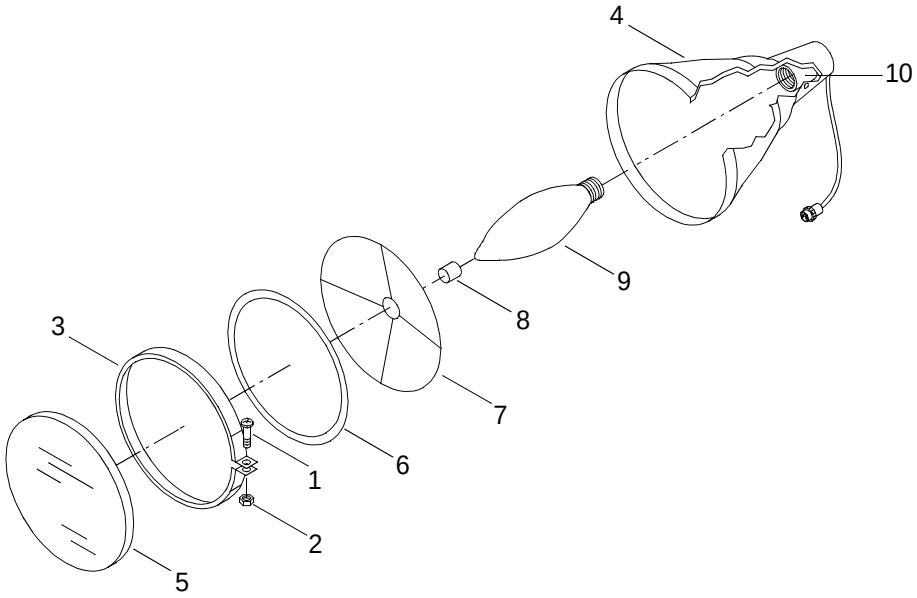
NOTE

Repair is limited to replacement of defective items.

1. Remove nut (1) and bolt (2) from retaining ring (3).



2. Remove retaining ring (3) from reflector (4).
3. Remove lens (5) from reflector (4).
4. Remove gasket (6) from reflector (4) and discard gasket (6).
5. Remove lens support (7) from reflector (4).
6. Remove lens bracket (8) from lamp (9).
7. Rotate lamp (9) counterclockwise and remove from socket (10).
8. Remove four screws (11) from reinforcement ring (12).



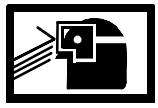
9. Remove reflector (4) from housing (13).
10. Remove reinforcement ring (12) from reflector (4).

11. Remove gasket (14) from housing (13) and discard gasket (14).
12. Remove two screws (15) from housing (13).
13. Loosen strain relief (16) and slide up cord (17).
14. Pull socket (10) from housing (13).
15. Loosen screws at base of socket (10), tag and disconnect cord (17) wires.
16. Remove cord (17) from housing (13).

CLEAN LIGHT TOWER OPTICAL/SOCKET ASSEMBLY

WARNING

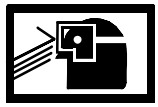

CHEMICAL


EYE PROTECTION

1. Using wiping rags and cleaner, clean debris from reflector and housing.

WARNING

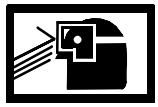

CHEMICAL


EYE PROTECTION

2. Using clean water, rinse cleaner residue from reflector and housing.
3. Air dry reflector and housing.

WARNING

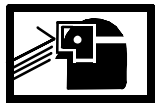

CHEMICAL


EYE PROTECTION

4. Using wiping rag and cleaner, wipe debris from lens.

WARNING


CHEMICAL

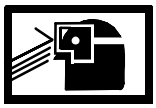

EYE PROTECTION

5. Using fresh water, rinse cleaner residue from lens.

6. Using clean cloth, dry lens.

WARNING

CHEMICAL



EYE PROTECTION

7. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT LIGHT TOWER OPTICAL/SOCKET ASSEMBLY

1. Inspect screws for damaged threads. Replace damaged item(s).
2. Inspect retaining ring for twisting or bending. Replace damaged item.
3. Inspect lens for cracks. Replace damaged item.
4. Inspect socket for damaged threads. Replace damaged item.
5. Inspect cord for breaks. Replace damaged item.
6. Inspect cord for frayed insulation. Replace damaged item.

ASSEMBLE LIGHT TOWER OPTICAL/SOCKET ASSEMBLY

1. Install cord (17) in housing (13).
2. Connect cord (17) wires, remove tags and tighten screws at base of socket (10).
3. Position socket (10) on housing (13).
4. Install two screws (15) in housing (13).
5. Slide strain relief (16) down cord (17) and tighten.
6. Position reflector (4) and new gasket (14) on housing (13).
7. Position reinforcement ring (12) on reflector (4).
8. Install four screws (11) in reinforcement ring (12). Tighten four screws (11).
9. Position lamp (9) in socket (10).
10. Rotate lamp (9) clockwise in socket (10). Tighten lamp (9).
11. Position lens bracket (8) on lamp (9).
12. Install lens support (7) in reflector (4).
13. Install new gasket (6) on reflector (4).
14. Install lens (5) in reflector (4).

15. Position retaining ring (3) on reflector (4).

16. Install bolt (2) and nut (1) on retaining ring (3). Tighten nut (1).

17. Install light tower optical/socket assembly. (WP 0154 00)

18. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BALLAST BOX
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Box, Ballast
(33968)
PN 36894269

Personnel Required

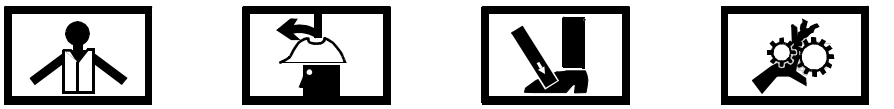
Interior Electrician 51R

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Control Panel Hour Meter Removed. (WP 0144 00)
Light Tower Control Panel Fuel Gage Removed. (WP 0145 00)
Light Tower Control Panel Duplex Outlet Removed. (WP 0146 00)
Light Tower Control Panel Twist Lock Outlet Removed. (WP 0147 00)
Light Tower Control Panel Main Circuit Breaker Removed. (WP 0148 00)
Light Tower Control Panel Toggle Switches Removed. (WP 0149 00)
Light Tower Control Panel 125 Volt Breaker Removed. (WP 0150 00)
Light Tower Control Panel Key Switch Removed. (WP 0151 00)
Light Tower Control Panel Removed. (WP 0160 00)
Light Tower Ballast Box Panel End Removed. (WP 0157 00)
Light Tower Ballast Box Cover Removed. (WP 0158 00)
Light Tower Ballasts Removed. (WP 0159 00)

REMOVE LIGHT TOWER BALLAST BOX

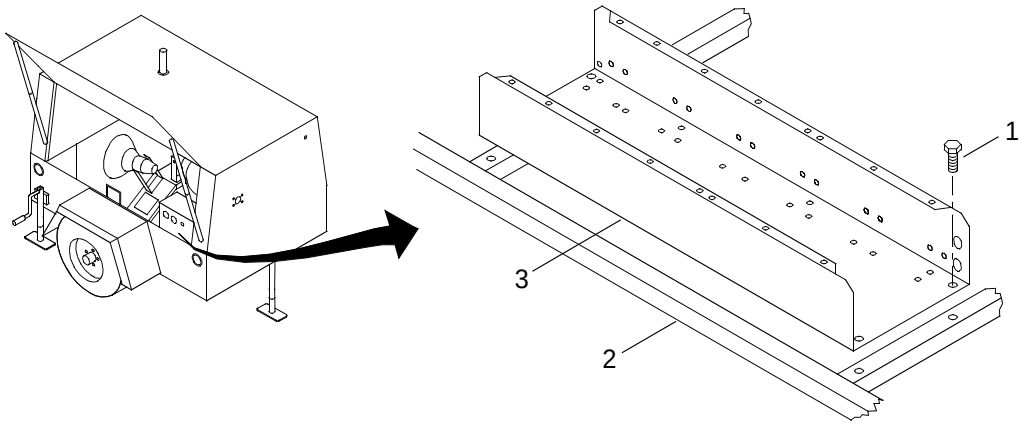
WARNING



VEST HELMET PROTECTION HEAVY PARTS MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove four bolts (1) from light tower frame (2) and ballast box (3).



2. Remove ballast box (3) from light tower frame (2) and discard.

INSTALL LIGHT TOWER BALLAST BOX

1. Position new ballast box (3) on light tower frame (2).
2. Install four bolts (1) through ballast box (3) and tighten.
3. Install light tower ballasts. (WP 0159 00)
4. Install light tower ballast box cover. (WP 0158 00)
5. Install light tower ballast box panel end. (WP 0157 00)
6. Install light tower control panel key switch. (WP 0151 00)
7. Install light tower control panel 125 volt breaker. (WP 0150 00)
8. Install light tower control panel toggle switches. (WP 0149 00)
9. Install light tower control panel main circuit breaker. (WP 0148 00)
10. Install light tower control panel twist lock outlet. (WP 0147 00)
11. Install light tower control panel duplex outlet. (WP 0146 00)
12. Install light tower control panel fuel gage. (WP 0145 00)
13. Install light tower control panel hour meter. (WP 0144 00)
14. Install light tower control panel. (WP 0160 00)
15. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BALLAST BOX PANEL END REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Panel, End
(33968)
PN 36894277

Personnel Required

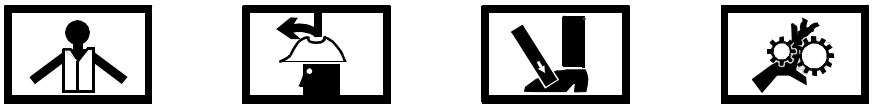
Interior Electrician 51R

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Control Panel Hour Meter Removed. (WP 0144 00)
Light Tower Control Panel Fuel Gage Removed. (WP 0145 00)
Light Tower Control Panel Duplex Outlet Removed. (WP 0146 00)
Light Tower Control Panel Twist Lock Outlet Removed. (WP 0147 00)
Light Tower Control Panel Main Circuit Breaker Removed. (WP 0148 00)
Light Tower Control Panel Toggle Switches Removed. (WP 0149 00)
Light Tower Control Panel 125 Volt Breaker Removed. (WP 0150 00)
Light Tower Control Panel Key Switch Removed. (WP 0151 00)
Light Tower Control Panel Removed. (WP 0160 00)

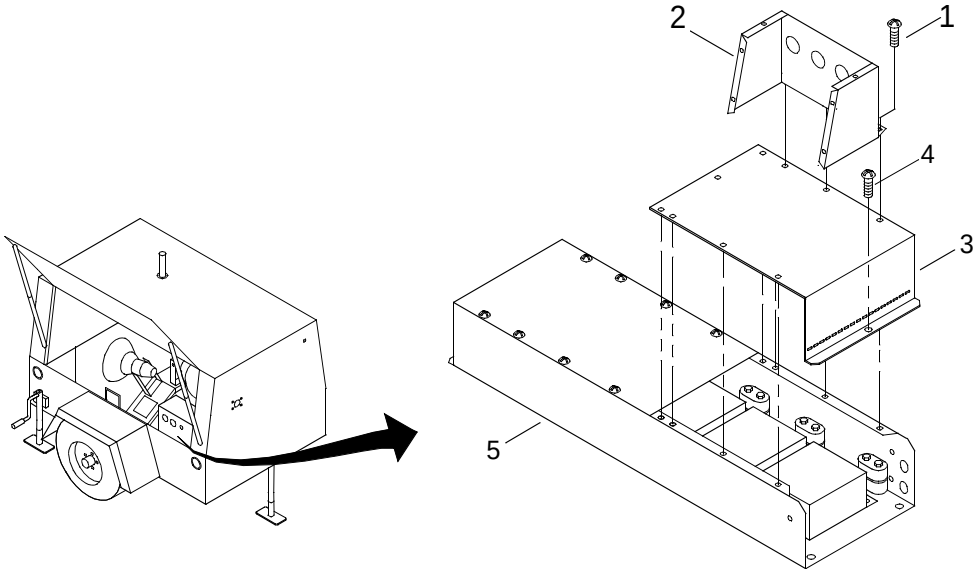
REMOVE LIGHT TOWER BALLAST BOX PANEL END

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove three hex head bolts (1) from control panel cover (2).



2. Remove control panel cover (2) from ballast box panel end (3).
3. Remove seven hex head bolts (4) from ballast box (5) and ballast box panel end (3).
4. Remove ballast box panel end (3) from ballast box (5) and discard.

INSTALL LIGHT TOWER BALLAST BOX PANEL END

1. Position new ballast box panel end (3) over ballast box (5).
2. Install seven hex head bolts (4) through ballast box panel end (3) and tighten.
3. Position control panel cover (2) over ballast box panel end (3).
4. Install three hex head bolts (1) through control panel cover (2) and tighten.
5. Install light tower control panel key switch. (WP 0151 00)
6. Install light tower control panel 125 volt breaker. (WP 0150 00)
7. Install light tower control panel toggle switches. (WP 0149 00)
8. Install light tower control panel main circuit breaker. (WP 0148 00)
9. Install light tower control panel twist lock outlet. (WP 0147 00)
10. Install light tower control panel duplex outlet. (WP 0146 00)
11. Install light tower control panel fuel gage. (WP 0145 00)
12. Install light tower control panel hour meter. (WP 0144 00)
13. Install light tower control panel. (WP 0160 00)
14. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BALLAST BOX COVER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)

Materials/Parts

Cover, Ballast Box
(33968)
PN 36894285

Personnel Required

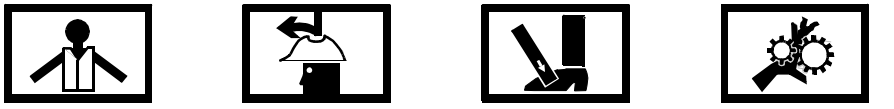
Interior Electrician 51R

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Control Panel Hour Meter Removed. (WP 0144 00)
Light Tower Control Panel Fuel Gage Removed. (WP 0145 00)
Light Tower Control Panel Duplex Outlet Removed. (WP 0146 00)
Light Tower Control Panel Twist Lock Outlet Removed. (WP 0147 00)
Light Tower Control Panel Main Circuit Breaker Removed. (WP 0148 00)
Light Tower Control Panel Toggle Switches Removed. (WP 0149 00)
Light Tower Control Panel 125 Volt Breaker Removed. (WP 0150 00)
Light Tower Control Panel Key Switch Removed. (WP 0151 00)
Light Tower Control Panel Removed. (WP 0160 00)
Light Tower Ballast Box Panel End Removed. (WP 0157 00)

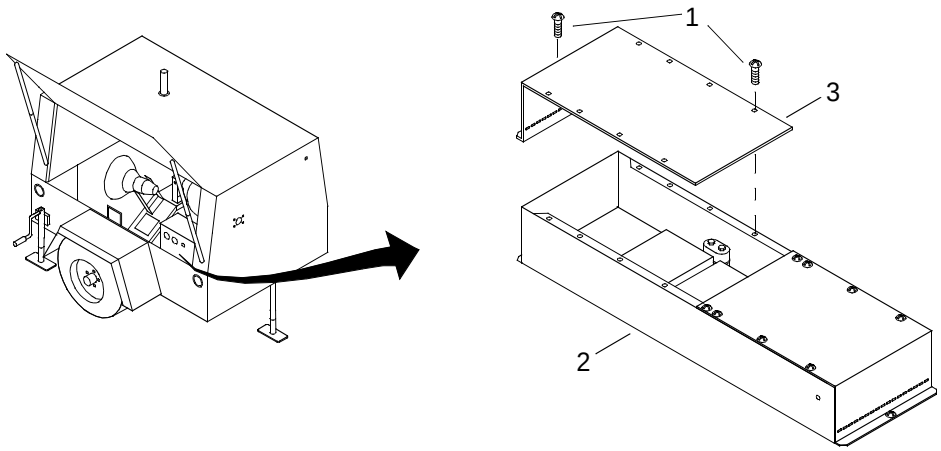
REMOVE LIGHT TOWER BALLAST BOX COVER

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nine hex head bolts (1) from ballast box (2) and ballast box cover (3).



2. Remove ballast box cover (3) from ballast box (2) and discard.

INSTALL LIGHT TOWER BALLAST BOX COVER

1. Position new ballast box cover (3) over ballast box (2).
2. Install nine hex head bolts (1) through ballast box cover (3) and tighten.
3. Install light tower ballast box panel end. (WP 0157 00)
4. Install light tower control panel key switch. (WP 0151 00)
5. Install light tower control panel 125 volt breaker. (WP 0150 00)
6. Install light tower control panel toggle switches. (WP 0149 00)
7. Install light tower control panel main circuit breaker. (WP 0148 00)
8. Install light tower control panel twist lock outlet. (WP 0147 00)
9. Install light tower control panel duplex outlet. (WP 0146 00)
10. Install light tower control panel fuel gage. (WP 0145 00)
11. Install light tower control panel hour meter. (WP 0144 00)
12. Install light tower control panel. (WP 0160 00)
13. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER BALLAST
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Kit, Ballast and Capacitor
(33968)
PN 36883791
Strap, Tiedown, Electrical Components (Item 41, WP 0252 00)

Personnel Required

Interior Electrician 51R

References

TM 55-1945-205-10-4

Equipment Condition

ligHt Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Control Panel Hour Meter Removed. (WP 0144 00)
Light Tower Control Panel Fuel Gage Removed. (WP 0145 00)
Light Tower Control Panel Duplex Outlet Removed. (WP 0146 00)
Light Tower Control Panel Twist Lock Outlet Removed. (WP 0147 00)
Light Tower Control Panel Main Circuit Breaker Removed. (WP 0148 00)
Light Tower Control Panel Toggle Switches Removed. (WP 0149 00)
Light Tower Control Panel 125 Volt Breaker Removed. (WP 0150 00)
Light Tower Control Panel Key Switch Removed. (WP 0151 00)
Light Tower Control Panel Removed. (WP 0160 00)
Light Tower Ballast Box Panel End Removed. (WP 0157 00)
Light Tower Ballast Box Cover Removed. (WP 0158 00)

REMOVE LIGHT TOWER BALLAST

WARNING

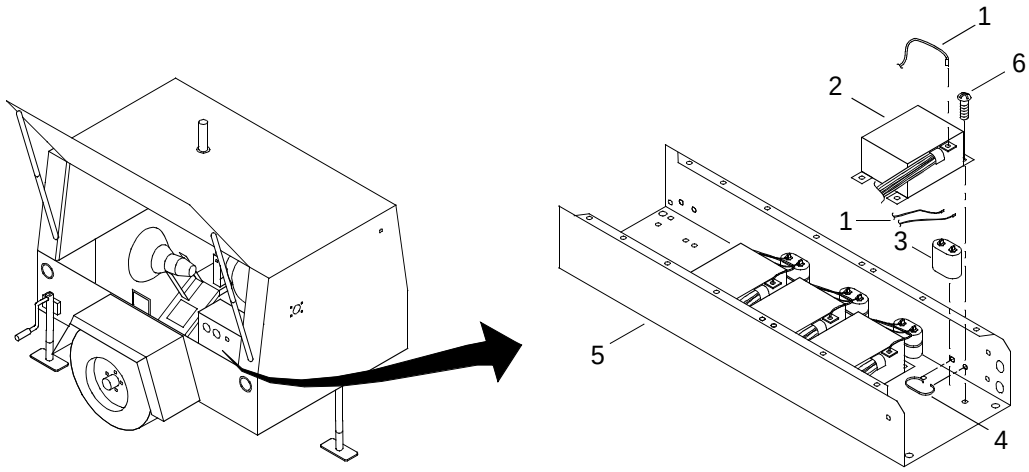
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

High voltage capacitors may hold a charge long after power is turned off. Always discharge capacitors before preforming maintenance. Failure to discharge capacitors could result in injury or death to personnel.

NOTE

The following procedure is typical for the removal and installation of all light tower ballasts.

1. Tag and disconnect wires (1) to ballast (2) and capacitor (3).



2. Cut tiedown straps (4) holding capacitor (3) to ballast box (5).
3. Remove capacitor (3) from ballast box (5) and discard.
4. Remove four bolts (6) from ballast box (5) and ballast (2).
5. Remove ballast (2) from ballast box (5) and discard.

INSTALL LIGHT TOWER BALLAST

1. Position new ballast (2) in ballast box (5).
2. Install four bolts (6) into ballast (2) and tighten.
3. Position new capacitor (3) against ballast box (5).
4. Install tiedown straps (4) around capacitor (3) and tighten.

5. Connect wires (1) to capacitor (3) and ballast (2) and remove tags.
6. Install light tower ballast box cover. (WP 0158 00)
7. Install light tower ballast box panel end. (WP 0157 00)
8. Install light tower control panel key switch. (WP 0151 00)
9. Install light tower control panel 125 volt breaker. (WP 0150 00)
10. Install light tower control panel toggle switches. (WP 0149 00)
11. Install light tower control panel main circuit breaker. (WP 0148 00)
12. Install light tower control panel twist lock outlet. (WP 0147 00)
13. Install light tower control panel duplex outlet. (WP 0146 00)
14. Install light tower control panel fuel gage. (WP 0145 00)
15. Install light tower control panel hour meter. (WP 0144 00)
16. Install light tower control panel. (WP 0160 00)
17. Install light tower battery negative lead terminal. (WP 0131 00)
18. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER CONTROL BOX PANEL
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Panel, Control Box
(33968)
PN 36876001

Personnel Required

Interior Electrician 51R

Equipment Condition

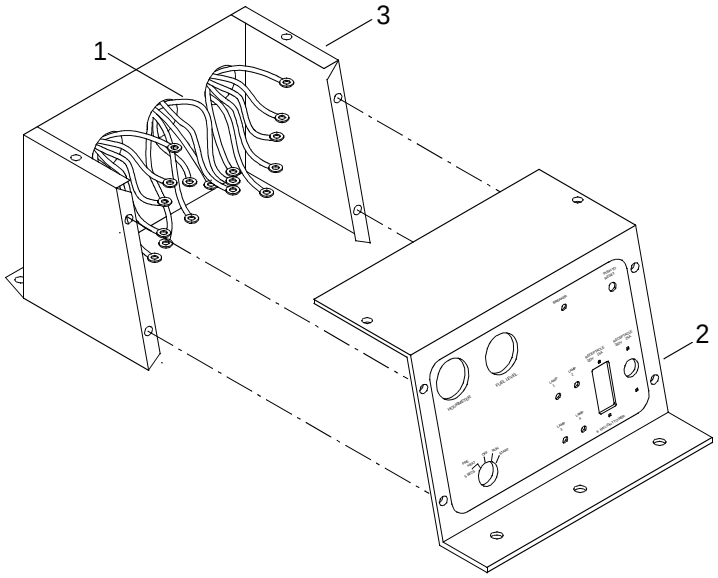
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Control Panel Hour Meter Removed. (WP 0144 00)
Light Tower Control Panel Fuel Gage Removed. (WP 0145 00)
Light Tower Control Panel Duplex Outlet Removed. (WP 0146 00)
Light Tower Control Panel Twist Lock Outlet Removed. (WP 0147 00)
Light Tower Control Panel Main Circuit Breaker Removed. (WP 0148 00)
Light Tower Control Panel Toggle Switches Removed. (WP 0149 00)
Light Tower Control Panel 125 Volt Breaker Removed. (WP 0150 00)
Light Tower Control Panel Key Switch Removed. (WP 0151 00)

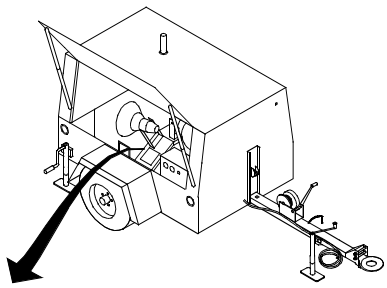
REMOVE CONTROL BOX PANEL

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Verify all wires (1) are disconnected from control panel (2) and tagged.





2. Remove control panel (2) from cover (3) and discard.

INSTALL CONTROL BOX PANEL

1. Position new control panel (2) over cover (3).

NOTE

Securing of control panel to cover is completed after all components have been installed.

2. Install light tower control panel key switch. (WP 0151 00)
3. Install light tower control panel 125 volt breaker. (WP 0150 00)
4. Install light tower control panel toggle switches. (WP 0149 00)
5. Install light tower control panel main circuit breaker. (WP 0148 00)
6. Install light tower control panel twist lock outlet. (WP 0147 00)
7. Install light tower control panel duplex outlet. (WP 0146 00)
8. Install light tower control panel fuel gage. (WP 0145 00)
9. Install light tower control panel hour meter. (WP 0144 00)
10. Verify all wires (1) are connected remove tags.
11. Install nine hex head bolts (4) through control panel (2) and into cover (3) and tighten.
12. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER GENERATOR CONNECTIONS
CLEANING AND INSPECTION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Cleaner, Vacuum, Electric (Item 7, WP 0253 00)

Materials/Parts

Cleaning Compound, Electrical Contact (Item 9, WP 0252 00)

Personnel Required

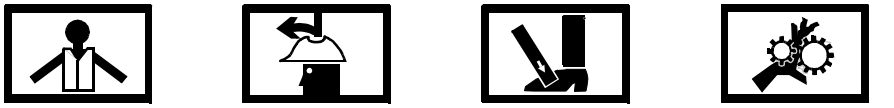
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

CLEAN LIGHT TOWER GENERATOR CONNECTIONS

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death to personnel.

1. Behind the control panel, open the top of the generator control box.

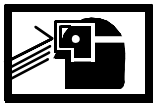
2. Vacuum out the interior of the generator control box.

WARNING

3. Spray all switch contacts and connectors with electrical contact cleaner.

WARNING

CHEMICAL



EYE PROTECTION

4. Cycle the switches through all possible positions, spraying electrical contact cleaner at each position.

5. Leave the control box open until completely dry.

INSPECT LIGHT TOWER GENERATOR CONNECTIONS

1. Inspect generator switch contacts and connectors for looseness. Tighten as required.

2. Inspect generator switch contacts and connectors for cracked or broken insulation or bare wires. Replace defective parts.

3. Inspect generator switch contacts and connectors for evidence of arcing on electrical terminals. Repair or replace defective parts.

4. Inspect generator switch contacts and connectors for corrosion. If found, clean as required.

5. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE LUBRICATING OIL REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Lubricating Oil, Engine (30 Grade) (Item 29, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

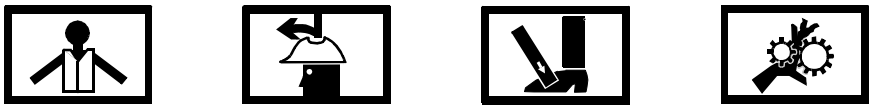
Engineer 88L

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

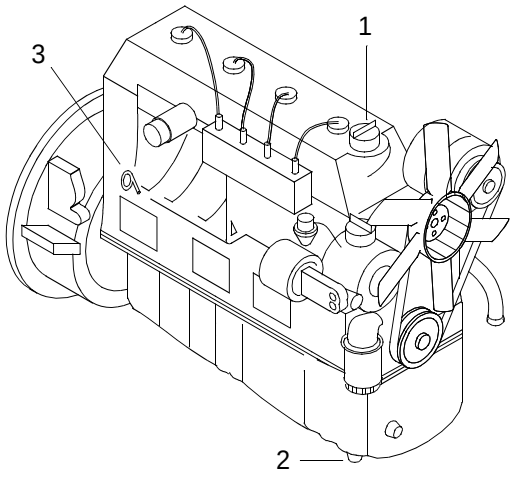
DRAIN LIGHT TOWER ENGINE OF LUBRICATING OIL

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove oil filler cap (1).



2. Position drain pan under drain plug (2) to catch oil.

WARNING

3. Remove drain plug (2) from engine oil pan and drain oil into drain pan.

4. Install and tighten drain plug (2) after oil is completely drained.

WARNING

5. Remove drain pan and dispose of contents in accordance with local procedures.

FILL LIGHT TOWER ENGINE WITH LUBRICATING OIL

1. Add clean engine oil to proper level.

WARNING

a. Add approximately 1.35 gals (5.1 Liters) of engine oil.

WARNING

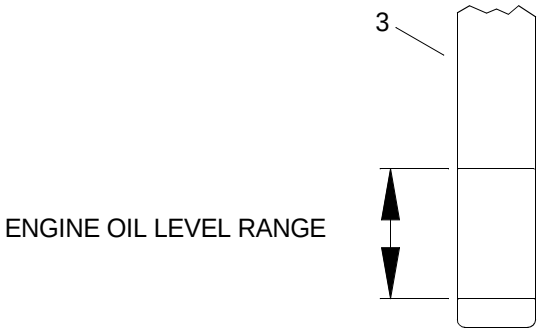
CHEMICAL EYE PROTECTION

b. Remove oil dip stick (3), wipe clean with a wiping rag and install.

WARNING

CHEMICAL EYE PROTECTION

c. Remove oil dip stick (3) and check for proper oil level.



d. Install oil dipstick (3).

WARNING

CHEMICAL EYE PROTECTION

e. Add additional engine oil as required.

2. Install oil filler cap (1).

WARNING

CHEMICAL EYE PROTECTION

3. Dispose of contaminated wiping rags in accordance with local procedures.

WARNING

4. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

5. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE OIL FILTER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)
Filter Wrench (Item 56, WP 0253 00)

Materials/Parts

Element, Lube Filter
(33968)
PN 36870574
Lubricating Oil, Engine (Item 29, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

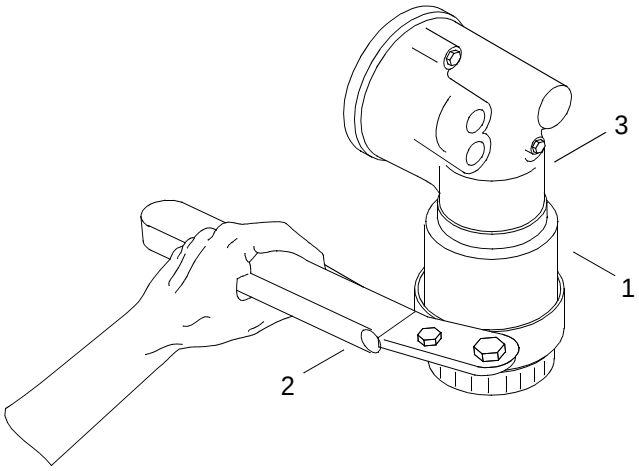
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Engine Lubricating Oil Drained. (WP 0162 00)

REMOVE LIGHT TOWER OIL FILTER

WARNING

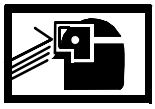
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Position drain pan under oil filter (1) to catch oil.



WARNING

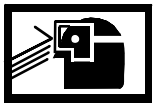

CHEMICAL


EYE PROTECTION

2. Turn oil filter (1) in counterclockwise direction with strap wrench (2).

WARNING

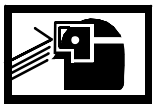

CHEMICAL


EYE PROTECTION

3. Remove oil filter (1) from oil filter manifold (3). Allow oil to drain into drain pan.

WARNING


CHEMICAL

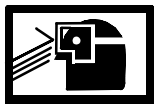

EYE PROTECTION

4. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER OIL FILTER

WARNING

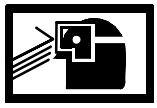

CHEMICAL


EYE PROTECTION

1. Pre-fill the new oil filter (1) with oil.

WARNING

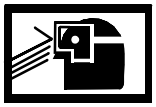

CHEMICAL


EYE PROTECTION

2. Apply a film of clean engine oil to the gasket of the oil filter (1).

WARNING


CHEMICAL


EYE PROTECTION

3. Thread oil filter (1) clockwise onto oil filter manifold (3) until oil filter (1) contacts sealing surface.

CAUTION

Do not use strap wrench to tighten oil filter as damage to oil filter could occur.

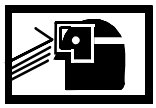
4. Hand tighten oil filter (1) until firmly seated.

5. Fill engine with lubricating oil. (WP 0162 00)

6. Install light tower battery negative lead terminal. (WP 0131 00)

WARNING


CHEMICAL


EYE PROTECTION


SLICK FLOOR

7. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE AIR CLEANER HOUSING
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 82, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 27, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 29, WP 0253 00)
Helmet, Safety (Brown) (Item 33, WP 0253 00)
Life Preserver, Vest (Item 38, WP 0253 00)

Materials/Parts

Housing, Air Cleaner

Personnel Required

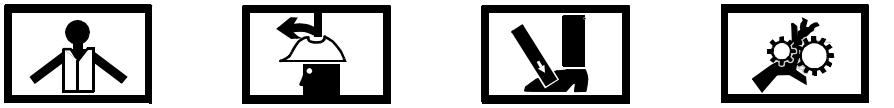
Seaman 88K

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Air Filter Removed. (WP 0172 00)

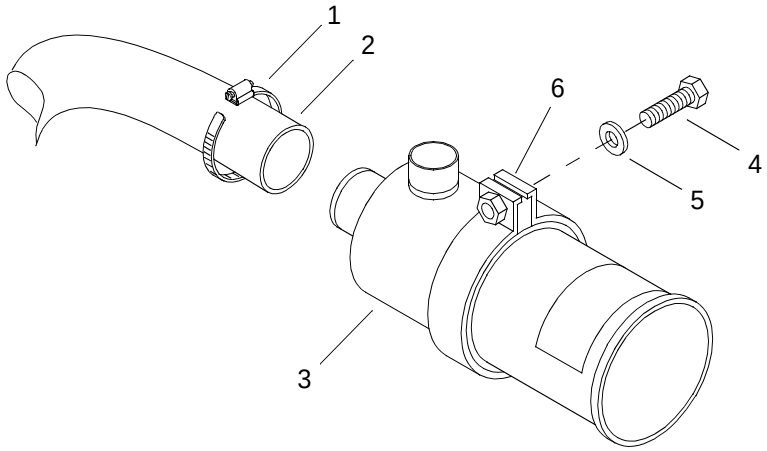
REMOVE LIGHT TOWER ENGINE AIR CLEANER HOUSING

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Loosen hose clamp (1).



2. Slide hose clamp (1) back on air intake hose (2).
3. Disconnect air intake hose (2) from air cleaner housing (3).
4. Remove bolt (4) and washer (5) from air cleaner band (6).
5. Spread air cleaner band (6) and remove air cleaner housing (3).

INSTALL LIGHT TOWER ENGINE AIR CLEANER HOUSING

1. Spread air cleaner band (6) and install air cleaner housing (3).
2. Install bolt (4) and washer (5) in air cleaner band (6).
3. Tighten bolt (4).
4. Connect air intake hose (2) to air cleaner housing (3).
5. Slide hose clamp (1) back into proper position on air intake hose (2).
6. Tighten hose clamp (1).
7. Install air filter. (WP 0172 00)
8. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FUEL FILTER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Filter Wrench (Item 56, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Filter, Fuel
(33968)
PN 36845493
Diesel Fuel, Summer Grade (Item 14, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

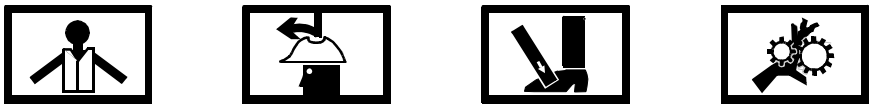
Engineer 88L

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

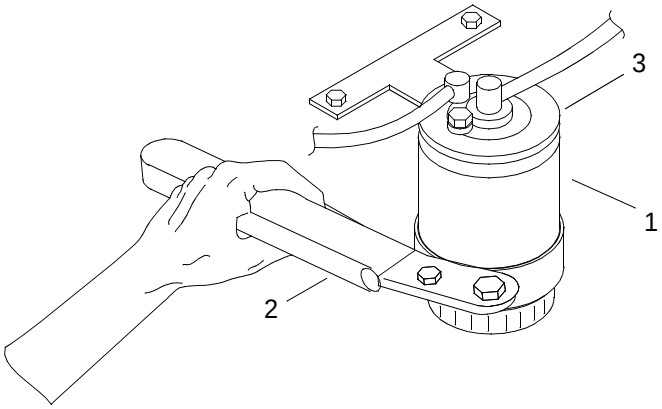
REMOVE LIGHT TOWER ENGINE FUEL FILTER

WARNING



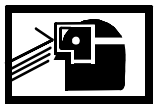
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Position a drain pan under fuel filter bowl (1).



WARNING

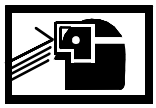

CHEMICAL


EYE PROTECTION

2. Turn the fuel filter (1) in counterclockwise direction with filter wrench (2).

WARNING

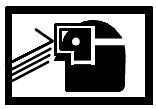

CHEMICAL


EYE PROTECTION

3. Remove fuel filter (1) from fuel filter manifold (3). Allow fuel to drain into drain pan.

WARNING


CHEMICAL

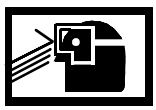

EYE PROTECTION

4. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE FUEL FILTER

WARNING

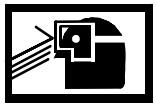

CHEMICAL


EYE PROTECTION

1. Prefill new fuel filter (1) with diesel fuel.

WARNING

CHEMICAL



EYE PROTECTION

2. Apply a film of diesel fuel to gasket of fuel filter (1).

WARNING

CHEMICAL

EYE PROTECTION

3. Thread fuel filter (1) clockwise onto fuel filter manifold (3) until fuel filter (1) contacts sealing surface.

CAUTION

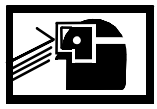
Do not use filter wrench to tighten fuel filter as damage to fuel filter could occur.

4. Hand tighten fuel filter (1) until firmly seated.

5. Install light tower battery negative lead terminal. (WP 0131 00)

WARNING

CHEMICAL



EYE PROTECTION

SLICK FLOOR

6. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FUEL SYSTEM
BLEEDING

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Rail and Marine) (Item 82, WP 0253 00)
Gloves, Chemical (Item 25, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 27, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 29, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 28, WP 0253 00)
Helmet, Safety (Brown) (Item 33, WP 0253 00)
Life Preserver, Vest (Item 38, WP 0253 00)
Pan, Drain (Item 46, WP 0253 00)

Materials/Parts
Spill Clean-Up Kit, Hazardous Material (Item 50, WP 0252 00)

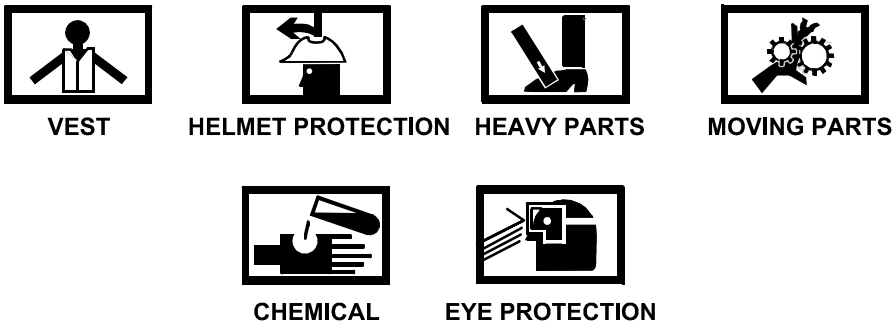
Personnel Required
Engineer 88L

References
TM 55-1945-205-10-4

Equipment Condition
Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

BLEED LIGHT TOWER ENGINE FUEL SYSTEM

WARNING

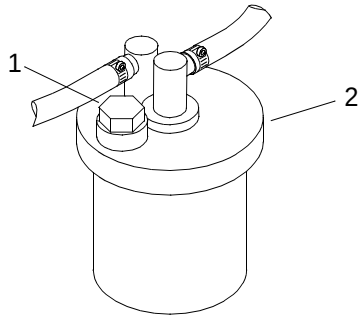


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

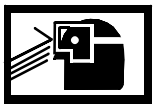
Bleeding of fuel system is required when any maintenance has been performed on fuel system or fuel tank has become empty or after long storage.

1. Open vent plug (1) on top of fuel filter head (2).



WARNING

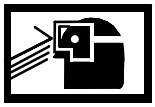

CHEMICAL


EYE PROTECTION

2. Allow air to purge until no air bubbles are present.

WARNING

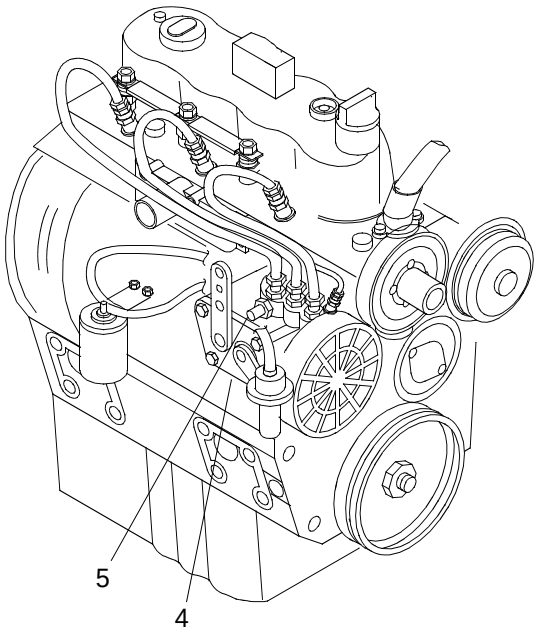

CHEMICAL


EYE PROTECTION

3. Close vent plugs (1) on top of fuel filter head (2).

4. Install light tower battery negative lead terminal. (WP 0131 00)

5. Open vent plug (3) on front side of injector pump (4).



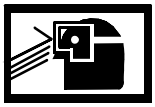
CAUTION

Do not hold ignition key in the start position for more than 20 seconds at a time without giving the starter motor a 3-5 minute rest to cool off. Failure to comply could result in damage to starter motor.

6. Turn the ignition key to the START position and hold until air is purged from fuel.
7. Turn the ignition key to the OFF position.
8. Close vent plug (3) on front side of injector pump (4).

WARNING

CHEMICAL



EYE PROTECTION

SLICK FLOOR

9. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.
10. Perform operational check of the light tower engine.TM 55-1945-205-10-4

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FUEL PUMP
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Assembly Pump, Fuel
(0XWR1)
PN 16285-5203-2
Gasket
(0XWR1)
PN 16264-5214-0
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

Engineer 88L

References

TM 55-1945-205-10-4

Equipment Condition

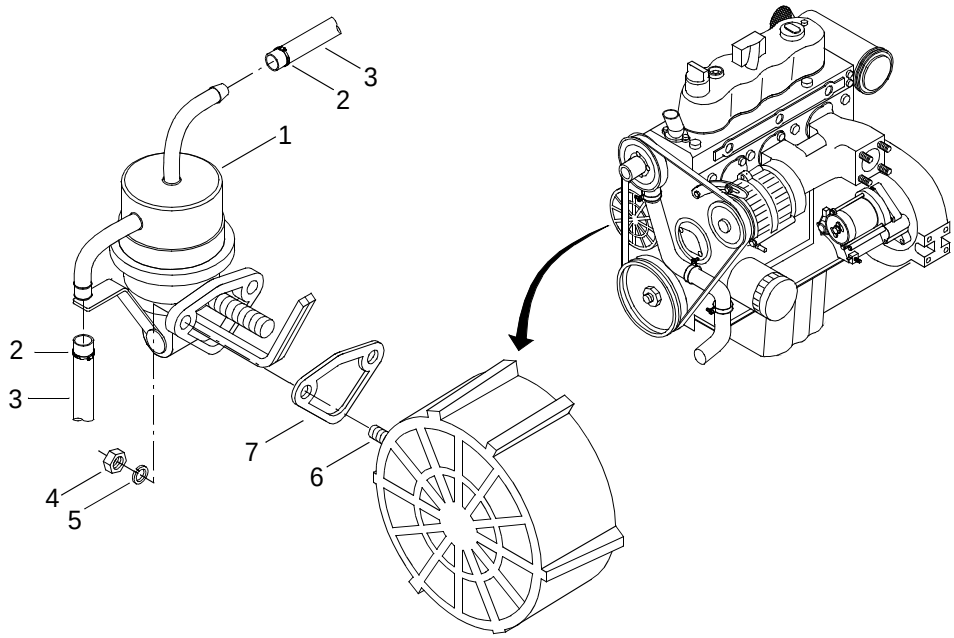
Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER ENGINE FUEL PUMP

WARNING

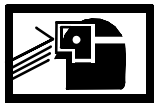
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Position drain pan under light tower engine fuel pump assembly (1).



WARNING

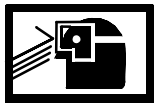

CHEMICAL


EYE PROTECTION

2. Loosen two clamps (2).

WARNING


CHEMICAL


EYE PROTECTION

3. Slide clamps (2) back on fuel hoses (3).

WARNING


CHEMICAL

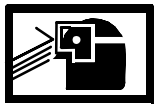

EYE PROTECTION

4. Remove two fuel hoses (3) from fuel pump assembly (1).

5. Remove two nuts (4) and lock washers (5) from studs (6).

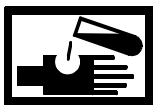
WARNING


CHEMICAL


EYE PROTECTION

6. Remove fuel pump assembly (1) and fuel pump gasket (7) from studs (6) and discard fuel pump gasket (7).

WARNING

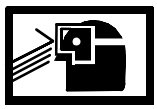

CHEMICAL


EYE PROTECTION

7. Dispose of fuel pump assembly (1) in accordance with local procedures.

WARNING


CHEMICAL

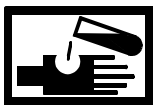

EYE PROTECTION

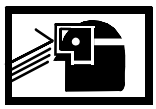
8. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE FUEL PUMP

1. Position new fuel pump gasket (7) and new fuel pump assembly (1) on studs (6).
2. Install two lock washers (5) and nuts (4) on studs (6) and tighten nuts (4).
3. Position two fuel hoses (3) on fuel pump assembly (1).
4. Slide two clamps (2) back into position and tighten clamps (2).
5. Bleed light tower fuel system. (WP 0166 00)
6. Install light tower battery negative lead terminal. (WP 0131 00)

WARNING


CHEMICAL


EYE PROTECTION


SLICK FLOOR

7. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.
8. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE IN LINE FUEL FILTER REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Filter, In Line
(33968)
PN 36789097
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

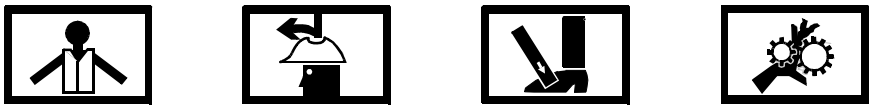
Engineer 88L

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER ENGINE IN LINE FUEL FILTER

WARNING

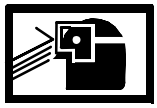


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Loosen clamps (1) from fuel hoses (2).

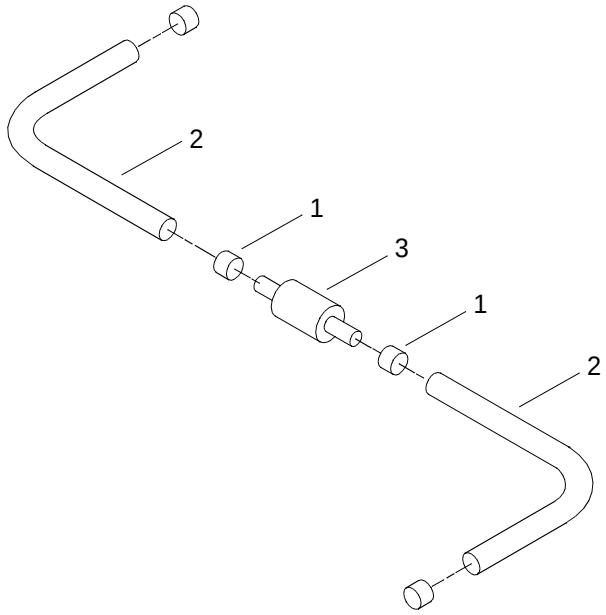
WARNING


CHEMICAL


EYE PROTECTION

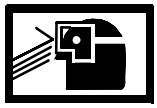
2. Position drain pan under fuel hoses (2).

3. Slide fuel hoses (2) back.



WARNING

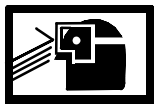

CHEMICAL


EYE PROTECTION

4. Remove fuel hoses (2) from in line fuel filter (3).

WARNING

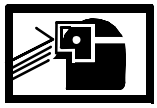

CHEMICAL


EYE PROTECTION

5. Discard filter (3) in accordance with local procedures.

WARNING

CHEMICAL



EYE PROTECTION

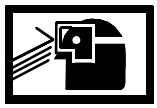
6. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE IN LINE FILTER

1. Install fuel hoses (2) on new fuel filter (3).
2. Slide hose clamps (1) back into position on hoses (2) and tighten clamps (1).
3. Install light tower battery negative lead terminal. (WP 0131 00)

WARNING

CHEMICAL



EYE PROTECTION

SLICK FLOOR

4. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FUEL TANK CAP GASKET REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

Gasket
(33968)
PN 3538511
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

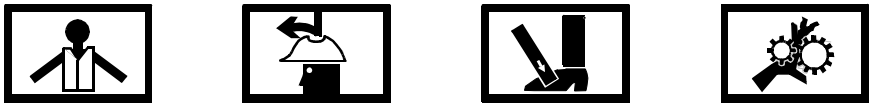
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

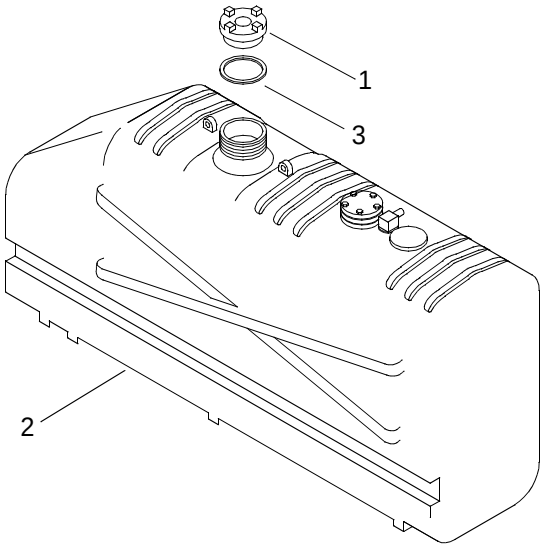
REMOVE LIGHT TOWER ENGINE FUEL TANK CAP GASKET

WARNING

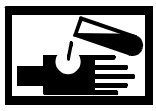


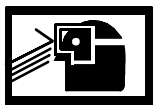
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during CF operations and maintenance. Failure to observe these precautions could result in serious injury or death to personnel.

1. Rotate light tower fuel tank cap (1) counterclockwise.



WARNING

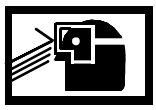

CHEMICAL


EYE PROTECTION

2. Remove fuel tank cap (1) from fuel tank (2).

WARNING

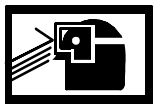

CHEMICAL


EYE PROTECTION

3. Remove fuel tank cap gasket (3) from fuel tank cap (1) and discard gasket (3).

WARNING

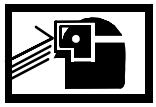

CHEMICAL


EYE PROTECTION

4. Using wiping rag and cleaner, clean inside of fuel tank cap (1).

WARNING

CHEMICAL



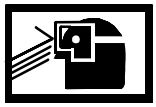
EYE PROTECTION

5. Using clean water, rinse cleaner residue from fuel tank cap (1).

6. Using clean wiping rag, dry fuel tank cap (1).

WARNING

CHEMICAL



EYE PROTECTION

7. Dispose of contaminated wiping rags in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE FUEL TANK CAP GASKET

1. Install new fuel tank cap gasket (3) in fuel tank cap (1).

2. Position fuel tank cap (1) on fuel tank (2).

3. Rotate light tower fuel tank cap (1) clockwise. Tighten fuel tank cap (1).

4. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FUEL LEVEL SENDING UNIT
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Personnel Required

Engineer 88L

References

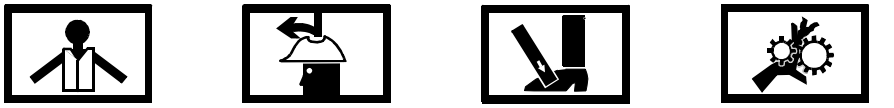
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

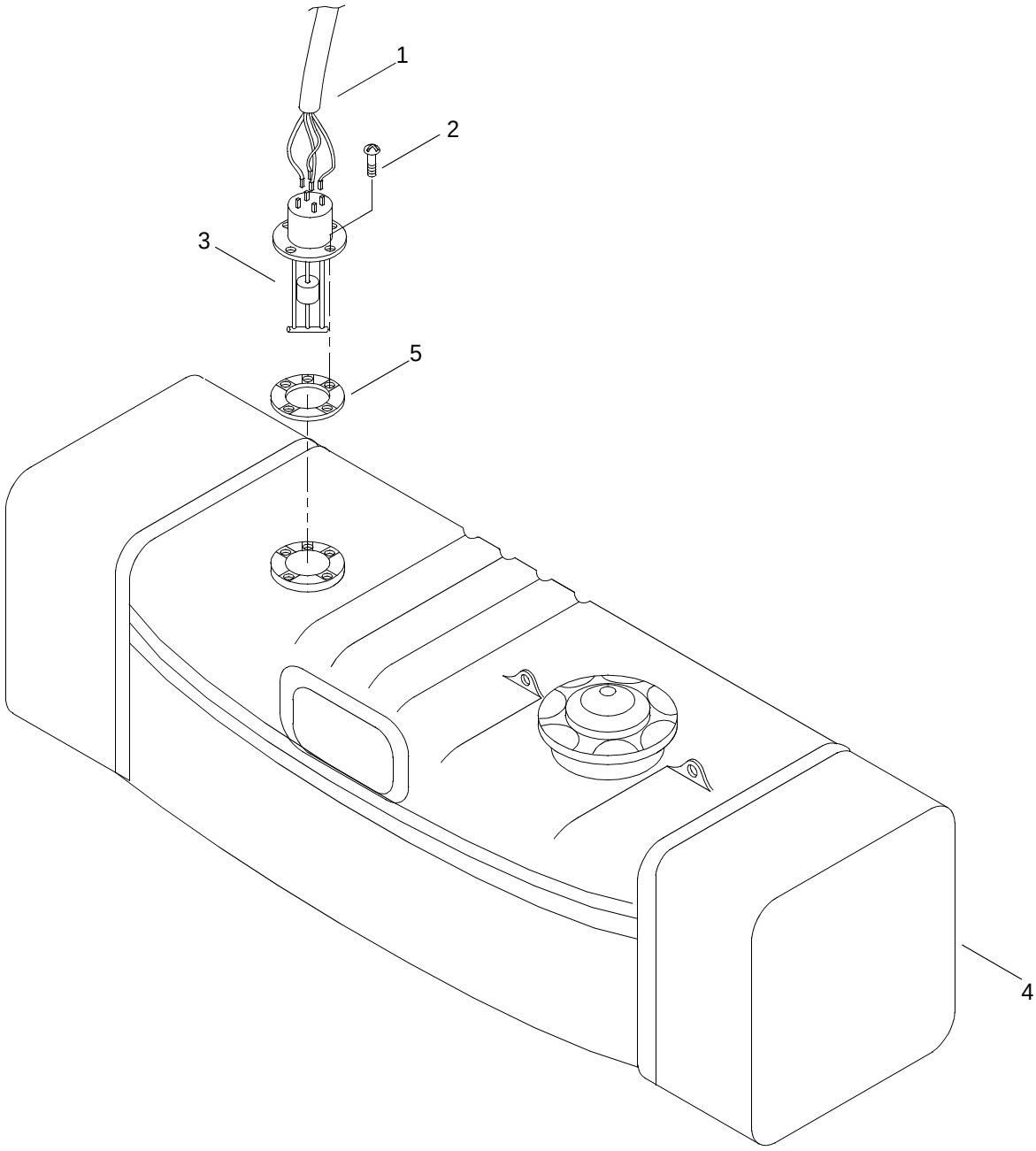
REMOVE LIGHT TOWER ENGINE FUEL LEVEL SENDING UNIT

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Tag and disconnect wiring harness (1).



WARNING

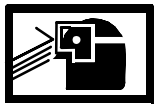
ELECTRICAL

Static electricity may be present on the human body. Ensure all static electricity is discharged prior to removing fuel sending unit. Failure to comply may result in injury or death to personnel.

2. Remove five pan head screws (2) securing fuel level sending unit (3) to fuel tank (4).

WARNING

CHEMICAL

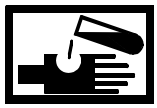


EYE PROTECTION

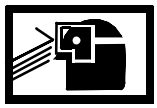
3. Remove and discard fuel level sending unit (3) and gasket (5).

INSTALL LIGHT TOWER ENGINE FUEL LEVEL SENDING UNIT

WARNING



CHEMICAL



EYE PROTECTION

1. Position new gasket (5) and new fuel level sending unit (3) on fuel tank (4).
2. Install five pan head screws (2) securing fuel level sending unit (3) fuel tank (4). Tighten five pan head screws (2).
3. Connect wiring harness (1) and remove tags.
4. Install light tower battery negative lead terminal. (WP 0131 00)
5. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FUEL LINES AND HOSE CLAMPS REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER ENGINE FUEL LINE AND HOSE CLAMPS

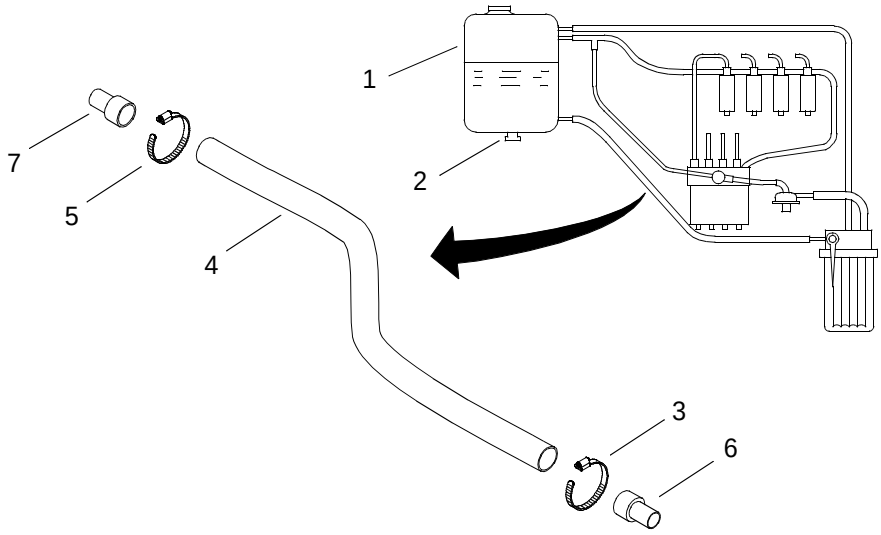
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

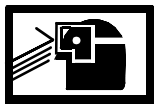
NOTE

The following procedure is typical for the removal and installation of all light tower engine fuel lines and hose clamps.

1. Position drain pan under fuel tank (1).

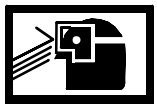


WARNING



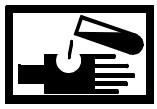
2. Open drain cock (2) under fuel tank (1).

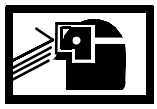
WARNING



3. Allow fuel tank (1) to drain into drain pan.
4. Remove hose clamp (3) on fuel line (4) and discard.
5. Remove hose clamp (5) on fuel line (4) and discard.
6. Remove fuel line (4) from fitting (6 and 7). Discard fuel line (4).
7. Remove fuel line (4) from fitting (7). Discard fuel line (4).

WARNING





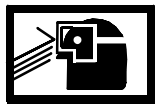
8. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE FUEL LINE AND CLAMPS

1. Install new fuel line (4) on fitting (6 and 7).
2. Position new hose clamp (5) around fuel line (4). Tighten hose clamp (5).
3. Position new hose clamp (3) around fuel line (4). Tighten hose clamp (3).
4. Close drain cock (2) under fuel tank (1).

WARNING

CHEMICAL



EYE PROTECTION

SLICK FLOOR

5. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.
6. Service light tower fuel tank. (TM 55-1945-205-10-4)
7. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE AIR FILTER ELEMENT
REMOVAL, CLEANING, INSPECTION AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Compressor, Unit, Reciprocating, Power Drive (Item 13, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)
Utility, Pail (Item 32, WP 0253 00)

Materials/Parts

Cloth, Cleaning (Item 12, WP 0252 00)
Detergent, General Purpose (Item 13, WP 0252 00)
Sodium Phosphate, Tribasic (Item 38, WP 0252 00)

Personnel Required

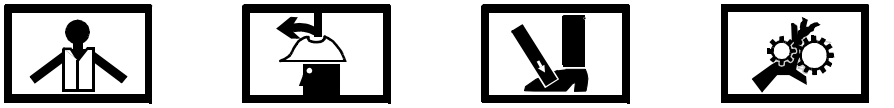
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

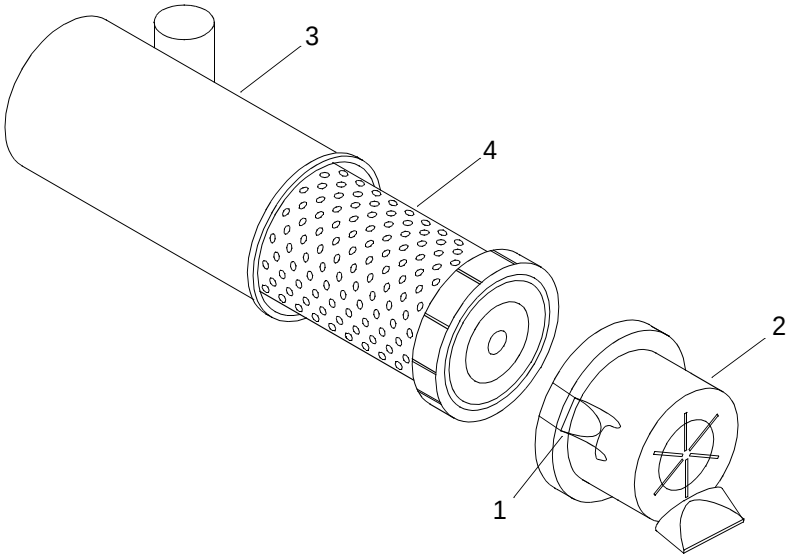
REMOVE LIGHT TOWER ENGINE AIR FILTER ELEMENT

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

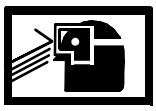
1. Release clips (1) on end cap (2).



2. Remove end cap (2) from air cleaner housing (3).
3. Remove air filter element (4) from air cleaner housing (3).

CLEAN LIGHT TOWER ENGINE AIR FILTER ELEMENT

WARNING



EYE PROTECTION

CAUTION

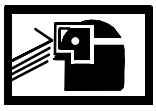
Hold air nozzle at least 1 in. from the pleated filter element. Failure to comply could result in damage to the filter element.

NOTE

If the filter is to be used immediately, compressed air is the only authorized method of cleaning the filter.

1. Using compressed air not to exceed 100 PSI, clean filter (4).

WARNING

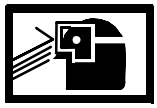


EYE PROTECTION

2. Inspect filter (4). Repeat cleaning step if needed.

WARNING

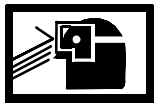

CHEMICAL


EYE PROTECTION

3. Using a mixture of trisodium phosphate and detergent, clean filter (4).

WARNING

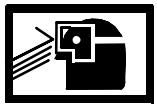

CHEMICAL


EYE PROTECTION

a. Mix four tablespoons of general purpose detergent to one gallon of warm water in utility pail.

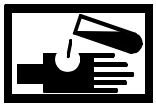
WARNING


CHEMICAL


EYE PROTECTION

b. Place filter element in cleaning solution and allow to soak for five minutes.

WARNING


CHEMICAL


EYE PROTECTION

c. Agitate filter element thoroughly in cleaning solution after soaking period.

WARNING


CHEMICAL

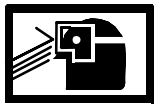

EYE PROTECTION

d. Remove filter element from cleaning solution and allow to drain.

e. Flush filter element with clean water.

WARNING

CHEMICAL



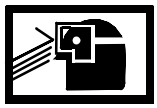
EYE PROTECTION

f. Repeat cleaning procedure until filter element is clean.

g. Allow filter element to air dry.

WARNING

CHEMICAL



EYE PROTECTION

4. Clean air cleaner housing (3) using a clean cloth and cleaning solution.

5. Allow air cleaner housing (3) to air dry.

INSPECT LIGHT TOWER ENGINE AIR FILTER ELEMENT

1. Inspect filter element (4) for tears or holes. If found, replace filter element.

2. Inspect filter element (4) for water or any other type of contamination. If found, replace filter element.

3. Inspect filter element (4) for dirt. If found, clean filter element. If dirt cannot be removed, replace filter element.

4. Inspect air cleaner housing (3) for dents or any damaged condition that could cause it to leak air past filter element. If found, replace air cleaner housing.

5. Inspect end cap (2) seal for damage or deformation. If found, replace end cap.

INSTALL LIGHT TOWER ENGINE AIR FILTER ELEMENT

1. Insert air filter element (4) into air cleaner housing (3).

2. Install end cap (2) on the air cleaner housing (3).

3. Secure end cap (2) with clips (1) to air cleaner housing (3).

4. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE EXHAUST MANIFOLD REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 82, WP 0253 00)
Gloves, Men's and (Leather Palm) (Item 27, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 29, WP 0253 00)
Helmet, Safety (Brown) (Item 33, WP 0253 00)
Life Preserver, Vest (Item 38, WP 0253 00)

Materials/Parts

Manifold, Exhaust
(33968)
PN 17213-1231-0
Gasket, Ex-Manifold
(33968)
PN 16261-1236-0

Personnel Required

Engineer 88L

References

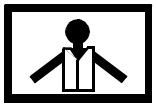
TM 55-1945-205-10-4

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Muffler Removed. (WP 0188 00)

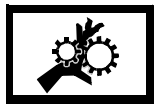
REMOVE LIGHT TOWER ENGINE EXHAUST MANIFOLD

WARNING


VEST

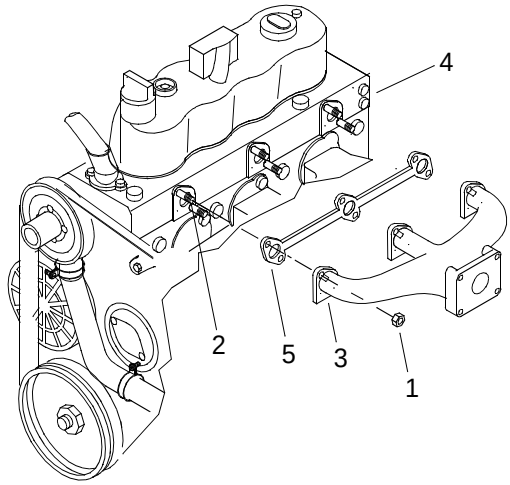

HELMET PROTECTION


HEAVY PARTS


MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove six hex nuts (1) from studs (2).



2. Remove exhaust manifold (3) from engine (4).

3. Using putty knife, clean old gasket material (5) from exhaust manifold (3) and engine (4).

INSTALL LIGHT TOWER ENGINE EXHAUST MANIFOLD

1. Install new gasket (5) over studs (2) on engine (4)

2. Install new exhaust manifold (3) on engine (4).

3. Install six hex nuts (1) on studs (2). Tighten hex nuts (1).

4. Install light tower engine muffler. (WP 0188 00)

5. Install light tower battery negative lead terminal. (WP 0131 00)

6. Perform operational check of light tower engine. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE COOLING SYSTEM
SERVICING AND INSPECTION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)

Materials/Parts

Antifreeze (Item 2, WP 0252 00)
Water, Reagent Distilled (Item 43, WP 0252 00)

Personnel Required

Engineer 88L

References

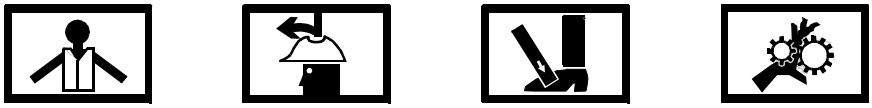
TM 55-1945-205-10-4

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

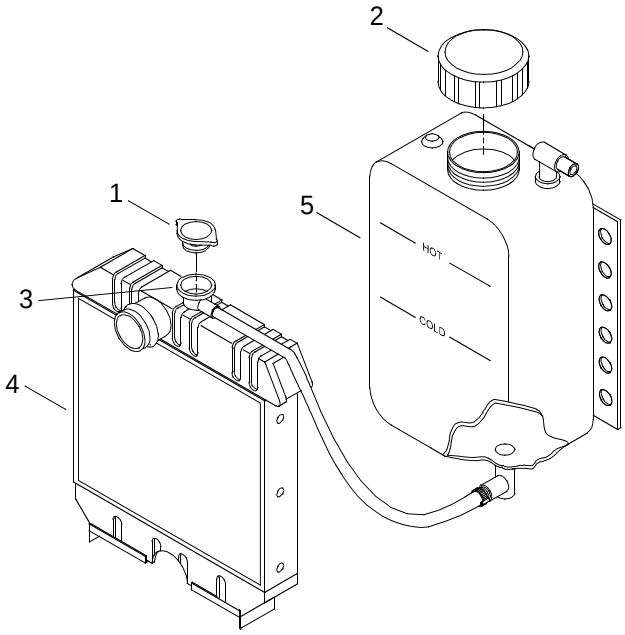
SERVICE LIGHT TOWER ENGINE COOLING SYSTEM

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove radiator cap (1) and reservoir tank cap (2).

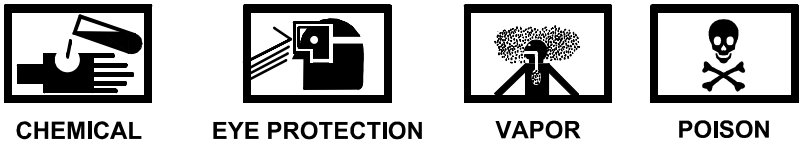


WARNING

2. Check fluid level reaches filler neck (3) of radiator (4). If coolant reaches filler neck no additional coolant is necessary.

3. Check fluid level of reserve tank (5) for a level between full and low.

WARNING



4. Fill radiator (4) and reserve tank (5) with distilled water and coolant.

5. Install radiator cap (1) and reserve tank cap (2) securely.

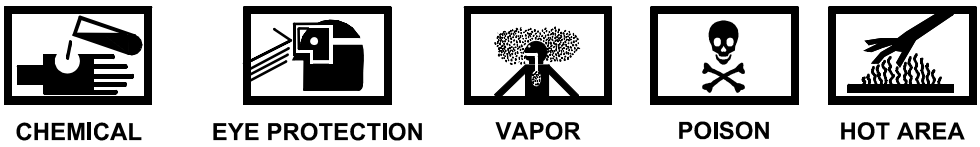
6. Start engine. (TM 55-1945-205-10-4)

WARNING

7. Shut down engine and check coolant level. (TM 55-1945-205-10-4)

8. When operating light tower below freezing, perform the following steps.

WARNING



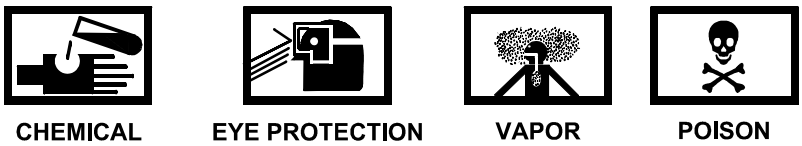
Do not open the radiator cap or reserve cap while the engine is running or immediately after engine has stopped. Allow engine to cool first. Do not attempt to add coolant until after engine has stopped running. Failure to follow these procedures can result in serious injury to personnel.

a. Remove radiator cap (1) and reservoir tank cap (2).

WARNING

b. Check coolant levels.

WARNING



c. Add a mixture of less than 50% antifreeze and distilled water to radiator (4) and reservoir tank (5).

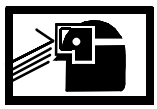
Table 1. Mixture of Antifreeze and Water.

VOL% ANTIFREEZE	FREEZING POINT		BOILING POINT	
40	-12°F	-24°C	222°F	106°C
50	-34°F	-37°C	226°F	108°C

9. Replace reservoir tank cap (2) and radiator cap (1).

INSPECT LIGHT TOWER ENGINE COOLING SYSTEM

WARNING

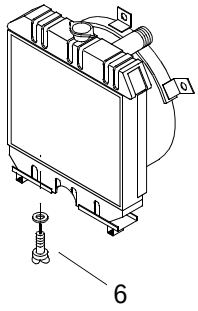


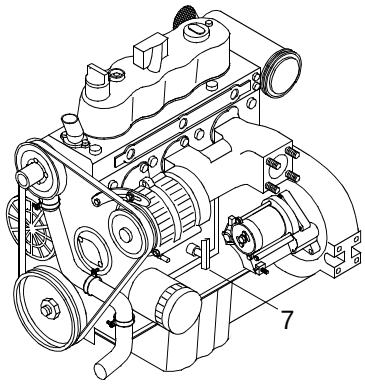
EYE PROTECTION

HOT AREA

Do not open the radiator cap or reserve cap while the engine is running or immediately after engine has stopped. Allow engine to cool first. Do not attempt to add coolant until after engine has stopped running. Failure to follow these procedures can result in serious injury to personnel.

1. Verify system has cooled.
2. Verify radiator drain cock (6) and engine drain cock (7) are closed.





3. Inspect for any items that would obstruct airflow to radiator.
4. Remove all items that are obstructing air flow.
5. Inspect radiator for bent fins, leaks. Repair as necessary.
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE RADIATOR COOLANT REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)
Qty 2

Materials/Parts

Antifreeze (Item 2, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)
Water, Reagent Distilled (Item 43, WP 0252 00)

Personnel Required

Engineer 88L

References

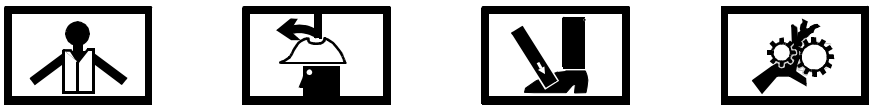
TM 55-1945-205-10-4

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

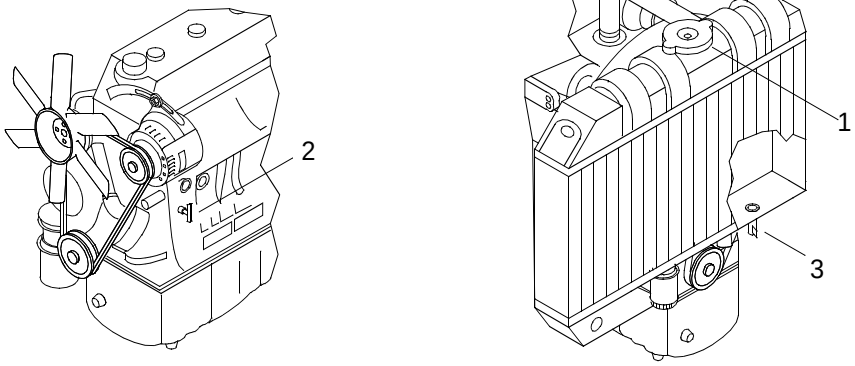
DRAIN LIGHT TOWER ENGINE RADIATOR COOLANT

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove radiator pressure cap (1).



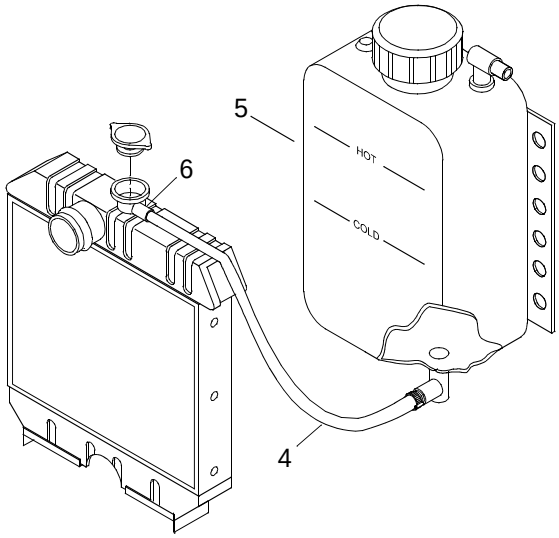
2. Position drain pan beneath the drain cocks.

3. Open drain cocks located on crankcase side of engine (2) and at the lower part of the radiator (3).

WARNING

4. Drain engine radiator coolant.

5. Position drain pan beneath overflow hose (4) and reserve tank (5).



6. Disconnect overflow hose (4) from radiator pressure cap housing (6).

WARNING

7. Drain reserve tank (5) coolant.

8. Connect overflow hose (4) to radiator pressure cap housing (6).

9. Close drain cocks located on crankcase side of engine (2) and the lower part of radiator (3).

WARNING

10. Remove drain pans and dispose of contents in accordance with local procedures.

FILL LIGHT TOWER ENGINE RADIATOR WITH COOLANT

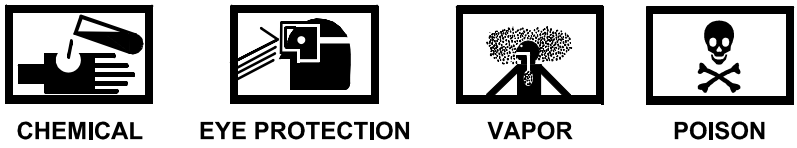
WARNING

1. Fill engine radiator with coolant mixture of not more than 50% antifreeze and water.

Table 1. Mixture of Antifreeze and Water.

VOL% ANTIFREEZE	FREEZING POINT		BOILING POINT	
40	-12°F	-24°C	222°F	106°C
50	-34°F	-37°C	226°F	108°C

WARNING



2. Fill overflow tank with coolant to the low level line.

3. Install radiator pressure cap (1).

4. Start engine. (TM 55-1945-205-10-4)

5. Operate engine until normal coolant temperature is reached.

NOTE

Coolant level drops the first time the engine is started. Stop the engine, and add more coolant as necessary.

6. Stop engine. (TM 55-1945-205-10-4)

7. Check coolant level in overflow tank.

WARNING

8. Add coolant as required.

WARNING

9. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

10. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER COOLING SYSTEM
FLUSHING

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Cleaning Compound, Engine Cooling System (Item 10, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

Engineer 88L

References

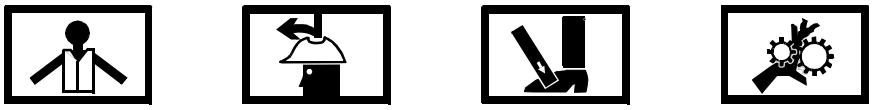
TM 55-1945-205-10-4

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

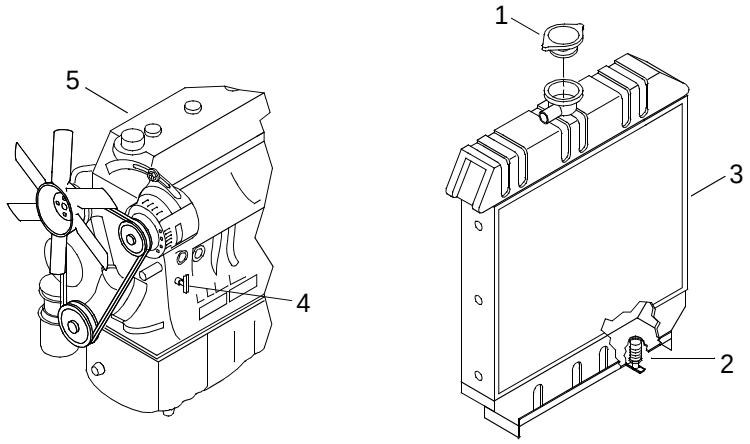
FLUSH LIGHT TOWER COOLING SYSTEM

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove the radiator pressure cap (1).



2. Position drain pan under the drain cock (2).

WARNING

3. Open drain cock (2) located at lower part of radiator (3).

WARNING

4. Drain enough engine radiator coolant to pour the entire contents of a bottle of radiator flush in radiator (3).

WARNING

5. Close drain cock (2).

6. Shake bottle of radiator cleaning flush.

7. Pour the entire contents of a bottle of flush into radiator (3).

8. Install radiator pressure cap (1).

9. Install light tower battery negative lead terminal. (WP 0131 00)

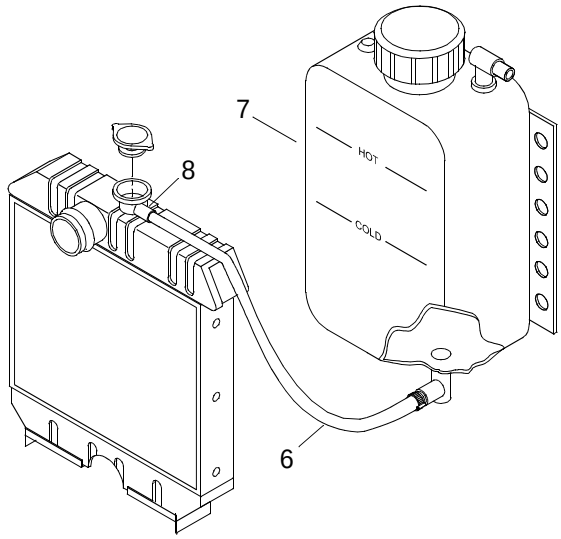
10. Start light tower engine. (TM 55-1945-205-10-4)
11. Allow light tower engine to run for 2-3 hours with radiator flush in cooling system.
12. Shut light tower engine down. (TM 55-1945-205-10-4)
13. Allow radiator (3) to cool.
14. Remove light tower battery negative lead terminal. (WP 0131 00)
15. Remove radiator pressure cap (1).
16. Position drain pan under drain cocks (2 and 4).
17. Open drain cock (2) located on the radiator (3).
18. Open drain cock (4) located on the engine (5).

WARNING

19. Drain engine radiator coolant.
20. Place drain pan beneath overflow hose (6) and reserve tank (7).

WARNING

21. Disconnect overflow hose (6) from radiator pressure cap housing (8) to drain the reserve tank (7).



WARNING

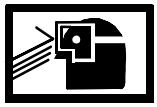
22. Drain reserve tank (7) coolant.
23. Connect the overflow hose (6) to the radiator pressure cap housing (8).
24. Close drain cock (4) on the engine (5).
25. Close drain cock (2) on the radiator (3)
26. Replace the light tower engine radiator coolant. (WP 0175 00)
27. Install light tower battery negative lead terminal. (WP 0131 00)

WARNING

28. Remove drain pan and dispose of contents in accordance with local procedures.

WARNING


CHEMICAL


EYE PROTECTION


VAPOR


POISON


SLICK FLOOR

29. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE UPPER RADIATOR HOSE REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Antifreeze (Item 2, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

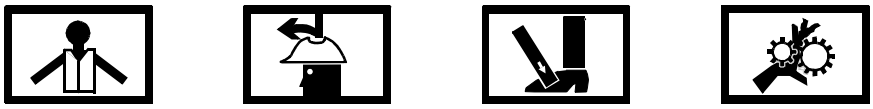
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

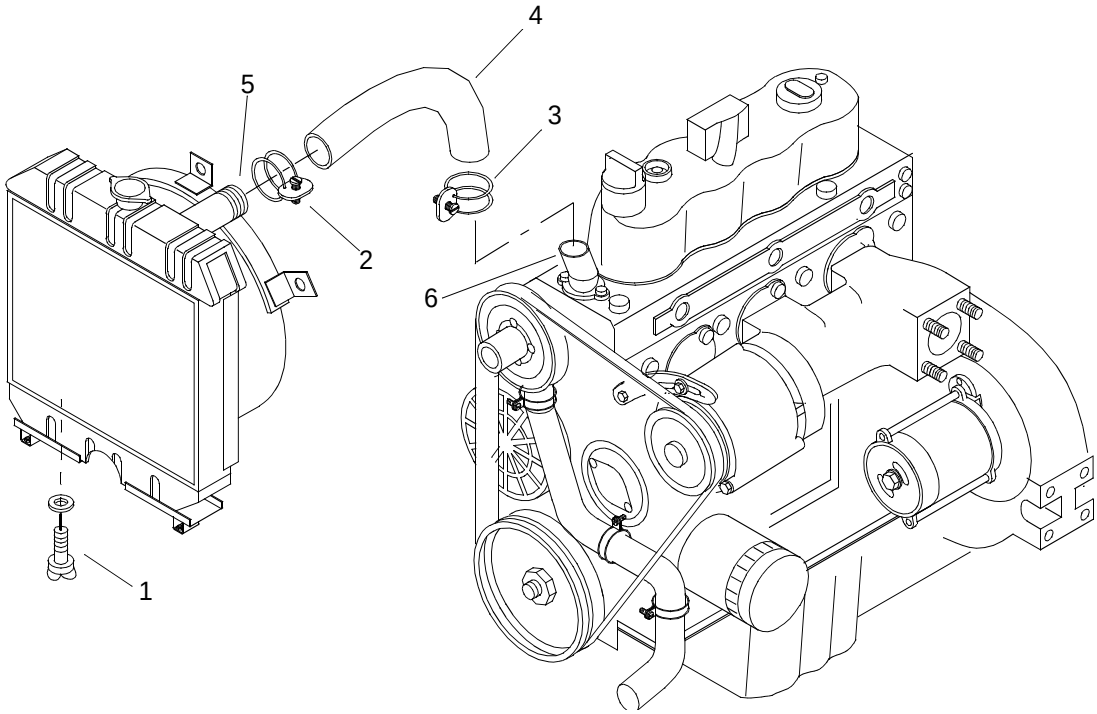
REMOVE LIGHT TOWER ENGINE UPPER RADIATOR HOSE

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Position drain pan under drain cock (1).



WARNING

NOTE

Opening the radiator cap may expedite fluid drainage

2. Open drain cock (1) and drain coolant into drain pan.
3. Loosen hose clamps (2 and 3) and slide back on hose (4).
4. Remove hose (4) from radiator (5) and thermostat cover (6).
5. Remove hose clamps (2 and 3) from hose (4) and discard hose.

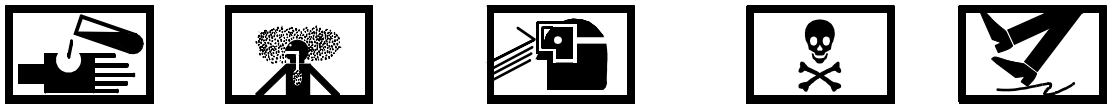
WARNING

6. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE UPPER RADIATOR HOSE

1. Install clamps (2 and 3) over new hose (4).
2. Install hose (4) on radiator (5) and thermostat cover (6).
3. Slide hose clamps (2 and 3) into the proper position on hose (4).
4. Tighten hose clamps (2 and 3).
5. Close drain cock (1).
6. Replace light tower engine radiator coolant. (WP 0175 00)

WARNING



7. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.
8. Light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE LOWER RADIATOR HOSE REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Hose, Radiator
(33968)
PN 16241-7287-0
Hose, Radiator
(33968)
PN 16626-7285-0
Antifreeze (Item 2, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

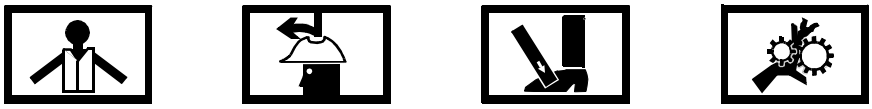
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER ENGINE LOWER RADIATOR HOSE

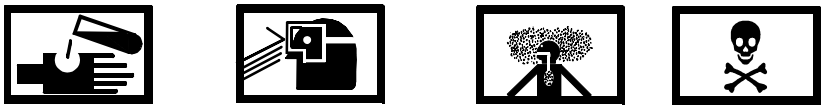
WARNING



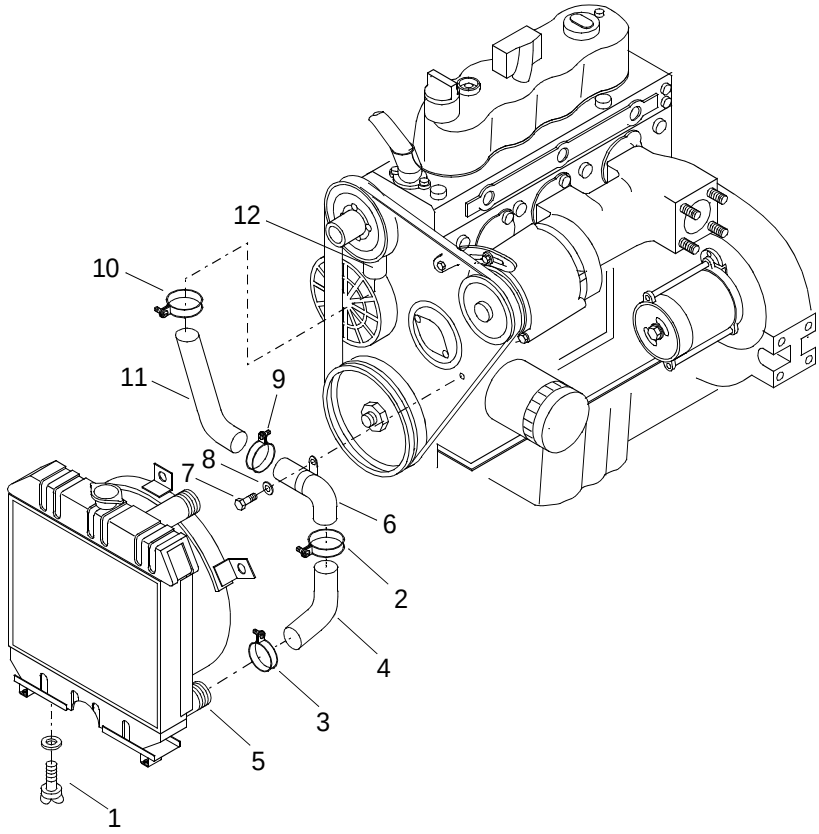
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Position drain pan under drain cock (1).

WARNING



2. Open drain cock (1) and drain coolant into drain pan.



3. Loosen hose clamps (2, 3) and slide back on hose (4).

WARNING

4. Remove hose (4) from radiator (5) and coolant elbow (6).

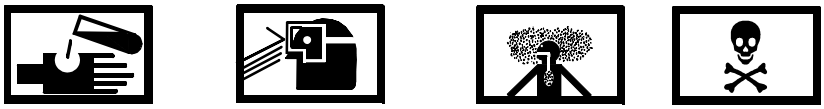
5. Remove hose clamps (2, 3) from hose (4). Discard hose (4).

6. Remove hex head bolt (7) and lock washer (8) from coolant elbow (6).

7. Loosen hose clamps (9, 10) and slide back on hose (11).

8. Remove coolant elbow (6) from hose (11).
9. Remove hose (11) from water pump (12).
10. Remove hose clamps (9, 10) from hose (11). Discard hose (11).

WARNING



11. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE LOWER RADIATOR HOSE

1. Install hose clamps (9, 10) over new hose (11).
2. Install new hose (11) on water pump (12).
3. Install coolant elbow (6) on hose (11).
4. Slide hose clamps (9, 10) into proper place over hose (11).
5. Install lock washer (8) and hex head bolt (7) on coolant elbow (6).
6. Tighten hose clamps (9, 10).
7. Install clamps (2, 3) over hose (4).
8. Install hose (4) on radiator (5) and coolant elbow (6).
9. Slide hose clamps (2, 3) into proper position on hose (4) and tighten.
10. Close drain cock (1).

WARNING

11. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.
12. Replace light tower engine coolant. (WP 0175 00)
13. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FAN BELT GUARD REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Guard, Fan
(33968)
PN 36868727

Personnel Required

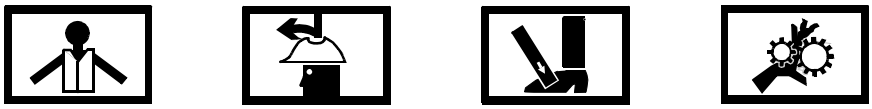
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

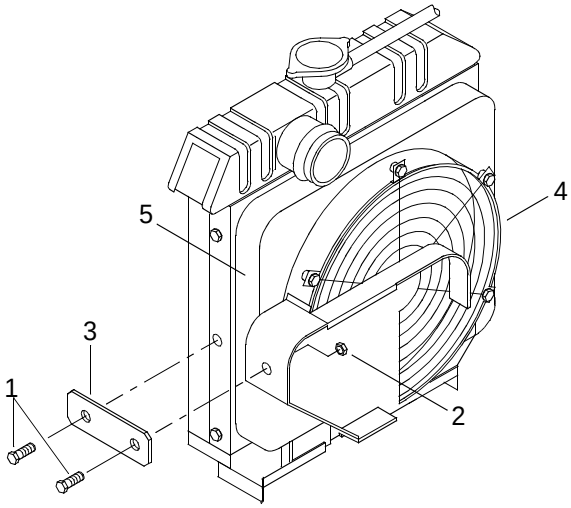
REMOVE LIGHT TOWER ENGINE FAN BELT GUARD

WARNING

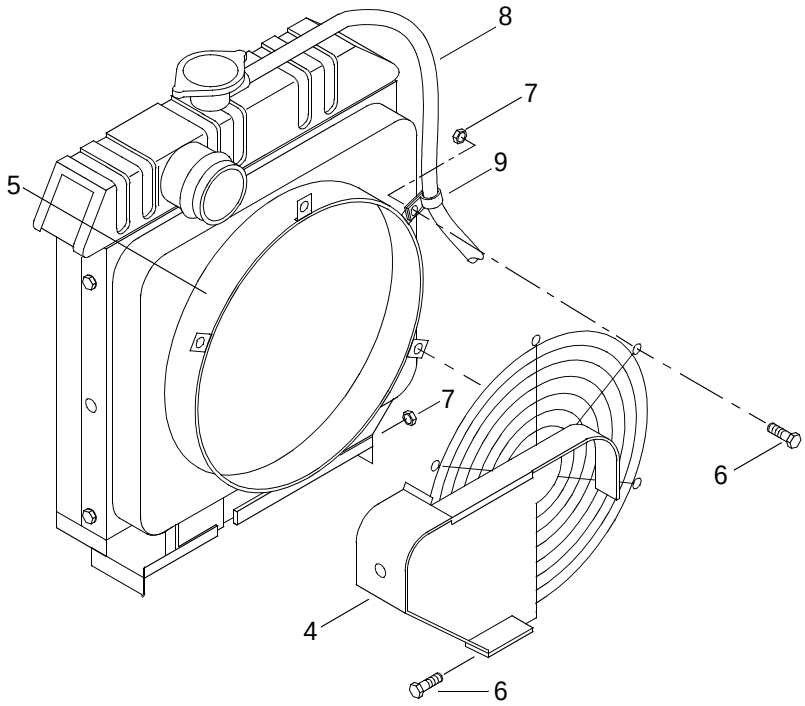


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in injury or death.

1. Remove two bolts (1) and hex nut (2) securing fan belt guard mounting bracket (3) to fan belt guard (4) and fan shroud (5).



2. Remove seven bolts (6) and hex nuts (7) securing fan belt guard (4) to fan shroud (5).



3. Move coolant overflow hose (8) and hose clamp (9) out of the way.

4. Remove fan belt guard (4) and discard.

INSTALL LIGHT TOWER ENGINE FAN BELT GUARD

1 Position fan belt guard (4), hose clamp (9) and coolant overflow hose (8) on fan shroud (5).

2. Install seven bolts (6) and hex nuts (7) securing fan belt guard (4) to fan shroud (5).

3. Position fan belt guard mounting bracket (3) on fan belt guard (4) and fan shroud (5).

4. Install two bolts (1) and hex nut (2) securing fan belt guard mounting bracket (3) to fan belt guard (4) and fan shroud (5).

5. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE FAN BELT REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Belt, Fan
(33698)
PN 36888493

Personnel Required

Engineer 88L

References

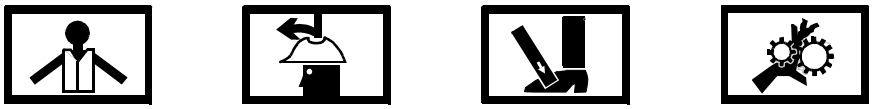
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Fan Belt Guard Removed. (WP 0179 00)

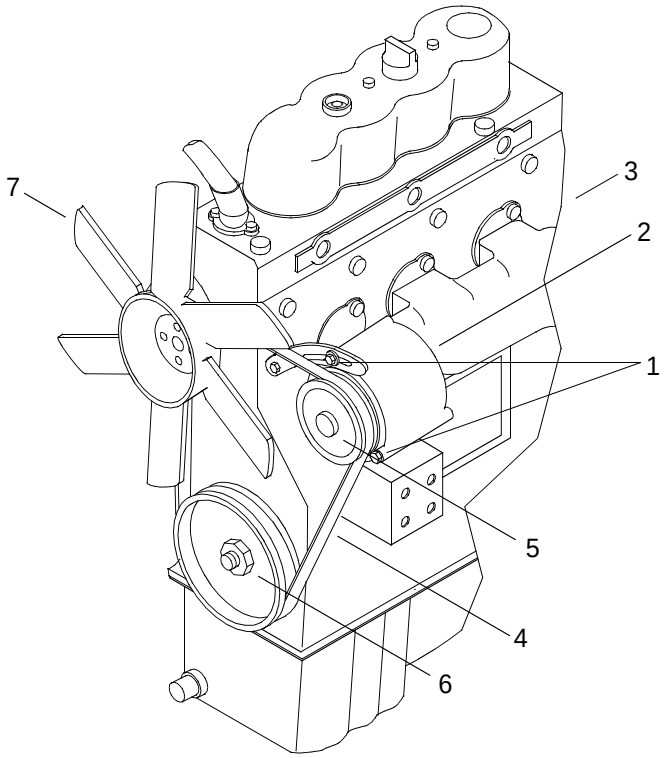
REMOVE LIGHT TOWER ENGINE FAN BELT

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Loosen alternator mount bolts (1).



2. Pivot alternator (2) toward engine (3).

3. Pull fan belt (4) off pulleys (5, 6) and fan (7) to remove. Discard belt (4).

INSTALL FAN BELT

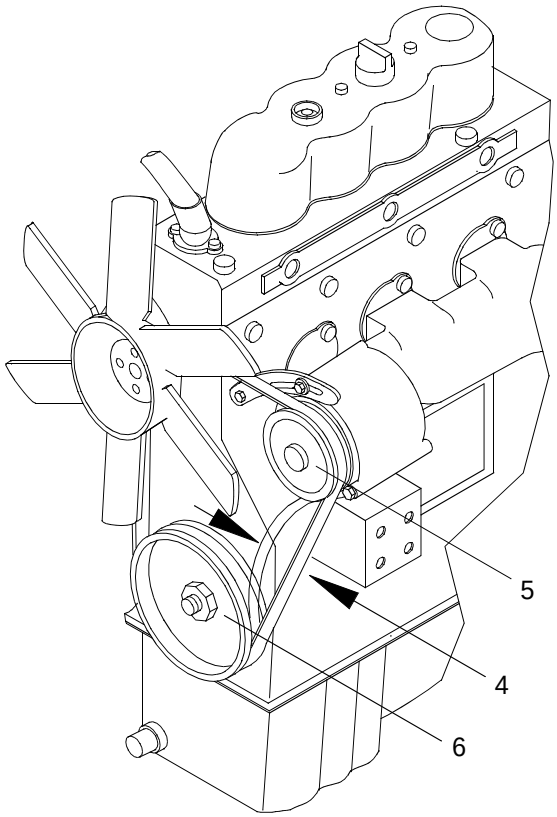
1. Position new fan belt (4) past fan (7) and over pulleys (5, 6).

2. Pivot alternator (2) away from engine (3) to tighten fan belt (4).

3. Tighten generator mount bolts (1).

4. Use spring scale to apply 22.1 ft lbs (10 kg) inward pull pressure on fan belt (4).

5. Measure the deflection of fan belt (4) between alternator pulley (5) and harmonic balancer pulley (6).



NOTE

If fan belt does not meet deflection specifications given, repeat steps 5, 6 and 7.

6. Verify fan belt (4) deflection dimensions are between 0.28 in. to 0.35 in. (7 to 9 mm).

7. Install light tower engine fan belt guard. (WP 0179 00)

8. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE COOLING FAN
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Fan, Engine Cooling
(33968)
PN 36888501

Personnel Required

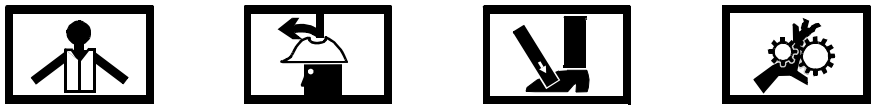
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Upper Radiator Hose Removed. (WP 0177 00)
Light Tower Engine Lower Radiator Hose Removed. (WP 0178 00)
Light Tower Engine Fan Belt Guard Removed. (WP 0179 00)
Light Tower Engine Radiator and Shroud Removed. (WP 0184 00)
Light Tower Engine Fan Belts Removed. (WP 0180 00)

REMOVE LIGHT TOWER ENGINE COOLING FAN

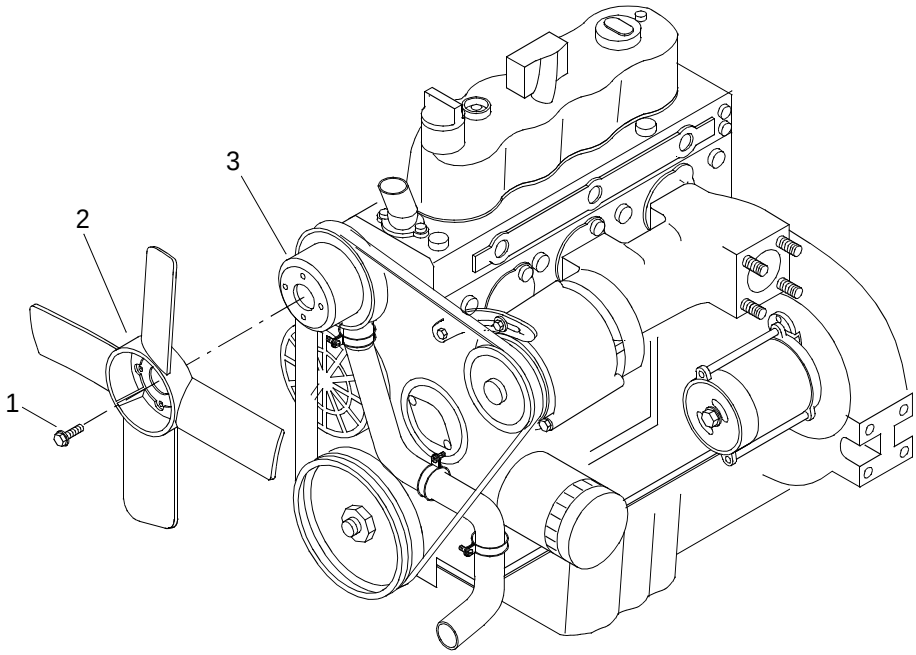
WARNING



VEST HELMET PROTECTION HEAVY PARTS MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death to personnel.

1. Remove four bolts (1) from cooling fan (2).



2. Remove cooling fan (2) from water pump sheave (3) and discard.

INSTALL LIGHT TOWER ENGINE COOLING FAN

1. Position new cooling fan (2) on water pump sheave (3).
2. Install four bolts (1) through cooling fan (2) into water pump sheave (3) and tighten.
3. Install light tower engine fan belts. (WP 0180 00)
4. Install light tower engine radiator and shroud. (WP 0184 00)
5. Install light tower engine fan belt guard. (WP 0179 00)
6. Install light tower engine lower radiator hose. (WP 0178 00)
7. Install light tower engine upper radiator hose. (WP 0177 00)
8. Replace light tower engine radiator coolant. (WP 0175 00)
9. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE WATER PUMP
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Gasket, Water Pump
(1Q0C4)
PN 16261-7343-0
Pump, Water
(1Q0C4)
PN 16241-7303-0

Personnel Required

Engineer 88L

References

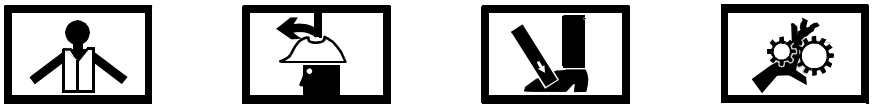
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Upper Radiator Hose Removed. (WP 0177 00)
Light Tower Engine Lower Radiator Hose Removed. (WP 0178 00)
Light Tower Engine Fan Belt Guard Removed. (WP 0179 00)
Light Tower Engine Radiator and Shroud Removed. (WP 0184 00)
Light Tower Engine Fan Belts Removed. (WP 0180 00)
Light Tower Engine Cooling Fan Removed. (WP 0181 00)

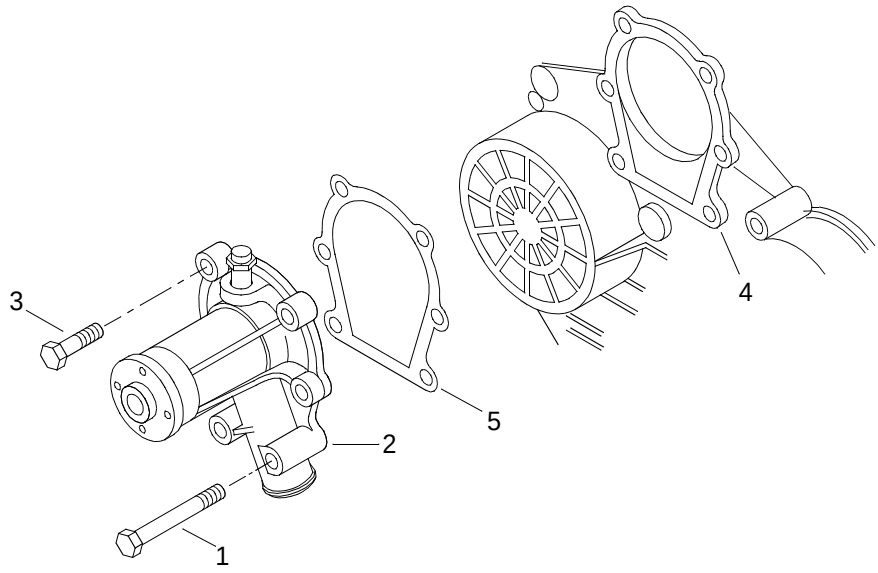
REMOVE LIGHT TOWER ENGINE WATER PUMP

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove two lower bolts (1) from water pump (2).



2. Remove four bolts (3) from water pump (2).
3. Remove water pump (2) from engine block (4).
4. Remove water pump gasket (5) and discard.

INSTALL LIGHT TOWER ENGINE WATER PUMP

1. Position new water pump (2) and new gasket (5) on engine block (4).
2. Install four bolts (3) through water pump (2) and gasket (5) into engine block (4).
3. Install two lower bolts through water pump (2) and gasket (5) into engine block (4).
4. Tighten bolts (1 and 3).
5. Install light tower engine cooling fan. (WP 0181 00)
6. Install light tower engine fan belts. (WP 0180 00)
7. Install light tower engine radiator and shroud. (WP 0184 00)
8. Install light tower engine fan belt guard. (WP 0179 00)
9. Install light tower engine lower radiator hose. (WP 0178 00)
10. Install light tower engine upper radiator hose. (WP 0177 00)
11. Replace light tower engine radiator coolant. (WP 0175 00)
12. Install light tower battery negative lead terminal. (WP 0131 00)
13. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE WATER PUMP
REPAIR

INITIAL SETUP:

Tools
Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts
Assembly Seal, Mechanical
(1Q0C4)
PN 16241-7305-0
Impeller, Water Pump
(1Q0C4)
PN 16241-7351-0
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required
Engineer 88L

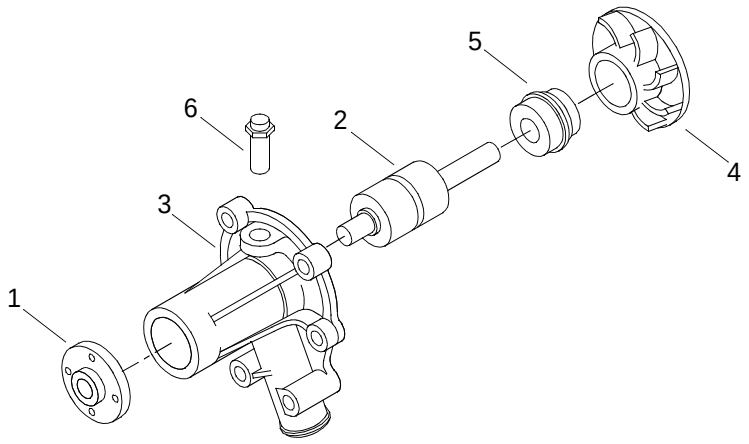
Equipment Condition
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Upper Radiator Hose Removed. (WP 0177 00)
Light Tower Engine Lower Radiator Hose Removed. (WP 0178 00)
Light Tower Engine Fan Belt Guard Removed. (WP 0179 00)
Light Tower Engine Radiator and Shroud Removed. (WP 0184 00)
Light Tower Engine Fan Belts Removed. (WP 0180 00)
Light Tower Engine Cooling Fan Removed. (WP 0181 00)

DISASSEMBLE LIGHT TOWER ENGINE WATER PUMP

NOTE

Repair is limited to the replacement of defective piece parts.

1. Remove the water pump flange (1) from water pump shaft (2).

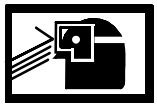


2. Remove water pump shaft (2) from water pump housing (3) with impeller (4) and mechanical seal (5) attached.
3. Remove water pump impeller (4) from water pump shaft (2).
4. Remove mechanical seal (5) from water pump shaft (2).
5. Remove water return pipe (6) from water pump housing (3).

CLEAN LIGHT TOWER ENGINE WATER PUMP

WARNING

CHEMICAL

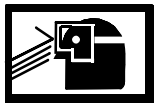


EYE PROTECTION

1 Using wiping rags soaked with cleaner, remove debris from external components.

WARNING

CHEMICAL

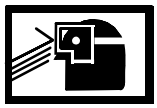


EYE PROTECTION

2. Using wiping rags soaked with cleaner, remove debris from internal components.

WARNING

CHEMICAL



EYE PROTECTION

3. Dispose of contaminated rags in accordance with local procedures.

INSPECT LIGHT TOWER ENGINE WATER PUMP

1. Inspect impeller for cracks or corrosion. Replace damaged part as required.
2. Inspect bearing for pitting, corrosion and freedom of movement. Replace damaged part as required.
3. Inspect water pump housing for cracks and corrosion. Replace damaged part as required.

ASSEMBLE LIGHT TOWER ENGINE WATER PUMP

1. Install water return pipe (6) on water pump housing (3).
2. Install new mechanical seal (5) on water pump shaft (2).
3. Install new water pump impeller (4) on water pump shaft (2).
4. Install water pump shaft (2) in water pump housing (3).
5. Install water pump flange (1) on the water pump shaft (2)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE RADIATOR AND SHROUD REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Radiator, Engine
(33968)
PN 3688451

Personnel Required

Engineer 88L

References

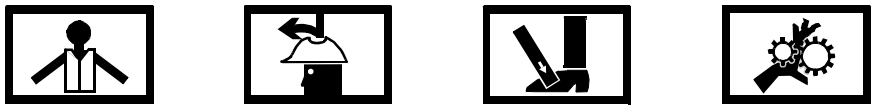
TM 55-1945-205-10-4

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Upper Radiator Hose Removed. (WP 0177 00)
Light Tower Engine Lower Radiator Hose Removed. (WP 0178 00)
Light Tower Engine Fan Belt Guard Removed. (WP 0179 00)

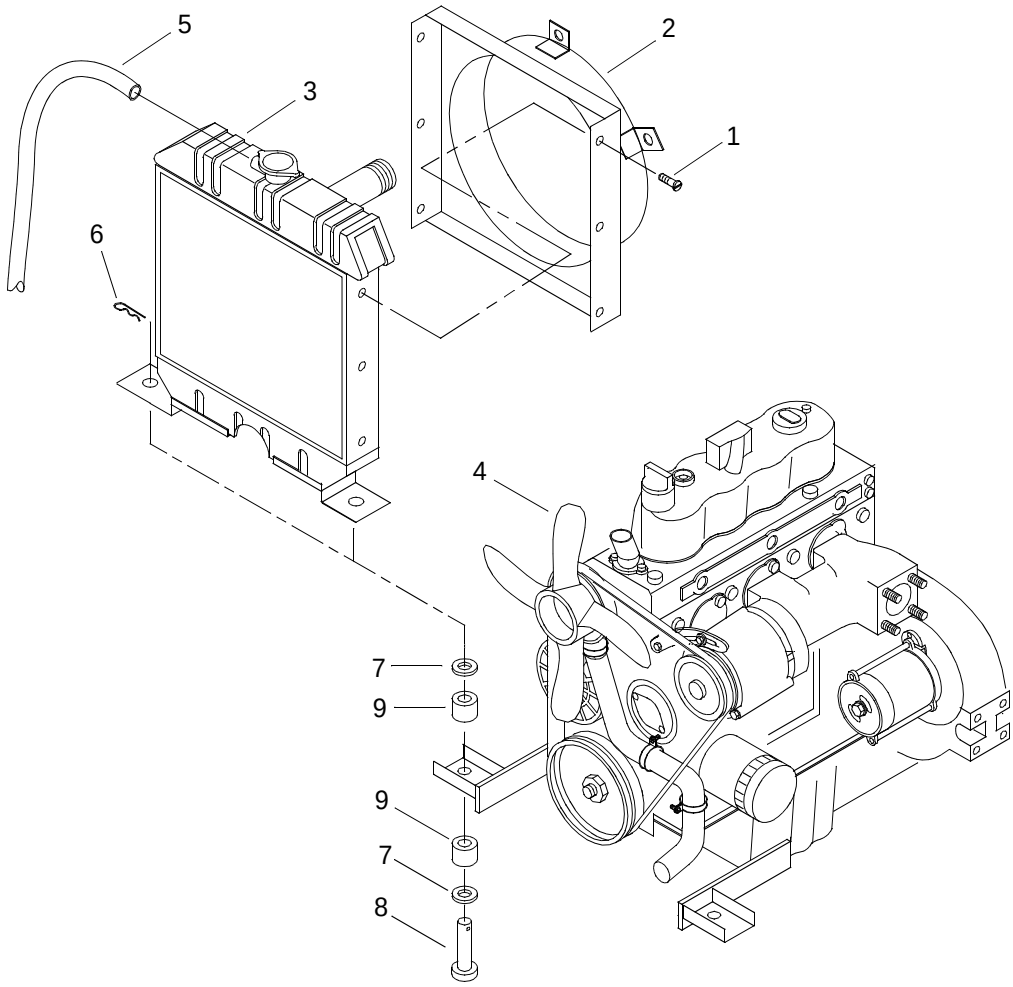
REMOVE LIGHT TOWER ENGINE RADIATOR AND SHROUD

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death to personnel.

1. Remove six hex head screws (1) securing shroud (2) to radiator (3).



2. Slide shroud (2) back toward engine fan (4).
3. Remove overflow line (5) from radiator (3).
4. Remove two retaining clips (6) and flat washers (7) from pin (8) securing radiator (3) to mount bushings (9).
5. Remove mount bushings (9).
6. Remove radiator (3).
7. Remove fan shroud (2) and discard.

INSTALL LIGHT TOWER ENGINE RADIATOR AND SHROUD

1. Position new fan shroud (2) over engine fan (4).
2. Position upper half of new mount bushings (9) on radiator mounting brackets (10).
3. Position new radiator (3) on mounting brackets (10).
4. Install two flat washers (7) and lower half of mount bushings (9) on pins (8).
5. Install two pins (8) up through upper half of new mount bushings (9) and radiator (3).

6. Install retaining clips (6) on pin (8).
7. Install overflow line (5) on radiator (3).
8. Position shroud (2) on radiator (4).
9. Install six hex head screws (1) securing shroud (2) to radiator (3). Tighten hex head screws (1).
10. Install light tower engine fan belt guard. (WP 0179 00)
11. Install light tower engine lower radiator hose. (WP 0178 00)
12. Install light tower engine upper radiator hose. (WP 0177 00)
13. Replace light tower engine radiator coolant. (WP 0175 00)
14. Install light tower battery negative lead terminal. (WP 0131 00)
15. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE RADIATOR RESERVE TANK
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron (Item 1, WP 0253 00)
Respirator, Air Filtering (Item 40, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)

Materials/Parts

Tank, Radiator Overflow
(33968)
PN 36845600
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)

Personnel Required

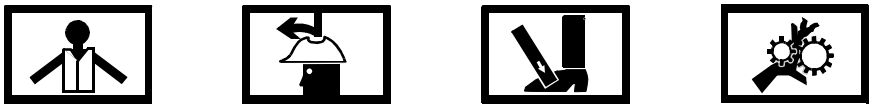
Engineer 88L

Equipment Condition

Light Tower Negative Battery Terminal Lead Removed. (WP 0131 00)

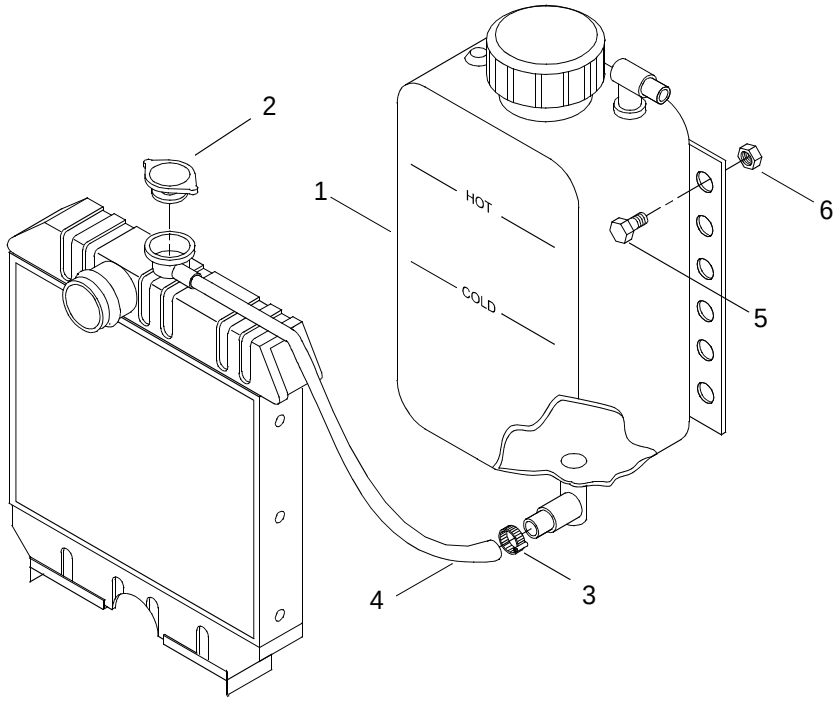
REMOVE LIGHT TOWER ENGINE RADIATOR RESERVE TANK

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

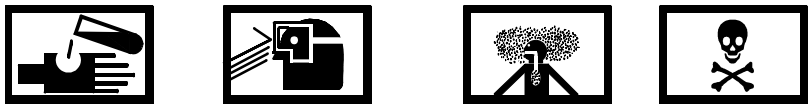
1. Position drain pan under reserve tank (1).



2. Remove radiator cap (2).

3. Loosen hose clamp (3) and slide back on hose (4).

WARNING

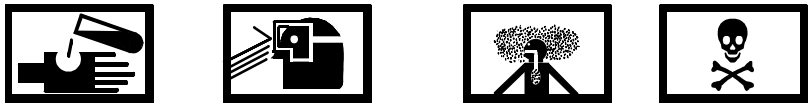


4. Remove hose (4) from bottom of reserve tank (1) and allow coolant to drain into drain pan.

5. Remove two hex head bolts (5) and hex nuts (6) from reserve tank (1).

6. Remove reserve tank (1) and discard.

WARNING



7. Remove drain pan and dispose of contents in accordance with local procedures.

INSTALL LIGHT TOWER ENGINE RADIATOR RESERVE TANK

1. Position new reserve tank (1) on rear panel (7).
2. Install two hex head bolts (5) and hex nuts (6) through reserve tank (1) on rear panel (7).
3. Install hose (4) on the bottom of reserve tank (1).
4. Slide hose clamp (3) back into position on hose (4). Tighten hose clamp (3).
5. Replace light tower engine radiator coolant. (WP 0175 00)
6. Install radiator cap (2).

WARNING

7. Clean up spilled fluid with a spill kit and dispose of spill kit waste in accordance with local procedures.
8. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE VALVE COVER
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Wrench, Torque (10-250 in. lbs) (Item 59, WP 0253 00)

Materials/Parts

Assy Cover, Cylinder Head
(0XWR1)
PN 16261-1450-0
Gasket
(0XWR1)
PN 15951-9666-0
Qty 3
Cleaner (Item 7, WP 0252 00)

Personnel Required

Engineer 88L

References

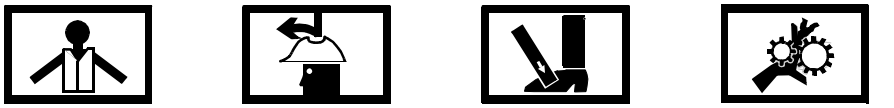
TM 55-1945-205-10-4

Equipment Condition

Light Tower Negative Battery Terminal Lead Removed. (WP 0131 00)

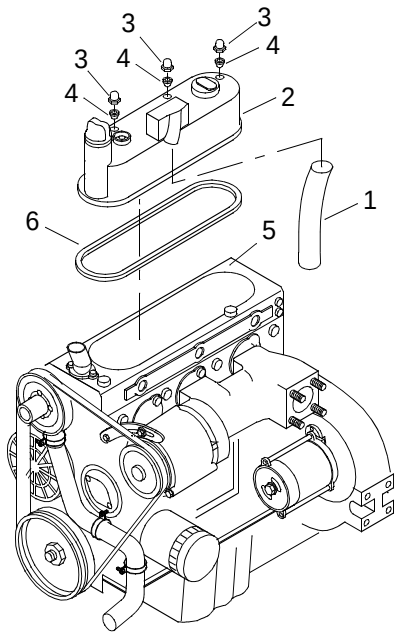
REMOVE LIGHT TOWER ENGINE VALVE COVER

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

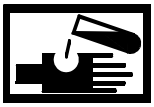
1. Disconnect engine breather hose (1) from valve cover (2).



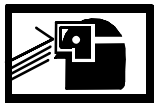
2. Remove three hex head cap nuts (3) and gaskets (4) from valve cover (2). Discard gaskets (4).
3. Remove valve cover (2) from cylinder head (5).
4. Remove valve cover gasket (6) and discard.

INSTALL LIGHT TOWER ENGINE VALVE COVER

WARNING



CHEMICAL



EYE PROTECTION

1. Using cleaner and putty knife, clean the gasket surface area on the cylinder head (5) and valve cover (4).
2. Install new valve cover gasket (6) in valve cover (4).
3. Install valve cover (2) on cylinder head (5).
4. Install three new gaskets (4) on valve cover (2).
5. Install three hex head cap nuts (3) in valve cover (2).
6. Torque hex head cap nuts (3) to 61.2 to 78 in. lbs (6.9-8.8 N-m).
7. Connect engine breather hose (1) to valve cover (2).
8. Install light tower negative battery terminal lead. (WP 0131 00)
9. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE VALVE COVER
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

O-Ring
(0XWR1)
PN 04811-50300
Element, Breather
(0XWR1)
PN 16241-0567-0
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Valve Cover Removed. (WP 0186 00)

DISASSEMBLE LIGHT TOWER ENGINE VALVE COVER

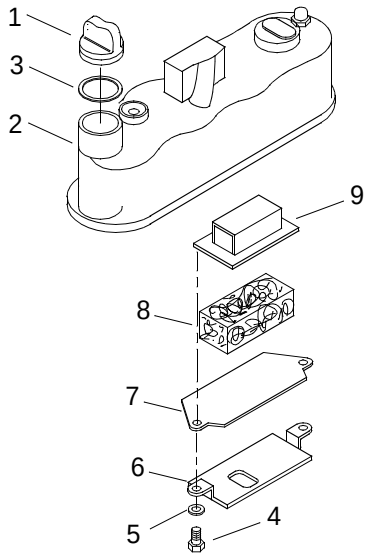
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

Repair is limited to the replacement of damaged components.

1. Remove oil filler plug (1) from the valve cover (2).



2. Remove o-ring (3) from the oil filler plug (1) and discard.
3. Remove two hex head bolts (4) and lock washers (5) from breather oil shield (6).
4. Remove breather oil shield (6).
5. Remove lower breather plate (7).
6. Remove breather element (8) and discard.
7. Remove upper breather plate (9).

CLEAN LIGHT TOWER ENGINE VALVE COVER

WARNING


CHEMICAL


EYE PROTECTION

1. Using wiping rags soaked with cleaner, remove debris from external components.

WARNING

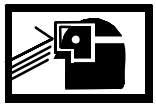

CHEMICAL


EYE PROTECTION

2. Using wiping rags soaked with cleaner, remove debris from internal components.

WARNING

CHEMICAL



EYE PROTECTION

3. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT LIGHT TOWER ENGINE VALVE COVER

1. Inspect oil filler plug (1) for cracks or damaged threads, replace as necessary.
2. Inspect valve cover (2) for cracks, dents, warping or any damage that may cause leaking or interfere with the normal operation of the engine, replace as necessary.
3. Inspect breather oil shield (6) for cracks, dents, or warping. Replace as necessary.
4. Inspect lower breather plate (7) for cracks, dents, or warping. Replace as necessary.
5. Inspect upper breather plate (9) for cracks, dents, or warping Replace as necessary.

ASSEMBLE LIGHT TOWER ENGINE VALVE COVER

1 Install upper breather plate (9).

2. Install new breather element (8).
3. Install lower breather plate (7).
4. Install breather oil shield (6).
5. Position two lock washers (5) under breather oil shield (6).
6. Install two hex head bolts (4) through lock washers (5) and breather oil shield (6). Tighten hex head bolts (4).
7. Install new o-ring (3) on oil filler plug (1).
8. Install the oil filler plug (1) on valve cover (2).
9. Install light tower engine valve cover. (WP 0186 00)
10. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ENGINE MUFFLER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Muffler, Engine
(33968)
PN 36871051
Gasket, Exhaust
(33968)
PN 15263-1237-0

Personnel Required

Engineer 88L

References

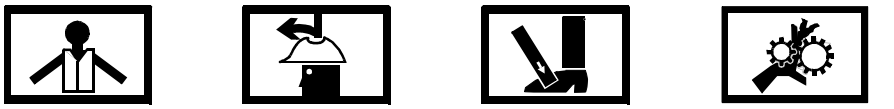
TM 55-1945-205-10-4

Equipment Condition

Engine Cool To Touch.
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

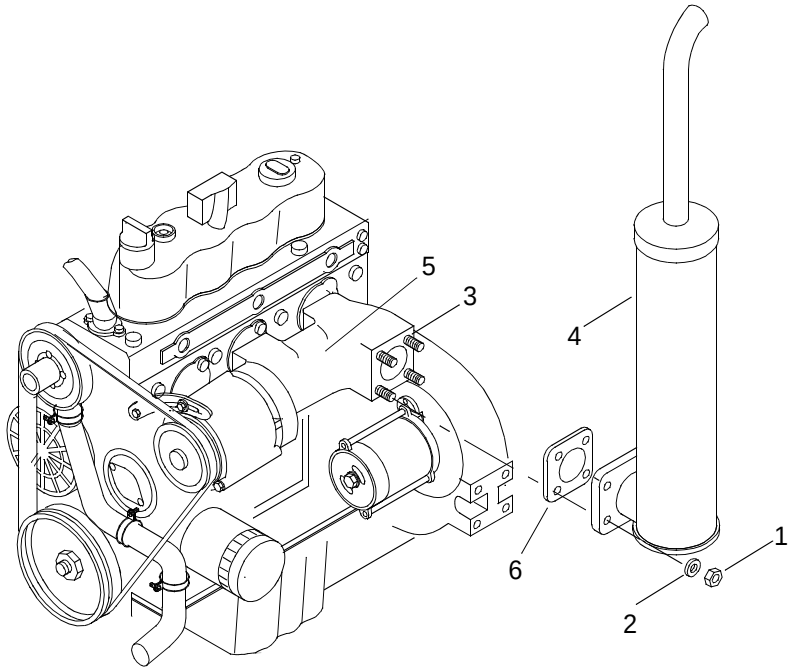
REMOVE LIGHT TOWER ENGINE MUFFLER

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove four hex nuts (1) and lock washers (2) from studs (3).



2. Remove muffler (4) from manifold (5).

3. Clean old gasket material (6) from manifold (5) with a putty knife.

INSTALL LIGHT TOWER ENGINE MUFFLER

1. Install new gasket (6) on manifold (5).

2. Install new muffler (4) on manifold (5).

3. Install four lock washers (2) and hex nuts (1) on studs (3). Tighten hex nuts (1).

4. Install light tower battery negative lead terminal. (WP 0131 00)

5. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

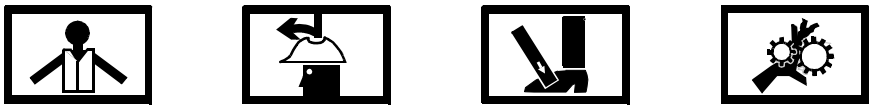
Tire/Wheel Assembly
(33968)
PN 35068345

Personnel Required

Engineer 88L

REMOVE LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY

WARNING

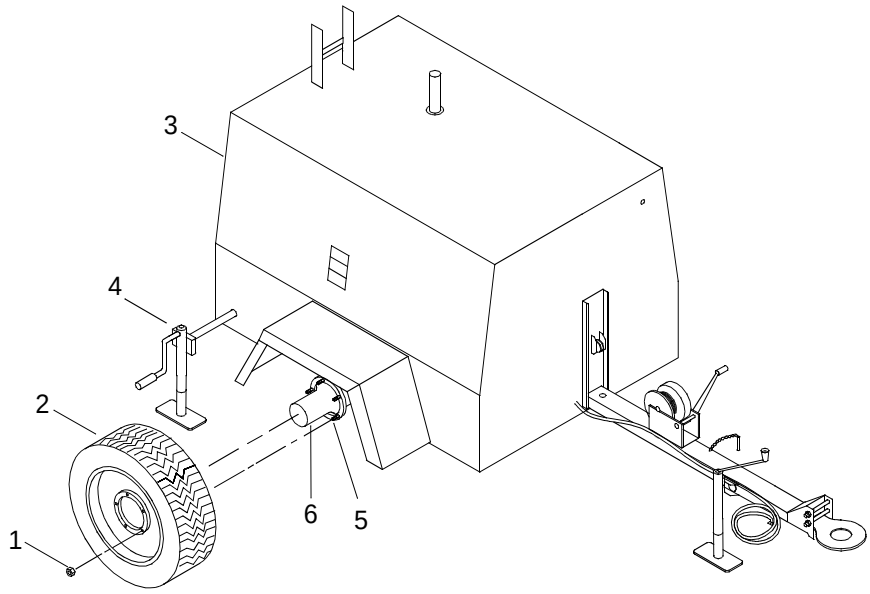


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for removal and installation of wheel and tire assemblies.

1. Loosen five lug nuts (1) on the wheel and tire assembly (2).



WARNING

HEAVY OBJECTS

2. Raise light tower (3) off the wheel and tire assembly (2) using outrigger (4).
3. Remove five lug nuts (1) from the hub studs (5).
4. Remove wheel and tire assembly (2) off hub (6).

INSTALL LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY

1. Position new wheel and tire assembly (2) on hub (6).
2. Install five lug nuts (1) on hub studs (5).

WARNING

HEAVY OBJECTS

3. Lower light tower (3) with outrigger (4) until its weight is supported on wheel and tire assembly (2).
4. Tighten five lug nuts (1) in a criss-cross pattern.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RUNNING GEAR WHEEL HUB
REMOVAL AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Wrench, Torque (150-750 in. lbs) (Item 61, WP 0253 00)

Materials/Parts

Pin, Cotter
(33968)
PN 35315225
Seal
(33968)
PN 35315142

Personnel Required

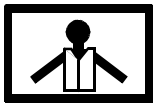
Engineer 88L

Equipment Condition

Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)

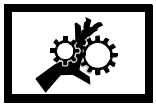
REMOVE LIGHT TOWER RUNNING GEAR WHEEL HUB

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

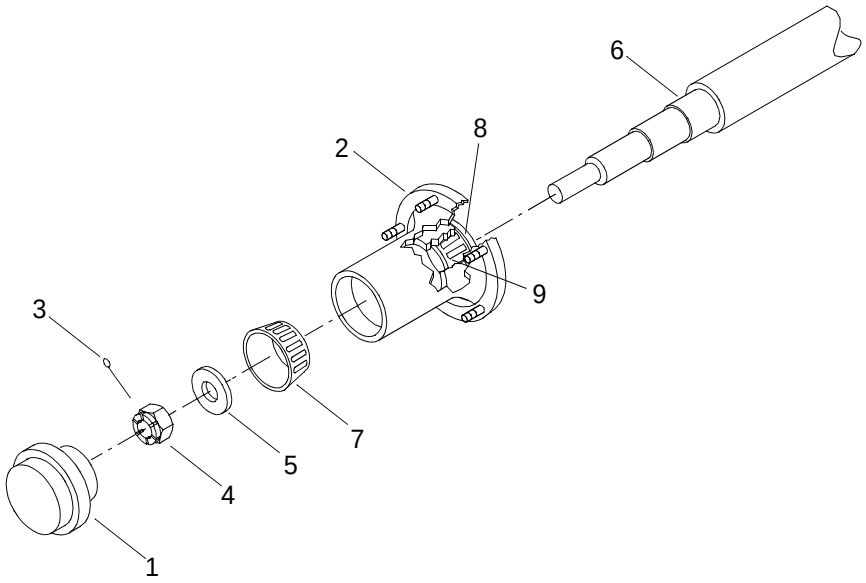

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of port and starboard light tower wheel hubs.

1. Remove dust cap (1) from hub (2).



2. Remove cotter pin (3) from nut (4). Discard cotter pin (3).
3. Remove nut (4) and washer (5) from axle (6).
4. Remove outer bearing (7).
5. Remove hub (2) from axle (6).

INSTALL LIGHT TOWER RUNNING GEAR WHEEL HUB

1. Install the hub (2) on axle (6).
    a. Rotate hub (2) slowly while pushing inward.
    b. Continue to push inward until inner bearing (9) and seal (8) are completely seated on axle (6).
    c. Install outer bearing (7) in hub (2).
    d. Install washer (5) and nut (4) on axle (6).
2. Using a torque wrench, torque nut (4) to 600 in. lbs (68 N-m).
3. Back nut (4) off until next available slot in nut (4) lines up with hole in axle (6).
4. Install new cotter pin (3) through the end of axle (6) and nut (4).
5. Bend cotter pin (3) over to secure in place.
6. Install dust cap (1) over nut (4) in hub (2).
7. Install light tower running gear wheel and tire assembly. (WP 0189 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RUNNING GEAR WHEEL HUB AND BEARINGS
REMOVAL, CLEANING, INSPECTION, LUBRICATION AND INSTALLATION

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron (Item 1, WP 0253 00)
Pan, Drain (Item 33, WP 0253 00)
Qty 2
Wrench, Torque (150-750 in. lbs) (Item 61, WP 0253 00)
Brush, Stencil (Soft Bristle) (Item 4, WP 0253 00)
Punch, Drive Pin, Brass (Item 39, WP 0253 00)

Materials/Parts

Pin, Cotter
(33968)
PN 35315217
Seal
(33968)
PN 35315142
Cleaner (Item 7, WP 0252 00)
Grease, General Purpose (Item 20, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)
Spill Clean-Up Kit, Hazardous Material (Item 39, WP 0252 00)
Shoring Block (Item 5, WP 0252 00)
Qty 2

Personnel Required

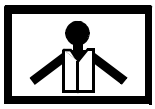
Engineer 88L

Equipment Condition

Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)

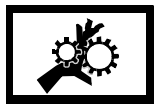
REMOVE LIGHT TOWER RUNNING GEAR WHEEL HUB AND BEARINGS

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

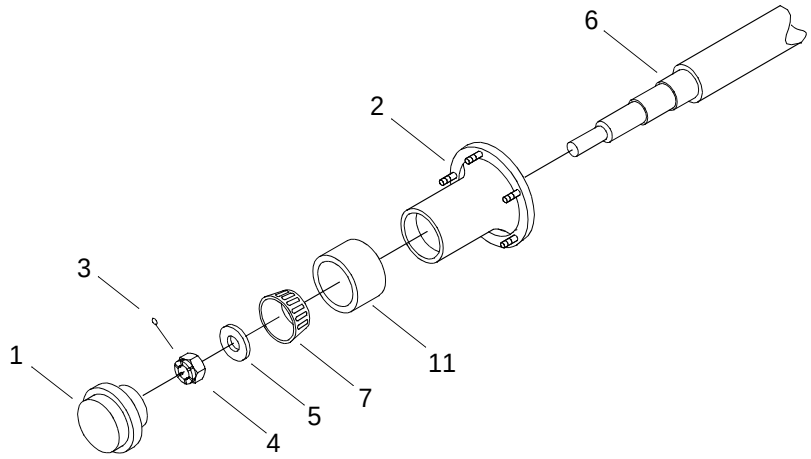

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

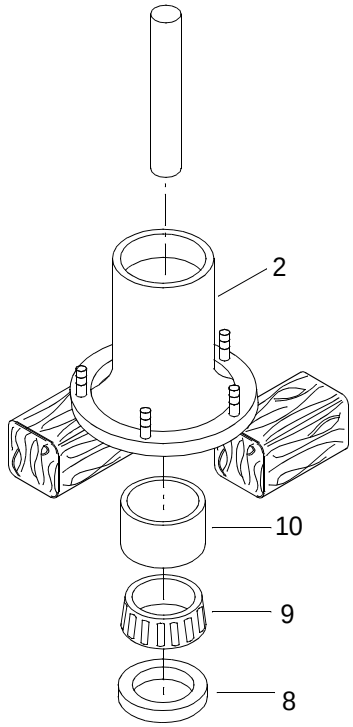
The following procedure is typical for both removal and installation of light tower wheel bearings and races.

1. Remove dust cap (1) from hub (2).



2. Remove cotter pin (3) from nut (4) and discard.
3. Remove nut (4) and washer (5) from axle (6).
4. Remove outer bearing (7).
5. Remove hub (2) from axle (6).

6. Remove seal (8), inner bearing (9) and race (10) from hub (2).



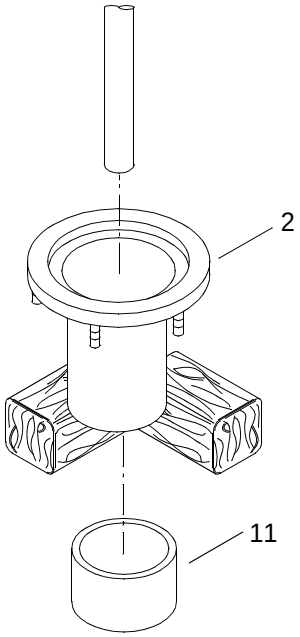
a. Support hub (2) on two blocks of wood, seal side down.

b. Using a brass drift and a hammer, drive the seal (8) and inner bearing (9) downward to remove from the back of hub (2).

c. Discard seal (8).

d. Using a brass drift and a hammer, drive inner bearing race (10) downward to remove from back of hub (2).

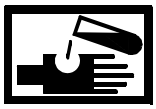
e. Turn the hub (2) over on the blocks of wood.



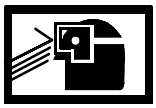
f. Using a brass drift and a hammer, drive the outer bearing race (11) downward to remove from the front of hub (2).

CLEAN LIGHT TOWER RUNNING GEAR WHEEL HUB AND BEARINGS

WARNING



CHEMICAL

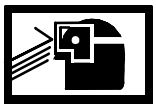


EYE PROTECTION

1. Pour a sufficient amount of cleaner into a drain pan to allow for the bearings (7 and 9) and hub (2) to be completely submerged.

WARNING

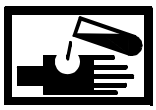
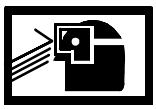
CHEMICAL



EYE PROTECTION

2. Place the bearings (7 and 9) and hub (2) in the cleaner and allow to soak for 10 to 15 minutes.

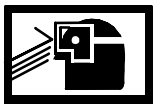
WARNING

CHEMICAL EYE PROTECTION

3. Agitate the bearings (7 and 9) and hub (2) thoroughly in the cleaner after the soaking period.

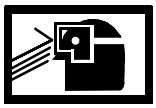
WARNING

CHEMICAL EYE PROTECTION

4. Scrub the bearings (7 and 9) and hub (2) thoroughly in the soft bristle brush.

WARNING

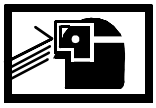



CHEMICAL EYE PROTECTION

5. Remove the bearings (7 and 9) and hub (2) from the cleaner and allow to drain in a drain pan lined with a clean wiping rag.

6. Allow the bearing (7 and 9) and hub (2) to air dry.

WARNING

CHEMICAL EYE PROTECTION

7. Remove drain pan and dispose of contents in accordance with local procedures.

INSPECT LIGHT TOWER RUNNING GEAR WHEEL HUB AND BEARINGS

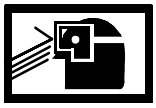
1. Inspect bearings (7 and 9) and races (10 and 11) for evidence of pitting or corrosion, cracking, discoloration and evidence of wear. Replace damaged items.

2. Inspect hub (2) for cracks and discoloration from heat damage. Replace damaged items.

LUBRICATE LIGHT TOWER RUNNING GEAR WHEEL HUB AND BEARINGS

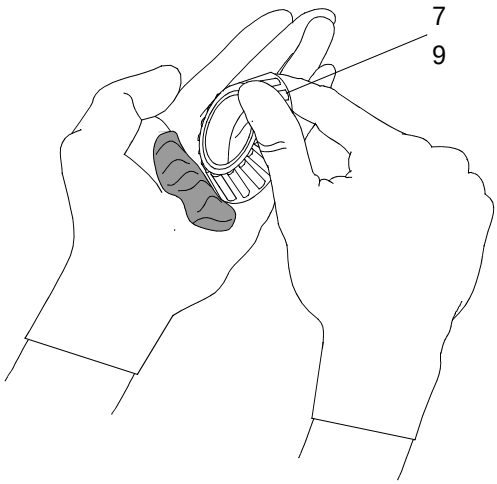
WARNING

CHEMICAL

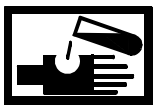


EYE PROTECTION

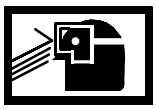
1. Place a small amount of grease in the palm of one hand and take bearings (7 and 9) in the other hand.



WARNING



CHEMICAL

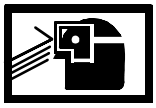


EYE PROTECTION

2. Push a segment of the wider end of bearings (7 and 9) down into the outer edge of the grease pile closest to the thumb.

WARNING

CHEMICAL

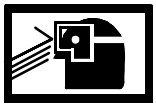


EYE PROTECTION

3. Keep lifting and pushing bearings (7 and 9) down into the edge of the grease pile until grease oozes out from the top and from between the roller bearings (7 and 9).

WARNING

CHEMICAL

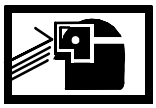


EYE PROTECTION

4. Rotate and repeat packing bearings (7 and 9) until completely filled with grease.

WARNING

CHEMICAL

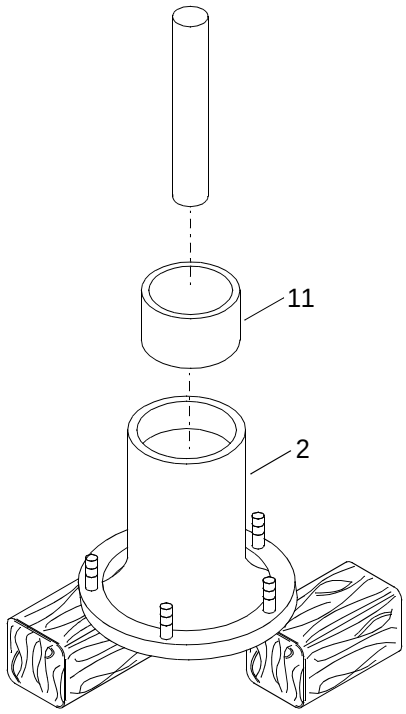


EYE PROTECTION

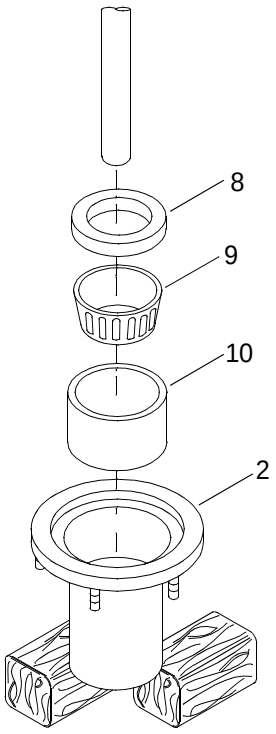
5. Pack the cavity in hub (2) with grease.

INSTALL LIGHT TOWER RUNNING GEAR WHEEL HUB AND BEARINGS

1. Using a brass drift and a hammer, drive outer bearing race (11) inward, seating it securely in the hub (2).



2. Turn hub (2) over on the blocks of wood.

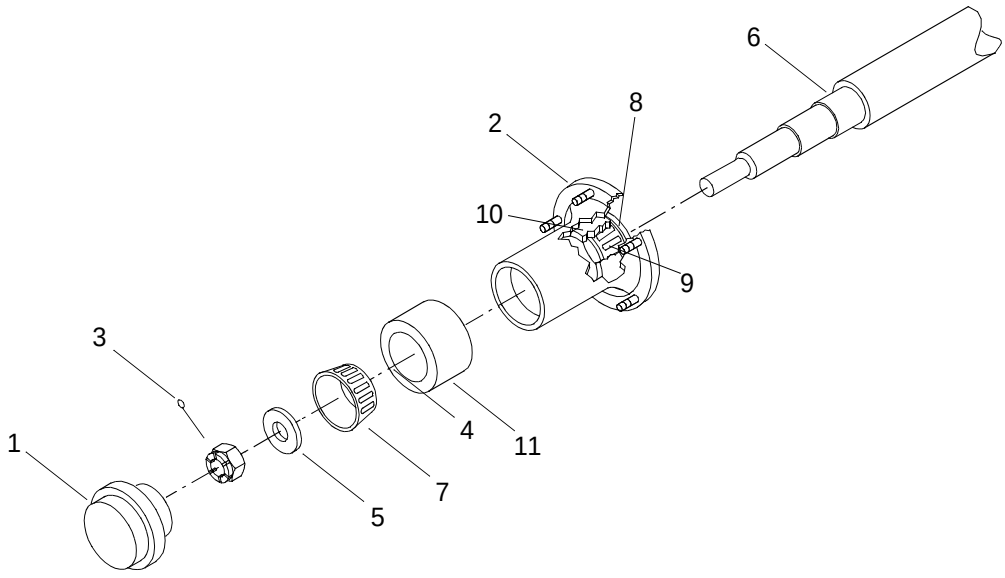


3. Using a brass drift and a hammer, drive inner bearing race (10) inward, seating it securely in the hub (2).

4. Install greased bearing (9) into inner bearing race (10) in hub (2).

5. Install new seal (8) in hub (2).

6. Install the hub (2) on axle (6).



a. Rotate hub (2) slowly while pushing inward.

b. Continue to push inward until inner bearing (9) and new seal (8) are completely seated on axle (6).

c. Install outer bearing (7) in hub (2).

d. Install washer (5) and nut (4) on axle (6).

7. Using a torque wrench, torque nut (4) to 600 in. lbs (68 N-m).
8. Back castle nut (4) off until next available slot in castle nut (4) lines up with hole in axle (6).
9. Install new cotter pin (3) through the end of axle (6) and nut (4).
10. Bend cotter pin (3) over to secure in place.
11. Install dust cap (1) over nut (4) in hub (2).
12. Install light tower running gear wheel and tire assembly. (WP 0189 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RUNNING GEAR WHEEL BEARINGS AND RACES REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Punch, Drive Pin, Brass (Item 39, WP 0253 00)
Wrench, Torque (150-750 in. lbs) (Item 61, WP 0253 00)

Materials/Parts

Pin, Cotter
(33968)
PN 35315225
Bearing, Outer
(33968)
PN 35315191
Race, Outer
(33968)
PN 35315183
Seal
(33968)
PN 35315142
Bearing, Inner
(33968)
PN 35361864
Race, Inner
(33968)
PN 35361872
Grease, General Purpose (Item 20, WP 0252 00)
Block, Shoring (Item 5, WP 0252 00)
Qty 2

Personnel Required

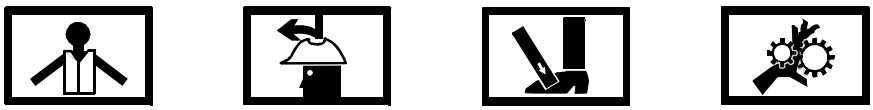
Engineer 88L

Equipment Condition

Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)

REMOVE LIGHT TOWER RUNNING GEAR WHEEL BEARINGS AND RACES

WARNING



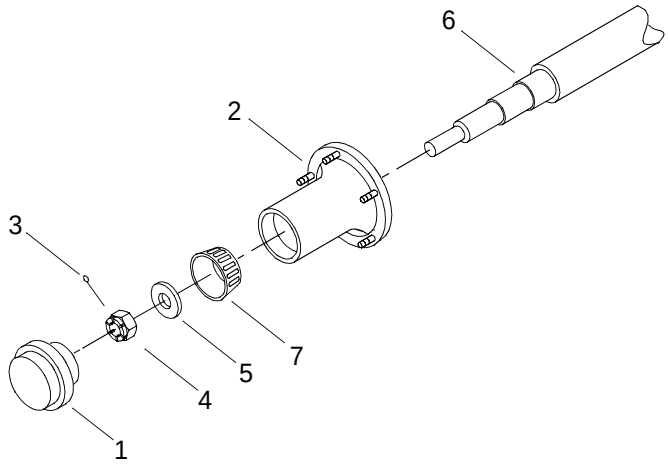
VEST HELMET PROTECTION HEAVY PARTS MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

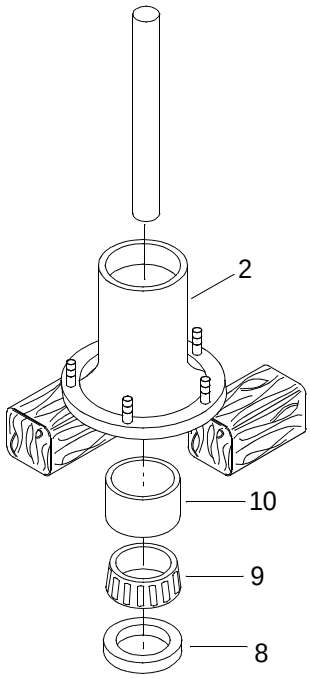
The following procedure is typical for the removal and installation of light tower wheel bearings and races.

1. Remove dust cap (1) from hub (2).



2. Remove cotter pin (3) from nut (4) and discard.
3. Remove nut (4) and washer (5) from axle (6).
4. Remove outer bearing (7) and discard.
5. Remove hub (2) from axle (6).

6. Support hub (2) on two blocks of wood, seal side down.



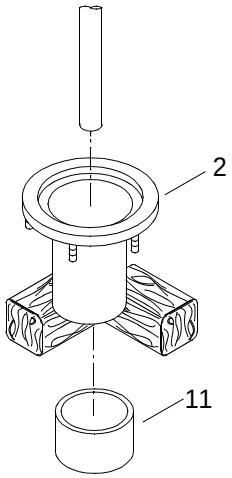
7. Using a brass drift and a hammer, drive the seal (8) and inner bearing (9) downward to remove from the back of hub (2).

8. Discard the seal (8) and inner bearing (9).

9. Using a brass drift and a hammer, drive the inner race (10) downward to remove from the back of hub (2).

10. Discard the inner race (10).

11. Turn the hub (2) over on the blocks of wood.



12. Using a brass drift and a hammer, drive the outer race (11) downward to remove from the front of hub (2).

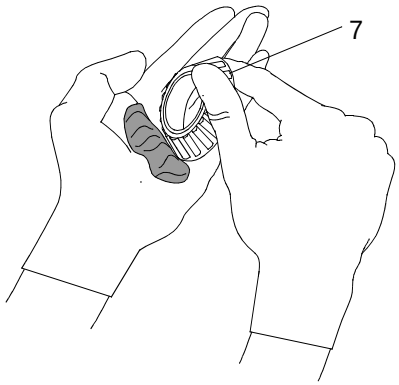
13. Discard outer race (11).

INSTALL LIGHT TOWER RUNNING GEAR WHEEL BEARINGS AND RACES

WARNING

CHEMICAL **EYE PROTECTION**

1. Place a small amount of grease in the palm of one hand and take new bearings (7 and 9) in the other hand.



WARNING

CHEMICAL **EYE PROTECTION**

2. Push a segment of the wider end of bearings (7 and 9) down into the outer edge of the grease pile closest to the thumb.

WARNING

CHEMICAL **EYE PROTECTION**

3. Keep lifting and pushing bearings (7 and 9) down into the edge of the grease pile until grease oozes out from the top.

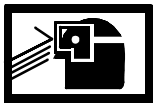
WARNING

CHEMICAL **EYE PROTECTION**

4. Rotate and repeat packing bearings (7 and 9) until completely filled with grease.

WARNING

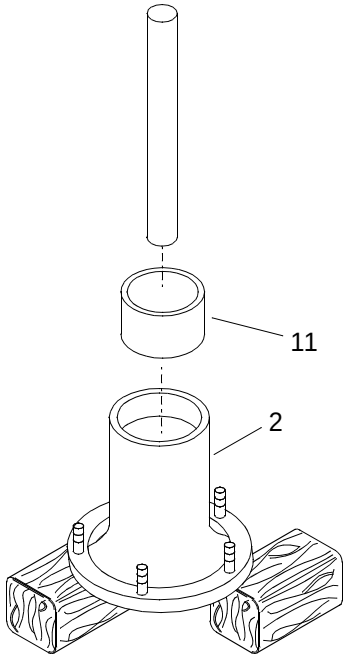
CHEMICAL



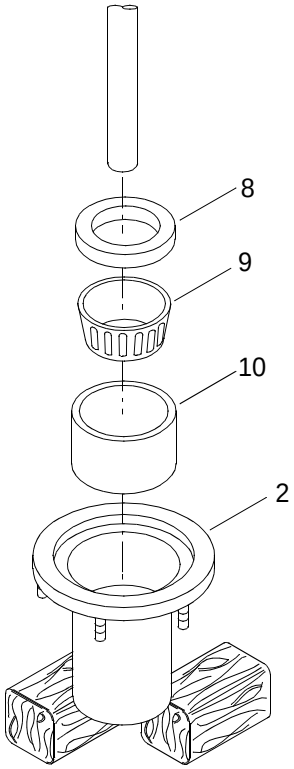
EYE PROTECTION

5. Pack the cavity in hub (2) with grease.

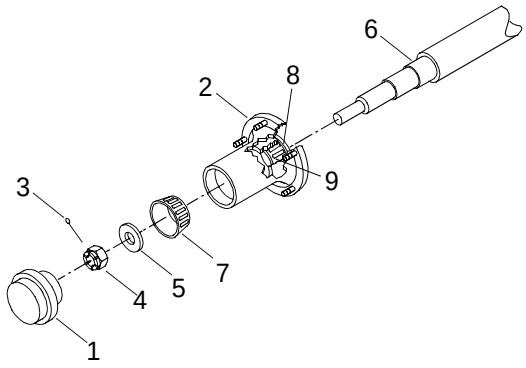
6. Using a brass drift and hammer, drive new outer bearing race (11) inward, seating it securely in the hub (2).



7. Turn hub (2) over on the blocks of wood.



8. Using a brass drift and hammer, drive new outer bearing race (11) inward, seating it securely in the hub (2).
9. Install greased inner bearing (9) into hub (2).
10. Using a brass drift and hammer, install new seal (8) into hub (2).
11. Install hub (2) on axle (6).



a. Rotate hub (2) slowly while pushing inward.

b. Continue to push inward until inner bearing (9) and new seal (8) are completely seated on axle (6).

c. Install greased outer bearing (7) in hub (2).

d. Install washer (5) and nut (4) on axle (6).

12. Using a torque wrench, torque nut (4) to 600 in. lbs (68 N-m).
13. Back castellated nut (4) off until next available slot in castellated nut (4) lines up with hole in axle (6).
14. Install new cotter pin (3) through the end of axle (6) and nut (4).
15. Bend new cotter pin (3) over to secure in place.
16. Install dust cap (1) over nut (4) in hub (2).
17. Install light tower running gear wheel and tire assembly. (WP 0189 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER AXLE SPRING
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Stand, Vehicle Support (Item 50, WP 0253 00)

Materials/Parts

Axle Spring
(33968)
PN 36848166

Personnel Required

Engineer 88L
Qty 2

Equipment Condition

Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)

REMOVE LIGHT TOWER AXLE SPRING

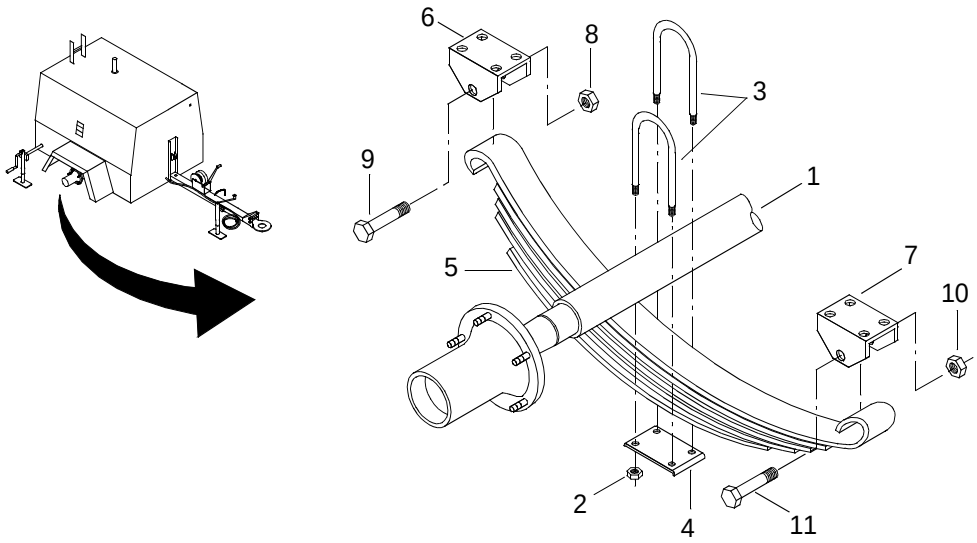
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of light tower port or starboard axle springs.

1. Using vehicle support stand, support light tower trailer axle (1).



2. Remove four nuts (2) from two u-bolts (3).
3. Remove plate (4) from two u-bolts (3).
4. Remove two u-bolts (3).

WARNING

HEAVY PARTS

5. Use assistant to support axle spring (5) during the removal from the aft hanger (6) and the front hanger (7).
6. Remove nut (8) from bolt (9).
7. Remove bolt (9) from axle spring (5) and aft hanger (6).
8. Remove nut (10) from bolt (11).
9. Remove bolt (11) from axle spring (5) and front hanger (7).

WARNING

HEAVY PARTS

10. Remove axle spring (5) and discard.

INSTALL LIGHT TOWER AXLE SPRINGS

WARNING

HEAVY PARTS

1. Use assistant to support new axle spring (5) until it is secured to front hanger (7) and aft hanger (6).

WARNING

HEAVY PARTS

2. Position axle spring (5) under front hanger (7) and aft hanger (6).
3. Install bolt (11) through front hanger (7) and axle spring (5).
4. Install nut (10) onto bolt (11) and tighten.
5. Install bolt (9) through aft hanger (6) and axle spring (5).
6. Install nut (8) onto bolt (9) and tighten.
7. Position plate (4) under axle spring (5).
8. Install two u-bolts (3) through plate (4).
9. Install four nuts (2) on two u-bolts (3) and tighten.
10. Remove vehicle support stand from underneath light tower trailer axle (1).
11. Install light tower running gear wheel and tire assembly. (WP 0189 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER AXLE SPRING FORWARD HANGER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Hanger, Forward
(33968)
PN 35326958

Personnel Required

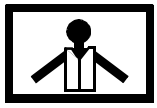
Engineer 88L

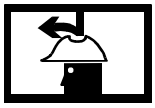
Equipment Condition

Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)
Light Tower Axle Spring Removed. (WP 0193 00)

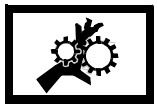
REMOVE LIGHT TOWER AXLE SPRING FORWARD HANGER

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

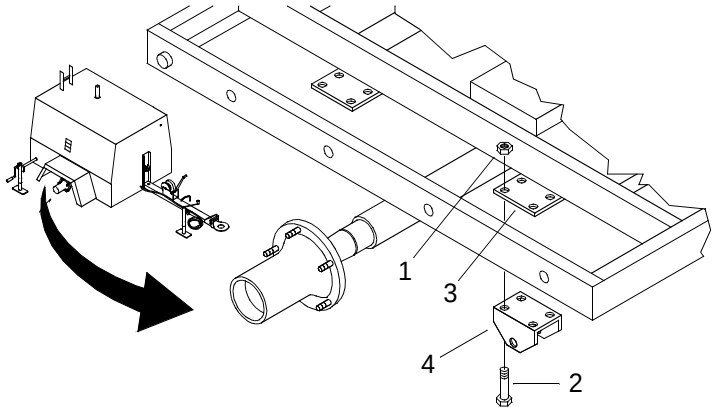

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of light tower port or starboard axle spring forward hangers.

1. Remove four nuts (1) from four bolts (2).



2. Remove four bolts (2) from bracket (3) and forward hanger (4).

3. Remove forward hanger (4) from underneath bracket (3) and discard.

INSTALL LIGHT TOWER AXLE SPRING FORWARD HANGER

1. Position new forward hanger (4) underneath bracket (3).

2. Install four bolts (2) through forward hanger (4) and bracket (3).

3. Install four nuts (1) onto four bolts (2) and tighten.

4. Install axle spring. (WP 0193 00)

5. Install light tower running gear wheel and tire assembly. (WP 0189 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER AXLE SPRING AFT HANGER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Hanger, Aft
(33968)
PN 35326966

Personnel Required

Engineer 88L

Equipment Condition

Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)
Light Tower Axle Spring Removed. (WP 0193 00)

REMOVE LIGHT TOWER AXLE SPRING AFT HANGER

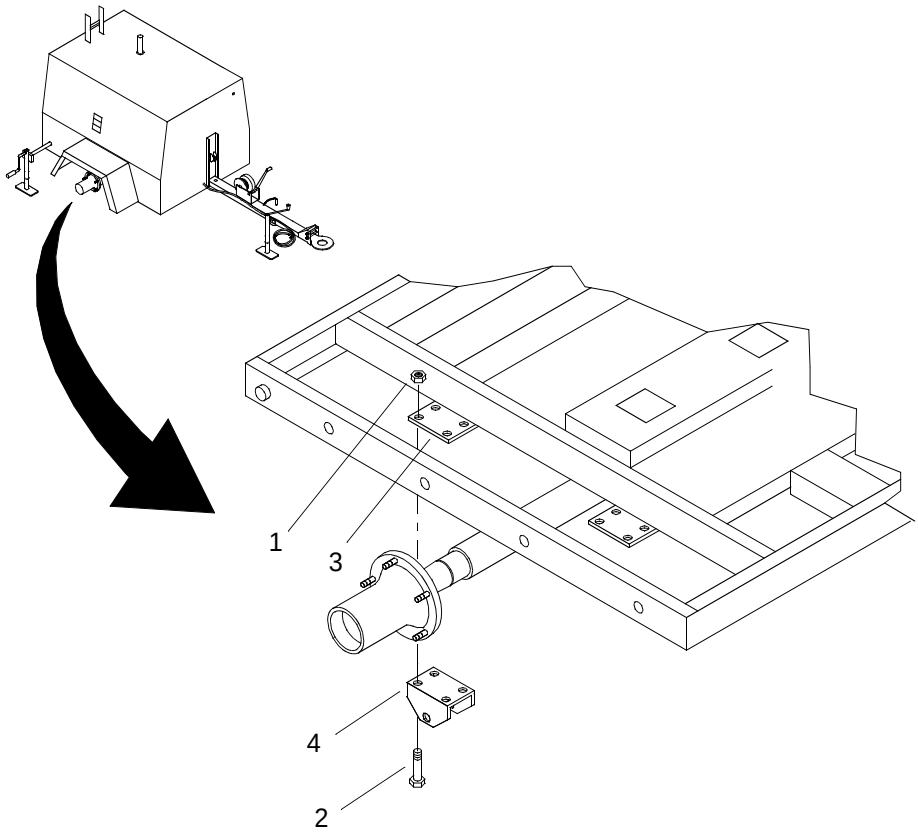
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of light tower port or starboard axle spring aft hangers.

1. Remove four nuts (1) from four bolts (2).



2. Remove four bolts (2) from bracket (3) and aft hanger (4).

3. Remove aft hanger (4) from underneath bracket (3) and discard.

INSTALL LIGHT TOWER AXLE SPRING AFT HANGER

1. Position new aft hanger (4) underneath bracket (3).

2. Install four bolts (2) through forward hanger (4) and bracket (3).

3. Install four nuts (1) onto four bolts (2) and tighten.

4. Install light tower axle spring. (WP 0193 00)

5. Install light tower running gear wheel and tire assembly. (WP 0189 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER AXLE
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Axle
(33968)
PN 36848174

Personnel Required

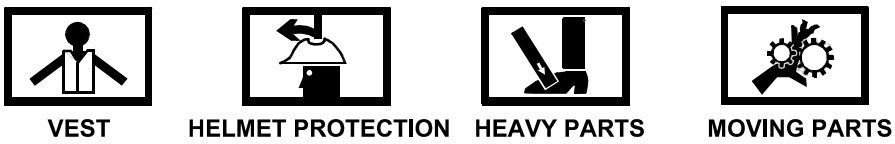
Engineer 88L (2)

Equipment Condition

Light Tower Running Gear Wheel And Tire Assemblies Removed. (WP 0189 00)
Light Tower Running Gear Wheel Hubs Removed. (WP 0190 00)

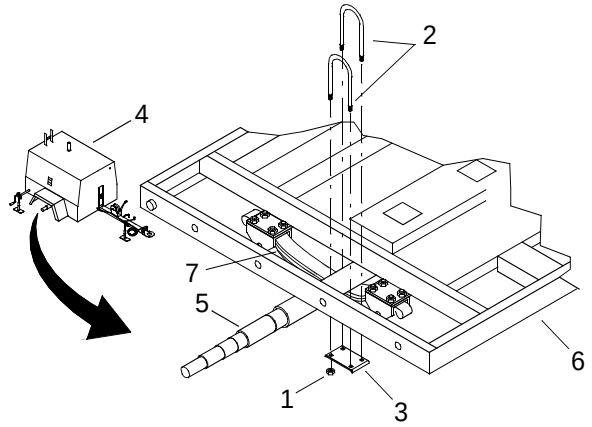
REMOVE LIGHT TOWER AXLE

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove four nuts (1) from two u-bolts (2).



2. Remove plate (3) from two u-bolts (2).

3. Remove two u-bolts (2).

WARNING

HEAVY PARTS

HEAVY OBJECTS

4. Repeat steps 1-3 on opposite side of light tower trailer (4).

5. Use assistant to help support axle (5) while sliding it from between the light tower trailer frame (6) and axle springs (7).

6. Discard axle (5).

INSTALL LIGHT TOWER AXLE

WARNING

HEAVY PARTS

HEAVY OBJECTS

1. Use assistant to support new axle (5) while sliding it between the axle springs (7) and the light tower trailer frame (6).

2. Position plate (3) under axle spring (7).

3. Install two u-bolts (2) through plate (3).

4. Install four nuts (1) onto two u-bolts (2) and tighten.

5. Repeat steps 2-5 on the opposite side of the light tower trailer (4).

6. Install light tower running gear wheel hubs. (WP 0190 00)

7. Install light tower running gear wheel and tire assemblies. (WP 0189 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER DRAWBAR PINTLE AND BRACKET REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

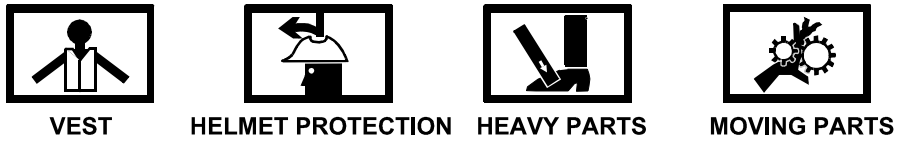
Eye, Pintle
(33968)
PN 35605187

Personnel Required

Seaman 88K

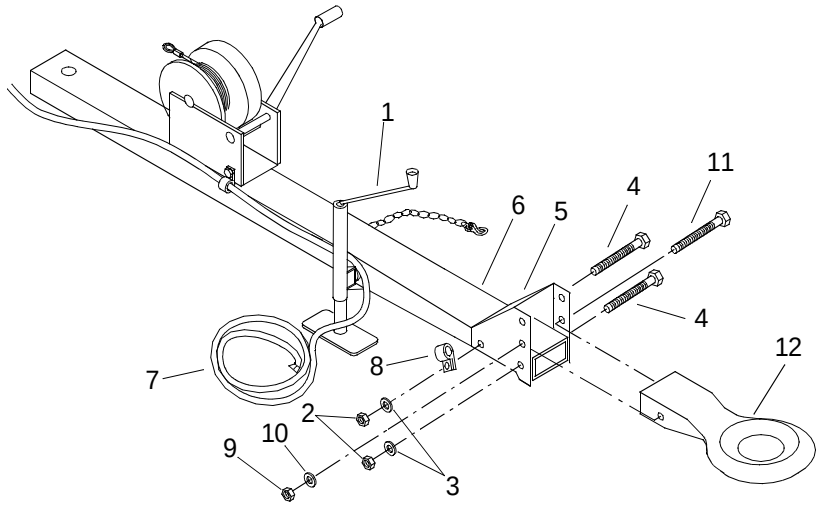
REMOVE LIGHT TOWER DRAWBAR PINTLE AND BRACKET

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rotate the jack handle (1) clockwise to support the front of the light tower.



2. Remove two nuts (2), washers (3) and bolts (4) securing the pintle bracket (5) to the drawbar (6).

3. Place wire bundle (7) and wire bundle clamp (8) out of the way.
4. Remove the nut (9), washer (10) and bolt (11) securing the pintle (12) to the pintle bracket (5).
5. Remove and discard the pintle (12) and bracket (5).

INSTALL LIGHT TOWER DRAWBAR PINTLE AND BRACKET

1. Position new pintle bracket (5) on end of drawbar (6).
2. Install two bolts (4) through the drawbar (6) and pintle bracket (5).
3. Install wire bundle (7) and clamp (8) on bolt (4).
4. Install two washers (3) and nuts (2) on bolts (4) and tighten.
5. Position new pintle (12) against pintle bracket (5).
6. Install bolt (11) through pintle bracket (5) and pintle (12).
7. Install washer (10) and nut (9) on bolt (11) and tighten nut (9).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RAISE/LOWER WINCH CABLE
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

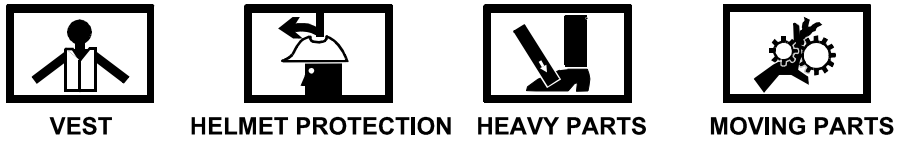
Cable
(33968)
PN 43210327

Personnel Required

Engineer 88L

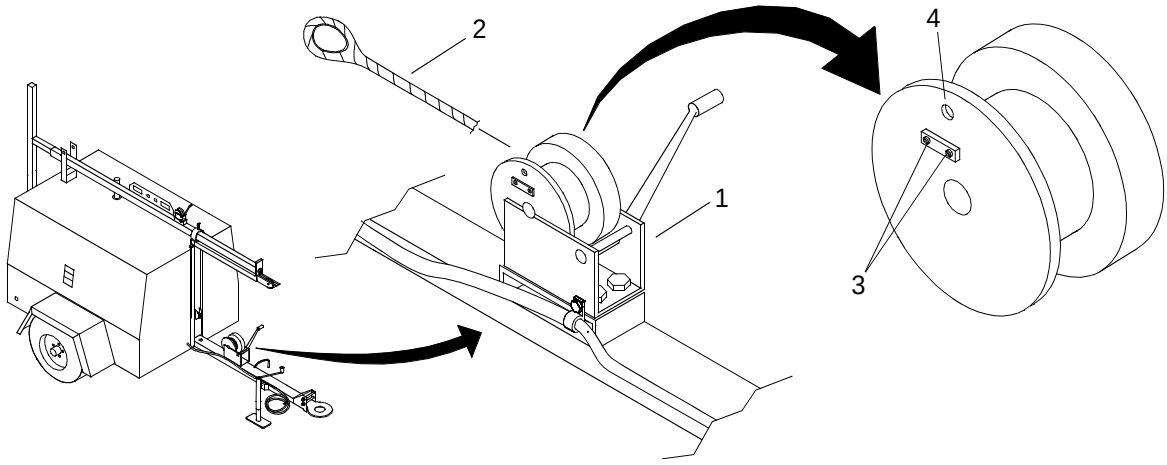
REMOVE LIGHT TOWER RAISE/LOWER WINCH CABLE

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rotate light tower raise/lower winch (1) counterclockwise to unreel cable (2).



2. Loosen two screws (3) on metal strap (4) and remove cable (2) from winch (1). Discard cable (2).

INSTALL LIGHT TOWER RAISE/LOWER WINCH CABLE

1. Install new cable (2) through hole in light tower raise/lower winch (1).
2. Position cable (2) under metal strap (4) and tighten two screws (3) to secure cable (2) to winch (1).
3. Rotate light tower raise/lower winch (1) clockwise to take up excess cable (2).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RAISE/LOWER WINCH
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Winch, 1500 lb
(33968)
PN 36869261

Personnel Required

Engineer 88L

Equipment Condition

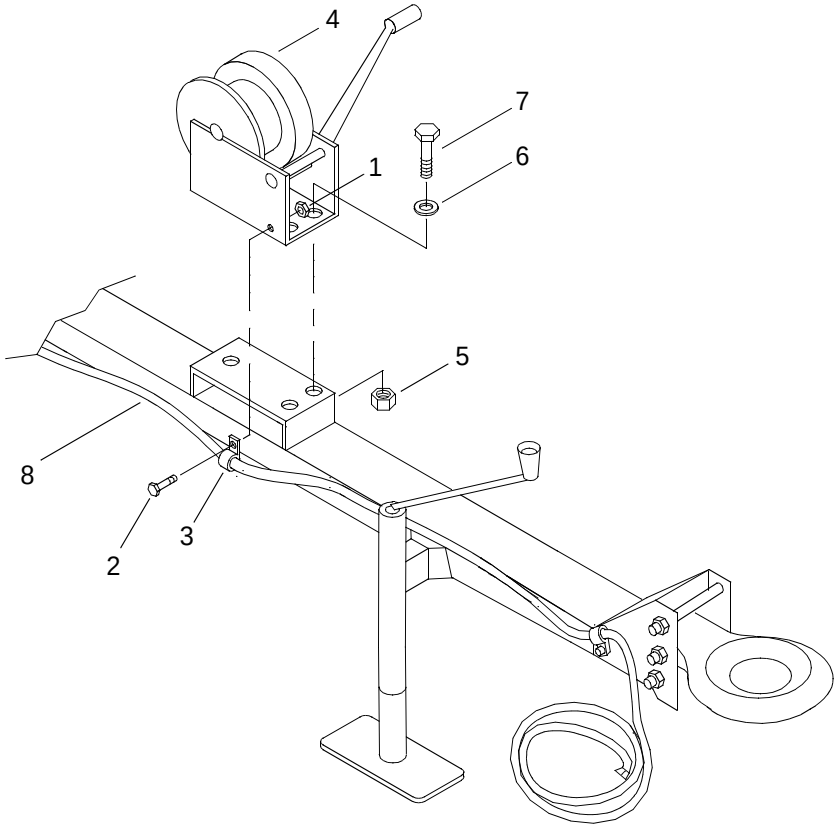
Light Tower Raise/Lower Winch Cable Removed. (WP 0198 00)

REMOVE LIGHT TOWER RAISE/LOWER WINCH

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nut (1), bolt (2) and wire clamp (3) from light tower raise/lower winch (4).



2. Remove three nuts (5), washers (6) and bolts (7) from light tower raise/lower winch (4).

3. Remove light tower raise/lower winch (4) from drawbar (8) and discard.

INSTALL LIGHT TOWER RAISE/LOWER WINCH

1. Position new light tower raise/lower winch (4) on drawbar (8).

2. Install three bolts (7), washers (6) and nuts (5) in light tower raise/lower winch (4). Tighten nuts (5).

3. Position wire clamp (3) on light tower raise/lower winch (4), install bolt (2) and nut (1). Tighten nut (1).

4. Install light tower raise/lower winch cable. (WP 0198 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER DRAWBAR JACK
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Pliers, Retaining Ring (Item 34, WP 0253 00)

Materials/Parts

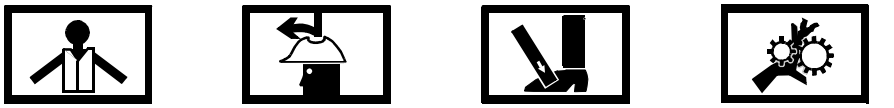
Ring, Snap
(33968)
PN 36780039
Jack, Drawbar
(33968)
PN 36848455

Personnel Required

Engineer 88L

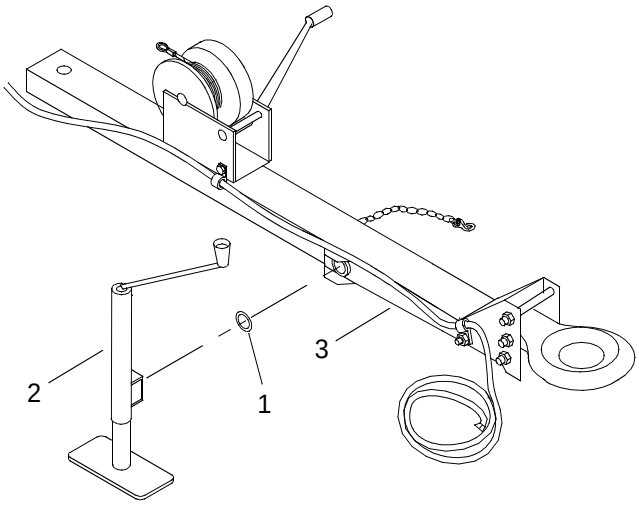
REMOVE LIGHT TOWER DRAWBAR JACK

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Using retaining ring pliers, remove ring (1) releasing drawbar jack (2) from drawbar (3).



2. Remove drawbar jack (2).

3. Discard ring (1) and drawbar jack (2).

INSTALL LIGHT TOWER DRAWBAR JACK

1. Position new ring (1) between new drawbar jack (2) and drawbar (3).

2. Install ring (1) to secure drawbar jack (2) to drawbar (3).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER DRAWBAR CHAIN/HOOK ASSEMBLY
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

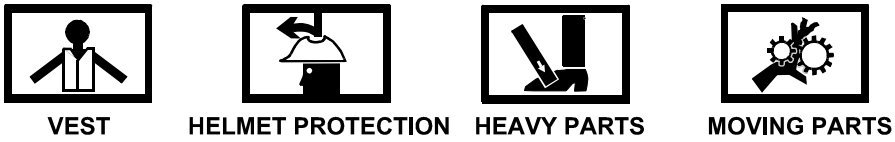
Chain/Hook Assembly
(33968)
PN 35610377

Personnel Required

Engineer 88L

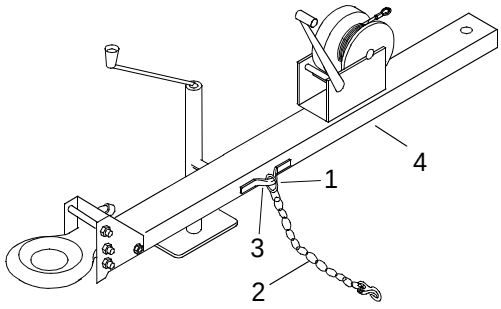
REMOVE LIGHT TOWER DRAWBAR CHAIN/HOOK ASSEMBLY

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Using pliers, remove flex-link (1) securing chain/hook assembly (2) to bracket (3) on drawbar (4).



2. Remove chain/hook assembly (2) from drawbar (3) and discard.

INSTALL LIGHT TOWER DRAWBAR CHAIN/HOOK ASSEMBLY

1. Position new chain/hook assembly (2) on bracket (3) of drawbar (4).
2. Using pliers, connect chain/hook assembly (2) to bracket (3) with flex-link (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER OUTRIGGER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

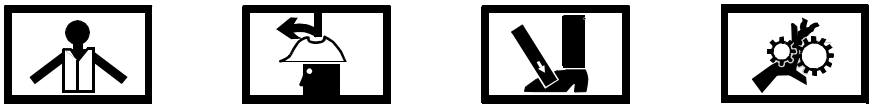
Outrigger
(33968)
PN 36847713
Pin, Outrigger
(33968)
PN 36848224

Personnel Required

Seaman 88K

REMOVE LIGHT TOWER OUTRIGGER

WARNING

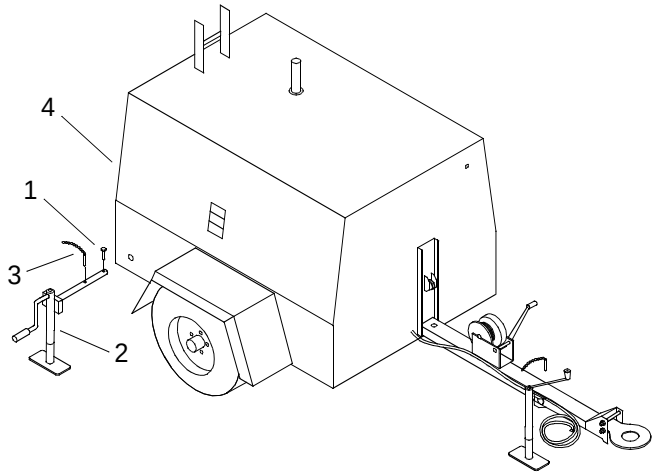


All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of both port and starboard light tower outriggers.

1. Move screw (1) from outrigger (2).



2. Remove pin (3) from outrigger (2) and discard.
3. Slide outrigger (2) from trailer (4) and discard.

INSTALL LIGHT TOWER OUTRIGGER

1. Slide new outrigger (2) into trailer (4).
2. Install new pin (3) into outrigger (2).
3. Install screw (1) into outrigger (2) and tighten screw (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER DRAWBAR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Drawbar
(33968)
PN 43210343
Block, Shoring (Item 5, WP 0252 00)
Qty 2

Personnel Required

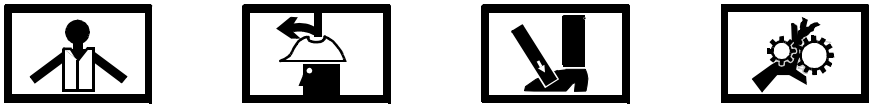
Seaman 88K

Equipment Condition

Light Tower Drawbar Pintle And Bracket Removed. (WP 0197 00)
Light Tower Drawbar Chain/Hook Assembly Removed. (WP 0201 00)
Light Tower Drawbar Jack Removed. (WP 0200 00)
Light Tower Raise/Lower Winch Cable Removed. (WP 0198 00)
Light Tower Raise/Lower Winch Removed. (WP 0199 00)

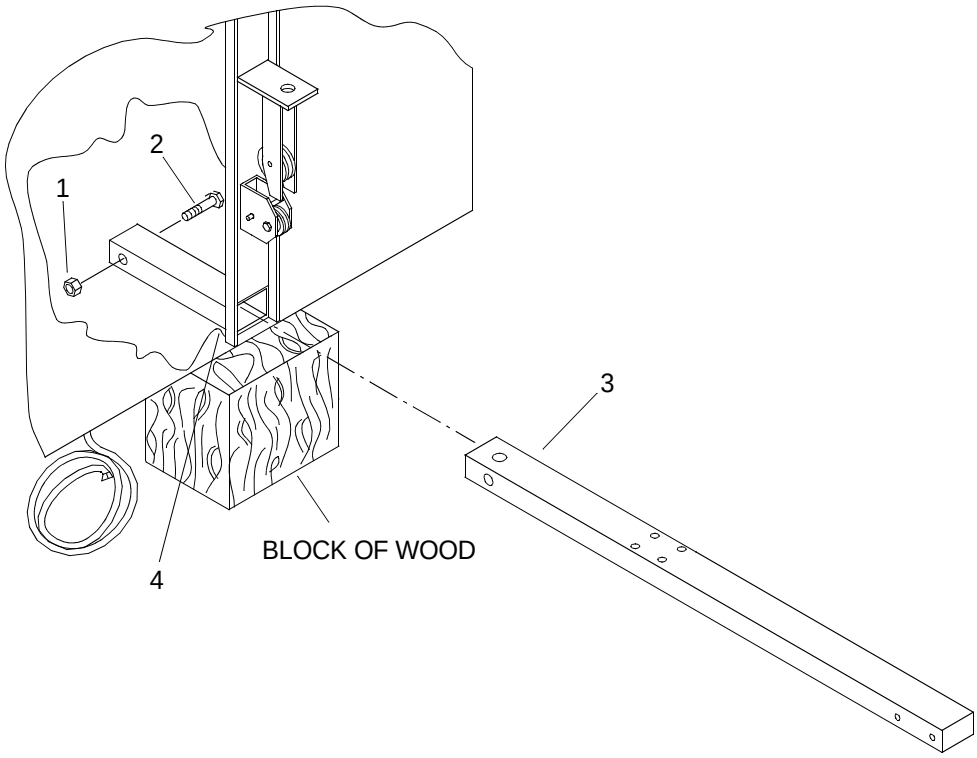
REMOVE LIGHT TOWER DRAWBAR

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Place a block of wood under the forward light tower structure frame to support light tower.



2. Remove nut (1) and bolt (2) securing the drawbar (3) to the drawbar insert tube (4).
3. Remove drawbar (3) from the drawbar insert tube (4) and discard.

INSTALL LIGHT TOWER DRAWBAR

1. Install new drawbar (3) into drawbar insert tube (4).
2. Install bolt (2) through the end of the drawbar tube (4) and drawbar (3).
3. Install nut (1) on bolt (2) and tighten.
4. Install light tower raise/lower winch. (WP 0199 00)
5. Install light tower raise/lower winch cable. (WP 0198 00)
6. Install light tower drawbar jack. (WP 0200 00)
7. Install light tower drawbar chain/hook assembly. (WP 0201 00)
8. Install light tower drawbar pintle and bracket. (WP 0197 00)

END OF WORK PACKAGE

GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY
REPAIR

INITIAL SETUP:

Tools

Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)
Compressor, Unit, Reciprocating, Power Drive (Item 8, WP 0253 00)
Inserter and Remover, Pneumatic Tire Valve Core (Item 22, WP 0253 00)
Gage, Tire Pressure, 20-120 PSI (Item 13, WP 0253 00)
Tire Iron (Item 52, WP 0253 00)
Qty 2

Materials/Parts

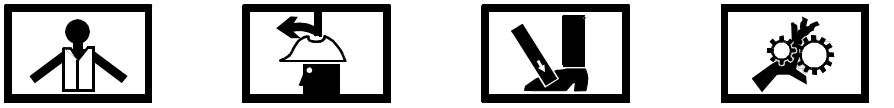
Tire
(33968)
PN 36773265
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

DISASSEMBLE LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY

WARNING

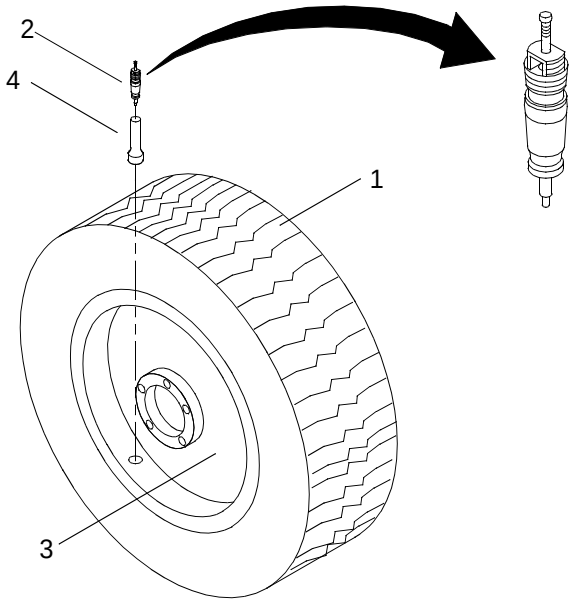


All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

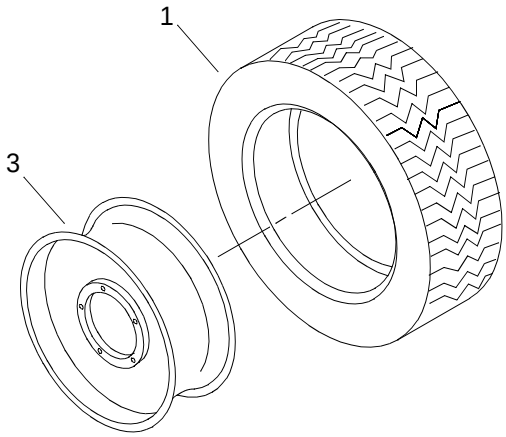
NOTE

Repair of the wheel and tire assembly is limited to the replacement of the tire only.

1. Deflate the tire (1) by removing the valve stem core (2). Use core remover.



2. Remove the tire (1) from the wheel (3) using tire iron(s).



3. Discard tire (1) in accordance with local procedures.

CLEAN LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY

WARNING

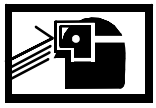

CHEMICAL


EYE PROTECTION

1. Using wiping rags soaked with cleaner, remove debris from external components.

WARNING

CHEMICAL



EYE PROTECTION

2. Using wiping rags soaked with cleaner, remove debris from internal components.

WARNING

CHEMICAL

EYE PROTECTION

3. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY

1. Inspect wheel (3) for corrosion and cracks. Replace as required.
2. Inspect valve stem (4) for cuts or tears. Replace as required.

ASSEMBLE LIGHT TOWER RUNNING GEAR WHEEL AND TIRE ASSEMBLY

1. Install the new tire (1) on the wheel (3) using tire iron(s).
2. Install valve stem core (2).
3. Using an air compressor, inflate the tire (1) to 32 PSI (220 kPa).
4. Check air pressure in the tire (1) using a pressure gage.
5. Add air as required.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER BASE
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Base, Tower
(33968)
PN 43210269

Personnel Required

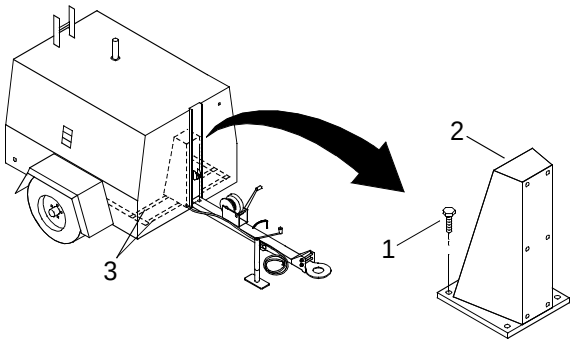
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower - Tower Assembly Removed. (WP 0208 00)
Light Tower - Tower Support Removed. (WP 0207 00)
Light Tower Roof Panel Removed. (WP 0217 00)
Light Tower Access Door Gas Springs Removed. (WP 0215 00)
Light Tower Side Doors Removed. (WP 0222 00)
Light Tower Front End Panel Removed. (WP 0219 00)

REMOVE LIGHT TOWER - TOWER BASE

1. Remove four hex head bolts (1) securing tower base (2) inside the light tower to frame cross members (3).



2. Remove tower base (2) and discard.

INSTALL LIGHT TOWER - TOWER BASE

1. Position new tower base (2) on frame cross members (3).
2. Install four hex head bolts (1) to secure tower base (2) to frame cross members (3). Tighten hex head bolts (1).
3. Install light tower front end panel. (WP 0219 00)
4. Install light tower roof panel. (WP 0217 00)
5. Install light tower side doors support. (WP 0222 00)
6. Install light tower - tower support. (WP 0207 00)
7. Install light tower access door gas springs. (WP 0215 00)
8. Install light tower - tower assembly. (WP 0208 00)
9. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER PIVOT SUPPORT
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Support, Tower Pivot
(33968)
PN 43210277

Personnel Required

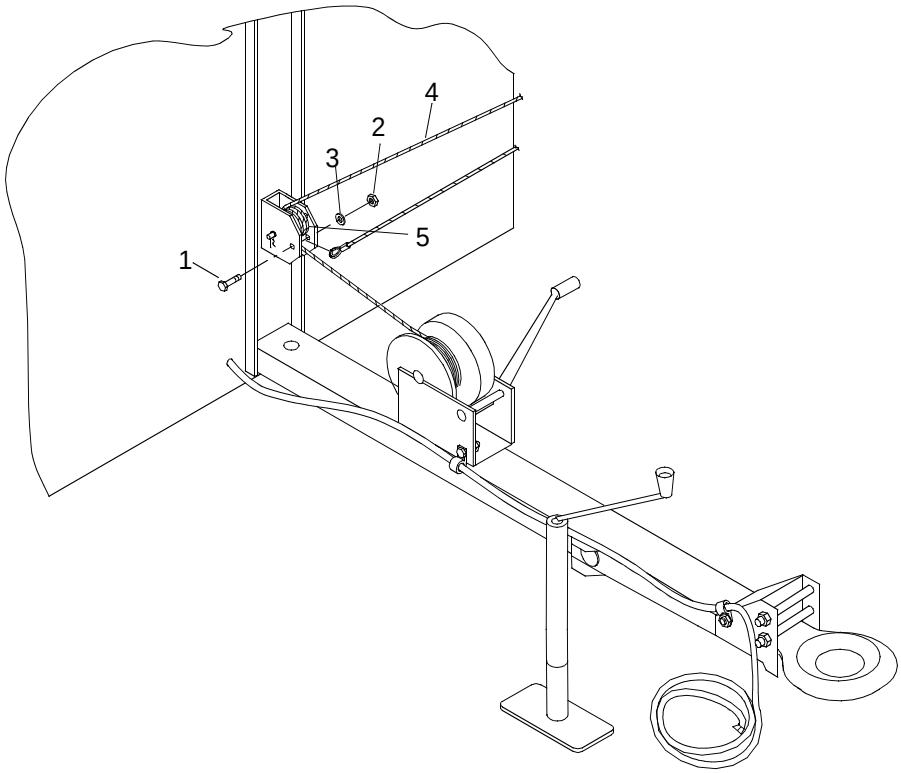
Engineer 88L (2)

REMOVE LIGHT TOWER SUPPORT PIVOT

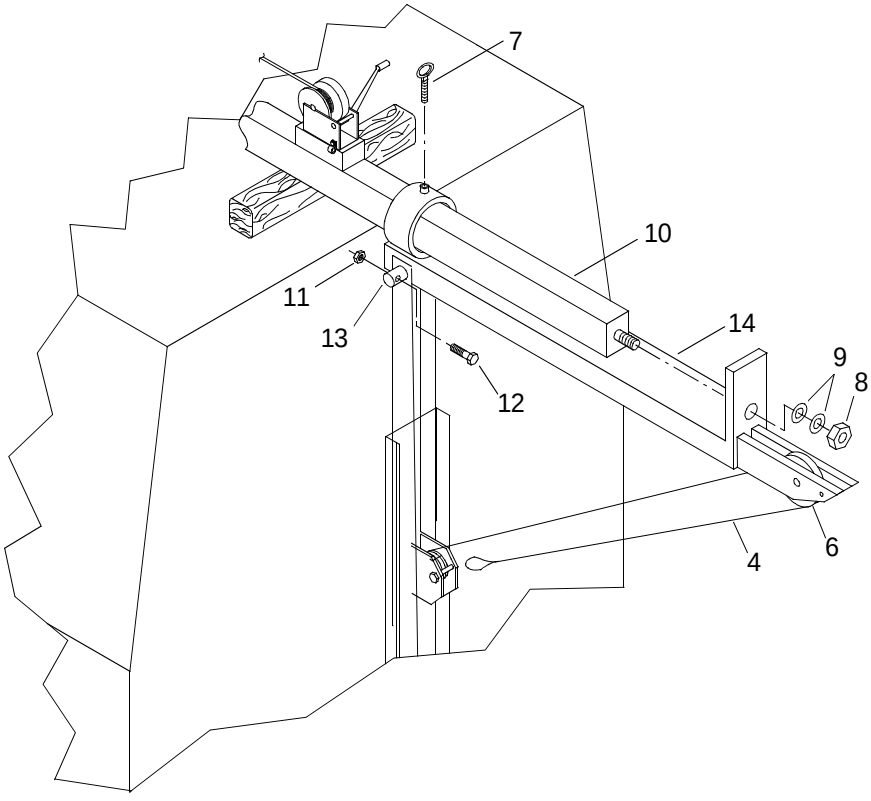
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in injury or death.

1. Remove hex head bolt (1), hex nut (2) and washer (3) from cable (4) at pulley (5).



2. Thread cable (4) around upper pulley (6).



3. Loosen eyebolt (7).

4. Remove hex nut (8) and two washers (9) from upper boom section (10).
5. Support upper boom section (10) with dunnage.
6. Remove hex nut (11) and hex head bolt (12) from pivot pin (13).
7. Remove pivot pin (13) securing pivot support (14).
8. Slide pivot support (14) off of upper boom section (10) and discard.

INSTALL LIGHT TOWER PIVOT SUPPORT

1. Position new pivot support (14) on upper boom section (10).
2. Install pivot pin (13) securing pivot support (14).
3. Install hex head bolt (12) and hex nut (11) on pivot pin (13).
4. Position upper boom section (10) on pivot support (14).
5. Install washer (9) and hex nut (8) securing upper boom section (10). Tighten hex nut (8).
6. Tighten eyebolt (7).
7. Remove dunnage from under boom (10).
8. Thread cable (4) around upper pulley (6).
9. Install hex head bolt (1), hex nut (2) and washer (3) securing cable (4) at lower pulley (5).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER SUPPORT
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Support, Tower
(33968)
PN 43210301
Pin, Cotter
(33968)
PN 95928867

Personnel Required

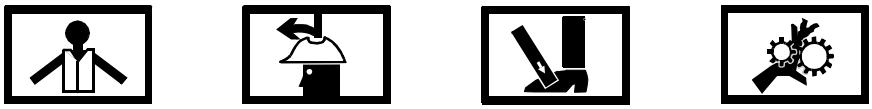
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower - Tower Assembly Removed. (WP 0208 00)

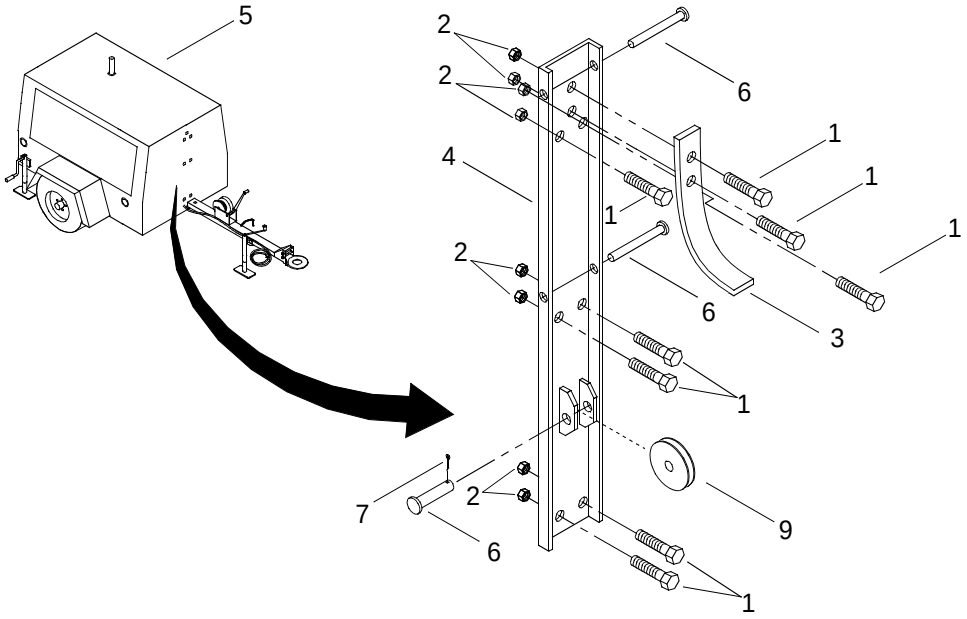
REMOVE LIGHT TOWER - TOWER SUPPORT

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove eight hex head bolts (1) and nuts (2) securing spring (3) and tower support (4) to front of light tower (5).



WARNING

HEAVY OBJECTS

2. Remove the spring (3) and tower support (4).
3. Remove top and bottom hitch pins (6) from the tower support (4).
4. Remove cotter pin (7), pin (8) and pulley (9) from tower support (4). Discard Cotter pin (7).
5. Remove tower support (4) and discard.

INSTALL LIGHT TOWER - TOWER SUPPORT

WARNING

HEAVY OBJECTS

1. Position new tower support (4) and spring (3) on front of light tower (5).
2. Install eight hex head bolts (1) and nuts (2) to secure spring (3) and tower support (4) to front of light tower (5). Tighten the nuts (2).

3. Install pulley (9), pin (8) and new cotter pin (7) on tower support (4).
4. Install top and bottom hitch pins (6) on tower support (4).
5. Install light tower - tower assembly. (WP 0208 00)
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER ASSEMBLY
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Sling, Lifting, 5300 lbs (Green) (Item 48, WP 0253 00)
Shackle, ½ in. 2 Ton (Item 45, WP 0253 00)
Qty 2

Materials/Parts

Tube, Bottom
(33968)
PN 43210244
Tube, Middle
(33968)
PN 43210285
Tube, Top
(33968)
PN 43210251
Block, Shoring (Item 5, WP 0252 00)
Qty 2

Personnel Required

Engineer 88L

Equipment Condition

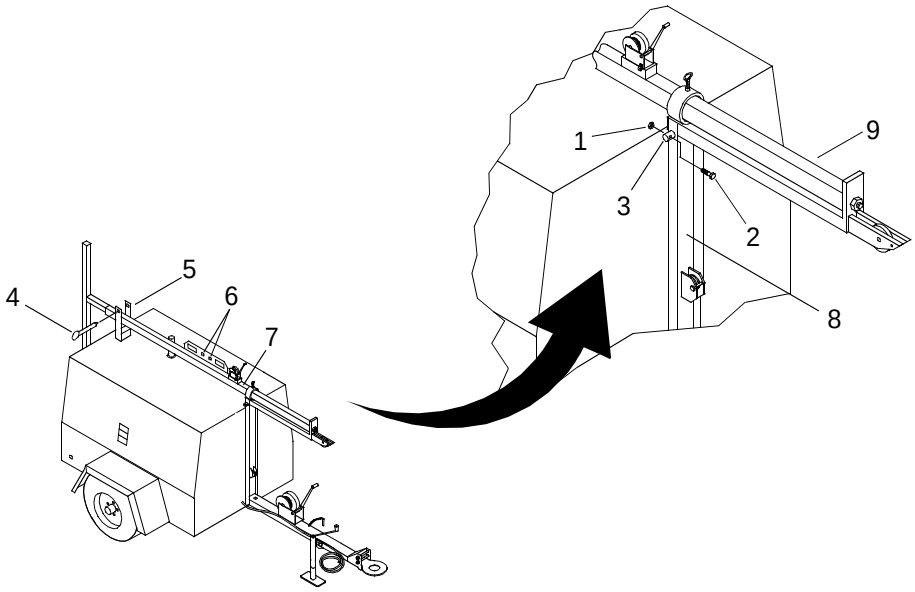
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER - TOWER ASSEMBLY

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove retaining nut (1) and bolt (2) from the pivot pin (3).



2. Remove tower rest retaining pin (4) from tower rest (5).

3. Attach sling and shackles to lift points (6) on tower assembly (7).

WARNING


HEAVY PARTS **HEAVY OBJECTS**

4. Using crane and sling to support weight of tower assembly (7), remove pivot pin (3) from tower support (8) and tower pivot support (9).

WARNING


HEAVY PARTS **HEAVY OBJECTS**

5. Remove tower assembly (7) and place on wooden blocks.

6. Remove sling from tower assembly (7).

7. Remove light tower - tower cross bar. (WP 0211 00)

8. Remove light tower - tower electrical cable shroud. (WP 0212 00)

9. Remove light tower electrical system junction box electrical cable. (WP 0133 00)

10. Remove light tower pivot support (9). (WP 0206 00)

11. Remove light tower - tower extend winch. (WP 0210 00)

12. Remove light tower - tower extend cables. (WP 0214 00)

13. Discard tower assembly (7).

INSTALL LIGHT TOWER - TOWER ASSEMBLY

1. Install the light tower - tower extend cables. (WP 0214 00)

2. Install the light tower - tower extend winch. (WP 0210 00)

3. Install the light tower pivot support. (WP 0206 00)

4. Install the light tower electrical system junction box electrical cable. (WP 0133 00)

5. Install the light tower - tower electrical cable shroud. (WP 0212 00)

6. Install the light tower - tower cross bar. (WP 0211 00)

WARNING

HEAVY PARTS

HEAVY OBJECTS

7. Using crane and sling, position new tower assembly (7) over tower support (8).

8. When the guide holes align on the tower support (8) and tower pivot support (9), install the pivot pin (3).

9. Install the retaining bolt (2) and nut (1) on pivot pin (3) and tighten nut (1).

WARNING

HEAVY PARTS

HEAVY OBJECTS

10. Lower tower assembly (7) onto tower rest (5) and secure tower assembly (7) with tower rest retaining pin (4).

11. Remove sling from tower assembly (7).

12. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER ASSEMBLY TRUNNION
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Trunnion
(33968)
PN 36885457

Personnel Required

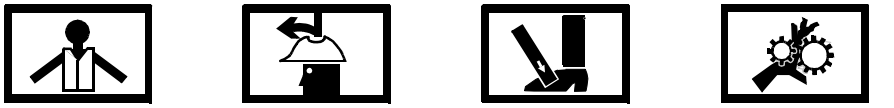
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Optical/Socket Assembly Removed. (WP 0154 00)

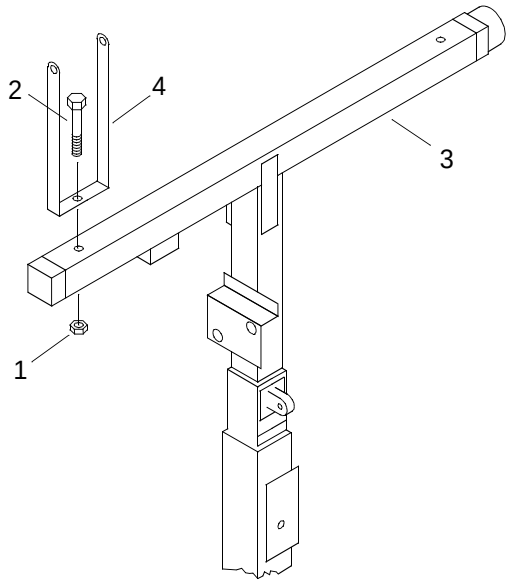
REMOVE LIGHT TOWER - TOWER ASSEMBLY TRUNNION

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove nut (1) and bolt (2) on support bar (3).



2. Remove trunnion (4) and discard.

INSTALL LIGHT TOWER - TOWER ASSEMBLY TRUNNION

1. Position new trunnion (4) on support bar (3).
2. Install bolt (2) and nut (1). Tighten nut (1).
3. Install light tower optical/socket assembly. (WP 0154 00)
4. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER EXTEND WINCH
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Winch, Tower 1500 lb
(33968)
PN 36869261

Personnel Required

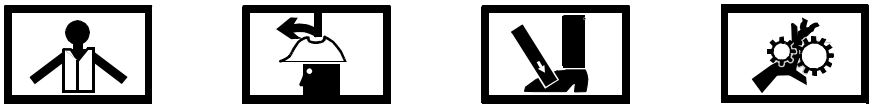
Engineer 88L

Equipment Condition

Light Tower - Tower Extend Cable Removed. (WP 0214 00)

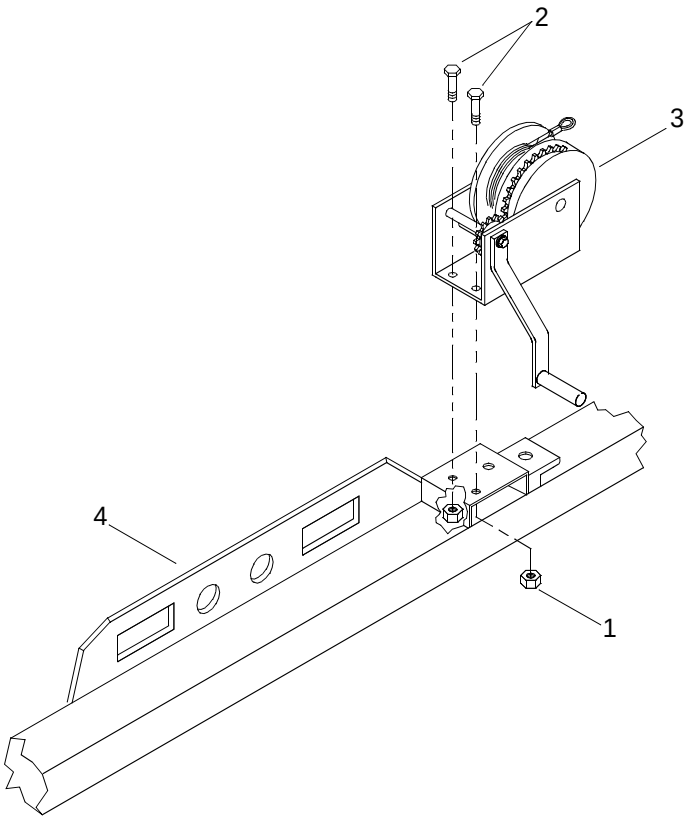
REMOVE LIGHT TOWER - TOWER EXTEND WINCH

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove three nuts (1) and bolts (2).



2. Remove winch (3) from tower assembly (4) and discard.

INSTALL LIGHT TOWER - TOWER EXTEND WINCH

1. Position new winch (3) on tower assembly (4).
2. Install three bolts (2) and nuts (1). Tighten nuts (1).
3. Install light tower extend tower cable. (WP 0214 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER CROSS BAR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Bar, Cross
(33968)
PN 43210319

Personnel Required

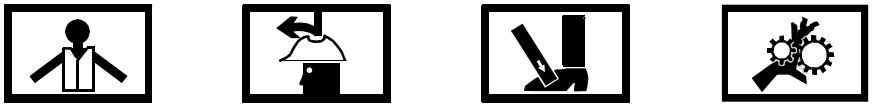
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Telescopic Light Tower Assembly Lowered. (TM 55-1945-205-10-4)
Light Tower Electrical Cable Shroud Removed. (WP 0212 00)
Light Tower Electrical System Junction Box Electrical Cable Removed. (WP 0133 00)
Light Tower Electrical System Junction Box Removed. (WP 0134 00)

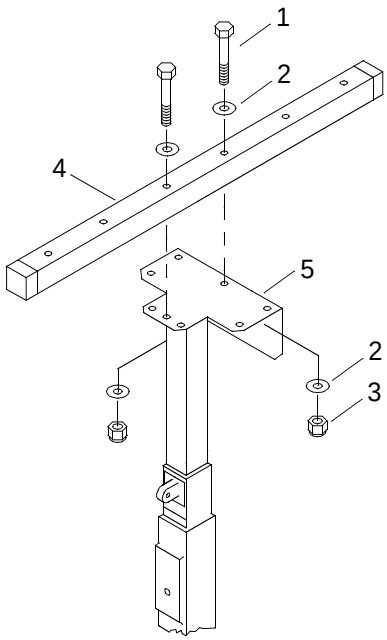
REMOVE LIGHT TOWER - TOWER CROSS BAR

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove two nuts (1), four washers (2) and two bolts (3) securing cross bar (4) to tower mounting bracket (5).



2. Remove cross bar (4) and discard.

INSTALL LIGHT TOWER - TOWER CROSS BAR

1. Position new cross bar (4) on tower mounting bracket (5).
2. Install two bolts (3), four washers (2) and two nuts (1) to secure the cross bar (4) to tower mounting bracket (5). Tighten nuts (1).
3. Install light tower electrical system junction box. (WP 0134 00)
4. Install light tower junction box electrical cable. (WP 0133 00)
5. Install light tower electrical cable shroud. (WP 0212 00)
6. Raise telescopic light tower assembly. (TM 55-1945-205-10-4)
7. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER ELECTRICAL CABLE SHROUD REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Shroud, Cable
(33968)
PN 36785822

Personnel Required

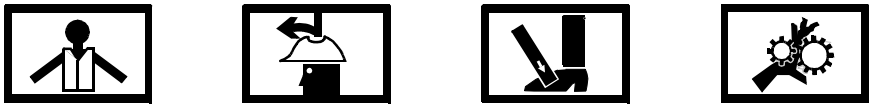
Engineer 88L

Equipment Condition

Telescopic Light Tower Assembly Lowered. (TM 55-1945-205-10-4)

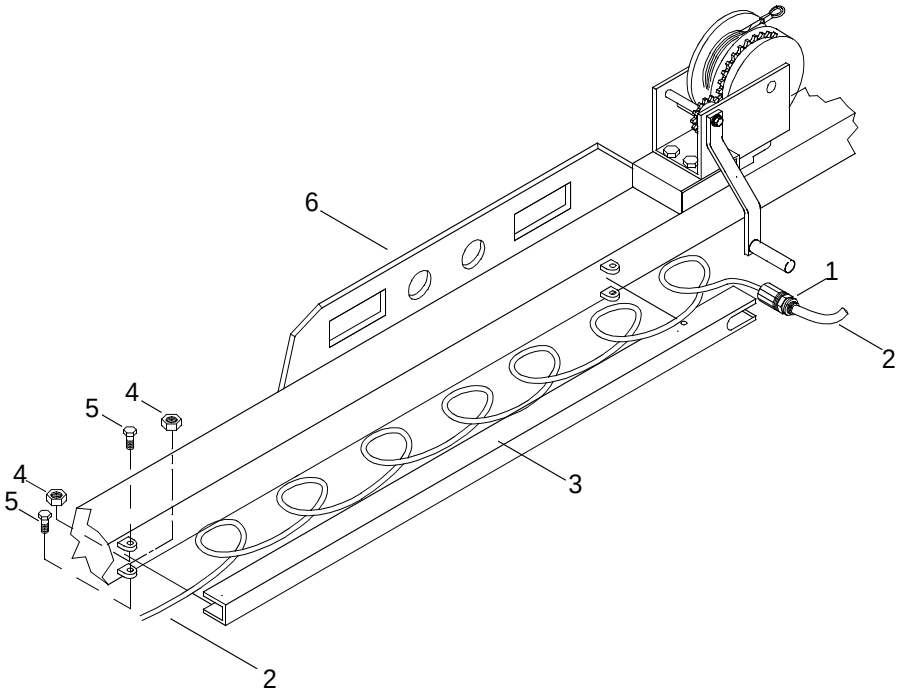
REMOVE LIGHT TOWER - TOWER ELECTRICAL CABLE SHROUD

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Loosen outer stuffing tube coupling (1) until junction box electrical cable (2) can be slid off notch in shroud (3).



2. Remove four nuts (4) and bolts (5).

CAUTION

Do not damage junction box electrical cable during removal of shroud. Failure to comply could result in damage to equipment.

3. Remove shroud (3) from tower assembly (6) and discard.

INSTALL LIGHT TOWER - TOWER ELECTRICAL CABLE SHROUD

1. Position new shroud (3) over junction box electrical cable (2) and on tower assembly (6).

2. Install four bolts (5) and nuts (4). Tighten nuts (4).

3. Position stuffing tube coupling (1) into notch on shroud (3). Tighten coupling (1).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER EXTEND CABLE PULLEY REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Pulley
(33968)
PN 36783009
Pin, Cotter
(33968)
PN 95928867

Personnel Required

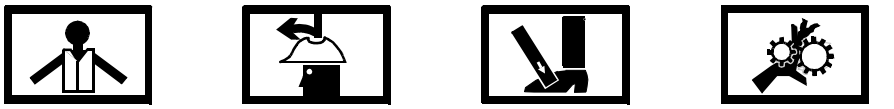
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower - Tower Assembly Removed. (WP 0208 00)
Light Tower Pivot Support Removed. (WP 0206 00)
Telescopic Light Tower Assembly Lowered. (TM 55-1945-205-10-4)
Light Tower - Tower Electrical Cable Shroud Removed. (WP 0212 00)
Light Tower Electrical System Junction Box Electrical Cable Removed. (WP 0133 00)
Light Tower - Tower Extend Tower Cable Removed. (WP 0214 00)

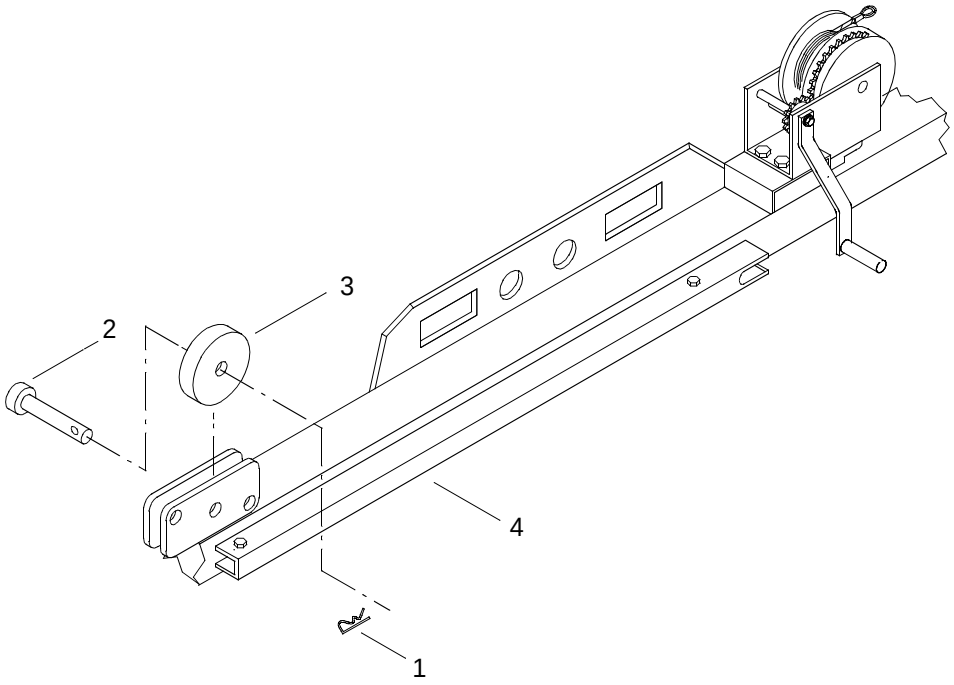
REMOVE TOWER EXTEND CABLE PULLEY

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove cotter pin (1) from pulley pin (2) and discard.



2. Remove pulley pin (2) from pulley (3).

3. Remove pulley (3) from tower assembly (4) and discard.

INSTALL TOWER EXTEND CABLE PULLEY

1. Position new pulley (3) on tower assembly (4).

2. Install pulley pin (2) into pulley (3).

3. Install new cotter pin (1) into pulley pin (2).

4. Install light tower extend tower cable. (WP 0214 00)

5. Install light tower electrical system junction box cable. (WP 0133 00)

6. Install light tower electrical cable shroud. (WP 0212 00)

7. Raise telescopic light tower assembly. (TM 55-1945-205-10-4)

8. Install light tower pivot support. (WP 0206 00)

9. Install light tower assembly. (WP 0208 00)

10. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER EXTEND CABLES
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

Cable (Tower Winch to Middle Tube Connection)
(33968)
PN 43210327
Cable (Middle Tube to Inner Tube Connection)
(33968)
PN 43210335
Pin, Cotter
(33968)
PN 95928867
Qty 3

Personnel Required

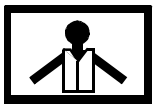
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower - Tower Assembly Removed. (WP 0208 00)
Light Tower Pivot Support Removed. (WP 0206 00)
Light Tower - Tower Extend Winch Removed. (WP 0210 00)
Telescopic Light Tower Assembly Lowered. (TM 55-1945-205-10-4)
Light Tower - Tower Electrical Cable Shroud Removed. (WP 0212 00)
Light Tower Electrical System Junction Box Electrical Cable Removed. (WP 0133 00)

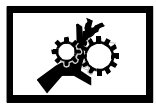
REMOVE LIGHT TOWER - TOWER EXTEND CABLES

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

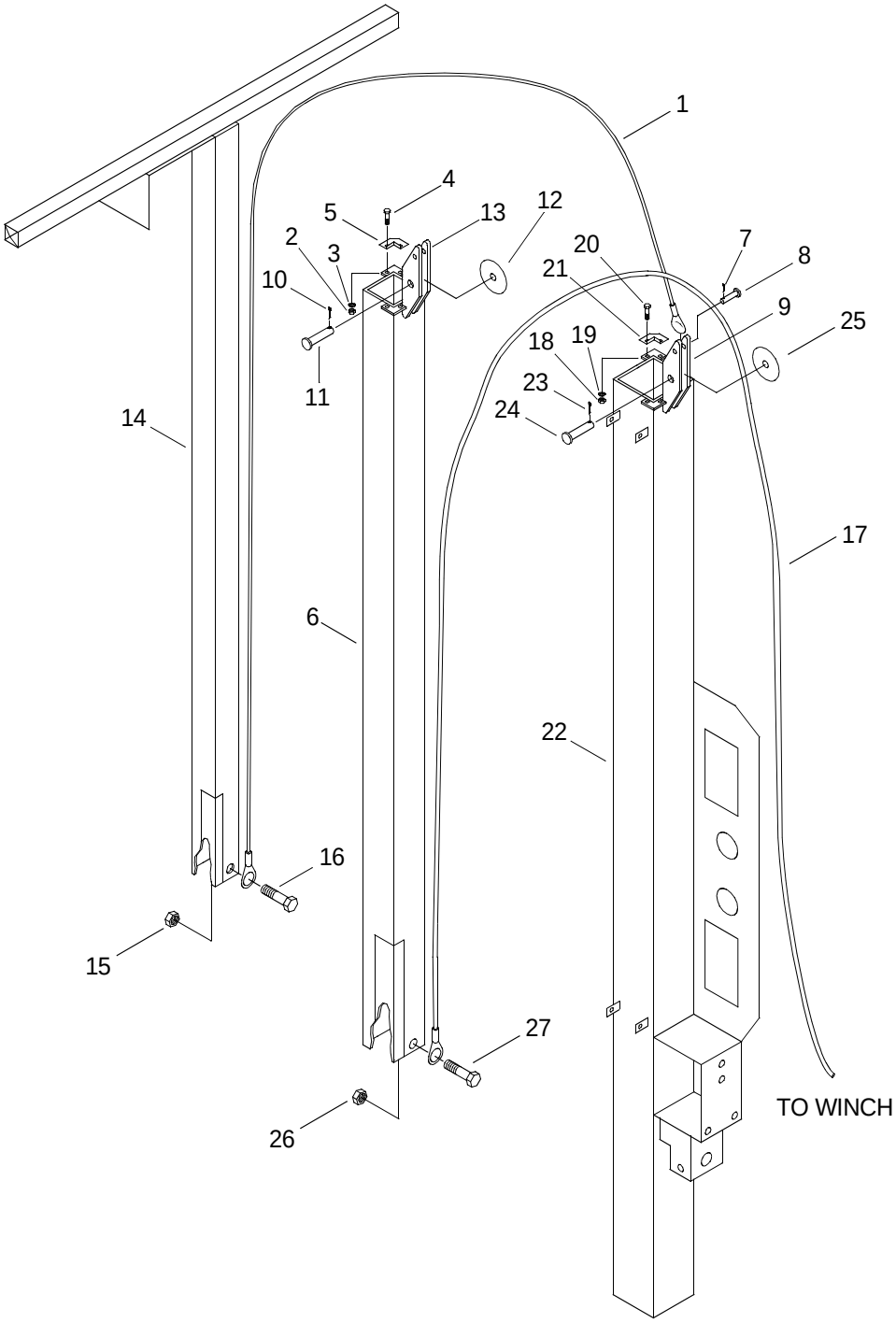

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The inner tube cable connects the inner tube to the middle tube. The middle tube cable connects the middle tube to the tower winch.

1. Remove inner tube cable (1).



a. Remove four nuts (2), washers (3) and screws (4) securing two slides (5) on the upper end of the middle tube (6).

b. Remove cotter pin (7) and pin (8) securing upper (loop) end of the inner tube cable (1) to outer tube mount bracket (9). Discard cotter pin (7).

c. Remove cotter pin (10), pin (11) and pulley (12) from middle tube mount bracket (13). Discard cotter pin (10).

d. Remove both inner tube (14) and inner tube cable (1) from inside middle tube (6).

e. Remove nut (15) and bolt (16) securing inner tube cable (1) to lower end of inner tube (14).

f. Remove inner tube cable (1).

2. Remove middle tube cable (17).

a. Remove four nuts (18), washers (19) and screws (20) securing two slides (21) on the upper end of outer tube (22).

b. Remove cotter pin (23), pin (24) and pulley (25) from outer tube mount bracket (9). Discard cotter pin (23).

c. Remove both middle tube (6) and middle tube cable (17) from inside outer tube (22).

d. Remove nut (26) and bolt (27) securing middle tube cable (17) to lower end of middle tube (6).

e. Remove middle tube cable (17).

INSTALL LIGHT TOWER - TOWER EXTEND CABLES

1. Install new middle tube cable (17).

a. Secure middle tube cable (17) to lower end of the middle tube (6) with bolt (27) and nut (28). Tighten nut (26).

b. Install both middle tube (6) and middle tube cable (17) in outer tube (22).

c. Install pulley (25), pin (24) and new cotter pin (23) on outer tube mount bracket (9), looping the middle tube cable (17) over pulley (25).

d. Install two slides (21) on the upper end of outer tube (22) and secure with four screws (20), washers (19) and nuts (18). Tighten nuts (18).

2. Install new inner tube cable (1).

a. Secure inner tube cable (1) to lower end of inner tube (14) with bolt (16) and nut (15). Tighten nut (15).

b. Install both inner tube (14) and inner tube cable (1) in middle tube (6).

c. Install pulley (12), pin (11) and new cotter pin (10) on middle tube mount bracket (13), looping the inner tube cable (1) over pulley (12).

d. Secure the upper (loop) end of inner tube cable (1) to outer tube mount bracket (9) with pin (8) and new cotter pin (7).

e. Install two slides (5) on the upper end of middle tube (6) and secure with the four screws (4), washers (3) and nuts (2). Tighten nuts (2).

3. Install light tower electrical system junction box cable. (WP 0133 00)

4. Install light tower - tower electrical cable shroud. (WP 0212 00)

5. Raise telescopic light tower assembly. (TM 55-1945-205-10-4)

6. Install light tower - tower extend winch. (WP 0210 00)

7. Install light tower pivot support. (WP 0206 00)

8. Install light tower - tower assembly. (WP 0208 00)

9. Install light tower battery negative lead terminal. (WP 0131 00)

10. Perform operational check of light tower. (TM 55-1945-205-10-4)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ACCESS DOOR GAS SPRING REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

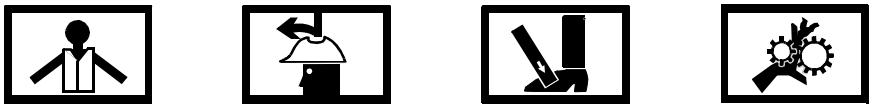
Spring, Gas
(33968)
PN 35600279

Personnel Required

Engineer 88L (2)

REMOVE LIGHT TOWER ACCESS DOOR GAS SPRING

WARNING

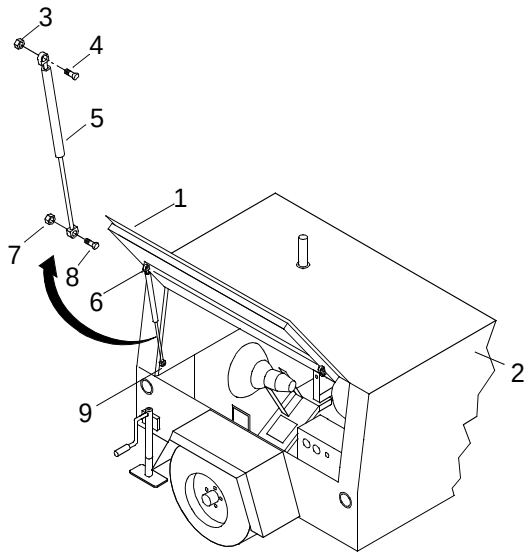


All personal must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

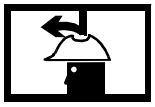
NOTE

The following procedure is typical for the removal and installation of all light tower trailer gas springs.

1. Open door (1) to light tower (2).



WARNING



HELMET PROTECTION

2. Using assistant, hold door (1) open and support from falling.
3. Remove lock nut (3) and stud (4) from gas spring (5) and door mount (6).
4. Remove lock nut (7) and stud (8) from gas spring (5) and side mount (9).
5. Discard gas spring (5).

INSTALL LIGHT TOWER ACCESS DOOR GAS SPRING

WARNING

HELMET PROTECTION

1. Using assistant, hold door (1) open and support from falling.
2. Position new gas spring (5) between door mount (6) and side mount (9).
3. Install studs (4, 8) through gas spring (5) and mounts (6, 9).
4. Install locks nut (3, 7) on studs (4, 8). Tighten nuts (3, 7).
5. Close door (1) to light tower (2).

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER LEFT HAND LOWER PANEL
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Panel, Left Lower
(33968)
PN 36896082

Personnel Required

Engineer 88L (2)

Equipment Condition

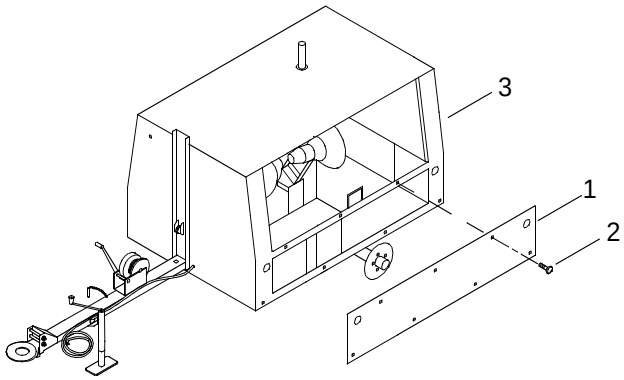
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)
Light Tower Access Door Gas Springs Removed. (WP 0215 00)
Light Tower Side Door Removed. (WP 0222 00)
Light Tower Fender Removed. (WP 0225 00)
Light Tower Reflectors Removed. (WP 0218 00)

REMOVE LIGHT TOWER LEFT HAND LOWER PANEL

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Use assistant to help support left lower panel (1).



2. Remove seven screws (2) from left lower panel (1).

WARNING

HEAVY PARTS

3. Remove left lower panel (1) from light tower trailer (3) and discard.

INSTALL LIGHT TOWER LEFT HAND LOWER PANEL

WARNING

HEAVY PARTS

1. Use assistant to help support new left lower panel (1) and position against light tower trailer (3).
2. Install seven screws (2) into left lower panel (1) and tighten.
3. Install light tower reflectors. (WP 0218 00)
4. Install light tower fender. (WP 0225 00)
5. Install light tower access door gas springs. (WP 0215 00)
6. Install light tower door. (WP 0222 00)
7. Install light tower running gear wheel and tire assembly. (WP 0189 00)
8. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER FRONT END PANEL
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 17, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Panel, Front End
(33968)
PN 36895084

Personnel Required

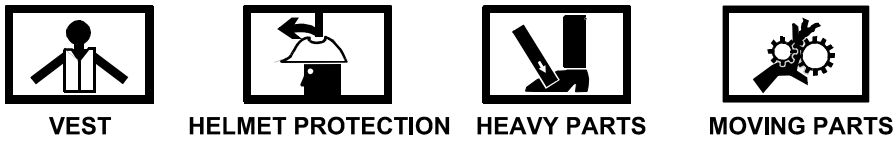
Engineer 88L (2)

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower - Tower Assembly Removed. (WP 0208 00)
Light Tower - Tower Support Removed. (WP 0207 00)

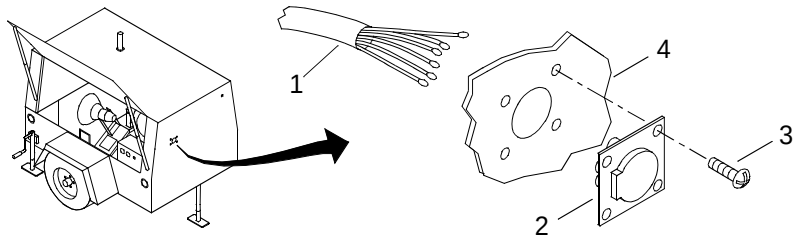
REMOVE LIGHT TOWER FRONT END PANEL

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Tag and disconnect wires (1) from 125 volt electrical socket (2).



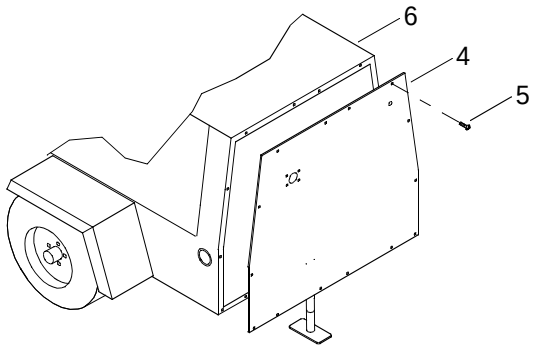
2. Remove four screws (3) from 125 volt electrical socket (2) and front panel (4).

3. Remove 125 volt electrical socket (2) from front panel (4).

WARNING

HEAVY PARTS

4. Use assistant to help support front panel (4).



5. Remove fourteen screws (5) from front panel (4).

6. Remove front panel (4) from light tower trailer (6) and discard.

INSTALL LIGHT TOWER FRONT END PANEL

WARNING

HEAVY PARTS

1. Use assistant to help support front panel (4).

2. Position new front panel (4) against light tower trailer (6).

3. Install fourteen screws (5) into front panel (4). Tighten screws (5).

4. Position 125 volt electrical socket (2) against front panel (4).

5. Install four screws (3) through 125 volt electrical socket (2) and into front panel (4). Tighten screws (3).

6. Connect wires (1) to 125 volt electrical socket (2) and remove tags.

7. Install light tower - tower support. (WP 0207 00)

8. Install light tower - tower assembly. (WP 0208 00)

9. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER REFLECTOR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Reflector Assembly
(33968)
PN 36787349

Personnel Required

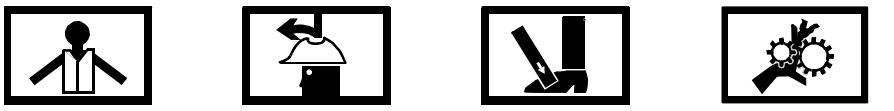
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER REFLECTOR ASSEMBLY

WARNING

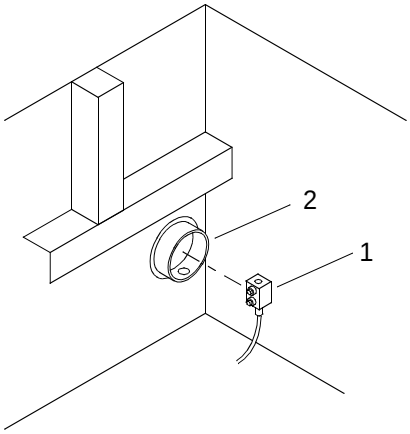


All personal must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

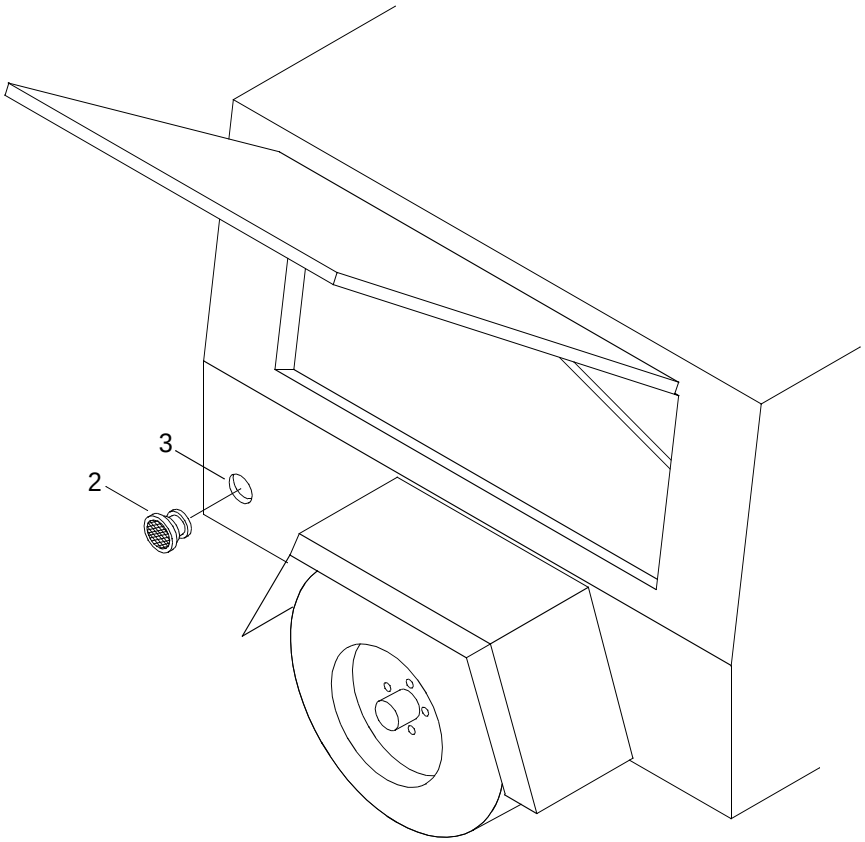
NOTE

The following procedure is typical for the removal and installation of all light tower trailer reflector assemblies.

1. Disconnect connector (1) from the rear of reflector assembly (2).



2. Remove reflector assembly (2) from the side of panel (3) and discard.



INSTALL LIGHT TOWER REFLECTOR

1. Install new reflector assembly (2) in panel (3).
2. Connect connector (1) to rear of reflector assembly (2).
3. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER ROOF PANEL
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Roof
(33968)
PN 36877710

Personnel Required

Engineer 88L (2)

Equipment Condition

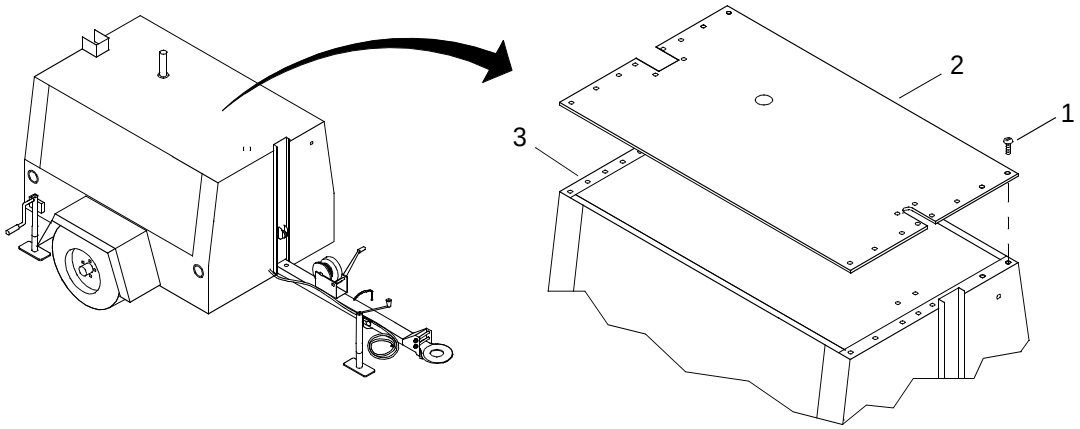
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower - Tower Assembly Removed. (WP 0208 00)
Light Tower Access Door Gas Springs Removed. (WP 0215 00)
Light Tower Side Doors Removed. (WP 0222 00)

REMOVE LIGHT TOWER ROOF PANEL

WARNING

All personal must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove twenty screws (1) from roof panel (2).



WARNING

HEAVY OBJECTS

2. Use assistant to help support roof panel (2) while removing it from light tower trailer (3). Discard roof panel (2).

INSTALL LIGHT TOWER ROOF PANEL

WARNING

HEAVY OBJECTS

1. Use assistant to help lift and position roof panel (2) on top of light tower trailer (3).
2. Install twenty screws (1) and tighten.
3. Install light tower trailer side doors. (WP 0222 00)
4. Install light tower access door gas springs. (WP 0215 00)
5. Install light tower - tower assembly. (WP 0208 00)
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER - TOWER REST
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Rest, Tower
(33968)
PN 43210293

Personnel Required

Engineer 88L

Equipment Condition

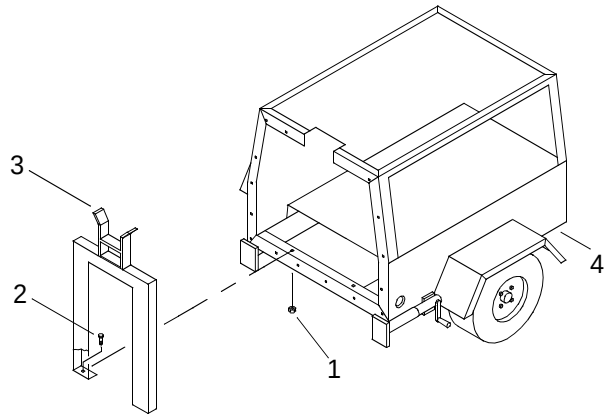
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Engine Radiator Reserve Tank Removed. (WP 0185 00)
Light Tower Reflectors Removed. (WP 0218 00)
Light Tower - Tower Assembly Removed. (WP 0208 00)
Light Tower Access Door Gas Springs Removed. (WP 0215 00)
Light Tower Side Doors Removed. (WP 0222 00)
Light Tower Roof Panel Removed. (WP 0219 00)
Light Tower Rear Panel Removed. (WP 0221 00)

REMOVE LIGHT TOWER - TOWER REST

WARNING

All personal must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove two hex nuts (1) and bolts (2) securing tower rest (3) to inside frame of light tower (4).



2. Remove tower rest (3) and discard.

INSTALL LIGHT TOWER - TOWER REST

1. Position new tower rest (3) on inside frame of light tower (4).
2. Install two hex head bolts (2) and hex nuts (1) to secure the tower rest (3). Tighten hex nuts (1).
3. Install light tower rear panel. (WP 0221 00)
4. Install light tower roof panel. (WP 0219 00)
5. Install light tower side doors. (WP 0222 00)
6. Install light tower access door gas springs. (WP 0215 00)
7. Install light tower reflectors. (WP 0218 00)
8. Install light tower engine radiator reserve tank. (WP 0185 00)
9. Install light tower - tower assembly. (WP 0208 00)
10. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER REAR PANEL
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Panel, Rear End
(33968)
PN 36868685

Personnel Required

Engineer 88L (2)

Equipment Condition

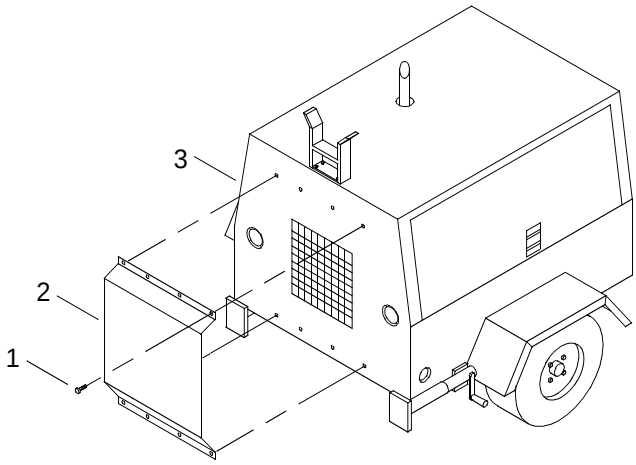
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Reflectors Removed. (WP 0218 00)
Light Tower Engine Radiator Reserve Tank Removed. (WP 0185 00)

REMOVE LIGHT TOWER REAR PANEL

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove eight screws (1) from exterior radiator shroud (2).

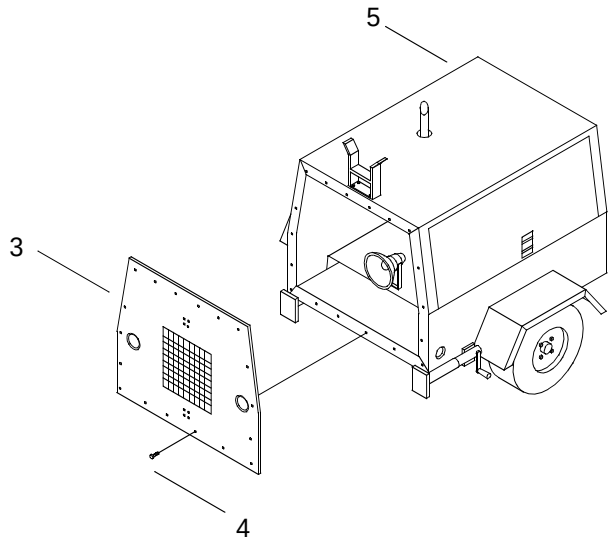


2. Remove exterior radiator shroud (2) from rear panel (3).

WARNING

HEAVY PARTS

3. Use assistant to help support rear panel (3).



4. Remove eighteen screws (4) from rear panel (3).

5. Remove rear panel (3) from light tower trailer (5) and discard.

INSTALL LIGHT TOWER REAR PANEL

WARNING

HEAVY PARTS

1. Use assistant to help support rear panel (3).
2. Position new rear panel (3) against light tower trailer (5).
3. Install eighteen screws (4) into rear panel (3). Tighten screws (4).
4. Position exterior radiator shroud (2) against rear panel (3).
5. Install eight screws (1) into exterior radiator shroud (2). Tighten screws (1).
6. Install light tower engine radiator reserve tank. (WP 0185 00)
7. Fill the engine radiator with coolant. (WP 0175 00)
8. Install light tower reflectors. (WP 0218 00)
9. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER SIDE DOOR
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Door, Side
(33968)
PN 36797215

Personnel Required

Engineer 88L (2)

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Access Door Gas Springs Removed. (WP 0215 00)

REMOVE LIGHT TOWER SIDE DOOR

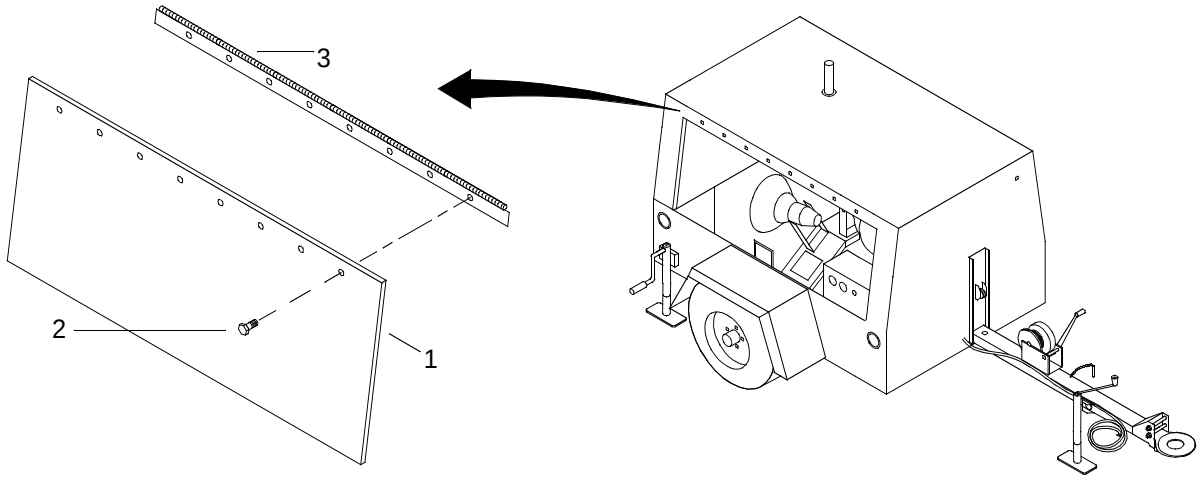
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of port and starboard light tower trailer access doors.

1. Open side door (1).



WARNING

HEAVY PARTS

2. Use assistant to help support side door (1).
3. Remove eight screws (2) from door hinge (3) and side door (1).
4. Remove side door (1) from door hinge (3) and discard.

INSTALL LIGHT TOWER SIDE DOOR

WARNING

HEAVY PARTS

1. Use assistant to help support side door (1).
2. Position new side door (1) against door hinge (3).
3. Install eight screws (2) through side door (1). Tighten screws (2).
4. Close side door (1).
5. Install light tower access door gas springs. (WP 0215 00)
6. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER SIDE DOOR HINGE
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Hinge
(33968)
PN 36707180

Personnel Required

Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Access Door Gas Springs Removed. (WP 0215 00)
Light Tower Side Door Removed. (WP 0222 00)

REMOVE LIGHT TOWER SIDE DOOR HINGE

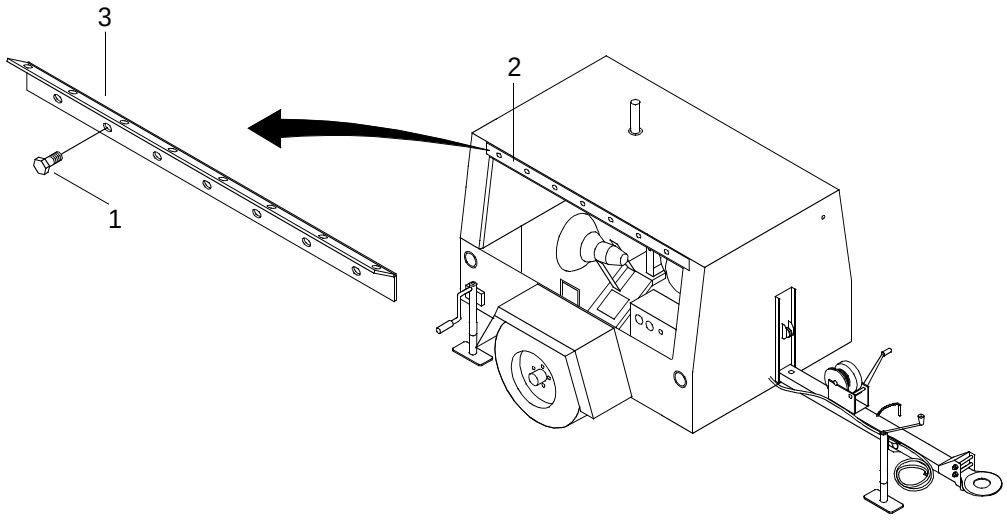
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of port and starboard light tower trailer door hinges.

1. Remove seven screws (1) from light tower roof panel (2) and door hinge (3).



2. Remove door hinge (3) from light tower roof panel (2) and discard.

INSTALL LIGHT TOWER SIDE DOOR HINGE

1. Position new door hinge (3) against light tower roof panel (2).
2. Install seven screws (1) through door hinge (3) and into light tower roof panel (2). Tighten screws (1).
3. Install light tower side door. (WP 0222 00)
4. Install light tower access door gas springs. (WP 0215 00)
5. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RIGHT HAND LOWER PANEL
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Panel, Right Lower
(33968)
PN 36896074

Personnel Required

Engineer 88L (2)

Equipment Condition

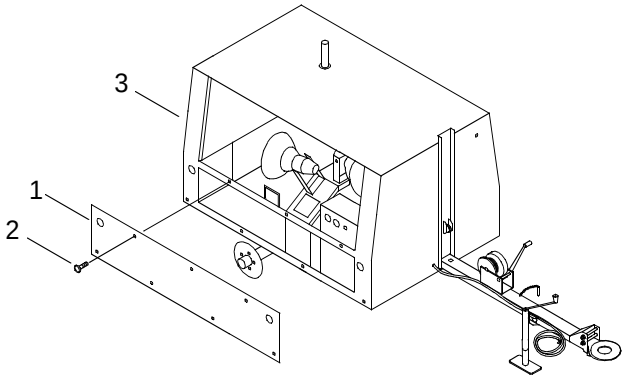
Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)
Light Tower Access Door Gas Springs Removed. (WP 0215 00)
Light Tower Door Removed. (WP 0222 00)
Light Tower Running Gear Wheel And Tire Assembly Removed. (WP 0189 00)
Light Tower Fender Removed. (WP 0225 00)
Light Tower Reflectors Removed. (WP 0218 00)

REMOVE LIGHT TOWER RIGHT HAND LOWER PANEL

WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Use assistant to help support right lower panel (1).



2. Remove seven screws (2) from right lower panel (1).

WARNING

HEAVY PARTS

3. Remove right lower panel (1) from light tower trailer (3) and discard.

INSTALL LIGHT TOWER RIGHT HAND LOWER PANEL

WARNING

HEAVY PARTS

1. Use assistant to help support new right lower panel (1) and position against light tower trailer (3).
2. Install seven screws (2) into right lower panel (1) and tighten.
3. Install light tower reflectors. (WP 0218 00)
4. Install light tower fender. (WP 0225 00)
5. Install light tower running gear wheel and tire assembly. (WP 0189 00)
6. Install light tower access door gas springs. (WP 0215 00)
7. Install light tower door. (WP 0222 00)
8. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER FENDER
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Fender, Vehicular
(33968)
PN 36877579

Personnel Required

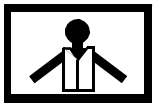
Engineer 88L

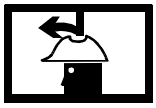
Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

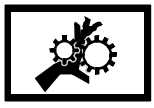
REMOVE LIGHT TOWER FENDER

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

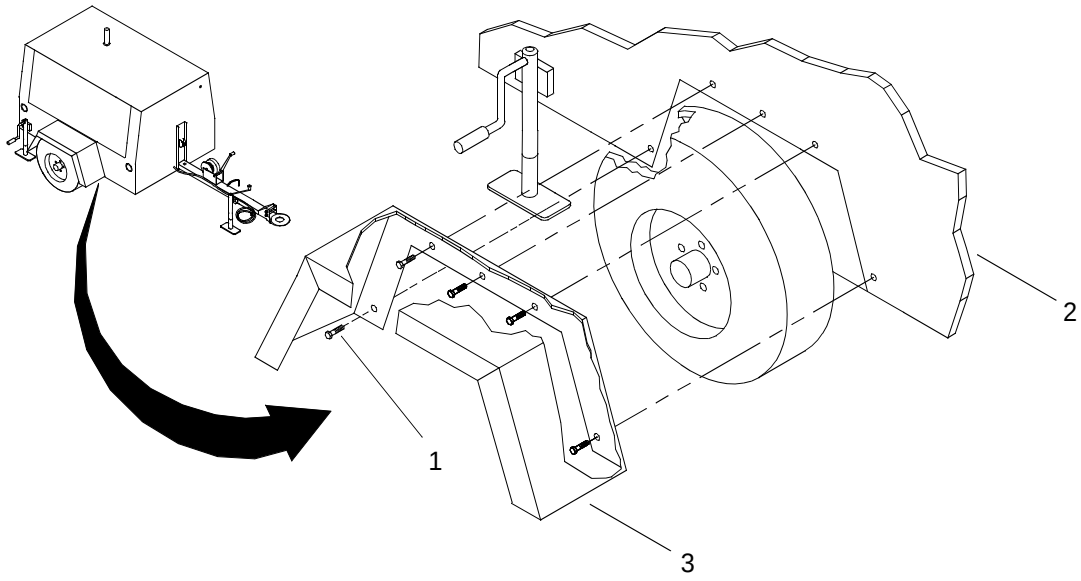

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of both light tower trailer fenders.

1. Remove five screws (1) from light tower trailer (2) and fender (3).



2. Remove fender (3) from light tower trailer (2) and discard.

INSTALL LIGHT TOWER FENDER

1. Position new fender (3) against light tower trailer (2).
2. Install five screws (1) through fender (3) and into light tower trailer (2). Tighten screws (1).
3. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER LEFT HAND LAMP STORAGE BRACKET
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Bracket, Left
(33968)
PN 36870384

Personnel Required

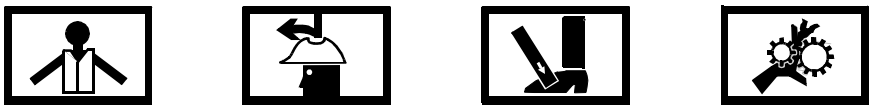
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal. (WP 0131 00)
Light Tower Upper Lamp Storage Bracket Removed. (WP 0228 00)

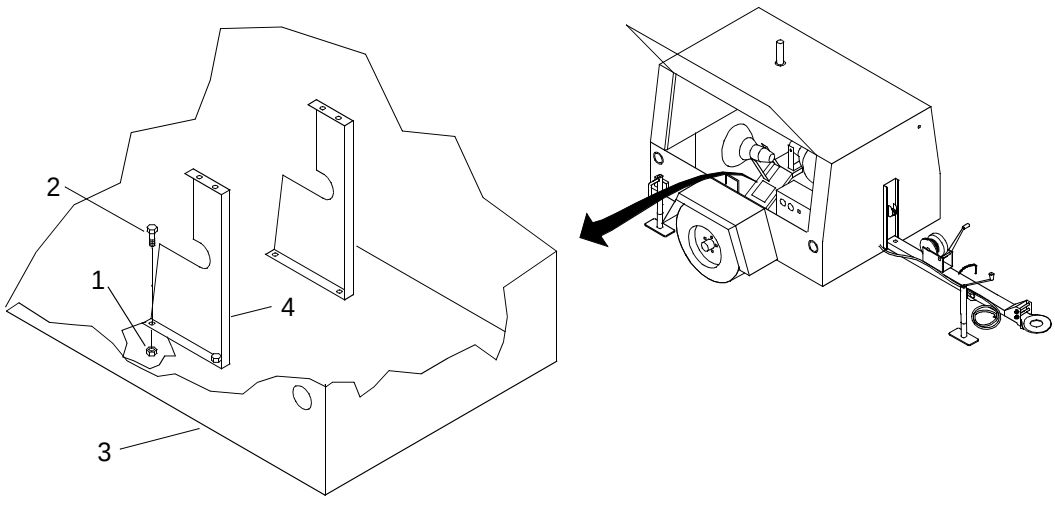
REMOVE LIGHT TOWER LEFT HAND LAMP STORAGE BRACKET

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove two nuts (1) and two bolts (2) from trailer floor (3).



2. Remove bracket (4) from trailer floor (3) and discard.

INSTALL LIGHT TOWER LEFT HAND LAMP STORAGE BRACKET

1. Position new bracket (4) on trailer floor (3).
2. Install two bolts (2) and two nuts (1) through trailer floor (3). Tighten nuts (1).
3. Install light tower upper lamp storage bracket. (WP 0228 00)
4. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER RIGHT HAND LAMP STORAGE BRACKET
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Bracket, Right
(33968)
PN 36874428

Personnel Required

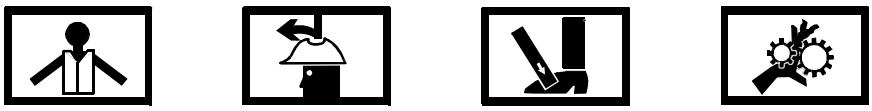
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal. (WP 0131 00)
Light Tower Upper Lamp Storage Bracket Removed. (WP 0228 00)

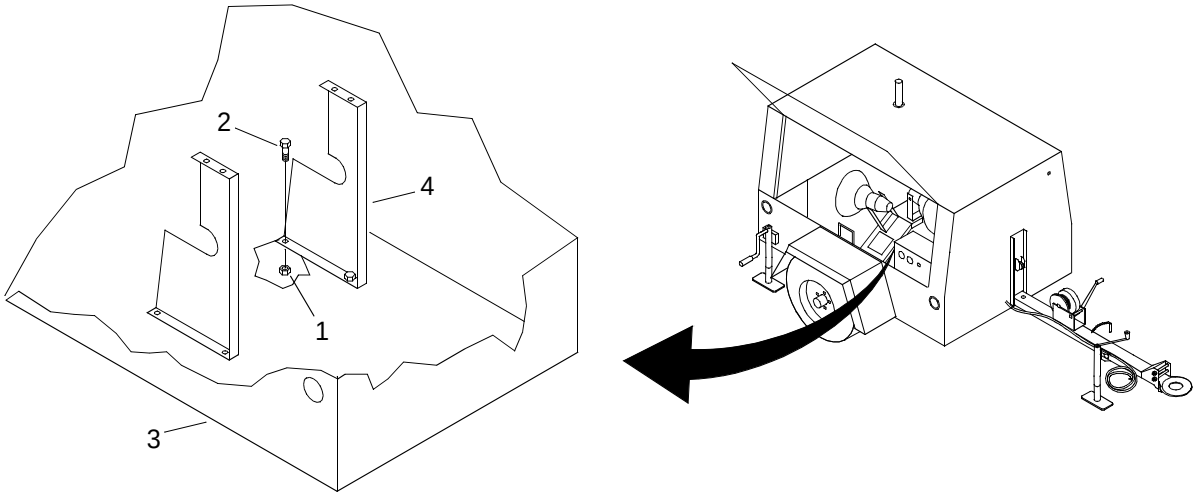
REMOVE LIGHT TOWER RIGHT HAND LAMP STORAGE BRACKET

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove two nuts (1) and two bolts (2) from trailer floor (3).



2. Remove bracket (4) from trailer floor (3) and discard.

INSTALL LIGHT TOWER RIGHT HAND LAMP STORAGE BRACKET

1. Position new bracket (4) on trailer floor (3).
2. Install two bolts (2) and two nuts (1) through trailer floor (3). Tighten nuts (1).
3. Install light tower upper lamp storage bracket. (WP 0228 00)
4. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER UPPER LAMP STORAGE BRACKET
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

Bracket, Upper
(33968)
PN 36894103

Personnel Required

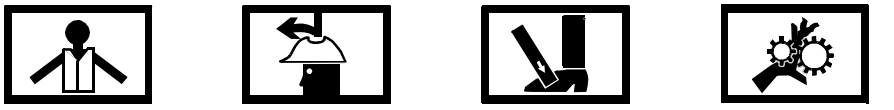
Engineer 88L

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

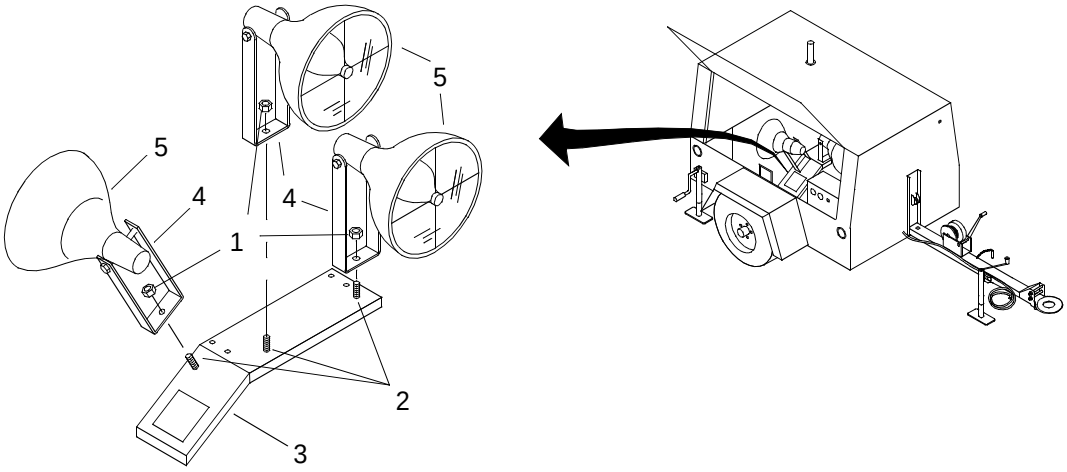
REMOVE LIGHT TOWER UPPER LAMP STORAGE BRACKET

WARNING

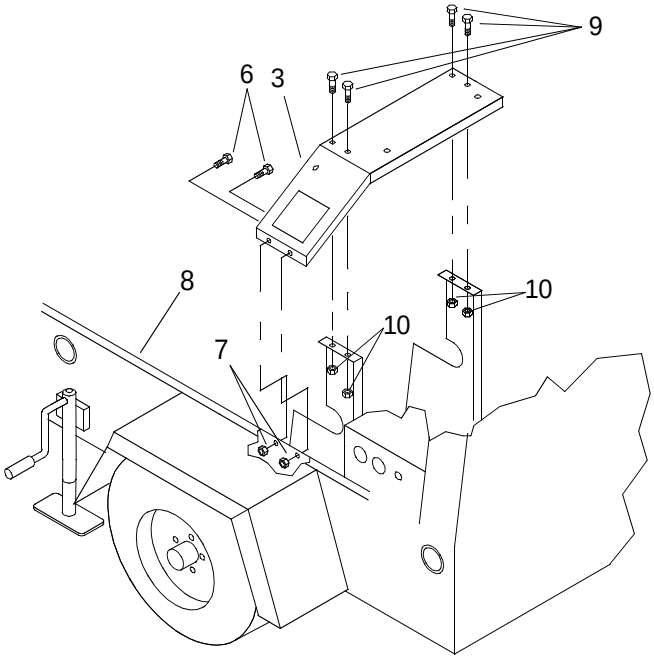


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove three nuts (1) from three studs (2) on bracket (3).



2. Remove three trunnions (4) with attached optical/socket assemblies (5) from bracket (3).
3. Remove three studs (2) from bracket (3).
4. Remove two nuts (6) and two bolts (7) securing bracket (3) to the side of trailer (8).



5. Remove four nuts (9) and four bolts (10).
6. Remove bracket (3) from inside of trailer (8) and discard.

INSTALL LIGHT TOWER UPPER LAMP STORAGE BRACKET

1. Position new bracket (3) inside trailer (8).
2. Install four bolts (10) and four nuts (9). Tighten nuts (9).
3. Install two bolts (7) and two nuts (6) to secure bracket (3) to side of trailer (8). Tighten nuts (6).
4. Install three studs (2) into bracket (3).
5. Position three trunnions (4) with attached optical/socket assemblies (5) on bracket (3).
6. Install three nuts (1) on studs (2). Tighten nuts (1).
7. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
LIGHT TOWER DOOR LATCH
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Item 53, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Compressor, Unit, Reciprocating, Power Drive (Item 8, WP 0253 00)
Bar, Bucking (Item 2, WP 0253 00)
Drill, Electric, Portable (Item 11, WP 0253 00)
Drill Set, Twist (Item 10, WP 0253 00)
Hammer, Pneumatic, Portable (Rivet Gun) (Item 19, WP 0253 00)

Materials/Parts

Latch, Door
(33968)
PN 36793602
Rivet
(33968)
PN 36794816
Qty 4

Personnel Required

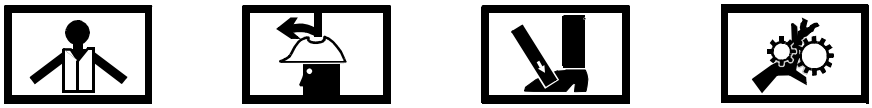
Engineer 88L (2)

Equipment Condition

Light Tower Battery Negative Lead Terminal Removed. (WP 0131 00)

REMOVE LIGHT TOWER DOOR LATCH

WARNING

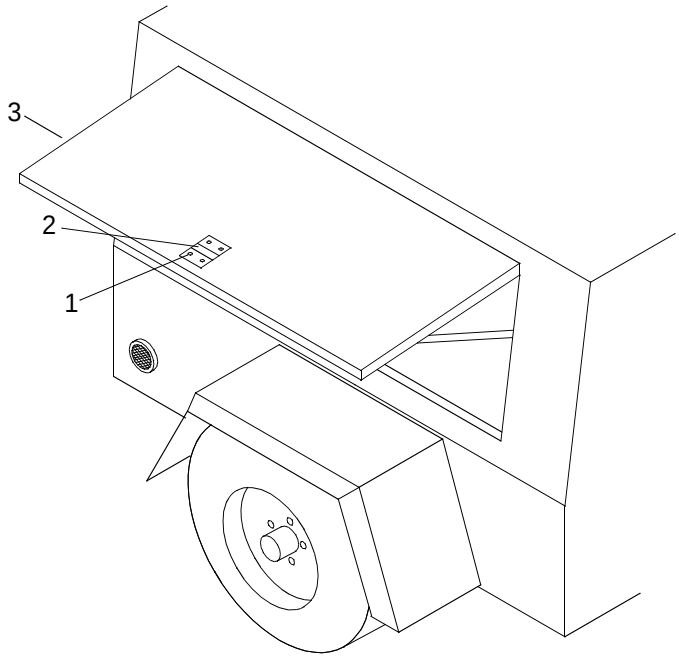


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of port and starboard light tower door latches.

1. Drill out four rivets (1) from door latch (2) using a drill and twist drill. Discard rivets (1).



2. Remove door latch (2) from light tower access door (3) and discard.

INSTALL LIGHT TOWER DOOR LATCH

1. Position new door latch (2) on light tower access door (3).
2. Position four new rivets (1) through new door latch (2) and light tower access door (3).
3. Using a rivet gun and bucking bar, drive four new rivets (1) and secure door latch (2) to light tower access door (3).
4. Install light tower battery negative lead terminal. (WP 0131 00)

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
OFFSHORE ANCHOR BUOY
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

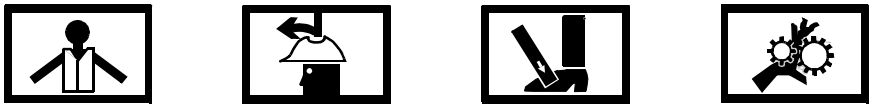
Buoy, Offshore Anchor
(97403)
PN A5-W

Personnel Required

Engineer 88L (2)

REMOVE OFFSHORE ANCHOR BUOY

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of offshore anchor container buoys.

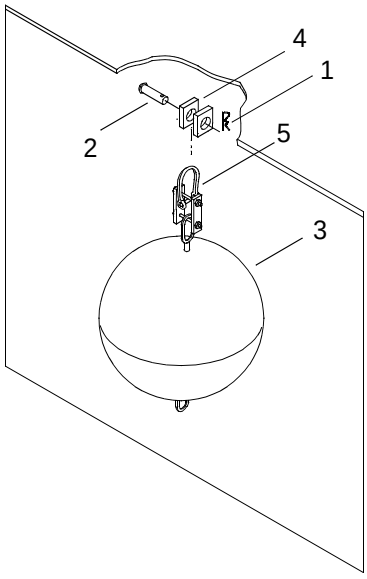
1. Unlatch and open container end doors.

WARNING

Doors must be secured and latched in the open position. Failure to comply could result in injury to personnel.

2. Secure end doors to container sides with locking bars.

3. Remove quick release pin (1) from pin (2).



WARNING

HEAVY OBJECTS

4. Using assistant, support the buoy (3) and pull pin (2) from container bracket (4) and buoy shackle (5).

5. Remove buoy (3).

INSTALL OFFSHORE ANCHOR BUOY

WARNING

HEAVY OBJECTS

1. Using assistant to support the new buoy (3), position buoy shackle assembly (5) in the container bracket (4).

2. Install pin (2) through container bracket (4) and buoy shackle assembly (5).

3. Install quick release pin (1) in pin (2).

4. Remove locking bars securing end doors to side of container.

WARNING

Doors must be secured and latched in the closed position. Failure to comply could result in injury to personnel.

5. Close and latch shut container end doors.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
OFFSHORE ANCHOR MOORING LEG
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

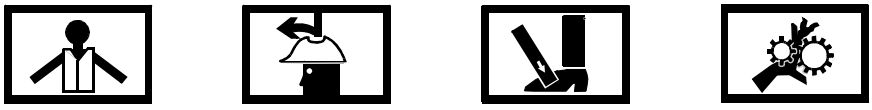
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

DISASSEMBLE OFFSHORE ANCHOR MOORING LEG

WARNING

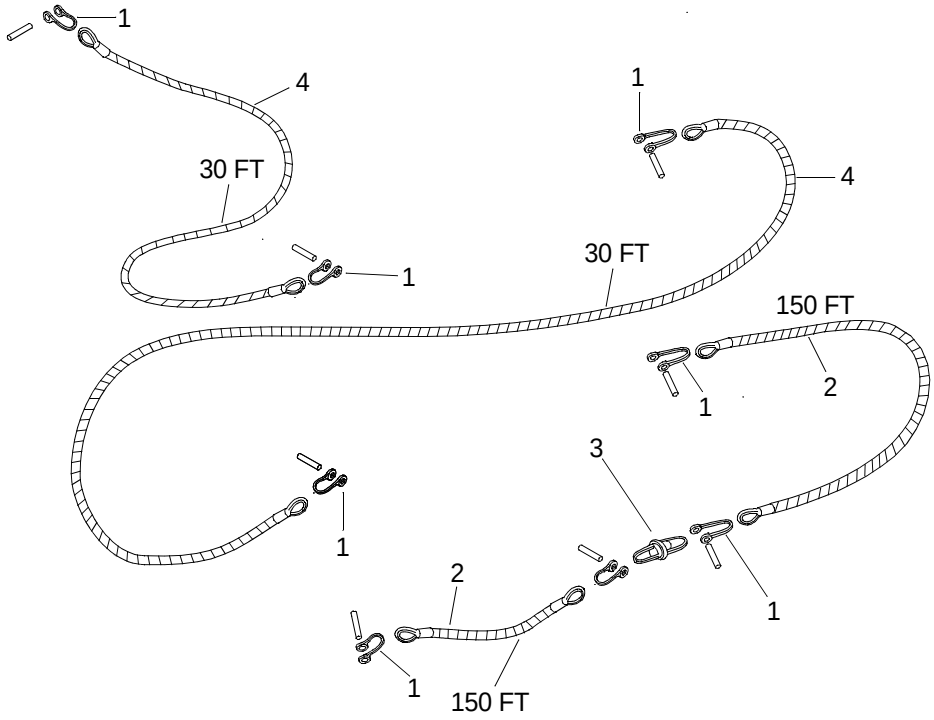


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

Repair is limited to the replacement of damaged components.

1. If attached, remove two shackles (1) securing two 150 ft wire rope assemblies (2) to swivel (3).



2. If attached, remove shackles (1) from ends of both 150 ft wire rope assemblies (2).

3. If attached, remove shackles (1) from both ends of both 30 ft wire rope assemblies (4).

CLEAN OFFSHORE ANCHOR MOORING LEG

WARNING

CHEMICAL **EYE PROTECTION**

NOTE

Use fresh water to thoroughly wash all equipment exposed to salt water or salt spray.

1. Clean wire rope assemblies and shackles with cleaner and wire brush.

2. Wipe all parts clean with wiping rags.

WARNING

CHEMICAL **EYE PROTECTION**

3. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT OFFSHORE ANCHOR MOORING LEG

1. Inspect wire ropes for damage. Replace damaged parts.
2. Inspect shackles for damaged threads. Replace damaged parts.

INSTALL OFFSHORE ANCHOR MOORING LEG

1. Install shackles (1) on both ends of both 30 ft wire rope assemblies (4).
2. Install shackles (1) on ends of both 150 ft wire rope assemblies (2).
3. Connect two 150 ft wire rope assemblies (2) to swivel (3) with two shackles (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
OFFSHORE ANCHOR
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

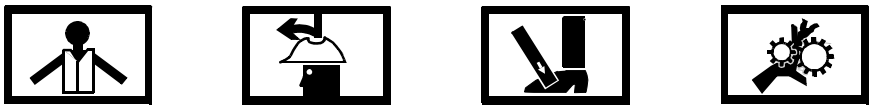
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

DISASSEMBLE OFFSHORE ANCHOR

WARNING

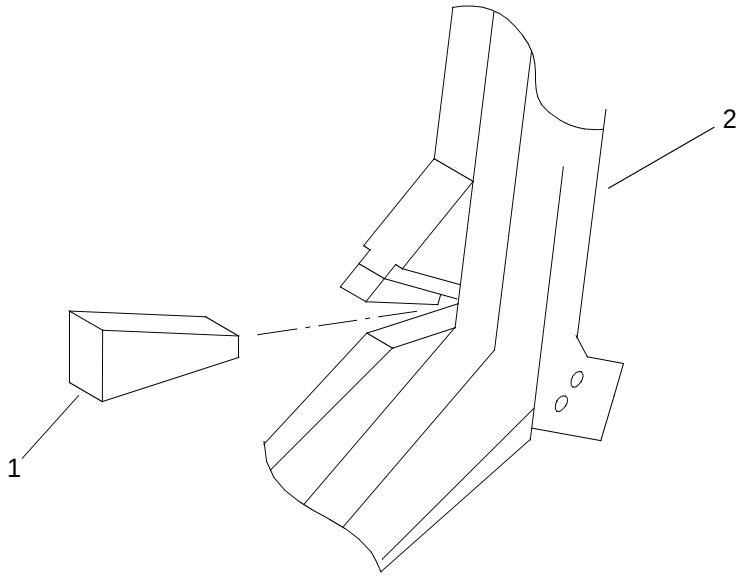


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

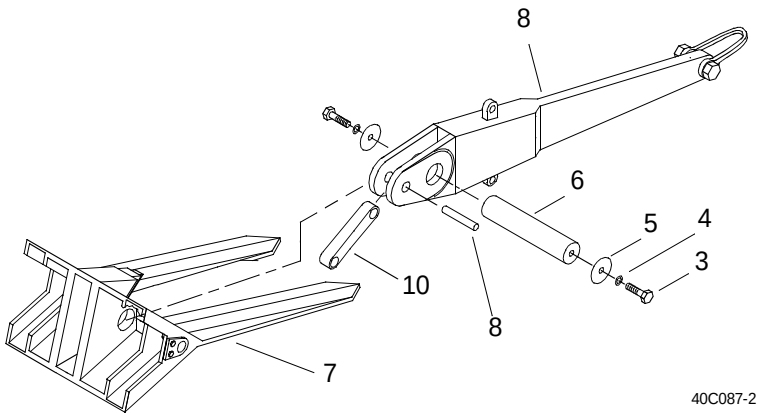
NOTE

Repair is limited to the replacement of defective items.

1. Remove aluminum wedge (1) from anchor (2).



2. Remove cotter pin (3), nut (4) and bolt (5) from shackle (6). Discard pin (3).



3. Remove shackle (6) from anchor shank (7).

4. Remove two cap screws (8), lock washers (9) and washers (10) from trunnion pin (11).

5. Remove trunnion pin (11) from fluke assembly (12).

WARNING

HEAVY PARTS

6. Remove fluke assembly (12) from anchor shank (7).

7. Remove pin (13) from anchor shank (7).
8. Remove link (14) from anchor shank (7).

CLEAN OFFSHORE ANCHOR

WARNING

CHEMICAL EYE PROTECTION

1. Using wiping rags soaked with cleaner, remove debris from all components.

WARNING

CHEMICAL EYE PROTECTION

2. Using clean water, remove cleaner residue from all components.
3. Air dry all components.

WARNING

CHEMICAL EYE PROTECTION

4. Dispose of contaminated rags in accordance with local procedures.

INSPECT OFFSHORE ANCHOR

1. Inspect all components for cracks and breaks. Replace damaged items.
2. Inspect threaded components for damaged threads. Replace damaged items.

ASSEMBLE OFFSHORE ANCHOR

1. Position link (14) on anchor shank (7).
2. Install pin (13) in anchor shank (7).

WARNING

HEAVY PARTS

3. Position fluke assembly (12) on anchor shank (7).
4. Install trunnion pin (11) in fluke assembly (12).
5. Install two washers (10), lock washers (9) and cap screws (8) in trunnion pin (11).
6. Position shackle (6) on anchor shank (7).
7. Install bolt (5), nut (4) and new cotter pin (3) in shackle (6).
8. Install aluminum wedge (1) in anchor (2).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
ONSHORE ANCHOR MOORING LEG
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

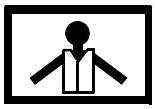
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

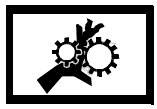
DISASSEMBLE ONSHORE ANCHOR MOORING LEG

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

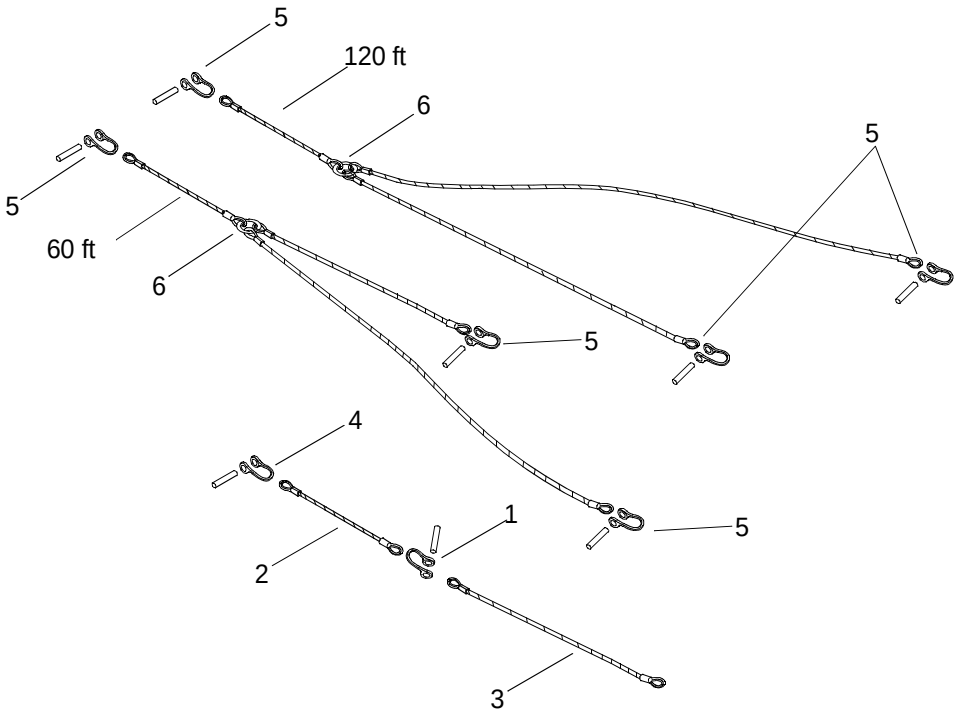

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

Repair is limited to the replacement of damaged components.

1. Remove shackle (1) from wire rope assemblies (2 and 3).



2. Remove shackle (4) from end of wire rope assembly (2).

3. Remove shackles (5) from both ends of both wire rope assemblies (6).

CLEAN ONSHORE ANCHOR MOORING LEG

WARNING

CHEMICAL **EYE PROTECTION**

NOTE

Use fresh water to thoroughly wash all equipment exposed to salt water or salt spray.

1. Clean wire rope assemblies and shackles with cleaner and wire brush.

2. Wipe all parts clean with wiping rags.

WARNING

CHEMICAL **EYE PROTECTION**

3. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT ONSHORE ANCHOR MOORING LEG

1. Inspect wire ropes for damage. Replace damaged parts.
2. Inspect shackles for damaged threads. Replace damaged parts.

INSTALL ONSHORE ANCHOR MOORING LEG

1. Install shackles (5) on both ends of both wire rope assemblies (6).
2. Install shackle (4) on end of wire rope assembly (2).
3. Connect two wire rope assemblies (2 and 3) with shackles (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
ONSHORE ANCHOR
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

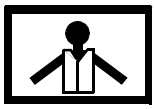
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

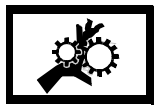
DISASSEMBLE ONSHORE ANCHOR

WARNING


VEST


HELMET PROTECTION


HEAVY PARTS

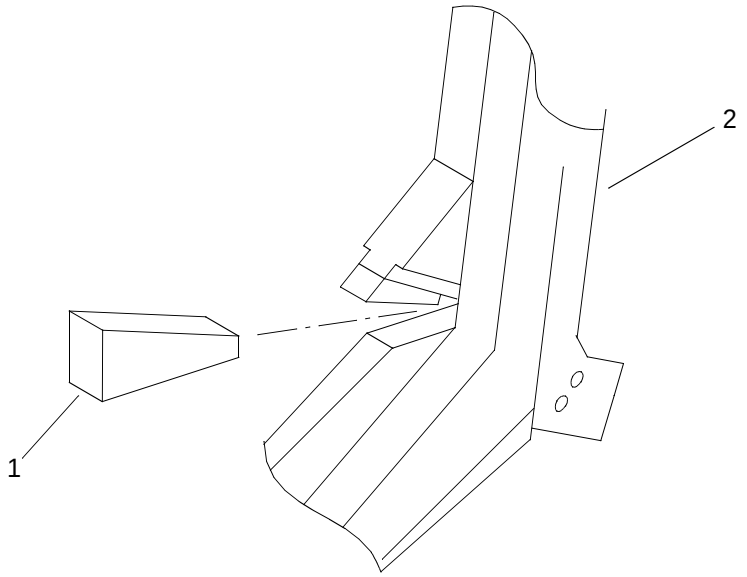

MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

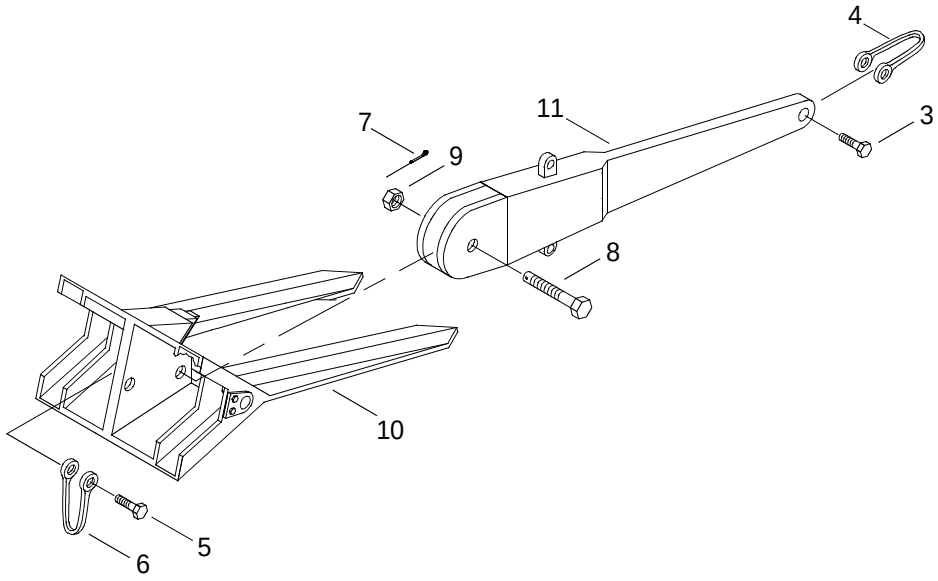
NOTE

Repair is limited to the replacement of defective items.

1. Remove aluminum wedge (1) from anchor (2).



2. Remove bolt (3) from shackle (4) and remove shackle (4).



3. Remove bolt (5) from shackle (6) and remove shackle (6).

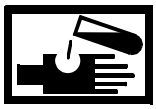
4. Remove cotter pin (7) from end of hex bolt (8). Discard pin.

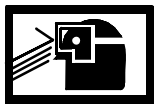
5. Remove hex nut (9) and hex bolt (8) from fluke assembly (10) and anchor shank (11).

6. Remove fluke assembly (10) from anchor shank (11).

CLEAN ONSHORE ANCHOR

WARNING

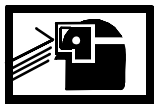

CHEMICAL


EYE PROTECTION

1. Using wiping rags soaked with cleaner, remove debris from all components.

WARNING

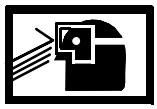

CHEMICAL


EYE PROTECTION

2. Using clean water, remove cleaner residue from all components.
3. Air dry all components.

WARNING


CHEMICAL


EYE PROTECTION

4. Dispose of contaminated rags in accordance with local procedures.

INSPECT ONSHORE ANCHOR

1. Inspect all components for cracks and breaks. Replace damaged items.
2. Inspect threaded components for damaged threads. Replace damaged items.

ASSEMBLE ONSHORE ANCHOR

1. Position anchor shank (11) in fluke assembly (10).
2. Install hex bolt (8) through fluke assembly (10) and anchor shank (11).
3. Install hex nut (9) on hex bolt (8). Tighten nut (9).
4. Install new cotter pin (7) in end of hex bolt (8) and bend ends over with pliers.
5. Install shackle (6) and bolt (5) on bottom of fluke assembly (10).
6. Install shackle (4) and bolt (3) on end of anchor shank (11).
7. Install aluminum wedge (1) in anchor (2).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
ONSHORE ANCHOR SNATCH BLOCK
REPAIR

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)
Apron, Utility (Item 1, WP 0253 00)

Materials/Parts

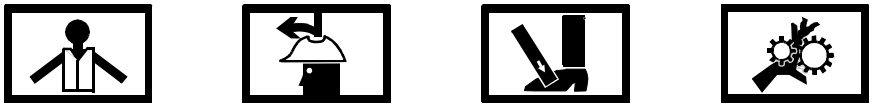
Cleaner (Item 7, WP 0252 00)
Rag, Wiping (Item 35, WP 0252 00)

Personnel Required

Engineer 88L

DISASSEMBLE ONSHORE ANCHOR SNATCH BLOCK

WARNING

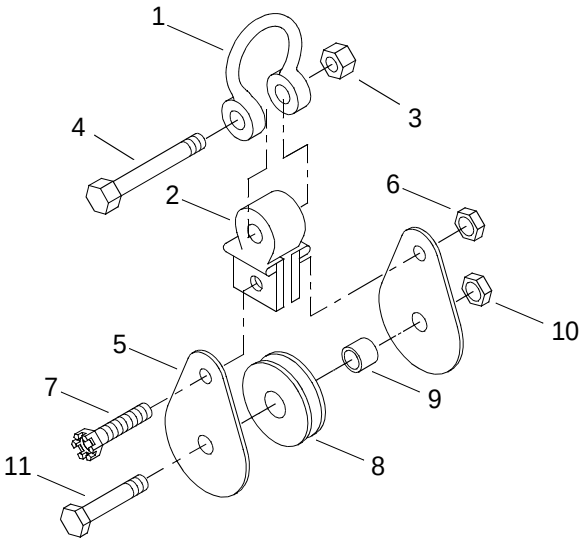


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

Repair is limited to the replacement of damaged components.

1. Remove shackle (1) from yoke (2).



a. Remove nut (3) from pin (4).

b. Remove pin (4) from shackle (1) and yoke (2).

c. Remove shackle (1).

2. Remove yoke (2) from top of snatch block (5).

a. Remove nut (6) from pin (7).

b. Remove pin (7) securing yoke (2) to snatch block (5).

c. Remove yoke (2).

3. Remove sheave (8) and bushing (9) from center of snatch block (5).

a. Remove nut (10) from pin (11).

b. Remove pin (11) securing sheave (8) and bushing (9) to snatch block (5).

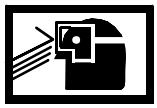
c. Remove sheave (8) and bushing (9).

d. Remove bushing (9) from inside sheave (8).

CLEAN ONSHORE ANCHOR SNATCH BLOCK

WARNING

CHEMICAL



EYE PROTECTION

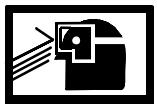
NOTE

Use fresh water to thoroughly wash all equipment exposed to salt water or salt spray.

1. Clean snatch block (5) and shackle (1) with cleaner and wire brush.
2. Wipe all parts clean with wiping rags.

WARNING

CHEMICAL



EYE PROTECTION

3. Dispose of contaminated wiping rags in accordance with local procedures.

INSPECT ONSHORE ANCHOR SNATCH BLOCK

1. Inspect sheave (8) and bushing (9) for cracks, deterioration, pitting or wear. Replace damaged parts.
2. Inspect shackle (1) for damaged threads. Replace damaged parts.

INSTALL ONSHORE ANCHOR SNATCH BLOCK

1. Install sheave (8) and bushing (9) in center of snatch block (5).
   a. Install bushing (9) inside sheave (8).
   b. Position sheave (8) and bushing (9) in center of snatch block (5).
   c. Install pin (11) through snatch block (5), sheave (8) and bushing (9).
   d. Install nut (10) on pin (11).
2. Install yoke (2) on top of snatch block (5).
   a. Position yoke (2) in snatch block (5).
   b. Install pin (7) through snatch block (5) and yoke (2).
   c. Install nut (6) on pin (7).

3. Install shackle (1) on yoke (2).

    a. Position shackle (1) on yoke (2).

    b. Install pin (4) through yoke (2) and shackle (1).

    c. Install nut (3) on pin (4).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
ONSHORE ANCHOR GRIPHOIST SHEAR PIN REPLACEMENT

INITIAL SETUP:

Tools

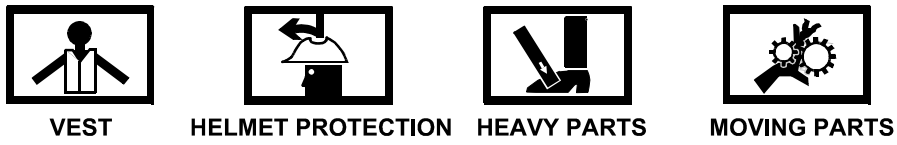
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Personnel Required

Engineer 88L

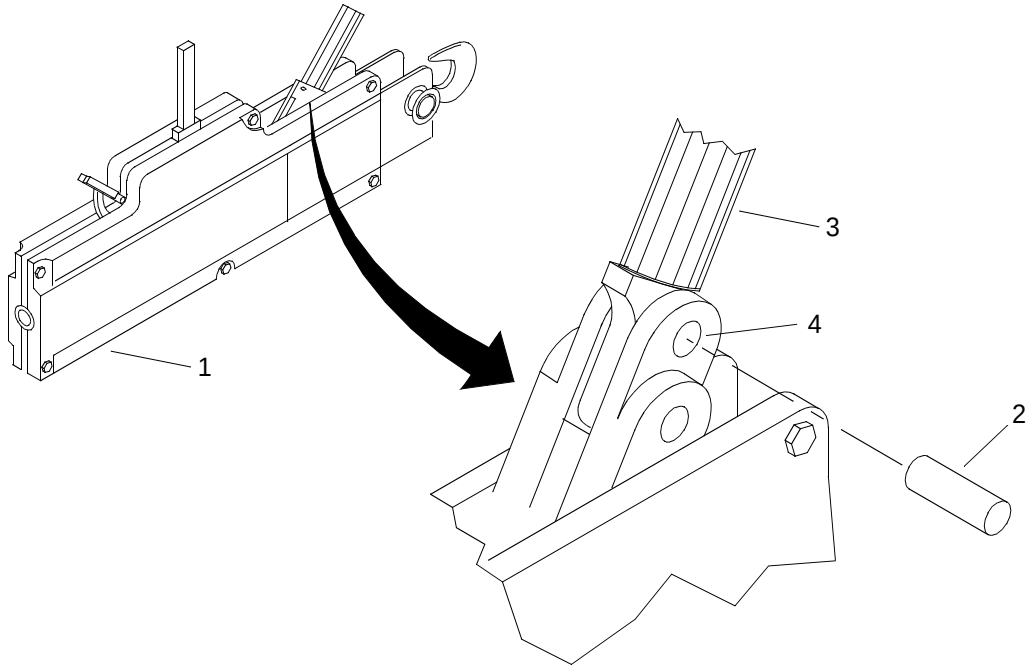
REMOVE ONSHORE ANCHOR GRIPHOIST SHEAR PIN

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Place the griphoist (1) on a flat level surface.



2. Using a a pin punch and hammer, remove the defective shear pin (2) from the power stroke lever (3) and griphoist (1).

3. Discard the broken shear pin (2).

INSTALL ONSHORE ANCHOR GRIPHOIST SHEAR PIN

1. Align the power stroke lever (3) and griphoist (1) shear pin holes (4).

2. Install the new shear pin (2) in place with a hammer to attach the power stroke lever (3) to the griphoist (1).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
HAND LANTERN INCANDESCENT BULB REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

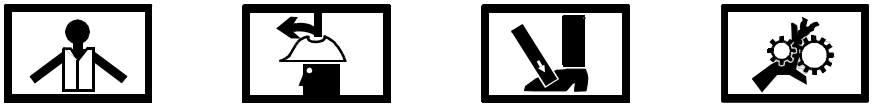
Lamp, Incandescent
(96906)
NSN 6240-00-866-4143
PN MS16524-2

Personnel Required

Engineer 88L

REMOVE HAND LANTERN INCANDESCENT BULB

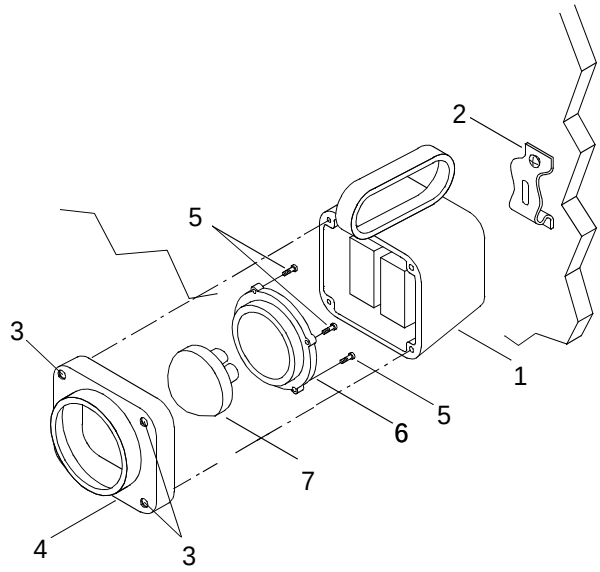
WARNING



NOTE

The following procedure is typical for the removal and installation of hand lantern incandescent bulbs.

1. Rotate hand lantern (1) 90° and remove from mounting bracket (2).



2. Loosen four captive screws (3) on cover (4).
3. Remove cover (4).
4. Place cover (4) face down on work bench.
5. Remove four retaining screws (5) securing retaining ring (6) over bulb (7).
6. Remove retaining ring (6) and bulb (7). Discard bulb (7).

INSTALL HAND LANTERN INCANDESCENT BULB

1. Position new bulb (7) into cover (4).
2. Position retaining ring (6) over bulb (7).
3. Install four retaining screws (5) to secure retaining ring (6) over the bulb (7). Tighten screws (5).
4. Position cover (4) on hand lantern (1).
5. Tighten four captive screws (3) to secure cover (4) to hand lantern (1).
6. Position hand lantern (1) on mounting bracket (2) and rotate 90°.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
HAND LANTERN BATTERIES
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

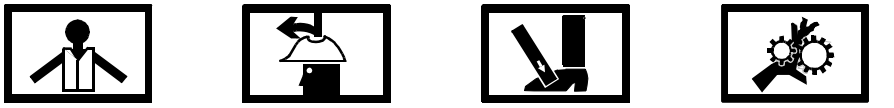
Battery, Non-rechargeable
(81349)
NSN 6135-00-050-3280
PN BA200U
Qty 2

Personnel Required

Engineer 88L

REMOVE HAND LANTERN BATTERIES

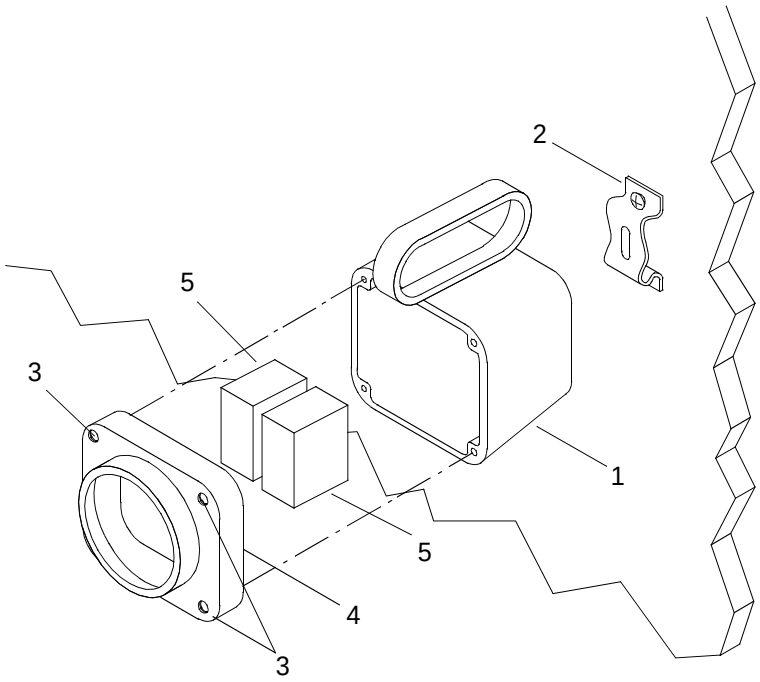
WARNING



NOTE

This task is typical for the removal and installation of hand lantern batteries.

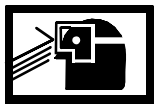
1. Rotate hand lantern (1) 90° and remove from mounting bracket (2).



2. Loosen four captive screws (3) on cover (4).
3. Remove cover (4).
4. Place hand lantern (1) face up on work bench.

WARNING


CHEMICAL


EYE PROTECTION

5. Remove batteries (5) and dispose of in accordance with local procedures.

INSTALL HAND LANTERN BATTERIES

WARNING


CHEMICAL


EYE PROTECTION

1. Install new batteries (5) in hand lantern (1).
2. Position cover (4) on hand lantern (1).
3. Tighten four captive screws (3) in cover (4) of hand lantern (1).
4. Position hand lantern (1) on mounting bracket (2) and rotate 90°.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
TOWING LIGHT INCANDESCENT BULB REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Materials/Parts

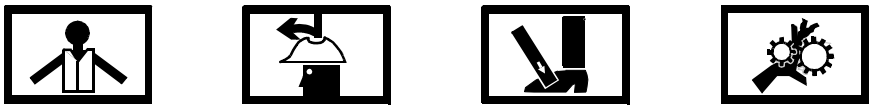
Lamp, Incandescent
PN U-2166-P

Personnel Required

Engineer 88L

REMOVE TOWING LIGHT INCANDESCENT BULB

WARNING

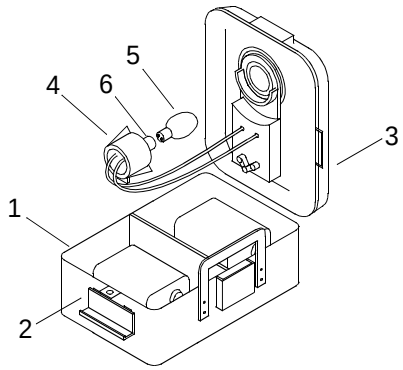


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of a towing light incandescent bulb.

1. Open towing light case (1) by unlatching clasp (2).



2. Open the cover (3).

3. Remove bulb base (4) from cover (3) by rotating counterclockwise and pulling outwards.

4. Remove bulb (5) from bulb holder (6) by pushing downwards and rotating counterclockwise and pulling outwards.

5. Discard bulb (5).

INSTALL TOWING LIGHT INCANDESCENT BULB

1. Install new bulb (5) into bulb holder (6), pushing downwards and rotating clockwise.

2. Install bulb base (4) into the cover (3) by pushing downwards and rotating clockwise.

3. Close cover (3) over towing light case (1) and lock shut with clasp (2).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
TOWING LIGHT BATTERIES
REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

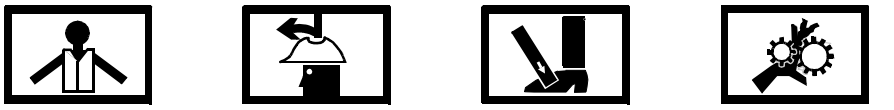
Battery
(83740)
NSN 6135-00-643-1310
PN EV90
Qty 2

Personnel Required

Engineer 88L

REMOVE TOWING LIGHT BATTERIES

WARNING

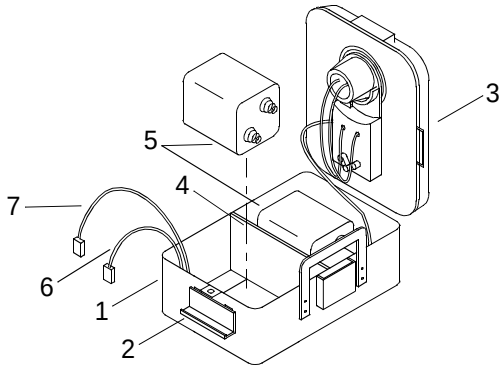


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

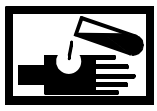
The following procedure is typical for the removal and installation of towing light batteries.

1. Open towing light case (1) by opening clasp (2).

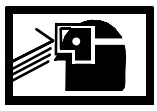


2. Open cover (3).

WARNING



CHEMICAL



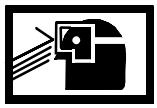
EYE PROTECTION

3. Raise battery holddown bracket (4) securing batteries (5) inside towing light case (1).
4. Disconnect positive (6) and negative (7) leads from batteries (5).
5. Remove batteries (5) and dispose of in accordance with local procedures.

INSTALL TOWING LIGHT BATTERIES

WARNING

CHEMICAL



EYE PROTECTION

1. Position new batteries (5) in towing light case (1).
2. Install positive (6) and negative (7) leads on batteries (5).
3. Lower battery holddown bracket (4) over batteries (5).
4. Close cover (3) over towing light case (1) and lock shut with clasp (2).

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
ANCHOR LIGHT INCANDESCENT BULB REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)

Personnel Required

Engineer 88L

REMOVE ANCHOR LIGHT INCANDESCENT BULB

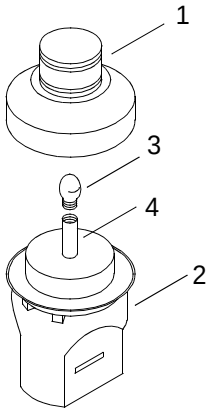
WARNING

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of an anchor light incandescent bulbs.

1. Remove anchor light top (1) from housing (2) by prying off.



2. Remove bulb (3) from bulb holder (4) by turning counterclockwise and discard bulb.

INSTALL ANCHOR LIGHT INCANDESCENT BULB

1. Install new bulb (3) into bulb holder (4) by turning clockwise.

2. Install anchor light top (1) onto housing (2) by pressing downwards.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
ANCHOR LIGHT BATTERIES
REPLACEMENT

INITIAL SETUP:

Tools

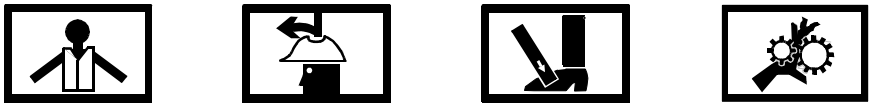
Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Personnel Required

Engineer 88L

REMOVE ANCHOR LIGHT BATTERIES

WARNING

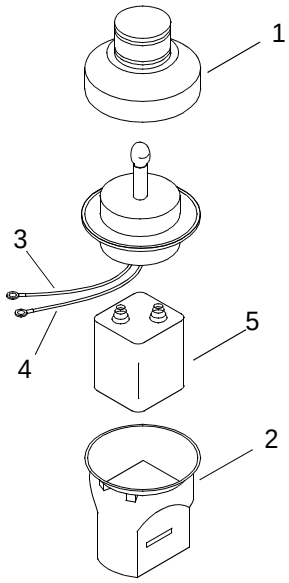


All personnel must wear personal flotation device, hard hat, safety shoes and gloves during FC operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of an anchor light batteries.

1. Remove anchor light top (1) from housing (2) by prying off.



2. Disconnect positive (3) and negative (4) leads from battery (5).

3. Remove battery (5) and dispose of in accordance with local procedures.

INSTALL ANCHOR LIGHT BATTERIES

1. Install new battery (5) into housing (2).

2. Connect positive (3) and negative (4) leads to battery (5).

3. Install anchor light top (1) onto housing (2) by pressing downwards.

END OF WORK PACKAGE

UNIT LEVEL MAINTENANCE
FLOATING CAUSEWAY
LIFE RING STROBE LIGHT BATTERY REPLACEMENT

INITIAL SETUP:

Tools

Tool Kit, General Mechanic's (Rail and Marine) (Item 54, WP 0253 00)
Gloves, Men's and Women's (Leather Palm) (Item 16, WP 0253 00)
Goggles, Sun, Wind and Dust (Safety) (Item 18, WP 0253 00)
Helmet, Safety (Brown) (Item 20, WP 0253 00)
Life Preserver, Vest (Item 25, WP 0253 00)
Gloves, Chemical (Item 14, WP 0253 00)
Goggles, Industrial (Chipping, Chemical) (Item 17, WP 0253 00)

Materials/Parts

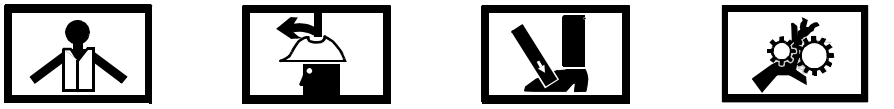
Battery, 6 Volt
(83740)
PN EV90

Personnel Required

Engineer 88L

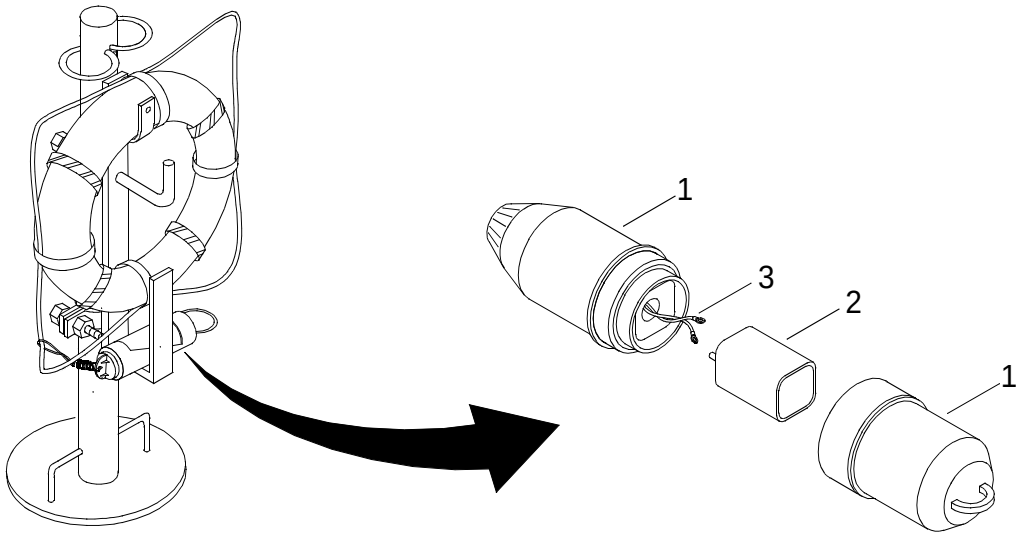
REMOVE LIFE RING STROBE LIGHT BATTERY

WARNING



All personnel must wear personal flotation device, hard hat, safety shoes and gloves during CF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unscrew strobe light housing (1) to expose battery (2).

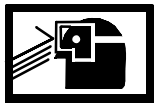


2. Disconnect two wires (3) from battery (2).

3. Remove battery (2) from strobe light housing (1).

WARNING


CHEMICAL

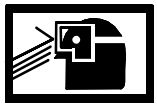

EYE PROTECTION

4. Discard battery (2) in accordance with local procedures.

INSTALL LIFE RING STROBE LIGHT BATTERY

WARNING


CHEMICAL


EYE PROTECTION

1. Position new battery (2) inside strobe light housing (1).

2. Connect two wires (3) to battery (2).

3. Position both sides of the strobe light housing (1) together and screw shut. Tighten strobe light housing (1).

END OF WORK PACKAGE

GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
WEIGHT LIFTING DEVICES
INSPECTION

INITIAL SETUP:

Personnel Required
Seaman 88K

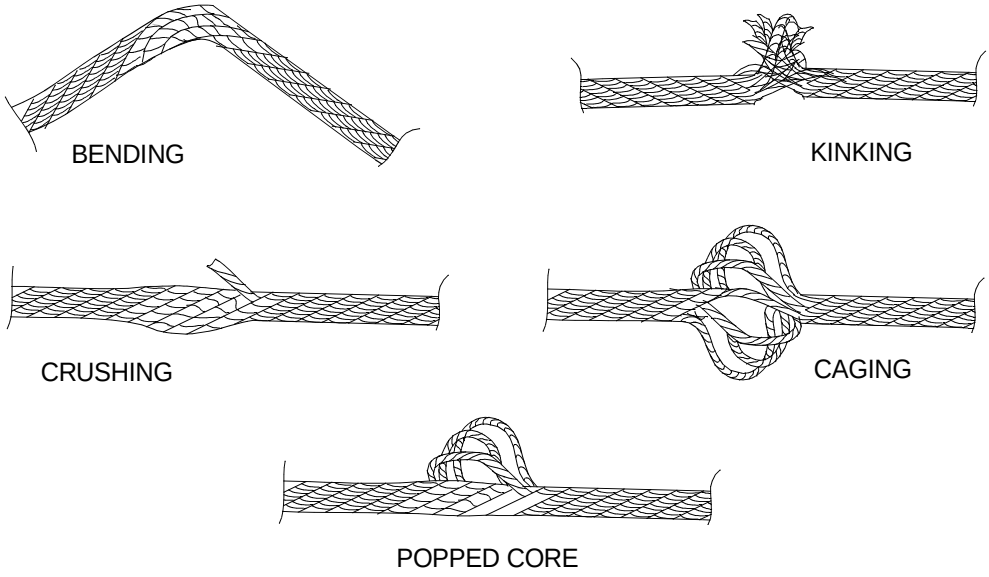
THREE LEG WIRE ROPE AND CHAIN SLINGS

WARNING

All damaged or defective slings and ropes shall be immediately removed from service as serious injury to personnel and damage to equipment could occur.

A visual inspection of slings and all fastenings and attachments shall be conducted before each use using the following minimum criteria.

1. Rope diameter reduction of below nominal value.
2. Rope for broken outside wires.
3. Rope for worn outside wires.
4. Rope for corroded, broken or frayed wires at end connections.
5. Rope for corroded, cracked, bent, worn, improperly sized or improperly applied end connections.
6. Rope for evidence of damage due to welding arc or other heat sources.
7. Rope for severe bending, kinking, crushing, caging or a popped core.

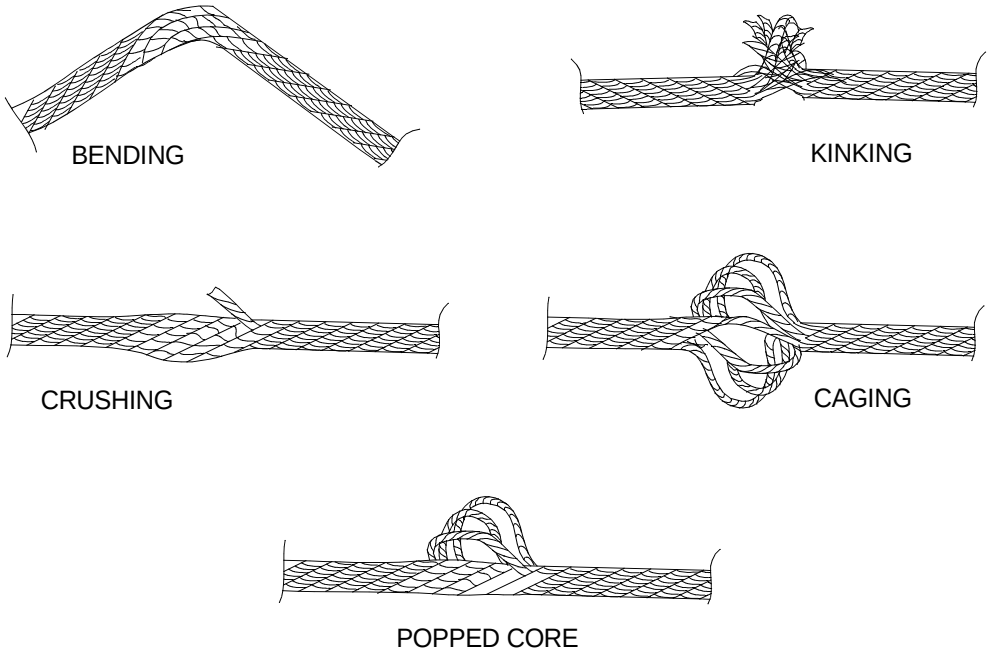


8. Chain for excessive wear or stretch.

9. Chain for bent or twisted links.
10. Chain for defective welds.
11. Chain for nicks and gouges.
12. All attaching shackles and hardware for corrosion, nicks, cuts, scratches or breaks.
13. Distortion of hoist attachment or terminal ring.

TWO LEG LIFTING SLING

1. Rope diameter reduction of below nominal value.
2. Rope for broken outside wires.
3. Rope for worn outside wires.
4. Rope for corroded, broken or frayed wires at end connections.
5. Rope for corroded, cracked, bent, worn, improperly sized or improperly applied end connections.
6. Rope for evidence of damage due to welding arc or other heat sources.
7. Rope for severe bending, kinking, crushing, caging, or a popped core.



8. All attaching shackles and hardware for corrosion, nicks, cuts, scratches or breaks.
9. Distortion of hoist attachment or terminal ring.

SPREADER BEAM LIFTING SLING

1. Rope diameter reduction of below nominal value.
2. Rope for broken outside wires.
3. Rope for worn outside wires.
4. Rope for corroded, broken or frayed wires at end connections.
5. Rope for corroded, cracked, bent, worn, improperly sized or improperly applied end connections.
6. Rope for evidence of damage due to welding arc or other heat sources.
7. Rope for severe bending, kinking, crushing, caging or a popped core.
8. All attaching shackles and hardware for excessive wear or corrosion.
9. Spreader beam for proper assembly.
10. Spreader beam for cracked or broken welds.
11. Spreader beam for bent or loose bolts, rivets, pins and other attaching devices.
12. Spreader beam for distortion of hoist attachment or terminal ring.

ROPE (NATURAL AND SYNTHETIC)

The existence of any of the following conditions will require that the rope be immediately removed from service.

1. Abnormal wear.
2. Powdered fiber between strands.
3. Broken or cut fibers.
4. Variation in the size or roundness of strands.
5. Discoloration or rotting.

END OF WORK PACKAGE

GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
WEIGHT LIFTING DEVICES
TESTING

INITIAL SETUP:

Personnel Required
Engineer 88L

References
29 CFR

INSPECT WEIGHT LIFTING DEVICES

Refer to 29 CFR, sections 1919.6, 1919.15, 1919.28, 1919.30 and 1919.31.

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE
FLOATING CAUSEWAY
ELECTRICAL WIRING
REPAIR

INITIAL SETUP:

Personnel Required
Engineer 88L

References
46 CFR 129.340

REPAIR ELECTRICAL WIRING

Refer to 46 CFR, Section 129.340.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
TORQUE LIMITS

INTRODUCTION

When To Use Torque Limits

When a torque is not specified in an individual work package, use the procedures in this work package to determine proper torque limits and use of adapters with torque wrenches.

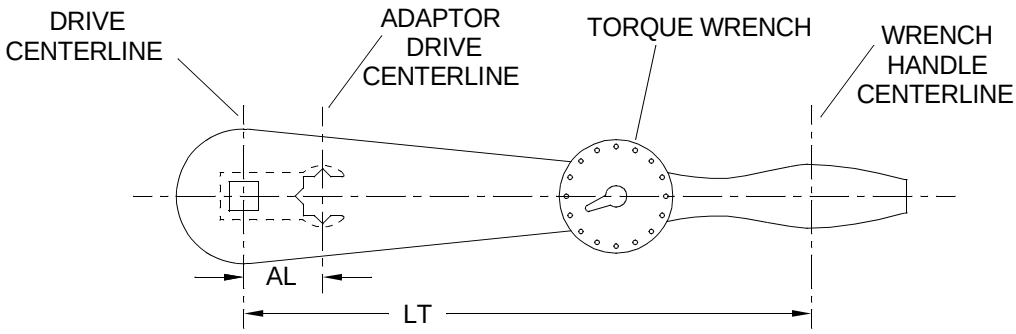
How To Use Adapters With Torque Wrenches

When an adaptor is necessary due to space or type of fitting being torqued, it must be determined how the adaptor changes the amount of force applied. If the adaptor increases or decreases the distance from the drive of the torque wrench to the fitting being torqued, an equation must be used to compensate for the difference.

NOTE

The following abbreviations apply to the below procedures:
DT = Desired Torque
LT = Length of Torque Wrench
AL = Adaptor Length
AT = Applied Torque

1. If the adaptor used decreases the distance between the center of the torque wrench handle and the center of the drive, first find the desired torque for the fitting, then calculate as follows:

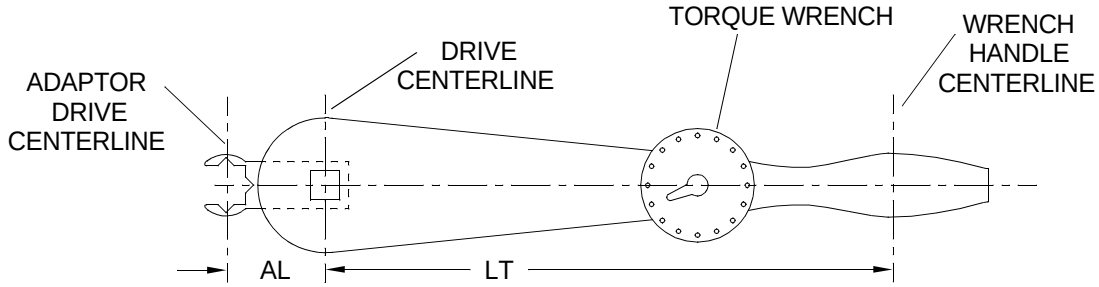


   a. Multiply DT by LT.

   b. Subtract AL from LT.

   c. Divide the first answer by the second answer to find AT.

2. If the adaptor used increases the distance between the center of the torque wrench handle and the center of the drive, first find the desired torque for the fitting, then calculate as follows:



a. Multiply DT by LT.

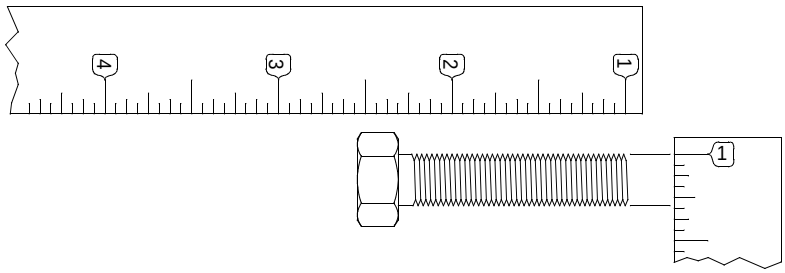
b. Add AL and LT.

c. Divide the first answer by the second answer to find AT.

TORQUE TABLES

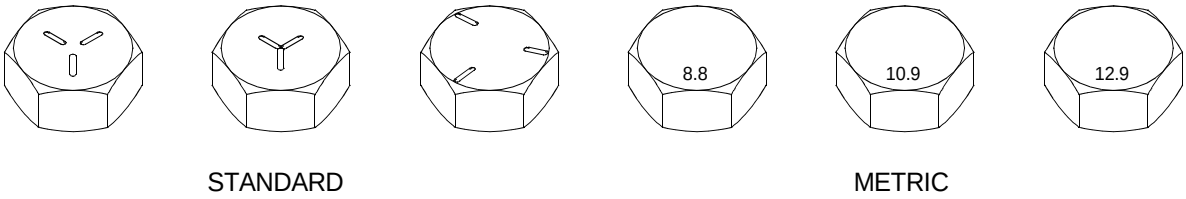
How To Use Torque Tables

1. Measure the diameter of the bolt to be torqued.



2. For SAE fasteners, determine the threads per inch by counting the threads. For metric fasteners, determine the thread pitch using a thread pitch gage.

3. Determine the type of markings on the bolt you are torquing by comparing the markings on the head of the bolt with the chart below.



4. Determine if this will be a wet or dry torque.

   a. Wet torque is any bolt that is lubricated or coated with an antiseize compound.

   b. Dry torque is any bolt that is not lubricated or coated with an antiseize compound.

5. On the table below, locate the bolt to be torqued.

   a. Locate the diameter of the bolt.

   b. Determine the threads per inch for the SAE fastener or the thread pitch for the metric fastener.

   c. Slide across the table to the proper grade.

   d. Choose wet or dry.

   e. Slide down the proper column and across the proper row until they intersect, this is the proper torque value.

Table 1. SAE Standard Torque Table.

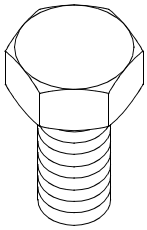
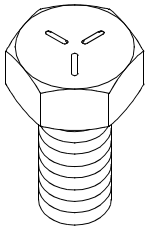
		SAE GRADE NO. 2				SAE GRADE NO. 5				SAE GRADE NO. 8			
													
		DRY		WET		DRY		WET		DRY		WET	
DIA IN.	THREADS PER INCH	IN. LBS	N-m	IN. LBS	N-m	IN. LBS	N-m	IN. LBS	N-m	IN. LBS	N-m	IN. LBS	N-m
1/4	20	66	7.46	49	5.54	101	11.41	76	8.58	143	16.15	107	12.09
1/4	28	75	8.47	56	6.33	116	13.10	87	9.83	164	18.53	123	13.89
5/16	18	135	15.25	101	11.41	209	23.61	157	17.73	295	33.32	221	24.96
5/16	24	150	17.17	112	12.65	230	25.98	173	19.54	327	36.94	245	27.68
3/8	16	240	27.11	180	20.33	370	41.80	278	31.40	523	59.08	392	44.28
3/8	24	272	30.73	204	23.04	420	47.44	315	35.58	593	66.99	445	50.27
7/16	14	384	43.38	288	32.53	593	66.99	445	50.27	837	94.55	628	70.94
7/16	20	428	48.35	321	36.26	662	74.78	496	56.03	935	105.62	700	79.07
1/2	13	585	66.08	439	49.59	904	102.12	678	76.59	1277	144.25	958	108.22
1/2	20	660	74.55	495	55.92	1020	115.22	764	86.30	1440	162.66	1080	122.00

Table 2. SAE Standard Torque Table.

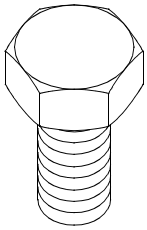
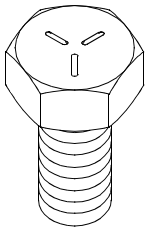
		SAE GRADE NO. 2				SAE GRADE NO. 5				SAE GRADE NO. 8			
													
		DRY		WET		DRY		WET		DRY		WET	
DIA IN.	THREADS PER INCH	FT LBS	N-m	FT LBS	N-m	FT LBS	N-m	FT LBS	N-m	FT LBS	N-m	FT LBS	N-m
9/16	12	70	94.92	53	71.87	109	147.80	82	111.19	154	208.82	115	155.94
9/16	18	78	105.77	59	80.00	121	164.08	91	123.40	171	231.88	128	173.57
5/8	11	97	131.53	73	98.99	150	203.40	113	153.23	212	287.47	159	215.60
5/8	18	110	149.16	82	111.19	170	230.52	127	172.21	240	325.44	180	244.08
3/4	10	172	233.23	129	174.92	269	364.76	201	272.56	376	509.86	282	382.39
3/4	16	192	260.35	144	195.26	297	402.73	223	302.29	420	569.52	315	427.14
1	8	-	-	-	-	644	873.26	483	654.95	909	1232.60	683	926.15
1	12	-	-	-	-	704	954.62	528	715.97	995	1349.22	746	1011.58

Table 3. Metric Standard Torque Table.

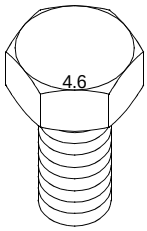
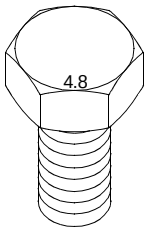
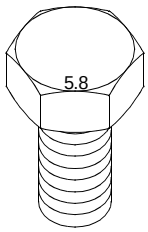
		CLASS 4.6				CLASS 4.8				CLASS 5.8			
													
		DRY		WET		DRY		WET		DRY		WET	
DIA MM	THREAD PITCH	N-m	IN. LBS	N-m	IN. LBS	N-m	IN. LBS	N-m	IN. LBS	N-m	IN. LBS	N-m	IN. LBS
3.0	0.5	.50	4	.40	4	.70	6	.50	4	-	-	-	-
3.5	0.6	.80	7	.60	5	1.10	10	.80	7	-	-	-	-
4.0	0.7	1.20	11	.90	8	1.60	14	1.20	11	-	-	-	-
5.0	0.8	2.40	21	1.80	16	3.30	29	2.50	22	4.00	35	3.00	27
6.0	1.0	4.00	35	3.00	27	5.66	50	4.20	37	6.90	61	5.20	26
8.0	1.25	9.90	88	7.40	66	13.60	120	10.20	90	16.70	148	12.50	111
10.0	1.50	19.60	174	14.70	130	27.00	239	20.00	177	33.10	293	24.80	220
12.0	1.75	34.10	302	25.60	227	47.00	416	35.00	310	58.00	51	43.00	381
14.0	2.0	54.30	481	40.80	361	75.00	664	56.00	496	92.00	814	69.00	611

Table 4. Metric Standard Torque Table.

		CLASS 8.8				CLASS 9.8				CLASS 10.9			
		DRY		WET		DRY		WET		DRY		WET	
DIA MM	THREAD PITCH	N-m	FT LBS	N-m	FT LBS	N-m	FT LBS	N-m	FT LBS	N-m	FT LBS	N-m	FT LBS
8.0	1.25	26.40	19	19.80	15	28.50	21	21.40	16	36.50	27	27.30	20
10.0	1.50	52.20	38	39.20	29	56.60	42	42.40	31	72.20	53	54.20	40
12.0	1.75	91.00	67	68.00	50	99.00	73	74.00	55	126.00	93	94.00	69
14.0	2.00	145.00	107	109.00	80	157.00	116	118.00	87	200.00	147	150.00	111
16.0	2.00	226.00	167	170.00	125	245.00	181	184.00	136	313.00	231	235.00	173
20.0	2.50	441.00	325	331.00	244	478.00	353	358.00	264	610.00	450	458.00	338
24.0	3.00	762.00	562	572.00	422	826.00	609	620.00	457	1055.00	778	791.00	583
30.0	3.50	1515.00	1117	1136.00	838	1641.00	1210	1231.00	908	2095.00	1545	1572.00	1159
36.0	4.00	2647.00	1952	1985.00	1464	2868.00	2115	2151.00	1586	3662.00	2701	2746.00	2025

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
WIRING DIAGRAMS

INITIAL SETUP:

Personnel Required
Engineer 88L

CABLE AND WIRING DIAGRAMS INTRODUCTION

Scope

This work package provides the wiring illustrations necessary for maintenance, troubleshooting and repair of the Floating Causeway (FC). Diagrams provide the identification of each wire to be connected, by color code or wire number as applicable. The diagrams show the location of each pertinent terminal and/or position.

The same diagram may be referenced at different times as it applies to instructions within the appropriate maintenance chapter (Unit Level, Direct Support, or General Support).

The one line diagram, schematic and wiring diagram fold out illustrations can be located after the alphabetical index in this manual.

LIST OF ABBREVIATIONS/ACRONYMS

The abbreviations used in this work package are in accordance with MIL-STD-12, except when the abbreviation stands for a marking actually found in the equipment.

Abbreviation/Acronym	Name
A or AMP	Ampere
AC	Alternating Current
ALT	Alternator
AUX	Auxiliary
AWG	American Wire Gauge
BLK	Black
BLU	Blue
BLWR	Blower
BNDING	Binding
BR	Blower Relay
BRKR	Breaker
BRN	Brown
CB	Circuit Board
CKT	Circuit
CMN	Common
COMM	Common
COND	Conductor
CR	Cooling Relay
DC	Direct Current
ECTS	Engine Coolant Temperature Switch
ENG	Engine
EOPS	Engine Oil Pressure Switch
FR	Fan Relay
FS	Level Switch

LIST OF ABBREVIATIONS/ACRONYMS (CONT'D)

Abbreviation/Acronym	Name
GCB	Ground Circuit Breaker
GENSET	Generator Set
GFCI	Ground Fault Circuit Interrupter
GND	Ground
GRD	Grid
GRN	Green
HR	Heater Relay
HZ	Hertz
KW	Kilowatt
J	Junction
JB	Junction Box
LMP	Lamp
LT	Light
MCS	Modular Causeway System
MFR	Manufacturer
NEU	Neutral
NO.	Number
OPT	Optional
ORG or ORN	Orange
OVHD	Overhead
pf	Pulse Frequency
PH	Phase
PNK	Pink
PML	Panel
PNL	Panel
Press.	Pressure
PWR	Power
R	Relay
RCPT or RECEPT	Receptacle
RRDF	Roll-On/Roll-Off Discharge Facility
RTN	Return
RVR	Reversing Valve Relay
SHLTR	Shelter
SHT	Sheet
SW	Switch
TB	Terminal Board
TYP	Typical
W/	With
WHT	White
WRG	Wiring
V	Volts
VAC	Volts Alternating Current
VDC	Volts Direct Current
VIO	Violet
YEL	Yellow

CHAPTER 4

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT SUPPORTING INFORMATION FOR MODULAR CAUSEWAY SYSTEM (MCS) FLOATING CAUSEWAY (FC)

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
REFERENCES

SCOPE

This work package lists all field manuals, forms, technical manuals and miscellaneous publications referenced in this manual.

ARMY REGULATIONS

AR 700-138	Army Logistics Readiness and Sustainability

CODE OF FEDERAL REGULATIONS

29 CFR	Labor, Parts 1911 to 1925
46 CFR	Shipping, Parts 90 to 139

DA PAMPHLETS

DA PAM 738-750	The Army Maintenance Management Systems (TAMMS)

FIELD MANUAL

FM 3-5	NBC, Decontamination

FORMS

DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
DA Form 2404	Equipment Inspection and Maintenance Worksheet
SF 361	Transportation Discrepancy Report
SF 368	Product Quality Deficiency Report

MISCELLANEOUS

ASME Y14.38-1999	The American Society of Mechanical Engineers Abbreviations and Acronyms
CTA 8-100	Common Table of Allowances, Army Medical Department Expendable/Durable Items
CTA 50-970	Common Table of Allowances, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items)
DOD-PRF-24648	Primer Coating, Zinc Dust Pigmented for Exterior Steel Surfaces
MIL-PRF-23236	Paint Coating Systems, Fuel and Salt Water Ballast Tanks (Metric)
SSPC SP-2	Steel Structures Painting Council, SP-2 Hand Tool Cleaning

SUPPLY CATALOG

SC 4910-95-A68	Shop Equipment, Automotive Maintenance and Repair: Field Maintenance, Wheeled Vehicle, Post, Camp and Station, Set C. Less Power
SC 4910-95-A72	Shop Equipment, Automotive Equipment and Repair, Organizational Maintenance
SC 4910-99-A07	Sets, Kits and Outfits, Shop Set, Aircraft Maintenance, Fixed Base: Hydraulic, Set C, General Support
SC 4910-99-A16	Sets, Kits and Outfits, Shop Set, Aircraft Maintenance, Fixed Base: Electrical
SC 4940-95-A64	Sets, Kits and Outfits Shop Equipment, Welding, Shelter Mounted
SC 5180-90-N26	Tool Kit, General Mechanics
SC 5180-90-N55	Sets, Kits and Outfits for Tool Kit, General Mechanics, Diesel Engine

TECHNICAL MANUALS

TM 5-805-7	Welding: Design, Procedures and Inspection
TM 5-2815-258-24	Unit, Direct Support and General Maintenance Manual for Detroit Diesel Engine Series 53
TM 9-6115-643-10	Generator Set (15KW), Skid Mounted, Tactical Quiet
TM 9-6115-642-24	Unit, Direct Support and General Maintenance Manual for Generator Set, Skid Mounted, Tactical Quiet 15 KW
TM 9-6115-643-24	Unit, Direct Support and General Maintenance Manual for Generator Set, Skid Mounted, Tactical Quiet 15 KW
TM 11-5820-890-10-8	SINCGARS Operators Manual
TM 11-5825-291-13	Operations and Maintenance Manual, Satellite Signals Navigations Sets
TM 55-1925-257-14&P	Operator, Unit, Direct Support and General Support Maintenance Manual for Incinerator Toilet/Urinal, Galley Equipment and Electric Water Heater
TM 55-1945-205-10-4	Operators Manual for the Modular Causeway System, Floating Causeway
TM 55-1945-205-24P-4	Unit, Direct Support and General Maintenance, Repair Parts and Special Tools List, Floating Causeway
TM 750-244-6	Destruction of TACOM Equipment

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
MAINTENANCE ALLOCATION CHART (MAC)

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at various levels under the standard Army Maintenance System concept.

The MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit - includes two subcolumns, C (operator/crew) and O (unit) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

Depot - includes a D subcolumn.

The tools and test equipment requirements, immediately following the MAC, if applicable, list the tools and test equipment, both special tools and common tool sets, required for each maintenance function as referenced from the MAC.

The remarks, immediately following the tools and test equipment requirements, if applicable, contain supplemental instructions and explanatory notes for a particular maintenance function.

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical and/or electrical characteristics with established standards through examination, e.g., by sight, sound or feel. This includes scheduled inspection and gaugings and evaluation of cannon tubes.

2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.

3. Service. Operations required periodically to keep an item in proper operating conditions; e.g., to clean, includes decontaminate, when required, to preserve, to drain, to paint or to replenish fuel, lubricants, chemical fluids or gases. This includes scheduled exercising and purging of recoil mechanisms.

4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.

5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating or fixing into position a spare, repair part or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

8. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. “Replace” is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance and Recoverability (SMR) code.

9. Repair. The application of the maintenance services, including fault location/troubleshooting, removal/ installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction or failure in a part, subassembly, module (component or assembly), end item or system.

NOTE

The following definitions are applicable to the “repair” maintenance function:

Services - inspect, test, service, adjust, align, calibrate and/or replace.

Fault location/troubleshooting - the process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly - the step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions - welding, grinding, riveting, straightening, facing, machining and/or resurfacing.

10. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/ operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

11. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

Explanation of Columns in the MAC

Column (1) - Group Number. Column (1) lists FGC numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) - Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies and modules for which maintenance is authorized.

Column (3) - Maintenance Function. Column (3) lists the functions to be preformed on the item listed in column (2). For a detailed explanation of these functions refer to “Maintenance Functions” outlined above.

Column (4) - Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as man-hours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figures represent the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

C - Operator or crew maintenance

O - Unit maintenance

F - Direct support maintenance

L - Specialized Repair Activity (SRA)

H - General support maintenance

D - Depot maintenance

NOTE

The “L” maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by a work time figure in the “H” column of column (4) and an associated reference code is used in the remarks column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) - Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) - Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) - Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) - Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) - Nomenclature. Name or identification of the tool or test equipment.

Column (4) - National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) - Tool Number. The manufacturer’s part number, model number or type number.

Explanation of the Columns in the Remarks

Column (1) - Remarks Code. The code recorded in column (6) of the MAC.

Column (2) - Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

OPERATOR MAINTENANCE
FLOATING CAUSEWAY
MAINTENANCE ALLOCATION CHART

MAINTENANCE ALLOCATION CHART

Table 1. MAC for Modular Causeway System. (MCS)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		REMARKS CODE
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
0101	POWERED SECTION								
010101	POWERED MODULE								
01010101	DRIVE TRAIN								
0101010101	DIESEL ENGINE								A
0101010102	MARINE GEAR								B
0101010103	TRANSFER CASE								C
0101010104	PUMP-JET	Inspect	0.5						E
		Service		3.0				1	E
		Repair					10.0		D
		Replace					50.0		D
010101010401	HYDRAULIC SYSTEM	Inspect	1.0						E
		Service	1.0	3.0				1	E
		Repair			3.0			2, 4, 7	
		Replace			6.0			2, 4, 7	
01010101040101	HYDRAULIC PUMP	Test	0.5						E
		Inspect	1.0						E
		Repair				4.0		2, 4, 7	E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
01010101040101	HYDRAULIC PUMP (CONT'D)	Replace		6.0				1, 2, 4	
01010101040102	HYDRAULIC HAND PUMP	Inspect	1.0						E
		Repair					20.0		
		Replace		2.0				1, 2, 4	
01010101040103	HYDRAULIC WAY-VALVE	Repair				2.0		2, 4, 7	
		Replace		1.5				1, 2, 4	
010101010403	FEEDBACK UNIT	Inspect	1.0						E
		Repair				2.5		2, 4, 7	
		Replace			2.0			2, 4, 7	
0101010105	ALTERNATOR	Test			1.0			7, 14, 15	E
		Inspect	0.5						E
		Replace			2.0			7, 14, 15	
01010102	ENGINE EXHAUST SYSTEM	Clean		2.0				1, 3, 9	E
		Inspect		2.0				1, 3, 9	E
		Repair			6.0			3, 7, 9	
01010103	BILGE PUMP	Test		2.0				1	E
		Inspect	1.0						E
		Replace		8.0				1	F
01010104	FIRE SUPPRESSION SYSTEM	Test					3.0		E
		Inspect	2.0				3.0		E
		Repair					8.0		G
		Replace					24.0		G

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
01010105	FUEL SYSTEM	Test	1.0						E
		Inspect	1.0						E
		Repair			4.0			7	
		Replace			12.0			7	
0101010501	FUEL/WATER SEPARATOR	Clean	1.0						E
		Inspect	1.0						E
		Repair		2.0				1	
		Replace			4.0			7	
01010106	ELECTRICAL SYSTEM	Test			1.0			7, 14, 15	E
		Adjust			1.0			7, 14, 15	
		Repair			2.0			7, 14, 15	
		Replace			8.0			7, 14, 15	
01010107	EMERGENCY STEERING SYSTEM	Inspect	2.0						E
		Service	1.0						E
		Replace		4.0				1	
0101010701	STEERING UNIT	Inspect	0.5						E
		Replace		2.0				1, 2	
0101010702	STEERING ADAPTOR	Inspect	0.5						E
		Replace		1.5				1	
01010108	HULL								
0101010801	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0101010801	EXTERIOR (CONT'D)	Repair		4.0				1, 16	
		Overhaul					24.0		
0101010802	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test		8.0			5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
01010109	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	
01010110	HATCHES & HINGES	Clean	1.0					8, 9, 23, 24	E
		Inspect	0.5						E
		Service	0.5						E
		Repair		2.0				1, 16	
		Replace		2.0				1	
0101010111	FLEXORS	Inspect	0.5						E
		Replace	4.0						
010102	NON-POWERED MODULES								
01010201	HULL								
0101020101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
		Repair		4.0				1, 16	
		Overhaul					24.0		
0101020102	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test					5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
01010202	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	
01010203	FLEXORS	Inspect	0.5						E
		Replace	4.0						
010103	OPERATORS CAB								
01010301	MIDDLE CONTROL PANEL	Test			2.0			7, 14, 15	E
		Inspect			2.0			7, 14, 15	E
		Repair			3.0			7, 14, 15	
		Replace			16.0			7, 14, 15	
01010302	LOWER CONTROL PANEL	Test			2.0			7, 14, 15	E
		Inspect			2.0			7, 14, 15	E
		Repair			3.0			7, 14, 15	
		Replace			16.0			7, 14, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
01010303	CIRCUIT BREAKER PANEL	Test			1.0			7, 14, 15	E
		Inspect			1.0			7, 14, 15	E
		Repair			2.0			7, 14, 15	
		Replace			12.0			7, 14, 15	
01010304	TERMINAL STRIP A-4	Test			1.0			7, 14, 15	E
		Inspect			1.0			7, 14, 15	E
		Repair			2.0			7, 14, 15	
		Replace			10.0			7, 14, 15	
01010305	SPOTLIGHT	Adjust		1.0				1	
		Replace		1.0				1	
01010306	DEFROSTER	Inspect	1.0						E
		Replace			4.0			7, 14, 15	
01010307	HEATER	Inspect		2.0				1	
		Repair			4.0			7, 14, 15	
		Replace			6.0			7, 14, 15	
01010308	WINDSHIELD WIPER	Repair		1.0				1	
		Replace		2.0				1	
01010309	COMMUNICATIONS EQUIPMENT								
0101030901	VHF/FM HANDHELD TRANSCEIVER	Repair					8.0		
		Replace		1.0				1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0101030902	AN/PSN-11 INTERFACE & SWITCHBOX	Repair					6.0		
		Replace			1.0			7, 14, 15	
0101030903	LOUDHAILER	Repair					8.0		
		Replace	0.5						
0101030904	SINCGARS RADIO								H
0101030905	VHF/FM DCS TRANSCEIVER	Repair					12.0		
		Replace		1.0				1	
01010310	NAVIGATION EQUIPMENT	Test	0.5						E
		Inspect	1.0						E
0101031001	COMPASS	Inspect	2.0.						E
		Replace		2.0				1	
		Calibrate		4.0				1	E
0101031002	PLGR								I
01010311	MAST	Inspect	3.0						E
		Repair		3.0				1	
0101031101	NAVIGATION LIGHTS	Repair		1.0				1	
		Replace		1.0				1	
0101312	OPERATORS CAB ELECTRICAL SYSTEM	Test			4.0			7, 14, 15	E
		Inspect			4.0			7, 14, 15	E
		Repair				6.0		7, 14, 15	
		Replace			10.0			7, 14, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
010104	ANCHOR ASSEMBLY	Inspect	1.0						E
		Repair		1.0				1	
		Replace		1.0				1	
0102	INTERMEDIATE SECTION								
010201	NON-POWERED MODULES								
01020101	HULL								
0102010101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E
		Repair		4.0				1, 16	
		Overhaul					24.0		
0102010102	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test		8.0			5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
01020102	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	
01020103	FLEXORS	Inspect	0.5						E
		Replace	4.0						

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
0103	CAUSEWAY FERRY BEACH- END SECTION								
010301	NON-POWERED MODULE								
01030101	HULL								
0103010101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E
		Repair		4.0				1, 16	
		Overhaul					24.0		
0103010102	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test		8.0			5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
01030102	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	
01030103	FLEXORS	Inspect	0.5						E
		Replace	4.0						
0104	CONTAINERS	Clean	1.0						E
		Inspect	2.0						E
		Repair			4.0			7	
		Replace					8.0		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
0101010101	DIESEL ENGINE	Inspect	4.0						E
		Service	4.0	4.0					E
		Repair				30.0		7, 27-218	
		Replace			120.0			7, 27-218	
		Overhaul					80.0		
010101010101	ENGINE BLOCK ASSEMBLY	Inspect	2.0						E, J
		Repair				6.0		7, 27-52	J
		Replace				120.0		7, 27-52	J
010101010102	CYLINDER HEAD ASSEMBLY	Clean				5.0		7, 53-85	E, K
		Repair				12.0		7, 53-85	K
		Inspect			6.0			7, 53-85	E, K
		Replace			8.0			7, 53-85	K
010101010103	CRANKSHAFT ASSEMBLY	Repair			16.0			7, 86-106	L
		Replace			24.0			7, 86-106	L
010101010104	CAMSHAFT ASSEMBLY	Repair				12.0		7, 131-141	
		Replace				16.0		7, 131-141	
010101010105	FLYWHEEL ASSEMBLY	Inspect			3.0			7, 107-112	M
		Replace			5.0			7, 107-112	M

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
010101010106	PISTON ASSEMBLY	Clean				2.0		7, 113-130	N
		Repair				3.0		7, 107-112	M
		Inspect				2.0		7, 113-130	N
		Rebuild				4.5		7, 113-130	N
		Replace				3.0		7, 113-130	N
010101010107	ENGINE BALANCE	Inspect				6.0		7, 131-141	O
		Adjust				3.0		7, 131-141	O
		Replace				8.0		7, 131-141	O
		Repair				8.0		7, 131-141	O
010101010108	FUEL SYSTEM	Inspect	0.5						E, P
01010101010801	FUEL PUMP	Inspect			1.0			7, 142-187	E
		Repair			4.0			7, 142-187	
		Replace			2.0			7, 142-187	
01010101010802	PRIMING PUMP	Inspect		1.5				1, 142-187	E
		Replace		2.0				1, 142-187	
010101010109	ELECTRIC GOVERNOR	Test			0.5				E
		Adjust		1.0				7, 142-187	
		Repair					5.0		
		Replace		2.0				1, 142-187	
		Inspect	0.5						E, Q
010101010110	AIR INTAKE SYSTEM	Clean		2.0				1, 188-195	E, Q
		Replace		3.0				1, 188-195	Q

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
01010101011001	BLOWER	Inspect			2.0	2.0		7, 188-195	E
		Adjust				4.0		7, 188-195	
		Repair				18.0		7, 188-195	
01010101011002	TURBOCHARGER	Inspect		2.0				1, 188-195	E, R
		Replace			8.0			7, 188-195	
		Repair					18.0		
		Replace			6.0			7, 188-195	
010101010111	LUBE OIL SYSTEM	Service	5.0	5.0					E, S
		Inspect	1.0						E
01010101011101	LUBE OIL PUMP	Inspect				3.0		7, 196-203	E
		Repair				4.0		7, 196-203	
		Replace				4.0		7, 196-203	
01010101011102	LUBE OIL COOLER	Clean			2.0			7	E
		Test			1.5			7, 25, 26	E
		Inspect			2.0			7	E
		Repair			4.0			7	E
		Replace			2.0			7	
010101010112	FRESH WATER COOLING SYSTEM	Inspect	1.0						E, T
		Clean		1.0				1	
01010101011201	FRESH WATER PUMP	Inspect			2.5			7, 212-215	E
		Repair			6.0			7, 212-215	
		Replace			3.0			7, 212-215	
		Test			2.0			7, 25, 26	E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
01010101011202	FRESH WATER COOLER	Clean			2.0			7	E
		Inspect			1.0			7	E
		Repair			4.0			7	
		Replace			3.0			7	
010101010113	RAW WATER COOLING SYSTEM	Inspect	1.0						E, U
01010101011301	RAW WATER PUMP	Inspect		2.0				1	E
		Clean		2.0				1	E, U
		Repair			4.0			7, 212-215	
		Replace		2.5				1, 212-215	
010101010114	ELECTRICAL SYSTEM	Test			4.0			7, 14, 15	E, V
		Inspect			2.0			7, 14, 15	E, V
		Repair			3.0			7, 14, 15	V
		Replace			16.0			1, 7, 14, 15	V
01010101011401	STARTER	Inspect	1.0						E
		Repair				6.0		7, 14, 15	
		Replace		3.0				1, 14, 15	
01010101011402	COLD PACK STARTER	Clean		1.0				1	E
		Inspect	0.5						E
		Adjust		1.0				1, 14, 15	
		Repair		2.5				1, 14, 15	
		Replace		3.0				1, 14, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
010101010115	OVER SPEED GOVERNOR	Test				1.0		7	E
		Adjust				1.5		7, 184-187	
		Repair				5.0		7, 184-187	
		Replace				4.0		7, 184-187	
010101010116	AUTO SHUTDOWN SYSTEM	Test		1.0					E
		Adjust			2.0			7, 14, 15	
		Repair				6.0		7, 14, 15	
		Replace		4.0			8.0	1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
0101010102	MARINE GEAR	Inspect	1.0						E
		Align			2.0			7, 17	
		Service	1.0	4.0				1	E
		Rebuild					25.0		W
		Replace			28.0			4, 7, 17	
010101010201	OIL SYSTEM	Inspect	0.5						E, X
		Repair		.5				1, 11	X
01010101020101	OIL COOLER	Clean	1.0						E
		Inspect	1.0						E
		Replace		4.0				1	
01010101020102	LINES & HOSES	Inspect	0.5						E
		Repair		1.0				1	
01010101020103	OIL PUMP	Inspect	1.0						E
		Repair		2.0				1, 3	
01010101020104	ELECTRIC CONTROL VALVE	Repair					8.0		
		Replace			6.0			7, 14, 15	
010101010202	GEAR MOUNTS	Inspect	.05						E
		Replace			2.0			3,7	
010101010203	COUPLING BLOCKS	Clean			1.0			7	E
		Inspect			1.0			7	E
		Replace			4.0			3, 7	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
010101010204	OUTPUT FLANGE	Inspect	0.5						E
		Align			2.0			3, 7, 17	
		Replace			4.0			3, 7, 17	
010101010205	OUTPUT SEAL	Inspect			2.0			7	E
		Replace			2.0			3, 7	
010101010206	INPUT FLANGE (ENGINE CONNECTION)	Inspect	0.5						E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
0101010103	TRANSFER CASE	Clean		2.0				1	E
		Service	1.0	4.0				1	E
		Overhaul				24.0			
		Rebuild					24.0	2, 7, 17	Y
		Replace			24.0			2, 7, 17	
010101010301	OIL SYSTEM	Inspect	1.0						E
		Repair		2.5				1	
01010101030101	OIL PUMP	Inspect	4.0						E
		Replace		2.5				1	
01010101030102	HOSES & FITTINGS	Inspect	0.2						E
		Replace		2.0				1	
01010101030103	OIL COOLER	Inspect	0.2						E
010101010302	GEAR SHAFT	Inspect				5.0		7	E
		Replace		3.5				1	
		Repair				8.0		3, 7, 17	
		Replace				7.0		3, 7, 17, 19	
01010101030201	UPPER SHAFT	Inspect				5.0		7	X
									E
		Repair				8.0		3, 7, 17	
		Replace				7.0		3, 7, 17, 19	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0101010103020101	INPUT SEAL	Clean			2.0			7	E
		Inspect			2.0			7	E
		Replace			2.0			3, 7, 17, 19	
0101010103020102	OUTPUT SEAL	Clean			2.0			7	E
		Inspect			2.0			7	E
		Replace			2.0			3, 7, 17, 19	
01010101030202	INTERMEDIATE SHAFT	Inspect				2.5		7	E
		Repair				5.5		3, 7, 17	
		Replace				6.5		3, 7, 17, 19	
01010101030203	LOWER SHAFT	Inspect				4.0		7	E
		Repair				8.0		3, 7, 17	
		Replace				6.0		3, 7, 17, 19	
0101010103020301	INPUT SEAL	Clean			2.0			7	E
		Replace			2.0			3, 7, 17, 19	
		Inspect			2.0			7	E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
02	**ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**								
0201	INTERMEDIATE SECTION								
020101	NON-POWERED MODULE								
02010101	HULL								
0201010101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Repair		4.0				1, 16	
		Service	1.5						E
		Overhaul					24.0		
		Inspect					2.0		
0201010102	INTERIOR	Clean					4.0		
		Test		6.0			5.0	1, 25, 26	E
		Repair					6.0		
02010102	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Overhaul					50.0		
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
02010103	FLEXORS	Inspect	0.5						E
		Replace	4.0						
0202	COMBINATION BEACH-END SECTION								
020201	NON-POWERED MODULE								
02020101	HULL								
0202010101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E
		Repair		4.0				1, 16	
		Overhaul					24.0		
		Inspect					2.0		
0202010102	INTERIOR	Clean					4.0		
		Test		6.0			5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
02020102	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	
02020103	FLEXORS	Inspect	0.5						E
		Replace	4.0						
0203	GENERATOR SHELTER			4.0				1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
020301	ARMY TACTICAL QUIET GENERATOR (ATQG)								AD
020302	FUEL SYSTEM	Inspect	1.0						E
		Repair			1.5			7	
		Replace		1.0				1	
02030201	MANUAL FUEL PUMP	Clean		1.0				1	E
		Inspect	1.0	1.0				1	E
		Repair		2.0				1	
		Replace		2.0				1	
020303	LOUVERS	Clean		1.0				1	E
		Inspect	1.0						E
		Service		1.0				1	E
		Repair		3.0				1	
		Replace		4.0				1	
020304	ELECTRICAL SYSTEM	Test			2.0			7, 14, 15	E
		Repair		2.0	3.0			1, 7, 14, 15	
		Replace			5.0			7, 14, 15	
020305	FIRE SUPPRESSION SYSTEM	Test					4.0		E, G
		Inspect	1.0						E
		Repair					4.0	1, 14, 15	G
		Replace					40.0		G
0204	PERSONNEL SHELTER								

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
020401	HEAT PUMP	Clean		4.0				1	E
		Inspect		1.0				1	E
		Service			3.0			7, 21	E
		Repair		2.0	4.0			1, 7,14, 15, 21	
		Replace			8.0			7,14, 15, 21	
		Rebuild				8.0		7,14, 15, 21	
020402	INCINOLET								AE
020403	ELECTRICAL SYSTEM	Inspect	2.0						E
		Repair		12.0	3.0			1, 7, 14, 15	
		Replace			12.0			7, 14, 15	
020404	COMMUNICATIONS EQUIPMENT								
02040401	VHF\FM HANDHELD TRANSCEIVER	Replace	1.0						
		Repair					8.0		
0205	LIGHT TOWER								
		Inspect			0.5			10, 15	E
020501	ELECTRICAL SYSTEM	Test			1.0			10, 15	E
		Repair			6.0			10, 15	
02050101	BATTERIES	Test			1.0			10, 13	E
		Inspect	0.5						E
		Replace		2.0				1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
02050102	OIL PRESSURE UNIT	Test			1.0			10	E
		Repair			1.0			10	
		Replace			1.5			10	
02050103	STARTING CIRCUIT	Repair			2.0			10, 15	
		Replace			3.0			10, 15	
02050104	ENGINE TEMPERATURE UNIT	Test			1.0			10, 18	E
		Replace			2.5			10, 18	
		Repair			2.0			10, 18	
02050105	HOURMETER UNIT	Repair			1.5			10	
		Replace			2.0			10	
02050106	SHUTDOWN CIRCUIT	Repair			2.0			10	
		Replace			4.0			10	
02050107	LAMP SYSTEM	Test	1.0						E
		Repair			2.0			10, 15	
		Replace			6.0			10, 15	
02050108	LAMP BALLAST SYSTEM	Test			0.5			10, 15	E
		Repair			2.0			10, 15	
		Replace			3.0			10, 15	
020502	GENERATOR	Clean		2.0				1	E
		Inspect					12.0		
		Repair					18.0		
		Replace					24.0		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02050202	CONTROL PANEL	Inspect	1.0						E
		Repair			3.0			10, 15	
		Replace			4.5			10, 15	
02050205	DIESEL ENGINE	Service	4.0	2.0				1	E
		Adjust		3.0				1	
		Overhaul					16.0		
		Repair				16.0		10	
		Replace			16.0			10	
0205020501	ENGINE FUEL SYSTEM	Inspect	1.0						E
		Repair		4.0				1	
		Replace			8.0			10	
020502050101	FUEL PUMP	Inspect	1.0						E
		Repair				4.0		10	
		Replace			5.0			10	
020502050102	FUEL TANK	Clean	2.0						E
		Inspect	1.0						E
		Repair		2.0				1	
		Replace		2.0				1	
0205020502	ENGINE AIR SYSTEM	Inspect	1.0						E
		Repair		2.0				1	
		Replace		4.0				1	
0205020503	ENGINE COOLING SYSTEM	Inspect	1.0						E
		Repair		3.0				1	
		Replace		2.0		5.0		1, 10	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020502050301	FAN ASSEMBLY	Inspect	0.5						E
		Repair		1.5				1	
		Replace		2.0				1	
020502050302	COOLING WATER PUMP	Inspect			1.0			10	E
		Repair				4.0		10	
		Replace			5.0			10	
020502050303	RADIATOR	Clean	1.0						E
		Inspect		1.0				1	E
		Service	2.0	4.0				1	E
		Repair				4.0		10	
		Replace		2.0	3.0			1, 10	
0205020504	CYLINDER HEAD	Inspect		1.0				1	E
		Adjust					2.0		
		Repair					8.0		
		Replace					5.0		
0205020505	VIBRATION DAMPER	Repair					4.0		
		Replace					4.0		
0205020506	EXHAUST SYSTEM	Clean	1.5						E
		Inspect	1.0						E
		Repair		3.0				1, 16	
		Replace		5.0				1	
0205020507	CRANKSHAFT	Inspect					4.0		
		Repair					8.0		
		Replace					8.0		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0205020508	PISTON	Inspect					4.0		
		Repair					4.0		
		Replace					4.0		
02050206	RUNNING GEAR	Service		2.0				1	E
		Repair		2.0		2.0		1, 10	
		Replace		18.0				1	
0205020601	TIRES	Inspect	0.5						E
		Repair				1.0		10	
		Replace				1.0		10	
02050207	SUPPORT TOWER	Inspect	0.5						E
		Service	1.0						E
		Repair			2.0			10	
		Replace			6.0			10	
02050208	TOWER RAISING ASSEMBLY	Inspect	0.5						E
		Repair			1.0			10	
		Replace			3.0			10	
02050209	ENCLOSURE	Inspect	0.5						E
		Repair			2.0			10	
		Replace			6.0			10	
0206	EASY ANCHOR	Inspect	2.0						E
		Service		1.0				1	E
		Repair			4.0			6, 7	
		Replace			6.0			6, 7	
0207	RHIB (ZODIAC)								

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020701	STEERING & THROTTLE	Inspect	1.0						E
		Service	1.0						E
		Repair			4.0			10	
		Replace			8.0			10	
020702	CONTROL PANEL	Inspect			2.0			10, 15	E
		Repair			4.0			10, 15	
		Replace			6.0			10, 15	
020703	BOAT HULL	Inspect	1.0						E
		Repair		2.0		20.0		1, 219-230	
		Replace				18.0		1, 219-230	
020704	NAVIGATION SYSTEM	Repair			3.0		12.0	7	
		Replace		2.0				1	
020705	OUTBOARD ENGINE	Test		4.0					E
		Repair					12.0		
		Rebuild					12.0		
		Replace		4.0					
02070501	ENGINE COVER	Inspect	1.0						E
		Repair			2.0			10	
		Replace			2.0			10	
02070502	LOWER ENGINE COVER	Inspect	1.0						E
		Repair			2.0			10	
		Replace			2.0			10	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
02070503	ELECTRICAL STARTER	Repair			2.0			10, 15	
		Replace			3.0			10, 15	
02070504	POWER TRIM/TILT ELECTRICAL	Adjust		1.0				1	
		Repair			2.0			10, 15	
		Replace			2.5			10, 15	
02070505	IGNITION	Repair					8.0		
		Replace					8.0	2, 17	
02070506	INTAKE MANIFOLD	Inspect			1.0			10	E
		Repair			3.0			10	
		Replace			3.0			10	
02070507	CARBURETOR	Adjust		1.0				1	
		Repair			3.0			10	
		Replace			3.0			10	
02070508	ELECTRIC PRIMER SYSTEM	Repair			3.0			10, 15	
		Replace			2.0			10, 15	
02070509	FUEL TANK	Inspect	1.0						E
		Repair			3.0			10	
		Replace	2.0						
02070510	FUEL HOSE & PRIMER BULB	Repair		1.0				1	
		Replace	1.0						
02070511	FUEL PUMP	Repair			2.0			10	
		Replace			2.0			10	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02070512	CRANKSHAFT & PISTON	Inspect					6.0		
		Repair					8.0		
		Replace					8.0		
02070513	CYLINDER & CRANKCASE	Inspect					6.0		
		Rebuild					16.0		
		Replace					8.0		
02070514	EXHAUST HOUSING	Inspect	1.0						E
		Repair			3.0			10	
		Replace			3.0			10	
02070515	POWER TRIM/TILT HYDRAULIC	Repair					4.0		
		Replace					3.0		
02070516	POWER TRIM/TILT MIDSECTION	Inspect					2.0		
		Repair					4.0		
		Replace					4.0		
02070517	GEARCASE	Inspect			3.0			10	E
		Repair					8.0		
		Replace					8.0		
0207051701	BEARING HOUSING ASSEMBLY	Inspect					2.0		
		Repair					3.0		
		Replace					3.0		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0207051702	PROPELLER SHAFT ASSEMBLY	Inspect					2.0		
		Repair					4.0		
		Replace					3.0		
0207051703	IMPELLER ASSEMBLY	Inspect					4.0		
		Repair					4.0		
		Replace					4.0		
0207051704	WATER PUMP ASSEMBLY	Inspect					4.0		
		Repair					4.0		
		Rebuild					8.0		
		Replace					4.0		
02070518	STEERING LINK KIT	Inspect	1.0						E
		Repair		1.0				1	
		Replace		2.0				1	
02070519	BATTERY	Test			2.0			10, 13	
		Service			2.0			10	
		Replace			2.0			10	
0207051901	BATTERY CABLE	Clean	0.5						
		Inspect	0.5						E
		Repair		1.0				1	
		Replace		1.0				1	
020706	FIRE EXTINGUISHER	Inspect	0.5						E
		Replace	2.0						E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0208	CONTAINERS	Inspect	2.0						E
		Clean	1.0						E
		Repair			4.0			7	
		Replace					8.0		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
02	**ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**								
03	**MODULAR WARPING TUG (WT)**								
0301	POWERED SECTION								
030101	POWERED MODULE								
03010101	DRIVE TRAIN								
0301010101	DIESEL ENGINE								Z
0301010102	MARINE GEAR								AA
0301010103	TRANSFER CASE								AB
0301010104	PUMP-JET ASSEMBLY	Inspect	0.5						E
		Service		3.0				1	E
		Repair					10.0		D
		Replace					50.0		
030101010401	HYDRAULIC SYSTEM	Inspect	1.0					1	E
		Service	1.0	3.0				1	E
		Repair			3.0			2, 4, 7	
		Replace			6.0			2, 4, 7	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
03010101040101	HYDRAULIC PUMP	Test	0.5						E
		Inspect	1.0						E
		Repair				4.0		2, 4, 7	
		Replace		6.0				1, 2, 4	
03010101040102	HYDRAULIC HAND PUMP	Inspect	1.0						E
		Repair					20.0		
		Replace		2.0				1, 2, 4	
03010101040103	HYDRAULIC WAY-VALVE	Repair				2.0		2, 4, 7	
		Replace		1.5				1, 2, 4	
030101010402	FEEDBACK UNIT	Inspect	1.0						E
		Repair				2.5		2, 4, 7	
		Replace			2.0			2, 4, 7	
0301010105	ALTERNATOR	Test			1.0			7, 14, 15	E
		Inspect	0.5						E
		Replace			2.0			7, 14, 15	
03010102	ENGINE EXHAUST SYSTEM	Clean		2.0				1, 3, 9	E
		Inspect		2.0				1, 3, 9	E
		Repair			6.0			3, 7, 9	
03010103	BILGE PUMP SYSTEM	Test		2.0				1	E
		Inspect	1.0						E
03010104	FIRE SUPPRESSION SYSTEM	Test					3.0		E
		Inspect	2.0				3.0		E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
03010104	FIRE SUPPRESSION SYSTEM (CONT'D)	Repair					8.0		G
		Replace					24.0		G
03010105	FUEL SYSTEM	Test	1.0						E
		Inspect	1.0						E
		Repair			4.0			7	
		Replace			12.0			7	
0301010501	FUEL/WATER SEPARATOR	Clean	1.0						E
		Inspect	1.0						E
		Repair		2.0				1	
		Replace			4.0			7	
03010106	ELECTRICAL SYSTEM	Test			1.0			7, 14, 15	E
		Adjust			1.0			7, 14, 15	
		Repair			2.0			7, 14, 15	
		Replace			8.0			7, 14, 15	
03010107	EMERGENCY STEERING SYSTEM	Inspect	2.0						E
		Service	1.0						E
		Replace		4.0				1	
0301010701	STEERING UNIT	Inspect	0.5						E
		Replace		2.0				1	
0301010702	STEERING ADAPTOR	Inspect	0.5						E
		Replace		1.5				1	
03010108	HULL								

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0301010801	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E
		Repair		4.0				1, 16	
		Overhaul					24.0		
0301010802	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test					5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
03010109	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	
03010110	HATCHES & HINGES	Clean	1.0						E
		Inspect	0.5					1	E
		Service	0.5						E
		Repair		2.0				1, 16	
		Replace		2.0				1	
03010111	FLEXORS	Inspect	0.5						E
		Replace	4.0						
030102	NON-POWERED MODULE								
03010201	HULL								

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0301020101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E
		Repair		4.0				1, 16	
		Overhaul					24.0		
0301020102	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test		8.0			5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
03010202	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace	1.0					1	
030103	OPERATORS CAB								
03010301	MIDDLE CONTROL PANEL	Test			2.0			7, 14, 15	E
		Inspect			2.0			7, 14, 15	E
		Repair			3.0			7, 14, 15	
		Replace			16.0			7, 14, 15	
03010302	LOWER CONTROL PANEL	Test			2.0			7, 14, 15	E
		Inspect			2.0			7, 14, 15	E
		Repair			3.0			7, 14, 15	
		Replace			16.0			7, 14, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
03010303	CIRCUIT BREAKER PANEL	Test			1.0			7, 14, 15	E
		Inspect			1.0			7, 14, 15	E
		Repair			2.0			7, 14, 15	
		Replace			12.0			7, 14, 15	
03010304	TERMINAL BOARD A-4	Test			1.0			7, 14, 15	E
		Inspect			1.0			7, 14, 15	E
		Repair			2.0			7, 14, 15	
		Replace			10.0			7, 14, 15	
03010305	SPOTLIGHT	Adjust		1.0				1	
		Replace		1.0				1	
03010306	DEFROSTER	Inspect	1.0						E
		Replace			4.0			7, 14, 15	
03010307	HEATER	Inspect		2.0				1	E
		Repair			4.0			7, 14, 15	
		Replace			6.0			7, 14, 15	
03010308	WINDSHIELD WIPER	Repair		1.0				1	
		Replace		2.0				1	
03010309	COMMUNICATIONS EQUIPMENT								
0301030901	VHF/FM HANDHELD TRANSCEIVER	Repair					8.0		
		Replace		1.0				1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0301030902	AN/PSN-11 INTERFACE & SWITCHBOX	Repair					6.0		
		Replace			1.0			7, 14, 15	
0301030903	LOUDHAILER	Test	0.5						E
		Repair					8.0		
		Replace	0.5						
0301030904	SINCGARS RADIO								H
0301030905	VHF/FM DSC TRANSCEIVER	Repair					12.0		
		Replace		1.0				1	
03010310	NAVIGATION EQUIPMENT	Test	0.5						E
		Inspect	1.0						E
0301031001	COMPASS	Inspect	2.0						E
		Replace		2.0				1	
		Calibrate		4.0				1	
0301031002	PLGR								I
03010311	MAST	Inspect	3.0						E
		Repair		3.0				1	
0301031101	NAVIGATION LIGHTS	Repair		1.0				1	
		Replace		1.0				1	
03010312	OPERATORS CAB ELECTRICAL SYSTEM	Test			4.0			7, 14, 15	E
		Inspect			4.0			7, 14, 15	E
		Repair				6.0		7, 14, 15	
		Replace			10.0			7, 14, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
030104	ANCHOR ASSEMBLY	Inspect	1.0						E
		Repair		1.0				1	
		Replace		1.0				1	
0302	CONTAINERS	Clean	1.0						E
		Inspect	2.0						E
		Repair			4.0			7	
		Replace					8.0		
0303	WINCH								AC
030301	WINCH DIESEL ENGINE								AD
030302	WINCH ASSEMBLY	Clean			8.0			7	E
		Test			4.0			7	E
		Inspect			4.0			7	E
		Service	4.0						
		Repair			4.0			7	
		Replace	3.0						

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
02	**ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**								
03	**MODULAR WARPING TUG (WT)**								
0301010101	DIESEL ENGINE	Inspect	4.0						E
		Service	4.0	4.0					E
		Repair				30.0		7, 27-218	
		Replace			120.0			7, 27-218	
		Overhaul					80.0		
030101010101	ENGINE BLOCK ASSEMBLY	Inspect	2.0						E, J
		Repair				6.0		7, 27-52	J
		Replace				120.0		7, 27-52	J
030101010102	CYLINDER HEAD ASSEMBLY	Clean				5.0		7, 53-85	K
		Inspect			6.0			7, 53-85	K
		Repair				12.0		7, 53-85	K
		Replace			8.0			7, 53-85	K
030101010103	CRANKSHAFT ASSEMBLY	Repair			16.0			7, 86-106	L
		Replace			24.0			7, 86-106	L
030101010104	CAMSHAFT ASSEMBLY	Repair				12.0		7, 131-141	
		Replace				16.0		7, 131-141	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
030101010105	FLYWHEEL ASSEMBLY	Inspect			3.0			7, 107-112	M
		Repair				3.0		7, 107-112	M
		Replace			5.0			7, 107-112	M
030101010106	PISTON ASSEMBLY	Clean				2.0		7, 113-130	N
		Inspect				2.0		7, 113-130	N
		Rebuild				4.5		7, 113-130	N
		Replace				3.0		7, 113-130	N
030101010107	ENGINE BALANCE	Inspect				6.0		7, 131-141	O
		Adjust				3.0		7, 131-141	O
		Repair				8.0		7, 131-141	O
		Replace				8.0		7, 131-141	O
030101010108	FUEL SYSTEM	Inspect	0.5						E, P
03010101010801	FUEL PUMP	Inspect			1.0			7, 142-187	E
		Repair			4.0			7, 142-187	
		Replace			2.0			7, 142-187	
03010101010802	PRIMING PUMP	Inspect		1.5				1, 142-187	E
		Replace		2.0				1, 142-187	
030101010109	ELECTRIC GOVERNOR	Test		0.5					E
		Adjust			1.0			7, 142-187	
		Repair					5.0		
		Replace		2.0				1, 142-187	
030101010110	AIR INTAKE SYSTEM	Clean		2.0				1, 188-195	E, Q
		Inspect	0.5						E, Q
		Replace		3.0				1, 188-195	Q

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
03010101011001	BLOWER	Inspect			2.0	2.0		7, 188-195	E
		Adjust				4.0		7, 188-195	
		Repair				18.0		7, 188-195	
		Replace			8.0			7, 188-195	
03010101011002	TURBOCHARGER	Inspect			2.0			1, 188-195	E, R
		Repair					18.0		
		Replace			6.0			7, 188-195	
030101010111	LUBE OIL SYSTEM	Service	5.0	5.0					E, S
		Inspect	1.0						E, S
03010101011101	LUBE OIL PUMP	Inspect				3.0		7, 196-203	E
		Repair				4.0		7, 196-203	
		Replace				4.0		7, 196-203	
03010101011102	LUBE OIL COOLER	Clean			2.0			7	E
		Test			1.5			7, 25, 26	E
		Inspect			2.0			7	E
		Repair			4.0			7	
		Replace			2.0			7	
030101010112	FRESH WATER COOLING SYSTEM	Inspect	1.0						E, T
		Clean		1.0				1	
03010101011201	FRESH WATER PUMP	Inspect			2.5			7, 212-215	E
		Repair			6.0			7, 212-215	
		Replace			3.0			7, 212-215	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
03010101011202	FRESH WATER COOLER	Clean			2.0			7	E
		Test			2.0			7, 25, 26	E
		Inspect			1.0			7	E
		Repair			4.0			7	
		Replace			3.0			7	
030101010113	RAW WATER COOLING SYSTEM	Clean	1.0						E, U
		Inspect		2.0				1	E, U
03010101011301	RAW WATER PUMP	Inspect		2.0				1	E
		Repair			4.0			7, 212-215	
		Replace		2.5				1, 211-215	
030101010114	ELECTRICAL SYSTEM	Test			4.0			7, 14, 15	E, V
		Inspect			2.0			7, 14, 15	E, V
		Repair			3.0			7, 14, 15	V
		Replace		4.0	16.0			1, 7, 14, 15	V
03010101011401	STARTER	Inspect	1.0						E
		Repair				6.0		7, 14, 15	
		Replace		3.0				1, 14, 15	
03010101011402	COLD PACK STARTER	Clean		1.0				1	E
		Inspect	0.5						E
		Adjust		1.0				1, 14, 15	
		Repair		2.5				1, 14, 15	
		Replace		3.0				1, 14, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
030101010115	OVER SPEED GOVERNOR	Test				1.0		7	E
		Adjust				1.5		7, 184-187	
		Repair				5.0		7, 184-187	
		Replace				4.0		7, 184-187	
030101010116	AUTO SHUTDOWN SYSTEM	Test		1.0					E
		Adjust			2.0			7, 14, 15	
		Repair				6.0		7, 14, 15	
		Replace		4.0			8.0	1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
02	**ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**								
03	**MODULAR WARPING TUG (WT)**								
0301010102	MARINE GEAR	Inspect	1.0						E
		Align			2.0			7, 17	
		Service	1.0	4.0				1	E
		Replace			28.0			4, 7, 17	
		Rebuild					25.0		W
030101010201	OIL SYSTEM	Inspect	0.5						E, X
		Repair		0.5				1, 11	X
03010101020101	OIL COOLER	Clean	1.0						E
		Inspect	1.0						E
		Replace		4.0				1	
03010101020102	LINES & HOSES	Inspect	0.2						E
		Repair		0.5				1	
		Replace		2.0				1	
03010101020103	OIL PUMP	Inspect	1.0						E
		Replace			2.0			1, 3	
03010101020104	ELECTRIC CONTROL VALVE	Repair				8.0			
		Replace			6.0			7, 14, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
030101010202	GEAR MOUNTS	Inspect	0.5						E
		Replace			2.0			3, 7	
030101010203	COUPLING BLOCKS	Clean			1.0			7	E
		Inspect			1.0			7	E
		Replace			4.0			3, 7	
030101010204	OUTPUT FLANGE	Inspect	0.5						E
		Align			2.0			3, 7, 17	
		Replace			4.0			3, 7, 17	
030101010205	OUTPUT SEAL	Inspect			2.0			7	E
		Replace			2.0			3, 7	
030101010206	INPUT FLANGE (ENGINE CONNECTION)	Inspect	0.5						E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
02	**ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**								
03	**MODULAR WARPING TUG (WT)**								
0301010103	TRANSFER CASE	Clean		2.0				1	E
		Service	1.0	4.0				1	E
		Overhaul				24.0			
		Rebuild					24.0	2, 7, 17	Y
		Replace			24.0			2, 7, 17	
030101010301	OIL SYSTEM	Inspect	1.0						E
		Repair		2.5				1	
03010101030101	OIL PUMP	Inspect	4.0						E
		Replace		2.5				1	
03010101030102	HOSES & FITTINGS	Inspect	0.2						E
		Replace		2.0				1	
03010101030103	OIL COOLER	Inspect	0.2						E
		Replace		3.5				1	
030101010302	GEAR SHAFT	Inspect				5.0		7	E
		Repair				8.0		3, 7, 17	
		Replace				7.0		3, 7, 17, 19	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
03010101030201	UPPER SHAFT	Inspect				5.0		7	E
		Repair				8.0		3, 7, 17	
		Replace				7.0		3, 7, 17, 19	
0301010103020101	INPUT SEAL	Clean			2.0			7	E
		Inspect			2.0			7	E
		Replace			2.0			3, 7, 17, 19	
0301010103020102	OUTPUT SEAL	Clean			2.0			7	E
		Inspect			2.0			7	E
		Replace			2.0			3, 7, 17, 19	
03010101030202	INTERMEDIATE SHAFT	Inspect				2.5		7	E
		Repair				5.5		3, 7, 17	
		Replace				6.5		3, 7, 17, 19	
03010101030203	LOWER SHAFT	Inspect				4.0		7	E
		Repair				8.0		3, 7, 17	
		Replace				6.0		3, 7, 17, 19	
0301010103020301	INPUT SEAL	Clean			2.0			7	E
		Inspect			2.0			7	E
		Replace			2.0			3, 7, 17, 19	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	**MODULAR CAUSEWAY SYSTEM (MCS)**								
01	**CAUSEWAY FERRY (CF)**								
02	**ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**								
04	**FLOATING CAUSEWAY (FC)**								
0401	INTERMEDIATE SECTION								
040101	NON-POWERED MODULE								
04010101	HULL								
0401010101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E
		Repair		4.0				1, 16	
		Overhaul					24.0		
0401010102	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test		6.0			5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
04010102	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
04010102	GUILLOTINE FITTINGS (CONT'D)	Replace		1.0				1	
04010103	FLEXORS	Inspect	0.5						E
		Replace	4.0						
0402	COMBINATION BEACH-END SECTION								
040201	NON-POWERED MODULES								
04020101	HULL								
0402010101	EXTERIOR	Clean		4.0				8, 9, 23, 24	E
		Inspect	1.0						E
		Service	1.5						E
		Repair		4.0				1, 16	
		Overhaul					24.0		
0402010102	INTERIOR	Clean					4.0		
		Inspect					2.0		
		Test					5.0	1, 25, 26	E
		Repair					6.0		
		Overhaul					50.0		
04020102	GUILLOTINE FITTINGS	Clean		1.0				8, 9, 23, 24	E
		Inspect	0.5						E
		Repair		3.0				1, 16	
		Replace		1.0				1	
04020103	FLEXORS	Inspect	0.5						E
		Replace	4.0						

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
0403	GENERATOR SHELTER	Repair		4.0				1	
040301	ARMY TACTICAL QUIET GENERATOR (ATQG)								
040302	FUEL SYSTEM	Clean					1.0		E
		Inspect					1.0	7	
		Repair					5.0	1	
04030201	MANUAL FUEL PUMP	Clean		1.0				1	E
		Inspect	1.0	1.0				1	E
		Repair		2.0				1	
		Replace		2.0				1	
040303	LOUVERS	Clean		1.0				1	E
		Inspect	1.0						E
		Service		1.0					E
		Repair		3.0				1	
		Replace		4.0				1	
040304	ELECTRICAL SYSTEM	Test			2.0			7, 14, 15	E
		Repair		2.0	3.0			1, 7, 14, 15	
		Replace			5.0			7, 14, 15	
040305	FIRE SUPPRESSION SYSTEM	Test					4.0		E, G
		Inspect	1.0						E
		Repair		2.0			4.0	1, 14, 15	G
		Replace					40.0		G

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
0404	PERSONNEL SHELTER								
040401	HEAT PUMP	Clean		4.0				1	E
		Inspect		1.0				1	E
		Service			3.0			7, 21	E
		Repair			4.0			1, 7,14, 15, 21	
		Rebuild				8.0		7,14, 15, 21	
		Replace			8.0			7,14, 15, 21	
040402	INCINOLET								AE
040403	ELECTRICAL SYSTEM	Inspect	2.0						E
		Repair		12.0	3.0			1, 7, 14, 15	
		Replace			12.0			7, 14, 15	
040404	COMMUNICATIONS EQUIPMENT								
04040401	VHF/FM HANDHELD TRANSCEIVER	Replace	1.0					1	
		Repair					8.0		
0405	LIGHT TOWER								
040501	ELECTRICAL SYSTEM	Test			1.0			10, 15	E
		Inspect			0.5			10, 15	E
		Repair			6.0			10, 15	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
04050101	BATTERIES	Test			1.0			10, 13	E
		Inspect	0.5						E
		Replace		2.0				1	
04050102	OIL PRESSURE UNIT	Test			1.0			10	E
		Repair			1.0			10	
		Replace			1.5			10	
04050103	STARTING CIRCUIT	Repair			2.0			10, 15	
		Replace			3.0			10, 15	
04050104	ENGINE TEMPERATURE UNIT	Test			1.0			10, 18	E
		Repair			2.0			10, 18	
		Replace			2.5			10, 18	
04050105	HOUR METER UNIT	Repair			1.5			10	
		Replace			2.0			10	
04050106	SHUTDOWN CIRCUIT	Repair			2.0			10	
		Replace			4.0			10	
04050107	LAMP SYSTEM	Test	1.0						E
		Repair			2.0			10, 15	
		Replace			6.0			10, 15	
04050108	LAMP BALLAST SYSTEM	Test			0.5			10, 15	E
		Repair			2.0			10, 15	
		Replace			3.0			10, 15	
040502	GENERATOR	Clean		2.0				1	E
		Inspect					12.0		

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	REMARKS CODE
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
040502	GENERATOR (CONT'D)	Repair					18.0		
		Replace					24.0		
04050202	CONTROL PANEL	Test	1.0						E
		Inspect	1.0						E
		Repair			3.0			10, 15	
		Replace			4.5			10, 15	
04050205	DIESEL ENGINE	Service	4.0	2.0				1	E
		Adjust		3.0				1	
		Repair				16.0		10	
		Overhaul					16.0		
		Replace			16.0			10	
0405020501	ENGINE FUEL SYSTEM	Inspect	1.0						E
		Repair		4.0				1	
		Replace			8.0			10	
040502050101	FUEL PUMP	Inspect	1.0						E
		Repair				4.0		10	
		Replace			5.0			10	
040502050102	FUEL TANK	Clean	2.0						E
		Inspect	1.0						E
		Repair		2.0				1	
		Replace		2.0				1	
0405020502	ENGINE AIR SYSTEM	Inspect	1.0						E
		Repair		2.0				1	
		Replace		4.0				1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIP REF CODE	
GROUP NO.	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		REMARKS CODE
0405020503	ENGINE COOLING SYSTEM	Inspect	1.0						E
		Repair		3.0				1	
		Replace		7.0				1, 10	
040502050301	FAN ASSEMBLY	Inspect	0.5						E
		Repair		1.5				1	
		Replace		2.0				1	
040502050302	COOLING WATER PUMP	Inspect						10	E
		Repair				4.0		10	
		Replace			5.0			10	
040502050303	RADIATOR	Clean	1.0						E
		Inspect		1.0				1	E
		Service	2.0	4.0				1	E
		Repair				4.0		10	
		Replace		2.0	3.0			1, 10	
0405020504	CYLINDER HEAD	Inspect		1.0				1	E
		Adjust					2.0		
		Repair					8.0		
		Replace					5.0		
0405020505	VIBRATION DAMPER	Repair					4.0		
		Replace					4.0		
0405020506	EXHAUST SYSTEM	Inspect	0.5						E
		Clean	1.5						E
		Repair			3.0			1, 16	
		Replace			5.0			1	

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0405020507	CRANKSHAFT	Inspect					4.0		
		Repair					8.0		
		Replace					8.0		
0405020508	PISTON	Inspect					4.0		
		Repair					4.0		
		Replace					4.0		
04050206	RUNNING GEAR	Service		2.0				1	E
		Repair		2.0				1, 10	
		Replace		18.0				1	
0405020601	TIRES	Inspect	0.5						E
		Repair				1.0		10	
		Replace				1.0		10	
04050207	SUPPORT TOWER	Inspect	0.5						E
		Service	1.0						E
		Repair			2.0			10	
		Replace			6.0			10	
04050208	TOWER RAISING ASSEMBLY	Inspect	0.5						E
		Repair			1.0			10	
		Replace			3.0			10	
04050209	ENCLOSURE	Inspect	0.5						E
		Repair			2.0			10	
		Replace			6.0			10	
0406	OFFSHORE ANCHOR	Clean	1.0						E
		Inspect	1.0						E

Table 1. MAC for Modular Causeway System. (MCS) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0406	OFFSHORE ANCHOR (CONT'D)	Repair			4.0			7	
		Replace		2.0				1	
0407	ONSHORE ANCHOR	Clean	1.0						E
		Inspect	1.0						E
		Repair			4.0			7	
		Replace		2.0				1	
0408	CONTAINERS	Clean	1.0						E
		Inspect	2.0						E
		Repair			4.0			7	
		Replace					8.0		

Table 2. Remarks for Modular Causeway System. (MCS)

REMARKS CODE	REMARKS
A	See MAC Chart for Causeway Ferry Diesel Engine Group Number 0101010101.
B	See MAC Chart for Causeway Ferry Marine Gear Group Number 0101010102.
C	See MAC Chart for Causeway Ferry Marine Gear Group Number 0101010103.
D	All repairs to the pump-jet must be done at depot level due to lack of technical information provided by the manufacturer, Schottel of Germany.
E	Preventive Maintenance Checks and Services (PMCS).
F	Includes replacement of level sensors, pump and motor.
G	Most work needs to be done by an authorized manufacturer's technical representative.
H	Refer to Army Technical Manual TM 11-5820-890-10-8.
I	Refer to Army Technical Manual TM 11-5825-291-13.
J	Includes cylinder liner, crankcase, crankcase breather and engine mounts.
K	Includes valves, springs, rocker arm, push rods, etc.
L	Includes valves, main bearings, vibration damper and crankshaft pulley.

Table 2. Remarks for Modular Causeway System. (MCS) (Continued)

REMARKS CODE	REMARKS
M	Includes drive shaft flex coupling.
N	Includes rings, connecting rod and connecting rod bearings.
O	Includes gear train, camshaft, idler gear, idler gear bearing, crankshaft timing gear, blower drive gear, and front and rear accessory drive gears.
P	Includes fuel water separator, fuel lines, fuel filter/strainer, fuel cooler, fuel manifold, fuel injector, fuel injector tube and valves.
Q	Includes air shutdown housing and air box check valves.
R	Includes intercooler and after cooler.
S	Includes lube oil pump driving gear, lube oil pressure regulator, lube oil relief valves, lube oil filter by-pass valve, lube oil cooler by-pass valve, lube oil pan and lube oil ventilation system.
T	Includes fresh water manifold and thermostat.
U	Includes raw water duplex strainer.
V	Includes starting batteries.
W	Rebuild of the marine gear is a depot level function.
X	Includes oil filter screen, pressure gage, temperature gage, selector valve, oil pump drive, output seal and gear mounts.
Y	Rebuild of the transfer case is a depot level function.
Z	See MAC Chart for Modular Warping Tug Diesel Engine Group Number 0301010101.
AA	See MAC Chart for Modular Warping Tug Marine Gear Group Number 0301010102.
AB	See MAC Chart for Modular Warping Tug Transfer Case Group Number 0301010103.
AC	Refer to Army Technical Manual TM 55-3950-204-14 & P.
AD	Refer to Army Technical Manual TM 5-2815-258-24.
AE	Refer to Army Technical Manual TM 55-1925-257-14&P.

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	O	General Mechanics Rail and Marine Tool Kit	5180-00-629-9783	
2	O	Torque Wrench, 30-150 in. lbs 3/8 in. Drive	5120-00-230-6380	
3	O	Torque Wrench, 30-150 ft lbs ½ in. Drive	5120-00-247-2540	
4	D	Torque Wrench, 100-500 ft lbs	5120-00-542-5577	
5	D	Pinch Pry Bar 60	5120-00-224-1384	
6	D	Hammer, Hand, (sledge hammer) 10 lb	5120-00-251-4489	
7	D	General Mechanics Tool Kit	5180-00-177-7033	
8	O	Hammer, Hand, Scaling	5120-00-224-4111	
9	O	Wire Brush	7920-00-291-5815	
10	D	Automotive Tool Kit	5810-00-177-7033	
11	O	Wrench, Strap	5120-00-776-1840	
12	D	Wrench, Monkey	5120-00-277-3120	
13	D	Electrolyte Solution Battery Tester	6630-00-171-5126	
14	O	Fuse Puller and Tester	5120-00-319-3295	
15	O	Multimeter	6625-00-171-5126	
16	O	Welder Tool Kit	5180-00-754-0661	
17	D	Dial Indicator	5120-00-402-9619	
18	D	Thermometer, Test	6685-00-056-3109	
19	G	Wheel Puller		
20	D	Pliers, Snap Ring		
21	D	Tool Kit, Compressor	5180-01-188-5075	
22		Megger	6625-01-015-1451	
23	O	Power Washer		
24	O	Scraper, Long Handle		

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
25	O	Air Tester		
26	O	Air Compressor		
27	D	Adaptor (1 5/8 in. Dia plugs) (Cylinder Block)		J21850
28	D	Aftercooler Adaptor Cup Plug Installer		J28711
29	D	Aftercooler Adaptor Plug Remover and Installer		J25275
30	D	Aftercooler Cup Plug Installer (2 ½ in. Dia)		J24597
31	D	Alignment Tool		J21799
32	D	Block Assembly Wrench Set		J25451-B
33	D	Block Thread Repair Kit		J29513
34	D	Cup Plug Installer (1 in. Dia)		J33420
35	D	Cylinder Block Air Box Plugging Tool		J29571
36	D	Cylinder Block Line Boring Tool		J29005
37	D	Cylinder Block Tap		J25384
38	D	Cylinder Diameter Checking Gage		J5347-B
39	D	Cylinder Hone Set (2½ in. to 5¾ in.)		J5902-01
40	D	Dial Bore Gage Master Setting Fixture		J23059-01
41	D	Dial Indicator Set		J22273-01
42	D	Diesel Engine Parts Dolly		J6387
43	D	Handle		J7079-02
44	D	Loctite “Chisel” Gasket Remover		PT7275
45	D	Master Ring Gage for Block Bore		J24564

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
46	D	Overhaul Stand (6V and 8V engines)		J29109
47	D	Overhaul Stand (12V and 16V engines)		J9384-04
48	D	Overhaul Stand Adaptor (6V and 8V engines)		J33850
49	D	Overhaul Stand Adaptor (12V and 16V engines)		J8650
50	D	Pipe Plug Remover/Installer (1/8 in. Dia)		J34650
51	D	Special Plug Remover (dry cylinder block)		J21995-01
52	D	Special Plug Remover		J23019
53	D	Load Cell Kit, Cam Follower Roller Fixture (Cylinder Head)		J33421-25
54	D	Cam Follower Service Fixture		J33421-A
55	D	Cylinder Head Bolt Hole Cleanout Tap		J25384
56	D	Cylinder Head Guide Studs (set of two)		J24748
57	D	Cylinder Head Holding Plate Set		J3087-01
58	D	Cylinder Head Lifting Fixture		J22062-01
59	D	Engine Barring Tool		J22582
60	D	Feeler Gage Set (.0015 in. to .015 in.)		J3172
61	D	Feeler Stock (.0015 in.)		J23185
62	D	Fuel Line Nut Wrench		J8932B
63	D	Injector Fuel Hole Brush		J8152
64	D	Pressure Checking Tool		J28454
65	D	Push Rod Remover (set of three)		J3092-01
66	D	Slide Hammer		J2619-01

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
67	D	Spring Tester		J22738-02
68	D	Valve Bridge Holding Fixture		J21772
69	D	Valve Bridge Gage Remover (broken)		J7453
70	D	Valve Bridge Guide Remover Set		J7091-01
71	D	Valve Bridge Guide Installer		J7482
72	D	Valve Guide Cleaner		J5437
73	D	Valve Guide Installer (machined)		J21520
74	D	Valve Guide Remover		J6569-A
75	D	Valve Seat Dial Gage		J8165-2
76	D	Valve Guide Oil Seal Installer		J35373
77	D	Valve Seat Grinder (Model VIP)		J7040-A
78	D	Valve Seat Grinder		J8165-1A
79	D	Valve Seat Grinder Adaptor Set		J24566
80	D	Valve Seat Insert Installer		J24357
81	D	Valve Seat Insert Remover Assembly		J23479-492
82	D	Valve Seat Insert Remover Collet		J23479-33
83	D	Valve Spring Checking Gage		J25076-B
84	D	Valve Spring Compressor		J7455-A
85	D	Water Nozzle Installer (intermediate)		J24857-A
86	D	Front Oil Seal Installer (6V and 8V) (Crankshaft)		J9783
87	D	Rear Oil Seal Installer (std and ovs seals)		J21112-B
88	D	Handle		J3154-A
89	D	Guide Studs (c/s with dowels)		J9727-2
90	D	Guide Studs (c/s without dowels)		J9727-5

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
91	D	Expander (std seal)		J4239
92	D	Handle		J8092
93	D	Guide Studs		J25002
94	D	Expander (ovs seal, no handle or guide studs)		J8682
95	D	Sleeve Installer (ovs seal)		J21983
96	D	Installer		J9727-A
97	D	Handle		J3154-1A
98	D	Expander (std seal, no handle)		J22425-A
99	D	Expander (ovs seal, no handle or guide studs)		J4195-01
100	D	Installer (ovs seal)		J4194-01
101	D	Dial Indicator Set		J5959-01
102	D	Engine Barring Tool		J22582
103	D	Flywheel Housing Alignment Studs		J1927-01
104	D	Micrometer Ball Attachment		J4757
105	D	Torque Wrench Adaptor (12V and 16V engines)		J22898-A
106	D	Universal Bar Type Puller		J24420-B
107	D	Flywheel Lifting Fixture (Flywheel)		J25026
108	D	Flywheel Lifting Tool		J6361-01
109	D	Oil Seal Removing and Replacing Tool Set		J3154-04
110	D	Slide Hammer Set		J5901-01
111	D	Flywheel Housing Aligning Studs (set of four) (Flywheel Housing)		J1927-01
112	D	Flywheel Housing Concentricity Gage Set		J9734-C

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
113	D	Connecting Rod Holding Fixture (Piston, Connecting Rod and Cylinder Liner)		J7632
114	D	Cylinder Liner Master Ring Gage		J24564
115	D	Cylinder Hone Set (2½ in. to 5¾ in. range)		J5902-01
116	D	Cylinder Liner Hold-Down Tool		J24565-02
117	D	Cylinder Liner Remover Set		J24563-A
118	D	Dial Bore Gage Setting Fixture		J23059-01
119	D	Dial Indicator Set		J24898
120	D	Feeler Gage Set		J3172
121	D	Micrometer Ball Attachment		J4757
122	D	Piston Crown Identification Gage		J25397-A
123	D	Piston Pin Alignment Tool		J24285
124	D	Piston Pin Retainer Installer		J23762-A
125	D	Piston Pin Retainer Leak Detector (plastic)		J23987-B
126	D	Piston Pin Retainer Leak Detector (all metal)		J35134
127	D	Piston Ring Compressor		J24227
128	D	Piston Ring Remover Installer		J8128
129	D	Piston to Liner Feeler Gage Set		J5438-01
130	D	Seal Ring Compressor		J24226
131	D	Accessory Drive Hub Oil Seal Aligning Tool (Camshaft)		J21166
132	D	Alternator Drive Step-Up Gear Aligning Gage		J29893
133	D	Balance Weight Cover Oil Seal Installer		J9791
134	D	Camshaft Gear Puller		J1902-B

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
135	D	Camshaft Gear Puller Adaptor Plate Set		J6202-01
136	D	Camshaft and Oil Pump Gear Installer		J1903
137	D	Dial Indicator and Attachment Set		J5959-01
138	D	Puller Adaptor		J7932
139	D	Slide Hammer Set		J6471-02
140	D	Spring Scale		J8129
141	D	Universal Bar Type Puller		J24420-B
142	D	Pullers (Fuel & Governors)		J6270-1
143	D	Oil Seal Remover and Installer		J6270-3
144	D	Buffing Wheel (brass wire)		J7944
145	D	Fuel Pipe Socket		J8932-B
146	D	Fuel System Primer		J5956
147	D	Injector Auxiliary Tester		J22640-A
148	D	Injector Body Reamer		J21089
149	D	Injector Calibrator		J22410
150	D	Injector Carbon Remover Set		J9418
151	D	Injector Holding Fixture		J22396
152	D	Injector Nut Seal Ring Installer		J29197
153	D	Injector Service Tool Set		J23435-C
154	D	Body Brush		J8152
155	D	Nut Socket Wrench		J4983-01
156	D	Rack Hole Brush		J8150
157	D	Spray Hole Cleaner Vice		J4298-1
158	D	Spray Tip Carbon Remover (high sack)		J9464-01

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
159	D	Spray Tip Carbon Remover (low sack)		J24838
160	D	Spray Tip Driver and Brushing Cleaner		J129101
161	D	Wire Sharpening Stone		J8170
162	D	Injector Tag Remover and Installer		J24767
163	D	Injector Test Oil (5, 10, 30 and 55 GAL)		J26400
164	D	Injector Tester		J23010-B
165	D	DDEC Injector Adaptor Kit		J23010-500
166	D	Lapping Block Set		J22090-A
167	D	Master Injector Calibrating Kit		J35369
168	D	Needle Valve Lift Gage		J9462-02
169	D	Polishing Compound		J23038
170	D	Polishing Stick Set		J22964
171	D	Spray Tip Cleaning Wire (.007 in. Dia holes)		J21462-01
172	D	Spray Tip Flow Gage		J25600-B
173	D	Field Modification Kit		J25600-103
174	D	Spring Tester		J29196
175	D	Tip Conical. Gage and Rack Freeness Tester		J29584
176	D	Cylinder Head Holding Plate Set		J3087-01
177	D	Cylinder Liner Depth Gage		J22273-01
178	D	Injector Protrusion Gage		J25521
179	D	Injector Tube Service Tool Set		J22525-B
180	D	Injector Tube Swaging Tool		J28611-A
181	D	Fuel Pump Tool Set		J1508-E

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
182	D	Fuel Pump Wrench		J4242
183	D	Control Link Operating Lever Bearing Remover and Installer		J8985
184	D	Governor Cover Bearing Installer		J21068
185	D	Governor Cover Bearing Remover and Installer		J21967-01
186	D	High Speed Spring Retainer and Installer		J5345-12
187	D	Governor Weight Shaft Retaining Ring Installer		J36840
188	D	Blower Alignment Tool (Air System)		J33001
189	D	Blower Clearance Feeler Set		J1698-02
190	D	Blower Service Tool Set		J6270-G
191	D	Installer, Lip Type Oil Seal/Water Sleeve		J35787-A
192	D	Dial Indicator Set (magnetic base)		J7872
193	D	Turbocharger Inlet Shield		J26554-A
194	D	Adaptor Cup Plug Installer		J28711
195	D	Adaptor Plug Remover and Installer		J25275
196	D	Bar Type Gear Puller (Lubrication System)		J24420
197	D	Oil Pump Drive Gear Installer (16V)		J9380
198	D	Oil Pump Drive Shaft Gear Installer (6V and 8V)		J22397
199	D	Oil Pump Driven Gear Installer (16V)		J9381
200	D	Oil Pump Driven Shaft Gear Installer (6V and 8V)		J22398

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
201	D	Oil Pump Driving Gear Installer (6V and 8V)		J22285
202	D	Spring Tester (1-125 lbs)		J29196
203	D	Strap Wrench (spin-on filter)		J24783
204	D	Cooling System Radiator Cap Pressure Tester (Cooling System)		J24460-01
205	D	Fingers, Fan Hub Nut Socket (16V)		J6534-8
206	D	Handle		J7079-2
207	D	Oil Seal Installer		J8501
208	D	Pliers		J4646
209	D	Puller		J24420-A
210	D	Socket, Fan Hub Nut (16V)		J22556-2
211	D	Thermostat Seal Installer		J8550
212	D	Water Pump Bearing and Gear Installer		J25257
213	D	Water Pump Impeller/Gear Slip Torque Tool		J33765
214	D	Water Pump Seal Remover Set		J22150-B
215	D	Water Pump Impeller Slip Checking Fixture		J34034
216	D	Slide Hammer (Electrical Equipment)		J23907-1
217	D	Tachometer Drive Alignment Tool Set		J23068
218	D	Tachometer Drive Shaft Remover		J5901-3
219	O	Coveralls, Eye Protection, Respirator, Gloves (Zodiac Boat Hull)		
220	O	Grease Pencil Or Chalk		

Table 3. Tools and Test Equipment for Modular Causeway System. (MCS) (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
221	O	Saber Saw With Metal Cutting Blades		
222	D	Grinder or Disc Sander w/ Coarse Medium Grit		
223	O	Measuring Tape		
224	D	Scissors, Shears		
225	O	Cardboard, Kraft Paper		
226	D	Disposable Containers, Mixing Sticks		
227	D	Disposable Brushes, Putty Knife		
228	D	Polyethylene Sheet		
229	D	Heavy Cardboard, Thin Plywood, Sheet Metal		
230	D	Acetone		

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
EXPENDABLE AND DURABLE ITEMS LIST (EDIL)

INTRODUCTION

Scope

This work package lists expendable and durable items to help you will need to operate and maintain the floating causeway. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item (e.g., Use Antiseize Compound (Item 3, WP 0106 00)).

Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item. (C = Operator/Crew, O = Unit/ AVUM, F = Direct Support/AVIM, H = General Support, D = Depot)

Column (3) - National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) - Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N). This column provides the other information you need to identify the item.

Column (5) - Unit of Measure (U/M). This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

EXPENDABLE AND DURABLE ITEMS LIST

Table 1. Expendable and Durable Items List. (EDIL)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
1	O	8040-01-250-3969	Adhesive, general purpose, medium strength, threadlocker (05972) 242	EA
2	O	6850-01-441-3218	Antifreeze, one gallon liquid (58536) A-A-52624	GL
3	O	8030-00-251-3980	Antiseize Compound, 1 lb. can thread compound (81349) MIL-A-907E	QT
4	O	8030-01-044-5034	Antiseize Compound, MIL-T-5544C graphite and petroleum, one pound can for use on threaded fasteners and fittings (81349) MIL-T-5544	CN
5	O	5510-01-470-5122	Block, Shoring (6 in. X 6 in. X 30 in.) (0F6V7) 551-032-001	EA

Table 1. Expendable and Durable Items List. (EDIL) (Continued)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
6	O	8020-00-200-3487	Brush, Paint, 4 in. nominal (80244) GSAPD 8020-00-200-3487	EA
7	O	6850-01-431-9025	Cleaner, Type II, 50 lb container (81349) MIL-C-29602	OZ
8	F	7930-01-071-2507	Cleaner, Condenser Coil, concentrated, dilute with 3 parts water (1B504) 0176	CN
9	F	6850-01-099-9842	Cleaning Compound, Electrical Contact, 20 oz. aerosol can (0B6S1) 619022	CN
10	O	6850-00-598-7328	Cleaning Compound, Engine Cooling System, oxalic acid and aluminum chloride with conditioner (81349) MIL-C-10597	KT
11	O	5350-01-168-0048	Cloth, Abrasive, aluminum oxide jean cloth (P-C-451) fine, 320 grit (80244) GSA-001	RO
12	O	7920-00-044-9281	Cloth, Cleaning, contains 10 lbs, white, 12 in. X 16 in. (58536) A-A-59323	BX
13	O	7930-00-279-7089	Detergent, General Purpose (58728) 2902N10	QT
14	O	9140-01-413-7511	Diesel Fuel, summer grade, DF2, low sulfer (81348) VV-F-800	BULK
15	O	8415-00-268-8330	Gloves, Men's, cotton, regular work (80480) 112	PR
16	O	9150-00-145-0268	Grease, Aircraft, Grade 2, resistant to corrosion, water, low evaporation and oxidation (81349) MIL-G-81322	CN
17	O	9150-01-197-7693	Grease, Automotive and Artillery, 14 oz cartridge, oxidation resistant, use where a single multi-purpose grease is needed (81349) M-10924-B	CN
18	O	9150-01-095-5512	Grease, Ball and Roller Bearing, lithium soap, temperature range -35º to 325ºF (-54º to 163ºC) (White Lithium Grease) (73219) L0189.001	CN
19	F		Grease, Cindol, (Starter & Pinion Lube) (1T4E6) 2321	TU

Table 1. Expendable and Durable Items List. (EDIL) (Continued)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
20	O	9150-00-929-7946	Grease, General Purpose, 14 oz. Cartridge, oxidation, corrosion, water, salt water, wear and extreme pressure resistant (TU Lubriplate Grease) (73736) DURA-Lith Grease EP2	CN
21	O	9150-00-235-5555	Grease, General Purpose, mineral oil and molybdenum disulfide, low evaporation, corrosive and salt water resistive (81349) MIL-G-23549	CN
22	F	9150-01-307-6848	Grease, Outboard Motor, (Triple-Guard) (80256) 508298	TU
23	F	9150-00-257-5358	Grease, Silicone Insulated Electric Motor, Molykote 44, 8 oz. tube, conforms to PPP-C-186, Group B, Class 1 or 2 (81349) MIL-L-15719	TU
24	O	9150-01-179-0228	Grease, Wire Rope-Exposed Gear, 35 lb can, corrosion and antiwear resistant (1VO74) 8888	CN
25	F	9150-01-463-0014	Hydraulic Fluid Petroleum Base, quicksilver power trim & steering fluid (1G604) 92-90100A12	QT
26	F	6506-00-153-8480	Hydrogen Peroxide Topical Solution, USP, 1 pt bottle (1HR62) NDC00395-1113-16	BT
27	F	6810-00-753-4993	Isopropyl Alcohol, Technical, 8 fl oz can, DOT Class 3 (89264) 2200200	CN
28	F		Kit, HPF Lube (0HBE8) 509952	KT
29	O	9150-00-186-6681	Lubricating Oil, Engine, 5 gal can, internal combustion engine, MIL-L-2104 30 Grade (81349) M2104-1-30W	QT
30	O	9150-01-035-5392	Lubricating Oil, Gear, 1 qt can, 80W90 Grade (81349) M2105-1-80W90	QT
31	O	8010-01-363-2805	Paint, Amercoat 385 #27 Haze Grey, epoxy (09869) 373-930	GA
32	O	8010-01-397-3802	Paint, Amercoat 385 #27, Haze Grey, anti-skid (09869) 372-130	GA

Table 1. Expendable and Durable Items List. (EDIL) (Continued)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
33	O	8010-01-363-2803	Paint, Amercoat 385 PA, Oxide, red primer, Type I, Class I (09869) 373-930	GA
34	O	5350-01-043-2278	Paper, Abrasive, 320 grit, 9 in. X 11 in., for metal, wood, plastic, paint, enamel and lacquer (80204) ANSI B74.18	SH
35	O	7920-00-205-1711	Rag, Wiping, cotton, contains 50 lbs, mixed colors (80244) 7920-00-205-1711	BE
36	O	8020-00-597-4759	Roller Kit, Paint, consists of paint tray and roller (81348) H-R-550	KT
37	O	8030-00-204-9149	Sealing Compound, 250 cc collapsible tube paste, pipe thread sealant w/teflon (05972) 592-41	TU
38	O	6810-00-141-6078	Sodium Phosphate, Tribasic, Anhydrous, Technical, Type 1, 1 lb bottle, powder or granular form (81349) 0-S-642	LB
39	O	4235-01-416-8465	Spill Clean-Up Kit, Hazardous Material, sorbent pads with disposal bags used for petroleum spills (50378) P-SKFL31	KT
40	O	7920-00-057-2087	Sponge, rectangular sponge 6 in. X 4 in. X 2 in. (18873) 8AF	EA
41	O	5975-00-156-3253	Strap, Tiedown, Electrical Components, plastic, MIL-M20693, Comp A, Type 1, 13.350 in long X 0.055 in thick X 0.192 in wide (56501) TY-28M	HD
42	O	7510-00-266-6710	Tape, Pressure Sensitive Adhesive, 60 yard roll (81346) ASTM D-6123	RL
43	O	6550-01-310-1677	Water, Reagent Distilled, four 1 gallon per package (07TA6) C4350-1A	PK
44	F	5510-00-268-3476	Wedge, Wood, butt thickness 1.5 in. taped to feathered edge X 3 in. wide (80064) S8800-461043	EA

UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
FLOATING CAUSEWAY
TOOL IDENTIFICATION LIST (TIL)

INTRODUCTION

Scope

This work package lists all common tools and supplements and special tool/fixtures needed to maintain the Floating Causeway.

Explanation of Columns in the Tool Identification List

Column (1) - Item Number. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Respirator (Item 4, WP 0107 00)).

Column (2) - Item Name. This column lists the item by noun nomenclature and descriptive features (e.g. Gage, belt tension).

Column (3) - National Stock Number. This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.

Column (4) - Part Number/CAGEC. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

Column (5) - Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this work package.

TOOL IDENTIFICATION LIST

Table 1. Tool Identification List. (TIL)

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER/ CAGEC	(5) REFERENCE
1	Apron, utility	8415-00-082-6108	A-A-55063 (64067)	SC 4910-95-A68
2	Bar, bucking, BB28 tool style	5120-00-177-7050	A-A-52123-X (58536)	
3	Battery, 6 volt	6140-00-191-8506	C152 (22337)	
4	Brush, stencil (soft bristle)	7520-00-223-8000	A-A2903 (58536)	SC 4910-95-A72
5	Brush, wire scratch	7920-00-291-5815	7920002915815 (83421)	SC 4910-95-A72
6	Cleaner, power washer	4920-01-086-2087	MODEL PVISM15HE-2R (56077)	
7	Cleaner, vacuum, electric	7910-00-267-1205	A-A-50438 (58536)	

Table 1. Tool Identification List. (TIL)

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER/ CAGEC	(5) REFERENCE
8	Compressor, unit, reciprocating, power drive	4310-00-861-9820	MILC13874 (81349)	SC 4940-95-A64
9	Crowbar	5120-00-224-1392	9150189 (18876)	
10	Drill set, twist	5133-00-293-0983	DB129B (55719)	
11	Drill, electric, portable, 115 volt	5130-00-477-0206	358 (89700)	
12	Gage, gap setting	5210-01-429-7356	GA461B (55719)	
13	Gage, tire pressure, 20 - 120 PSI	4910-01-121-9847	YA804 (55719)	
14	Gloves, chemical	8415-00-266-8677	ZZ-G-381 (81349)	
15	Gloves, electrical	8415-00-266-8691	ZZ-G-401 (81348)	
16	Gloves, men’s and women’s (leather palm)	8415-00-634-4658	37G2940 (90142)	
17	Goggles, industrial (chipping, chemical)	4240-00-190-6432	A-A-1110 (58536)	SC 4910-95-A72
18	Goggles, sun, wind and dust (safety)	8465-01-004-2893	MIL-G-43914 (81349)	
19	Hammer, pneumatic, portable (rivet gun)	4920-01-139-4547	A-A-3049 (58536)	
20	Helmet, safety (brown)	8415-00-889-3768	ISEA/ANSI Z89-1 (80204)	
21	Hose assembly, nonmetallic	4720-00-203-3912	A-A-59270 (58536)	
22	Inserter and remover, pneumatic tire valve core	5120-01-478-0869	27-130 (85803)	
23	Jumper cable, battery	6150-01-217-8748	65813 (79550)	
24	Level, spirit	5210-01-175-1887	MIL-L-17653 (81349)	
25	Life preserver, vest	4220-00-022-2518	MIL-L-17653 (81349)	
26	Lubricating gun, hand	4930-00-965-0288	30415 (77335)	
27	Mallet, rubber	5120-00-293-3399	69-490 (03914)	
28	Mittens, heat protective	8145-00-266-8840	GGG-W-2843 (81348)	

Table 1. Tool Identification List. (TIL)

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER/ CAGEC	(5) REFERENCE
29	Mop, wet	7920-00-224-8726	7920-00-224-8726 (83421)	
30	Multimeter	6625-01-265-6000	27/FM W/ACCE (89536)	
31	Oiler, hand	4930-00-274-5713	A-A-50477B (58536)	SC 4910-95-A72
32	Pail, utility	7240-01-252-7075	4486T4 (39428)	
33	Pan, drain	4910-00-287-2944	MILP45819 (81349)	SC 4910-95-A68
34	Pliers, retaining ring	5120-01-024-6182	J4646 (72582)	
35	Pliers, retaining ring, flat jaw	5120-00-596-1106	12z11027-3 (10001)	
36	Puller kit, universal (crossbar)	5180-00-423-1596	GGG-P-781 (81348)	
37	Puller, battery terminal	5120-00-944-4268	54000 (36540)	
38	Punch set, drive pin	5120-00-883-3003	GGG-P-831 (81348)	
39	Punch, drive pin, brass	5120-00-239-0038	12-1-14-314 (81337)	
40	Respirator, air filtering	4240-00-883-6519	85556 (55799)	
41	Scale, tension	4910-00-779-6832	J8129 (33287)	
42	Scale, weighing spring	6670-00-254-4634	MMM-S-133 (18348)	
43	Scraper, ship	5110-00-224-9929	PD 5110-00-224-9929 (80244)	
44	Screwdriver, flat tip (non-magnetic)	5120-01-271-8967	2503551 (07187)	
45	Shackle, ½ in. 2 ton		1019472 (75535)	
46	Sling, 36,000 lbs adjustable chain, consisting of:			
	1 1/4 in. alloy master link		1014342 (75535)	
	200 ft-5/8 in. chain		273563 (75535)	
	5/8 in. clevis grab hook		1027695 (75535)	
	5/8 in. lokalloy		1014723 (75535)	
47	Sling, lifting, 53,000 lbs (brown)		EN600X25FT (3AJ34)	
48	Sling, lifting, 5300 lbs (green)		EN60X4FT (3AJ34)	

Table 1. Tool Identification List. (TIL)

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER/ CAGEC	(5) REFERENCE
49	Sprayer, pesticide, manually carried	3740-00-641-4719	A-A-55748 (58536)	
50	Stand, vehicle support	4910-01-301-3051	FH1012 (01252)	
51	Test set, compartment air	6685-00-327-2957	805-1749233 (80064)	
52	Tire iron (37 in.)	5120-00-765-8536	T48A (75204)	
53	Tool kit, general mechanic's	5180-00-177-7033	SC5180-90-CL-N26 (50980)	SC 5180-90-N26
54	Tool kit, general mechanic's (rail and marine)	5180-00-629-9783	SC5180-90-CL-N55 (50980)	
55	Vise, machinists	5120-00-293-1439	504M20 (79419)	
56	Wrench, strap	5120-01-160-8863	3375929 (15434)	
57	Wrench, torque (0-175 ft lbs) (½ in. sqdr)	5120-01-396-5751	1753LDF (08194)	
58	Wrench, torque (0-75 in. lbs) (¼ in. sqdr)	5120-01-112-9532	B107.14MTY1CLCS T1 (80204)	
59	Wrench, torque (100-600 ft lbs) (¾ in. sqdr)	5120-00-221-7983	SW130-301 (10001)	
60	Wrench, torque (10-250 in. lbs) (3/8 in. sqdr)	5120-01-356-0743	J24405 (33287)	
61	Wrench, torque (150-750 in. lbs) (3/8 in. sqdr)	5120-01-374-01931	GGG-W-2843 (81348)	
62	Socket wrench set	5120-00-204-1999	B107.1 (05047)	
63	Socket, socket wrench	5130-00-227-6679	B107.2 (80204)	
64	Key, socket head screw (allen wrench)	5120-00-198-5387	57042 (74445)	

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PWR PNL NO.: SHLTR PNL			TITLE: MCS POWER PANEL			LOCATION: MCS SHELTER
FEEDER NO.: (GENERATOR EXISTING)			CABLE TY: SO AWG #2 (5-COND)			
						TOTAL CONNECTED KW: 10.02
CKT	DESIGNATION	REV	EQUIPMENT SERVED	CB	PH	CABLE	LOAD (KW)
1	(SHLTR PNL)-2P-A	C	HEAT PUMP (COOLING & HEATING)	30A	AB-GND	LSFSGU-9	4.16
2	(SHLTR PNL)-1P-B(1)	C	120VAC HOSPITAL GRADE RECEPT VIA 120VAC GFCI RECPT	20A	A-NEU/GND	LSFSGU-9	1.20
3	(SHLTR PNL)-1P-C(1)	C	FLOURESCENT OVERHEAD (RED/WHT) LIGHTS VIA SWITCH	15A	C-NEU/GND	LSFSGU-4	0.30
4	(SHLTR PNL)-1P-D(1)	C	VENTILATOR & 90° LIGHT FIXTURE VIA SWITCHES	15A	C-NEU/GND	LSFSGU-4	0.24
5	(SHLTR PNL)-1P-E	C	RECEPTACLE FOR HAND-HELD RADIO CHARGER	20A	B-NEU/GND	LSFSGU-9	0.48
6	(SHLTR PNL)-2P-F	C	INCINOLET ELECTRIC TOILET WITH BLOWER	20A	BC-GND	LSFSGU-9	3.64
7	(SHLTR PNL)-1P-G	C	SPARE CIRCUIT	15A	A-NEU/GND	-	-
8	(SHLTR PNL)-2P-J	C	SPARE CIRCUIT	15A	CA-GND	-	-
9	(SHLTR PNL)-1P-L	C	SPARE CIRCUIT	15A	B-NEU/GND	-	-

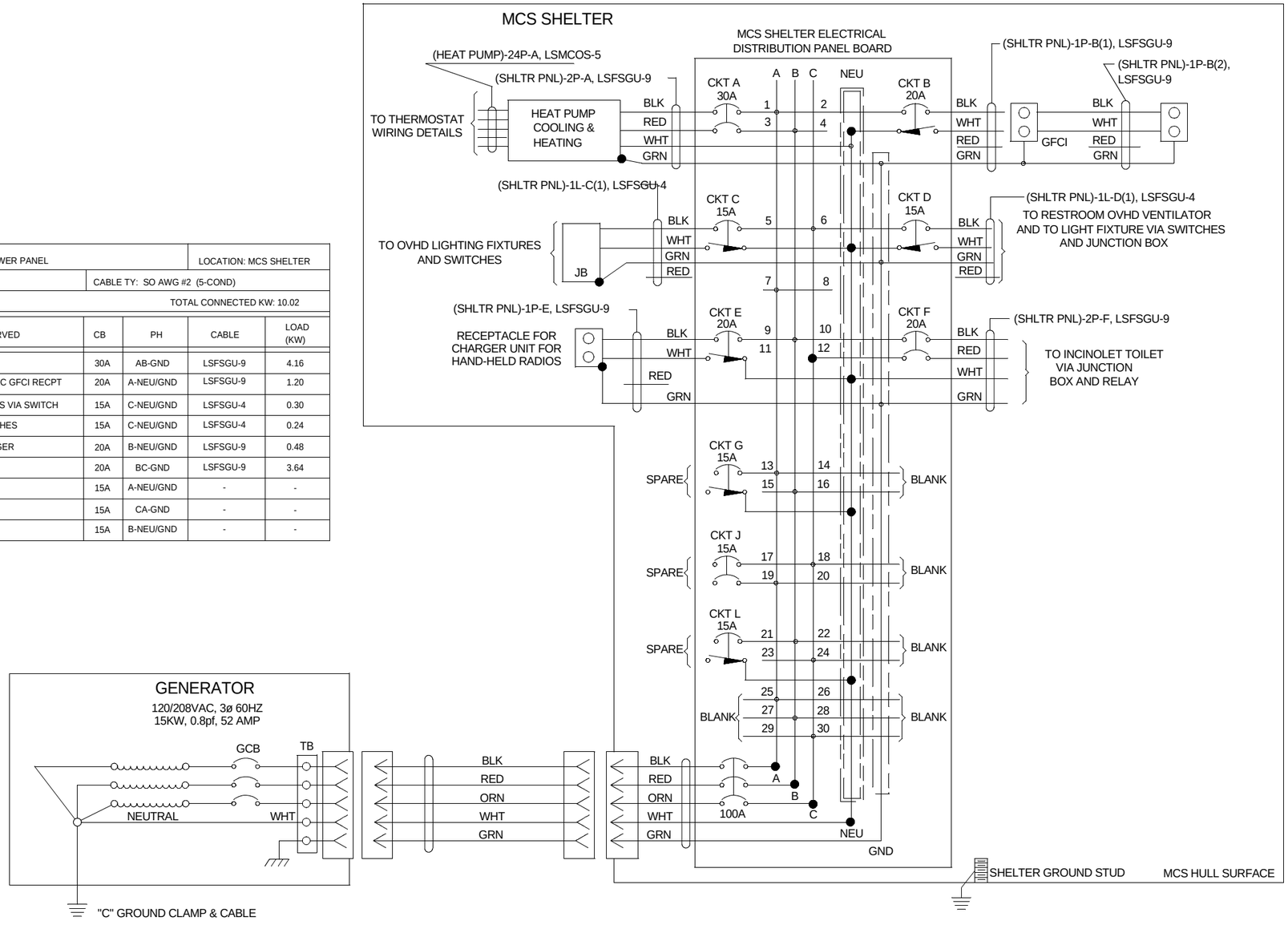
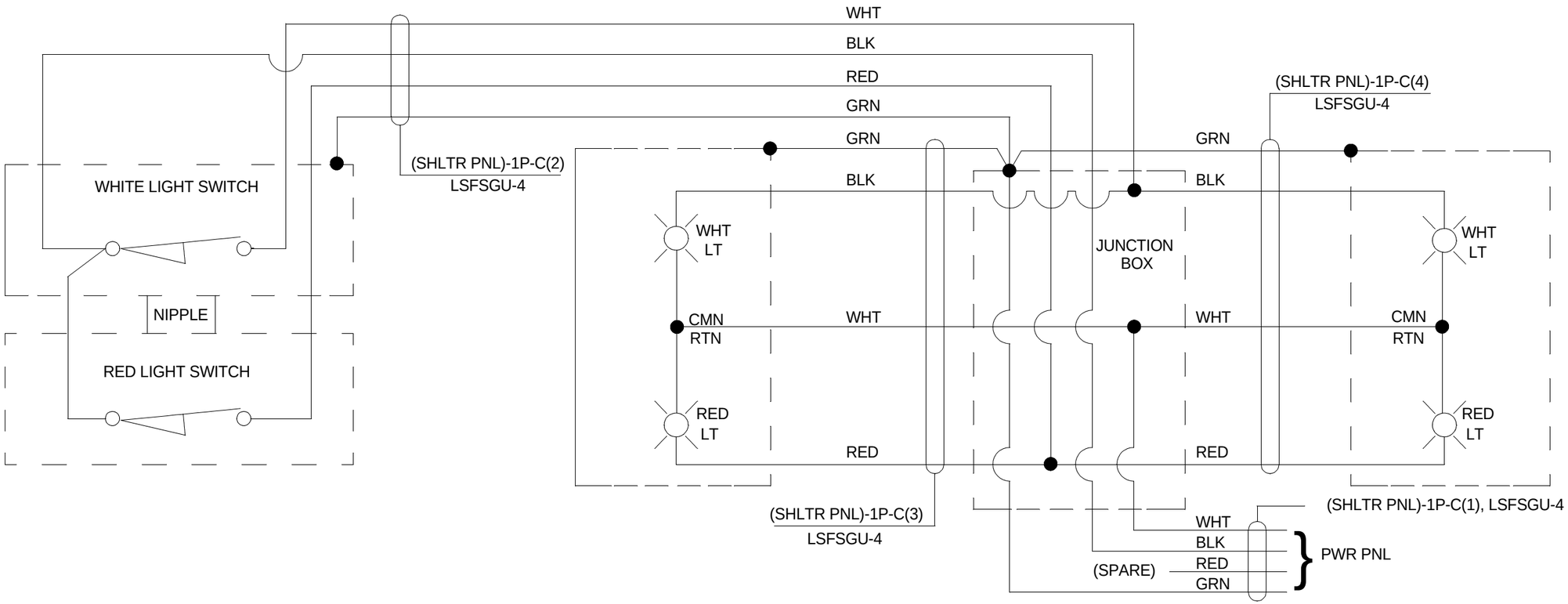
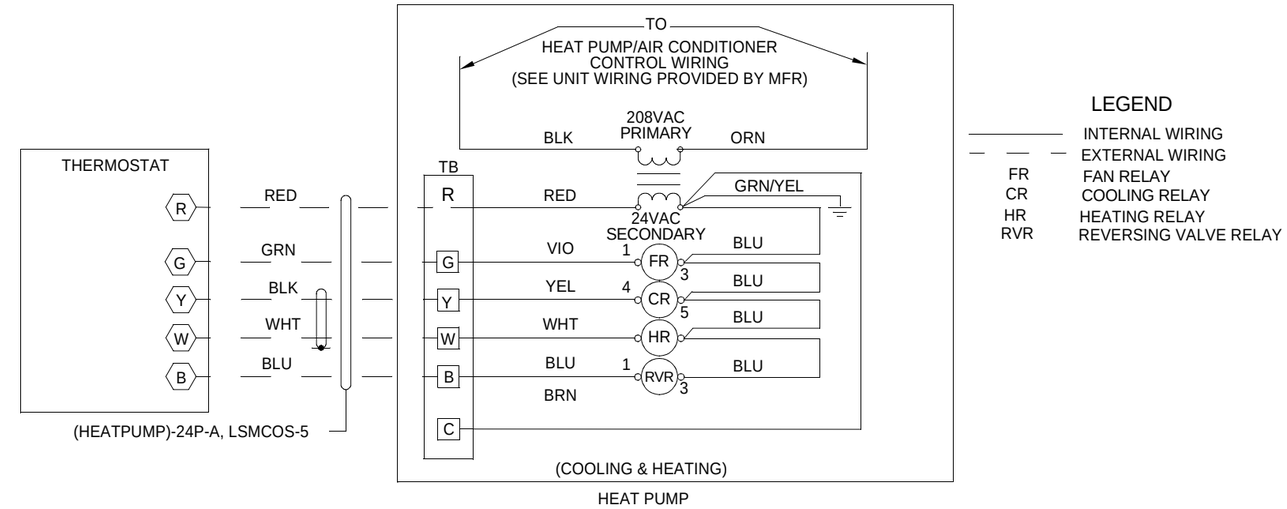


Figure 1. MCS Personnel Shelter Wiring Diagram (Sheet 1).

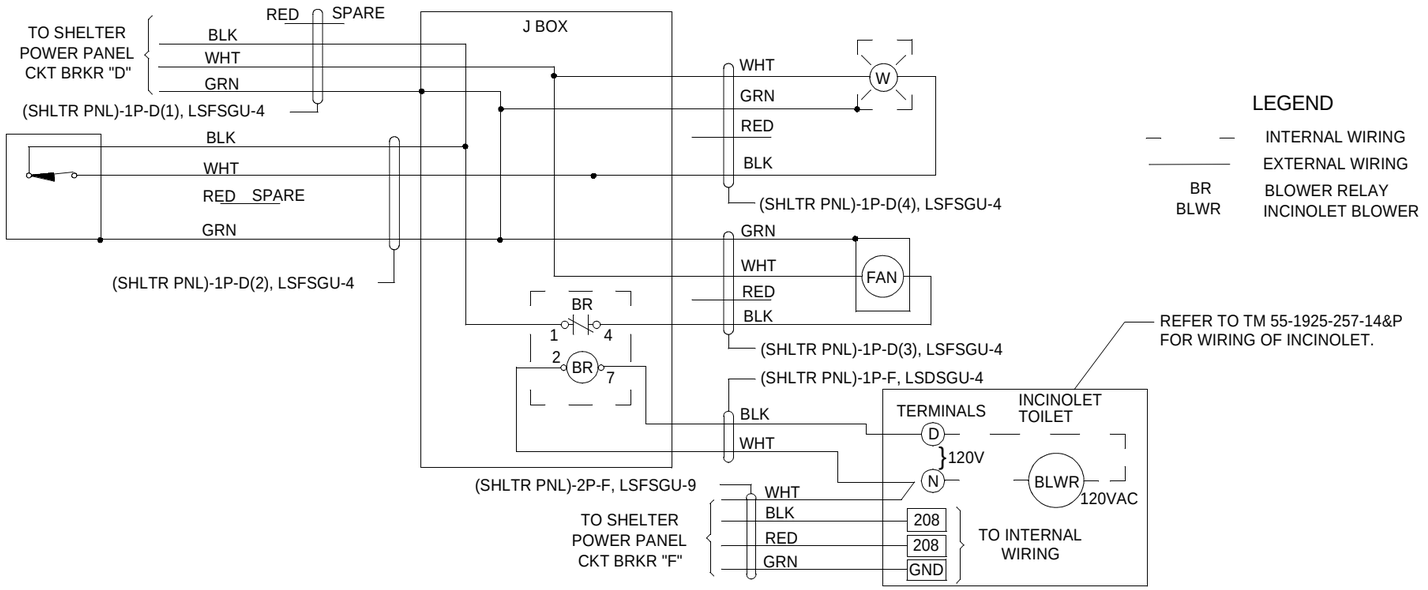


TYPICAL DETAILED HOOKUP FOR BOTH OVERHEAD FLUORESCENT RED/WHITE LIGHT SWITCH & OVERHEAD LIGHTING

Figure 1. MCS Personnel Shelter Wiring Diagram (Sheet 2).



HEAT PUMP AND THERMOSTAT WIRING DETAILS



INCINOLET BLOWER AND OVERHEAD VENTILATOR DISABLE WIRING DIAGRAM

Figure 1. MCS Personnel Shelter Wiring Diagram (Sheet 3).

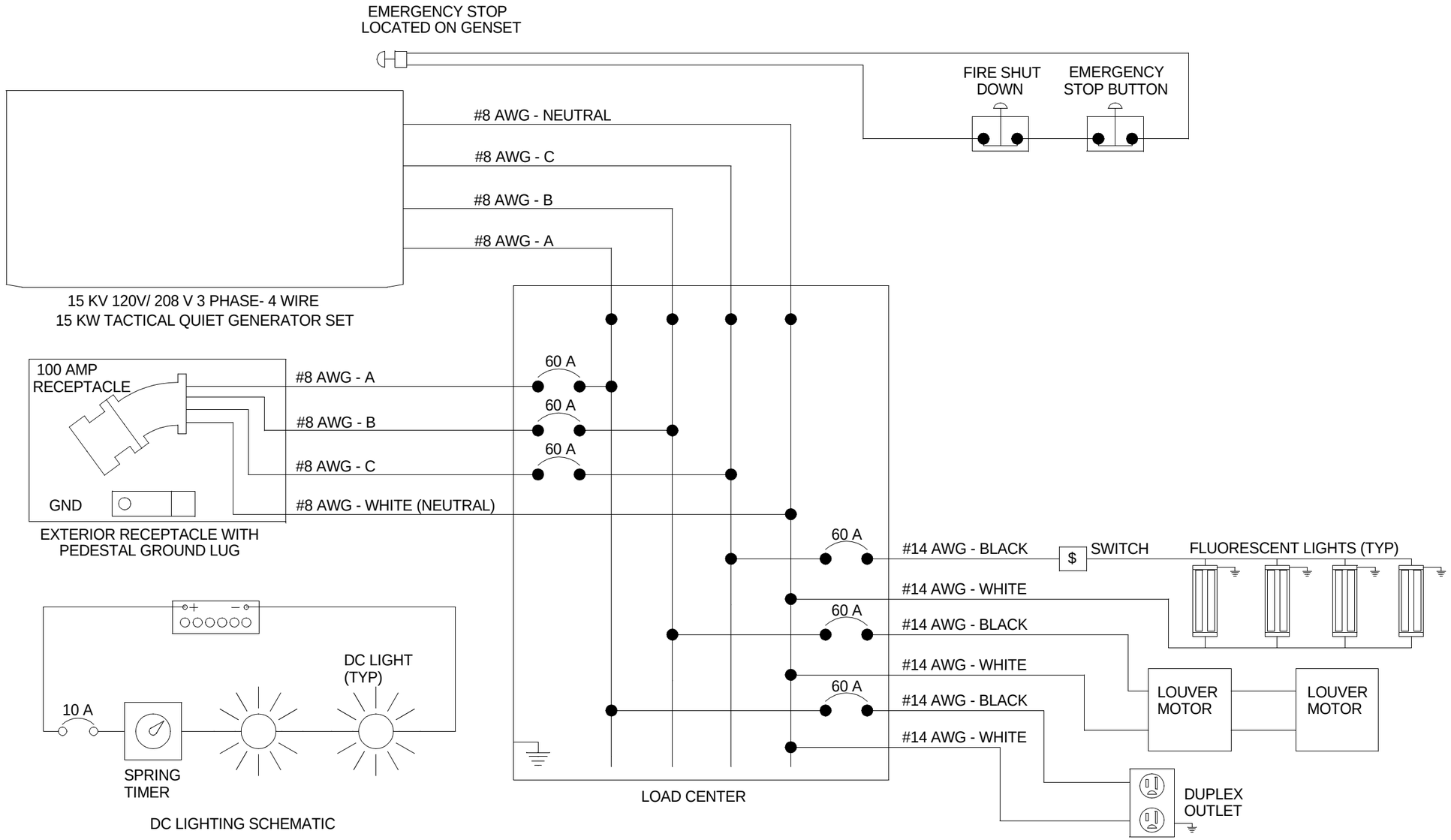
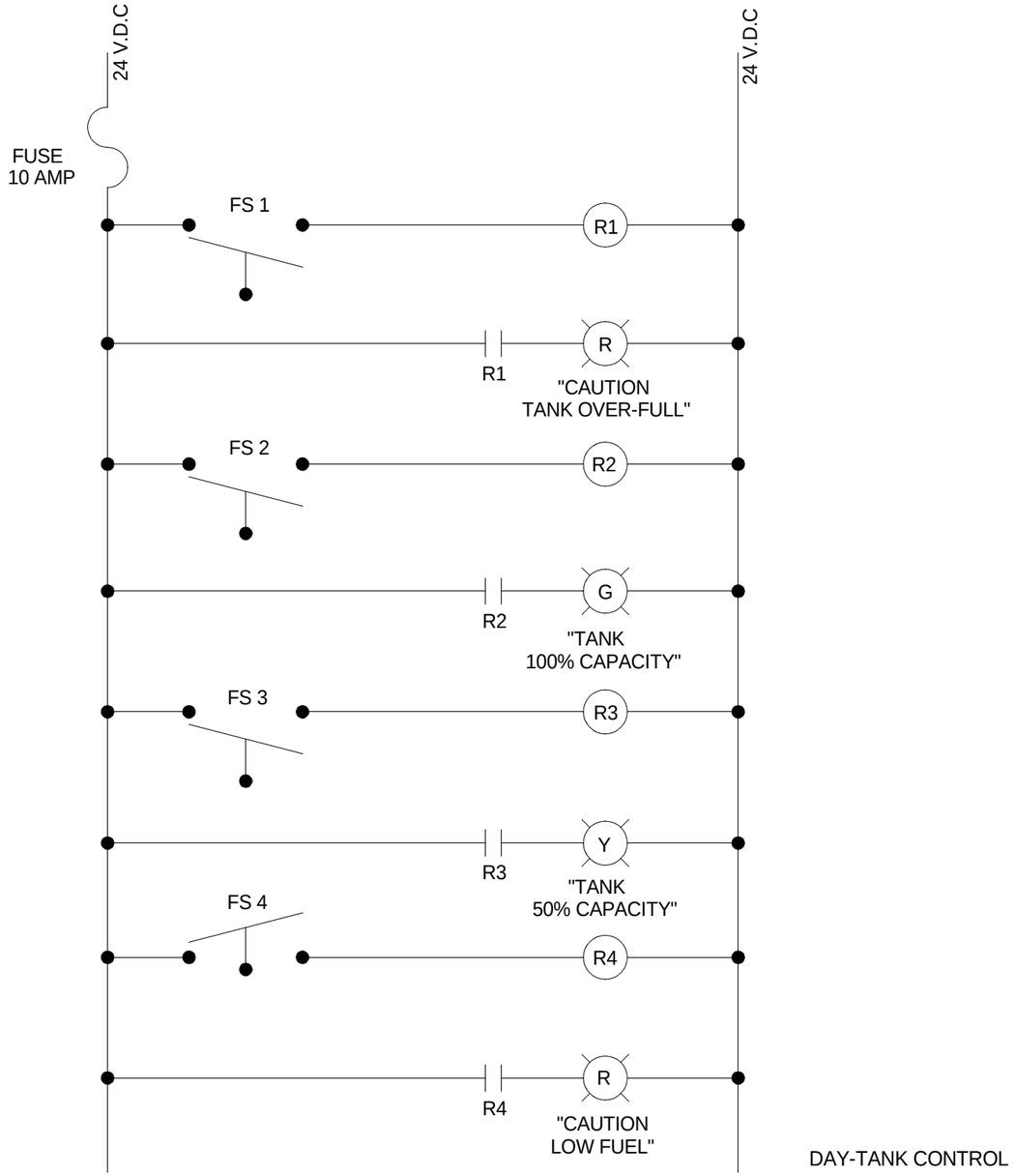


Figure 2. MCS 15KW Generator Container Wiring Diagram (Sheet 1).



LEGEND

FS 1	LEVEL SWITCH NO. 1
FS 2	LEVEL SWITCH NO. 2
FS 3	LEVEL SWITCH NO. 3
FS 4	LEVEL SWITCH - LOW LEVEL
R 1	RELAY 1, 24 V.D.C., 2 POLE
R 2	RELAY 2, 24 V.D.C., 2 POLE
R 3	RELAY 3, 24 V.D.C., 2 POLE
R 4	RELAY 4, 24 V.D.C., 2 POLE
R	PILOT LAMP (RED)
G	PILOT LAMP (GREEN)
Y	PILOT LAMP (YELLOW)

DAY-TANK CONTROL

Figure 2. MCS 15KW Generator Container Wiring Diagram (Sheet 2).

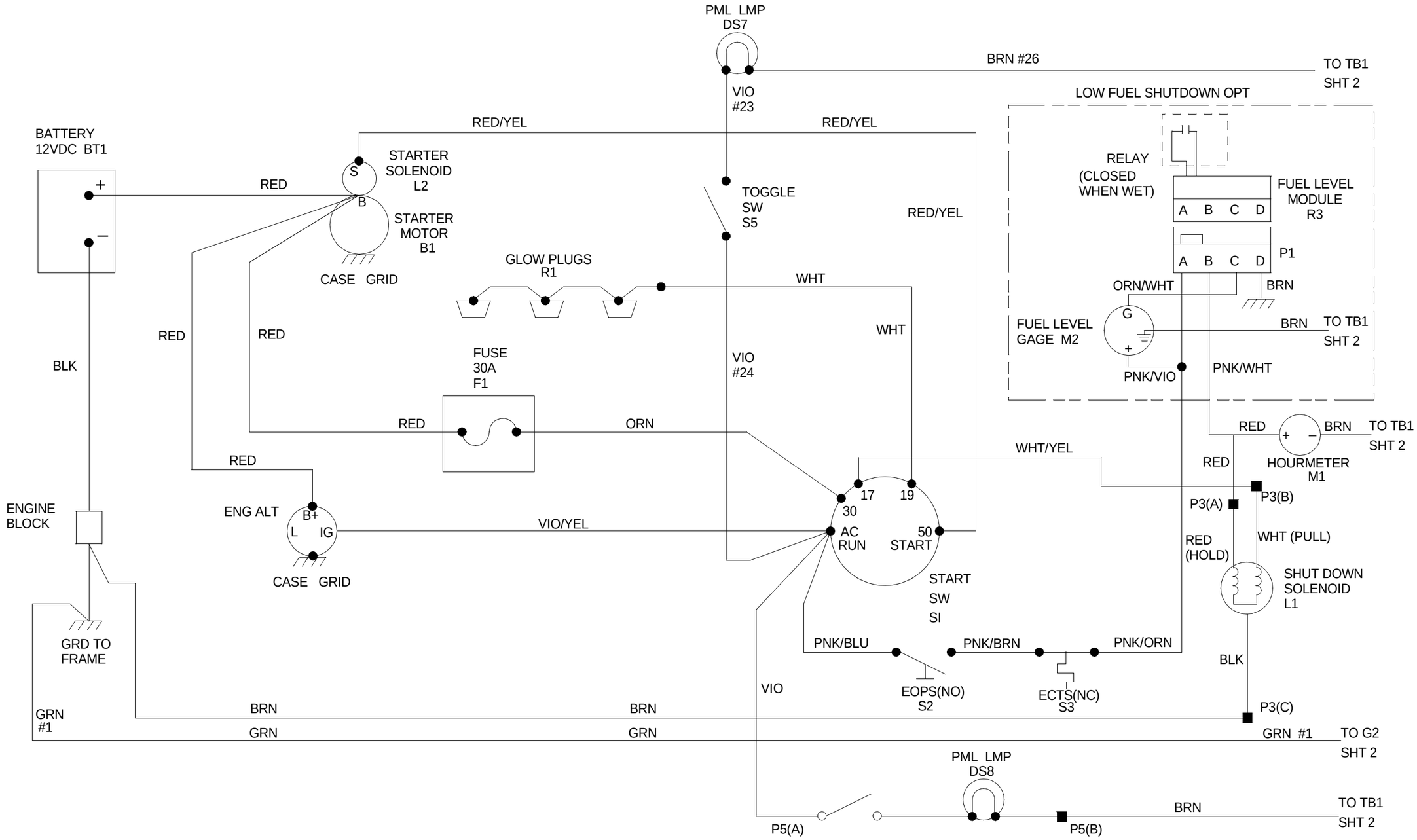


Figure 3. MCS Light Tower Wiring Diagram (Sheet 1).

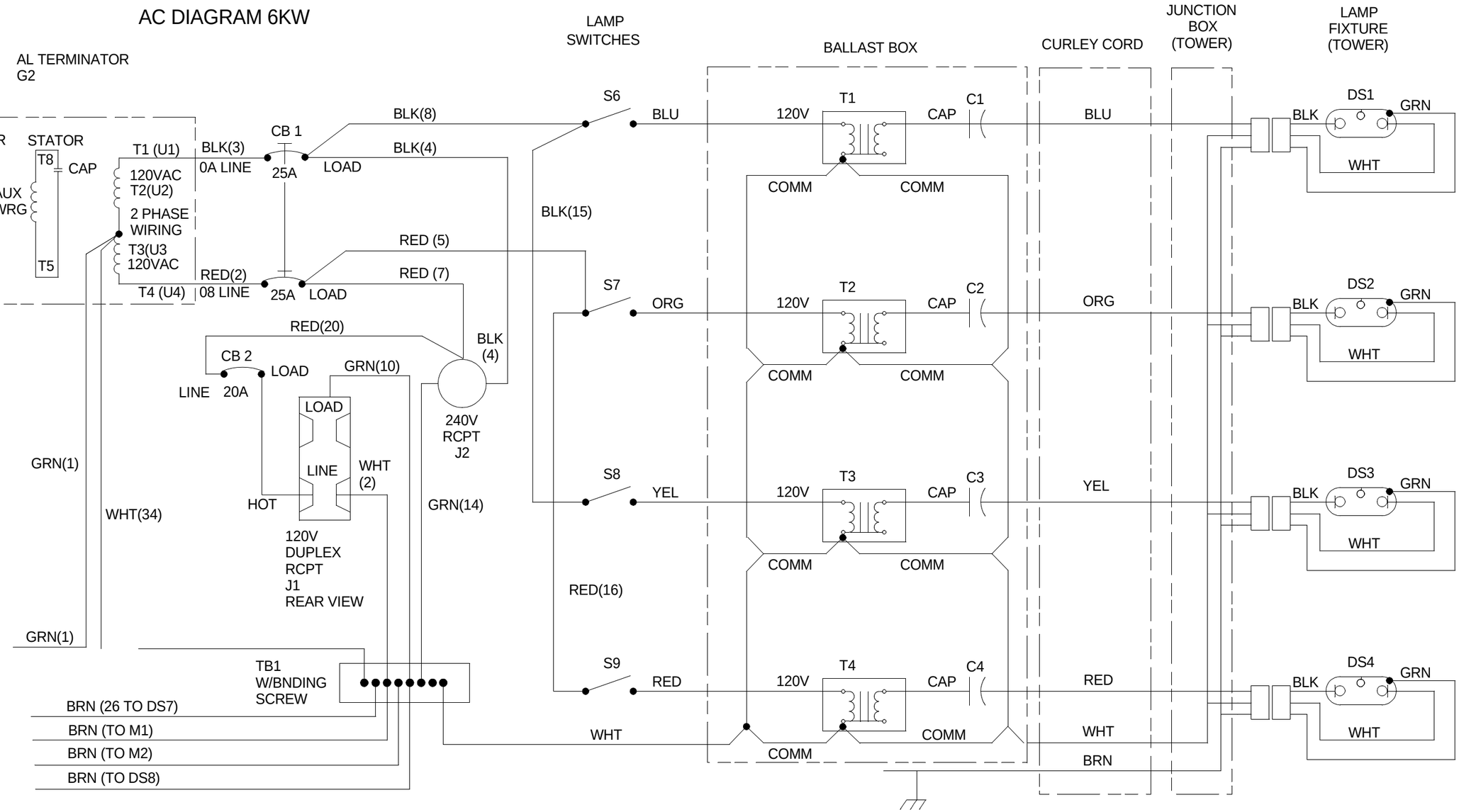


Figure 3. MCS Light Tower Wiring Diagram (Sheet 2).

L6A WIRING DIAGRAM PARTS LIST

DESIGNATOR	PART NO.	DESCRIPTION
BT1	35839497	12 VOLT BATTERY
F1	36786259	30 AMP Fuse
S1	36786457	Start Switch
S2	36757581	Engine Oil Press. Switch
S3	36868479	Engine Temp. Switch
S4	35337435	Toggle Switch
M1	35605229	Hourmeter
R1	Supplied w/Engine	Glow Plugs
L1	Supplied w/Engine	Shutdown Solenoid
L2	Supplied w/Engine	Starter Solenoid
M2	35604099	Gage, Fuel Level
DS1-DS6	36847747	Metal Halide Lamp
DS1-DS4	36766837	High Press. Sodium Lamp
DS7	36843852	Panel Lamp
DS8	36844066	Reel Lamp
R3	36789931	Module, Fuel Level
G2	336868966	Generator-6Kw
CB1	36780278	(6Kw) Main Circuit Breaker
CB2-CB3	35371772	120V Receptacle Breaker
S6-S9	35337435	Lamp Switch
J1-J2	36848745	125 Volt Receptacle
J3	36848752	250 Volt Receptacle
-----	36848349-1000 watt	Kit, Ballast, MH or HPS
TB1	36787265	Bus Bar

Figure 3. MCS Light Tower Wiring Diagram (Sheet 3).

These are the instructions for sending an electronic 2028.

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however, only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17 and 27.

From: "Whomever" whomever@avma27.army.mil
To: whomever@avma27.army.mil
To: TACOM-TECH-PUBS@ria.army.mil

Subject:DA Form 2028

1. ***From:*** Joe Smith
2. ***Unit:*** home
3. ***Address:*** 4300 Park
4. ***City:*** Hometown
5. ***St:*** MO
6. ***Zip:*** 77777
7. ***Date Sent:*** 19-OCT-93
8. ***Pub no:*** 55-1915-200-10
9. ***Pub Title:*** TM
10. ***Publication Date:*** 11-APR-88
11. ***Change Number:*** 12
12. ***Submitter Rank:*** MSG
13. ***Submitter Fname:*** Joe
14. ***Submitter Mname:*** T
15. ***Submitter Lname:*** Smith
16. ***Submitter Phone:*** 123-123-1234
17. ***Problem:*** 1
18. ***Page:*** 1
19. ***Paragraph:*** 3
20. ***Line:*** 4
21. ***NSN:*** 5
22. ***Reference:*** 6
23. ***Figure:*** 7
24. ***Table:*** 8
25. ***Item:*** 9
26. ***Total:*** 123
27. ***Text:***

This is the text for the problem below line 27.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is DAAG.	Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
TO: *(Forward to proponent of publication or form) (Include ZIP Code)*	FROM: *(Activity and location) (Include ZIP Code)*	

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

** Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)*	FROM: *(Activity and location) (Include ZIP Code)*	DATE

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0207003

To be distributed in accordance with the Initial Distribution Number (IDN) 256409 requirements for TM 55-1945-205-24-4.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 dekagram = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C