

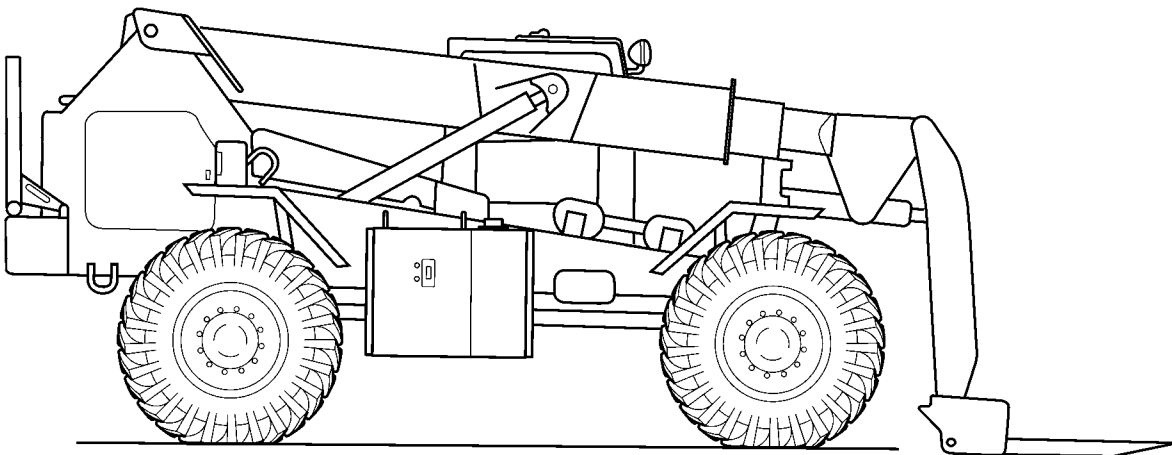
TM 10-3930-660-10

TECHNICAL MANUAL

OPERATOR'S MANUAL

FOR

TRUCK, FORKLIFT; 6,000 LB
VARIABLE REACH, ROUGH TERRAIN
NSN 3930-01-158-0849



SUPERSEDURE NOTICE - This manual supersedes TM 10-3930-660-10, dated 30 March 1993.

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

HEADQUARTERS, DEPARTMENT OF THE ARMY

MAY 2006

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within the technical manual.



BIOLOGICAL - abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.



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



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



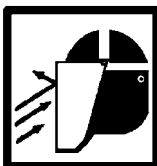
ELECTRICAL - electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.



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



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



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



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



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



HYDRAULIC FLUID PRESSURE - hydraulic fluid spraying human figure shows that fluid escaping under great pressure can cause injury or death.



RADIOACTIVE - identifies a material that emits radioactive energy and can injure human tissue or organs.



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

FOR INFORMATION ON FIRST AID, REFER TO FM 4-25.11.



WARNING

CARBON MONOXIDE (EXHAUST GASES) CAN KILL!

- Carbon monoxide is a colorless, odorless, deadly poison which, when breathed, deprives the body of oxygen and causes suffocation. Exposure to air containing carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, apparent drowsiness, and coma. Permanent brain damage or death can result from severe exposure.
 - Carbon monoxide occurs in exhaust fumes of internal combustion engines. Carbon monoxide can become dangerously concentrated under conditions of inadequate ventilation. The following precautions must be observed to ensure safety of personnel when engine of vehicle is operated.
1. DO NOT operate vehicle engine in enclosed areas without adequate ventilation.
 2. DO NOT idle vehicle engine without adequate ventilation.
 3. DO NOT drive vehicle with inspection plates or cover plates removed.
 4. BE ALERT for exhaust poisoning symptoms. They are:
 - Headache
 - Dizziness
 - Sleepiness
 - Loss of muscular control
 5. If you see another person with exhaust poisoning symptoms:
 - Remove person from area.
 - Expose to fresh air.
 - Keep person warm.
 - Do not permit physical exercise.
 - Administer cardiopulmonary resuscitation (CPR), if necessary.
 - Notify a medic.
 6. BE AWARE. The field protective mask for nuclear-biological-chemical (NBC) protection will not protect you from carbon monoxide poisoning.

The Best Defense Against Carbon Monoxide Poisoning Is Good Ventilation!

WARNING

AUTOMATIC FORK LEVEL

- Do not travel with the fork auto leveler switch in the ON position. It is possible to drop a load which may result in load damage, injury or death.
- The vehicle is less stable when traveling with the load in a raised position. If you must move the vehicle with the load raised above the carry position (bottom of load at 24 in. (610 mm) above the ground).
- Avoid sharp turns and sudden starts/stops.
- Operate all controls smoothly.
- Move very slowly.
- Keep the vehicle level.
- Ensure that the counterweight is in place. An unbalanced vehicle could tip over and may cause severe personal injury or death.

WARNING

BACK-UP ALARM

The back-up alarm does not operate in the blackout lighting mode. Use extreme caution when backing in the blackout mode. Do not disconnect this feature at any time. Failure to follow this warning may result in severe personnel injury or death.



WARNING

BATTERIES



- To avoid injury, eye protection and acid-resistant gloves must be worn when working around batteries. Do not smoke, use open flame, make sparks or create other ignition sources around batteries. If a battery is giving off gases, it can explode and cause injury to personnel. Remove all jewelry such as rings, ID tags, watches, and bracelets. If jewelry or a tool contacts a battery terminal, a direct short will result in instant heating or electric shock, damage to equipment, and injury to personnel.
- Sulfuric acid contained in batteries can cause serious burns. If battery corrosion or electrolyte makes contact with skin, eyes or clothing, take immediate action to stop the corrosive burning effects. Failure to follow these procedures may result in injury or death.
 - a. **Eyes.** Flush with cold water for no less than 15 minutes and seek medical attention immediately.
 - b. **Skin.** Flush with large amounts of cold water until all acid is removed. Seek medical attention as required.
 - c. **Internal.** If corrosion or electrolyte is ingested, drink large amounts of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Seek medical attention immediately.
 - d. **Clothing/Equipment.** Wash area with large amounts of cold water. Neutralize acid with baking soda or household ammonia.

WARNING

BOOM

- Do not raise or extend the boom until the frame is level. Failure to do so could cause the load to drop or vehicle to tip.
- Extreme care must be taken to ensure that the boom does not come near overhead wires or structures. Death or injury may result from contacting power lines. Never operate this vehicle close to electric power, or other, lines. If lines are near to your operating area, notify your supervisor of the lines prior to starting work.
- Make sure the frame is level before raising or extending the boom with a load. Failure to do so could cause the load to drop, or vehicle to tip.
- Always lift the load from its resting spot before extending or retracting the boom. Always extend or retract the boom before lowering the load to its resting spot. Failure to do so could cause vehicle damage and result in severe personal injury or death.
- Always retract the boom before lowering or transporting a load. Failure to do so could cause vehicle instability and result in severe personal injury or death.
- When engine power is lost with the boom extended or raised, the boom must be fully retracted before it is lowered to prevent severe personal injury and vehicle damage.



WARNING
COMPRESSED AIR

Particles blown by compressed air are hazardous. DO NOT exceed 15 psi (103 kPa) nozzle pressure when drying parts with compressed air. Use a maximum of 30 psi (207 kPa) when cleaning components. DO NOT direct compressed air against human skin. Failure to follow this warning may result in injury or death. Make sure air stream is directed away from user and other personnel in the area. To prevent injury, user must wear protective goggles or face shield.



WARNING
DRY CLEANING SOLVENT



Cleaning compound, solvent MIL-PRF-680 Type III is an environmentally compliant and low toxic material. However, it may be irritating to the eyes and skin. The use of protective gloves and goggles is suggested. Use in well-ventilated areas. Keep away from open flames and other sources of ignition.



WARNING
ETHER COLD START SYSTEM



Ether fuel is extremely flammable and toxic. DO NOT smoke and make sure you are in a well-ventilated area away from heat, open flames or sparks. Wear eye protection. Avoid contact with skin and eyes and avoid breathing ether fumes. If fluid enters or fumes irritate the eyes, wash immediately with large quantities of clean water for 15 minutes. Seek medical attention immediately if ether is inhaled or causes eye irritation. Failure to follow this warning may cause injury or death.



WARNING
FIRE EXTINGUISHER

Discharging large quantities of dry chemical fire extinguisher inside an enclosed winterized cab may result in temporary breathing difficulty during and immediately after the discharge event. Discharge fire extinguisher from outside the cab. Ventilate cab thoroughly prior to reentry.



WARNING
FUEL HANDLING

- DO NOT smoke or permit any open flame in area of vehicle while you are servicing diesel fuel system. Be sure hose nozzle is grounded against filler tube during refueling to prevent static electricity. Failure to follow this warning may result in injury to personnel or equipment damage.
- DO NOT perform fuel system checks, inspections or maintenance while smoking or near fire, flames or sparks. Fuel may ignite, causing damage to vehicle and injury or death.
- Wear fuel-resistant gloves when handling fuels and promptly wash exposed skin and change fuel-soaked clothing.



WARNING
HAZARDOUS WASTE DISPOSAL

When servicing this vehicle, performing maintenance or disposing of materials such as engine coolant, transmission fluid, lubricants, battery acids or batteries, consult your unit/local hazardous waste disposal center or safety office for local regulatory guidance. If further information is needed, please contact The Army Environmental Hotline at 1-800-872-3845.



WARNING
HEARING PROTECTION

Your hearing can be PERMANENTLY DAMAGED if you are exposed to constant high noise levels of 85 DB or greater. Hearing protection is required when operating vehicle or when working on vehicle while it is operating. Failure to wear hearing protection may result in hearing loss.



WARNING

HYDRAULIC SYSTEM PRESSURE

Do NOT remove hydraulic tank filler cap or disconnect or remove any hydraulic system line or fitting unless hydraulic system pressure has been relieved. Hydraulic system pressure can be over 2,500 psi (17,237 kPa), even with engine and pump OFF. To relieve pressure, lower all hydraulic attachments to the ground and shut down engine. Move control levers through all operating positions, then SLOWLY loosen hydraulic tank filler cap. After maintenance, tighten all connections before applying pressure. Escaping hydraulic fluid under pressure can penetrate the skin, causing serious injury or death.

WARNING

LOW BRAKE PRESSURE

Shut the vehicle down immediately whenever the low brake pressure warning light is illuminated. Failure to do so may result in injury or death.

WARNING

MAINTENANCE PROCEDURES

Unless otherwise specified, perform all maintenance procedures with all equipment lowered to the ground, transmission in Neutral, parking brake applied and the engine stopped. Failure to perform these tasks may cause personal injury or death.



WARNING

NBC EXPOSURE



- If NBC exposure is suspected, personnel wearing protective equipment must handle all air cleaner media. Consult your NBC Officer or NBC NCO for appropriate handling or disposal procedures.
- NBC contaminated filters must be handled using adequate precautions as described in FM 3-11.4, *Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection*, and must be disposed of by trained personnel.

WARNING

IF NBC EXPOSURE IS SUSPECTED ALL AIR FILTER MEDIA WILL BE HANDLED BY PERSONNEL WEARING FULL NBC PROTECTIVE EQUIPMENT. SEE OPERATOR/MAINTENANCE MANUAL.

7690-01-114-3702

To order this NBC decal use:

National Stock Number (NSN) - 7690-01-114-3702
 Part Number (PN) - 12296626
 Commercial and Government Entity Code (CAGEC) - 19207



WARNING
PRESSURIZED COOLING SYSTEM



- DO NOT service cooling system unless engine has cooled. This is a pressurized cooling system and escaping steam or hot coolant will cause serious burns.
- DO NOT remove cooling system radiator cap when engine is hot. Allow engine to cool down. Loosen cap to first stop and let any pressure out of cooling system, then remove cap. Failure to follow this warning may cause serious burns.
- Wear effective eye, glove, and skin protection when handling coolants. Failure to do so may cause injury.



WARNING
SLAVE STARTING

- When slave starting vehicle, use NATO slave cable that DOES NOT have loose or missing insulation.
- DO NOT proceed if suitable cable is not available.
- DO NOT use civilian-type jumper cables.

WARNING

TOWING

- Carefully move the towing vehicle into position. Always use a ground guide and any device necessary to lift the tow bar into position without standing directly between the vehicles. Failure to follow this precaution could result in personal injury or vehicle damage.
- When the propeller shafts are disconnected and the parking brake disengaged, the vehicle may roll and could result in severe personal injury. Always chock the wheels properly.

WARNING

TRAVEL OF 6K FORKLIFT

- Travel on inclines, slopes, ramps and grades only as follows:
 - Loaded Forklift: with forks (and load) pointing uphill.
 - Empty Forklift: with forks pointing downhill. Do NOT stop quickly. Failure to follow this warning may cause injury or death.
- Do not exceed 45% grade (25 degrees) longitudinally. Vehicle becomes unstable and fluid levels are shifted. Internal components may not be properly lubricated causing vehicle damage. Tires may slip (loss of traction) or vehicle may tip causing possible operator injury or death.
- Do not exceed 30% grade (17 degrees) laterally. Vehicle becomes unstable and fluid levels are shifted. Internal components may not be properly lubricated causing vehicle damage. Tires may slip (loss of traction) or vehicle may tip causing possible operator injury or death.
- Do NOT stop quickly. The load may drop off the forks causing damage or personal injury.
- Do not downshift at high speeds. Vehicle will slow suddenly and drop the load or possible cause operator injury.
- Do not turn fast as this may cause the vehicle to tip and possibly lose the load. This is particularly true in the 4 wheel steering mode. Turn the vehicle in a lower gear or a slower speed.
- Use care when handling and transporting the ammunition pallets. Failure to do so could result in severe personal injury or death.
- Do not operate the vehicle with the emergency steer switch in the OFF position. If engine power is lost there will be a loss of emergency steering capabilities. Failure to follow this precaution could result in severe personal injury.

WARNING

VEHICLE OPERATION

- Use caution and maintain three-point contact at all times when mounting or dismounting vehicle, to avoid injury or death.
- BE ALERT for personnel in the area while operating vehicle. Always check to ensure area is clear of personnel and obstructions before moving. Failure to follow this warning may result in injury or death.
- Use of seat belt while operating vehicle is mandatory. Fasten belt BEFORE driving. Trying to fasten belt while driving creates a hazardous condition. Failure to follow this warning may result in injury or death.
- DO NOT allow riders on vehicle. Failure to follow this warning may result in injury or death.
- Make sure frame is level before raising or extending boom with load. Failure to do so could cause load to drop or vehicle to tip.
- Never move any part of vehicle or load near a power line or power lines. Failure to follow this warning could result in immediate severe injury or death.
- Ensure that counterweight is in place. An unbalanced forklift could tip over and could cause severe personal injury or death.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

Date of issue for original manual is:

Original 1 May 2006

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 36 AND TOTAL NUMBER OF WORK PACKAGES IS 26 CONSISTING OF THE FOLLOWING:

Page/WP No.	*Change No.
Cover/(Back Blank)	0
a to i/(j Blank)	0
A/(B Blank)	0
i to iv	0
WP 0001 00 to 0026 00	0
Index-1 to Index-4	0

* Zero in this column indicates an original page or work package.

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OPERATOR'S MANUAL

FOR

TRUCK, FORKLIFT; 6,000 LB
VARIABLE REACH, ROUGH TERRAIN
(NSN 3930-01-158-0849)

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 (*Recommended Changes to Equipment Technical Publications*), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is <https://aeeps.ria.army.mil/>. The DA Form 2028 is located under the Public Applications section in the AEPS Public Home Page. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or e-mail your letter or DA Form 2028 direct to: AMSTA-LC-LPIT/TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, 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.

SUPERSEDURE NOTICE - This manual supersedes TM 10-3930-660-10, dated 30 March 1993.

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

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HOW TO USE THIS MANUAL

NOTE

If at any time you are unsure how to use this manual or you cannot locate the information you need, notify supervisor.

INTRODUCTION

1. This revised manual is designed to help you operate the Truck, Forklift; 6,000 lb. Variable Reach, Rough Terrain and perform operator troubleshooting and maintenance on the forklift.
2. This manual is written in work package format:
 - a. Chapters divide the manual into major categories of information (e.g., *Introductory Information with Theory of Operation, Operating Instructions, Operator Troubleshooting, Operator Maintenance Instructions, and Supporting Information*).
 - b. Each Chapter is divided into work packages, which are identified by a 6-digit number (e.g., 0001 00, 0002 00, etc.) located on the upper right-hand corner of each page. The work package page number (e.g., 0001 00-1, 0001 00-2, etc.) is located centered at the bottom of each page.
 - c. If a Change Package is issued to this manual, added work packages use the 5th and 6th digits of their number to indicate new material. For instance, work packages inserted between WP 0001 00 and WP 0002 00 are numbered WP 0001 01, WP 0001 02, etc.
3. Scan through this manual to become familiar with its organization and contents before attempting to operate or maintain the forklift.

CONTENTS OF THIS MANUAL

1. A *Warning Summary* is located at the beginning of this manual. Become familiar with these warnings before operating or performing operator troubleshooting or maintenance on the forklift.
2. A *Table of Contents*, located in the front of the manual, lists all chapters and work packages in the publication.
 - a. The Table of Contents also provides *Reporting Errors and Recommending Improvements* information and DA Form 2028 addresses, for the submittal of corrections to this manual.
 - b. If you cannot find what you are looking for in the *Table of Contents*, refer to the alphabetical *Index* at the back of the manual.
3. Chapter 1, *Introductory Information with Theory of Operation* provides general information on the manual and the forklift.
4. Chapter 2, *Operating Instructions* explains and illustrates all operator's controls and indicators and contains a *Stowage and Decal, Data Plate, and Stencil Guide*. It also describes how to perform all operating procedures for the forklift: *Operation Under Usual Conditions* and *Operation Under Unusual Conditions*.
5. Chapter 3 covers all *Operator Troubleshooting*. WP 0009 00 contains a *Troubleshooting Symptom Index*. If the forklift malfunctions, this index should always be consulted to locate the appropriate troubleshooting procedure.
6. Chapter 4 deals with *Operator Maintenance Instructions*. Major areas covered are *Preventive Maintenance Checks and Services (PMCS)* and operator level maintenance tasks.
7. Chapter 5 includes *Supporting Information: References, Components of End Item (COEI) and Basic Issue Items (BII) Lists, Additional Authorization List (AAL), and Expendable and Durable Items List and Load Rating Chart*.

FEATURES OF THIS MANUAL

1. WARNINGS, CAUTIONS, NOTES, subject headings, and other important information are highlighted in **BOLD** print as a visual aid.

WARNING

A WARNING indicates a hazard which may result in injury or death.

CAUTION

A CAUTION is a reminder of safety practices or directs attention to usage practices that may result in damage to equipment.

NOTE

A NOTE is a statement containing information that will make the procedures easier to perform.

2. Statements and words of particular interest may be printed in CAPITAL LETTERS to create emphasis.
3. Within a procedural step, reference may be made to another work package in this manual or to another manual. These references indicate where you should look for more complete information. If you are told: "Start engine (WP 0005 00)," go to WP 0005 00 in this manual for instructions on starting engine.
4. Illustrations are placed after, and close to, the procedural steps to which they apply. Callouts placed on the art may be text or numbers.
5. Numbers located at lower right corner of art (e.g., 409-001; 409-002, etc.) are art control numbers and are used for tracking purposes only.
6. Technical instructions include metric units as well as standard units. For your reference, a *Metric Conversion Chart* is located on the inside back cover of the manual.

CHAPTER 1
INTRODUCTORY INFORMATION WITH
THEORY OF OPERATION

SCOPE

1. **Type of Manual.** This manual is used for operating and performing operator troubleshooting and maintenance on the 6K forklift.
2. **Model Number and Equipment Name.** The 6K Forklift, 6000 lb Variable Reach, Rough Terrain Forklift Truck is equipped with a Multiple Launch Rocket System (MLRS) lifting tool.
3. **Purpose of Equipment.** The 6K forklift is designed for loading and unloading Multiple Launch Rocket System (MLRS) pods and other munitions from transport vehicles and containers. The 6K forklift is also designed for use as a standard rough terrain forklift.
4. **Special Limitations on Equipment.** The 6K forklift has no special limitations. Normal limitations such as travel speed, lift capacity, etc. are given in WP 0002 00.

MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-751, *Functional Users Manual for The Army Maintenance Management System*, as contained in the Maintenance Management Update.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your 6K forklift 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 a SF 368 (*Product Quality Deficiency Report*). Mail it to Commander, U.S. Army Tank-automotive and Armaments Command, Attn: AMSTA-AC-NML, Rock Island, Illinois 61299-7630. We'll send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

1. 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.
2. 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 these materials may be a corrosion problem.
3. If a corrosion problem is identified, it can be reported using SF Form 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 738-751.

WARRANTY INFORMATION

Refer to the Warranty Technical Bulletin TB 10-3930-660-14.

LIST OF ABBREVIATIONS

NOTE

Refer to ASME Y14.38-1999 for standard abbreviations.

ABBREVIATION	DEFINITION
6K forklift	Variable Reach, Rough Terrain Forklift Truck
AAL	Additional Authorization List
BII	Basic Issue Items
C	Centigrade or Celsius
cc	Cubic Centimeter
CCA	Cold Cranking Amps
cm	Centimeter
COEI	Components of End Item
F	Fahrenheit
FOPS	Falling Object Protective Structure
GVWR	Gross Vehicle Weight Rating
IAW	In Accordance With
kg	Kilogram
km	Kilometer
kPa	Kilopascal
kph	Kilometers per Hour
L	Liter
lb-ft	Pound Foot
LED	Light-Emitting Diode
MLRS	Multiple Launch Rocket System
mm	Millimeter
mph	Miles per Hour
Nm	Newton Meter
oz	Ounce
PMCS	Preventive Maintenance Checks and Services
qt	Quart
ROPS	Roll Over Protective Structure
STE/ICE-R	Simplified Test Equipment for Internal Combustion Engines - Reprogrammable

END OF WORK PACKAGE

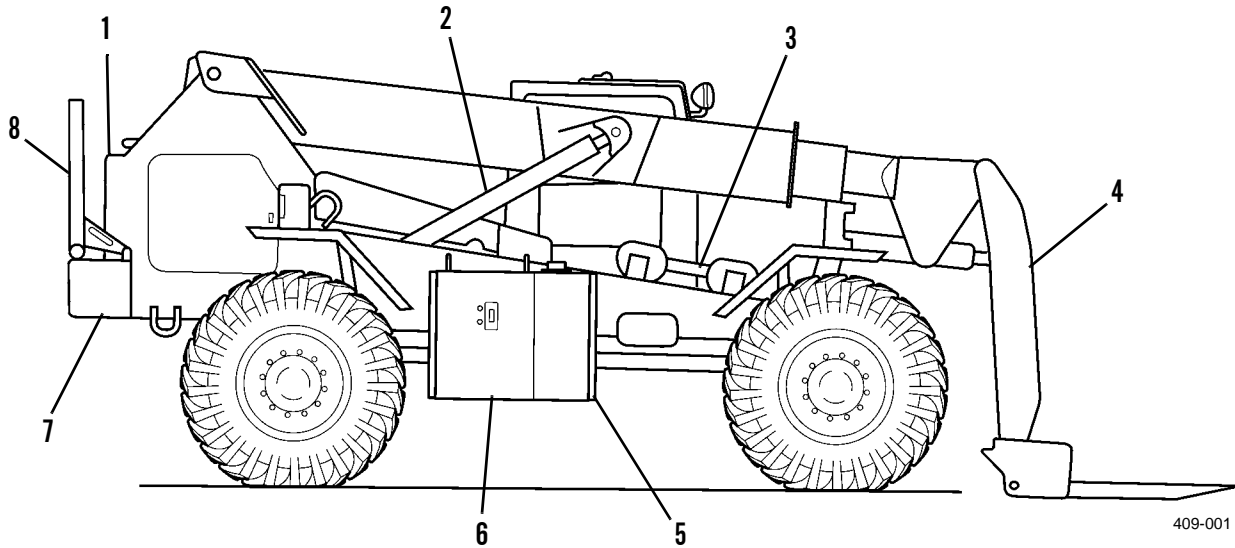
EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES1. **Characteristics.**

All weather operational.

2. **Capabilities and Features.**

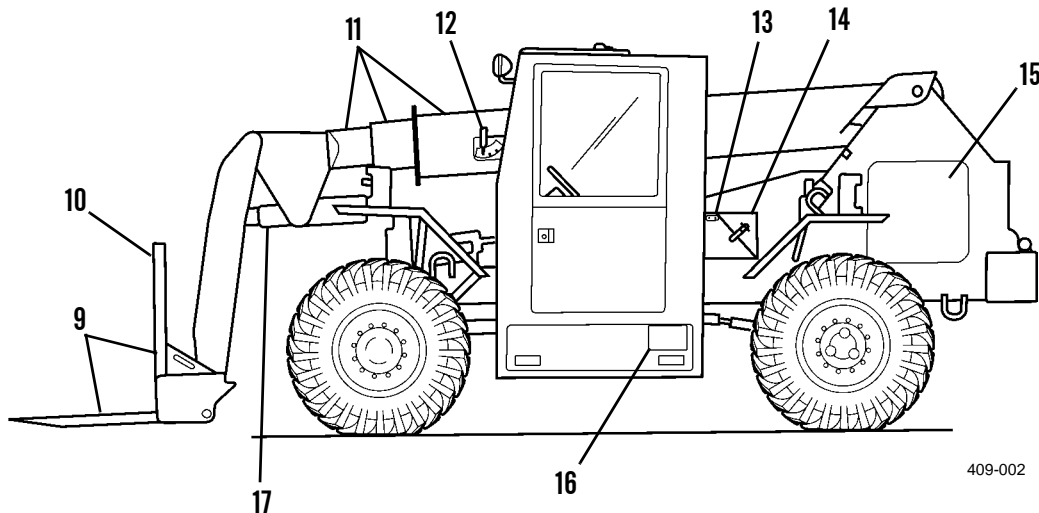
- a. With the MLRS lifting tool and stop tube on the forks, the vehicle can handle MLRS pods.
- b. With the MLRS lifting tool and stop tube removed and the backrest installed on carriage, the vehicle can handle boxes and palletized ammunition loads.
- c. The lifting tool stop tube fits over the forks. It prevents the lifting tool from moving too far back on the forks and prevents the MLRS pods from contacting the frame or vehicle wheels when in the carry position.
- d. The vehicle frame can be tilted 9 degrees to left or right which allows vehicle to be level when traversing a sideslope.
- e. The MLRS attachment can be raised to a horizontal position for loading and unloading munitions.
- f. The forks tilt, level, and sideshift to maneuver loads.
- g. Lifts loads of 6,000 lb (2,722 kg) to a height of 23 ft (7 m) and 4,000 lb (1,814 kg) to a height of 26 ft (8 m).
- h. Can tow other vehicles weighing 27,100 lb (12,292 kg) or less.
- i. The operator can select one of three steering modes: two steer, four steer, and crab steer.
- j. Can ford in up to 30 in. (762 mm) of water.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS



KEY	COMPONENT	DESCRIPTION
1	Radiator	Contains coolant which provides engine cooling.
2	Boom Hoist Cylinder	Raises and lowers the boom.
3	Lifting Hook and Stop Assembly (shown in storage position)	The stop tube prevents the lifting hook from moving too far back on the forks and prevents the MLRS pod from contacting the frame or vehicle wheels when in the carry position.
4	Attachment	The attachment can be raised to a horizontal position, creating a low profile and extended reach configuration. This configuration is useful in loading and unloading munitions from transport vehicles and containers.
5	Fuel Tank	Contains diesel fuel for engine operation.
6	Hydraulic Oil Reservoir	Contains hydraulic oil for the hydraulic system.
7	Frame and Counterweight	The frame is a heavy-duty design constructed of 1-3/16 in. thick steel plates. The frame is equipped with tie-down lugs meeting air transport specifications, tow lugs, a pintle hook, and a 3,600 lb counterweight.
8	Load Backrest (shown in storage position)	Used to rest a load during non-MLRS operations. The backrest can be attached to the fork carriage and serves as a backstop or support materials being carried on the forks.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - CONTINUED



KEY	COMPONENT	DESCRIPTION
9	Forks and Carriage	Serve as an anchoring point of the forks. The fork carriage is also equipped with automatic fork leveling. Moving a switch will keep the forks level when raising or lowering the boom.
10	Load Backrest (Shown in fork carriage position)	Serves as a backstop or support for materials being carried on the forks.
11	Boom	The telescopic, three-stage boom is constructed of welded high strength steel. The boom will retract or extend the reach and height of the forks.
12	Boom Angle Indicator	Shows the angle of the boom relative to the horizon.
13	NATO Slave Receptacle	Connection point for starting a disabled vehicle or for receiving starting assistance when disabled.
14	Battery Box	Holds the batteries which provide current for the electric system.
15	Engine	Provides the necessary power to drive the transmission. The engine also contains sending units for the Simplified Test Equipment for Internal Combustion Engines (STE/ICE-R) diagnostics.
16	Tool Box	Storage area for tools and basic issue items.
17	Attachment Hoist Cylinder	Moves the attachment forward and back.

EQUIPMENT DATA

General:

Type	Truck, Forklift, 6,000 lb; Variable Reach, Rough Terrain
Vehicle Operational Weight	27,100 lb (12,292 kg)
Boom Assembly Weight	4,100 lb (1,860 kg)
Inner Boom Weight	955 lb (433 kg)
Intermediate Boom Weight	830 lb (376 kg)
Outer Boom Weight	1,580 lb (717 kg)
Boom Extend Cylinder Weight	537 lb (244 kg)
Length (Carry Position) Maximum	312 in. (7,925 mm)
Width	102 in. (2,591 mm)
Height (Maximum)	101 in. (2,565 mm)
Wheelbase	124 in. (3,150 mm)
Track Width (Tread)	81.3 in. (2,065 mm)

Functional:

Lift (Maximum)	6,000 lb (2,722 kg)
Lift Height	26 ft (8 m)
Boom Lift Angle (Maximum)	45 degrees
Maximum Reach from Load Center to Front Tires	24.16 ft (7.36 m)
Maximum Reach Below Grade	20 in. (508 mm)
Ground Clearance	14.3 in. (363 mm)
Turning Radius (Curb to Curb)	15 ft 4 in. (4.7 m)
Frame Oscillation	9 degrees to the left or right
Fording Depth (Freshwater)	30 in. (762 mm)
Travel Speed (Maximum)	23 mph (37 kph)

Refill Capacities:

Fuel Tank	44 gal. (166.5 L)
Cooling System	8 gal. (30 L)
Hydraulic Oil Reservoir	56.6 gal. (214.2 L)
Engine Crankcase	15 qt (14 L)
Transmission	5.5 gal. (2 L)

EQUIPMENT DESCRIPTION AND DATA - CONTINUED

0002 00

EQUIPMENT DATA - CONTINUED

Power Train:

Engine (6K):

Model6BT5.9
 Manufacturer Cummins
 Horsepower (@ 2,500 RPM) 152 hp
 Number of Cylinders 6
 Displacement 359 in.³
 Weight 1,075 lb (401 kg)
 Engine Idle RPM 850 to 950 RPM

Engine (ATLAS):

Model6BT5.9-C165
 Manufacturer Cummins
 Horsepower (@ 2,500 RPM) 165 hp
 Number of Cylinders 6
 Displacement 359 in.³
 Weight 930 lb (422 kg)
 Engine Idle RPM 900 to 1,000 RPM

Transmission:

Model 1,723
 Manufacturer Funk Manufacturing
 Powershift 3 speed forward and reverse
 Speed Range, First Gear 0-4 mph (0-6 kph), level surface
 Speed Range, Second Gear 0-8 mph (0-13 kph), level surface
 Speed Range, Third Gear 0-23 mph (0-37 kph), level surface
 Weight 846 lb (384 kg)

Axles and Brakes:

Model (Front) PSOC-205-HOB-205
 Model (Rear) PSOC-205-HOB-206
 Manufacturer Rockwell
 Weight - Axle Assembly (Front or Rear) 1,650 lb (748 kg)

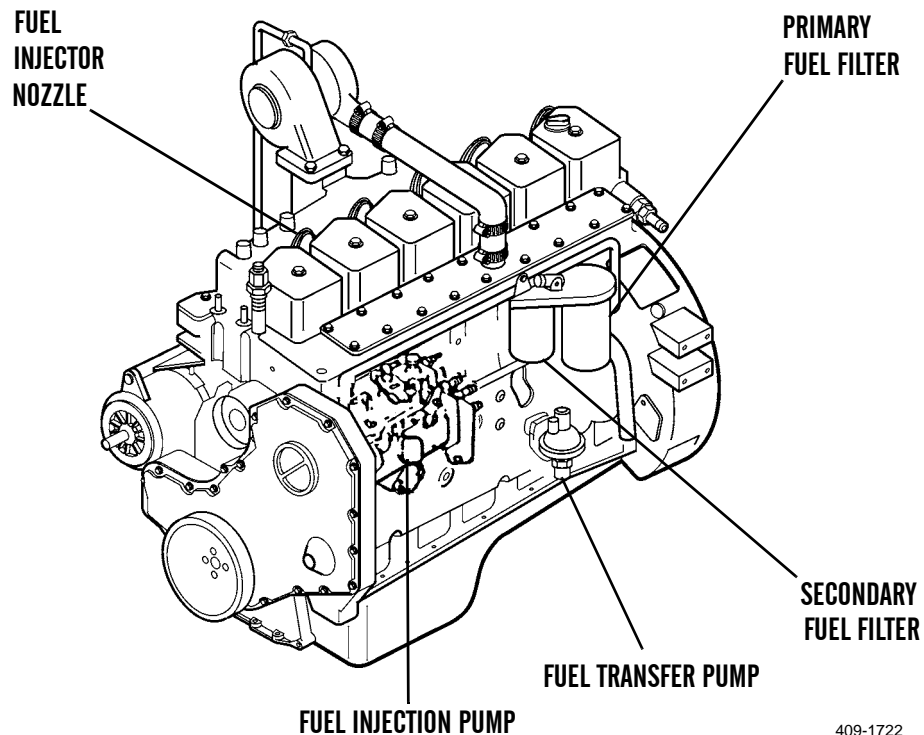
END OF WORK PACKAGE

INTRODUCTION

This work package explains how components of the 6K forklift work together. A functional description is given for the fuel system, engine lubrication system, engine cooling system, steering and brake system, electrical system, and hydraulic system.

FUEL SYSTEM

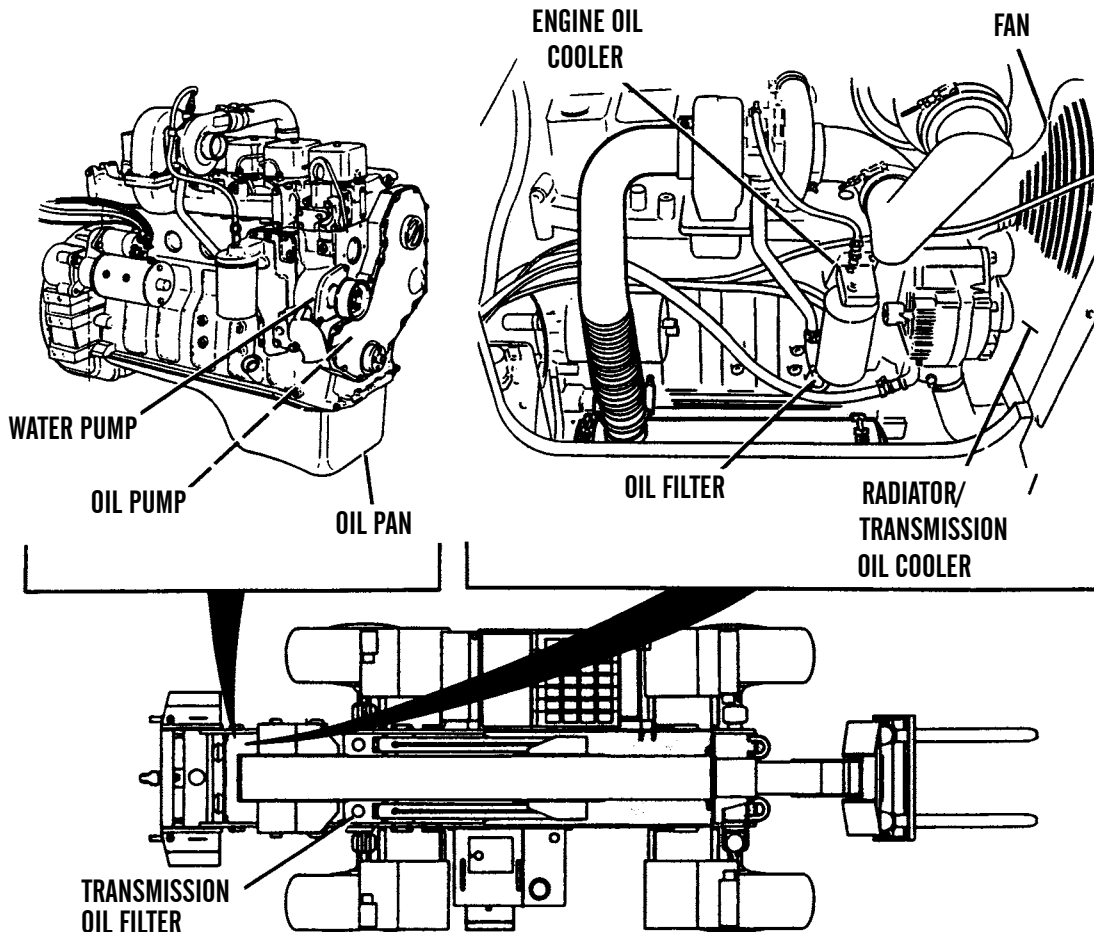
1. **Fuel/Water Separator.** Removes moisture from fuel. (Not shown, located ahead of the engine on the right side of frame).
2. **Fuel Filter.** Removes larger particles from the fuel before it reaches the injector pump.
3. **Fuel Transfer Pump.** Pulls fuel from the fuel tank through the fuel/water separator, and sends it through the fuel filters to the fuel injection pump.
4. **Fuel Injection Pump.** Sends exact amount of fuel to the injector nozzles.
5. **Fuel Injector Nozzle.** Turns the stream of fuel into a fine spray which permits good combustion in the cylinder. There is one nozzle for each cylinder.



409-1722

ENGINE LUBRICATION AND COOLING SYSTEMS

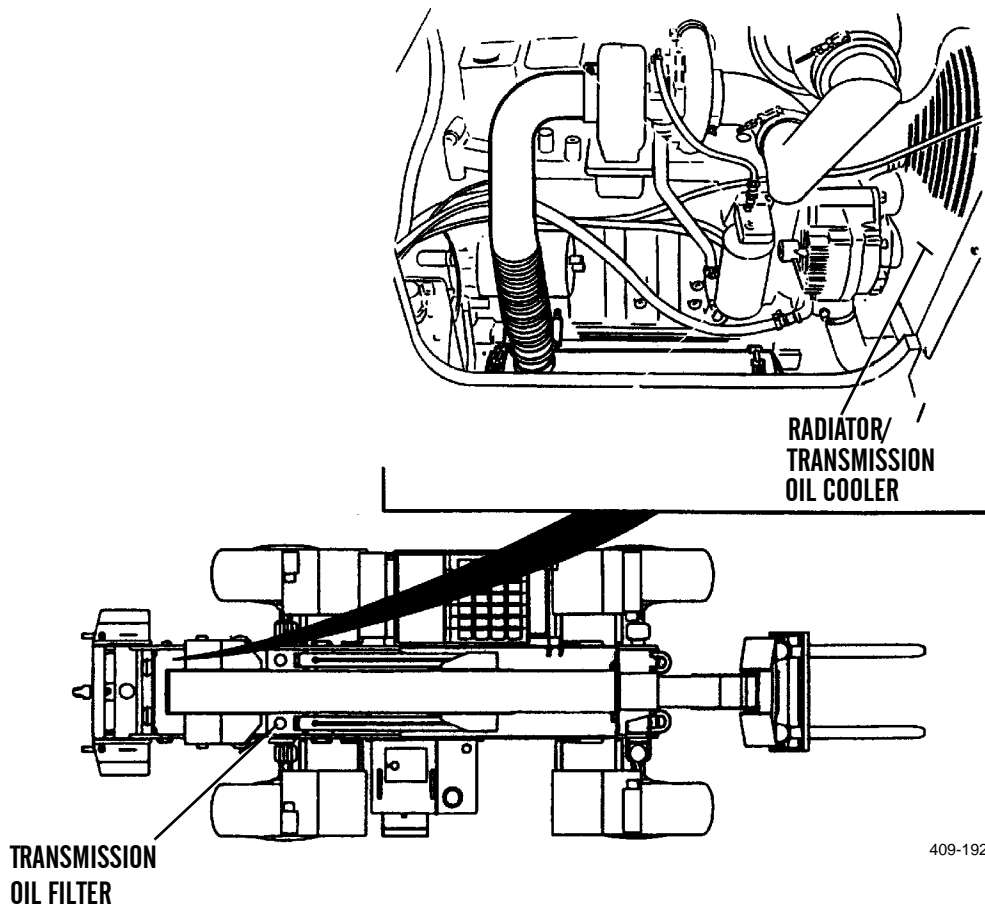
1. **Oil Pump.** Located on the front housing cover side. The pump draws oil from the oil pan and sends it through the oil cooler, and then through the oil filter. From the filter, the oil enters the cylinder block to lubricate the engine and is then returned to the oil pan. From the filter, oil is also sent through the turbocharger and then returned to the oil pan.
2. **Oil Pan.** Contains the oil that lubricates moving parts in the engine. It is attached to the bottom of the engine.
3. **Engine Oil Cooler.** Engine oil flows through the plates of the oil cooler. As the oil warms, the heat is transferred to the coolant which flows from the radiator. The coolant flows across the plates of the oil cooler.
4. **Oil Filter.** Removes particles from the oil which could cause damage to the internal parts of the engine.
5. **Water Pump.** Draws coolant from the radiator and sends it through the oil cooler cavity and cylinder block to cool the engine. The coolant then returns to the radiator.
6. **Fan.** The fan is turned by the engine drive belt. It creates air flow through the radiator to lower the temperature of the coolant as it passes through the radiator.
7. **Radiator.** The 6K forklift cooling system uses an overflow system. The system is full when 2 qt (1.8 L) of coolant are visible in the overflow bottle. Coolant circulates through the radiator to be cooled after leaving the cylinder block.



409-004

TRANSMISSION LUBRICATION AND COOLING SYSTEMS

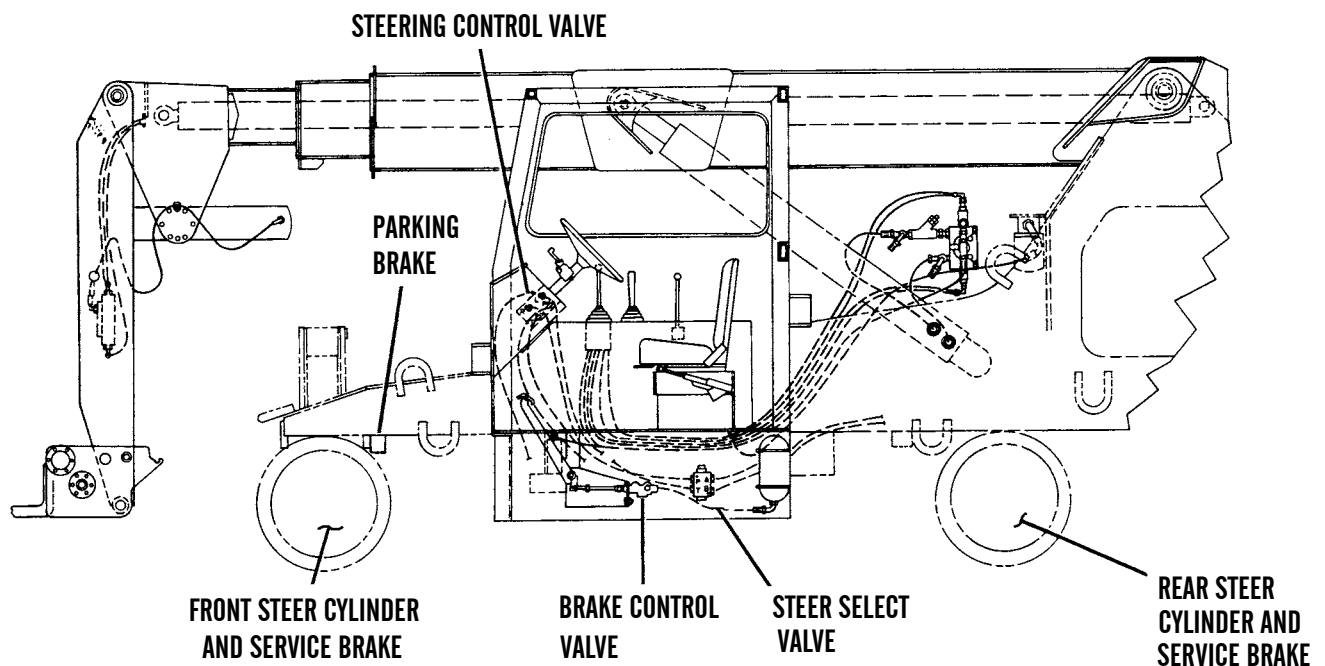
1. **Transmission Oil Filter.** Located on right side, just above the boom hoist cylinder on the engine bulkhead. Filter removes particles in the oil which could damage internal components of the transmission. A pump inside the transmission produces oil flow through the filter, transmission, and oil cooler.
2. **Transmission Oil Cooler.** The cooler is located in the bottom of the radiator. Coolant from the radiator is circulated across the cooler to lower the transmission oil temperature.



409-1920

STEERING AND BRAKE SYSTEM

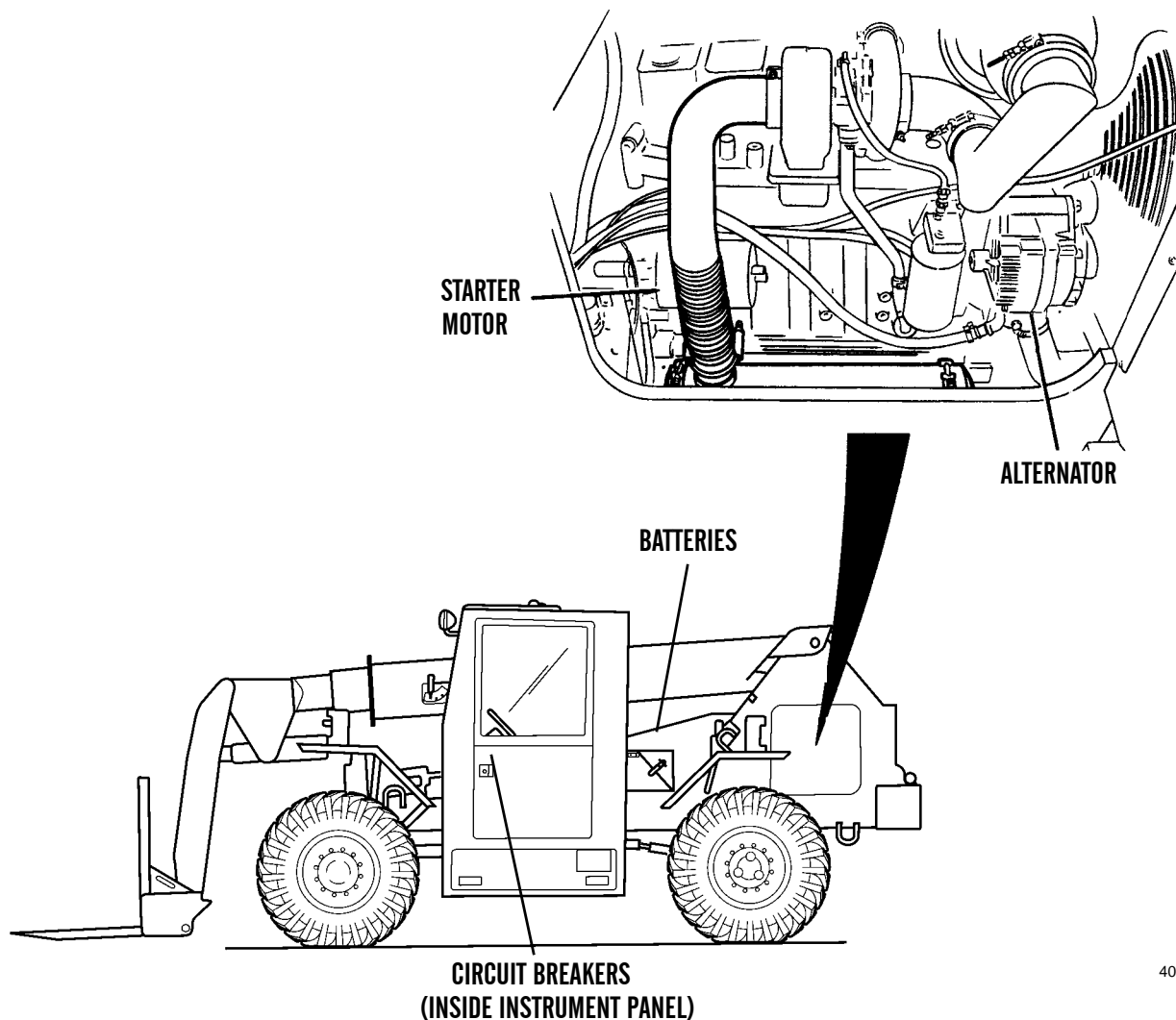
1. **Steer Cylinders.** A cylinder is mounted at both ends of each axle and controlled by the steering wheel.
2. **Steering Control Valve.** Connected directly to the steering wheel and located behind the instrument access panel. Controls the steering function by directing the flow of hydraulic fluid to the cylinders.
3. **Steer Select Valve.** Externally mounted under the cab. Allows the selection of two wheel, four wheel, or crab steering through the steer select control, a three-position switch.
4. **Brake Control Valve.** Located under the cab. Provides a priority flow to the brake system. Excess flow is directed by the priority valve to the frame tilt system.
5. **Service Brakes.** Dry disc, caliper-type brakes are mounted on all four wheels. The service brakes are hydraulically actuated by pressing the brake or transmission disconnect pedals. An accumulator in the braking system enables a limited number of stops without engine power.
6. **Parking Brake.** A mechanically actuated drum brake is mounted on the front axle input shaft. A lever in the cab engages and disengages the parking brake.



409-005

ELECTRICAL SYSTEM

1. **Batteries.** Provide power for three circuits: the charging circuit, the starting circuit, and the lighting circuit. Two 12 volt batteries are connected in series to provide starting power.
2. **Alternator.** The 24 volt, 65 amp alternator, an integral part of the charging circuit, provides current to charge the batteries when the engine is running.
3. **Starter Motor.** Part of the starting circuit, the starter motor is used to turn the engine flywheel fast enough to start the engine.
4. **Circuit Breakers.** Located inside instrument panel. Switches that open the battery circuit if there is a shorted, grounded wire or excessive current draw by a defective component in the corresponding circuit. When the circuit is open, no current will flow through the electrical system. The circuit breakers will automatically reset once they cool. If a breaker continually trips, the electrical system requires repair.

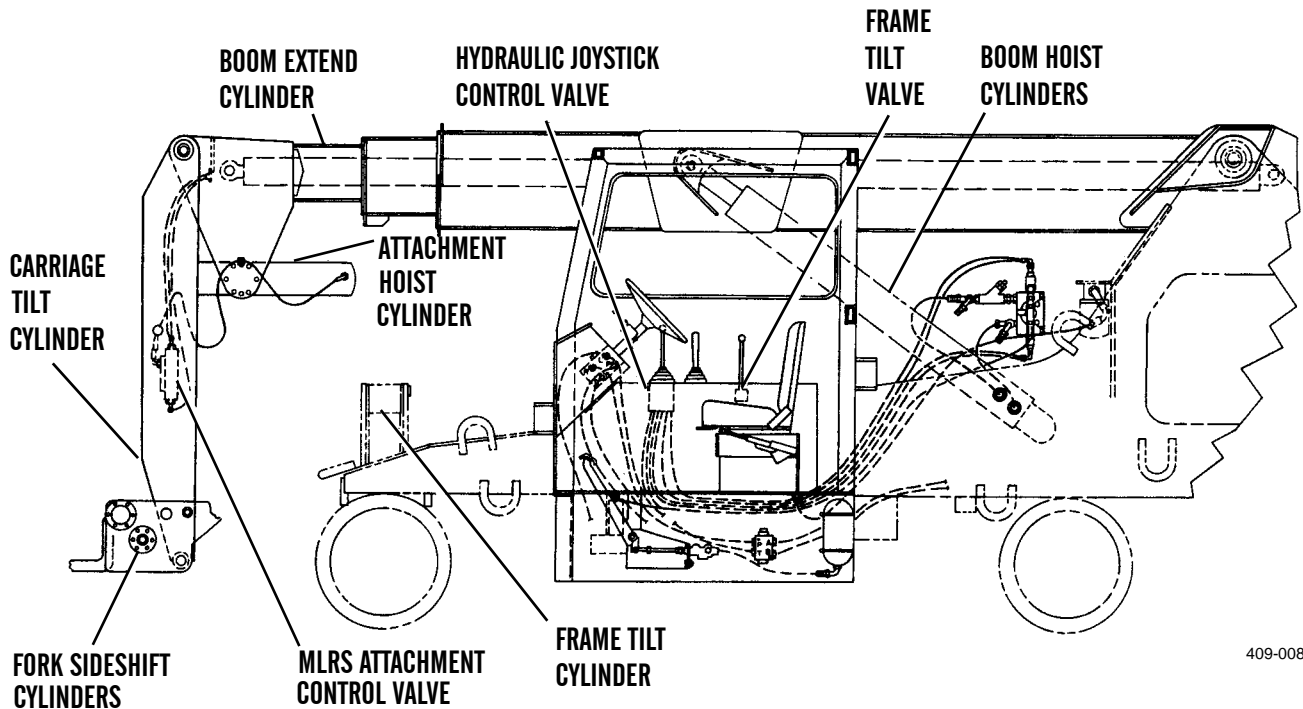
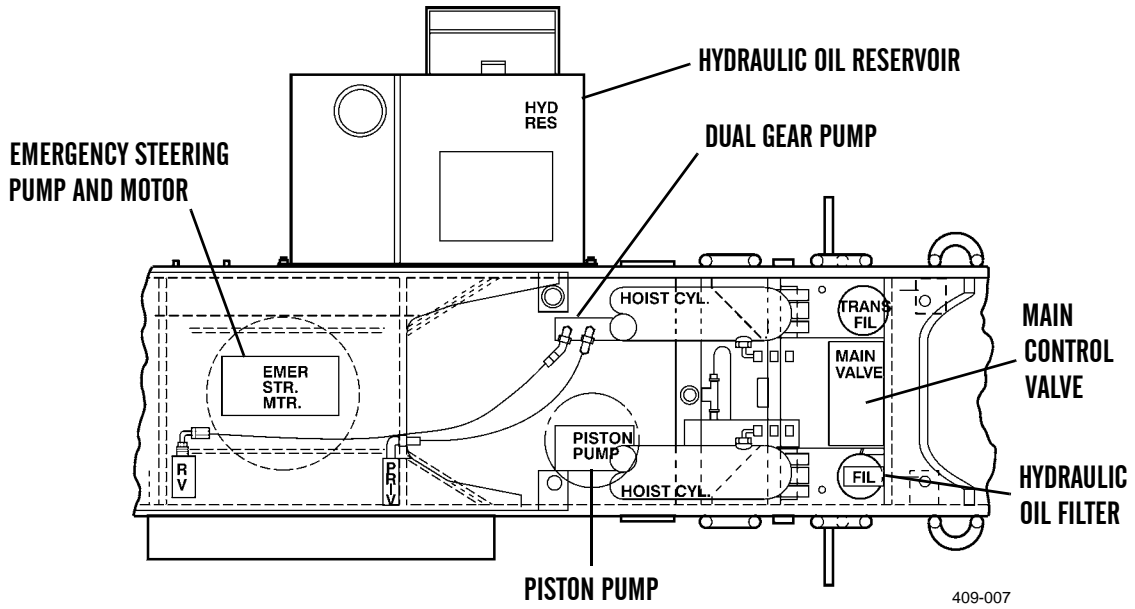


409-006

HYDRAULIC SYSTEM

1. **Hydraulic Oil Reservoir.** Contains oil for the entire hydraulic system.
2. **Hydraulic Oil Filter.** Removes smaller harmful particles from the oil before the oil returns to the reservoir.
3. **Main Control Valve.** Located on the engine compartment bulkhead of the main frame (near back of transmission). Operated by the hydraulic joystick control valve to control: boom hoist/lowering and extend/retract.
4. **Attachment Control Valve.** Mounted on the attachment and controlled by an electrical joystick. Controls the three attachment functions: hoist/lowering, fork tilt, and fork sideshift.
5. **Frame Tilt Valve.** Mounted inside the console located to the right of the operator seat. Controls the tilting of the vehicle frame. Operated by frame tilt control lever.
6. **Hydraulic Joystick Control Valve.** Located on the side console in cab. Controls the following boom functions: raise, lower, extend, and retract.
7. **Dual Gear Pump.** Mounted to and driven by the transmission to supply hydraulic oil flow. This two section pump supplies hydraulic fluid for the following functions: boom hoist, boom extend, steering, brakes and frame tilt.
8. **Piston Pump.** Mounted to and driven by the transmission. This pump supplies hydraulic fluid for the following functions: attachment hoist, fork tilt and shift control.
9. **Emergency Steering Pump and Motor.** Located in the vehicle frame forward of the transmission. This pump supplies 5 gpm of emergency flow to the steering system whenever the starter-run control switch is on and there is a loss of hydraulic oil pressure. The pump is driven by an electric motor.
10. **Fork Sideshift Cylinders.** Two cylinders controlled by one joystick control. Both cylinders can be operated at the same time to sideshift forks left or right, to move forks together or apart. The cylinders can also be operated individually.
11. **Carriage Tilt Cylinders.** Two cylinders controlled by the electric joystick control. Moving the lever to the right causes the cylinders to extend and the fork tips to lower. Moving the lever to the left causes the cylinders to retract and the fork tips to raise.
12. **Attachment Hoist Cylinder.** This cylinder is controlled by the attachment hoist control joystick. When the lever is pushed forward, the cylinder will retract. When the lever is pulled back, the cylinder will extend and raise the MLRS attachment.
13. **Boom Extend Cylinder.** This cylinder is controlled by the boom extend and retract joystick control. Moving the lever to the right causes the cylinder to extend and increase the reach distance or the height of the forks, depending on the angle of the boom. Moving the lever to the left causes the cylinder to retract.
14. **Frame Tilt Cylinder.** This cylinder is controlled by the frame tilt control joystick. When the lever is moved forward, the cylinder extends and tilts the vehicle to the left. Pulling the lever back causes the cylinder to retract and tilt the frame to the right.
15. **Boom Hoist Cylinders.** Two cylinders controlled by the boom hoist control joystick. When the lever is moved forward, the cylinders retract and the boom lowers. Moving the lever backward causes the cylinders to extend and the boom to raise.

HYDRAULIC SYSTEM - CONTINUED



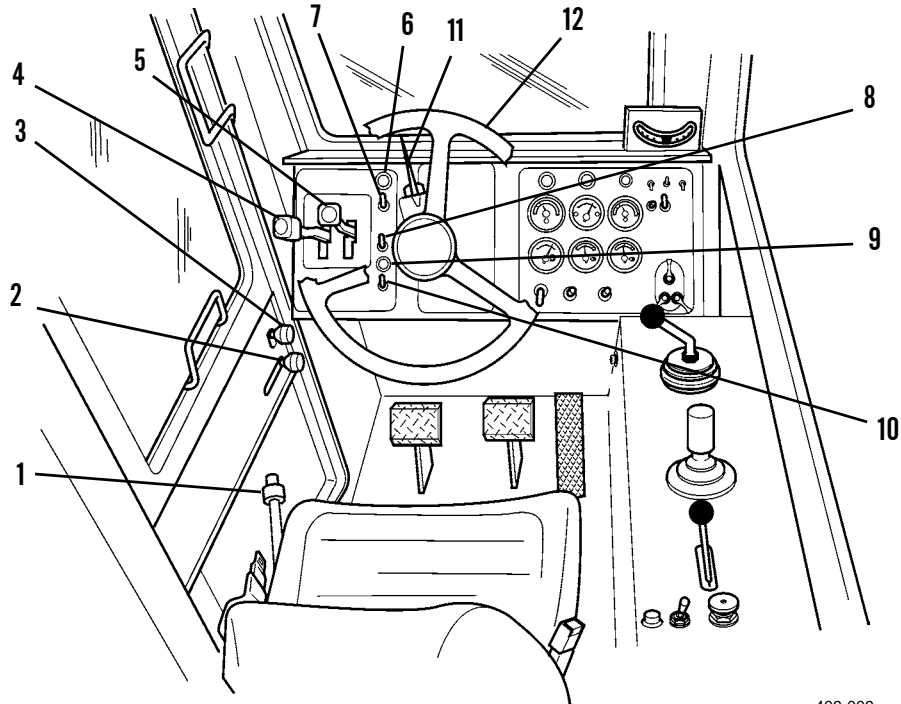
END OF WORK PACKAGE

CHAPTER 2
OPERATING INSTRUCTIONS

GENERAL

This work package describes, locates and illustrates the controls and indicators used on the 6K forklift. Read and become familiar with the location and function of all operator controls and indicators, as described in this work package.

CAB DOOR AND INSTRUMENT PANEL CONTROLS AND INDICATORS



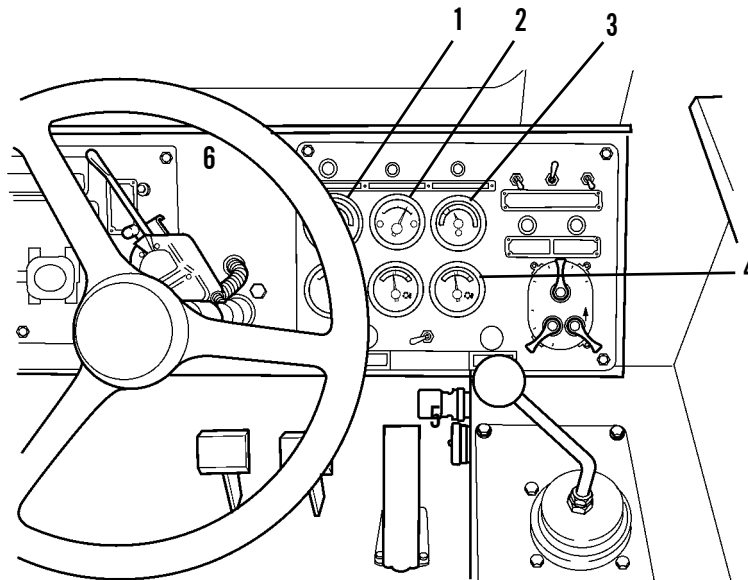
409-009

KEY	CONTROL OR INDICATOR	FUNCTION
1	Parking Brake Lever	Applies the parking brake. Pull the lever up to apply the brake. Push the lever down to release the brake. Adjust the brake by turning the knob on end of lever.
2	Lower Cab Door Release	Opens the upper and lower cab door. Pull back horizontally on the knob to open the door.
3	Upper Cab Door Release	Opens the upper cab door. Pull down on the knob to open the door. A rubber catch on the outside and a cloth strap will hold the door in a full open position.
4	Travel Select Control	Controls the direction of travel. Move the lever all the way up to travel forward. Move the lever to the center position for neutral. Move the lever all the way down to travel in reverse.
5	Range Select Control	Controls the travel speed. Move the lever all the way up to position 3 for high ground speed. Move the lever to the center position 2, for normal speed conditions. Move the lever all the way down to position 1 for highest torque and pulling power.
6	Automatic Fork Level Indicator Light	Illuminates whenever the fork auto leveler switch is in the ON position.

CAB DOOR AND INSTRUMENT PANEL CONTROLS AND INDICATORS - CONTINUED

KEY	CONTROL OR INDICATOR	FUNCTION
7	Fork Auto Leveler Switch	Automatically controls the level of the forks when in the ON position. In the OFF position, the forks can be tilted manually with the electric joystick control.
8	Front Window Wiper Switch	A three position switch which controls the front windshield wiper. Move the switch up for high speed operation, to the middle for OFF and down for low speed operation.
9	Front Window Wash Button	Spray fluid onto the front window. Push the button and use front wiper to wash the window.
10	Rear Window Wiper Switch	Three position switch controls the rear windshield wiper. Move the switch up for high speed operation, to the middle for OFF and down for low speed operation.
11	Directional Light Switch	Pull the tab out to operate four-way hazard flasher. Move directional lever right or left to disengage hazard flashers. Operates with key on or off. Move directional lever right or left to operate turn signal lights.
12	Steering Wheel	Controls the direction of travel. Turn the wheel clockwise to turn right, counterclockwise to turn left.

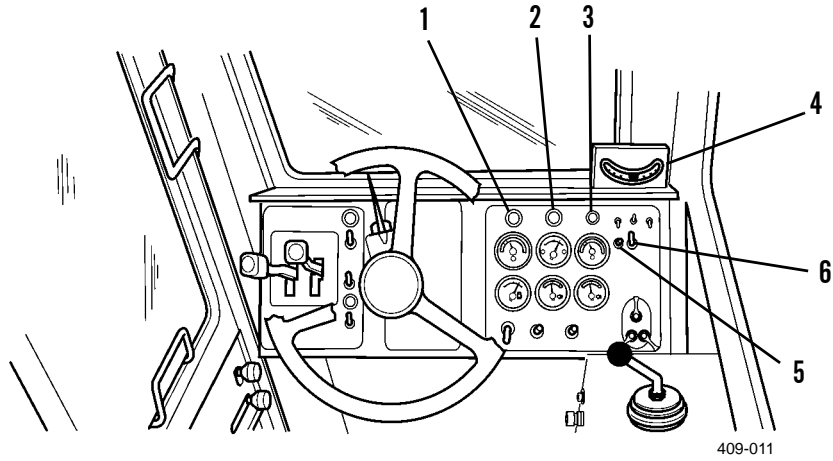
CAB DOOR AND INSTRUMENT PANEL CONTROLS AND INDICATORS - CONTINUED



409-010

KEY	CONTROL OR INDICATOR	FUNCTION
1	Water Temperature Gauge	Indicates temperature of the engine water and coolant. Normal operating temperature of water/coolant is between 180°F (82°C) and 210°F (99°C).
2	Engine Oil Pressure Gauge	Indicates the oil pressure of the engine. Normal oil pressure at operating temperature and maximum governed rpm is between 30 psi (207 kPa) and 80 psi (552 kPa).
3	Transmission Oil Temperature Gauge	Indicates the temperature of the transmission oil. The temperature must not exceed 250°F (121°C). If the temperature reaches 250°F (121°C) or the warning light illuminates, move the transmission range select lever to NEUTRAL and run the engine at low idle (between 1,000 and 1200 rpm). Within two or three minutes, the temperature should drop to normal values. If not, stop the vehicle and correct the problem before continuing.
4	Fuel Gauge	Indicates the fuel level in the fuel tank.
5	Voltmeter	Indicates voltage of the electrical system. Normal operating voltage is between 24 and 28.5 volts.
6	Hourmeter	Records the hours of vehicle operation. Used to schedule periodic maintenance procedures.

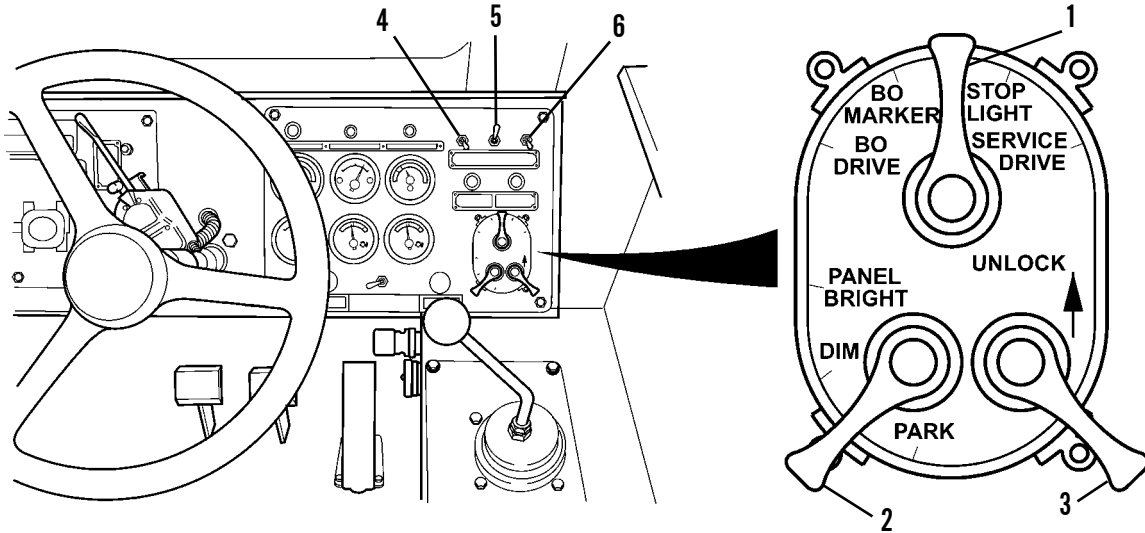
DASH LIGHTS AND INDICATORS



409-011

KEY	CONTROL OR INDICATOR	FUNCTION
1	High Water Temperature (Engine) Warning Light	Indicates a high temperature of the engine coolant. Illuminated whenever the temperature exceeds 225°F (107°C).
2	Low Oil Pressure (Engine) Warning Light	Indicates low oil pressure of the engine. Illuminated whenever the pressure drops below 10 psi (69 kPa).
3	High Transmission Temperature Warning Light	Indicates a high temperature of the transmission oil. Illuminated whenever the temperature exceeds 250°F (121°C).
4	Lateral Level Indicator	Indicates the angle of the main frame. Assists in maintaining a level attitude on sideslope up to 9 degrees (15% grade).
5	Parking Brake Indicator Light	Illuminated when the starter-run control switch is ON and the parking brake is engaged.
6	Low Brake Pressure Warning Light	Indicates low pressure of the service brakes. Illuminated whenever the hydraulic pressure in the accumulator drops below 650 psi (4482 kPa).

LIGHTING SWITCHES



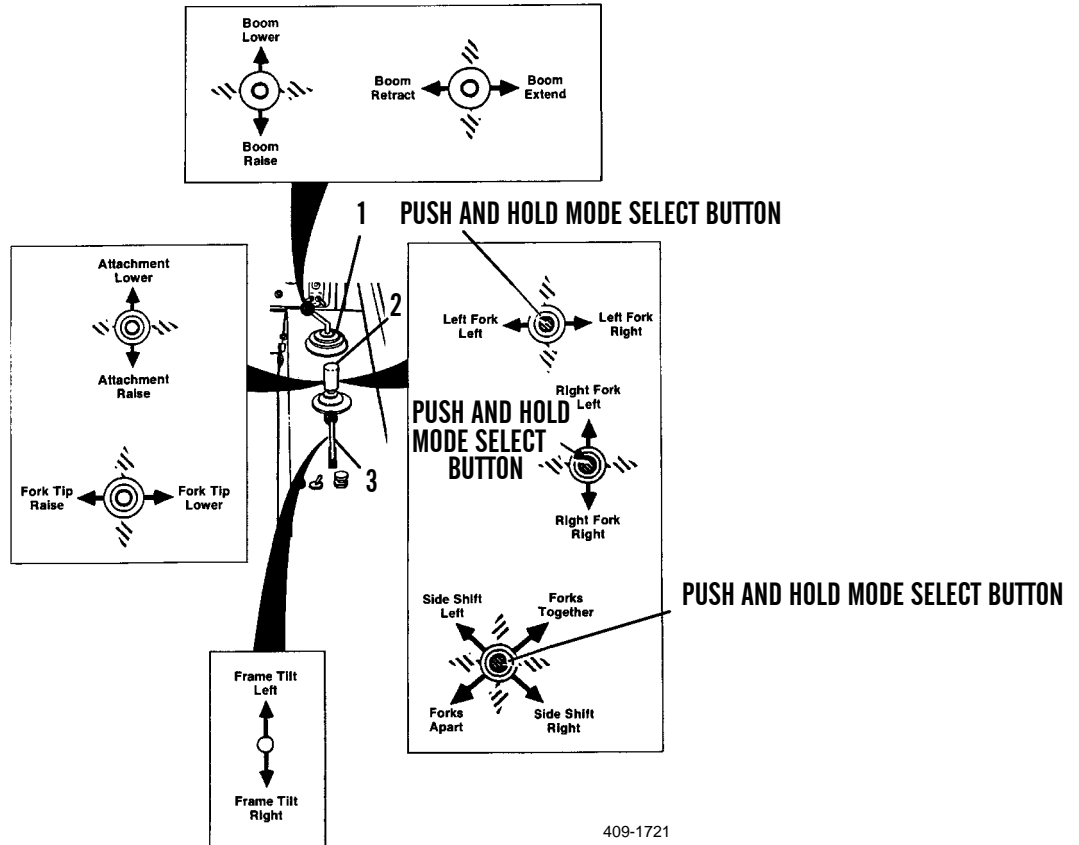
409-012

KEY	CONTROL OR INDICATOR	FUNCTION
1	Service Lighting Control Switch	<p>This light switch has five positions. The following lists the lights that will operate in each position:</p> <ul style="list-style-type: none"> • OFF Position - Only forward, rear and boom flood-lights will operate. • BLACKOUT MARKER (BO) Position - Blackout front markers will operate. Blackout tail lamps will operate. Blackout stop lamps will operate. • BLACKOUT DRIVE (BO) Position - Blackout front markers will operate. Blackout taillamps will operate. Blackout stop lamps will operate. Blackout drive lamp will operate. Back-up alarm will not operate. • STOP LIGHT Position - Service stop lamps will operate. • SERVICE DRIVE Position - Service stop lamps will operate. Service taillamps will operate. Service head-lamps will operate.
2	Auxiliary Lighting Switch	<p>This switch has four positions. The following lists the lights that will operate in each position:</p> <ul style="list-style-type: none"> • OFF Position - Instrument panel light and parking light circuits are open and will not operate. • PARK Position - Parking lights will illuminate if service light switch is in SERVICE DRIVE position. • PANEL DIM Position - Instrument panel lights are on with minimum illumination. • PANEL BRIGHT Position - Instrument panel lights are on with maximum illumination.

LIGHTING SWITCHES - CONTINUED

KEY	CONTROL OR INDICATOR	FUNCTION
3	Switch Lock	This lock is used to prevent accidental movement of the main lighting control switch. Lift lock lever to move service lighting control switch to STOP LIGHT, SERVICE DRIVE and BO DRIVE positions.
4	Light Switch (Forward Floods)	Controls the forward floodlights.
5	Light Switch (Boom Flood)	Controls the boom floodlights.
6	Light Switch (Rear Floods)	Controls the rear floodlights.

BOOM, MLRS ATTACHMENT, FRAME TILT AND FORK CONTROLS

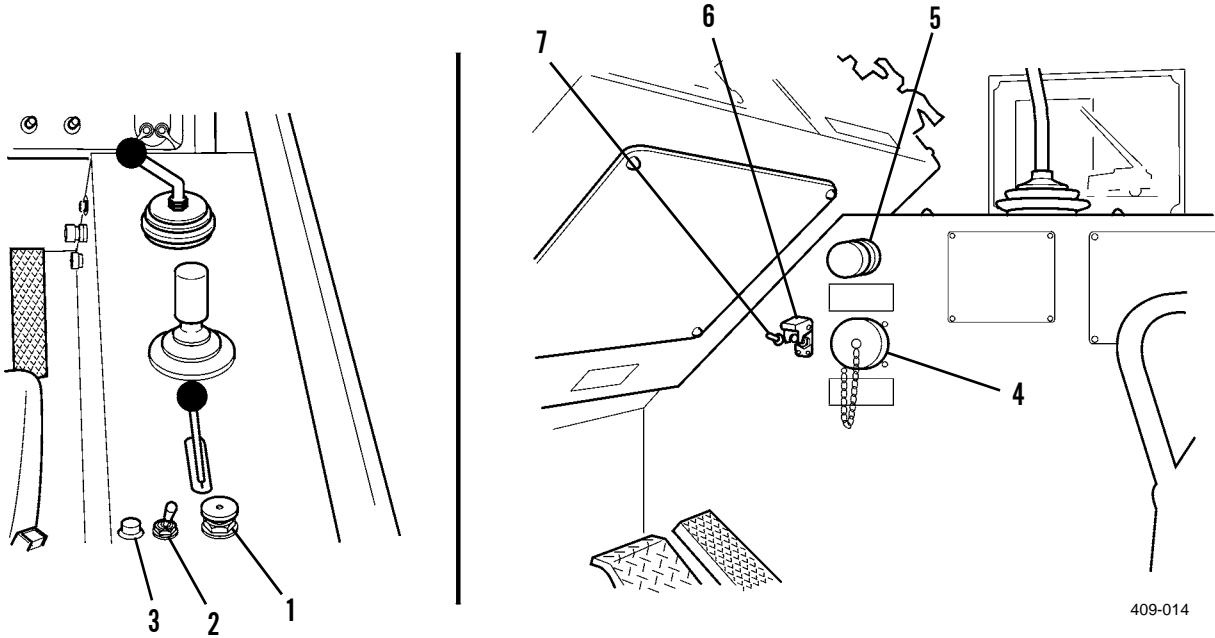


409-1721

BOOM, MLRS ATTACHMENT, FRAME TILT AND FORK CONTROLS - CONTINUED

KEY	CONTROL OR INDICATOR	FUNCTION
1	Hydraulic Joystick Control	Controls the movement of the boom: raising, lowering, extending, and retracting. Push the lever forward to lower the boom. Pull the lever back to raise the boom. Move the lever to the left to retract the boom. Move the lever to the right to extend the boom.
2	Electric Joystick Control	<p>Controls the movement of the MLRS attachment and forks: MLRS raise and lower, forks sideshift and tilt. Push the lever forward to lower the attachment. Pull the lever back to raise the attachment.</p> <p>Move the lever to the right to lower the fork tips. Move the lever to the left to raise the forks tips. The fork tilt will operate only when the fork auto leveler switch is in the OFF position.</p> <p>Push the button on top of joystick down and hold while moving to the left to shift the left fork to the left. Move the lever to the right to shift the left fork to the right.</p> <p>Push the button down and hold. Pull the lever back to shift the right fork to the right. Push the lever forward to shift the right fork to the left.</p> <p>To sideshift both left and right forks to the right, push the button down and pull the lever to the right rear corner. Push the button down and push the lever to the left front corner to sideshift left.</p> <p>To move the forks apart, push the button down and pull the lever to the left rear corner. Push the button down and push lever to right front to move forks together.</p>
3	Frame Tilt Control	Controls tilt of the frame. Push the lever forward to tilt the vehicle left. Pull the lever back to tilt the vehicle right.

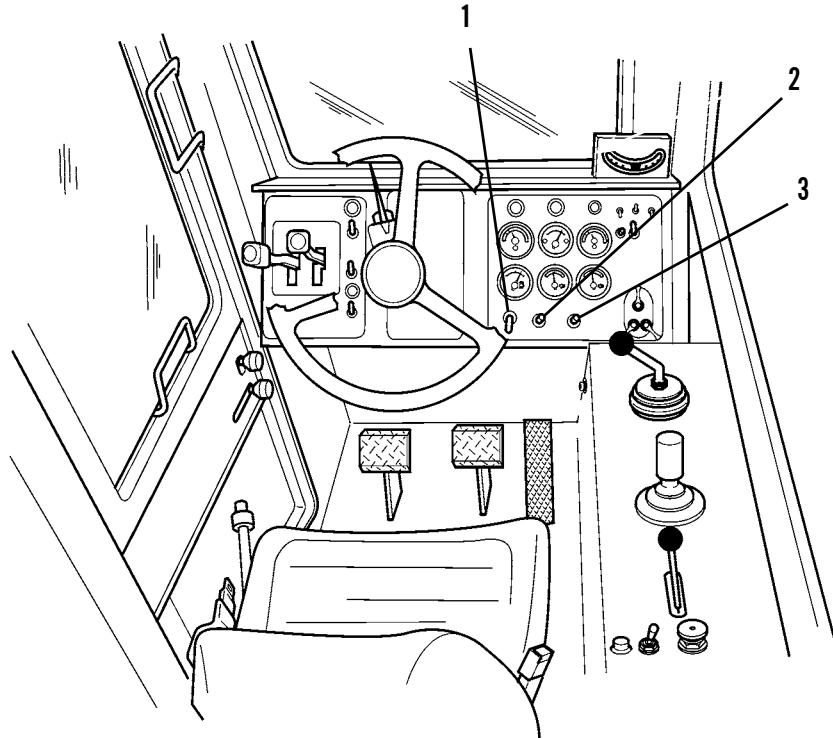
SIDE CONSOLE SWITCHES AND CONTROLS



409-014

KEY	CONTROL OR INDICATOR	FUNCTION
1	Heater Temperature Control	Controls the temperature inside cab. Push to decrease temperature. Pull to increase temperature.
2	Heater Blower Switch	A three-position switch controls the air flow of the heater. Blower is OFF in the center position. Move switch forward for high (two blowers operating) and backward for low (single blower operating).
3	Engine Primer Button	Aid for cold weather starting. Push the button to inject a measured amount of ether into the engine intake manifold.
4	STE/ICE-R Diagnostic Receptacle	A connection point for the STE/ICE-R test equipment.
5	Instrument Resistor Module	Identifies the vehicle to the STE/ICE-R test equipment.
6	Emergency Steer Switch	Turns the steering pump circuit off during maintenance activities when it is not necessary to operate and for cold weather starting. The switch is ON when the red cover is down and the switch is down. The switch is in the OFF position when the red cover is up and the switch is up.
7	Auxiliary Fuel Shut-Off Switch	Permits cranking the engine without starting during STE/ICE-R diagnostic testing. The switch is in the OFF position when the switch is up. The switch is ON when it is down.

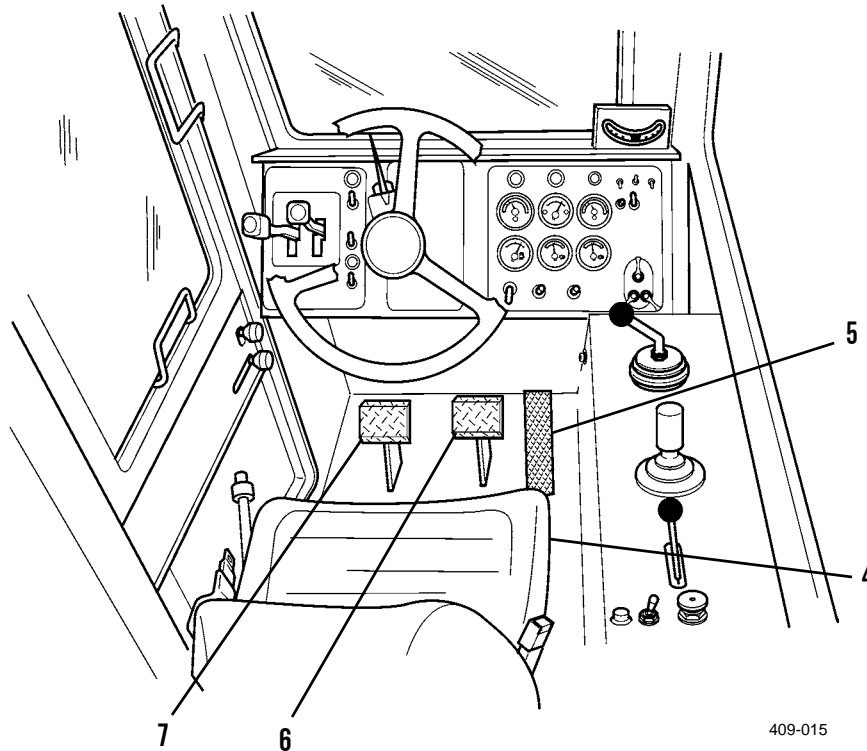
MISCELLANEOUS CONTROLS, OPERATOR SEAT AND FOOT PEDALS



409-015

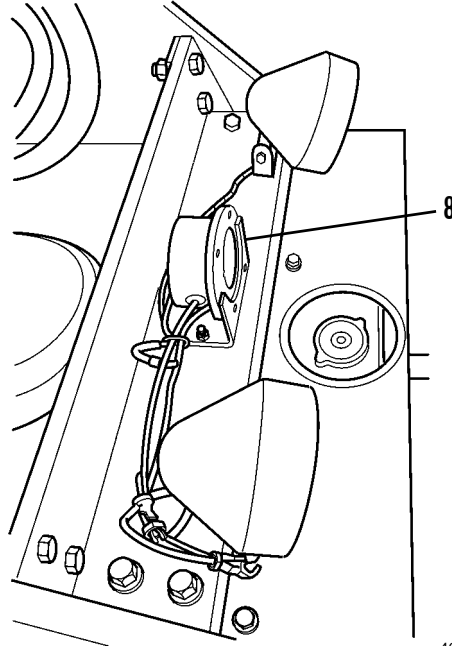
KEY	CONTROL OR INDICATOR	FUNCTION
1	Starter-Run Control Switch	Controls current flow from the batteries to the electrical system. In the OFF position, the switch disconnects the flow of current between the battery and the electrical system. Also, the switch is used to shut the engine down. Once turned to the OFF position, the fuel solenoid on the fuel injection pump is deactivated, stopping the flow of fuel from the pump to the injectors. In the RUN position, all controls and indicators are operable; the emergency and steering pumps are activated. In the START position, only the engine starting motor is engaged and the fuel solenoid is activated.
2	Steer Select Control	Allows the operator to control the steering mode: CRAB (left position), 2 WHEEL (center position), and 4 WHEEL (right position).
3	Horn Button	Depress the button to sound the horn.

MISCELLANEOUS CONTROLS, OPERATOR SEAT AND FOOT PEDALS - CONTINUED



KEY	CONTROL OR INDICATOR	FUNCTION
4	Operator Seat	A lever under the seat controls the back and forth movement. Seat height can be adjusted by changing the elevation of the seat mounting plate.
5	Accelerator Pedal	Controls engine speed. Depress the pedal to increase engine speed. Release pressure on pedal to decrease engine speed.
6	Brake Pedal	Applies the service brakes. Depress the pedal to actuate the disc brakes on all four wheels. The brake lights illuminate when this pedal is pressed if the service lighting control switch is in the STOP LIGHT or SERVICE DRIVE position.
7	Transmission Disconnect Pedal	Engages the service brakes and disconnects the transmission from the drive train. Depressing pedal allows the operator to increase the engine rpm without shifting to NEUTRAL, thereby accelerating hydraulic functions.

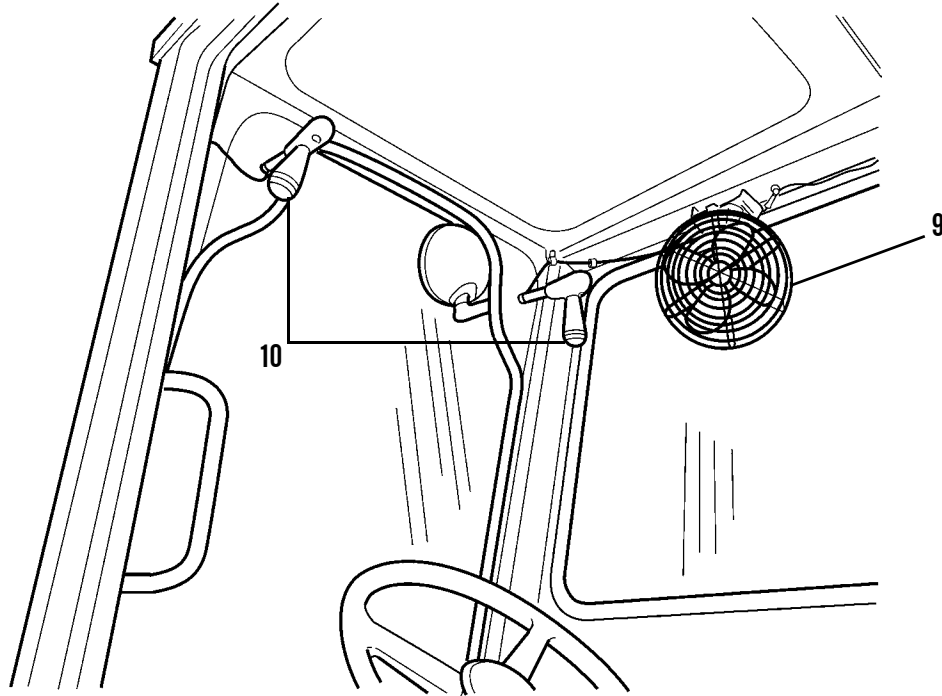
MISCELLANEOUS CONTROLS, OPERATOR SEAT AND FOOT PEDALS - CONTINUED



409-016

KEY	CONTROL OR INDICATOR	FUNCTION
8	Back-Up Alarm	Activated whenever the range select control lever is placed in the reverse travel position. The alarm will not operate in the blackout lighting mode.

MISCELLANEOUS CONTROLS, OPERATOR SEAT AND FOOT PEDALS - CONTINUED



409-017

KEY	CONTROL OR INDICATOR	FUNCTION
9	Defroster Fans	Turn switch to ON position on front and rear fans to remove moisture or frost from front and rear windows.
10	Front Floodlight Controls	Adjusts the positions of the front floodlights. Rotate the handle to turn the floodlight. Turn the handle assembly to change the axis of the light rotation.

END OF WORK PACKAGE

GENERAL

It is essential that the operator know how to perform every operation of which the vehicle is capable. This work package gives instructions on starting and stopping the vehicle, on the basic motions of the vehicle and how to use these instructions to perform specific tasks for which the equipment was designed.

NEW VEHICLE BREAK-IN

Controlled break-in is the ideal fitting of all internal moving metal parts. Using the proper oil and preventive maintenance program during this period will provide long life of the engine.

1. **Starting the Engine.** Warm the engine to operating temperature, 180-190°F (82-88°C), before placing the engine under load.
2. **Operation.**
 - a. Avoid constant speeds.
 - b. Use the range select control lever to place the transmission in the appropriate gear to prevent engine lugging.
 - c. Check the gauges to ensure normal operation of the engine.
 - d. Check the coolant level and fill as necessary.
 - e. Check the oil level. Add oil as necessary to keep it at the correct level. Do not overfill the crankcase.
 - f. After the first 20 hours of operation, the transmission oil and filter must be changed. Contact Maintenance to change and lubricate with correct grade of lubricant. After the first 50 hours of operation, the following items must be changed: Planetary Gear Oil, Hydraulic Oil Filter, Engine Oil and Filter, Differential Oil. Contact Maintenance.

OPERATE ENGINE

1. Adjust the operator seat so that when your seat belt is buckled you can still depress the foot pedals.

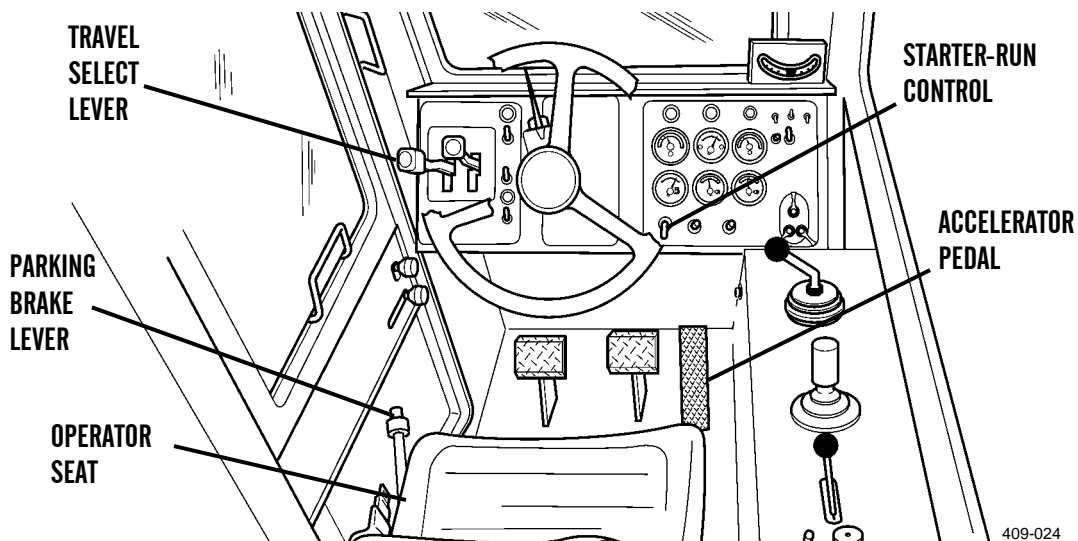
NOTE

Before starting vehicle, ensure parking brake is engaged.

2. If the parking brake is not engaged, pull lever up.

NOTE

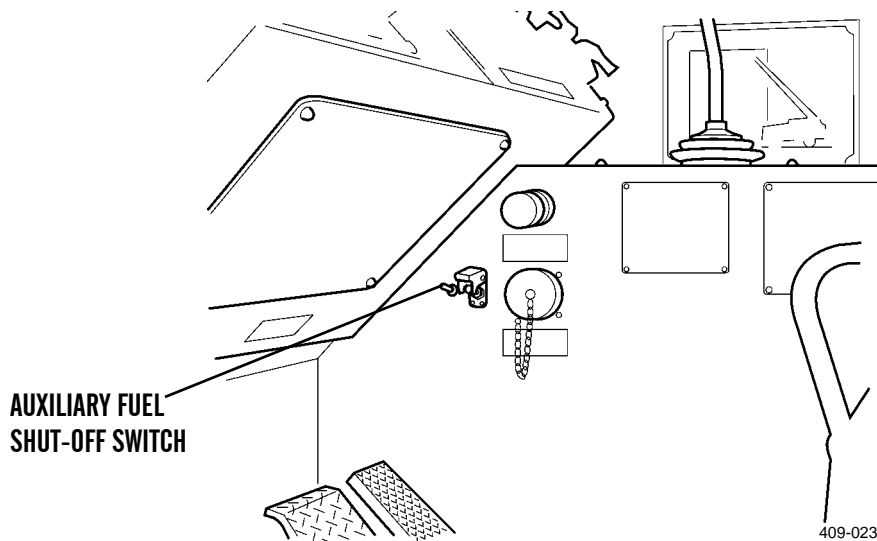
Before starting vehicle, ensure travel select lever is placed in Neutral "N".



409-024

OPERATE ENGINE - CONTINUED

3. If the travel select lever is not in the neutral position, move the lever to Neutral "N".
4. On the first start of the day, check the neutral switch for proper operation.
 - a. Place the travel select lever in the Forward, "F" position.
 - b. Ensure that the auxiliary fuel shut-off switch is in OFF position.

**CAUTION**

If the engine turns over, do not continue. This indicates that the neutral safety switch is defective.

- c. Turn the starter-run control switch to the START position. The engine should not turn over.
 - d. Return the starter-run control switch to the OFF position.
 - e. Return the travel select lever to the Neutral, "N" position.
 - f. Place the auxiliary fuel shut-off switch to the ON position.
5. Press the accelerator pedal to approximately half speed.

CAUTION

Do not crank the starting motor for more than 30 seconds at a time. Continuous cranking can overheat and damage the starting motor.

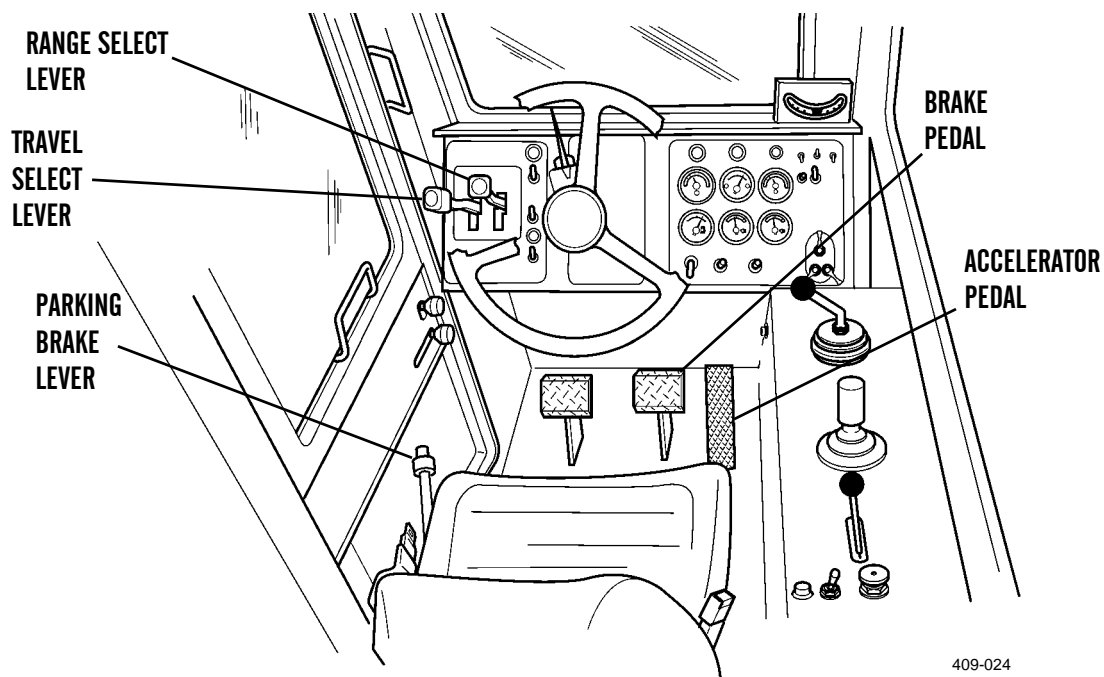
6. Turn the starter-run control switch clockwise to the START position. Release the switch as soon as the engine starts. If the engine fails to start on the first try, wait until the engine and starter have come to a complete stop. Then, return the switch to the OFF position before attempting to start again.

CAUTION

If the coolant temperature exceeds 220°F (104°C) or the warning light is illuminated, shut the engine down immediately. Do not operate the vehicle continuously at a water temperature above 210°F (99°C) or below 140°F (60°C).

OPERATE ENGINE - CONTINUED**CAUTION**

- If the oil pressure fluctuates or drops, or if the warning light is illuminated, stop the engine and find the cause. Do not operate the engine at oil pressure lower than 10 psi (69 kPa).
 - If oil pressure does not register within 15 seconds after the engine starts, stop the engine or serious damage may occur. Stop the engine by turning the starter-run control switch to the OFF position.
7. After the engine starts, operate the engine just above idle for 30 to 60 seconds before driving the vehicle. Check the readings on the gauges before moving the vehicle. Return engine speed to idle before moving the range select lever.

**MOVE FORKLIFT****WARNING**

- Do not travel with the fork auto leveler switch in the ON position. It is possible to drop a load which may cause load damage, injury or death.
- Use care when backing up. Have someone direct you if you cannot see where you are going. Watch clearances.

CAUTION

The forks extend beyond the end of the carriage. The operator must be aware of the swing of the forks when turning and allow for adequate clearance between the forks and other objects.

1. Operating Safety.

- a. Do not allow riders on the vehicle.
- b. Understand lifting limitations of forklift and keep the vehicle under control. DO NOT try to exceed limitations.

MOVE FORKLIFT - CONTINUED**WARNING**

The 6K forklift is less stable when traveling with the load in a raised position. If you must move the vehicle with the load raised above the carry position (bottom of load 24 in. (610 mm) above the ground):

- Avoid sharp turns and sudden starts/stops.
 - Operate all controls smoothly.
 - Move very slowly.
 - Keep the vehicle level.
- c. Always carry the load low (bottom of load 24 in. (610 mm) above the ground) for maximum stability.

CAUTION

Make sure the lower cab door is closed when operating the vehicle. Forklift wheels can contact the lower door if the door is left open.

- d. Always operate the forklift with the lower cab door closed.

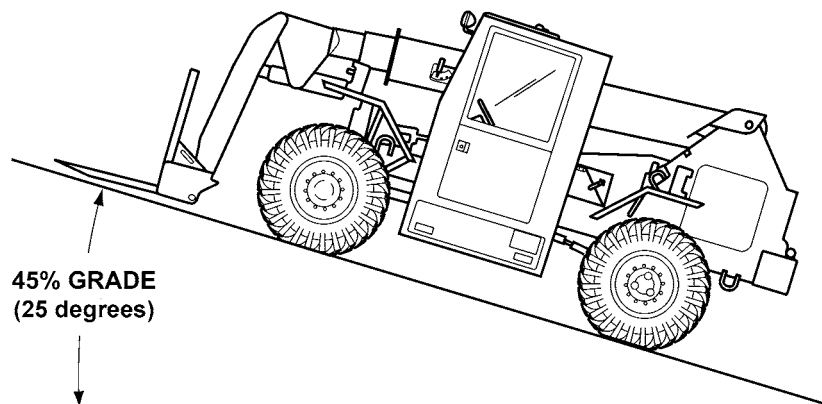
**WARNING**

- Extreme care must be taken to ensure that the boom does not come near overhead wires or structures. Death or injury may result from contacting power lines. Never operate this vehicle close to electric power, or other, lines. If lines are near to your operating area, notify your supervisor of the lines prior to starting work.
- Should contact with power line occur, stay on the vehicle until the boom is cleared or until the current is turned off. Keep all personnel off the forklift. If you must leave the vehicle, JUMP, DO NOT STEP OFF.

WARNING

Travel on inclines, slopes, ramps and grades only as follows:

- Loaded forklift: with forks (and load) pointing uphill.
 - Empty forklift: with forks pointing downhill.
- e. Know the vehicle operating limits for ascending, descending, and traversing slopes.

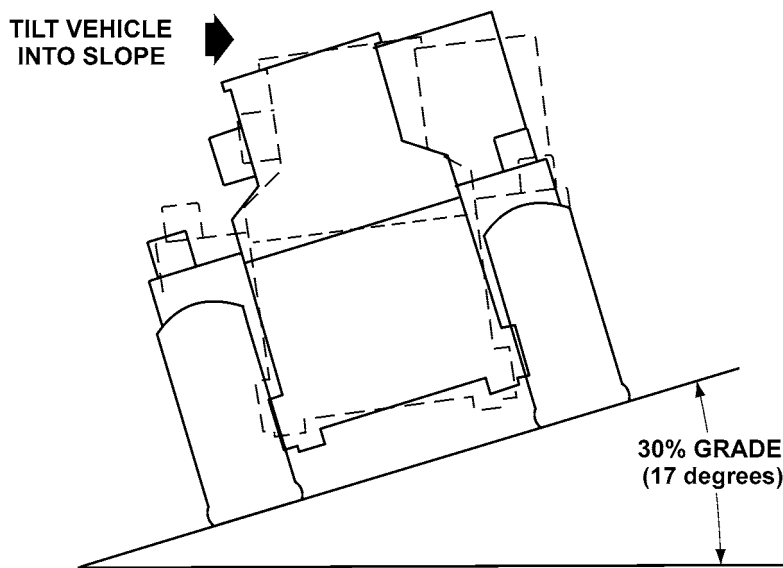


409-025

MOVE FORKLIFT - CONTINUED**WARNING**

Do not exceed 45% grade (25 degrees) longitudinally. Forklift becomes unstable and fluid levels are shifted. Internal components may not be properly lubricated causing vehicle damage. Tires may slip (loss of traction) or vehicle may tip, causing possible operator injury or death.

- (1) With or without rated capacity load, for maximum longitudinal stability, do not exceed 45% grade (25 degrees).



409-026

WARNING

Do not exceed 30% grade (17 degrees) laterally. Forklift becomes unstable and fluid levels are shifted. Internal components may not be properly lubricated causing vehicle damage. Tires may slip (loss of traction) or vehicle may tip, causing possible operator injury or death.

- (2) With or without rated capacity load, for maximum lateral stability, do not exceed 30% grade (17 degrees).

2. **Starting Travel Procedures.**

- a. With engine at idle speed, depress the brake pedal to apply the service brakes.
- b. Make sure the travel select lever is in the Neutral "N" position.
- c. Ensure that the forks are raised at least 24 in. (610 mm) above the ground.
- d. Place range select control lever to the desired range.
- e. Push parking brake lever down to release the parking brake.
- f. Move travel select lever to the Forward "F" position for forward travel, or down to the Reverse "R" position for reverse travel.
- g. Release brake pedal and press the accelerator pedal to control vehicle speed.

MOVE FORKLIFT - CONTINUED3. **Changing Direction of Travel.****WARNING**

DO NOT STOP QUICKLY. The load may drop off the forks causing damage or personal injury.

- a. Depress brake or transmission disconnect pedal to apply the service brakes and bring the forklift to a complete stop.

NOTE

When changing direction of travel, reduce engine speed.

- b. Move travel select lever through Neutral, "N" to the desired direction.

4. **Changing Gear Selection Range.****WARNING**

DO NOT downshift at high speeds. Forklift will slow suddenly and drop the load or possibly cause operator injury.

CAUTION

- Operating the vehicle with a heavy load in high gear will cause the torque converter to slip excessively and the transmission may overheat.
- Upshifting and downshifting should be done in the normal sequence of speeds.

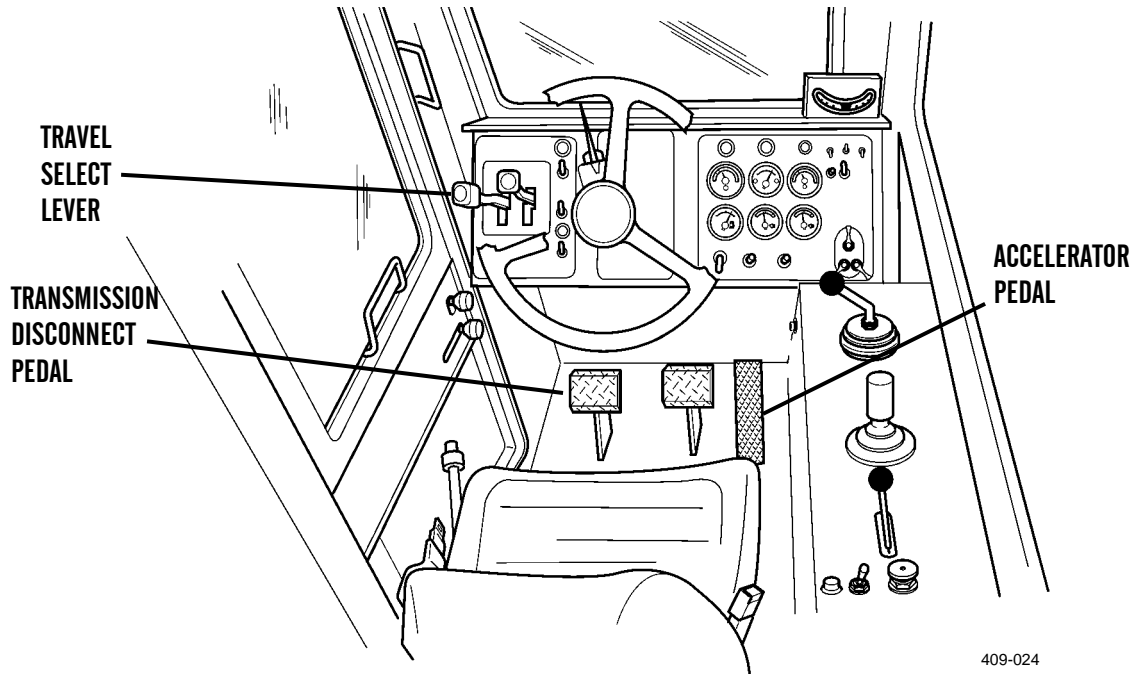
NOTE

The gears should be engaged only after reaching the top speed of the next lower gear. If necessary, the forklift should be slowed by means of the service brakes.

- a. Shifting to the next higher gear may be accomplished at any engine RPM while the forklift is in motion.
- b. When downshifting, DO NOT over-rev the engine. Allow forklift to slow before shifting to the next lower gear.

5. **Accelerating Hydraulic Functions.**

- a. Depress and hold transmission disconnect pedal.
- b. Depress accelerator pedal to increase and maintain higher engine speed.
- c. Perform desired hydraulic functions.
- d. Reduce engine speed to idle after operations are completed.
- e. Shift travel select control lever as necessary.
- f. Slowly release transmission disconnect pedal.

MOVE FORKLIFT - CONTINUED**STEER FORKLIFT**

The forklift can be operated in three steering modes as selected with the steer select control switch: 4 wheel steer, 2 wheel steer, and crab steer.

WARNING

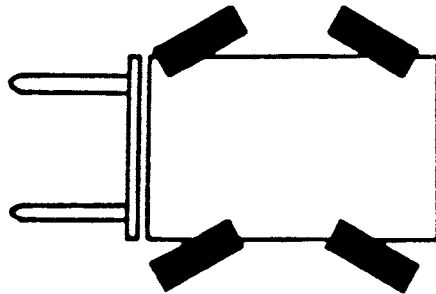
Do not turn fast as this may cause the forklift to tip and possibly lose the load. This is particularly true in the 4 wheel steering mode. Turn the forklift in a lower gear or a slower speed.

CAUTION

- Before changing steering modes, synchronize steering, see step 4, *Steering System Synchronization*. Failure to follow this caution will result in vehicle mistracking and tire damage.
- The forks extended beyond the end of the carriage. Be aware of the swing of the forks when turning. Allow for adequate clearance between the forks and other objects.

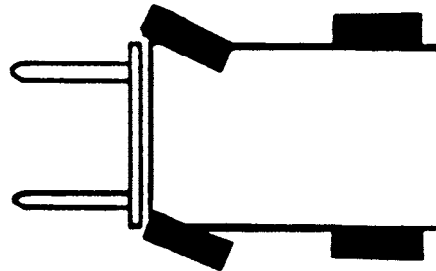
STEER FORKLIFT - CONTINUED

1. **4 Wheel Steering.** Move steer select control switch to the right position. The front wheels will steer the direction that the steering wheel is turned; the rear wheels will steer in the opposite direction. This mode allows an extremely short turn radius. It also enables the rear wheels to follow the tracking of the front wheels which is an advantage in mud or sand conditions.



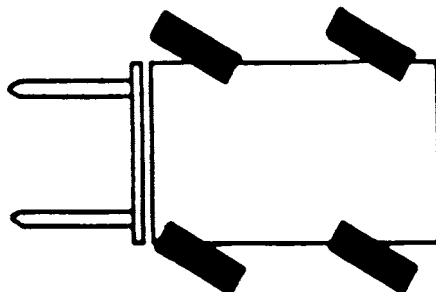
409-028a

2. **2 Wheel Steering.** Move steer select control switch to the center position. The front wheels will steer in the direction that the steering wheel is turned. The rear wheels will remain in the fixed forward position. This mode is used for on-highway travel or at higher speeds.



409-029a

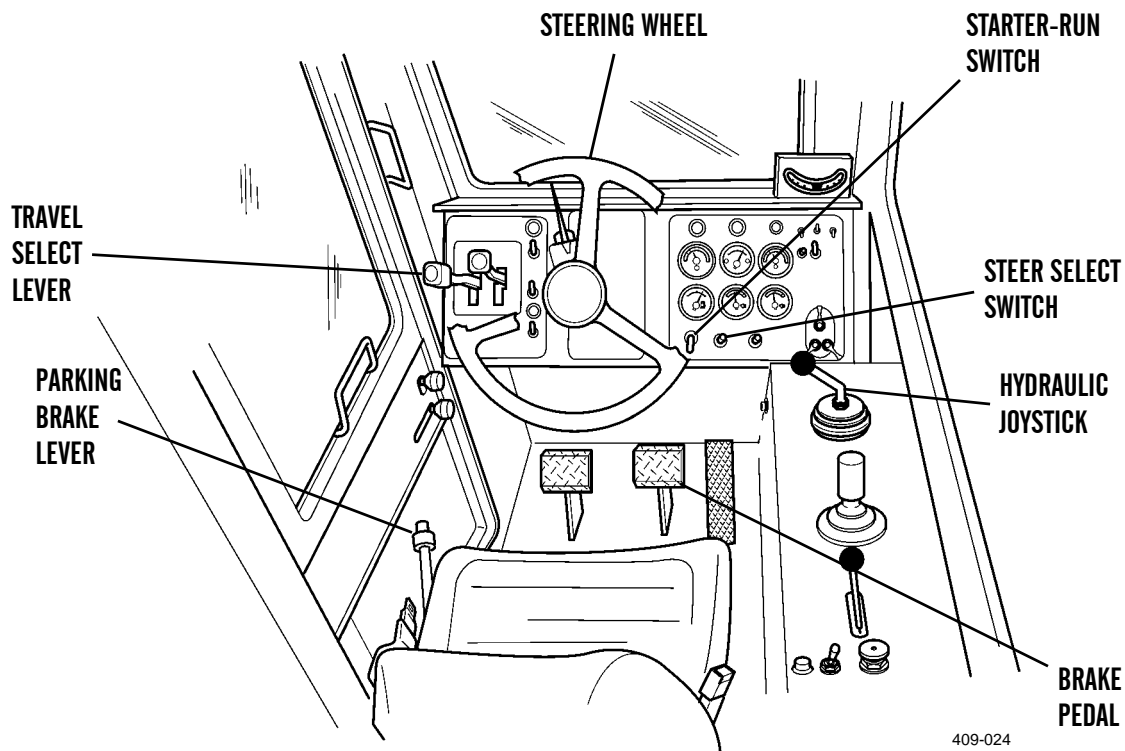
3. **Crab Steering.** Move steer select control switch to the left position. All wheels will steer in the same direction. This mode permits the operator to move the vehicle sideways toward the landing point of the load. This is especially helpful in tight quarters on the job, where there is not enough space to move a conventional forklift back and forth several times in order to line up at the exact spot in front of the loading location.



409-030

STEER FORKLIFT - CONTINUED

4. **Steering System Synchronization.** Use the following procedures to align the front and rear wheels if the wheels are not set in the same direction after you change steering modes (4 wheel, 2 wheel, and crab steer).
 - a. Use steering wheel to put the rear wheels in a straight-ahead position.
 - b. Place steer select control switch in the 2 WHEEL position (center).
 - c. Use steering wheel and adjust the front wheels to a straight-ahead position.
 - d. Move steer select control switch to the desired mode for continued operation.

**STOP FORKLIFT**

1. Depress the brake pedal to slow vehicle down.
2. Bring the vehicle to a complete stop. Place travel select lever in Neutral "N" position.
3. Pull parking brake lever up to apply parking brake.
4. Move hydraulic joystick control lever left to retract the boom extend cylinder.
5. Push hydraulic joystick control lever forward to lower the boom until forks are resting on the ground.

STOP ENGINE

1. Place travel select lever in the Neutral "N" position.
2. Pull parking brake lever up to apply the parking brake.
3. Move hydraulic joystick control lever to retract the boom extend cylinder.
4. Push hydraulic joystick control lever forward to lower the boom until forks are resting on the ground.

STOP ENGINE - CONTINUED

5. Turn all lights and accessories off.
6. Allow engine to idle for three minutes.
7. Turn starter-run control switch to the OFF position.
8. Perform *After Operation Checks* listed in the Preventive Maintenance Checks and Services (WP 0012 00).

OPERATE IN ROUGH TERRAIN

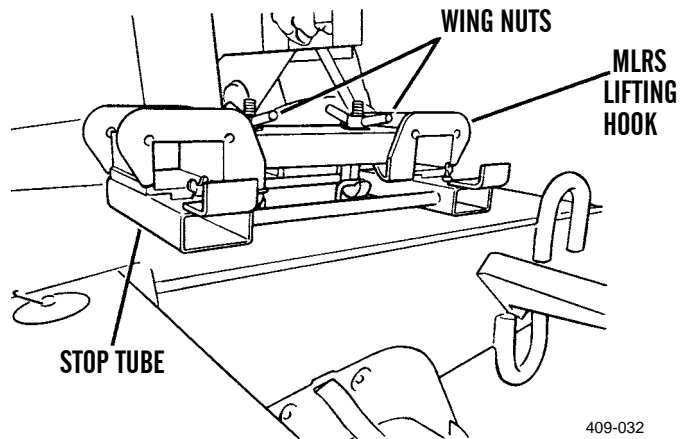
WARNING

Do not travel with fork auto leveler switch in the ON position. It is possible to drop a load which may cause in load damage, injury or death.

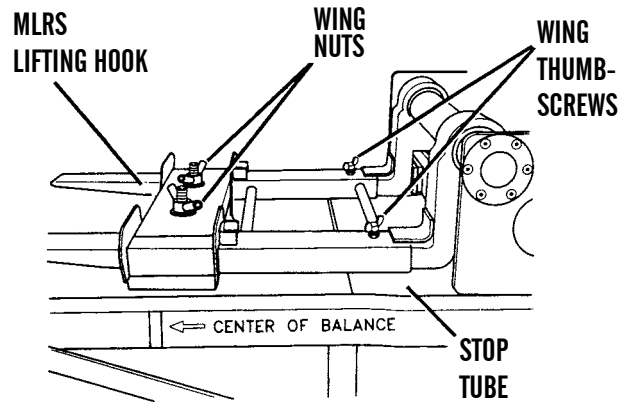
INSTALL MLRS LIFTING HOOK AND STOP ASSEMBLY

With the MLRS lifting hook and stop assembly attached to the MLRS pod and stop tube on the forks, the 6K forklift can handle MLRS pods. The following procedures provide instructions for use of the lifting tool and stop tube.

1. The MLRS lifting hook and stop are stored on the forklift deck. Loosen the two wing nuts and lift the MLRS lifting hook from the stop tube.



2. Attach the lifting hook to the MLRS pod to be moved. The hooks on the tool must be mounted to the lifting bar on the MLRS pod. Tighten the wing nuts on the hooks.
3. Remove the stop tube from the vehicle deck and slide the stop tube all the way onto the forks. Tighten the wing thumbscrews to secure the stop tube on the forks.



LOAD MLRS PODS FROM A GROUNDED CONTAINER OR TRAILER

The 6K forklift can extract an MLRS pod from a 20 ft ISO grounded container or from a trailer as shown in illustrations. To move the MLRS pod, proceed as follows:



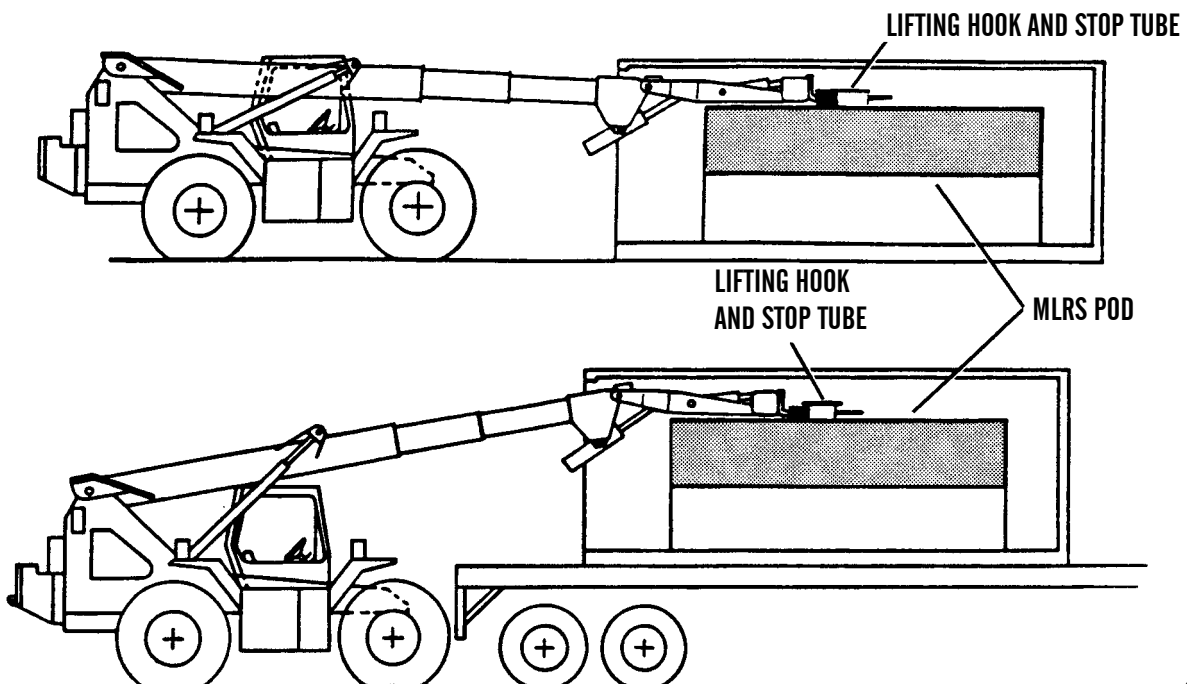
WARNING

- Make sure frame is level before raising or extending boom with load. Failure to do so could cause load to drop or vehicle to tip.
- Never move any part of vehicle or load near a power line or power lines. Failure to follow this warning could result in immediate severe injury or death.
- Ensure that counterweight is in place. An unbalanced forklift could tip over and could cause severe personal injury or death.

1. Install lifting hook and stop assembly.
2. Start engine.
3. Place forklift directly behind the MLRS pod container or trailer.
4. Check lateral level indicator. If necessary move frame tilt control lever to level vehicle.
5. Move fork auto leveler switch to ON position.
6. Move electric and hydraulic joysticks to maneuver forks and boom into MLRS lifting tool on top of MLRS pod. Stop tube on forks must contact lifting tool on pod.

NOTE

The fork sideshift is limited to +/- 5 in. (127 mm) from centerline of forklift.



409-034

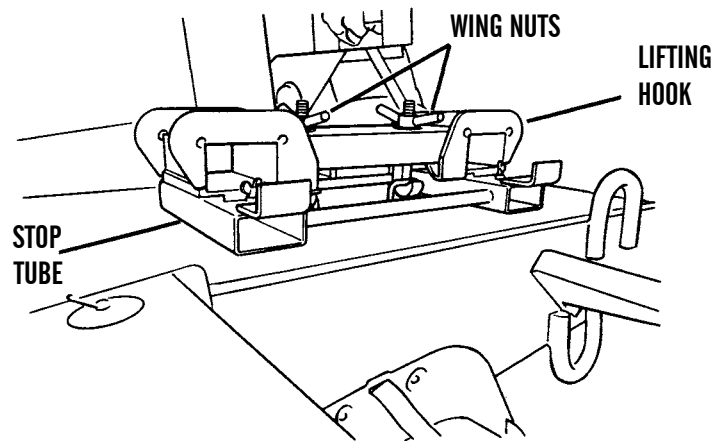
LOAD AND UNLOAD MLRS PODS FROM A GROUNDED CONTAINER OR TRAILER - CONTINUED**WARNING**

Always lift the load from its resting spot before extending or retracting the boom. Always extend or retract the boom before lowering the load to its resting spot. Failure to do so may cause forklift instability and result in severe personal injury or death.

7. Move fork auto leveler switch to OFF position.
8. After lifting the pod, operate the carriage, forks, and boom as necessary and slowly back the vehicle away from the container or trailer.
9. Transport the MLRS pods to desired location. If the pods are to be carried more than a short distance or over rough terrain, install the load stabilizers. Refer to *Install Load Stabilizers* in this work package.
10. After a MLRS pod has been moved to desired location, loosen the wing nuts on the lifting hook and remove hook from pod. For moving additional MLRS pods, attach MLRS lifting hook to next pod, see *Install MLRS Lifting Hook and Stop Assembly* in this work package. Repeat steps 3 to 10.
11. After operation, loosen the wing thumbscrews on the stop tube. Slide the stop tube from the forks. Place the stop tube in storage area on forklift deck.

LOAD AND UNLOAD MLRS PODS FROM A GROUNDED CONTAINER OR TRAILER - CONTINUED

12. Loosen the wing nuts on the lifting hook. Remove the hook from the pod and set it on top of the stop assembly. Move assembly so that the hooks engage the attaching loops on forklift frame. Tighten the wing nuts on the lifting hook which secures it and the stop assembly to the frame.



409-036

INSTALL LOAD STABILIZERS

The 6K forklift can be used to transport MLRS pods from one area to another. The load stabilizers must be attached if the pods are to be carried more than a short distance over rough terrain. To attach the load stabilizers, proceed as follows:

1. With an MLRS pod attached to the lifting hook, use the hydraulic joystick control to raise the load approximately 1 ft (0.3 m) off the ground.
2. Remove load stabilizers from forklift tool box.

NOTE

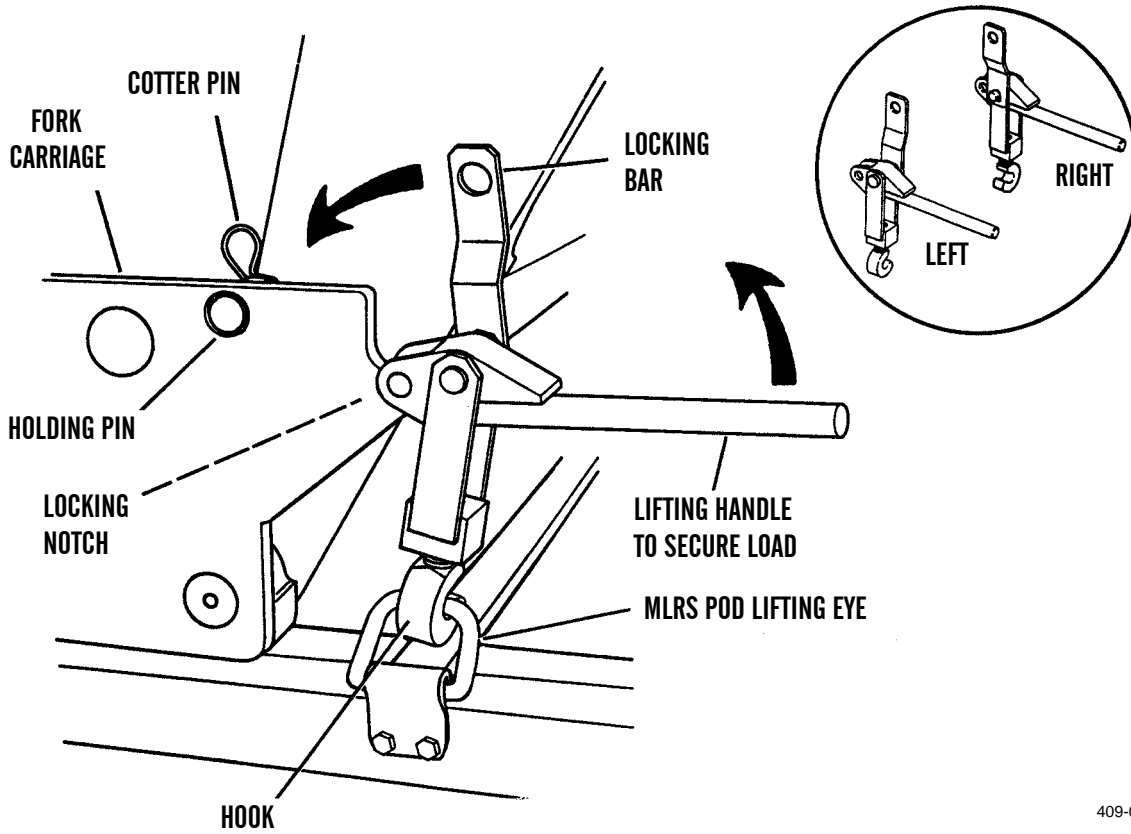
Load stabilizers are marked "RH" and "LH." Install load stabilizer marked "RH" to right-hand side of the fork carriage. Install load stabilizer marked "LH" to left-hand side of the fork carriage.

3. Attach load stabilizers to left- and right-side of MLRS pod as follows:
 - a. Place stabilizer hook through MLRS pod lifting eye.
 - b. Put end of handle in locking notch of fork carriage.
 - c. Lift handle up to secure pod.
 - d. Align locking bar with holding pin hole in fork carriage.
 - e. Install pin through fork carriage and locking bar. Secure pin with cotter pin.

NOTE

If fork carriage and MLRS pod do not make contact when load stabilizers are locked in position (too loose) or load stabilizers cannot be locked (too tight), release and adjust the stabilizer. Adjust the stabilizers by turning the hook in or out of the stabilizer block.

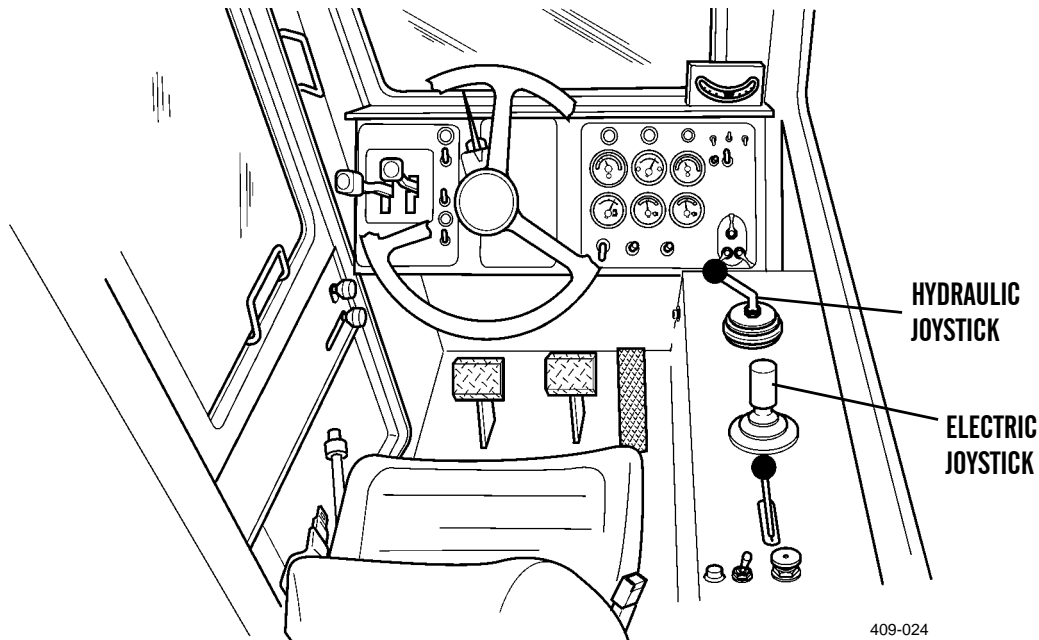
INSTALL LOAD STABILIZERS - CONTINUED



409-037

INSTALL LOAD STABILIZERS - CONTINUED

- f. Use the hydraulic joystick control to raise the load to travel position (bottom of load should be 2 ft (0.6 m) above ground level).

**CAUTION**

With the load stabilizers attached, never set the load down on the ground. Possible damage to the MLRS pod may result.

- g. Before removing the load stabilizers, use the fork auto leveler switch to level the forks, then turn switch off.

LOAD AND UNLOAD AMMUNITION AND OTHER PALLETS FROM A CONTAINER OR TRAILER**WARNING**

- Use care when handling and transporting the ammunition pallets. Failure to do so may cause severe personal injury or death.
 - Never move any part of the vehicle or load near a power line or power lines. Failure to follow this warning may cause immediate severe injury or death.
 - Ensure that the counterweight is in place. An unbalanced forklift could tip over and could cause severe personal injury or death.
 - Always lift the load from its resting spot before extending or retracting the boom. Always extend or retract the boom before lowering the load to its resting spot. Failure to do so could cause forklift instability and result in severe personal injury or death. Refer to WP 0026 00 for Load Rating Chart.
1. Install load backrest. Refer to *Use Load Backrest for Routine Forklift Operation* in this work package.
 2. Move the forklift to the pallet.

**LOAD AND UNLOAD AMMUNITION AND OTHER PALLETS FROM
A CONTAINER OR TRAILER - CONTINUED****CAUTION**

Do not lift more than one pallet with the forks. Pallets may topple and result in load or vehicle damage.

3. Move fork auto leveler switch to the ON position. Use the hydraulic joystick control lever to position the forks at the bottom of the uppermost pallet.
4. Move the vehicle or extend the boom to engage the bottom of the pallet with the forks.
5. Use the hydraulic joystick control lever to raise the boom and lift the pallet slowly.
6. Maneuver the vehicle with pallet away from the pallet stack.

WARNING

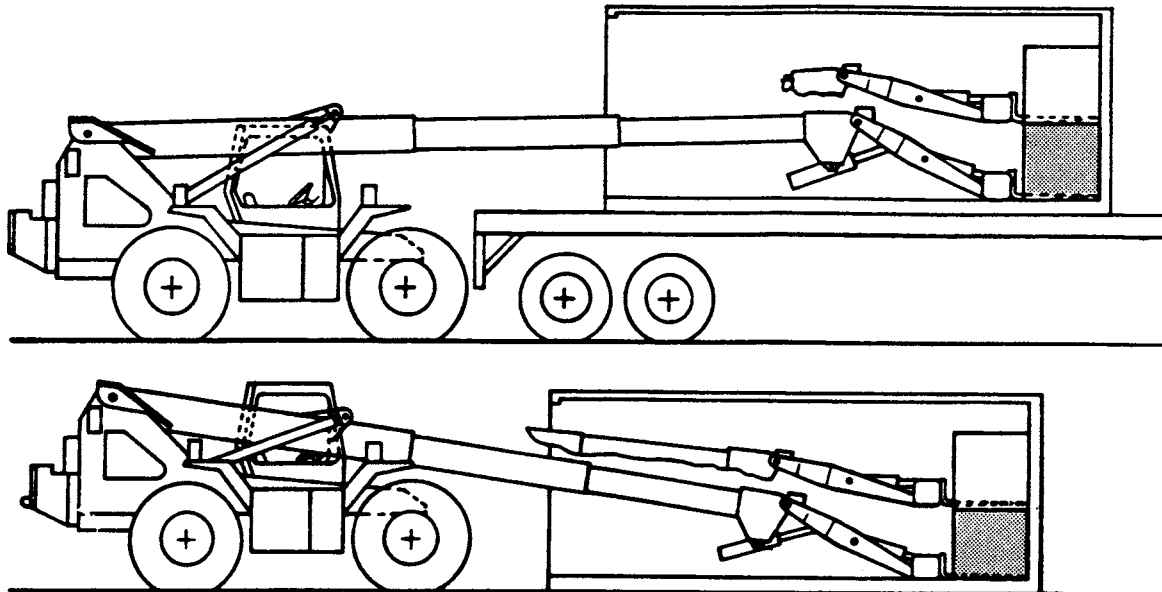
Always retract the boom before lowering or transporting a load. Failure to do so may cause forklift instability and result in severe personal injury or death.

7. Use the hydraulic joystick control lever to retract the boom and then lower the pallet to a travel position (approximately two feet above ground level).

WARNING

Do not travel with fork auto leveler switch in the ON position. It is possible to drop a load which may cause load damage, injury or death.

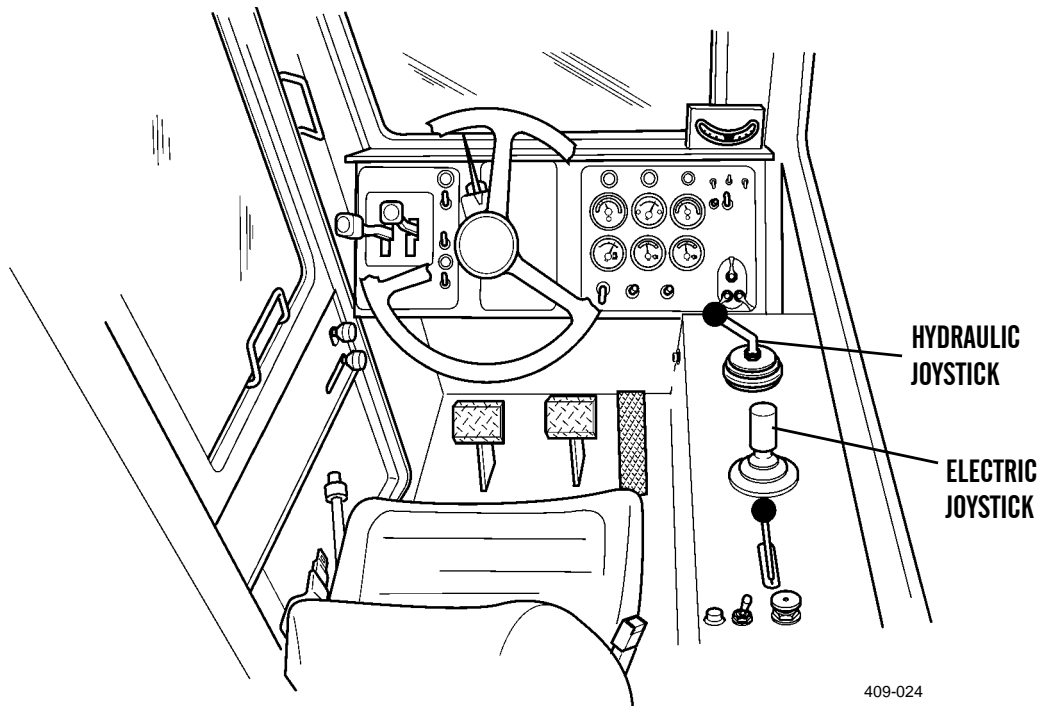
8. Move the fork auto leveler switch to the OFF position before traveling.
9. Use the electric joystick control lever to raise the fork tips and enable the load to be supported by the backrest. Use care when traveling with a load.
10. Move vehicle to, and in line with, the unloading area.



409-039

**LOAD AND UNLOAD AMMUNITION AND OTHER PALLETS FROM
A CONTAINER OR TRAILER - CONTINUED**

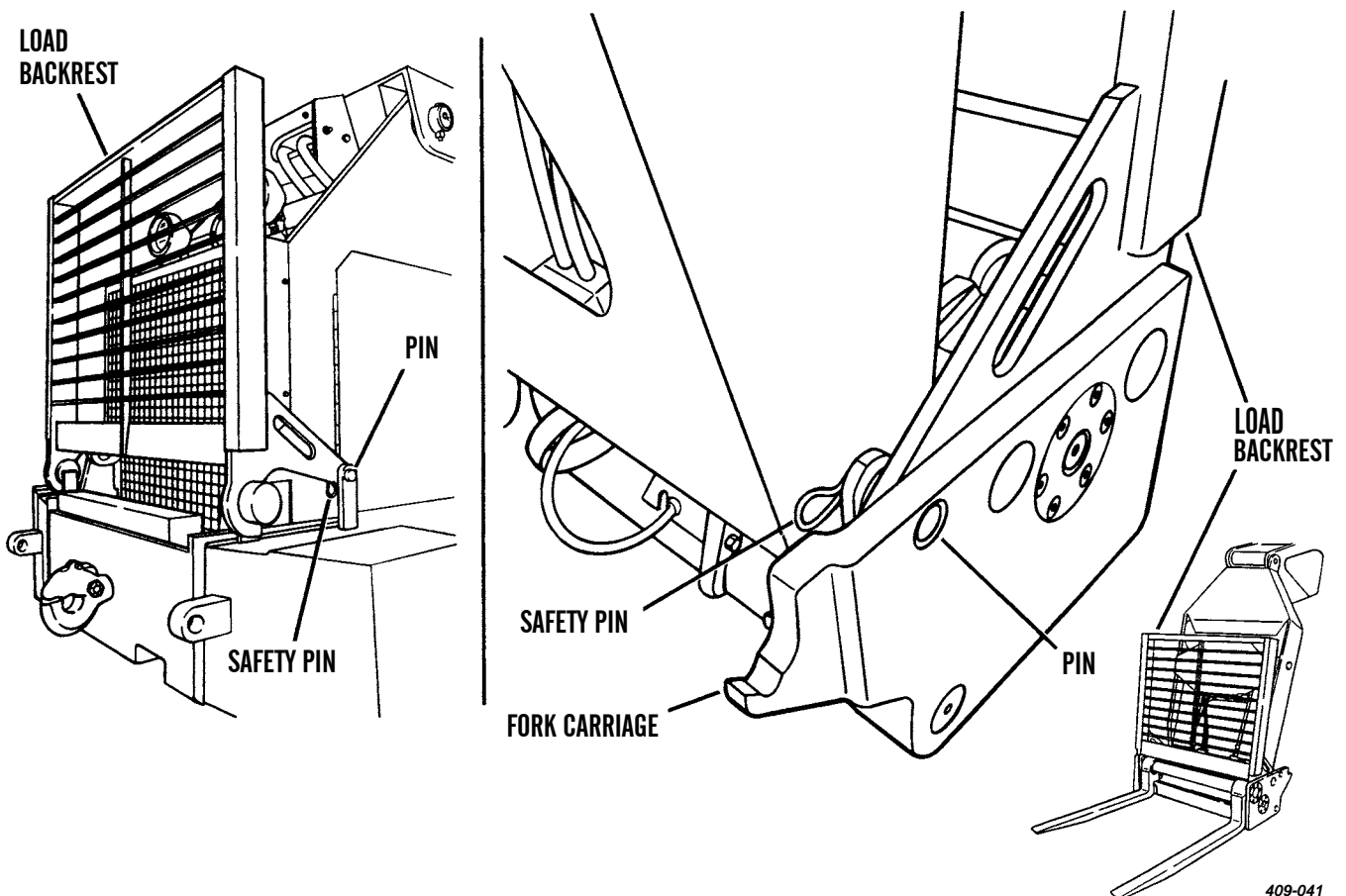
11. Move the fork auto leveler switch to the ON position. Use the hydraulic and electrical joystick control levers to set the load down.



12. Move fork auto leveler switch to the OFF position and use the controls to remove the weight from the forks. Move forklift slowly away from the pallet.
13. Use the electric joystick control lever to move the forks to a carrying position.
14. Repeat steps 2 thru 13 for continued operation.

USE LOAD BACKREST FOR ROUTINE FORKLIFT OPERATION

1. Move forks together slightly so hooks on backrest fit on fork shaft of fork carriage.
2. Using two personnel, remove the pins and safety pins which secure the load backrest to the counterweight. Remove backrest from counterweight.
3. Position the load backrest on the fork carriage. Ensure that the hooks on the load backrest are wrapped around the fork shaft on the fork carriage. Secure the backrest with pins and safety pins.
4. After completing operation with the load backrest, remove the safety pins and pins.
5. Tilt the load backrest forward and slide it back until the hooks are clear of the fork shaft. Remove the load backrest vehicle.
6. When the load backrest is not being used, place it in the storage position on the counterweight. Secure it with pins and safety pins.



409-041

END OF WORK PACKAGE

GENERAL

This work package provides the operator with additional instructions for operating in various environments and emergency situations. In addition to normal preventive maintenance, special care must be taken to keep the 6K forklift operational in extreme temperatures and other environmental conditions.

SLAVE STARTING**WARNING**

When slave starting tractor:

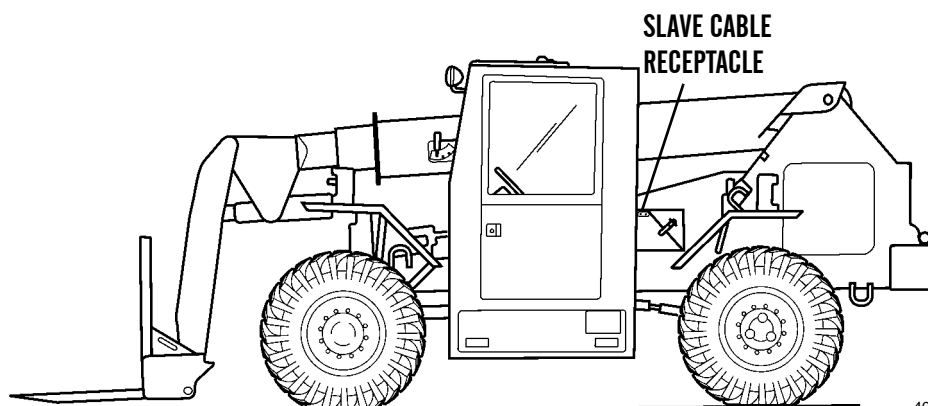
- Use NATO slave cable that does NOT have loose or missing insulation.
- DO NOT proceed if suitable cable is not available.
- DO NOT use civilian-type jumper cables.
- DO NOT allow disabled and booster vehicles to come in contact with each other at any time during slave starting.

Failure to follow this warning may result in injury or death to personnel.

NOTE

Ensure that both disabled vehicle and booster vehicle are equipped with serviceable NATO slave receptacles.

1. Connect NATO slave cable to booster vehicle slave receptacle.
2. Connect other end of slave cable to NATO slave receptacle of disabled vehicle.
3. Ensure disabled vehicle's battery disconnect switch is in ON position.
4. Start booster vehicle and run at a speed just above idle.
5. Wait approximately five minutes, then start disabled vehicle. If engine fails to start, notify Unit Maintenance.
6. After starting disabled vehicle, return booster vehicle to idle.
7. Remove NATO slave cable from disabled vehicle, then from booster vehicle.



409-051

OPERATE IN EXTREME MOIST HEAT**CAUTION**

- Operating during periods of extreme heat [ambient temperatures above 100°F (38°C)] can cause engine and hydraulic systems to overheat. Engine temperatures above 230°F (110°C) and hydraulic oil temperatures above 250°F (121°C) can cause damage to engine and hydraulic system components. Check engine coolant temperature warning light and hydraulic oil temperature warning light often during periods of extreme heat to prevent damage to engine and hydraulic system.
- Gaskets and seals are more likely to leak when engine and hydraulic system operating temperatures are high. Check engine and hydraulic oil levels more often during periods of extreme heat to prevent damage to engine and hydraulic system components. Check for leaks around gaskets, seals and fittings more often.

1. At Parking or Halt.

- a. If possible, park the 6K forklift under shelter.
- b. Dry the seat and wiring to prevent the formation of mildew.
- c. Keep the fuel tank full at all times to avoid condensation from forming in the tank.
- d. Contact Maintenance to check all points of lubrication.
- e. Clean and lubricate 6K forklift with correct grade of lubricants to help prevent deterioration. Have Maintenance change air, fuel, transmission and hydraulic filter elements at shorter than normal intervals, as designated in Maintenance PMCS.
- f. Perform operator PMCS more often than normal (WP 0011 and WP 0012 00).
- g. Do not over fill fuel tank. Extreme heat causes fuel to expand and overflow.
- h. Ensure that water is as free as possible of mineral deposits before adding coolant mixture to radiator. Local desert water sources have high mineral deposits that will clog radiator.
- i. Ensure that water/antifreeze mixture is 50/50. This mixture raises coolant boiling point to help prevent overheating.
- j. High temperatures can damage hoses. Check radiator, fuel and lubricant hoses for leaks around fittings. Notify supervisor if hoses are damaged.

OPERATE IN EXTREME DRY HEAT (REFER TO FM 90-3, DESERT OPERATIONS)**CAUTION**

- Operating during periods of extreme heat [ambient temperatures above 100°F (38°C)] can cause engine and hydraulic systems to overheat. Engine temperatures above 230°F (110°C) and hydraulic oil temperatures above 250°F (121°C) can cause damage to engine and hydraulic system components. Check engine coolant temperature warning light and hydraulic oil temperature warning light often during periods of extreme heat to prevent damage to engine and hydraulic system.
 - Gaskets and seals are more likely to leak when engine and hydraulic system operating temperatures are high. Check engine and hydraulic oil levels more often during periods of extreme heat to prevent damage to engine and hydraulic system components. Check for leaks around gaskets, seals and fittings more often.
2. **Preparation.** Precautions must be taken to avoid overheating.
 - a. Contact Maintenance to drain, flush and refill cooling system.
 - b. Contact Maintenance to lubricate the 6K forklift with correct grade of lubricants.
 3. **Operation.**

**WARNING**

- DO NOT service cooling system unless engine has cooled. This is a pressurized cooling system and escaping steam or hot coolant will cause serious burns.
 - DO NOT remove cooling system radiator cap when engine is hot. Allow engine to cool down. Loosen cap to first stop and let any pressure out of cooling system, then remove cap. Failure to follow this warning may cause serious burns.
 - Wear effective eye, glove, and skin protection when handling coolants. Failure to do so may cause injury.
- a. Check the water temperature gauge at frequent intervals.
 - b. Check the air cleaner indicator frequently. Have the filter serviced often.
 - c. Clean and lubricate 6K forklift with correct grade of lubricants to help prevent deterioration. Have Maintenance change air, fuel, transmission and hydraulic filter elements at shorter than normal intervals, as designated in Maintenance PMCS.
 - d. Perform operator PMCS more often than normal (WP 0011 and WP 0012 00).
 - e. Do not fill fuel tank completely. Extreme heat causes fuel to expand and overflow.
 - f. Ensure that water is as free as possible of mineral deposits before adding coolant mixture to radiator. Local desert water sources have high mineral deposits that will clog radiator.
 - g. Ensure that water/antifreeze mixture is 50/50. This mixture raises coolant boiling point to help prevent overheating.
 - h. High temperatures can damage hoses. Check radiator, fuel and lubricant hoses for leaks around fittings. Notify supervisor if hoses are damaged.
 - i. Park 6K forklift under cover or in the shade, if possible.

OPERATE IN EXTREME COLD

1. **Introduction.** Extreme cold causes many problems:
 - a. Lubricants thicken or congeal.
 - b. Batteries may freeze or lose their electrical efficiency.
 - c. Fuel may not readily atomize for combustion.
 - d. Various materials become hard, brittle, and easily damaged.
 - e. Cooling system requires adequate protection from extreme cold.
 - f. Fuels, lubricants, and antifreeze require special storage, handling, and use.
2. **Preparation.** Extensive preparation of mechanical equipment is required when extreme cold weather is anticipated. The following steps will help protect the vehicle against subfreezing temperatures.
 - a. Contact Maintenance to prepare the cooling system by draining and then refilling with antifreeze appropriate for anticipated temperatures. Refer to WP 0025 00 and TB 750-651, *Use of Antifreeze Solutions, Antifreeze Extender, Cleaning Compounds*.
 - b. Contact Maintenance to change the engine lubricating oil to the grade for cold weather operation.
3. **Starting the Engine.**
 - a. Try starting the engine using the procedure in WP 0005 00.

WARNING

Do not operate the forklift with the emergency steer switch in the OFF position. If engine power is lost there will be a loss of emergency steering capabilities. Failure to follow this precaution could result in severe personal injury.

CAUTION

Use the engine primer button only while cranking the engine. Use only for starting a cold engine. Failure to follow this precaution could cause engine damage.

OPERATE IN EXTREME COLD - CONTINUED**NOTE**

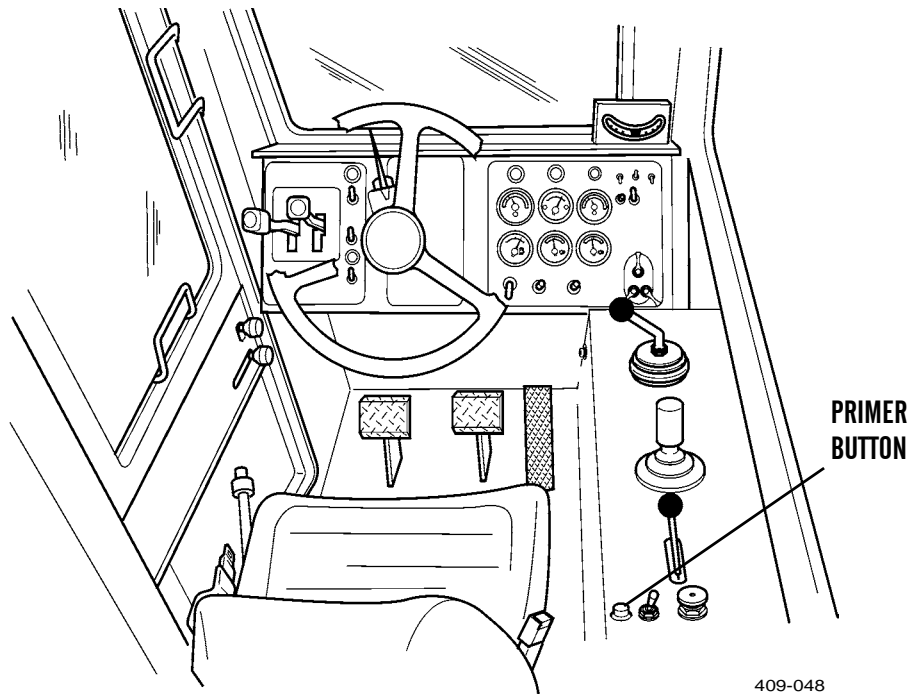
The engine primer will not function at temperatures above 1.1°C (+/- -13°C).

- b. If the engine does not start, turn the emergency steering pump switch off (switch up).

CAUTION

Do not depress the engine primer button for more than 5 seconds. Failure to follow this precaution could result in forklift damage.

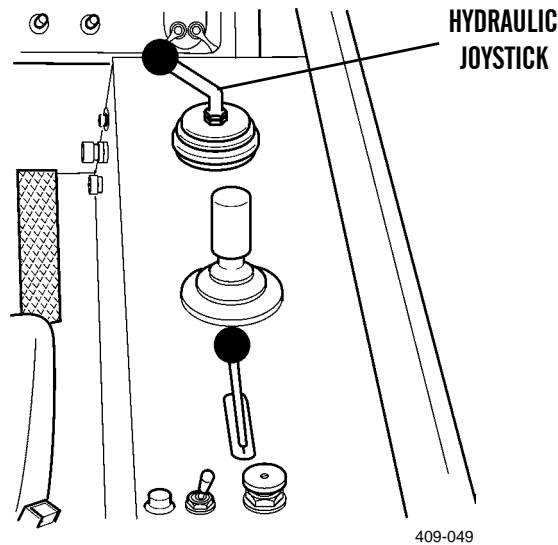
- c. Crank the engine and press the engine primer button for no longer than 5 seconds. This injects a measured amount of starting fluid into the engine.



- d. Release the engine primer button and continue to crank engine.
- e. If engine fails to start, repeat steps c and d.
- f. After starting the engine, run at half throttle until engine warms to normal temperature (180°-190°F) (82°-88°C).
- g. Use the hydraulic joystick control lever to raise the boom until the forks are 6 in. (152 mm) from the ground and fully retract the boom.

OPERATE IN EXTREME COLD - CONTINUED

- h. Continue to hold the hydraulic joystick control lever in the boom retract position for 10 to 15 minutes. This operation warms the hydraulic oil by forcing the oil through the boom circuit relief valve. Operate all hydraulic functions until warm oil has circulated through the cylinders.



- i. Turn the emergency steer switch to the ON position (red cover down) after the oil is warm and before driving the vehicle.

NOTE

When turning the emergency steer switch to ON, the pump may operate for up to 10 seconds. If the pump runs longer than 10 seconds, oil is not warm enough. Turn the switch to OFF. Repeat step h to allow hydraulic fluid to warm up before operating.

OPERATE IN SALT WATER AREAS**At Halt or Parking.**

- In salt water area, keep the forklift as clean as possible. Salt water causes corrosion of exposed parts. After operation is completed, wash with fresh water, if available.
- Keep all lubricating points wiped clean and contact Maintenance to lubricate.
- Keep all wiring and connections clean and free from corrosion.

OPERATE IN SANDY OR DUSTY CONDITIONS**1. Operation.**

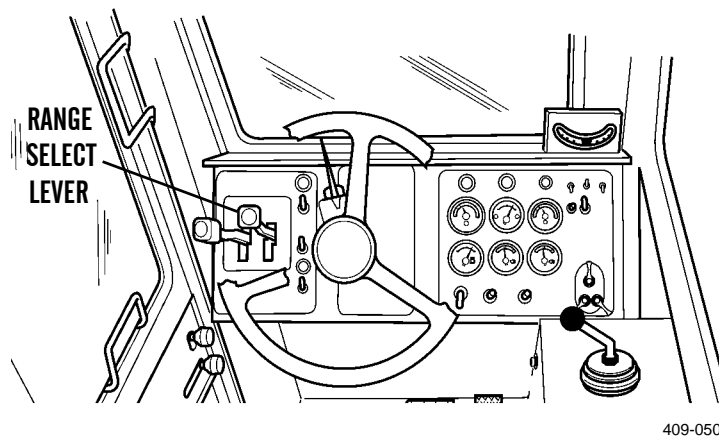
- Check the radiator frequently and keep it clean of dust and sand.
- Check the air cleaner indicator frequently. Service the filter as often as required.

OPERATE IN SANDY OR DUSTY CONDITIONS - CONTINUED**2. At Halt or Parking.**

- a. Contact Maintenance to lubricate the 6K forklift at more frequent intervals. Clean all fittings and lubrication openings thoroughly before lubricating to prevent entrance of dust or sand with the lubricant.
- b. When not in use, cover the operator compartment, and utilize whatever means are available to protect the engine compartment from the entry of windblown dust or sand.

FORDING

1. Check the water depth, allowing for inconsistency of the bottom. Do not attempt to ford even the narrowest stream that is more than 30 in. (762 mm) deep.
2. Make certain all gauges are indicating normal operating pressure and temperatures.
3. Use the range select lever to shift the transmission into the low speed range (position 1), and speed the engine up to minimize the danger of stalling. Enter the water slowly to minimize surges of backwash into the engine compartment. Fording speed should not exceed 3 to 4 mph (5 to 6 kph).

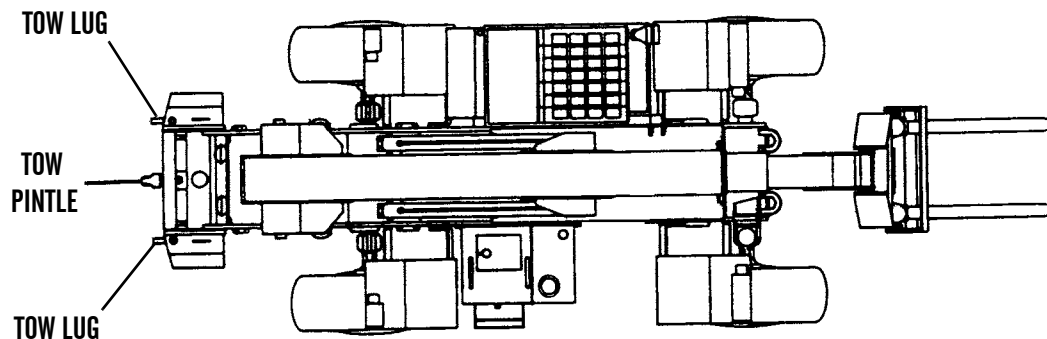
**NOTE**

In the event of complete submersion, contact Maintenance for appropriate disposition.

4. Contact Maintenance to lubricate the vehicle completely, as soon as possible, after fording.

TOWING OTHER VEHICLES**WARNING**

- Carefully move the forklift into position. Always use a ground guide and any device necessary to lift the tow bar into position without standing directly between the forklifts. Failure to follow this precaution could result in personal injury or forklift damage.
- The 6K forklift is equipped with a towing pintle and lugs. Towing should be limited to vehicles weighing 27,100 lbs (12,292 kg) or less. Whenever the 6K forklift is used to tow another vehicle, use the tow pintle to attach the tow bar.

**TOWING THE 6K FORKLIFT****WARNING**

- Carefully move the towing vehicle into position. Always use a ground guide and any device necessary to lift the tow bar into position without standing directly between the forklifts. Failure to follow this precaution may cause personal injury or forklift damage.
- If the 6K forklift must be towed, tow lugs are used to connect the tow bar. Tow lugs are located at the rear of the vehicle, on the counterweight.
- Do NOT tow at speeds over 20 mph (32 kph).

NOTE

Contact Maintenance to perform the necessary preparation of the 6K forklift for towing.

1. Position the forks approximately 24 in. (61 cm) above the ground.

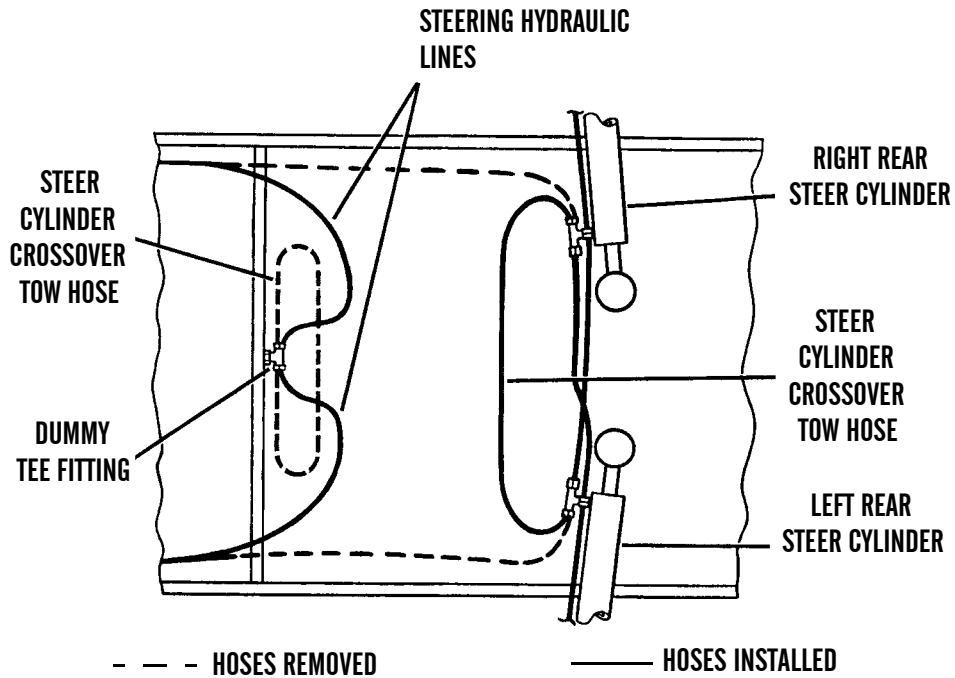
WARNING

When the propeller shafts are disconnected and the parking brake disengaged, the forklift may roll and could result in severe personal injury. Always chock the wheels properly.

2. Chock all wheels.

TOWING THE 6K FORKLIFT- CONTINUED

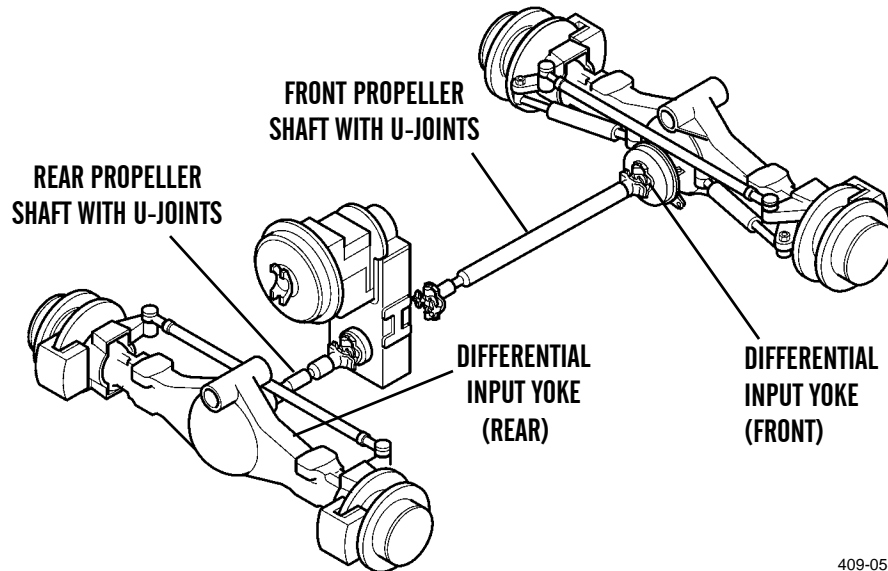
3. Disconnect the rear axle steering cylinder hoses as follows:
 - a. Remove the steer cylinder crossover hose from the dummy tee fitting located on the main frame crossbar at the rear of the transmission.
 - b. Disconnect the steering hydraulic line from the rod end tee fitting of the left steer cylinder. Connect the line to one side of the dummy tee fitting.
 - c. Disconnect the steering hydraulic line from the rod end tee fitting of the right steer cylinder. Connect the line to the other side of the dummy tee fitting.
 - d. Using the steer cylinder crossover hose from step a, connect the left and right steer cylinder. Use open ports from which hoses were removed in steps b and c. Route the hose so that it clears the axle input yoke.



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TOWING THE 6K FORKLIFT- CONTINUED

4. Remove the four bolts that secure the U-joint and rear propeller shaft to the input yoke of the rear differential. Place the unattached end of the propeller shaft in the hanger hook provided underneath the vehicle.



5. Remove the four bolts that secure the U-joint and front propeller shaft to the yoke on the front differential. Place the unattached end of the propeller shaft in the hanger provided underneath the vehicle.
6. Attach the tow bar to the tow lugs of the 6K forklift.
7. Move the towing vehicle into position using a ground guide. Two people are required to lift and connect the tow bar to the towing vehicle pintle.
8. Release the parking brake.
9. Remove the wheel chocks. Ensure that all personnel and equipment are clear. Proceed to tow with caution.
10. After towing of the 6K forklift is completed, set the parking brake, chock the wheels, and reconnect the propeller shafts and the steering lines by reversing steps 3 thru 5.
11. Bleed any trapped air from the steering system using the following procedure:
 - a. Synchronize the steering as described in WP 0005 00.
 - b. Turn the steering wheel two full turns right and left in all steering modes.

EMERGENCY BOOM OPERATIONS

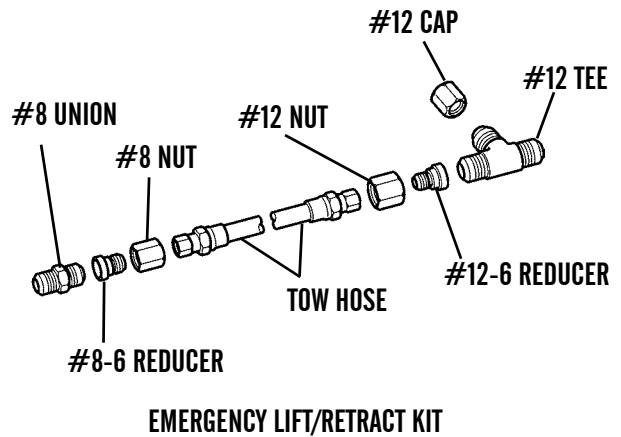
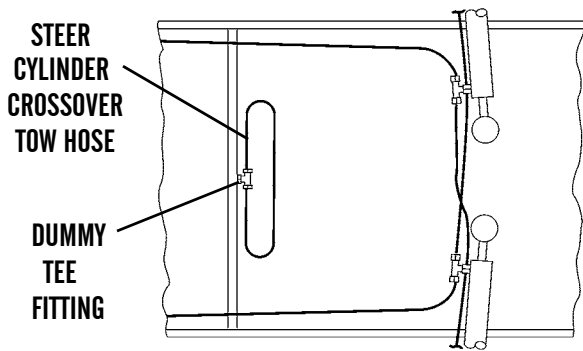
WARNING

If engine power is lost with the boom extended or raised, the boom must be fully retracted before it is lowered to prevent severe personal injury and vehicle damage.

NOTE

Contact Maintenance to perform the necessary preparation of the 6K forklift for emergency boom operations.

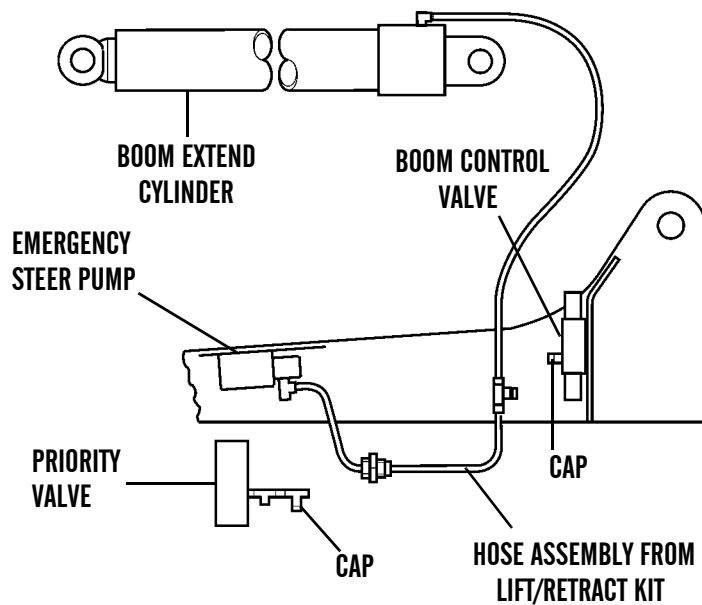
1. **Emergency Boom Retracting.** Whenever an emergency situation prevents the use of engine power for retracting the boom, proceed with the following:
 - a. Remove the transmission cover.
 - b. Remove the steer cylinder crossover tow hose from the dummy tee fitting, located on the main frame crossbar at the rear of the transmission. Install caps on the dummy tee (two small caps are located in the tool box as part of the emergency lift/retract kit).
 - c. Assemble the #8 nut and the #8-6 reducer to the union (parts are from the emergency lift/retract kit) and install the assembly on one end of the tow hose.
 - d. Assemble the #12 nut and the #12-6 reducer to one end of the #12 tee fitting (parts from the emergency lift/retract kit) and install on the other end of the tow hose. Install a #12 cap on branch of the tee fitting. Tighten all connections.



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EMERGENCY BOOM OPERATIONS - CONTINUED

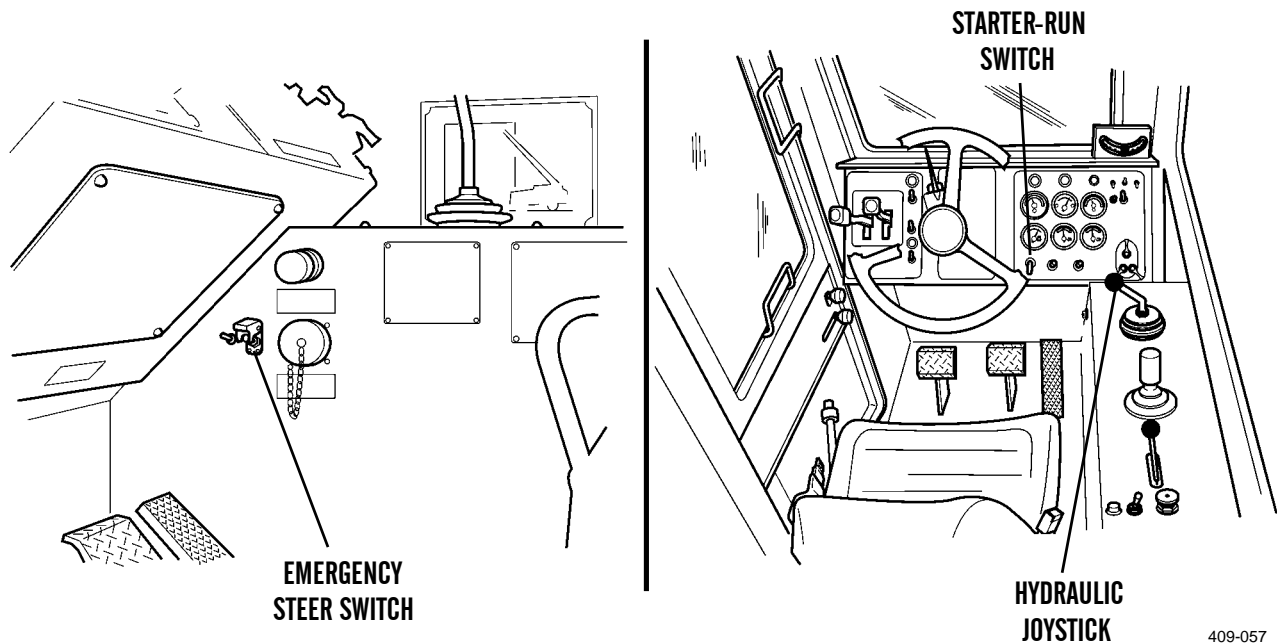
- e. Disconnect the output line from the emergency steer pump from the priority valve tee. Install a cap at the priority valve tee connection.
- f. Connect the union end of the tow hose to the emergency steer pump hose that was disconnected in step e.
- g. Disconnect the rod end hose of the boom extend cylinder from the main control valve (bottom middle port). Install a #12 cap on the main control valve fitting.
- h. Connect the tee end of the tow hose to the boom extend cylinder rod hose that was disconnected in step g.
- i. Operate the emergency steering pump by turning the starter-run control switch and the emergency steer switch to the ON position.



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EMERGENCY BOOM OPERATIONS - CONTINUED

- j. Move the hydraulic joystick to the left until the boom is fully retracted. Turn the ignition switch off after the boom is fully retracted.



- k. After retracting the boom, reconnect the lines by reversing steps b through i, and return fittings to the emergency lift/retract kit and the towing hose to the dummy tee.
- l. Install transmission cover.
2. **Emergency Boom Lowering.** Whenever an emergency situation prevents the use of engine power for lowering the boom, first perform step a if boom is extended, then proceed with the following:
 - a. Remove the transmission cover.

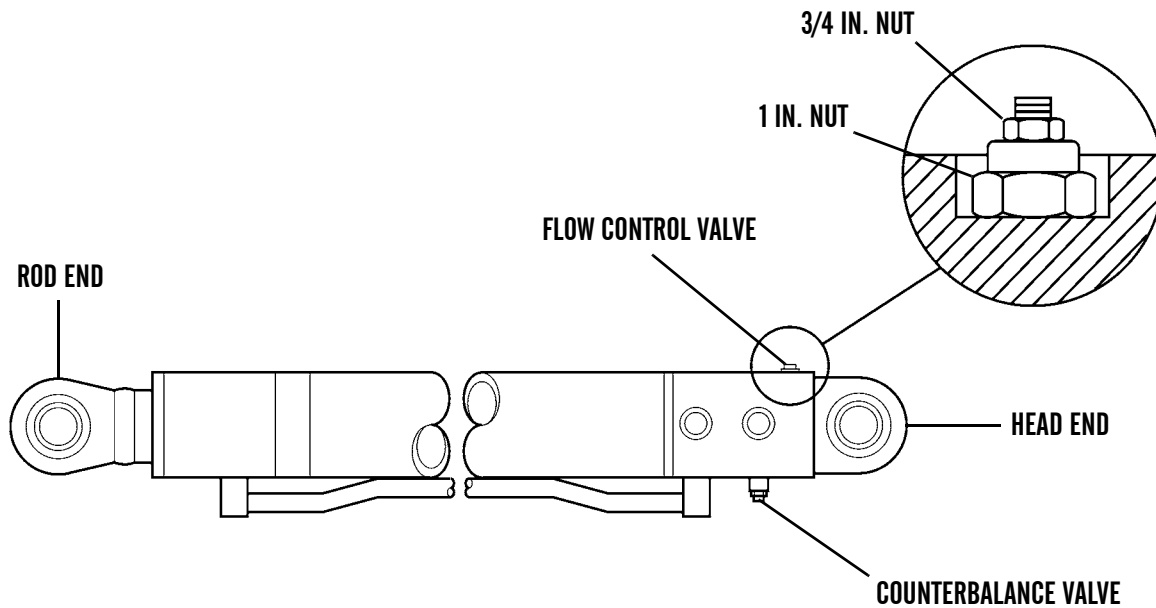
EMERGENCY BOOM OPERATIONS - CONTINUED

- b. To retract the hoist cylinders, hydraulic oil must bypass the hoist cylinder counterbalance valves by flowing through the flow control valves. The flow control valves are located on the top side of the base of the hoist cylinders.

WARNING

Do not loosen the 1 in. hex nut or remove the stem on the flow control valve when the cylinder is pressurized due to a raised boom or load. If the high hydraulic pressure is released, the boom could drop and cause severe personal injury.

- (1) Loosen the 3/4 in. hex nut locknut on the flow control valve stem (located on the top side of each hoist cylinder base end).
- (2) Unscrew the stem with a 3/16 in. allen wrench to the internal stop.

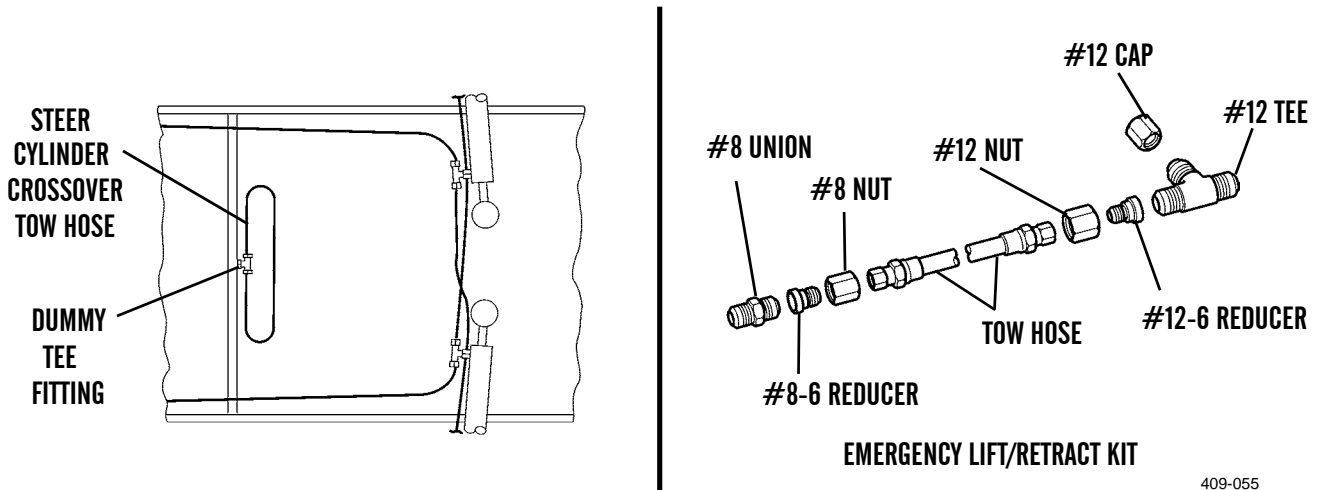


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- c. Actuate the emergency steering pump by turning the emergency steer switch and the starter-run control switch to the ON position.
- d. Move the hydraulic joystick forward to lower the boom until the load or forks are about 24 in. (61 cm) above ground level.
- e. Return the system to normal operation as follows:
 - (1) Return the hydraulic joystick to the neutral (center) position.
 - (2) Turn the starter-run control switch and the emergency steer switch to the OFF position.
 - (3) Screw both flow control stems in until they are seated and tighten locknuts.
 - (4) Install the transmission cover.

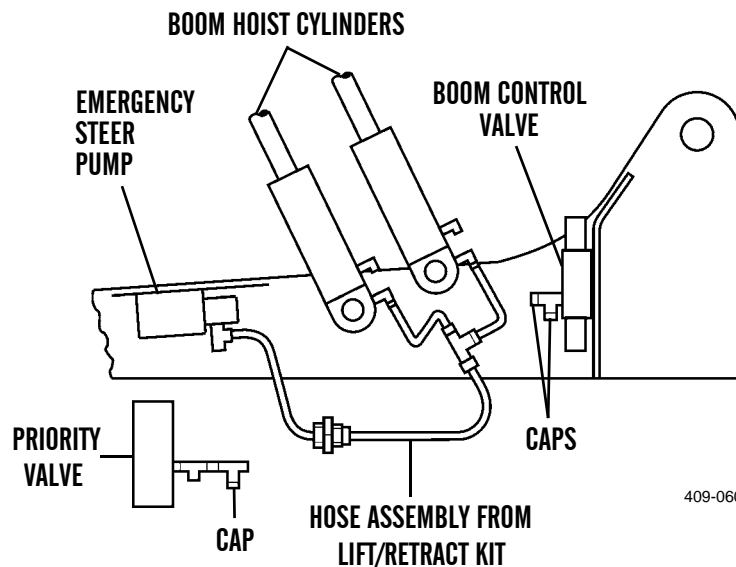
EMERGENCY BOOM OPERATIONS - CONTINUED

3. **Emergency Boom Raise.** Whenever an emergency situation prevents the use of engine power for raising the boom, proceed with the following:
 - a. Remove the transmission cover.
 - b. Remove the steer cylinder crossover tow hose from the dummy tee fitting, located on the main frame crossbar at the rear of the transmission. Install caps on the dummy tee (two small caps are located in the tool box as part of the emergency lift/retract kit).
 - c. Assemble the #8 nut and the #8-6 reducer to the union parts (are from the emergency lift/retract kit) and install the assembly on one end of the tow hose.
 - d. Assemble the #12 nut and the #12-6 reducer to one end of the #12 tee fitting (parts from the emergency lift/retract kit) and install on the other end of the tow hose.



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- e. Disconnect the output line from the emergency pump at the priority valve tee. Install a cap at the priority valve tee connection.



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EMERGENCY BOOM OPERATIONS - CONTINUED

- f. Connect the union end of the tow hose to the emergency steer pump hose that was disconnected in step e.
- g. Disconnect both hoses from the base ends of the boom hoist cylinders at the main control valve tee fitting (bottom left port). Install caps on the main controls valve tee fitting.
- h. Connect the tee end of the tow hose to the boom hoist cylinder rod hoses that were disconnected in step g.

NOTE

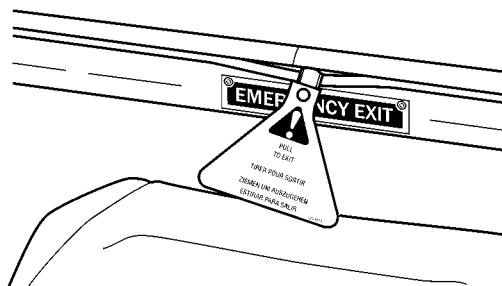
If the boom will not raise during step i, move the hydraulic joystick lever to the boom raise position.

- i. To raise the boom, make sure the emergency steer switch is on. Turn the start-run control switch on until the load or forks are about 24 in. (61 cm) from the ground. Turn the starter-run control switch off.
- j. After raising the boom, reconnect the lines by reversing steps b through h and return fitting to the emergency lift/retract kit and the towing hose to the dummy tee.
- k. Install transmission cover.

REAR WINDOW EMERGENCY EXIT

The rear window can be used as an emergency exit when exit through the cab doors cannot be made. To open the emergency exit, proceed as follows:

1. While facing rear windows, grasp tag attached to rubber locking strip.
2. Pull tag and rubber locking strip fully out from rubber molding of rear window.
3. Push outward on rear window to remove rear window from cab.
4. Exit cab through rear window opening.



409-3012

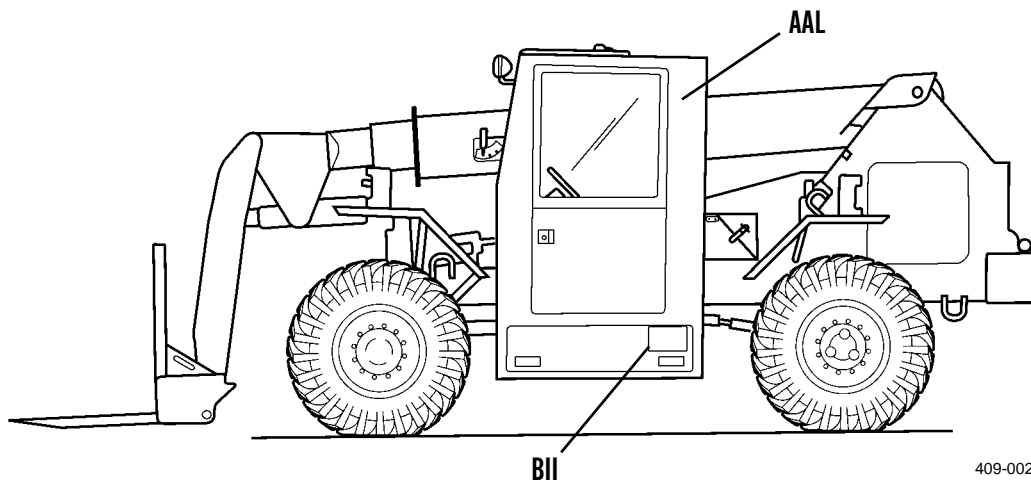
END OF WORK PACKAGE

INTRODUCTION

1. This work package shows the location for stowage of equipment and materials required to be carried on the 6K Forklift.
2. This work package also includes illustrations showing the location of all decals, data plates, and stencils on the 6K forklift.

STOWAGE GUIDE

1. The equipment stowage locator is designed to help inventory items required for safe and efficient operation.
2. The equipment locator is representative of BII and applicable AAL stowage on the forklift. Refer to WP 0023 00 and WP 0024 00 for a listing of BII and AAL items.

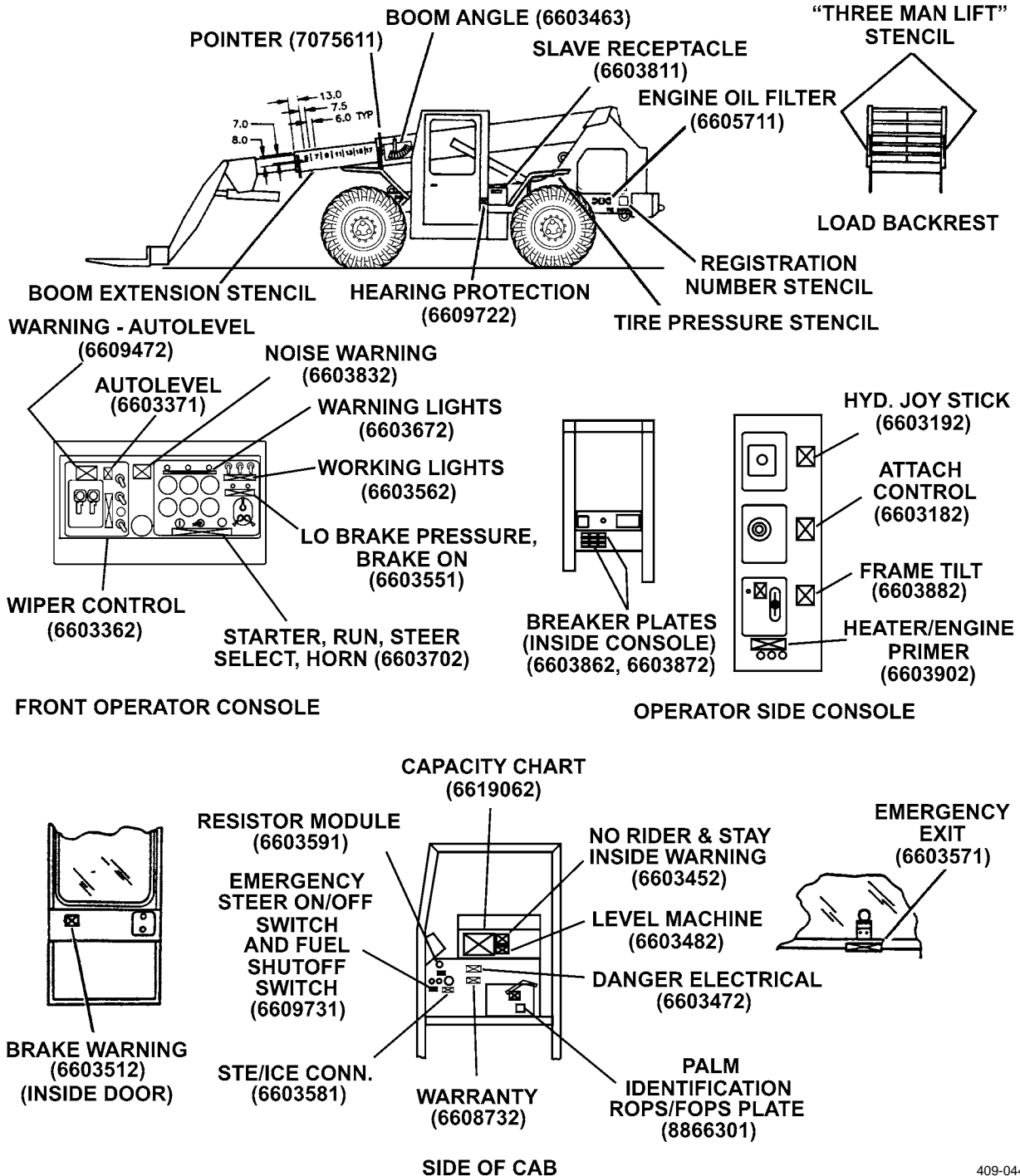


409-002

DECALS, DATA PLATES AND STENCILS

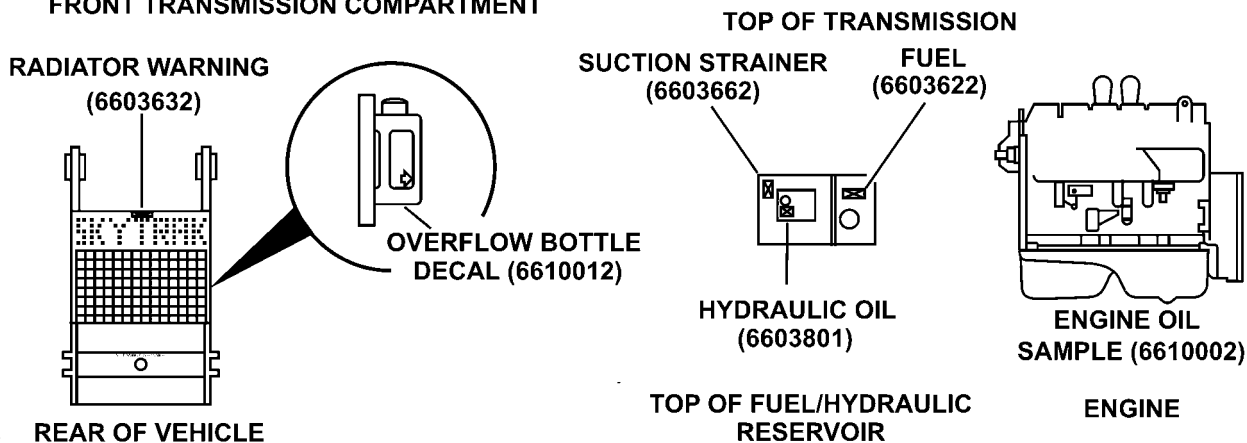
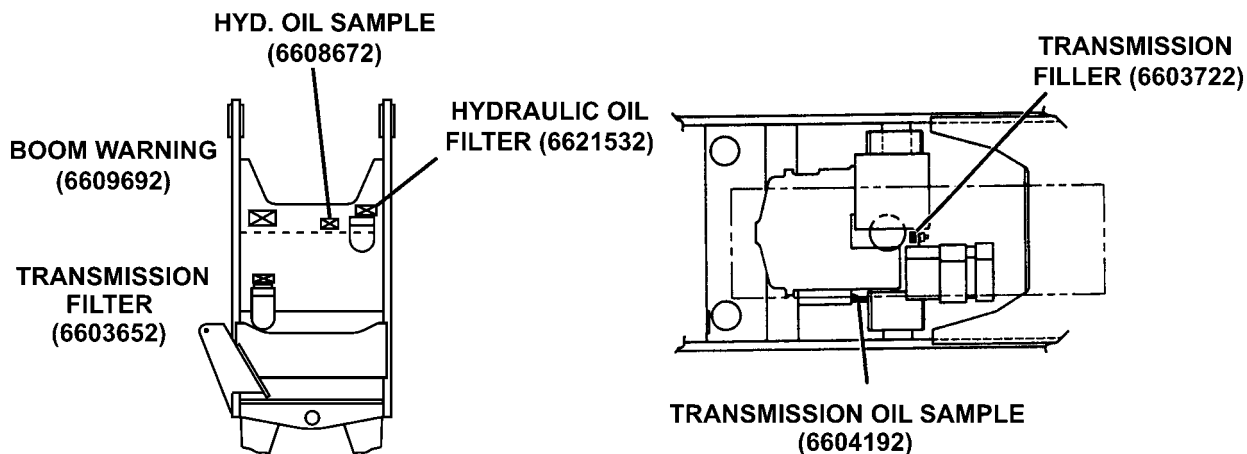
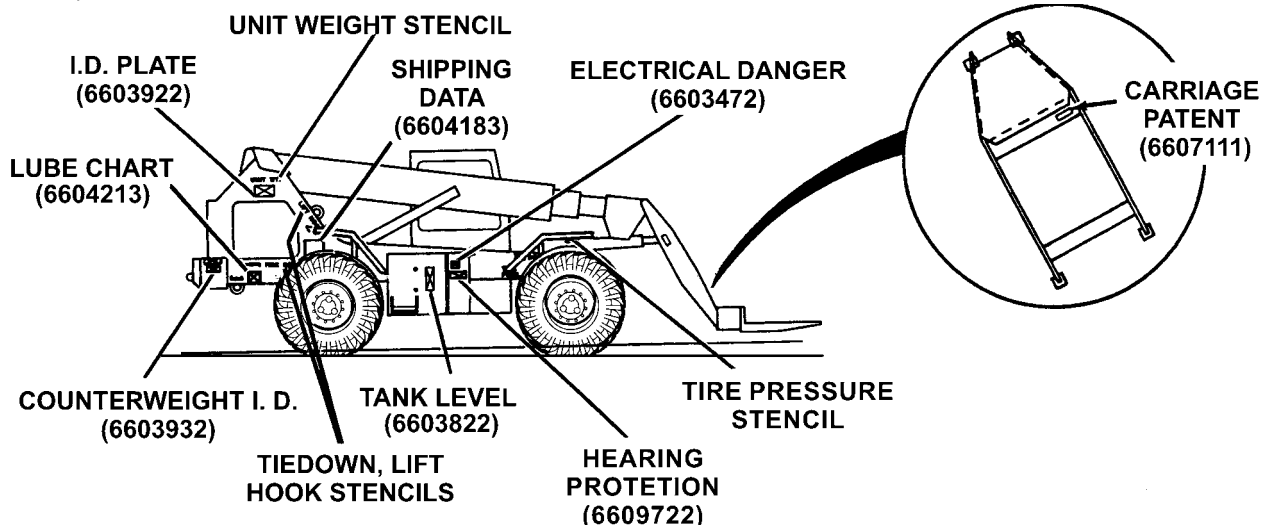
NOTE

Refer to the next two figures for an illustration of the location of decals, data plates and stencils.



409-044

DECALS, DATA PLATES AND STENCILS - CONTINUED



409-047

END OF WORK PACKAGE

CHAPTER 3
OPERATOR TROUBLESHOOTING

INTRODUCTION

1. This chapter provides information for identifying and correcting malfunctions which may develop while operating the 6K Variable Reach Rough Terrain Forklift Truck.
2. The Troubleshooting Symptom Index in WP 0009 00 lists common malfunctions which may occur and refers you to the proper page in WP 0010 00 for a troubleshooting procedure.
3. If you are unsure of the location of an item mentioned in troubleshooting, refer to WP 0002 00 or WP 0004 00.
4. Before performing troubleshooting, read and follow all safety instructions found in the Warning Summary at the front of this manual.
5. The Troubleshooting Symptom Index cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed, or is not corrected by the listed corrective actions, notify supervisor.
6. When troubleshooting a malfunction:
 - a. Locate the symptom or symptoms in WP 0009 00 that best describe the malfunction.
 - b. Turn to the page in WP 0010 00 where the troubleshooting procedures for the malfunction in question are described. Headings at the top of each page show how each troubleshooting procedure is organized: MALFUNCTION, TEST OR INSPECTION (in step number order), and CORRECTIVE ACTION.
 - c. Perform each step in the order listed until the malfunction is corrected. DO NOT perform any maintenance task unless the troubleshooting procedure tells you to do so.

EXPLANATION OF COLUMNS

The columns in Table 1 in WP 0010 00 are defined as follows:

1. **MALFUNCTION**. A visual or operational indication that something is wrong with the equipment.
2. **TEST OR INSPECTION**. A procedure to isolate the problem in a system or component.
3. **CORRECTIVE ACTION**. A procedure to correct the problem.

END OF WORK PACKAGE

TROUBLESHOOTING SYMPTOM INDEX

0009 00

<u>Malfunction/Symptom</u>	<u>Troubleshooting Procedure Page</u>
All Hydraulic Functions Operate Slowly	0010 00-3
Engine Cranks But Will Not Start	0010 00-1
Engine Misfires or Runs Rough	0010 00-1
Engine Overheats	0010 00-2
Engine Primer Button Does Not Work	0010 00-3
Engine Will Not Crank	0010 00-1
Forklift Starts But Will Not Move	0010 00-2
Forks Will Not Automatically Level	0010 00-3
Front and Rear Wheels Are Not Aligned in the Straight Ahead Position	0010 00-3
Hydraulic Oil is Foaming	0010 00-3
Low Engine Oil Pressure	0010 00-2
Low Engine Power	0010 00-1
Only One Heater Fan Operates	0010 00-3
Parking Brake Will Not Hold Forklift	0010 00-4
Parking Brake Will Not Release	0010 00-4
Poor or No Brakes	0010 00-3

END OF WORK PACKAGE

Table 1. Troubleshooting Procedures.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
<p>1. Engine Will Not Crank.</p>	<p>Check to see if range select control lever is in the Neutral "N" position.</p> <p>Check for loose or disconnected battery cables.</p>	<p>Move range select control lever to "N" position (WP 0004 00).</p> <p>Notify Maintenance.</p>
<p>2. Engine Cranks But Will Not Start.</p>	<p>1. Check to see if the auxiliary fuel shut-off switch is in the OFF position.</p> <p>2. Check to see if fuel tank is empty.</p> <p>3. Check the ambient temperature.</p> <p>4. Check the fuel/water separator for water.</p> <p>5. Check to see if any fuel lines are damaged.</p>	<p>Move the auxiliary fuel shut-off switch to the ON position (WP 0004 00).</p> <p>Fill fuel tank (WP 0021 00).</p> <p>Use the engine primer button in extreme cold temperature to start the engine (WP 0006 00).</p> <p>Drain the fuel/water separator (WP 0019 00).</p> <p>Notify Maintenance.</p>
<p>3. Engine Misfires or Runs Rough.</p>	<p>1. Check to see if fuel tank is low or empty.</p> <p>2. Check to see if any moisture is present in fuel/water separator.</p> <p>3. Check for black or gray exhaust smoke. Plugged or dirty intake system.</p> <p>4. Check for white or blue smoke. Indicates engine is cold.</p> <p>5. Check for leaks in fuel lines and injectors.</p>	<p>Fill fuel tank (WP 0021 00).</p> <p>Drain the fuel/water separator (WP 0019 00).</p> <p>Clean or replace air filters (WP 0017 00).</p> <p>Allow engine to warm up.</p> <p>Notify Maintenance.</p>
<p>4. Low Engine Power.</p>	<p>1. Check air filter restriction indicator.</p> <p>2. Check the exhaust pipe for obstruction.</p> <p>3. Check for high engine oil level.</p>	<p>Clean the air filter (WP 0017 00).</p> <p>Remove any obstructions.</p> <p>Notify Maintenance if oil level is high.</p>

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
7. Forklift Starts but Will Not Move - Continued.	6. Check transmission disconnect pedal for free movement.	Notify Maintenance.
8. Engine Primer Button Does Not Work.	Check the ambient temperature.	The primer button will not work if the ambient temperature is above 34°F +/- 8°F (1°C +/- -13°C).
9. All Hydraulic Functions Operate Slowly.	<ol style="list-style-type: none"> 1. Check to see if the hydraulic oil is cold. 2. Check to see if the hydraulic oil level is low. 3. Engine speed too low. 4. Inspect hydraulic lines for signs of damage or leaks. 	<p>Operate the hydraulic system until normal operating temperature is achieved (WP 0005 00).</p> <p>Add oil as necessary (WP 0021 00).</p> <p>Increase engine speed with accelerator.</p> <p>Notify Maintenance.</p>
10. Hydraulic Oil Is Foaming.	<ol style="list-style-type: none"> 1. Check to see if the hydraulic oil level is low. 2. Check to see if the hydraulic oil is contaminated with water. 	<p>Add hydraulic oil as necessary (WP 0021 00).</p> <p>Replace hydraulic oil (WP 0021 00).</p>
11. Forks Will Not Automatically Level.	<ol style="list-style-type: none"> 1. Check to see if the fork auto leveler switch is in the ON position. 2. Check for damaged or broken wire(s) from toggle switch to fork autoleveler switch. 	<p>Move fork auto leveler switch to the ON position (WP 0004 00).</p> <p>Notify Maintenance.</p>
12. Only One Heater Fan Operates.	Check to see if the heater blower switch is in the LOW speed position.	Move the heater blower switch to the HIGH speed position. Only one fan operates on low speed. At high speed, both fans operate. If malfunction is not corrected, notify Maintenance.
13. Front and Rear Wheels Are Not Aligned in the Straight Ahead Position.	Check to see if the steer select control switch is in the CRAB or 4 WHEEL position.	The front and rear wheels do not always align straight ahead after changing steering modes. Proceed with steering system synchronization (WP 0005 00).
14. Poor or No Brakes.	1. Check hydraulic oil level at reservoir sight glass.	Add oil as necessary (WP 0021 00).

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
14. Poor or No Brakes - Continued.	2. Check for oil leakage at brake calipers or hose connections.	Notify Maintenance.
15. Parking Brake Will Not Hold Forklift.	Check for loose parking brake lever linkage.	Adjust parking brake lever (WP 0020 00). If adjustment is correct, notify Maintenance.
16. Parking Brake Will Not Release.	Check for tight parking brake lever linkage.	Adjust parking brake lever (WP 0020 00). If adjustment is correct, notify Maintenance.

END OF WORK PACKAGE

CHAPTER 4
OPERATOR MAINTENANCE INSTRUCTIONS

GENERAL

1. To ensure that the 6K forklift is ready for operation at all times, it must be inspected on a regular basis so that defects may be found and corrected before they result in injury or equipment failure or damage.
2. The PMCS Table in WP 0012 00 contains systematic instructions on inspections, lubrications, services, adjustments and corrections to be performed by the operator to keep the forklift in good operating condition and ready for its primary mission.

EXPLANATION OF TABLE ENTRIES

1. **Item Number (Item No.) Column.** Numbers in this column are for reference. When completing DA Form 2404 or DA Form 5988-E (*Equipment Inspection and Maintenance Worksheet*), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must perform checks and services for the interval listed.
2. **Interval Column.** This column tells you when you must perform the procedure in the procedure column.
 - a. *Before* procedures must be done immediately before you operate the forklift.
 - b. *During* procedures must be done while you are operating the forklift.
 - c. *After* procedures must be done immediately after you have operated the forklift.
 - d. *Weekly* procedures must be done once each week.
 - e. *Monthly* procedures must be done once each month.
3. **Man-Hours Column.** This column indicates man-hours required to complete prescribed lubrication.
4. **Location, Item to Check/Service Column.** This column provides the location and item to be checked or serviced.

NOTE

The WARNINGS and CAUTIONS appearing in your PMCS table should always be observed. WARNINGS and CAUTIONS appear before applicable procedures. You must observe these WARNINGS to prevent injury to yourself and others, and CAUTIONS to prevent the forklift from being damaged.

5. **Procedure Column.** This column gives the procedure you must perform to check or service the item listed in the Item to Check/Service column, to know if the forklift is ready or available for its intended mission. You must perform the procedure at the time stated in the interval column.
6. **Not Fully Mission Capable If: Column.** Information in this column tells you what faults will keep the forklift from being capable of performing its primary mission. If you perform check/service procedures that show faults listed in this column, the equipment is not mission-capable. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

GENERAL PMCS PROCEDURES

1. Always perform PMCS in the same order so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry. If the forklift does not perform as required, refer to the appropriate troubleshooting procedure in Chapter 3.
2. If anything looks wrong and you can't fix it, write it on your DA Form 2404 or DA Form 5988-E. If you find something seriously wrong, IMMEDIATELY report it to supervisor.
3. Before performing preventive maintenance, read all the checks required for the applicable interval and prepare all that is needed to make all the checks. You'll always need a rag or two.

GENERAL PMCS PROCEDURES - CONTINUED**WARNING**

Cleaning compound, solvent MIL-PRF-680 Type III is an environmentally compliant and low toxic material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition.

- a. **Keep It Clean.** Dirt, grease, oil and debris get in the way and may cover up a serious problem. Clean as you work and as needed. Use cleaning compound, solvent (Item 2, WP 0025 00) on all metal surfaces. Use detergent (Item 3, WP 0025 00) and water when you clean rubber, plastic and painted surfaces.

**WARNING**

When servicing forklift, performing maintenance or disposing of materials such as engine coolant, hydraulic fluid, lubricants, battery acids or batteries and CARC paint, consult your Field/local hazardous waste disposal center or safety office for local regulatory guidance. If further information is needed, please contact The Army Environmental Hotline at 1-800-872-3845.

- b. **Hazardous Waste Disposal.** Ensure all spills are cleaned up and disposed of IAW local policy and ordinances.
- c. **Rust and Corrosion.** Check metal parts for rust and corrosion. If any bare metal or corrosion exists, clean and apply a light coat of lubricating oil (Item 9, WP 0025 00). Report it to supervisor.
- d. **Bolts, Nuts and Screws.** Check bolts, nuts and screws for obvious looseness, missing, bent or broken condition. You can't try them all with a tool, but look for chipped paint, bare metal or rust around bolt heads. If you find one is loose, notify supervisor.
- e. **Welds.** Look for loose or chipped paint, rust or gaps where parts are welded together. If you find a bad weld, report it to supervisor.
- f. **Electric Wires and Connectors.** Look for cracked or broken insulation, bare wires and loose or broken connectors. Reconnect loose connectors. Ensure that wires are in good condition.
- g. **Hoses and Fluid Lines.** Look for wear, damage and signs of leaks. Check for loose clamps and fittings. Wet spots indicate leaks, but a stain around a fitting or connector can also mean a leak. If a leak comes from a loose fitting or connector, notify supervisor. If something is broken or worn out, report it to supervisor.
- h. **Fluid Leakage.** It is necessary for you to know how fluid leakage affects the status of the forklift. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of the forklift. Learn and be familiar with them, and remember - when in doubt, notify supervisor.

CAUTION

Operation is allowable with Class I and Class II leakage, EXCEPT for fuel, where NO leaks are allowed. WHEN IN DOUBT, NOTIFY SUPERVISOR. When operating with Class I or Class II leaks, check fluid levels more frequently. Class III leaks must be reported immediately to supervisor. Failure to do this will result in damage to forklift and/or components.

GENERAL PMCS PROCEDURES - CONTINUED**NOTE**

Notify supervisor of any leaks you cannot fix.

Leakage Definitions for PMCS

Class I	Leakage indicated by wetness or discoloration, but not great enough to form drops.
Class II	Leakage great enough to form drops, but not enough to cause drops to drip from the item being checked/inspected.
Class III	Leakage great enough to form drops that fall from the item being checked/inspected.

GENERAL LUBRICATION PROCEDURES**NOTE**

- Lubrication instructions contained in this PMCS are MANDATORY.
 - Overall view of lubrication points is located in the Lubrication Chart at the end of this work package. Localized views are located following the Lubrication Chart. Specific lubrication instructions are contained in the PMCS Table in WP 0012 00.
 - Refer to FM 9-207 for lubrication in arctic operation.
1. Included in this PMCS are lubrication services to be performed by the operator.
 2. Lubrication intervals are based on normal operation. Lubricate more during constant use and less during inactive periods. Use correct grade of lubricant for seasonal temperature expected. Refer to the *KEY* at the end of this work package.
 3. For forklift under manufacturer's warranty, hardtime intervals shall be followed. Shorten intervals if lubricants are known to be contaminated or if operation is under adverse conditions (e.g., longer than usual operating hours, extended idling periods, extreme dust, etc.).
 4. Keep all lubricants in a closed container and store in a clean, dry place away from extreme heat. Keep container covers clean and do not allow dust, dirt or other foreign material to mix with lubricants. Keep lubrication equipment clean and ready for use.

**WARNING**

Cleaning compound, solvent MIL-PRF-680 Type III is an environmentally compliant and low toxic material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition.

5. Clean area around lubrication points with cleaning compound, solvent (Item 2, WP 0025 00) or equivalent before lubricating equipment. Keep all external parts of equipment not requiring lubrication free of lubricants. After lubrication, wipe off excess lubricant to prevent accumulation of foreign matter.
6. Maintain a record of lubrication performed and report any problems noted during lubrication. Refer to DA PAM 738-750 for forms and procedures to record and report any findings.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION - CONTINUED 0011 00

GENERAL LUBRICATION PROCEDURES - CONTINUED

LUBRICANT/ COMPONENT	REFILL CAPACITY	EXPECTED TEMPERATURES*			INTERVALS
		Above +15°F (Above -9°C)	+40°F to -15°F (+4°C to -26°C)	+40°F to -65°F (+4°C to -54°C)	
OE/HDO Lubricating Oil, ICE, Tactical					D - Daily W - Weekly
OEA, Lubricating Oil, ICE, Arctic					
Engine Crankcase	15 qt (14 l)	See Chart A			
Oil Can Points	As Req'd	See Chart A			
Transmission	5 gal. (19 l)	See Chart B			
Hydraulic Reservoir	56.6 gal. (93 l) System Capacity	See Chart C			
GO Lubricating Oil, Gear, Multipurpose					
Differentials	10.6 qt (10 l)	See Chart D			
Planetary Hubs	2.7 qt (2.5 l)	See Chart D			
GAA, Grease, Automot- ive and Artillery					
Carriage Tilt Cylinder & Carriage Pivot Pins	As Req'd	All Temperatures			
MLRS Hoist Cylinder & MLRS Attachment Pivot Pins	As Req'd	All Temperatures			
Propeller Shaft Slip Joints & U-Joints	As Req'd	All Temperatures			
Tie Rod Ends	As Req'd	All Temperatures			
Axle Carrier Pins	As Req'd	All Temperatures			
Steering Knuckle Bear- ings & U-Joints	As Req'd	All Temperatures			
Brake Pedal & Transmis- sion Disconnect Pedal Counter Shaft	As Req'd	All Temperatures			
Transmission Input Shaft Bearing, Slip Joint, & U- Joint	As Req'd	All Temperatures			
Boom Extend & Boom Retract Chain Sheaves	As Req'd	All Temperatures			
Boom Pivot & Boom Hoist Cylinder Pins	As Req'd	All Temperatures			
Frame Tilt Cylinder Pin	As Req'd	All Temperatures			

Table 1. CHART A - ENGINE AND OIL CAN POINTS

Lubricant	EXPECTED TEMPERATURES																				
	°F	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120	
	°C	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49	
OE/HDO	Lubricating Oil, ICE, Tactical																				
OEA	Lubricating Oil, ICE, Arctic																				
OE/HDO-15W/40																					
OEA																					

Table 2. CHART B - TRANSMISSION

Lubricant	EXPECTED TEMPERATURES																				
	°F	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120	
	°C	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49	
OE/HDO	Lubricating Oil, ICE, Tactical																				
OEA	Lubricating Oil, ICE, Arctic																				
OEA *																					

*If OEA lubricant is required to meet the low expected-temperature range, OEA lubricant is to be used in lieu of OEA/HDO 10 lubricant for all expected temperatures where OE/HDO-10 is specified.

Table 3. CHART C - HYDRAULIC RESERVOIR

Lubricant	EXPECTED TEMPERATURES																					
	°F	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120		
	°C	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49		
OE/HDO	Lubricating Oil, Gear, Tactical																					
OEA	Lubricating Oil, Gear, Arctic																					
OE/HDO 10*																						

*If OEA lubricant is required to meet the low expected-temperature range, OEA lubricant is to be used in lieu of OEA/HDO 10 lubricant for all expected temperatures where OE/HDO-10 is specified.

Table 4. CHART D - DIFFERENTIALS AND PLANETARY HUBS

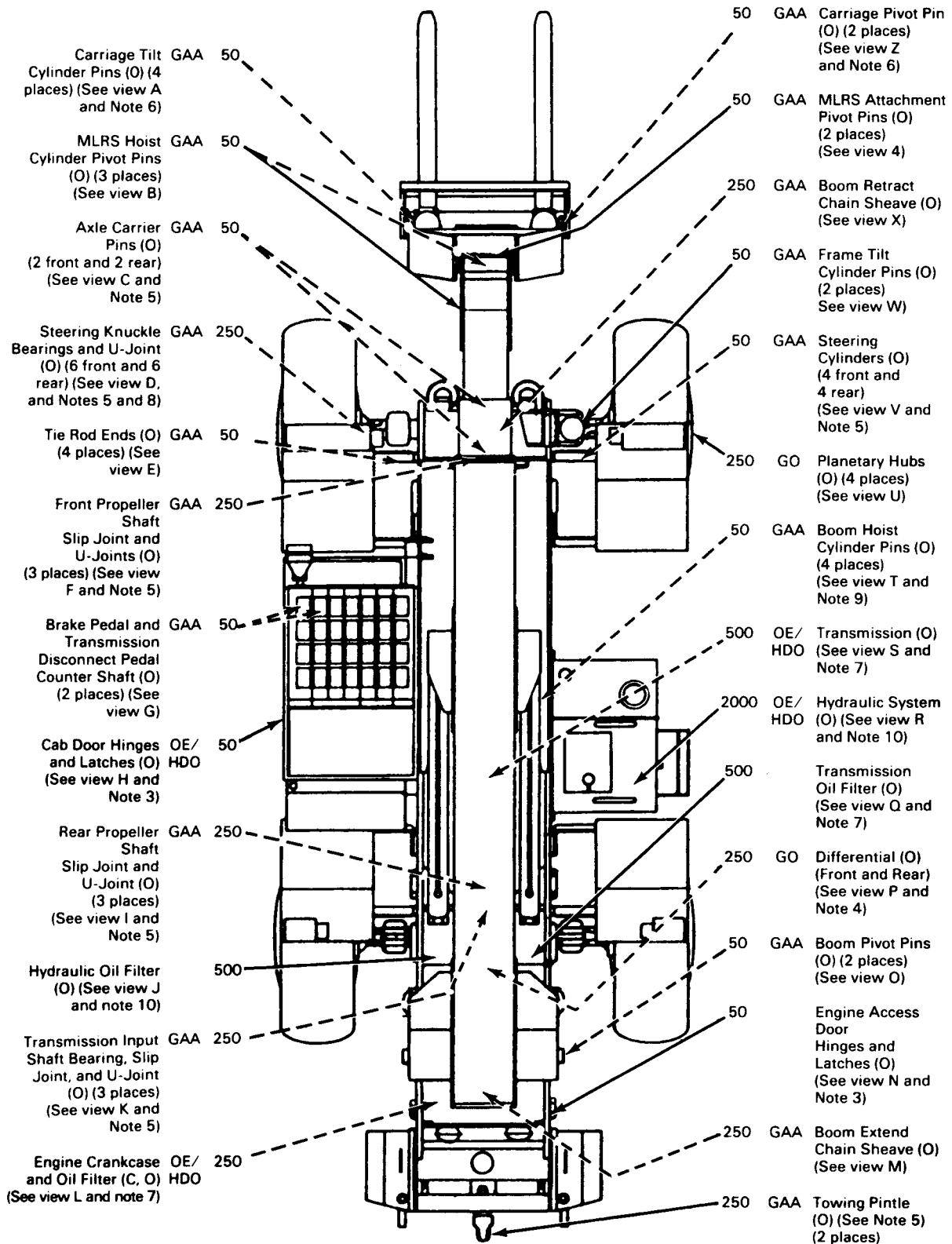
Lubricant	EXPECTED TEMPERATURES																						
	°F	-90	-80	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120	
	°C	-68	-62	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49	
GO	Lubricating Oil, Gear, Multipurpose																						
GO-80W/90																							

Table 5. CHART E - ANTIFREEZE

Lubricant	EXPECTED TEMPERATURES																						
	°F	-90	-80	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120	
	°C	-68	-62	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49	
ANTIFREEZE	Antifreeze, Ethylene Glycol, Inhibited, Heavy Duty																						
ANTIFREEZE	Antifreeze, Arctic Grade																						
Antifreeze																							
Antifreeze, Arctic Grade																							

LUBRICANT • INTERVAL

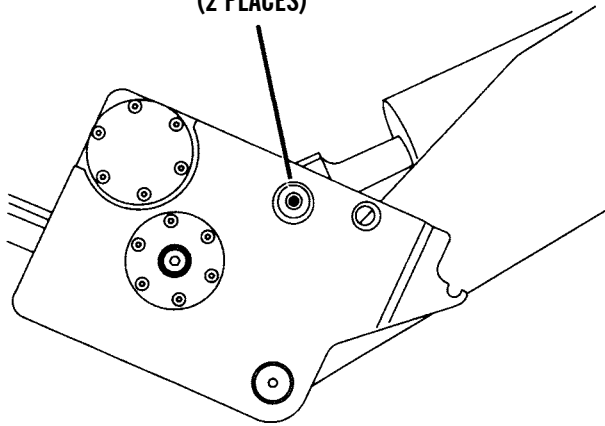
INTERVAL • LUBRICANT



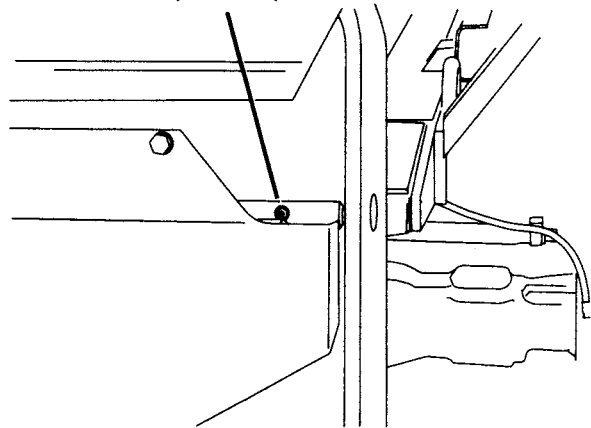
1. LUBRICATION. During adverse weather or abnormal dusty conditions, lubrication may require daily servicing.
2. The lubricating points for the brake pedal and transmission disconnect pedal counter shaft are located under the cab (GAA).
3. Lubricate all hinges and door latches with a hand oiler (OE/HDO).
4. Check the differential oil levels while vehicle is on a level surface. Oil should be to the bottom of the check and fill hole (GO).
5. Lubricate after fording operations (GAA).
6. **WARNING - Do not stand under the attachment and carriage assembly during lubrication services.** To lube the carriage lube points and tilt cylinder lower points, raise the fork assembly 48 in. (122 cm) and tilt the carriage assembly forward 90 degrees. To lube the tilt cylinder's head pivot pin, place the level forks/carriage firmly on the ground (GAA).
7. During adverse weather, dusty or sand conditions, change transmission oil and filter element at 250 hours intervals. For normal off-highway operation, for operation under rapid change in ambient temperature, or for operation in presence of chemical fumes, change at 375 hour intervals. Use MIL-L-2104D hydraulic transmission fluid when operating the vehicle in temperatures above -10°F (-23°C), and MIL-L-46167A transmission fluid when operating in temperatures below -10°F (-23°C).
8. To lube the steering knuckle joint, the vehicle may have to be moved forward to backwards to align grease fitting with access hole. If the fitting is aligned with the access hole. If the fitting is aligned with the access hole but grease gun will not go on fitting, turn the wheels right or left until grease gun fits on grease fitting (GAA).
9. Raise the boom to approximately 15 degrees to lubricate the boom hoist cylinder pins (GAA).
10. Drain hydraulic reservoir every 2000 hours. Change hydraulic oil filter and add oil (OE/HDO) to reservoir until oil is visible in sight gage. Operate hydraulic system and check oil level again.

LUBE POINT (GAA)
(2 PLACES)

VIEW A - CARRIAGE TILT CYLINDER PINS



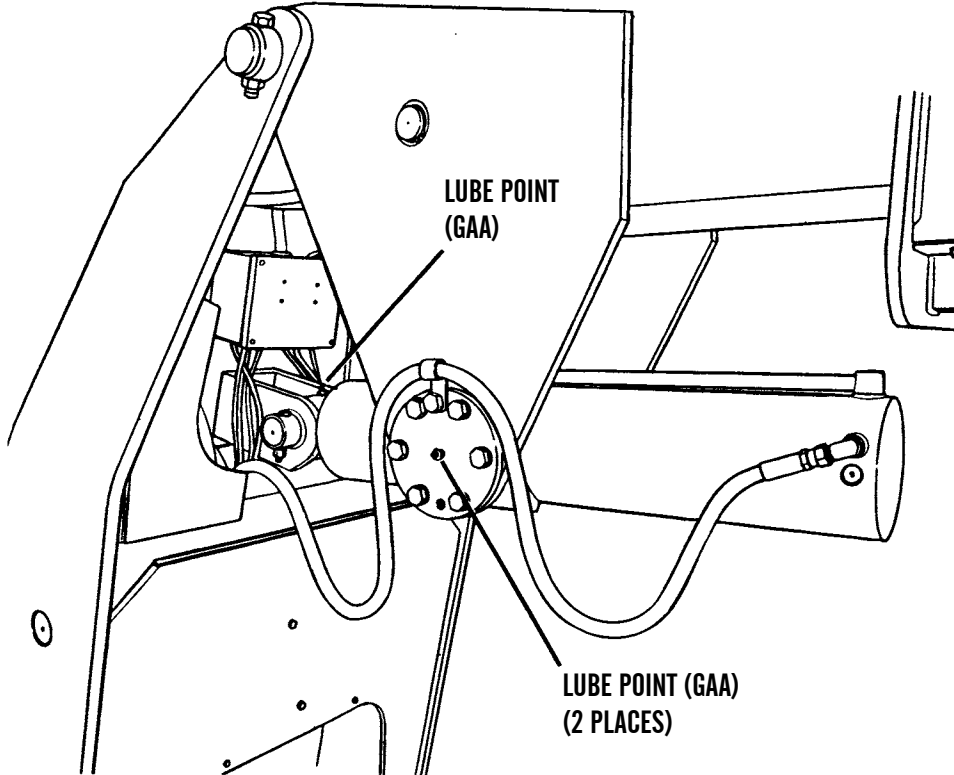
LUBE POINT (GAA)
(2 PLACES)



409-082

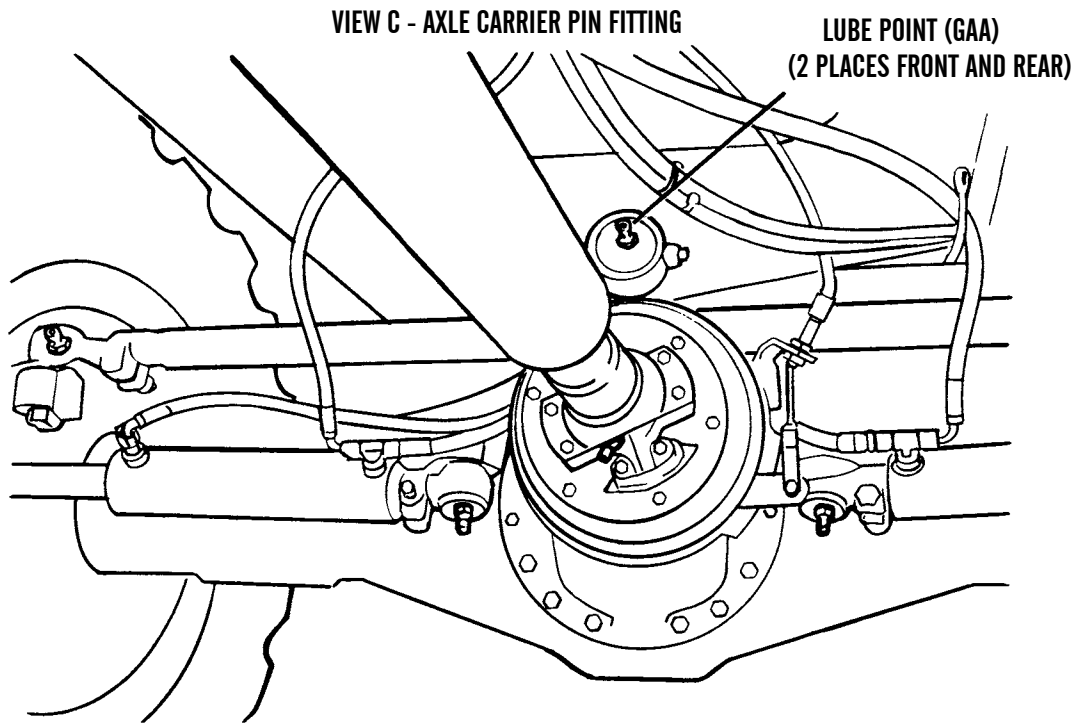
VIEW B - MLRS HOIST CYLINDER PIVOT PINS

LUBE POINT
(GAA)

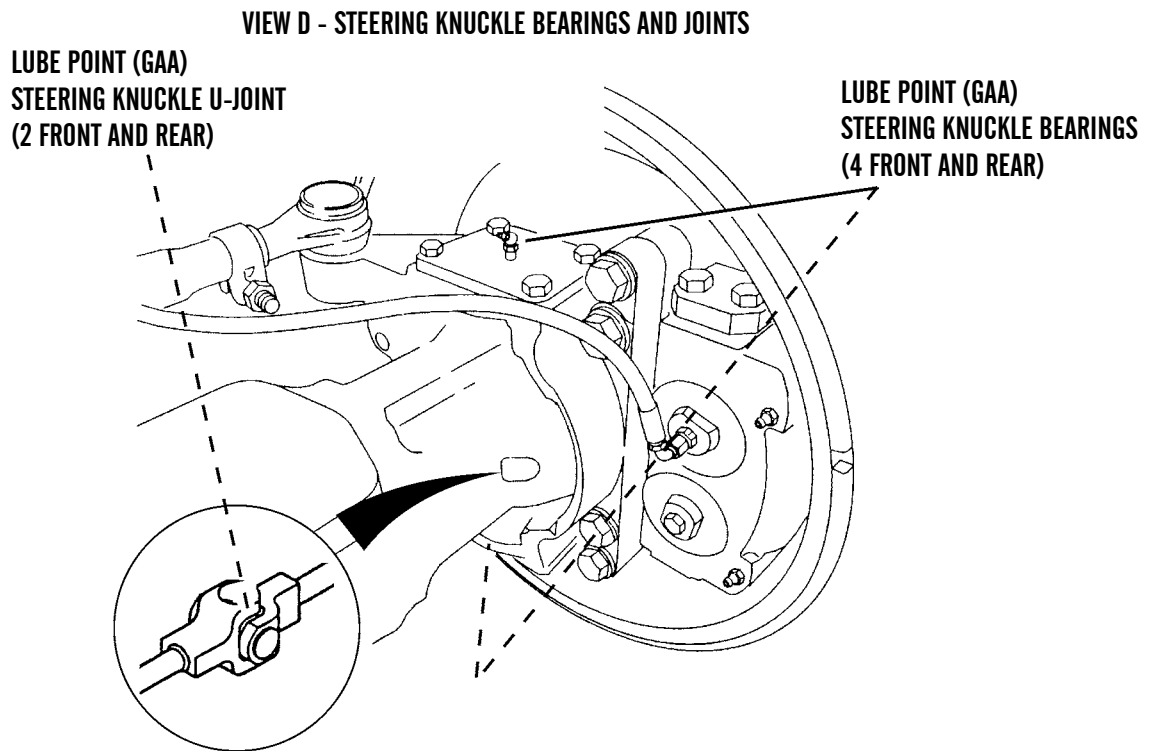


LUBE POINT (GAA)
(2 PLACES)

409-083

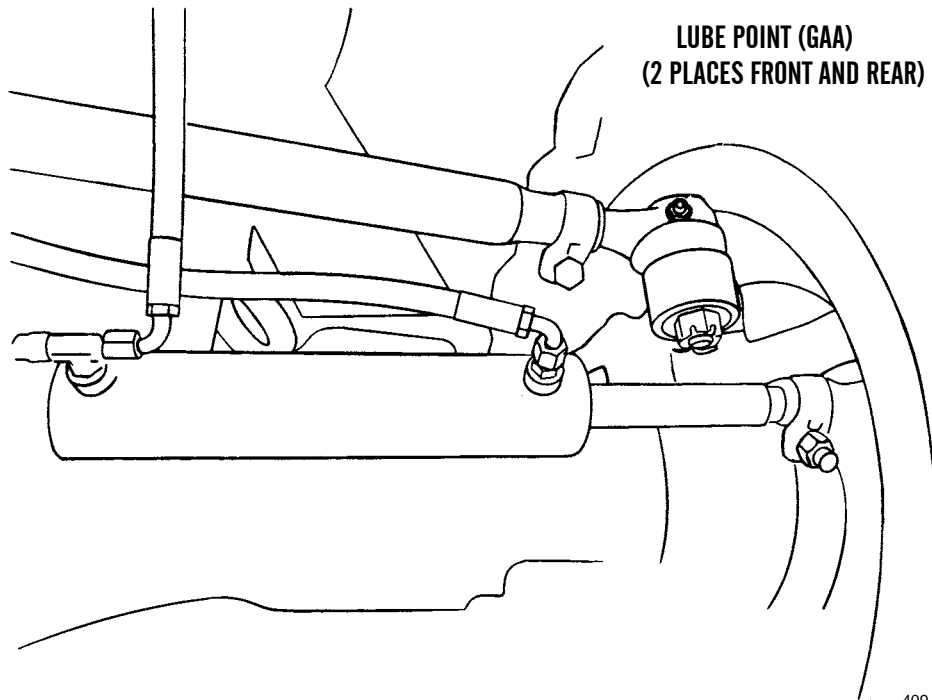


409-084

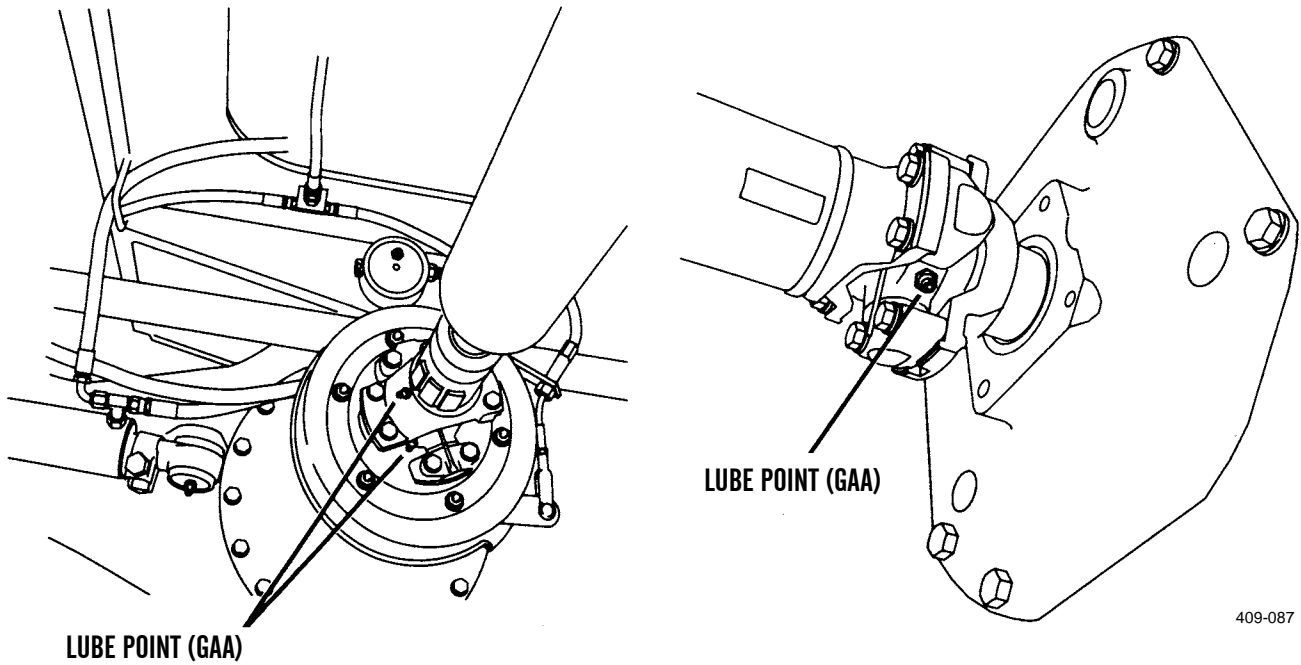


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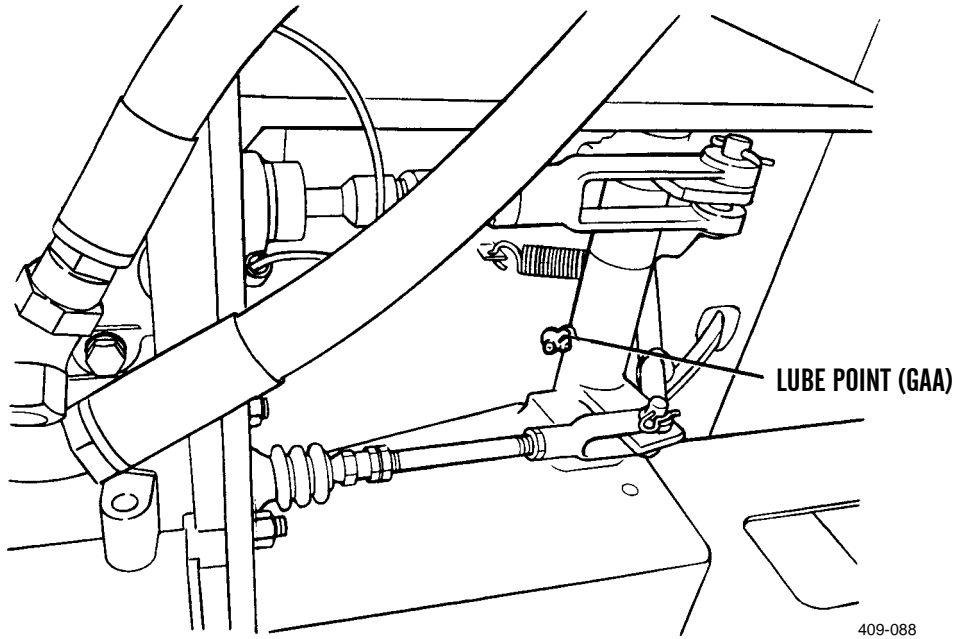
VIEW E - TIE ROD ENDS



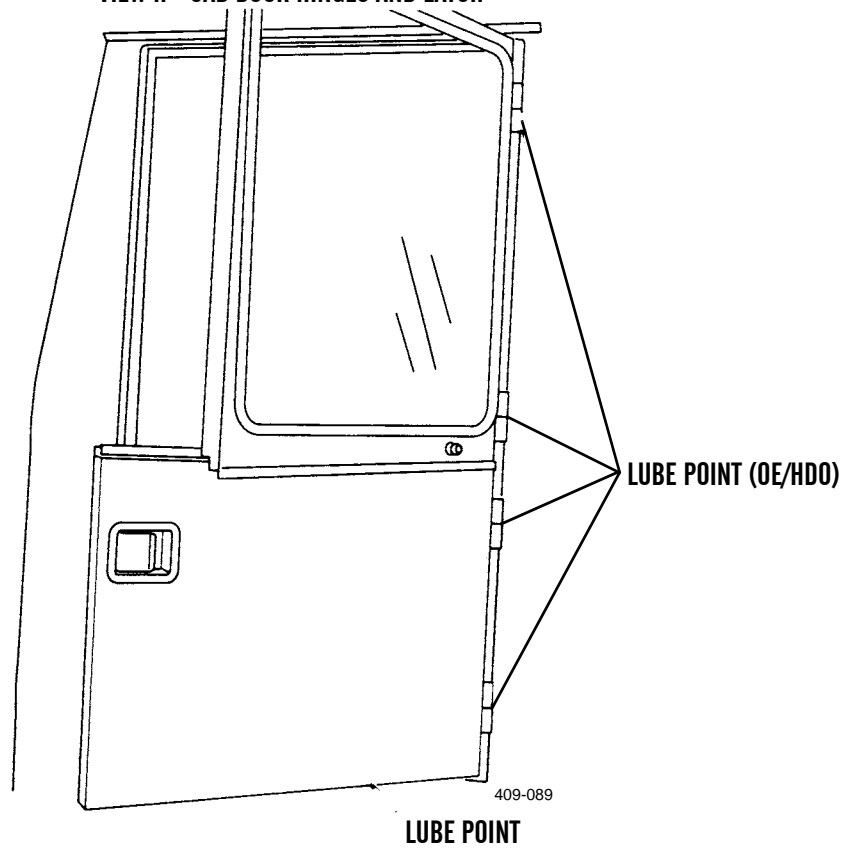
VIEW F - FRONT PROPELLER SHAFT SLIP JOINT AND U-JOINTS



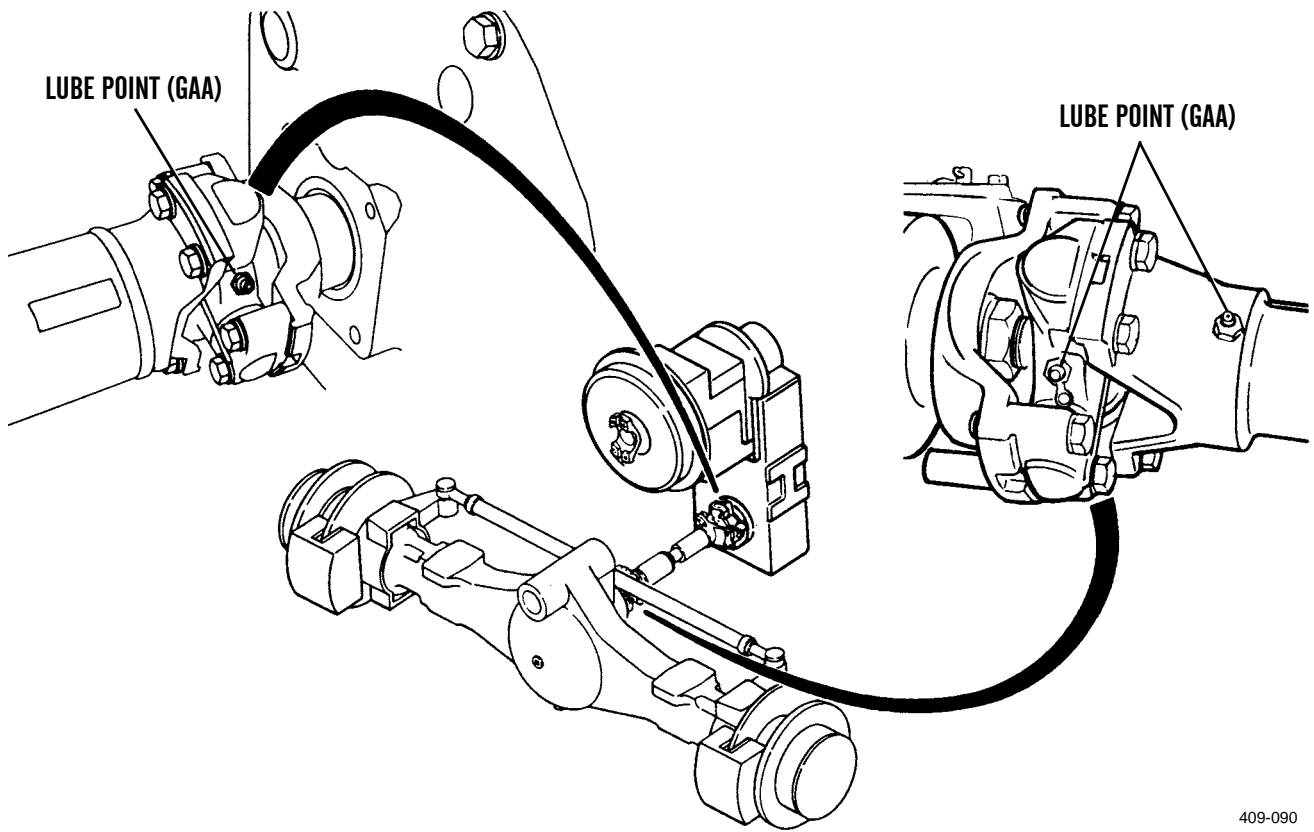
VIEW G - BRAKE PEDAL AND TRANSMISSION DISCONNECT PEDAL COUNTER SHAFT



VIEW H - CAB DOOR HINGES AND LATCH

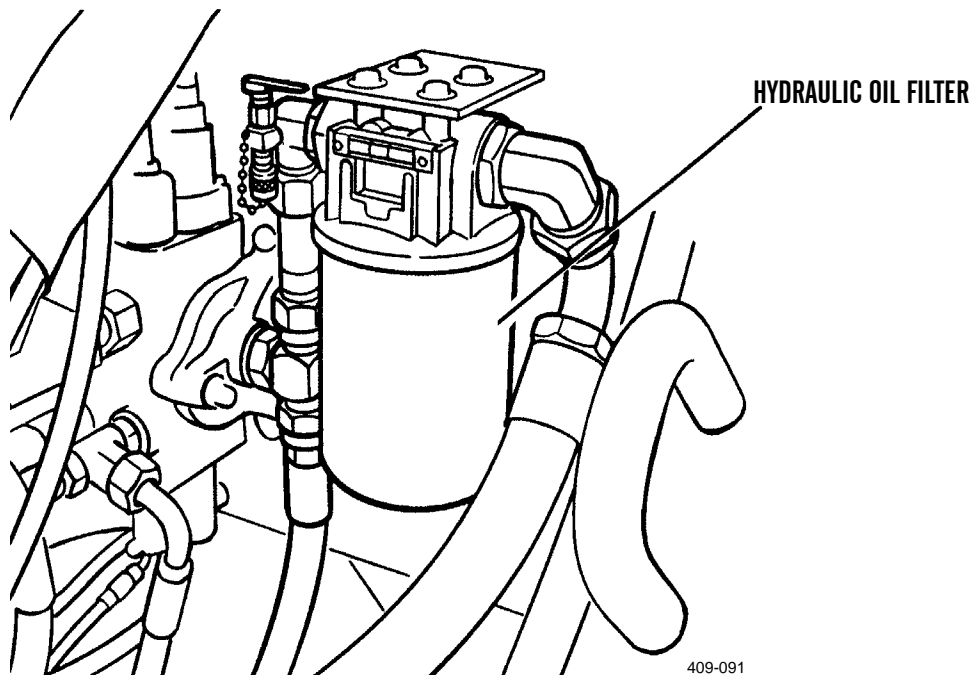


VIEW I - REAR PROPELLER SHAFT SLIP JOINT AND U-JOINT



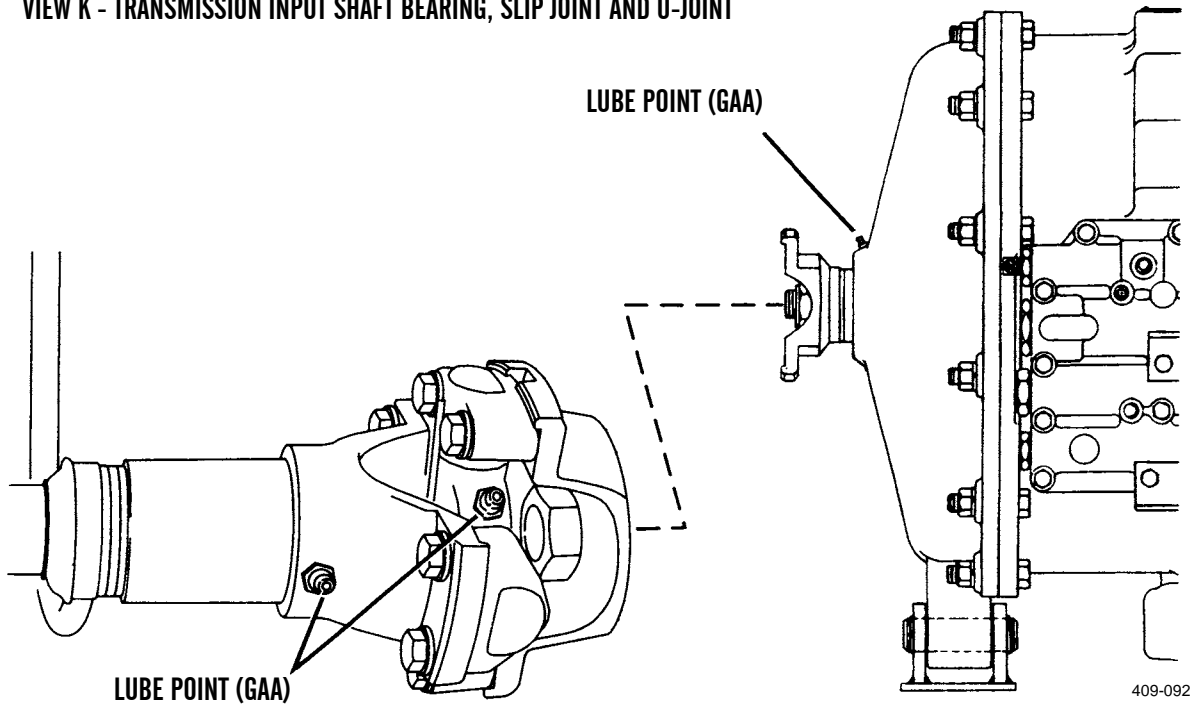
409-090

VIEW J - HYDRAULIC OIL FILTER

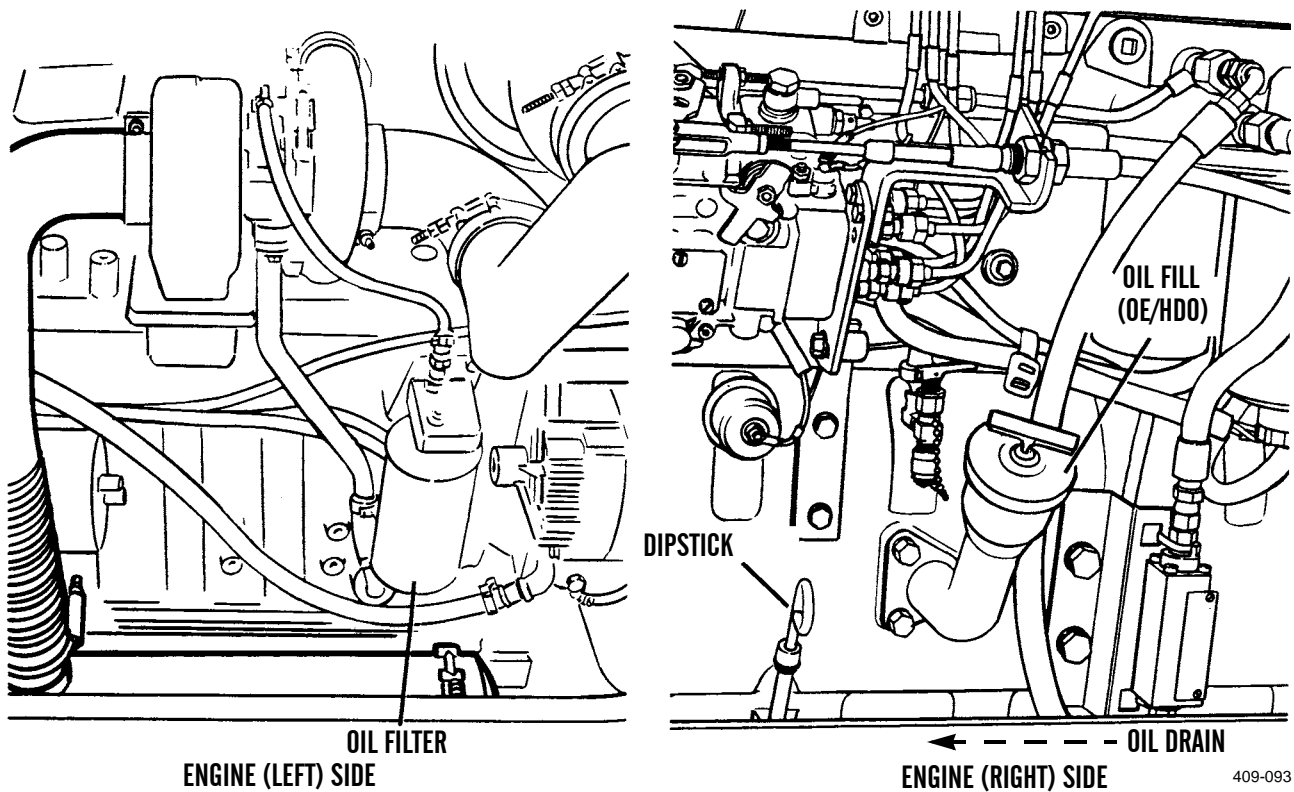


409-091

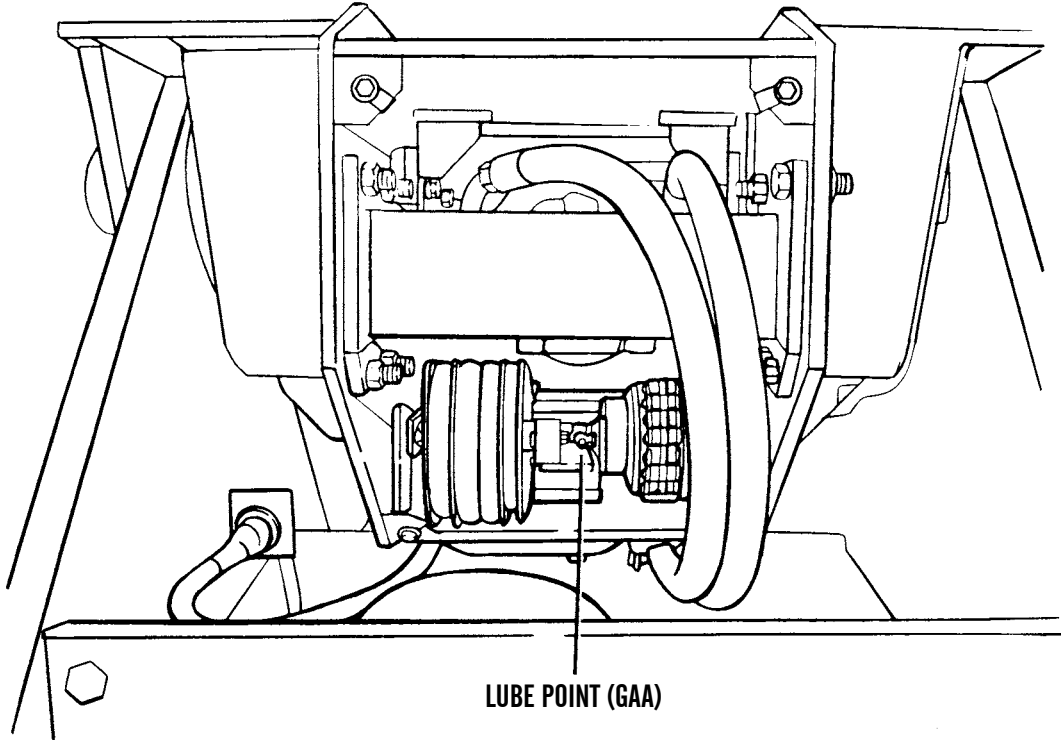
VIEW K - TRANSMISSION INPUT SHAFT BEARING, SLIP JOINT AND U-JOINT



VIEW L - ENGINE CRANKCASE AND OIL FILTER



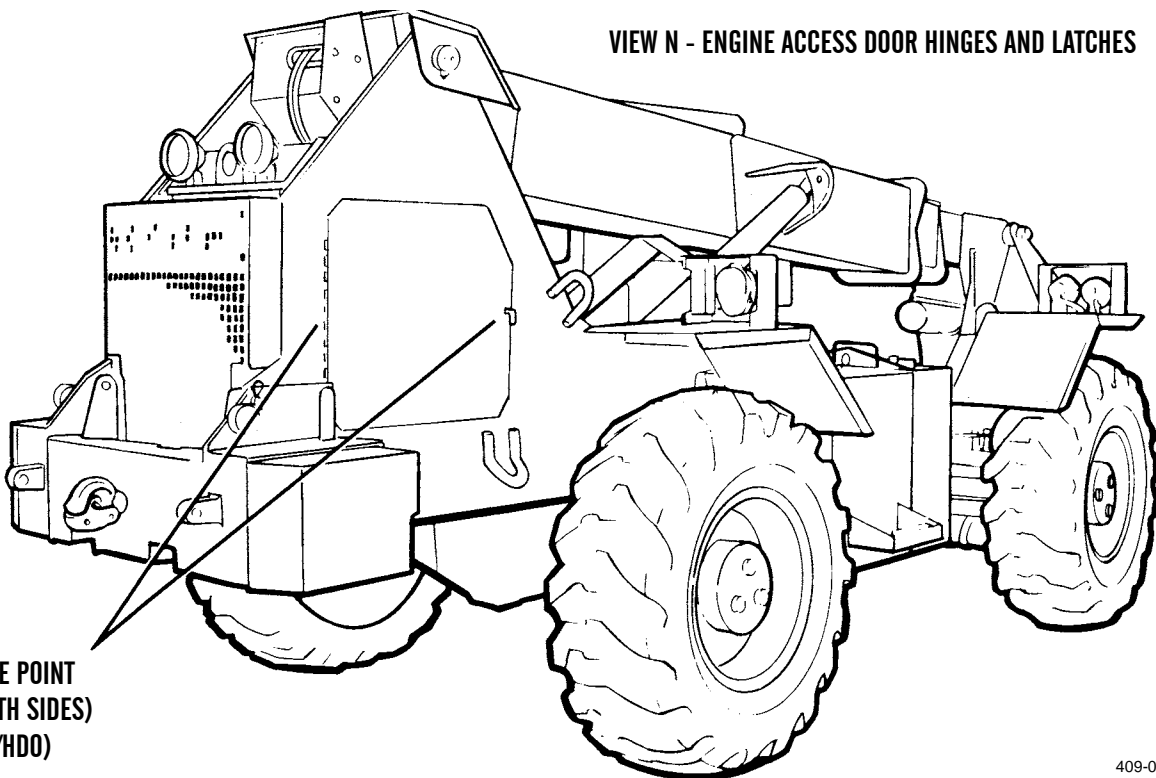
VIEW M - BOOM EXTEND CHAIN SHEAVE



LUBE POINT (GAA)

409-094

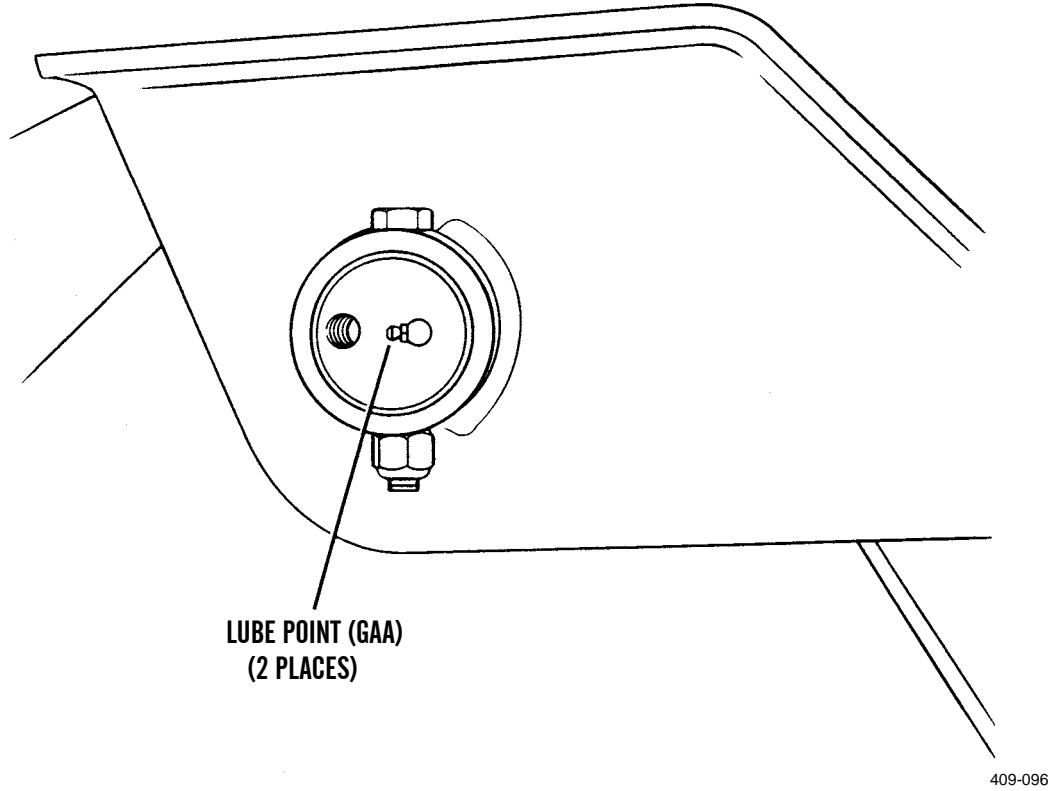
VIEW N - ENGINE ACCESS DOOR HINGES AND LATCHES



LUBE POINT
(BOTH SIDES)
(OE/HDO)

409-095

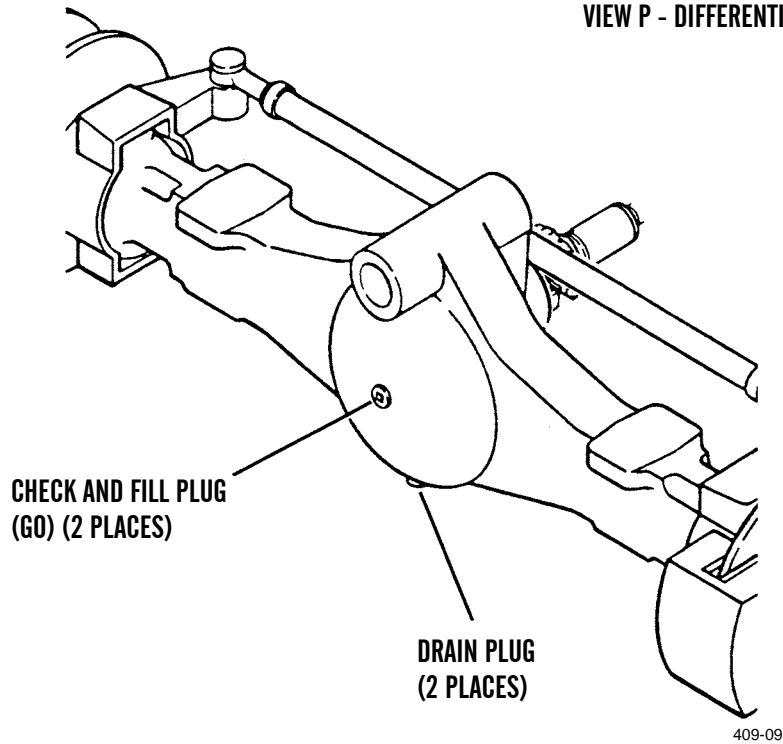
VIEW O - BOOM PIVOT PINS



LUBE POINT (GAA)
(2 PLACES)

409-096

VIEW P - DIFFERENTIAL

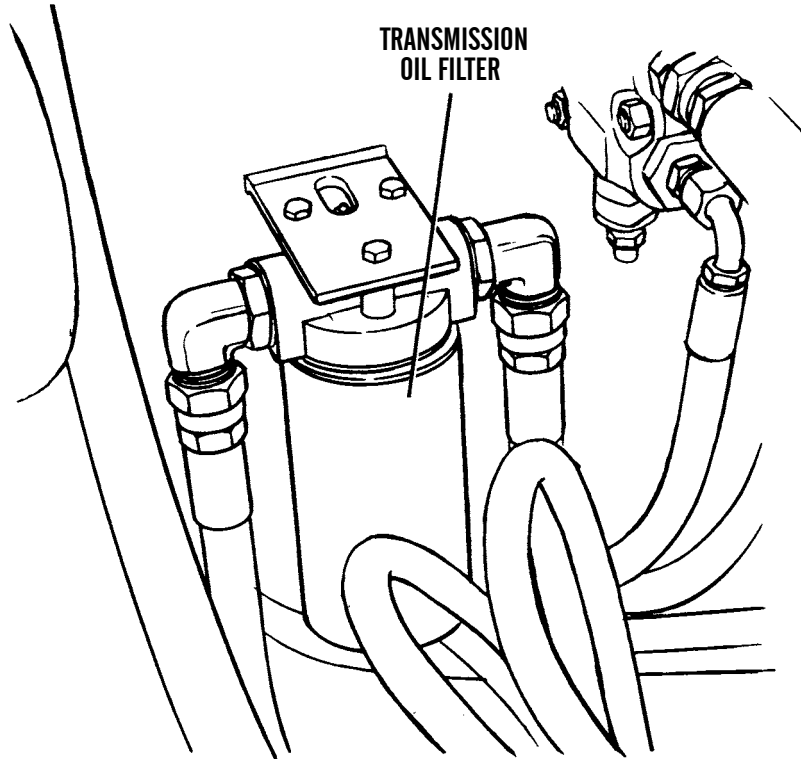


CHECK AND FILL PLUG
(GO) (2 PLACES)

DRAIN PLUG
(2 PLACES)

409-097

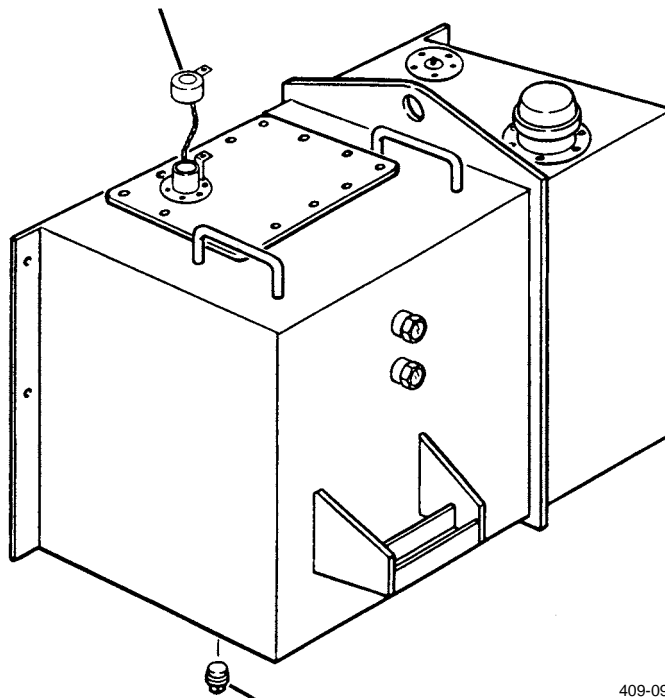
VIEW Q - TRANSMISSION OIL FILTER



409-098

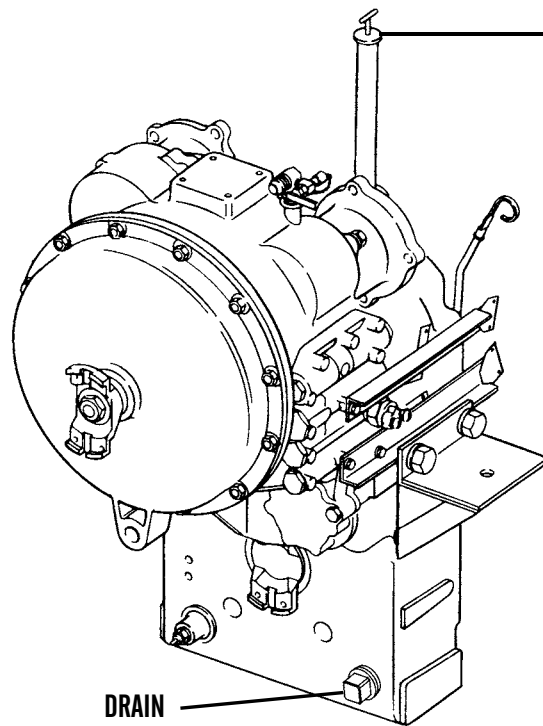
FILL CAP (OE/HDO)

VIEW R - HYDRAULIC SYSTEM



409-099

VIEW S - TRANSMISSION

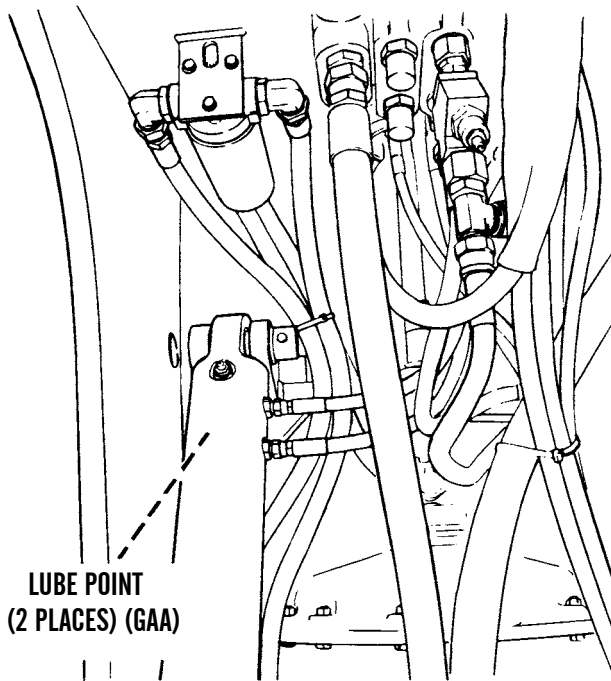


TRANSMISSION FILL
(OE/HDO)

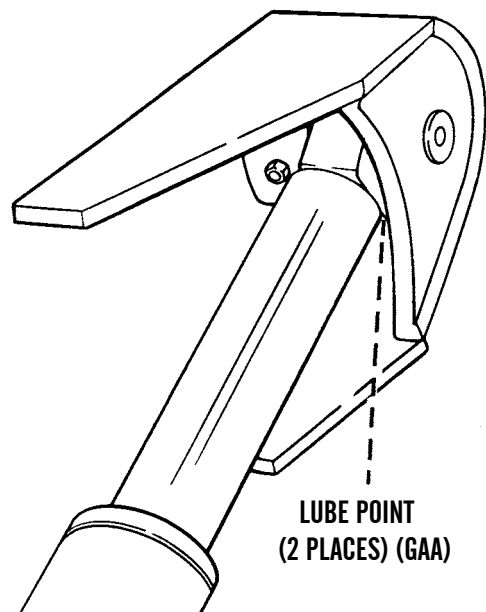
DRAIN

409-1915

VIEW T - BOOM HOIST CYLINDER PINS



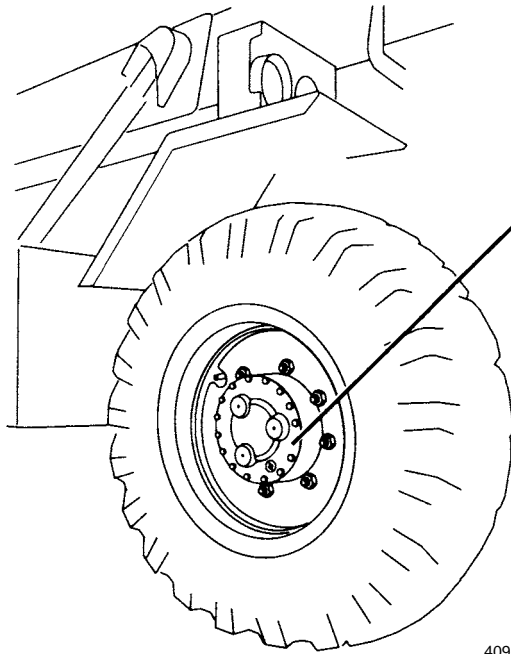
LUBE POINT
(2 PLACES) (GAA)



LUBE POINT
(2 PLACES) (GAA)

409-101

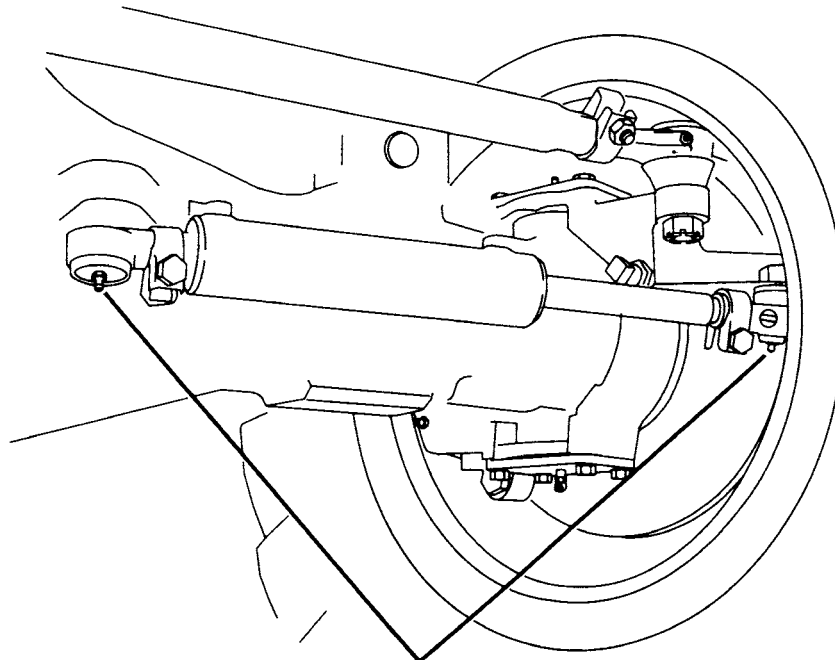
VIEW U - PLANETARY HUBS



DRAIN AND FILL PLUG
(4 PLACES) (GO)

409-102

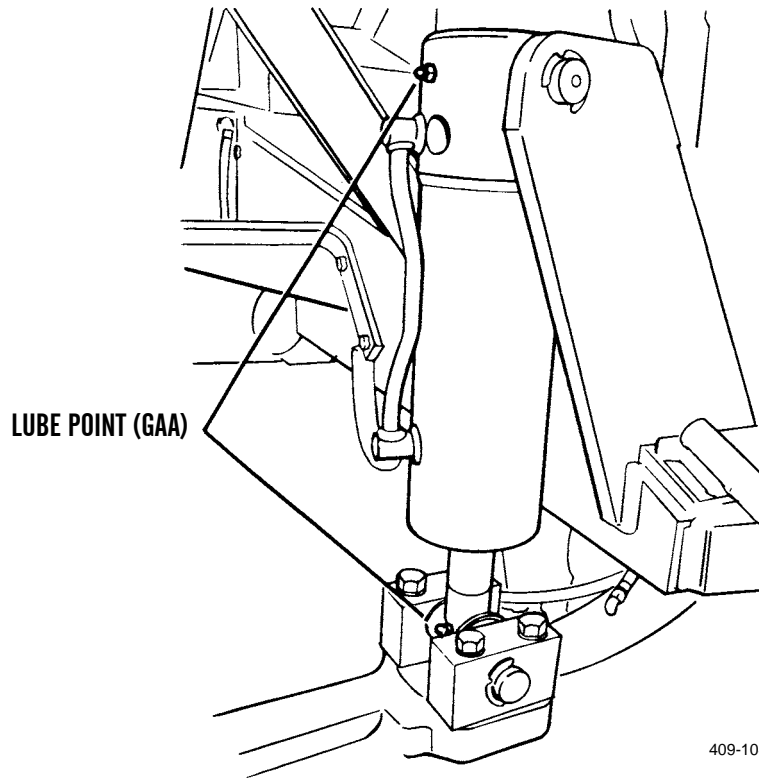
VIEW V - STEERING CYLINDERS



LUBE POINT
(8 PLACES) (GAA)

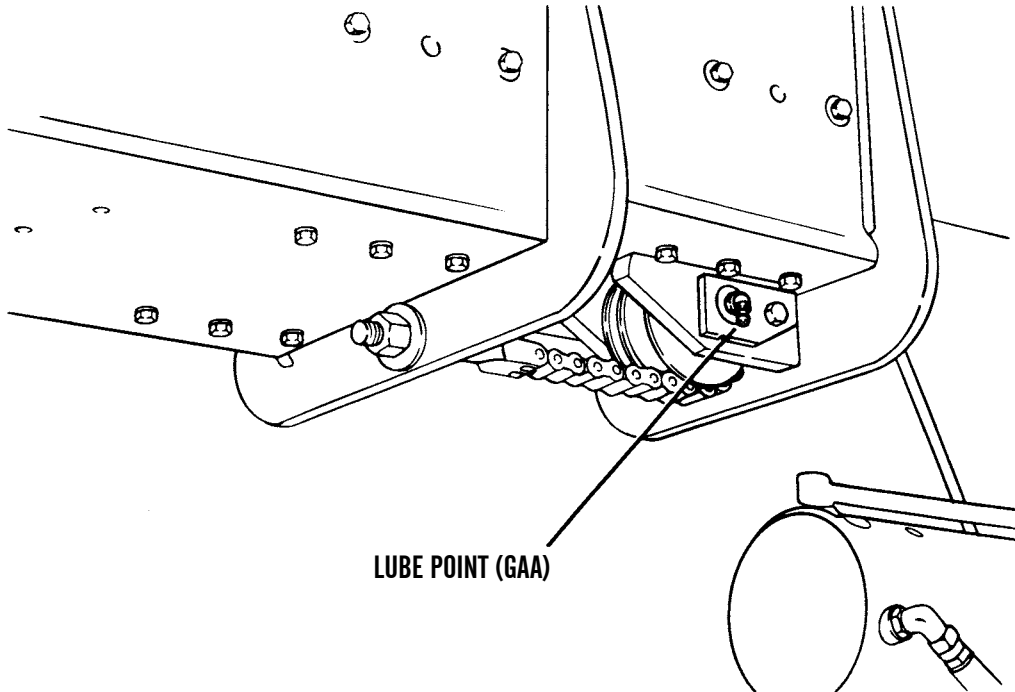
409-103

VIEW W - FRAME TILT CYLINDER PINS



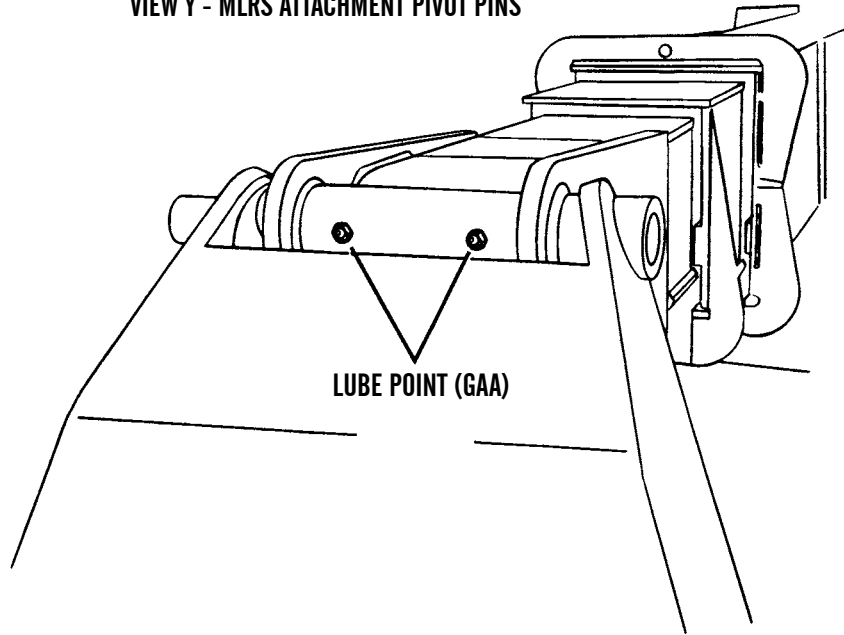
409-104

VIEW X - BOOM RETRACT CHAIN SHEAVE



409-105

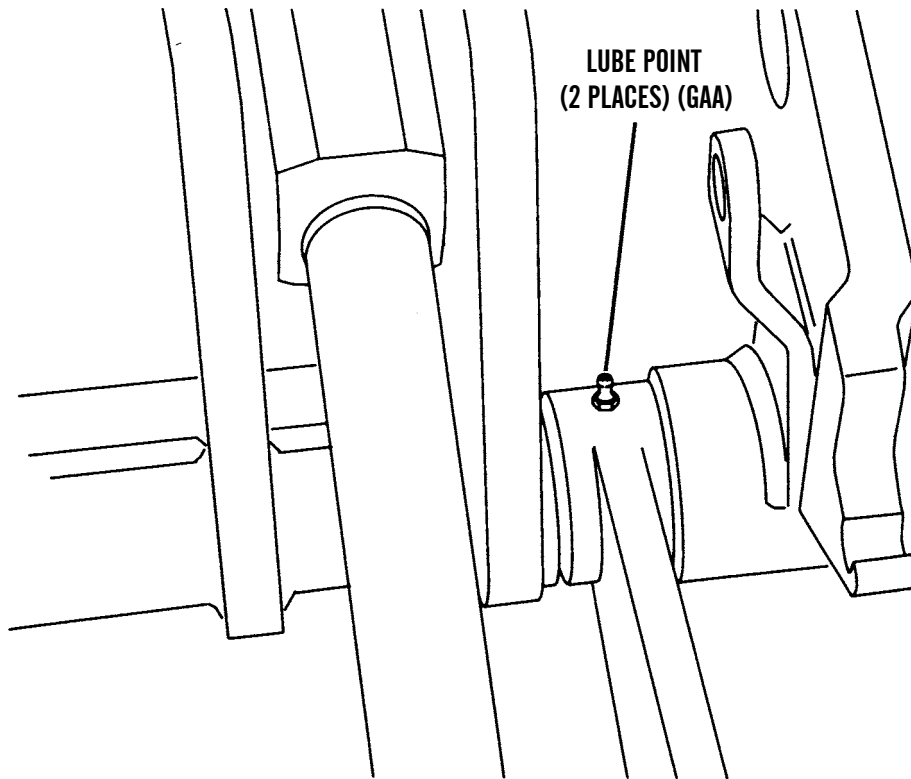
VIEW Y - MLRS ATTACHMENT PIVOT PINS



LUBE POINT (GAA)

409-106

VIEW Z - CARRIAGE PIVOT PIN



LUBE POINT
(2 PLACES) (GAA)

409-107

END OF WORK PACKAGE

Table 1. Preventive Maintenance Checks and Services for 6K Forklift.

Item No.	Interval	Man-Hours	Location	Procedure	NOT FULLY MISSION CAPABLE IF:
			Item To Check/Service		
1	Before			NOTE	
			FRONT AND LEFT SIDE	<ul style="list-style-type: none"> • Review all WARNINGS, CAUTIONS, and NOTES before performing PMCS on the forklift. • Perform all PMCS checks if: <ul style="list-style-type: none"> a. You are the assigned operator, but have not operated the forklift since the last weekly checks. b. You are operating the forklift for the first time. • Unless otherwise indicated, perform PMCS with forklift parked on level ground, parking brake applied, travel select lever in N (Neutral), forks lowered to the ground and engine OFF. • If leakage is detected during performance of PMCS, further investigation is required to determine location and cause of leak. 	
			Front of Boom	<ul style="list-style-type: none"> a. Inspect the forks, boom, MLRS fork attachment carriage and lifting hook and stop assembly for cracked, bent or broken members. b. Check exterior wiring and connectors for damage and insecure mounting. 	<p>Forks, boom, MLRS fork attachment, carriage or lifting hook and stop assembly are cracked, bent or broken.</p> <p>Damage that would interfere with mission.</p>
2	Before		Front Wheels and Tires	<p>Visually check tires and wheels for defects, underinflation and loose, missing, or damaged wheel nuts and studs.</p>	<p>Defects or underinflation that would interfere with mission. Any missing or damaged wheel nuts or studs.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

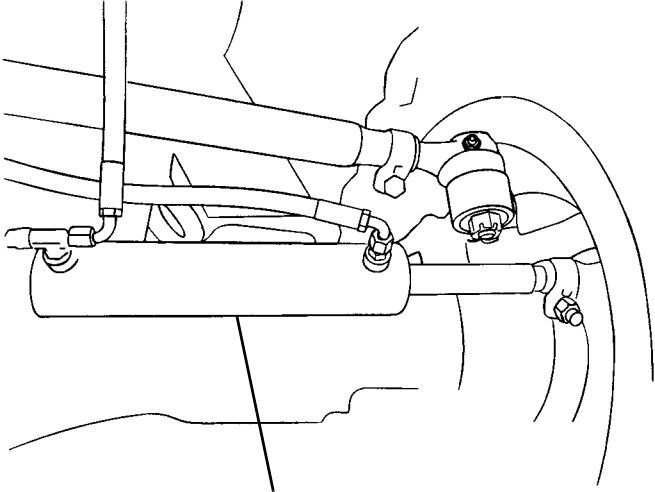
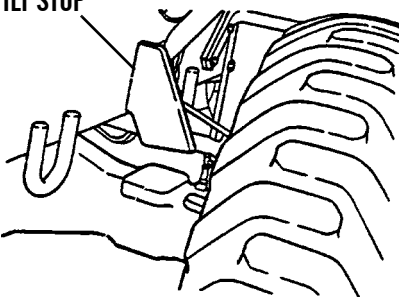
Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
3	Before		Front Steering Cylinders, Hoses and Fittings	Check cylinders, hoses and fittings for leaks and damage.	Class III oil leaks are evident. Damage that would impair operation is evident.
 <p data-bbox="701 1291 867 1360">FRONT STEERING CYLINDER</p> <p data-bbox="1075 1285 1144 1304">409-3001</p>					
4	Before		Frame Tilt Stops	Check frame tilt stops for cracks, bends and damage to welds.	Cracks, bends or damage to welds is evident.
 <p data-bbox="532 1516 698 1543">FRAME TILT STOP</p> <p data-bbox="933 1827 1003 1845">409-3002</p>					

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

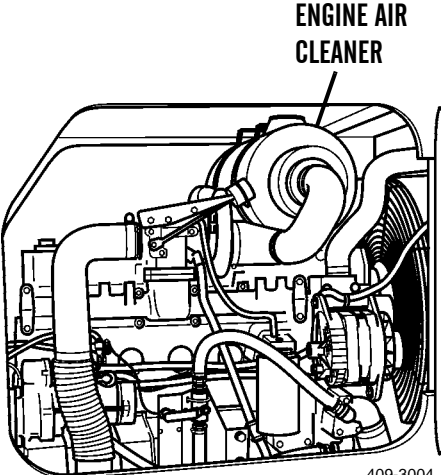
Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
5	Before		Overall View	a. Check ground under forklift for evidence of fluid leaks such as engine oil, coolant, fuel and hydraulic oil. b. Check forklift for obvious damage that would impair operation.	Class III engine oil, coolant, fuel or hydraulic oil leaks are evident. Damage that would impair operation is evident.
6	Before		Cab Exterior LEFT REAR AND REAR	Check for damage to lights, front and rear windshields, windshield wipers and windows.	Damage that would interfere with mission is evident.
7	Before		Engine Air Cleaner	Open engine compartment access door and check air cleaner for damaged or missing parts.	Any parts missing or damaged that would impair operation is evident.
 <p style="text-align: center;">409-3004</p>					
8	Before		Radiator	Visually check radiator for damage or obstruction. Remove any obstruction.	Radiator leaking or damage that would impair operation is evident.
9	Before		Engine	Visually check engine for signs of damage.	Damage that would impair operation is evident.

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

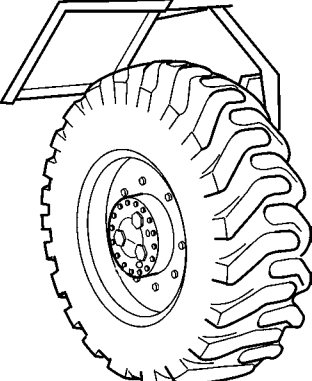
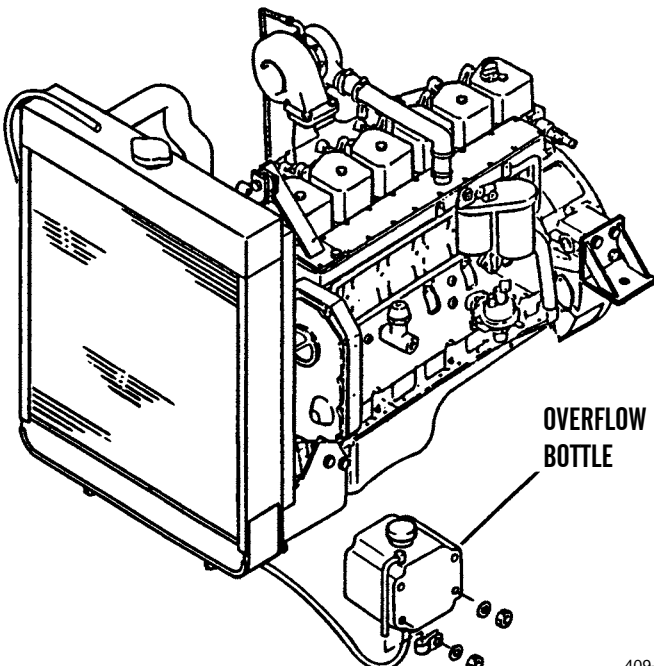
Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
10	Before		Rear Wheels and Tires	Visually check tires and wheels for defect, under inflation and loose, missing or damaged wheel nuts and studs.	Defects or underinflation that would interfere with mission. Any missing or damaged wheel nuts or studs.
					
11	Before		Coolant Overflow Tank	Open engine compartment access door and visually check level of coolant in coolant overflow tank. Coolant level should be at approximately 1/3 full.	Coolant not visible in coolant overflow tank.
					

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

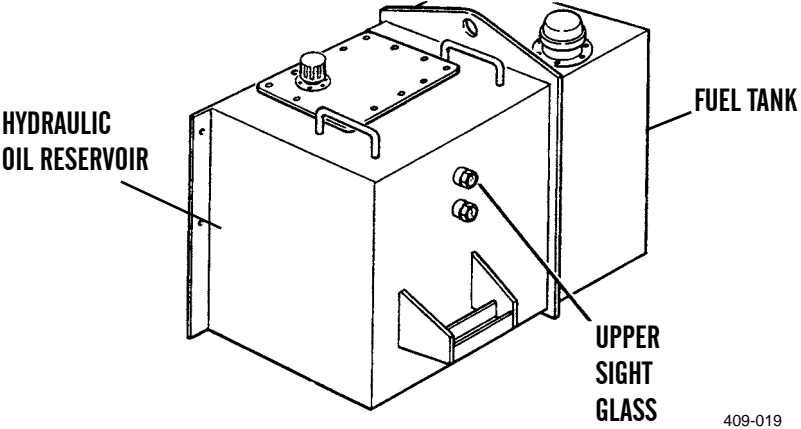
Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
12	Before		RIGHT SIDE Hydraulic Oil Tank	a. Visually check for damage and leaks. b. Check level of oil in hydraulic oil reservoir. Oil should be visible in upper sight glass.	Class III leaks are evident. Oil not visible in upper sight glass.
					
13	Before		Fuel Tank	Visually check for damage and leaks.	Class III leaks are evident.

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

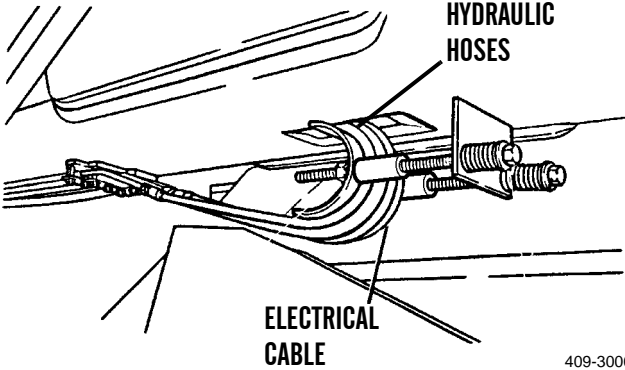

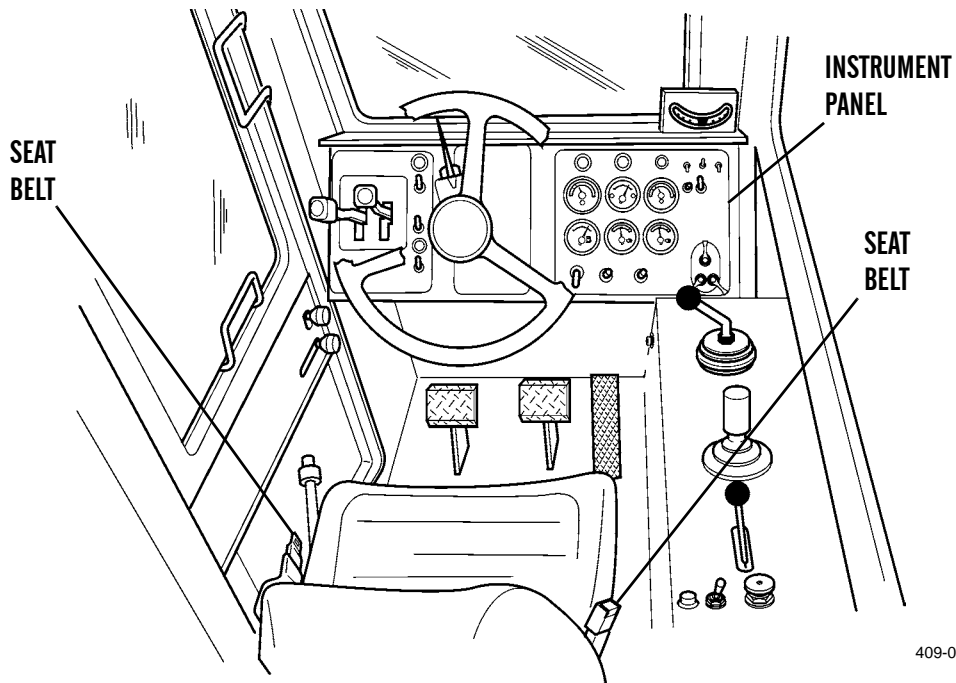
Item No.	Interval	Man-Hours	Location	Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
14	Before		Center of Boom		Check that boom hoses and electrical cable are snug against tensioner and not crossed or worn.	Hoses or cable are crossed, worn or obviously loose.
 <p>HYDRAULIC HOSES</p> <p>ELECTRICAL CABLE</p> <p>409-3000</p>						
15	Before		CAB INTERIOR	<p>Fire Extinguisher</p> <p>a. Visually check for missing or damaged fire extinguisher. Ensure it is securely mounted behind seat.</p> <p>b. Check gage for reading in green area of gage.</p> <p>c. Check for broken or missing seal.</p>	<p>a. Visually check for missing or damaged fire extinguisher. Ensure it is securely mounted behind seat.</p> <p>b. Check gage for reading in green area of gage.</p> <p>c. Check for broken or missing seal.</p>	<p>Fire extinguisher is missing or damaged.</p> <p>Pressure gage needle is in recharge (red) area.</p> <p>Seal is broken or missing.</p>
 <p>409-3005</p>						

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
16	Before		Seat and Seat Belt	Check seat and seat belt for damage and proper operation.	Seat belt is damaged.
17	Before		Steering Wheel and Column	Visually check steering wheel and column for damage.	Damage that would impair operation is evident.
18	Before		Instrument Panel	Check for damaged gages, warning indicators and switches.	Any warning indicator is broken or unreadable. Any of the following gages are unreadable: <ul style="list-style-type: none"> • Engine oil pressure. • Water temperature. • Transmission oil temperature.



409-009

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

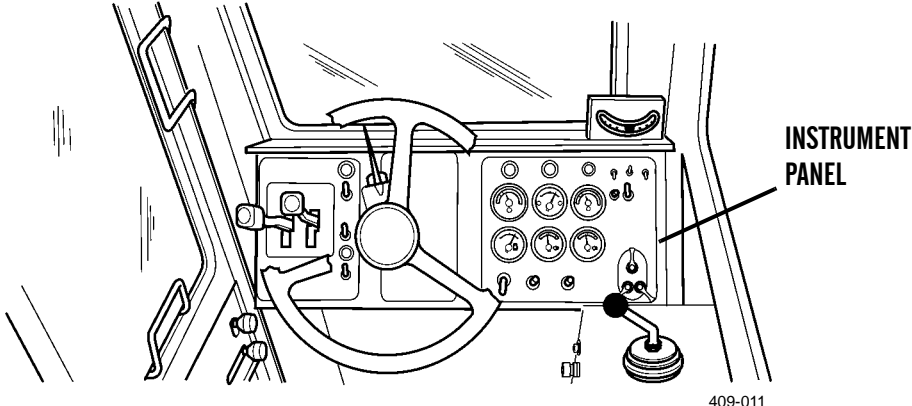
Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
 <p style="text-align: right; margin-right: 100px;">INSTRUMENT PANEL</p> <p style="text-align: right; margin-right: 50px;">409-011</p>					
19	Before		Engine Startup	a. Start engine and verify that all indicators and warning lights operate properly. b. Check operation of lights (headlights, floodlights, turn signals, brake lights, blackout lights). c. Adjust position of rear view mirror for optimum view to the rear of forklifts required.	Engine will not start. Indicators and warning lights stay on. Brake lights or turn signal lights do not function that would interfere with mission.
20	Before		Parking Brake	With parking brake applied, place transmission in forward gear. Forklift should not move.	Parking brake does not hold forklift.
21	Before		Brakes	a. Depress brake pedal and check to ensure that pedal is firm and does not depress fully to floor. b. Place transmission in forward gear and allow forklift to move ahead. Operate brakes. Forklift should stop.	Pedal is spongy or travels fully to floor. Forklift does not stop. Use parking brake to stop forklift if necessary.

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
22	Before		Steering	Operate two-wheel, four-wheel and crab steering fully in each direction. Check to ensure that steering is smooth and functions correctly. WARNING Before operating boom, ensure that boom will not raise or extend close to overhead power lines. Failure to follow this warning may result in injury or death to personnel. CAUTION The forks extend beyond the end of the carriage. The operator must be aware of the swing of the forks when turning and allow for adequate clearance between forks and other objects.	Steering is erratic or malfunctions.
23	Before		Boom	Operate the boom. Extend, retract, raise and lower boom. Check that boom operation is smooth and functions correctly.	Boom operation is erratic or malfunctions.
24	Before		Frame Tilt	Operate frame tilt fully left and right.	Frame tilt is erratic or inoperative.
25	Before		Automatic Fork Level	With fork auto leveler switch ON, check that forks remain level when boom is raised and lowered.	Automatic fork level erratic or inoperative.
26	Before		Fork Sideshift	Operate fork sideshift. Move forks left and right together and apart.	Fork sideshift is erratic or inoperative.
27	Before		Instrument Panel	With forklift fully warmed up check indicators, warning lights and readings on gages.	Indicators, warning lights or gages indicate an abnormal reading.
28	Before		Backup Alarm and Horn	a. Place transmission in R (Reverse). Check that backup alarm functions. b. Press horn button on instrument panel. Horn should sound.	Backup alarm does not function. Horn does not function.

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
29	During		Brakes	a. Check brakes for pulling, grabbing or reduced braking capacity. b. Check parking brake operation with engine idling and transmission in a forward gear.	Brakes pull, grab or exhibit unsafe operation. Parking brake will not hold forklift.
30	During		Steering	Check for smooth, controlled steering without pulling or drifting.	Steering is erratic.
31	During		Drive Train	Monitor forklift operation for unusual noise or vibrations from engine transmission, drive-shafts, and wheels.	
32	During		Overall Leakage	Be alert for evidence of fluid leaks.	Class III engine oil, coolant or hydraulic oil leaks are evident. Any fuel or oil leaks from brakes is evident.
 WARNING 					
<ul style="list-style-type: none"> • If NBC exposure is suspected, personnel wearing protective equipment should handle all air cleaner media. Consult your NBS Officer or NBC NCO for appropriate handling or disposal procedures. • NBC contaminated filters must be handled using adequate precautions as described in FM 3-11.4, <i>Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection</i>, and must be disposed of by trained personnel. 					
CAUTION					
When operating in desert or extremely dusty condition, clean the primary air cleaner element after every 4 hours of operation.					
33	After		REAR Primary Air Cleaner Element	Clean primary air cleaner element as necessary (WP 0017 00).	

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
34	After		Air Cleaner Indicator	Ensure air cleaner indicator shows yellow. Service air cleaner if red band is showing (WP 0017 00).	
35	After		Engine	Check engine for any of the following conditions. a. Fluid leaks such as oil, coolant or fuel. b. Loose damaged or missing drive belts. c. Damaged coolant hoses. d. Damaged electrical harnesses.	Class III oil, coolant, or fuel leaks are evident.
36	After		FRONT AND LEFT SIDE		
			Overall View	a. Check ground under forklift for evidence of fluid leaks such as engine oil, coolant, fuel and hydraulic oil. b. Check forklift for obvious damage that would impair operation.	Class III engine oil, coolant, fuel or hydraulic oil leaks and evident. Damage that would impair operation is evident.
37	After		Cab Exterior	a. Check for damage to lights, front and rear windshields, windshield wipers and windows. b. Check forklift for obvious damage that would impair operation. c. Clean windshield and windows as required. Use cleaning compound, solvent (Item 2, WP 0025 00).	Damage that would interfere with visibility and impair operation is evident. Damage that would impair operation is evident.

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

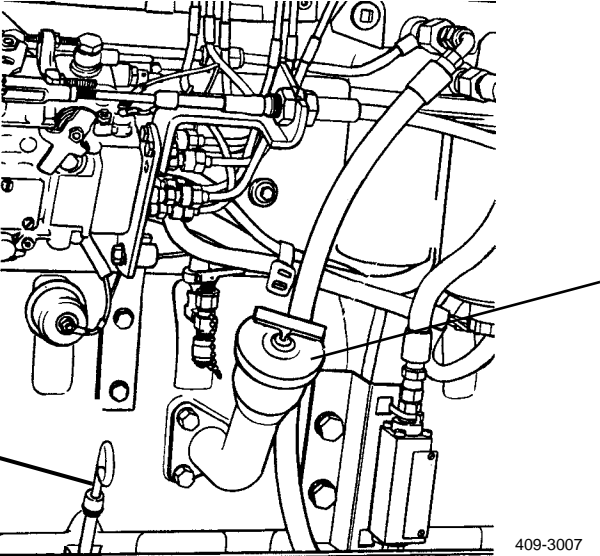
Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
38	After		REAR AND RIGHT SIDE	Check engine for any of the following conditions: a. Fluid leaks such as oil, coolant or fuel. b. Loose, damaged or missing drive belts. c. Damaged coolant hoses. d. Damaged electrical harnesses.	Class III oil, coolant or fuel leaks are evident.
39	After		Engine Oil Level		
 <p data-bbox="1169 1360 1263 1428">OIL FILL (OE/HDO)</p> <p data-bbox="386 1558 479 1585">DIPSTICK</p> <p data-bbox="1075 1675 1144 1696">409-3007</p>					
40	After		Transmission Oil Level	With engine running, transmission selector lever in N (Neutral) and parking brake applied, check level of oil on dipstick. Maintain oil level between "ADD" and "FULL" marks.	

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

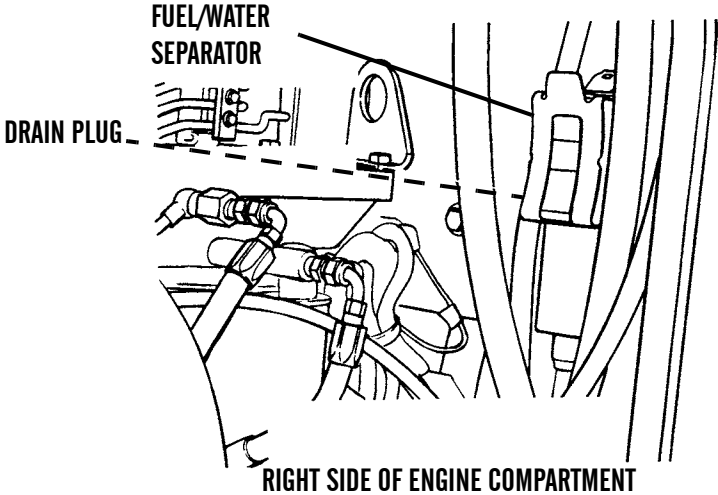
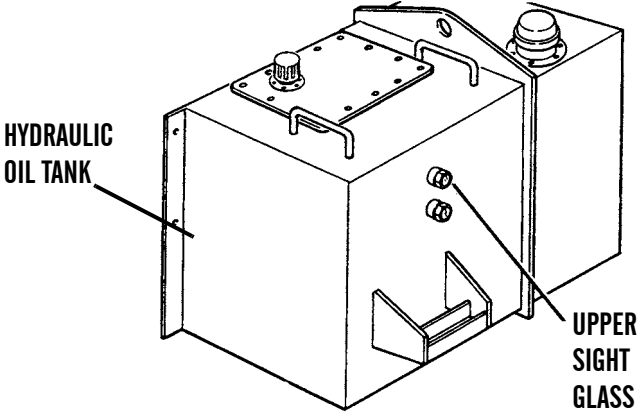
Item No.	Interval	Man-Hours	Location	Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
41	After		Fuel/Water Separator	Remove drain plug on fuel/water separator and drain water into a container (WP 0019 00). Install drain plug.	 <p style="text-align: center;">409-3008</p>	
42	After		Hydraulic Oil Reservoir	Check level of oil in hydraulic oil reservoir. Oil level should be visible in upper sight glass.	 <p style="text-align: center;">409-019</p>	

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.


Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
43	After		Fuel Tank	 <p>WARNING</p> <ul style="list-style-type: none"> • DO NOT smoke or permit any open flame in area of vehicle while you are service diesel fuel systems. Be sure hose nozzle is grounded against filler tube during refueling to prevent static electricity. Failure to follow this warning may result in injury to personnel or equipment damage. • Operating personnel must wear fuel-resistant gloves when handling fuels. If exposed to fuel, promptly wash exposed skin and change fuel-soaked clothing. <p>NOTE</p> <ul style="list-style-type: none"> • Place portable fire extinguisher within reach prior to refueling. • DO NOT overfill fuel tank. If fuel starts foaming from fuel tank, stop IMMEDIATELY to avoid fuel spillage. <p>a. Check fuel tank filler tube and cap for damage or leaks.</p> <p>b. Remove fuel tank filler cap. Inspect cap gasket for damage.</p> <p>c. Check strainer to ensure it is clean. Remove strainer and clean as required.</p> <p>d. Add fuel (Item 6, WP 0025 00) to tank. Do NOT overfill. Reinstall fuel cap and secure.</p>	<p>a. Any fuel leaks or damage are noted.</p> <p>b. Fuel cap gasket is missing or damaged.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

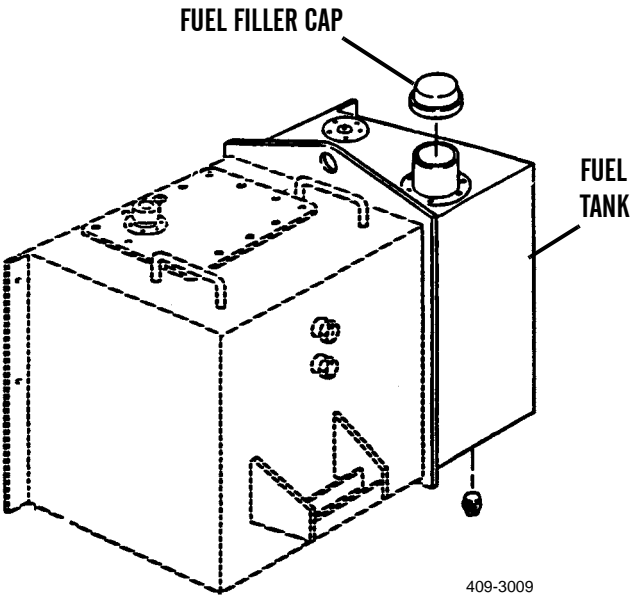
Item No.	Interval	Man-Hours	Location Item To Check/ Service	Procedure	NOT FULLY MISSION CAPABLE IF:
43 (Con't)	After		Fuel Tank	 <p style="text-align: right; margin-right: 50px;">409-3009</p>	

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

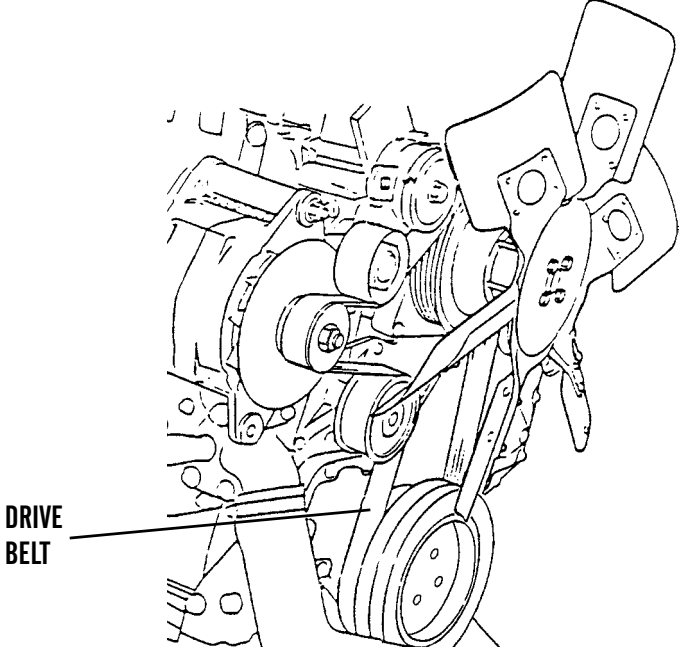
Item No.	Interval	Man-Hours	Location	Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
44	Weekly		Drive Belt	a. Open left or right engine compartment access door and check for loose, damaged or missing drive belt.		
<div style="text-align: center;">  </div> <p style="text-align: right; margin-right: 50px;">409-3010</p>						

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.


Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
45	Weekly		Batteries	 <p>WARNING</p> <ul style="list-style-type: none"> To avoid injury, eye protection and acid-resistant gloves must be worn when working around batteries. Do not smoke, use open flame, make sparks or create other ignition sources around batteries, If a battery is giving off gases, it can explode and cause injury to personnel. Remove all jewelry such as rings, ID tags, watches, and bracelets. If jewelry or a tool contacts a battery terminal, a direct short will result in instant heating, damage to equipment, and injury to personnel. Sulfuric acid contained in batteries can cause serious burns. If battery corrosion or electrolyte makes contact with skin, eyes or clothing, take immediate action to stop the corrosive burning effects. Failure to follow these procedure may result in death or serious injury to personnel. <p>CAUTION</p> <p>To reduce battery damage, check battery compartment for corrosion (greenish/white powder) and do NOT jerk or pull on battery cables during visual inspection.</p> <ol style="list-style-type: none"> Access batteries by removing battery box cover. Check battery hold-down for looseness or damage. Inspect batteries for a cracked case and evidence of leaking. 	<p>Hold-down is loose or damaged.</p> <p>Battery case is cracked or leaks are evident.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

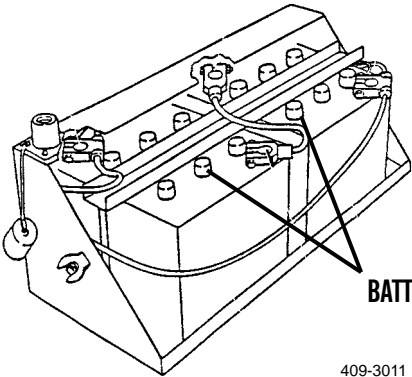
Item No.	Interval	Man-Hours	Location	Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
45 (Con't)	Weekly		Batteries	<p>NOTE</p> <p>If forklift is equipped with original equipment maintenance-free batteries, batteries will have no filler caps</p> <p>d. Check for damaged or missing battery filler caps</p> <p>e. Check for missing, broken, split or frayed battery cables.</p> <p>f. Check for damaged battery posts.</p> <p>g. Check for rust, corrosion, and cleanliness.</p> <p>h. Report any problems to Maintenance.</p>	<p>Damaged or missing filler caps are noted.</p> <p>Damage battery cables.</p> <p>Damage battery noted.</p>	
 <p>409-3011</p>						
46	Weekly		Engine	<p>Check engine for any of the following conditions:</p> <p>a. Fluid leaks such as oil, coolant or fuel</p> <p>b. Damaged coolant hoses.</p> <p>c. Damaged electrical harnesses.</p>	<p>Class III oil, coolant or fuel leaks are evident.</p>	

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.




Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
47	Weekly		Exhaust System	Check exhaust system for loose or missing mounting hardware.  WARNING   Ether fuel is extremely flammable and toxic. DO NOT smoke and make sure you are in a well-ventilated area away from heat, open flames or sparks. Wear eye protection. Avoid contact with skin and eyes and avoid breathing ether fumes. If fluid enters or fumes irritate the eyes, wash immediately with large quantities of clean water for 15 minutes. Seek medical attention immediately if ether is inhaled or causes eye irritation. Failure to follow this warning may cause death or serious injury to personnel.	
48	Weekly		Ether Cold Start System	Check for loose connections and damage to lines, fittings, and ether canister. Be alert for odor of leaking ether.	Damage or evidence of leaks.
49	Monthly		ROPS and FOPS	Check cab Roll Over Protective Structure (ROPS) Falling Object Protective Structure (FOPS) and forklift frame for loose or missing mounting hardware and obvious damage such as cracks or bends.	Loose or missing mounting hardware. Cracks or bends are evident.

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
50	Monthly		All Systems Exercise	<p style="text-align: center;">CAUTION</p> <p>Do NOT exercise vehicle when temperature is below 0°F (-18°C).</p> <p style="text-align: center;">NOTE</p> <p>Perform the following exercise procedure after completion of all <i>Before</i>, <i>After</i>, <i>Weekly</i>, and <i>Monthly</i> PMCS.</p> <p>Do NOT exercise forklift if it has been operated within the past month.</p> <p>a. Start engine and run at idle for five minutes.</p> <p>b. While forklift is warming up, perform a walk around inspection, checking for evidence of leaks.</p> <p style="text-align: center;">NOTE</p> <p>If temperature is below 32°F (0°C), operate controls for 15 minutes prior to moving vehicle.</p> <p>c. After forklift has idled for five minutes, begin to operate all controls slowly:</p> <ul style="list-style-type: none"> • Transmission in all ranges. • Brakes and parking brake applied and released. • Steering in two-wheel, four-wheel and crab in F (forward) and in R (reverse). 	<p>Class III oil, coolant or hydraulic leaks are evident. Any brake fluid or fuel leaks are evident.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for 6K Forklift - Continued.

Item No.	Interval	Man-Hours	Location Item To Check/Service	Procedure	NOT FULLY MISSION CAPABLE IF:
50 (Con't)	Monthly		All Systems Exercise	<p style="text-align: center;">WARNING</p> <p>Before operating boom, ensure that boom will not raise or extend close to overhead power lines. Failure to follow this warning may result in injury or death to personnel.</p> <p style="text-align: center;">CAUTION</p> <p>The forks extend beyond the end of the carriage. The operator must be aware of the swing of the forks when turning and allow for adequate clearance between forks and other objects.</p> <ul style="list-style-type: none"> • Boom in extend and retract, raise and lower. • Frame tilt in fully left and right. • Forks in left and right, together and apart. 	

END OF WORK PACKAGE

INSPECTION OF COMPONENTS

1. Clean all parts before inspection. Check for defects such as physical distortion, wear, cracks and pitting.
2. Check all hose surfaces for broken or frayed fabric, breaks caused by sharp kinks or chafing against other parts of the unit. Inspect metal tubing lines for kinks. Inspect fitting threads for damage. Replace any defective parts. Check for leaks after assembly and during initial operation period.
3. Visually inspect all castings and weldments for cracks.
4. Inspect all wiring for chafed or burned insulation. Inspect all terminal connectors for loose connections and broken parts.

CLEANING PROCEDURES

1. For exterior cleaning of frame and structural components, use detergent (Item 3, WP 0025 00) in a solution as recommended on the container. Leave application on surface for approximately 10 minutes before rinsing. Rinse with hot or cold water under pressure. If available, use hot water under 80-120 lb (551-827 kPa) pressure. An ordinary garden hose may be used if no other equipment is available. If pressurized water supply is not available, wash painted surfaces with a solution of 1/4 cup soap (Item 15, WP 0025 00) to one gallon of water.

**WARNING**

Cleaning compound, solvent MIL-PRF-680 Type III is an environmentally compliant and low toxic material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition.

NOTE

Do not use dielectric grease on electrical connectors.

2. Electrical parts such as coils, connectors, switches and insulating wiring shall not be soaked or sprayed with cleaning solutions. Clean these parts with a clean, dry cloth moistened with cleaning compound, solvent (Item 2, WP 0025 00).

REMOVAL OF COMPONENTS

1. Ensure that adequate clearance is available for removal of component. Disassemble 6K forklift to extent necessary to provide adequate working clearance.
2. Remove parts only when service is required. Do not disassemble a component further than necessary to accomplish service.

ASSEMBLY AND INSTALLATION

Ensure that all parts are clean and dry before installation. If you lose or damage a component during servicing, notify supervisor.

END OF WORK PACKAGE

ENGINE OIL SAMPLING VALVE SERVICE

0014 00

THIS WORK PACKAGE COVERS

Engine oil sampling

INITIAL SETUP**Materials/Parts**

- Oil, lubricating (Item 8 or 12, WP 0025 00)
- Rag, wiping (Item 14, WP 0025 00)
- Container, 1 qt capacity

Equipment Conditions

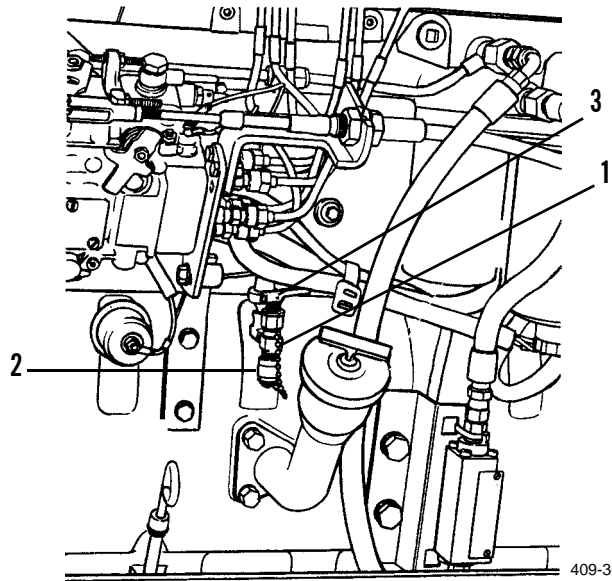
- Engine off (WP 0005 00)
- Vehicle parked on level ground

**WARNING**

- Oil is very slippery. Immediately wipe up any spills. Failure to follow this warning may cause injury.
- Hot oil or metal parts can cause burns. Wear insulated gloves, long sleeves and eye protection when working with heated parts.

ENGINE OIL SAMPLING

1. Clean the engine oil sampling valve (1).
2. Start the engine (WP 0005 00). Bring it to normal operating temperature.
3. Obtain the oil sample.
 - a. With the engine at idle, remove the dust cap (2) on the oil sampling valve (1).
 - b. Attach an appropriate size hose to the valve, if desired.
 - c. Place a clean container under the valve (1) opening (or hose if used).
 - d. Push down or pull up on the lever (3) to drain approximately one pint of oil prior to taking a sample.
 - e. Place a sample bottle under the valve opening (or hose if used) and fill it to within 1/2 in. from top. Cap the bottle immediately.
 - f. Install dust cap (2) on the oil sampling valve (1). Return the oil drained into container during step d to the engine.
 - g. Check oil level and add oil if necessary.



409-3007

END OF WORK PACKAGE

HYDRAULIC OIL SAMPLING VALVE SERVICE

0015 00

THIS WORK PACKAGE COVERS

Hydraulic oil sampling

INITIAL SETUP

Materials/Parts

Oil, lubricating (Item 8 or 11, WP 0025 00)

Rag, wiping (Item 14, WP 0025 00)

Container, 1 qt capacity

Equipment Conditions

Engine off (WP 0005 00)

Vehicle parked on level ground



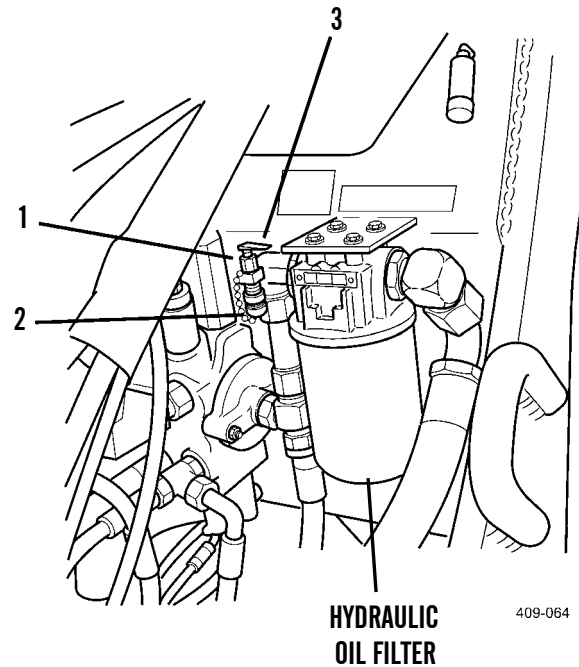
WARNING



- Oil is very slippery. Immediately wipe up any spills. Failure to follow this warning may cause injury.
- Hot oil or metal parts can cause burns. Wear insulated gloves, long sleeves and eye protection when working with heated parts.

HYDRAULIC OIL SAMPLING

1. Clean the hydraulic oil sampling valve (1).
2. Start the engine (WP 0005 00). Bring the hydraulic fluid to normal operating temperature (WP 0005 00).
3. With the engine running, place the travel select control lever in Neutral. Apply the parking brake.
4. Obtain the oil sample.
 - a. Remove the dust cap (2) on the hydraulic oil sampling valve (1).
 - b. Attach an appropriate size hose to the valve, if desired.
 - c. Place a clean container under the valve (1) opening (or hose if used).
 - d. Push down or pull up on the lever (3) to drain approximately one pint of oil prior to taking a sample. Release the lever (3) to close the valve (1).
 - e. Place a sample bottle under the valve opening (or hose if used) and fill it to within 1/2 in. (12.7 mm) from top. Cap the bottle immediately.
 - f. Install a dust cap (2) on the hydraulic oil sampling valve (1).
 - g. Check oil and add oil if necessary (WP 0021 00).

**END OF WORK PACKAGE**

THIS WORK PACKAGE COVERS

Transmission oil sampling

Materials/Parts

Oil, lubricating (Item 8 or 11, WP 0025 00)

Rag, wiping (Item 15, WP 0025 00)

Container, 1 qt capacity

Equipment Conditions

Engine off (WP 0005 00)

Vehicle parked on level ground



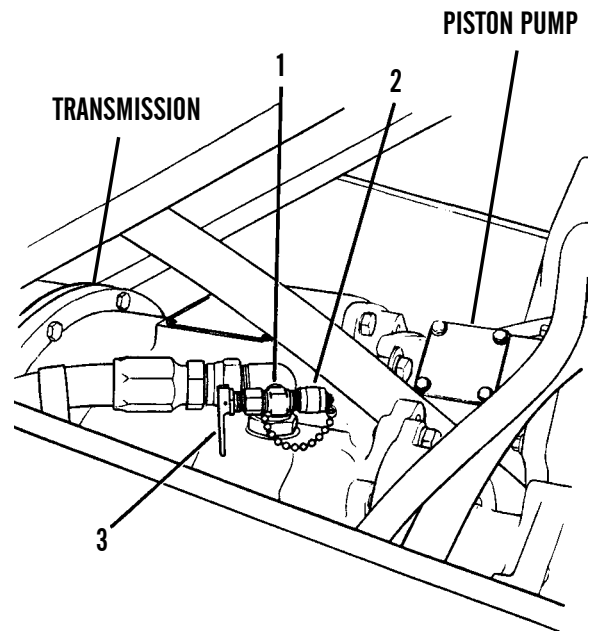
WARNING



- Oil is very slippery. Immediately wipe up any spills. Failure to follow this warning may cause injury.
- Hot oil or metal parts can cause burns. Wear insulated gloves, long sleeves and eye protection when working with heated parts.

TRANSMISSION OIL SAMPLING

1. Clean the transmission oil sampling valve (1).
2. Start the engine (WP 0005 00). Drive the vehicle approximately one mile or allow to idle in gear for a while to bring the transmission to normal operating temperature.
3. With the engine running, place the travel select control lever in neutral. Apply the parking brake.
4. Obtain the oil sample.
 - a. Remove the dust cap (2) on the transmission oil sampling valve (1).
 - c. Place a clean container under the valve (1) opening (or hose if used).
 - d. Push down or pull up on the lever (3) to drain approximately one pint of oil prior to taking a sample. Release the lever (3) to close the valve (1).
 - e. Place a sample bottle under the valve opening (or hose if used) and fill it to within 0.5 in. (12.7 mm) from top. Cap the bottle immediately.
 - f. Install a dust cap (2) on the transmission oil sampling valve (1).
 - g. Check transmission fluid level and add oil if necessary.



409-063

END OF WORK PACKAGE

THIS WORK PACKAGE COVERS

Removal, Service, Installation

INITIAL SETUP

Materials/Parts

- Detergent (Item 3, WP 0025 00)
- Rag, wiping (Item 14, WP 0025 00)

Equipment Conditions

- Engine off (WP 0005 00)
- Vehicle parked on level ground

REMOVAL

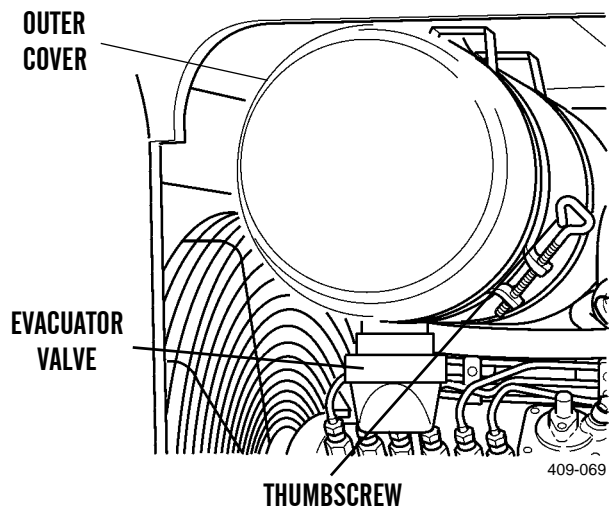


WARNING



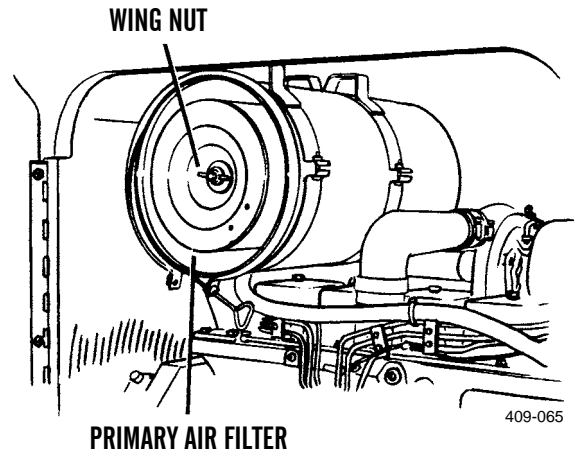
If NBC exposure is suspected, all air filter media should be handled by personnel wearing protective equipment. Consult your unit NBC Officer or NBC NCO appropriate handling or disposal instructions.

1. Turn thumbscrew to loosen clamp. Remove outer cover.



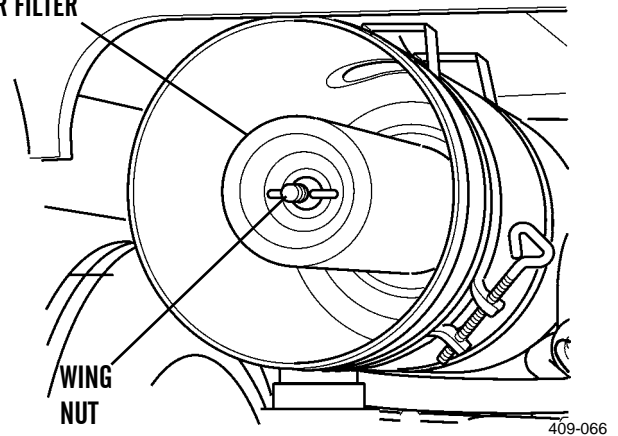
REMOVAL - CONTINUED

2. Remove wing nut to remove primary filter element.
3. Use a damp cloth to remove dust and foreign material from inside canister.

**SERVICE****CAUTION**

The secondary element is not intended to be cleaned. For the maximum engine protection and air cleaner service life, replace the secondary element with a new one every third primary element change or cleaning.

1. Check secondary element for damage. Replace element if it has the slightest damage to gasket or pleated element.
2. Replace secondary element if element is visibly dirty.
3. If secondary element is to be replaced, remove wing nut to remove element.

SECONDARY AIR FILTER**CAUTION**

Air restriction indicator will not function properly if an element has a break in the filtering paper or if the element is not properly seated in the canister.

4. Install new secondary element with gasket end into canister first. Be sure the element is centered in canister before tightening wing nut.

SERVICE - CONTINUED**CAUTION**

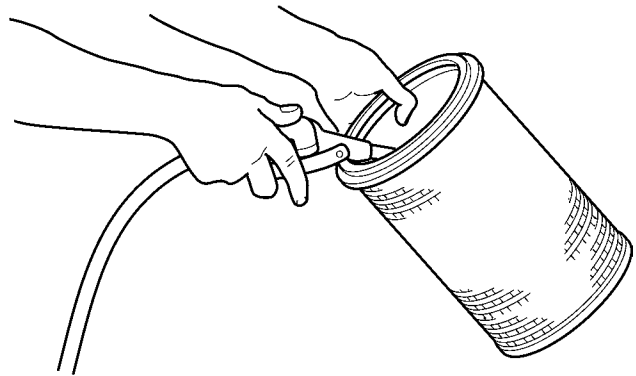
Do not tap the element against a hard surface as this damages the element.

5. Remove loose dust by tapping element with palm of your hand. DO NOT use a hard surface.

**WARNING**

Particles blown by compressed air are hazardous. DO NOT exceed 15 psi (103 kPa) nozzle pressure when drying parts with compressed air. Use a maximum of 30 psi (207 kPa) when cleaning components. DO NOT direct compressed air against human skin. Failure to follow this warning may result in injury or death. Make sure air stream is directed away from user and other personnel in the area. To prevent injury, user must wear protective goggles or face shield.

6. To remove remaining dust, use compressed air under 30 psi (207 kPa). Blow the air up and down the pleats from the inside of the element. Be careful not to damage or tear paper element.



409-067

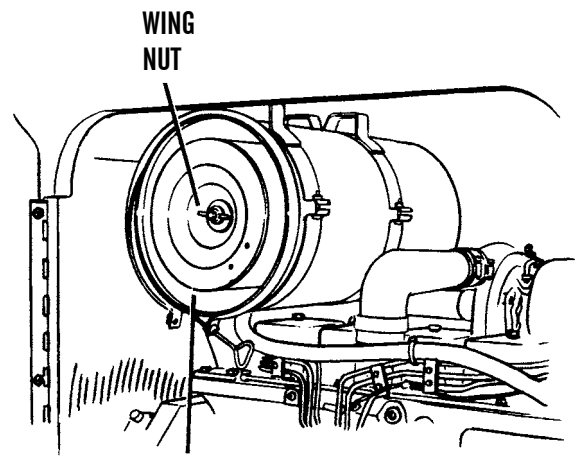
CAUTION

DO NOT wash element in fuel oil, oil, gasoline, or solvent. DO NOT use compressed air to remove water from an element.

7. To clean oily or sooty element, wash thoroughly with warm water and non-foaming detergent. Rinse element with clean water and allow element to air dry. Clean outer cover and rubber evacuator valve with soap and water.

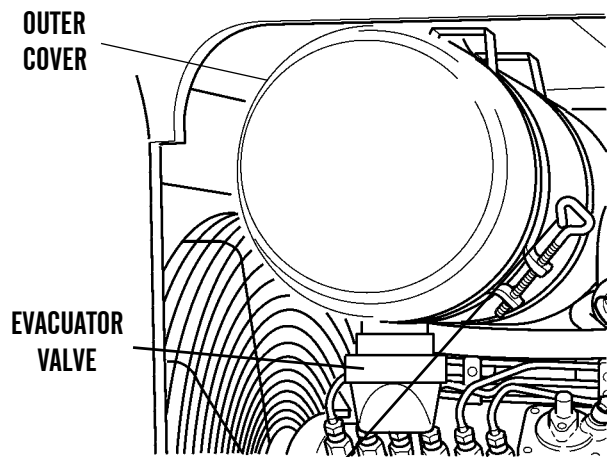
INSTALLATION

1. DO NOT install element until it is dry.
2. Inspect element for damage. Place a bright light inside the element and rotate element slowly. If any rupture, holes or damaged gaskets are discovered, replace the element.
3. If a new element is to be installed, inspect the element and gasket for shipping and storage damage.
4. Install the primary filter element in the air cleaner canister and secure with the wing nut.
5. Install outer cover. Turn thumbscrew to tighten clamp.



409-065

6. Install the outer cover and clamp. Tighten the thumbscrew.
7. Check the rubber evacuator valve to be sure it is not plugged or damaged.
8. Reset the air intake restriction indicator by pressing button on end of indicator.



409-069

END OF WORK PACKAGE

ENGINE COOLANT CHECK AND FILL

0018 00

THIS WORK PACKAGE COVERSCheck and Fill

INITIAL SETUP**Materials/Parts**

Antifreeze (Item 1, WP 0025 00)
Rag, wiping (Item 14, WP 0025 00)

Equipment Conditions

Engine off (WP 0005 00)
Vehicle parked on level ground

**WARNING**

- DO NOT service cooling system unless engine has cooled. This is a pressurized cooling system and escaping steam or hot coolant may cause burns.
- DO NOT remove radiator cap when engine is hot. Allow engine to cool down. Loosen cap to first stop and let any pressure out of cooling system, then remove cap. Failure to follow this warning may cause burns.
- Wear effective eye, glove, and skin protection when handling coolants. Failure to do so may cause injury.

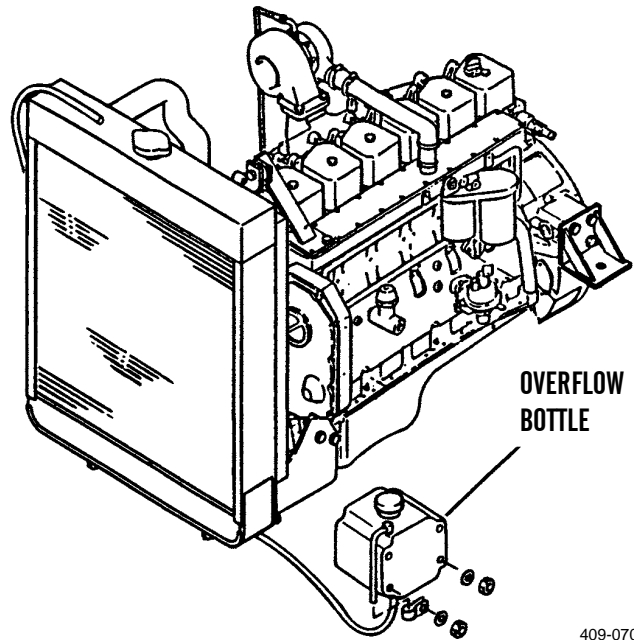
CHECK AND FILL

1. Check coolant level in overflow bottle. Bottle must be 1/3 to 2/3 full.

CAUTION

Do not fill coolant system with water only. Use ethylene glycol mixture (antifreeze) with water. Failure to do so will result in damage to engine.

2. Add coolant to overflow bottle.
 - a. If bottle is less than 1/3 full, add approximately one qt.
 - b. If no coolant is visible in the bottle, add 2 qt of coolant to bottle and fill radiator with coolant.



409-070

END OF WORK PACKAGE

FUEL/WATER SEPARATOR SERVICE

0019 00

THIS WORK PACKAGE COVERSDrain

INITIAL SETUP**Materials/Parts**

Container, 1 qt capacity

Equipment Conditions

Engine off (WP 0005 00)

Vehicle parked on level ground

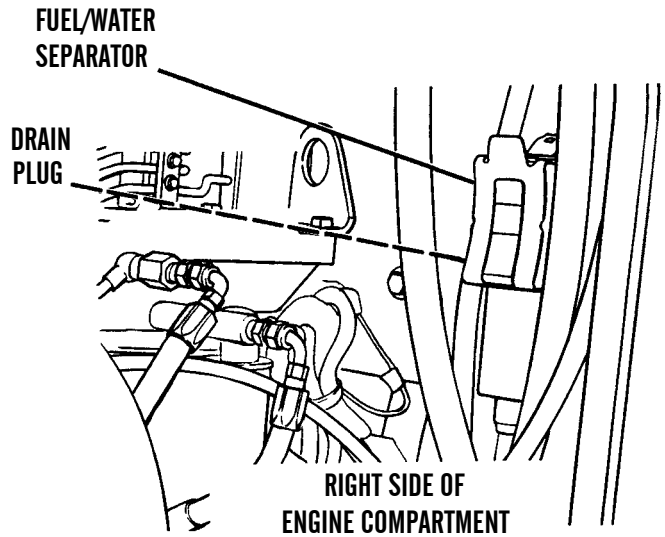
**WARNING**

- DO NOT perform fuel system checks, inspections or maintenance while smoking or near fire, flames or sparks. Fuel may ignite, causing injury, death or damage to forklift.
- DO NOT perform fuel system checks, inspections or maintenance while smoking or near fire, flames or sparks. Fuel may ignite, causing injury, death or damage to forklift.
- Place portable fire extinguisher within reach prior to draining fuel/water separator.
- Wear fuel-resistant gloves when handling fuels and promptly wash exposed skin and change fuel-soaked clothing.
- Fuel is very slippery. If fuel is spilled, clean fuel up immediately. Before starting forklift, check that no fuel is spilled under vehicle.

DRAIN**NOTE**

Use container to catch any fuel or water that may drain from system. Dispose of fuel IAW local policy and ordinances.

1. Look through glass of water separator for presence of water or sediment.
2. Drain water and sediment from water separator.
 - a. Remove the drain plug located on the left side of separator base.
 - b. Allow the water and sediment to drain.
 - c. Install and tighten drain plug.

**END OF WORK PACKAGE**

PARKING BRAKE LEVER ADJUSTMENT

0020 00

THIS WORK PACKAGE COVERS

Adjustment

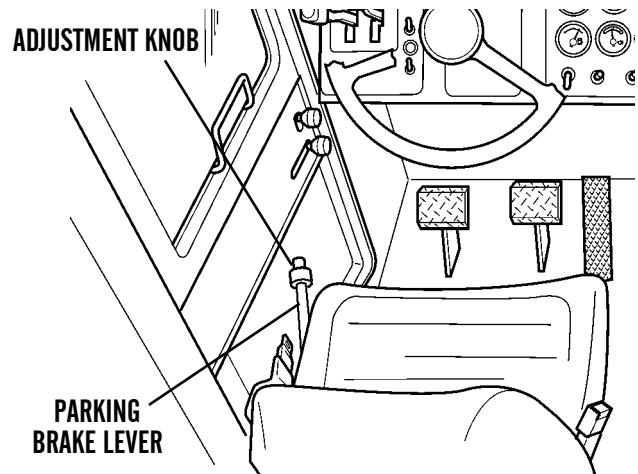
INITIAL SETUP**Equipment Conditions**

Engine off (WP 0005 00)

Vehicle parked on level ground

ADJUSTMENT

1. Turn adjustment knob on end of parking brake lever.
 - a. Turn knob clockwise to tighten parking brake lever linkage.
 - b. Turn knob counterclockwise to loosen parking brake lever linkage.
2. Contact Maintenance if turning adjustment knob will not tighten or loosen parking brake sufficiently.



409-071

END OF WORK PACKAGE

THIS WORK PACKAGE COVERS

Drain and Fill Fuel Tank

Drain and Fill Hydraulic Oil Reservoir

INITIAL SETUP

Materials/Parts

- Fuel (Item 4, 5 or 6, WP 0025 00)
- Oil, lubricating (Item 8 or 11, WP 0025 00)
- Rag, wiping (Item 14, WP 0025 00)

Equipment Conditions

- Engine off (WP 0005 00)
- Vehicle parked on level ground



WARNING



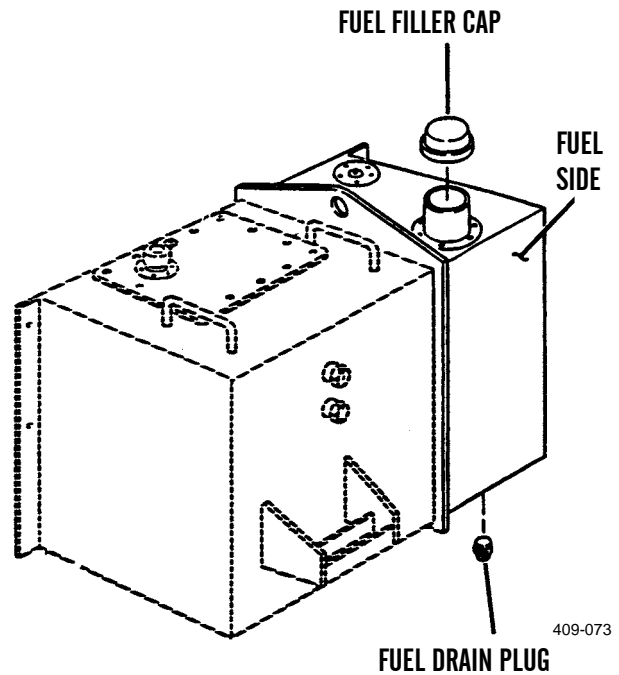
- DO NOT perform fuel system checks, inspections or maintenance while smoking or near fire, flames or sparks. Fuel may ignite, causing injury, death or damage to forklift.
- Wear fuel-resistant gloves when handling fuels and promptly wash exposed skin and change fuel-soaked clothing.
- Place portable fire extinguisher within reach prior to draining fuel tank.
- Fuel is very slippery. To avoid injury, wipe up spilled fuel with rags. Before starting forklift, check that no fuel is spilled on or around vehicle.

NOTE

- Dispose of fuel and oil IAW local policies and ordinances.
- Fuel side of fuel/hydraulic oil reservoir contains 44 gal. (166.5 l) of fuel when full.
- Hydraulic oil side of fuel/hydraulic oil reservoir contains 56.6 gal. (214.2 L) of oil when full.

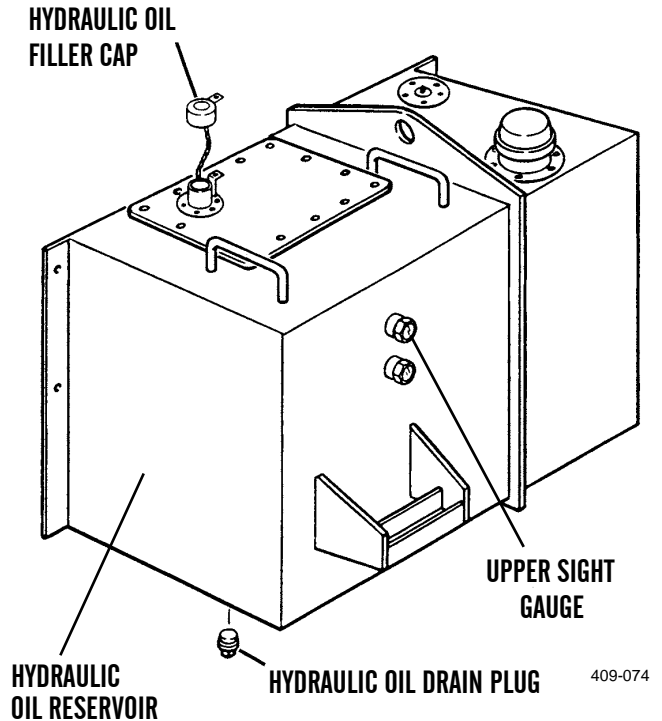
DRAIN AND FILL FUEL TANK

1. Remove fuel filler cap.
2. Place suitable drain pan under fuel drain plug.
3. Remove fuel drain plug from tank and allow fuel to drain completely.
4. Install fuel drain plug and fill tank with fuel.
5. Install fuel filler cap.



DRAIN AND FILL HYDRAULIC OIL RESERVOIR

1. Place all hydraulic cylinders in retracted position.
2. Remove hydraulic oil filler cap.
3. Place suitable drain pan under hydraulic oil drain plug.
4. Remove hydraulic oil drain plug and allow hydraulic oil to drain completely.
5. Install hydraulic oil drain plug.
6. Fill reservoir with hydraulic oil until oil level is visible in upper sight gauge.
7. Install hydraulic oil filler cap.



END OF WORK PACKAGE

CHAPTER 5
SUPPORTING INFORMATION

REFERENCES

0022 00

SCOPE

This work package lists all publication indexes, forms, field manuals, technical manuals and other publications referenced in this manual and which apply to operation and operator maintenance of the 6000 lb. Variable Reach Rough Terrain Forklift Truck.

PUBLICATION INDEXES

The following indexes should be consulted frequently for latest changes or revisions and for new publications relating to material covered in this technical manual.

Functional User's Manual for The Army Maintenance Management System (TAMMS) DA PAM 738-751

FORMS

Refer to DA PAM 738-751, *Functional User's Manual for The Army Maintenance Management System (TAMMS)*, for instructions on the use of maintenance forms.

Equipment Inspection and Maintenance Worksheet DA Form 2404, DA Form 5988-E

Product Quality Deficiency Report SF Form 368

Recommended Changes to Publications and Blank Forms DA Form 2028

FIELD MANUALS

Basic Cold Weather Manual FM 31-70

Chemical and Biological Contamination Avoidance FM 3-3

Desert Operations FM 90-3

First Aid FM 4-25.11

Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection FM 3-11.4

NBC Decontamination FM 3-5

Northern Operations FM 31-71

Nuclear Contamination Avoidance FM 3-3-1

Operations and Maintenance of Ordnance Materiel in Cold Weather FM 9-207

TECHNICAL BULLETINS

Use of Antifreeze Solutions, Antifreeze Extender, Cleaning Compounds TB 750-651

Warranty Technical Bulletin TB 10-3930-660-14

TECHNICAL MANUALS

Materials Used for Cleaning, Preserving, Abrading and Cementing Ordnance Materiel and Related Materiels Including Chemicals TM 9-247

Operator's, Unit, Intermediate Direct Support, and Intermediate General Support Maintenance Manual for Lead-Acid Storage Batteries TM 9-6140-200-14

Use of Antifreeze Solutions, Antifreeze Extender, Cleaning Compounds TB 750-651

OTHER PUBLICATIONS

Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items) CTA 50-970

END OF WORK PACKAGE

SCOPE

This work package lists basic issue items for the 6K forklift to help you inventory items required for safe and efficient operation. There are no Components of the End Item (COEI) for the 6K forklift.

GENERAL

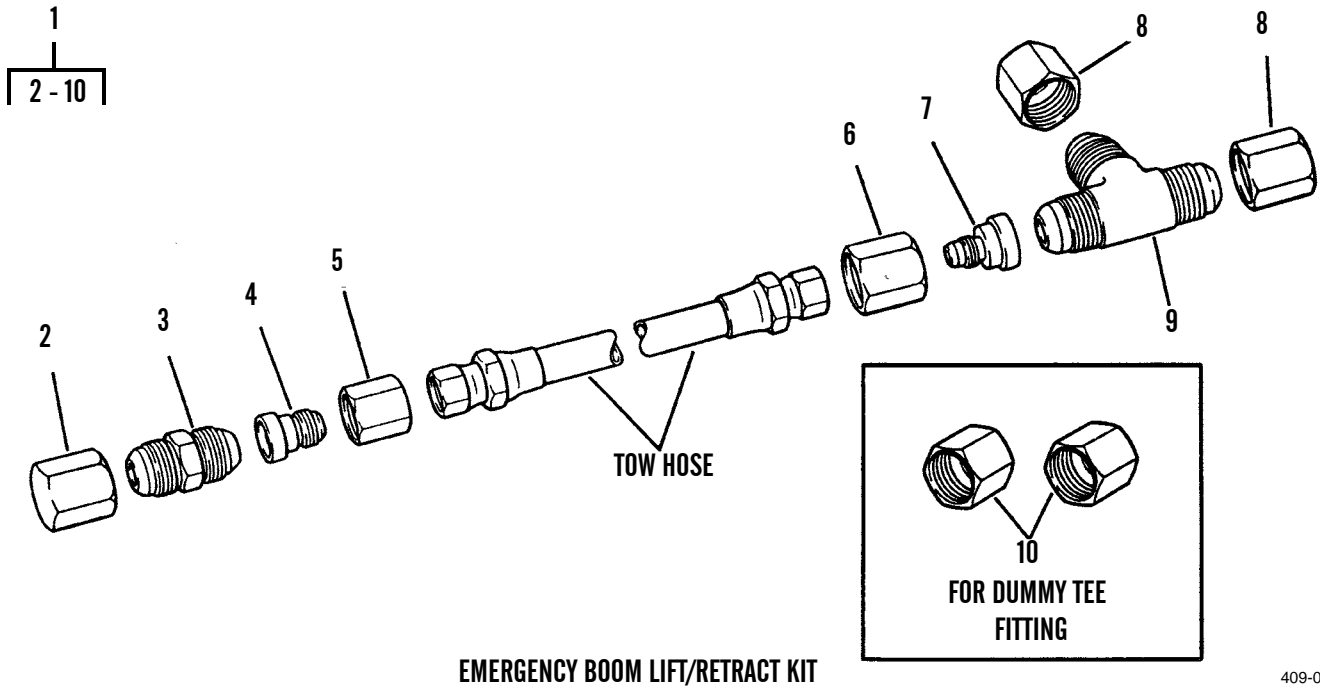
The BII information is divided into the following lists:

Table 1, Basic Issue Items List. These are the minimum essential items required to place the forklift in operation, to operate it and to perform emergency repairs. Although shipped separately packaged, BII must be with the forklift during operation and whenever it is transferred between property accounts. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of end item. Illustrations are furnished to assist you in identifying the items.

EXPLANATION OF COLUMNS

Below is an explanation of columns found in the tabular listings:

1. **Column (1) - Illustration Number (Illus Number).** This column indicates the number of the illustration that shows the item.
2. **Column (2) - National Stock Number.** Indicates the National Stock Number (NSN) assigned to the item and will be used for requisitioning purposes.
3. **Column (3) - Description, CAGEC, and Part Number.** Indicates the Federal item name (in all capital letters) and, if required, a minimum description in parentheses to identify and locate the item. The entry for each item ends with the Commercial and Government Entity Code (CAGEC) in parentheses followed by the part number.
4. **Column (4) - Usable on Code.** Indicates a code if the item needed is not the same for different models of equipment.
5. **Column (5) - Unit of Measure (U/M).** Indicates how the item is issued for the National Stock Number shown in Column (2).
6. **Column (6) - Quantity Required (Qty Rqd).** Indicates the quantity of the item required.

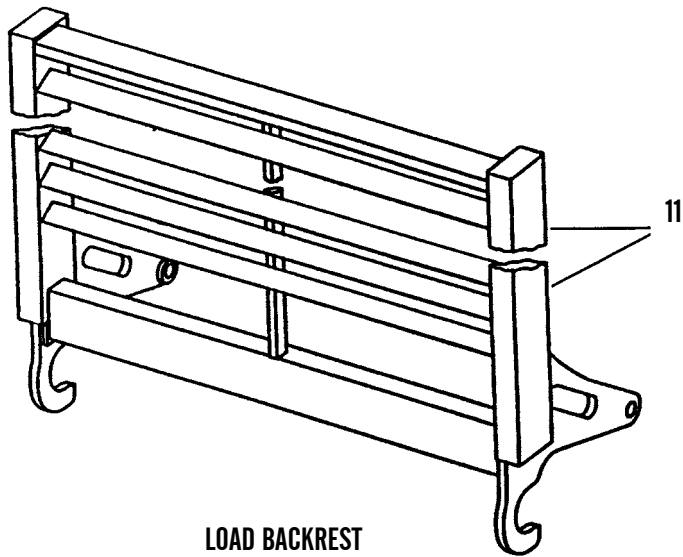


EMERGENCY BOOM LIFT/RETRACT KIT

409-075

Table 1. Basic Issue Items.

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) USABLE ON CODE	(5) U/M	(6) QTY RQD
1	3950-01-291-8932	Emergency boom lift and retract kit 6607572 (3Y949)		EA	1
2	4730-00-585-6565	Cap, tube 830FS08 (30327)		EA	1
3	4730-00-797-6567	Nipple, tube MS51501A8 (96906)		EA	1
4	4730-00-786-2247	Reducer body, tube 0603-8-6 (98441)		EA	1
5	4730-00-762-1239	Nut, tube coupling 8 BTX-S (98441)		EA	1
6	4730-00-812-0924	Nut, tube coupling 12 BTX-S (98441)		EA	1
7	4730-00-999-9831	Reducer, tube 12-6TRTXS (98441)		EA	1
8	4730-00-647-3311	Cap, tube 06CP-12 (98441)		EA	2
9	4730-00-467-2597	Tee, tube MS51510A12 (96906)		EA	1
10	5310-00-257-6177	Nut, plain, cap 8760488 (34949)		EA	2

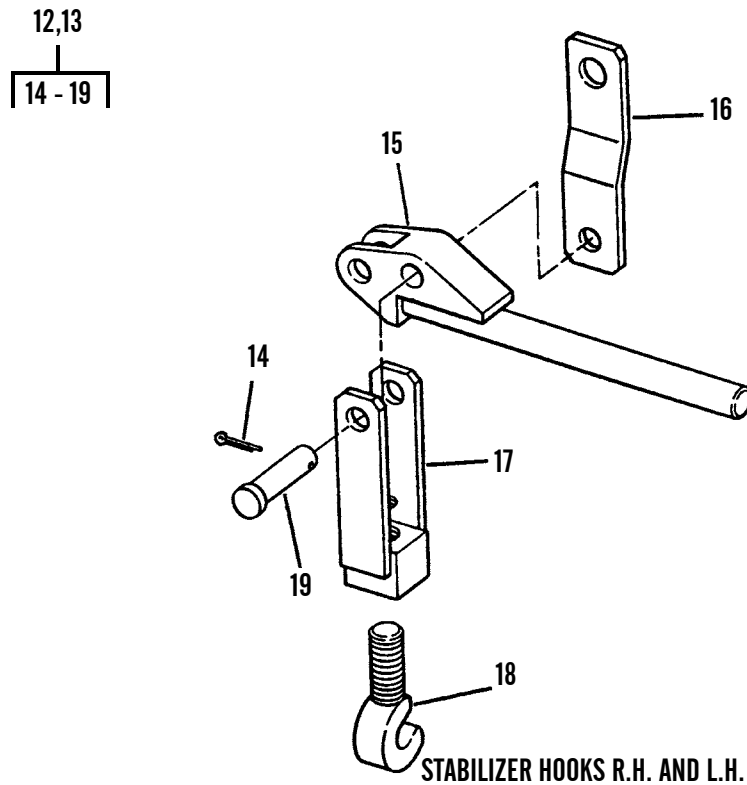


LOAD BACKREST

409-076

Table 1. Basic Issue Items - Continued.

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) USABLE ON CODE	(5) U/M	(6) QTY RQD
11	2540-01-289-9053	Load backrest 6608325 (3Y949)		EA	1



409-077

Table 1. Basic Issue Items - Continued.

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) USABLE ON CODE	(5) U/M	(6) QTY RQD
12	3930-01-292-6446	Load stabilizer, left hand 6609424 (3Y949)		EA	1
13	3930-01-292-9057	Load stabilizer, right hand 6609414 (3Y949)		EA	1
14	5315-00-013-7214	Pin, cotter MS24665-359 (96906)		EA	2
15	3040-01-297-5408	Lever, manual control 6609273 (3Y949)		EA	2
16	5365-01-297-6381	Spacer, plate 6609842 (3Y949)		EA	2
17	5340-01-296-8838	Clevis, rod end 6609322 (3Y949)		EA	2
18	5306-01-297-9007	Bolt, hook 6609832 (3Y949)		EA	2
19	5315-01-288-6747	Pin, straight headed 11-289 (96652)		EA	2

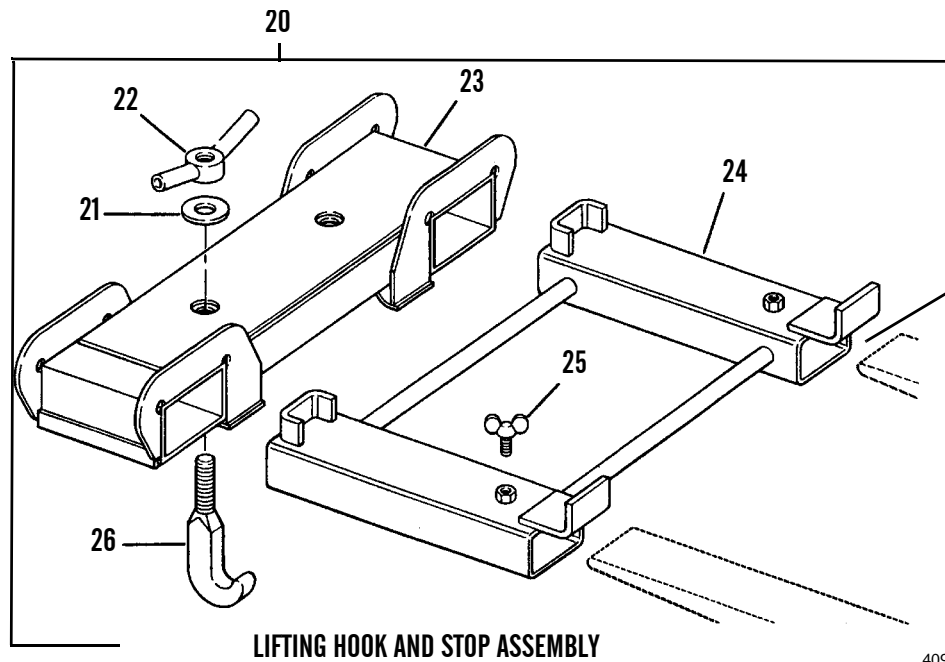
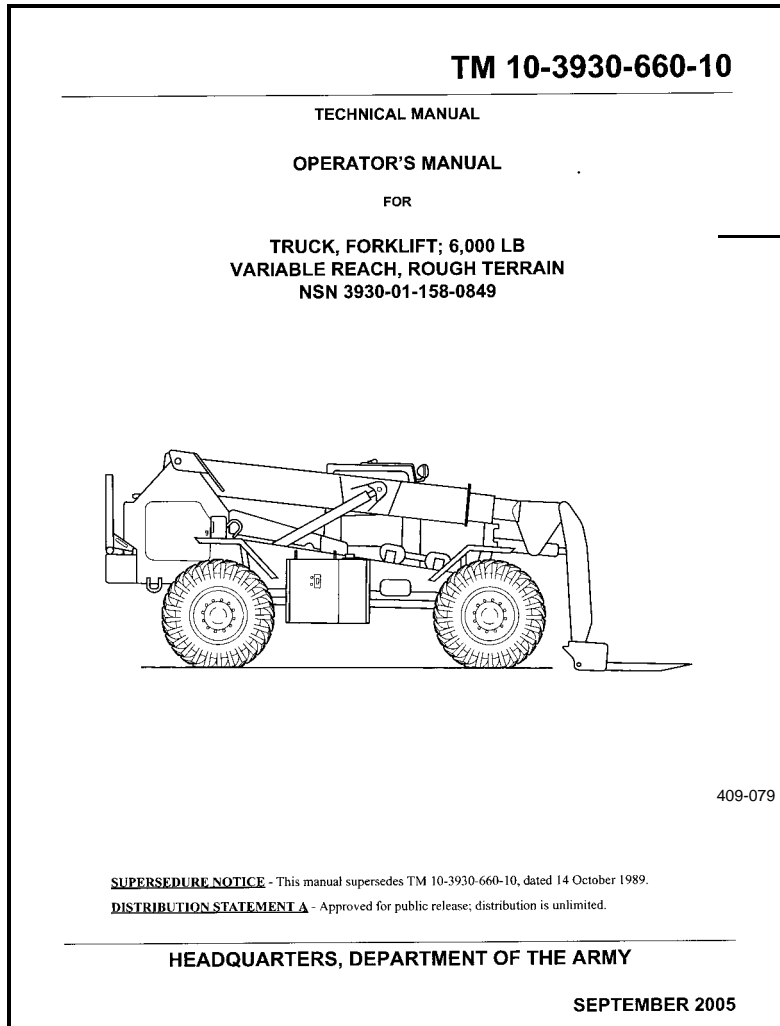


Table 1. Basic Issue Items - Continued.

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) USABLE ON CODE	(5) U/M	(6) QTY RQD
20	3930-01-313-4627	Lifting hook and stop assembly (MLRS) 6611132 (3Y949)		EA	1
21	5310-00-809-8541	Washer, flat MS27183-27 (96906)		EA	2
22	5310-01-296-8694	Nut, plain wing 6605982 (3Y949)		EA	2
23	3930-01-293-6929	Hook, attachment 6605864 (3Y949)		EA	1
24	3930-01-296-9339	Stop, hook 6609394 (3Y949)		EA	1
25	5305-01-297-3103	Thumbscrew 90196A712 (39428)		EA	2
26	5306-01-297-9008	Bolt, hook 6606032 (3Y949)		EA	2



27

Table 1. Basic Issue Items - Continued.

(1)	(2)	(3)	(4)	(5)	(6)
ILLUS NUMBER	NATIONAL STOCK NUMBER	DESCRIPTION, CAGEC, AND PART NUMBER	USABLE ON CODE	U/M	QTY RQD
27	TM10-3930-660-10	Operator's Manual			

END OF WORK PACKAGE

ADDITIONAL AUTHORIZATION LIST (AAL)

0024 00

SCOPE

This work package lists additional items you are authorized for support of the 6K forklift.

GENERAL

This list identifies items that do not have to accompany the 6K forklift and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA or JTA.

EXPLANATION OF COLUMNS

1. **Column (1) - National Stock Number.** Indicates the National Stock Number (NSN) assigned to the item and will be used for requisitioning purposes.
2. **Column (2) - Description, CAGEC, and Part Number.** Indicates the Federal item name (in all capital letters) followed by a minimum description when needed. The entry for each item ends with the Commercial and Government Entity Code (CAGEC) in parentheses followed by the part number.
3. **Column (3) - Usable on Code.** Indicates a code if the item needed is not the same for different models of equipment.
4. **Column (4) - Unit of Measure (U/M).** Indicates how the item is issued for the National Stock Number shown in Column (1).
5. **Column (5) - Qty Auth.** Indicates the quantity authorized.

Table 1. Additional Authorization List

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION, CAGEC, AND PART NUMBER	(3) USABLE ON CODE	(4) U/M	(5) QTY AUTH
4210-01-493-8162	Fire extinguisher, 5 lb (98752) B500T (54905)		EA	1

END OF WORK PACKAGE

EXPENDABLE AND DURABLE ITEMS LIST

0025 00**SCOPE**

This work package lists the expendable and durable items you will need to operate and maintain the 6K forklift. This listing is for informational purposes 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

1. **Column (1) - Item Number.** This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item [e.g., Use antifreeze (Item 1, WP 0025 00)].
2. **Column (2) - Level.** This column identifies the lowest level of maintenance that requires the listed item.
C - Operate/Crew
3. **Column (3) - National Stock Number (NSN).** This is the NSN assigned to the item which you can use to requisition it.
4. **Column (4) - Description, Item Name, CAGEC, and Part Number.** This provides the other information you need to identify the item.
5. **Column (5) - Unit of Measure (U/M).** This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, AND PART NUMBER	(5) U/M
1	C	6850-01-464-9125	ANTIFREEZE: Permanent Ethylene Glycol, Inhibited, Heavy-Duty (58536) A-A-52624 1 Gallon Can	GAL
		6850-00-181-7933	(81349) MILA46153 5 Gallon Container	GAL
		6850-01-441-3223	(58536) A-A-52624 55 Gallon Drum	GAL
2	C	6850-01-474-2320 6850-01-474-2321	CLEANING COMPOUND: Solvent, Type III (81349) MIL-PRF-680 5 Gallon Can 55 Gallon Drum	GAL GAL
3	C	7930-00-282-9699	DETERGENT: General Purpose, Liquid (83421) 7930-00-282-9699 1 Gallon Can	GAL
4	C	9140-00-286-5286 9140-00-286-5287 9140-00-286-5288	DIESEL FUEL: DF-1 Grade, Arctic (81346) ASTM D 975 Bulk 5 Gallon Can 55 Gallon Drum	GAL GAL GAL
5	C	9140-00-286-5294 9140-00-286-5295 9140-00-286-5296	DIESEL FUEL: DF-2 Grade (81346) ASTM D 975 Bulk 5 Gallon Can 55 Gallon Drum	GAL GAL GAL
6	C	9130-01-031-5816	FUEL, TURBINE: Aviation (81349) MILT83133 GR JP8	GAL

EXPENDABLE AND DURABLE ITEMS LIST - CONTINUED

0025 00

Table 1. Expendable and Durable Items List - Continued.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, AND PART NUMBER	(5) U/M
7	C	9150-01-197-7688	GREASE: Automotive and Artillery GAA (81349) M-10924-A 1-1/4 Ounce Tube	OZ
		9150-01-197-7693	(81349) M-10924-B 14 Ounce Cartridge	OZ
		9150-01-197-7690	(81349) M-10924-C 1-3/4 Pound Can	LB
		9150-01-197-7692	(81349) M-10924-E 35 Pound Can	LB
8	C	9150-00-402-4478	OIL: Lubricating, Arctic, OEA (81349) MIL-PRF-46167 1 Quart Can	QT
		9150-00-402-2372	(81349) MIL-PRF-46167 5 Gallon Drum	GAL
		9150-00-491-7197	(81349) MIL-PRF-46167 55 Gallon Drum	GAL
9	C	9150-01-035-5390	OIL: Lubricating, GO 75 (81349) MIL-PRF-2105 1 Quart Can	QT
		9150-01-035-5391	5 Gallon Can	GAL
10	C	9150-01-035-5392	OIL: Lubricating, GO 80W/90 (81349) MIL-PRF-2105 1 Quart Can	QT
		9150-00-001-9395	5 Gallon Can	GAL
		9150-01-035-5394	55 Gallon Drum	GAL
11	C	9150-00-189-6727	OIL: Lubricating, OE/HDO 10 (81349) MIL-PRF-2104 1 Quart Can	QT
		9150-00-186-6668	5 Gallon Can	GAL
		9150-00-191-2772	55 Gallon Drum	GAL

Table 1. Expendable and Durable Items List - Continued.

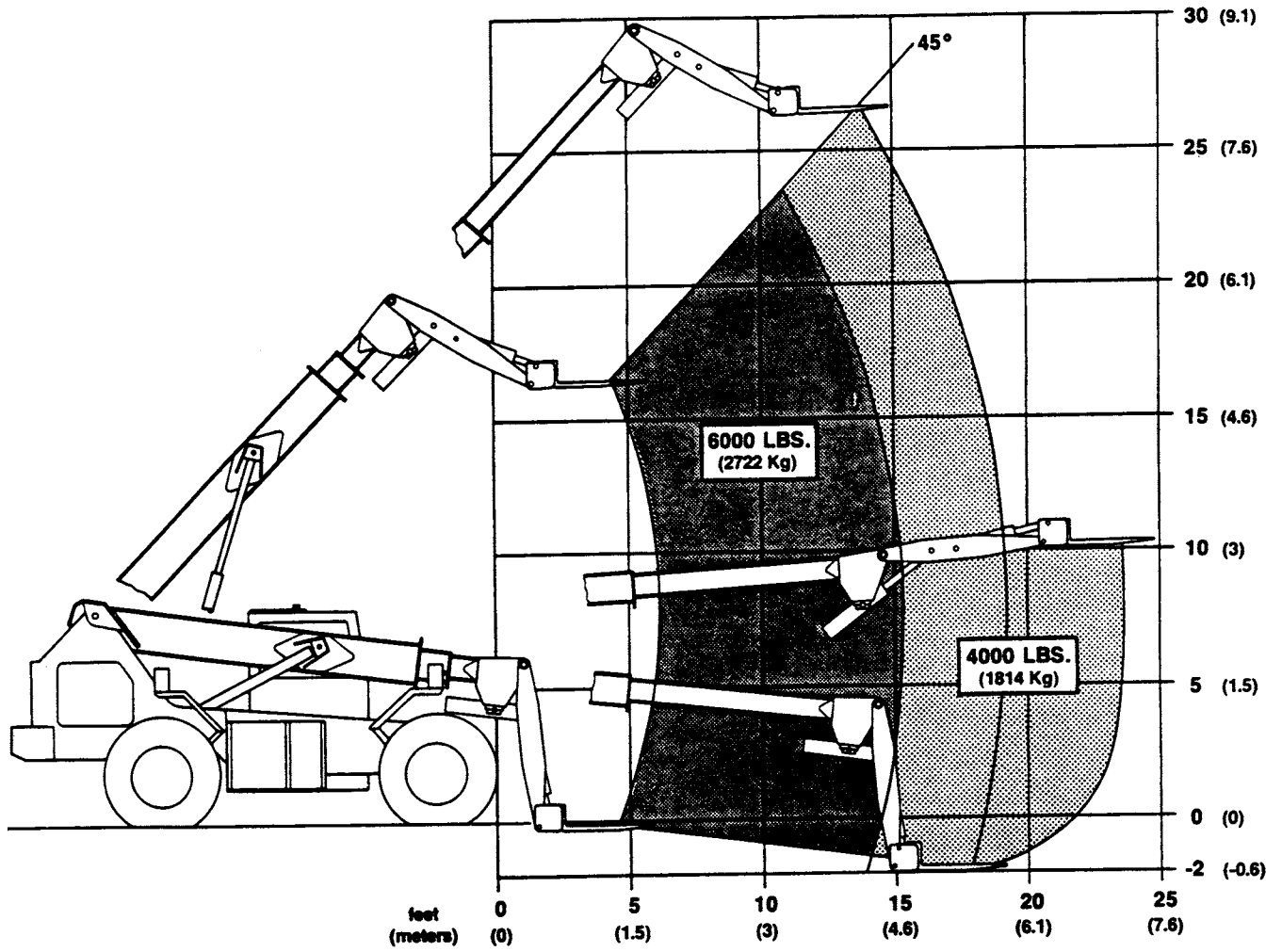
(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, AND PART NUMBER	(5) U/M
12	C	9150-01-152-4117	OIL: Lubricating, OE/HDO 15W/40 (81349) MIL-PRF-2104 1 Quart Can	QT
		9150-01-152-4118	5 Gallon Can	GAL
		9150-01-152-4119	55 Gallon Drum	GAL
13			OIL: Synthetic (ISO 220) (11083) 4C6767 (15958) Syntho Gear EP 220 (19135) SHC 630 1 Quart Can	QT
14	C	7920-00-205-1711	RAG: Wiping (64067) 7920-00-205-1711 50 Pound Bale	LB
15	C	7930-00-634-3935	SOAP: Laundry 200 Pound Container	LB

END OF WORK PACKAGE

LOAD RATING CHART

0026 00

LOAD RATING CHART



409-080

END OF WORK PACKAGE

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By Order of the Secretary of the Army:

Official:

A handwritten signature in black ink that reads "Joyce E. Morrow". The signature is written in a cursive style with a large, stylized initial "J".

JOYCE E. MORROW
*Administrative Assistant to the
Secretary of the Army*

0609310

PETER J. SCHOOMAKER
*General, United States Army
Chief of Staff*

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To be distributed in accordance with the initial distribution number (IDN) 254834,
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TO: (Forward to proponent of publication or form) (Include ZIP Code) AMSTA-LC-CI/TECH PUBS, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: (Activity and location) (Include ZIP Code) 125th Transportation Company ATTN: Motor SGT (SGT Wilson) Ft. Riley, KA 78665-4000
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PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER TM 10-3930-660-10	DATE 1 May 2006	TITLE Operator's Manual for Truck Forklift; 6,000 lb Variable Reach, Rough Terrain
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ITEM	PAGE	PARA-	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON
	0017 00-2					Part number supplied for item 2 is incorrect.

SAMPLE

** Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE Johnny Wilson, E-5, MOTOR SGT	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION DSN 867-7967	SIGNATURE
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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
<h1>SAMPLE</h1>								

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TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER TM 10-3930-660-10				DATE 1 May 2006		TITLE Operator's Manual for Truck, Forklift: 6,000 lb Variable Reach, Rough Terrain	
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).	
<i>*Reference to line numbers within the paragraph or subparagraph.</i>							
TYPED NAME, GRADE OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION		SIGNATURE	

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THE METRIC SYSTEM AND EQUIVALENTS

<p>Linear Measure</p> <p>1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches 1 Kilometer = 1000 Meters = 0.621 Miles</p> <p>Weights</p> <p>1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces 1 Kilogram = 1000 Grams = 2.2 Pounds 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons</p> <p>Liquid Measure</p> <p>1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces</p>	<p>Square Measure</p> <p>1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches 1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet 1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles</p> <p>Cubic Measure</p> <p>1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet</p> <p>Temperature</p> <p>$5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}$ 212° Fahrenheit is equivalent to 100° Celsius 90° Fahrenheit is equivalent to 32.2° Celsius 32° Fahrenheit is equivalent to 0° Celsius $9/5 \text{ C}^{\circ} + 32 = \text{F}^{\circ}$</p>
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APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

To Change	To	Multiply By
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

