

## Scandinavian Airlines System

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POTABLE WATER SYSTEM - DESCRIPTION AND OPERATION

1. General

- A. The potable water system utilizes a water tank (or tanks) to store fresh water. The potable water is supplied to each galley unit, to each lavatory wash basin, and to each drinking fountain (if equipped). The potable water is also supplied to the lavatory toilets for use in the water flush cycle.
- B. Each lavatory and each galley is equipped with a water shutoff valve found just above the floor level in the related area. This valve will isolate the individual galley or lavatory from the rest of the system. Each lavatory wash basin has a faucet that will drain both the hot and the cold water. The faucets are self venting which allows automatic bleed of the air trapped in the system.
- C. AIRPLANES WITH SHUTOFF VALVES FOR LAVATORY SINK AND TOILET;  
The water shutoff valve will isolate the individual lavatory's sink and toilet from the rest of the system.
- D. AIRPLANES WITH SHUTOFF VALVES FOR LAVATORY SINK OR TOILET;  
Seperate water shutoff valves will isolate the individual lavatory's sink or toilet from the rest of the system.
- E. The supply tubes distribute fresh water from the water tank to the lavatories and the galleys. The drain tubes drain water from the water system to the outside of the airplane. The supply tubes are flexible teflon hoses with reinforced nylon covering. Stainless steel fittings and connectors are used at the junctions of the tubes. The supply tubes route from below the water tank to just below floor level. These tubes enter all the galleys and the lavatories from below or through the component side. The drain tubes are stainless steel and run from the galleys area, floor drains, and the lavatory wash basins to the drain masts. The drain tubes are installed between the waste tanks and the service panel.
- F. AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
The water fill fitting at the service panel is electrically heated to prevent freezing. For more information, refer to AMM 30-71-00.
- G. The drain masts are electrically heated to prevent freezing. For more information, refer to AMM 30-71-00.
- H. The water supply and the drain lines, found in the area where freeze is possible, are electrically heated. These areas are also enclosed with insulation blankets. For more information, refer to AMM 30-71-00.
- I. The water heaters supply hot water to the wash basin in each lavatory. Each lavatory has a water heater in the hot water supply to the faucet.

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- J. AIRPLANES WITH LAVATORY WATER FILTERS;  
the charcoal water filters are installed in the cold water lines of each lavatory.
- K. The potable water system has a quantity indication system. This system will allow the flight crew and the ground service personnel to determine the water quantity in the water tank(s). A water quantity transmitter sends a signal to the water quantity indicators.
- L. The pressurization system for the water system tank forces water from the water tank(s) to the wet galleys and the lavatories. Primary pressurization of the water tank(s) is from the air compressor. The secondary pressurization comes from the engine bleed air, the APU, or the ground cart. The air compressor is outboard and above the right main water tank. The air filters clean the air before it enters the water system and the check valves stop airflow out of the system. A pressure relief valve prevents the system pressure from exceeding 60 psi. A pressure switch will control the operation of the air compressor.
- M. For more details on the Potable Water system, refer to these wiring diagrams and functional schematics:
  - SSM 38-10-01: POTABLE WATER
  - SSM 38-12-01: POTABLE WATER COOLER
  - SSM 38-13-01: LAVATORY WATER HEATERS
  - WDM 38-12-11: POTABLE WATER COOLER
  - WDM 38-13-11: LAVATORY WATER HEATERS
  - WDM 38-14-11: WATER QUANTITY INDICATION
  - WDM 38-14-12: POTABLE WATER PRESSURE SYSTEM
  - WDM 38-15-11: POTABLE WATER PRESSURE SYSTEM

2. Water Tank (Fig. 1)

- A. The potable water system has two water tanks that contain clean water. These airplanes have one 120 gallon (454 liter) right main tank and one 45 gallon (170 liter) auxiliary tank.

The main tank is located aft of the aft bulk cargo compartment behind the bulkhead lining. The auxiliary tank is located to the right of the aft bulk cargo compartment behind the sidewall lining. Each tank has its longitudinal axis in the forward and aft direction.

The right main tank is supported by tie-rods attached to the STA 1562 and 1582 main deck floor beams. The right main tank is centered on RBL 42. A horizontal brace installed on the aft end of the water tank will stop the tank movement from side to side. A shear pin found at the forward end of the tank will stop the forward and the aft movement.

The auxiliary tank is supported from below by tie-rods attached to the STA 1439 and 1461 body frames and is centered on RBL 76. The mount brackets installed on the frames provide two outboard support points for the tank. The rods bolt to the frames below the tank and connect to the metal bands on the tank to provide inboard vertical support. The two frames at the mount bracket and the horizontal rod provide support for the water tank movement in the forward and aft direction.

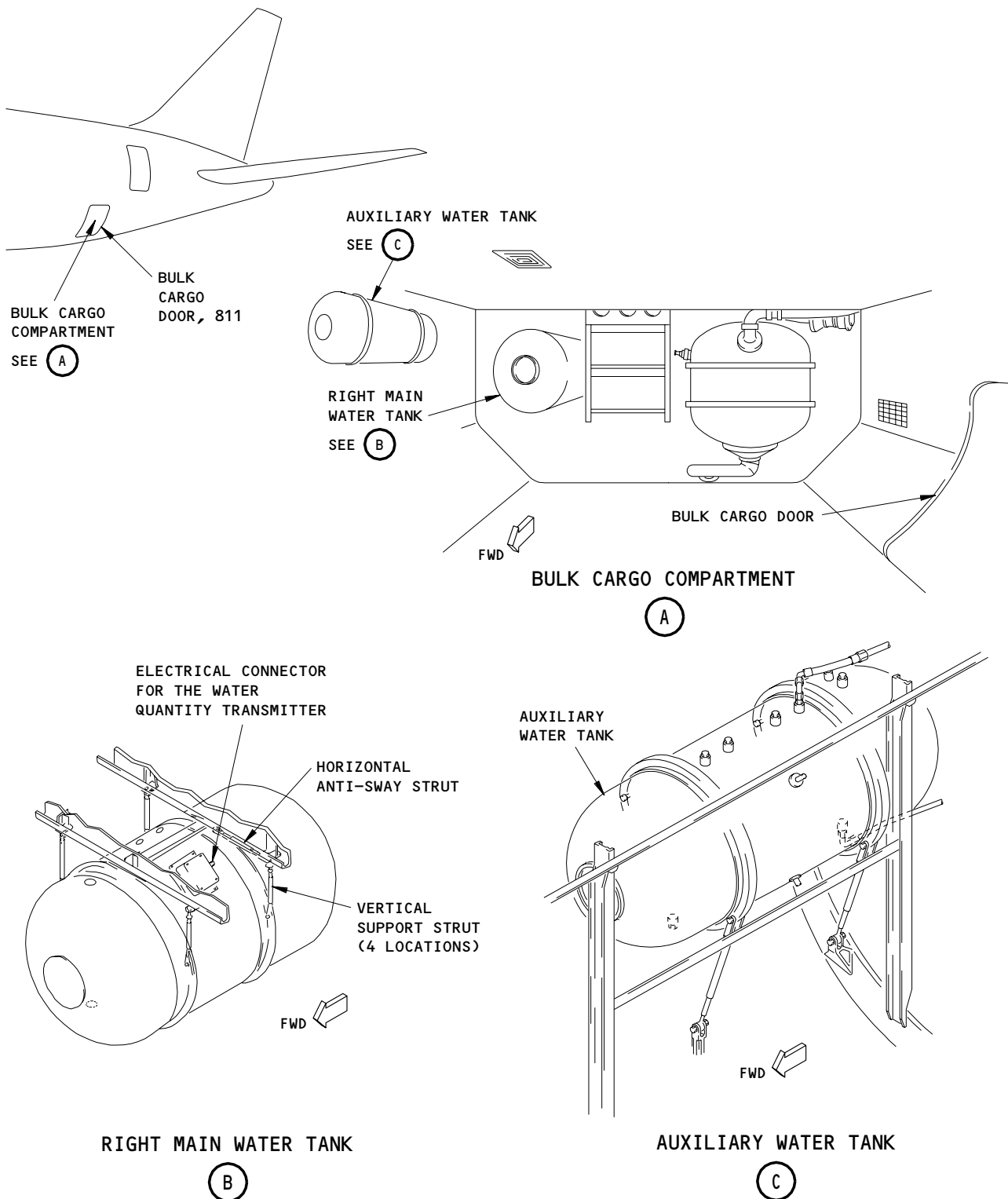
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Potable Water Tanks  
Figure 1

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- B. The main water tank(s) is an ABS liner covered with Fiberglass. The tank is cylindrical with rounded ends, and has removable stainless steel end plates. Two aluminum bands, which encircle the cylindrical part of the tank, are used as mount supports. The water tank capacity is 120 gallons (454 liters). A standpipe is installed to limit the useable water quantity to 109 gallons (412 liters).
  - C. The auxiliary water tank is an ABS plastic liner covered with fiberglass. The tank is cylindrical with rounded ends, and has removable metal end plates. Two bands, which encircle the cylindrical part of the tank, are used for mount supports. The tank capacity is 45 gallons (170 liters) with a useable water capacity of 40 gallons (151 liters).
  - D. 767-200,767-300 AIRPLANES WITH RIGHT MAIN AND AUX TANKS;  
The combined capacity of the right main and the auxiliary potable water tanks is 165 gallons (625 liters). The standpipe in the main and auxiliary tanks will limit the total water capacity to 149 gallons (565 liters).
  - E. AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
On the inboard side of the right main water tank is a mount pad for the quantity sensor. An air tube enters the top of the tank to pressurize the tank. There are two fittings on the outboard upper side of the water tank. One fitting connects the tank to the water fill line. The other fitting connects the tank to the overflow line. The tubes that attach to the bottom of the tank are used for the water distribution and the tank drain.
  - F. AIRPLANES WITH THE ONE-PORT SERVICE PANEL (COMBINED FILL/DRAIN);  
On the inboard side of the right main water tank is a mount pad for the quantity sensor. An air tube enters the top of the tank to pressurize the tank. There are two fittings on the outboard upper side of the water tank. One fitting connects the tank to the pressurization line and the other fitting connects the tank to the vent/overflow line. The tubes that attach to the bottom of the tank are used for the water distribution and the tank fill and drain.
3. Service Panels (Fig. 2)
- A. The forward drain panel for the water system is aft of the forward cargo door. This panel has a water drain connection and a drain valve handle. Turn the drain valve handle to drain the water from the forward potable water system tubes. These tubes connect the water tank(s) with the forward galleys and lavatories.
  - B. AIRPLANES WITH THE TWO-PORT AFT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
The aft service and drain panel is aft of the aft cargo door. The panel is used to fill the potable water tank(s) and to drain the tank(s), and aft galleys and lavatories. The aft service and drain panel has a water fill connection, a water drain connection, fill/overflow and drain valve handles, and a water quantity indicator.

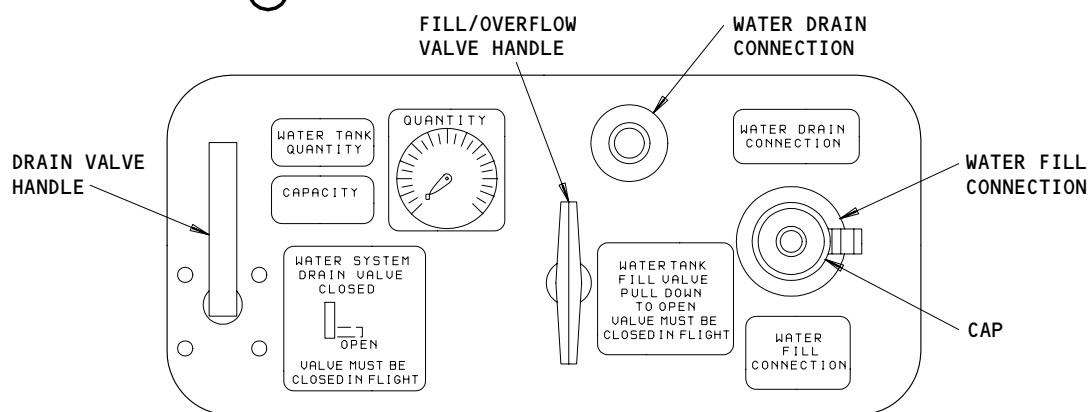
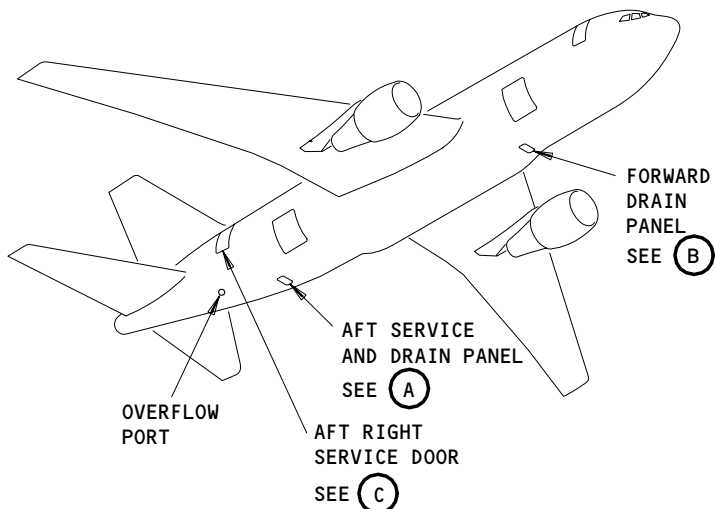
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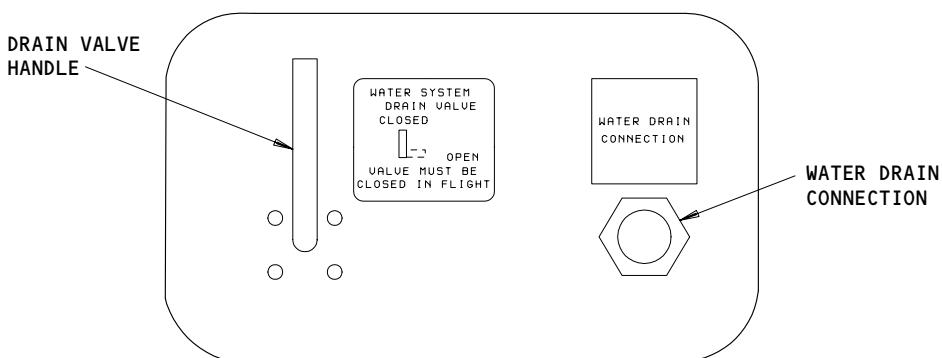
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AFT SERVICE AND DRAIN PANEL

(A)



FORWARD DRAIN PANEL

(B)

Service Panels  
Figure 2 (Sheet 1)

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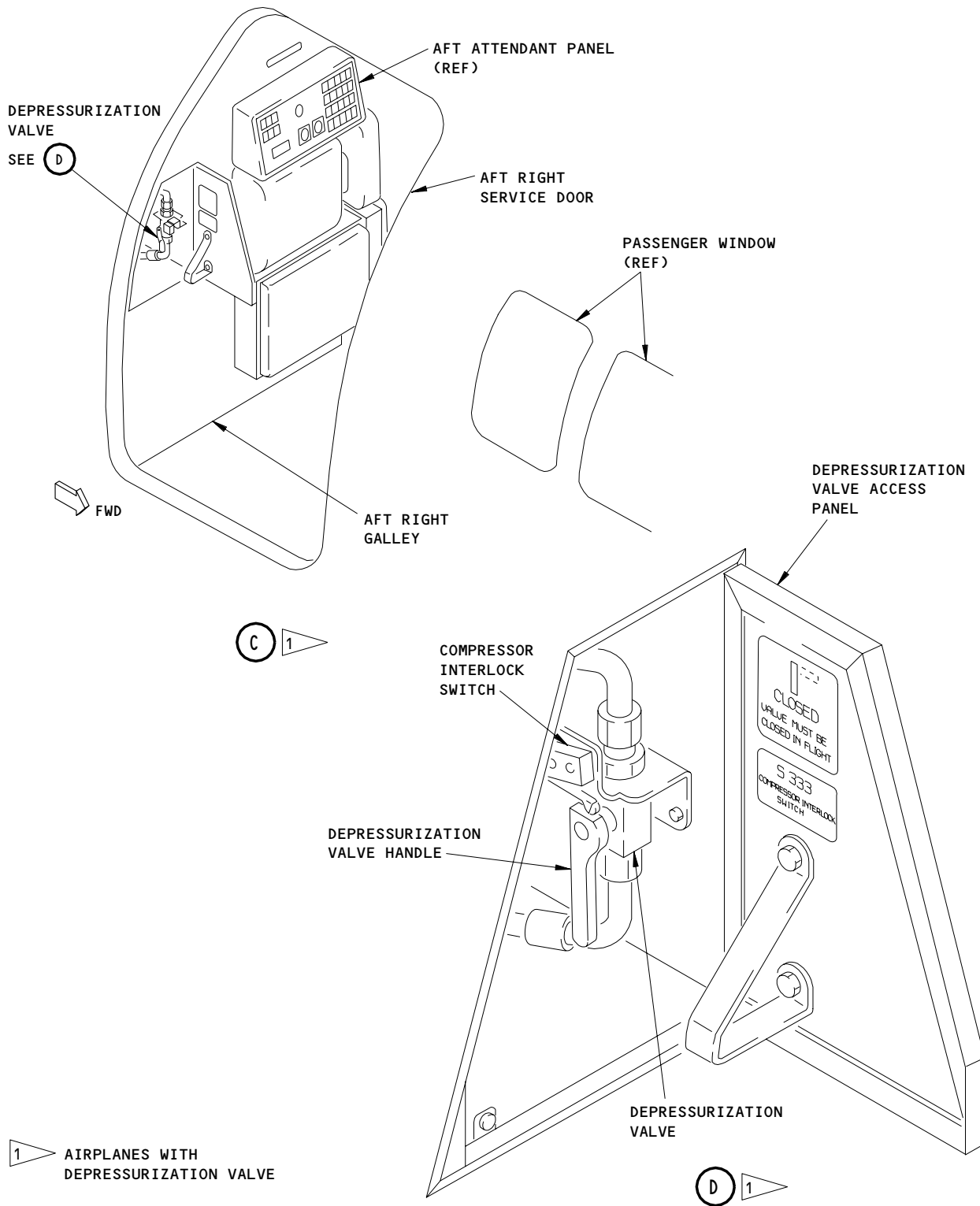
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1 AIRPLANES WITH DEPRESSURIZATION VALVE

Service Panels  
Figure 2 (Sheet 2)

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C. AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
The aft service/drain panel is aft of the aft cargo door. The panel is used to fill the potable water tank(s) and to drain the tank(s), and aft galleys and lavatories. The service/drain panel has a combined water fill/drain connection, a water fill/drain valve handle, a water quantity indicator, a fill/drain indicator light, and an air compressor interlock switch.

SAS  
SAS | (1) The water fill service panel door is equipped with holders for chlorine tablets. See Figure 7.

4. Fill/Overflow Valves (Fig. 3)

A. AIRPLANES WITH THE TWO-PORT AFT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
The fill/overflow valve has two functional modes. The service mode is used to fill the water tank(s). When open the fill/overflow valve will direct the water from the service panel to the water tank(s) and to vent system pressure. When the valve is closed the water will flow from the service panel to the overflow tube. This is the operational mode.

(1) The fill/overflow valve is found above the right main water tank. The valve has four ports to control the flow of the water through the water system. The valve is mechanically controlled from the service panel.

5. Vent/Overflow Valve (Fig. 3)

A. AIRPLANES WITH THE ONE-PORT SERVICE PANEL (COMBINED FILL/DRAIN);  
The vent/overflow valve has two functional modes. The FILL/DRAIN (or service) mode is used to fill or drain the water tanks. The service mode starts when a service panel access door is opened. Opening the service panel door releases the plunger switch (which also serves as the air compressor interlock switch), which energizes the overflow valve control relay, and the vent/overflow valve opens (Fig 7). When the vent/overflow valve opens, the water fill power monitoring light on the service panel lights. When the power monitor is lighted, you may fill or drain the potable water system.

Closing the service panel door closes the plunger switch. This deenergizes the overflow valve control relay and the vent/overflow valve closes. This is the FLIGHT (or operational) mode.

The vent overflow valve has a manual override lever. The manual override lever may be used to open or close the valve if the actuator motor fails or electrical power is not available.

(1) The vent/overflow valve is found above the right main water tank. The valve has two ports to control the flow of water through the potable water system. The valve is electrically controlled by a plunger switch on the water service panel door and the vent overflow valve control relay.

6. ALL SAS AIRPLANES;  
Depressurization Valve (Fig. 2)

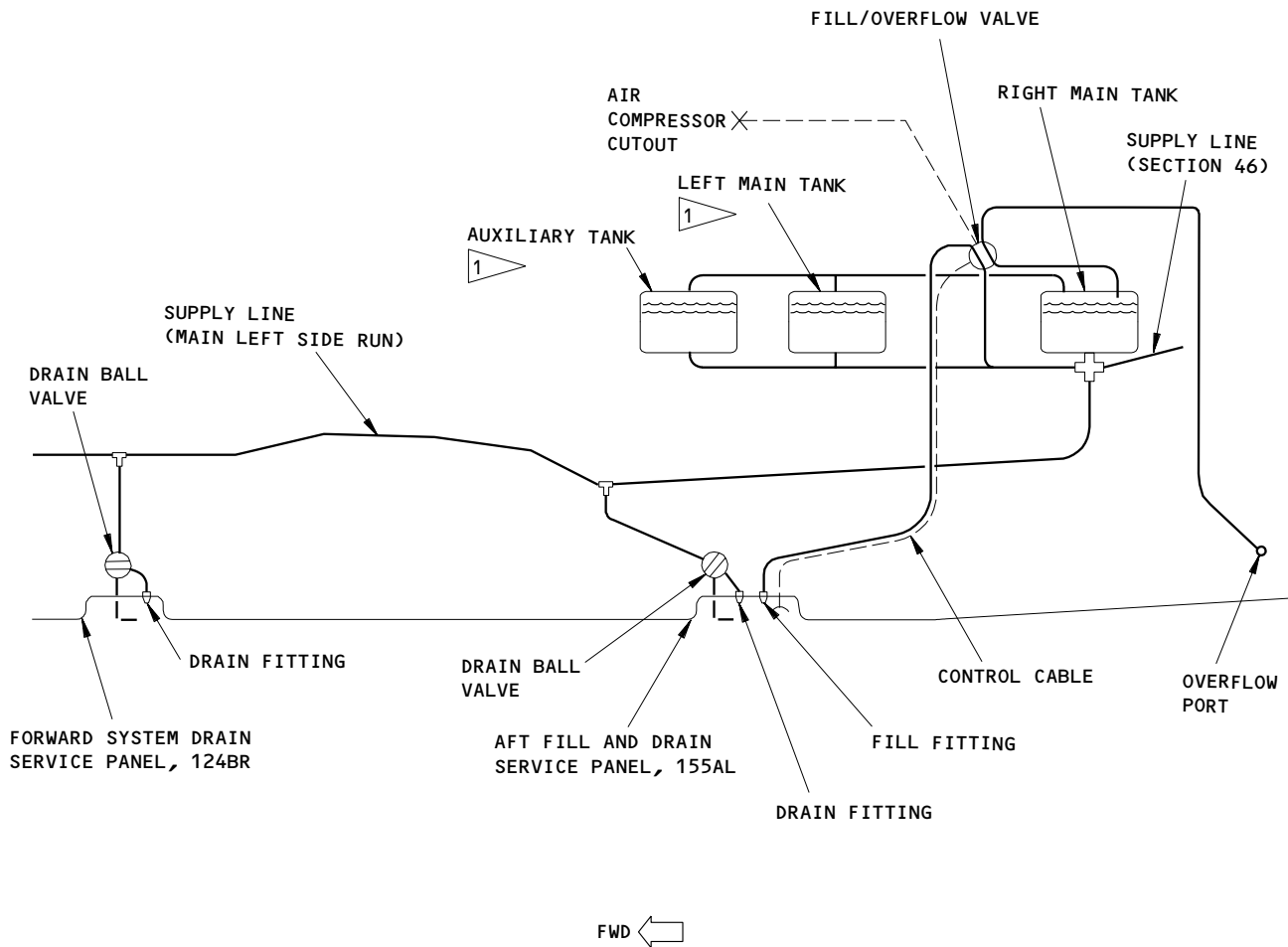
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WATER FILL VENT/DRAIN LAYOUT

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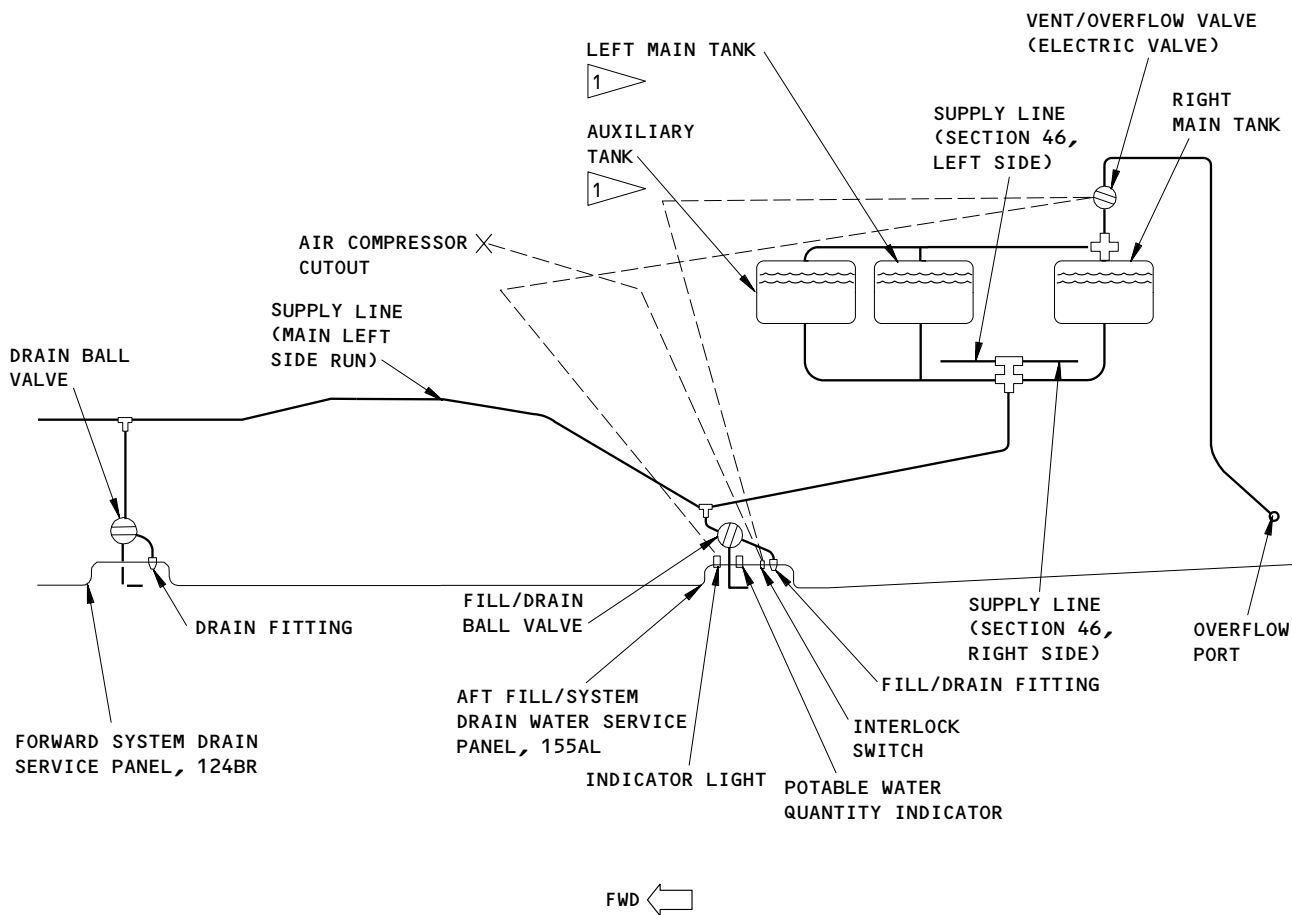
Fill/Overflow Valve  
Figure 3 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITH AFT SERVICE PANEL  
WITH TWO PORTS (FILL AND DRAIN)

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WATER FILL VENT/DRAIN LAYOUT

Vent/Overflow Valve  
Figure 3 (Sheet 2)

EFFECTIVITY  
AIRPLANES WITH AFT SERVICE PANEL  
WITH ONE PORT (COMBINED FILL/DRAIN)

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- A. The water supply tubes in the passenger compartment are protected from freezing when the airplane is on the ground by a manual valve system. This valve system will allow water to drain below the cabin floor. The valve system consists of a vent valve and a compressor interlock switch. The valve is installed outboard of the aft right attendant panel inside the airplane. When you open the valve the air compressor will turn off and the air pressure will vent from the potable water tank. This will allow the water to drain below the passenger compartment floor. The water supply tubes below the passenger compartment floor are installed with heater tapes to provide freeze protection.

7. Compressor Interlock Switches

- A. AIRPLANES WITH THE TWO-PORT AFT SERVICE PANEL (SEPARATE FILL AND DRAIN); The fill/overflow valve has a compressor interlock switch. When you turn the fill/overflow valve to open, the interlock switch will open and stop the operation of the air compressor. When the fill/overflow valve is closed, the interlock switch will close and energize the air compressor.
  - (1) AIRPLANES WITH DEPRESSURIZATION VALVE;  
the depressurization valve also has a compressor interlock switch.
- B. AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); The water service panel has a compressor interlock switch. When you open the service panel door, the interlock switch will open and stop the operation of the air compressor. When the service panel door is closed, the interlock switch will close and energize the air compressor system.

8. AIRPLANES WITH LAVATORY CHARCOAL WATER FILTERS;

Water Filter

- A. Each lavatory has a filter installed in the cold water line to remove impurities. The filter consists of a two piece stainless steel case that utilizes a V-band type clamp to join the two half cases. The case has threaded fittings at both the inlet and outlet connections. The filter case contains a replacable filter cartridge. The cartridge uses activated charcoal as its filtering material.

9. Water Heaters (Fig. 4)

- A. Each lavatory has a water heater in the supply line to the hot water faucet. Each heater is a three-pint tank with three 140-watt heating elements. The heaters get 115V AC power from the left miscellaneous electrical equipment panel, P36 and the right miscellaneous electrical equipment panel, P37. The ON-OFF power switch is normally ON. This illuminates the indicator light and allows the water heater to cycle on and off automatically until the power switch is turned OFF.
- B. WATER HEATERS WITH THE TEMPERATURE SELECT SWITCH;  
The temperature select switch is on the bottom of the water heater. The temperature select switch adjusts the control thermostat to give water that can be heated to one of these temperature ranges. The ranges are: 101°F to 109°F (LOW), 111°F to 119°F (MED) and 121°F to 129°F (HIGH). If the control thermostat fails in the closed position, the overheat switch will cut power to the heater circuit when the temperature reaches approximately 170°F.

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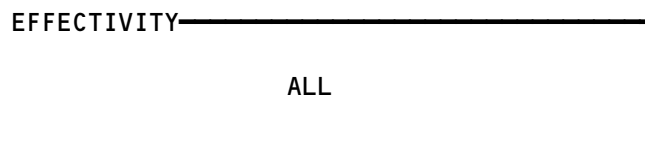
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Figure 4



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- C. WATER HEATERS WITHOUT THE TEMPERATURE SELECT SWITCH;  
The water heater will automatically heat the water to the temperature of approximately 125°F. The control thermostat opens the heater circuit when the temperature goes above 125°F and closes when the temperature goes below 125°F. If the control thermostat does not open at 125°F, the overheat switch will cut power to the heater circuit when the temperature reaches approximately 195°F.
- D. When the overheat switch opens, the indicator light goes out and the heater element circuit opens. An overheat condition requires manually resetting the overheat switch. Removing the top cover of the water heater, and depressing the overheat switch reset button closes the heater element circuit. If the pressure in the water heater reaches 140 psi, the pressure relief valve, on the side of the water heater, opens. The valve relieves pressure to about 130 psi before closing.

10. Water Quantity Transmitter (Fig. 5)

- A. The water quantity transmitter is a capacitance type transmitter. It is powered by 28v dc from the overhead circuit breaker panel, P11, in flight and from the APU/EXT power circuit breaker panel, P34, while the airplane is on ground power. The transmitter receives signals from a water quantity sensor which is inside the water tank wall behind the teflon liner. The transmitter sends signals to the water quantity indicators. A banana plug electrically connects the transmitter to the quantity sensor. The quantity sensor has two connections, either of which can connect to the transmitter. If one connection is not usable, the plug can be reinstalled on the mounting pad 180 degrees from the original position to engage with the sensor secondary connection.
  - (1) The water quantity transmitter is installed on the inboard side of the right main water tank.

11. Water Quantity Indicators (Fig. 5)

- A. A potable water quantity indicator shows how much water is in the tank(s). The indicators get 28 volt dc power from the overhead circuit breaker panel, P11, in flight. While the airplane is on the ground the ground handling bus (GHB) supplies the electric power. The indicator is a 1.35 inch diameter gage.
- B. There are two quantity indicators. One indicator is on the aft attendant panel, and one is on the aft service and drain panel.

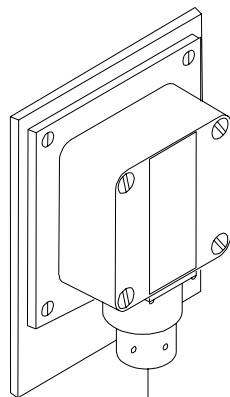
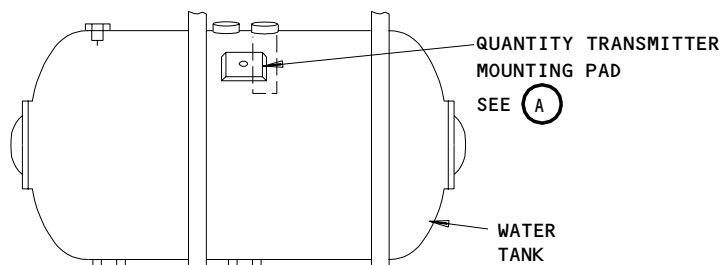
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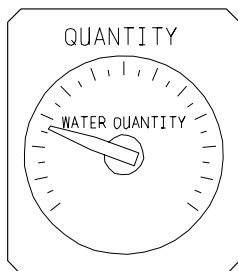
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TO QUANTITY INDICATOR  
SEE (B) (C)

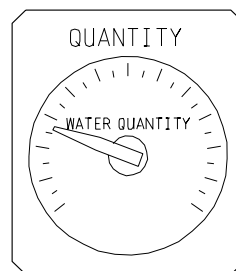
QUANTITY TRANSMITTER

(A)



AFT CABIN ATTENDANT CONTROL PANEL

(B)

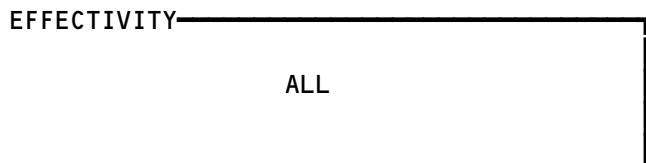


AFT SERVICE AND DRAIN PANEL

(C) 1

1 AS INSTALLED

Water Quantity Indication  
Figure 5



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- C. The scale ranges in 1/8th increments are used as follows:
  - 0 to 120 gallons (450 liters)      one main tank
  - 0 to 160 gallons (600 liters)      one main + one aux tank
  - 0 to 280 gallons (1050 liters)    two main + one aux tank
  - 0 to 240 gallons (900 liters)    two main tanksE to F in 1/8th increments is used on various configurations

12. Pressurization Components (Fig. 6)

- A. The potable water system is pressurized by air. Pressurized air enters the water tank from one of two sources, the air compressor, or the pneumatic bleed line. The pneumatic bleed air is supplied by one of three sources; engines, APU, or ground service air. Tank air pressure is limited to 60 psi by a pressure relief valve that, once opened will close at no more than 53 psi.
- B. The air compressor supplies the primary air pressure for the potable water system. The secondary pressure is supplied by the bleed air from the pneumatic system. The pressure switch is above the tank on the inlet air line. If the system pressure falls to approximately 30 psi, the pressure switch closes which will energize the air compressor. When the system air pressure is approximately 40 psi, the pressure switch opens and the compressor operation will stop.
- C. There are check valves in the air tubes to keep the air from flowing the incorrect direction.
- D. AIRPLANES WITH UNLOADER VENTS IN THE CHECK VALVES;  
the unloader vent in the check valve releases the pressure from the air compressor when the air compressor stops. This makes it easier for the air compressor to start.
- E. Air filters are installed in the air tubes and on the air compressor. These air filters keep dirt out of the potable water system. The air filters have a 10 micron filter side.

13. Operation

A. Functional Description

- (1) Electrical power for the potable water system is 28 volts dc except for the 115 volt ac air compressor. The system operation is automatic with power being controlled by the pressure switch and the compressor interlock switches. The pressure switch and compressor interlock switches are in series and control the air compressor operation.

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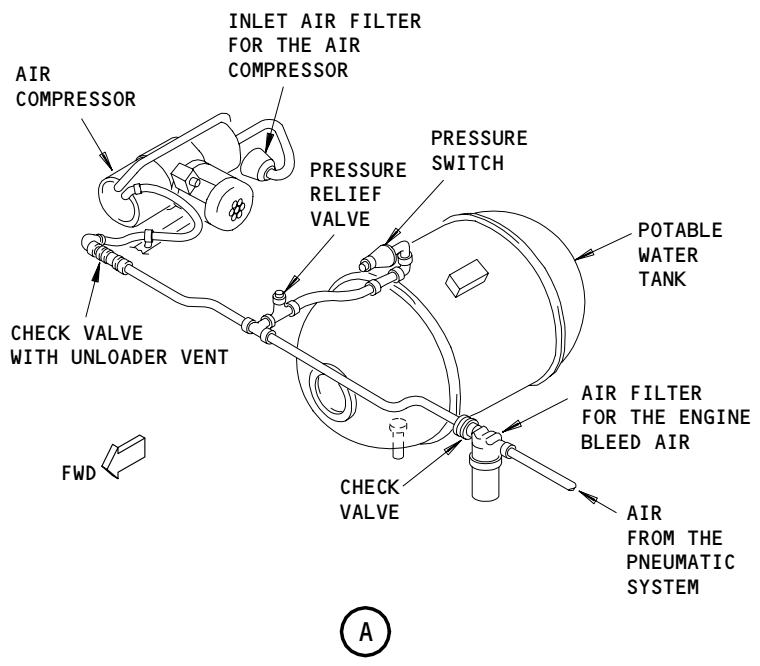
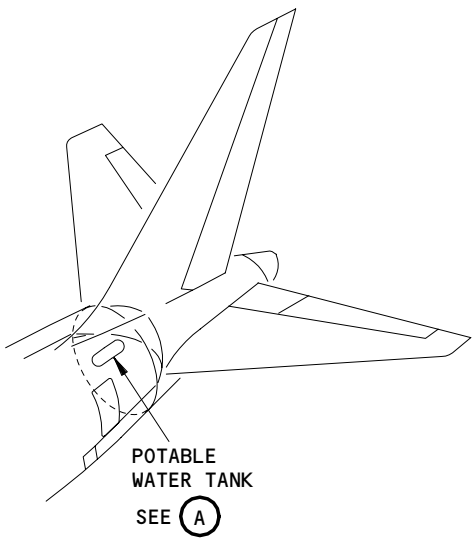
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Pressurization Components  
Figure 6

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# BOEING

767  
FAULT ISOLATION/MAINT MANUAL

## POTABLE WATER

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CIRCUIT BREAKER - ENT LTS POT WATER, C1355		1	FLT COMPT, P11 11U28	*
CIRCUIT BREAKER - AIR CPRSR WATER SYS, C397		1	119AL, MAIN EQUIP CTR, P33 33H6	*
CIRCUIT BREAKER - POT WATER/ENTRY LTS, C1354		1	119AL, MAIN EQUIP CTR, P34 34P11	*
CIRCUIT BREAKER - WATER/WASTE LAV WH SYS 1, C1365	5		119AL, MAIN EQUIP CTR, P36 36D7	*
WATER/WASTE WTR HTR LAV SYS 1, C1365	6	1	36E7	*
CIRCUIT BREAKER - WATER/WASTE LAV WH SYS 2, C1366	5	1	119AL, MAIN EQUIP CTR, P37 37H7	*
WATER/WASTE WTR HTR LAV SYS 2, C1366	6	1	37E7	*
COMPRESSOR - AIR, M142		1	811, AFT OF BULK CARGO COMPT	38-15-01
FAUCET - LAVATORY WASHBASIN	1	4	LAV	38-11-06
FAUCET - LAVATORY WASHBASIN	2	4	LAV	38-11-06
FILTER - AIR	3	2	811, AFT OF BULK CARGO COMPT	38-15-02
FILTER - AIR	4	2	811, AFT OF BULK CARGO COMPT	38-15-02
FILTER - WATER	2	4	LAV, BELOW WASHBASIN	38-10-00
HEATER - WATER, M8	1	4	LAV, BELOW WASHBASIN	38-13-01
HEATER - WATER, M8	2	4	LAV, BELOW WASHBASIN	38-13-02
INDICATOR - WATER QUANTITY, N108		3	155AL, AFT SVC AND DRAIN PANEL	38-14-02
INDICATOR - WATER QUANTITY, YBIN1		2	AFT ATTENDANT STA, P22	38-14-02
MUFFLER - DRAIN LINE	1	4	LAV, BELOW WASHBASIN	38-10-00
MUFFLER - DRAIN LINE	2	4	LAV, BELOW WASHBASIN	38-10-00
RELAY - (FIM 31-01-49/101) WATER PRESS SYS, K6 WATER SYS 28V PWR, K174			822, AFT CARGO DOOR, E6 RACK, P49	
SWITCH - COMPRESSOR INTERLOCK, S333	1	2	AFT ATTENDANT STA	38-15-03
SWITCH - COMPRESSOR INTERLOCK, S553		1	811, AFT OF BULK CARGO COMPT	38-15-03
SWITCH - PRESSURE ACTUATED COMPRESSOR, S332		2	811, AFT OF BULK CARGO COMPT	38-15-05
TANK - POTABLE WATER, AUXILIARY		1	811, BULK CARGO COMPT SIDEWALL	38-11-01
TANK - POTABLE WATER, MAIN		1	811, AFT OF BULK CARGO COMPT	38-11-01
TRANSMITTER - WATER QTY, T167		1	811, AFT OF BULK CARGO COMPT	38-14-01
VALVE - FILL/OVERFLOW		1	811, AFT OF BULK CARGO COMPT	38-11-03
VALVE - PRESSURE RELIEF		2	811, AFT OF BULK CARGO COMPT	38-15-06

\* SEE THE WDM EQUIPMENT LIST

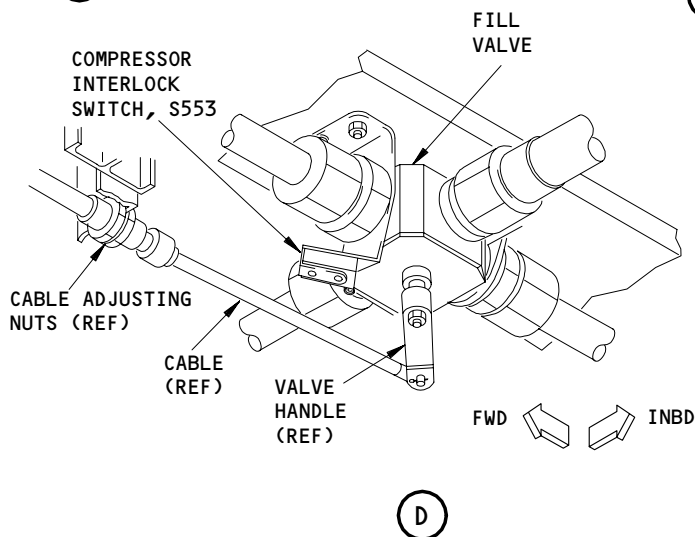
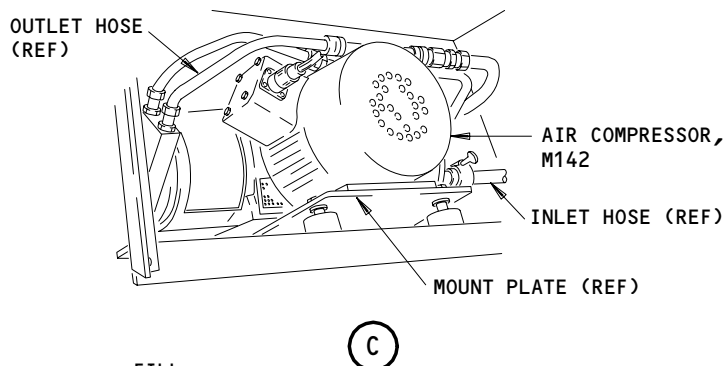
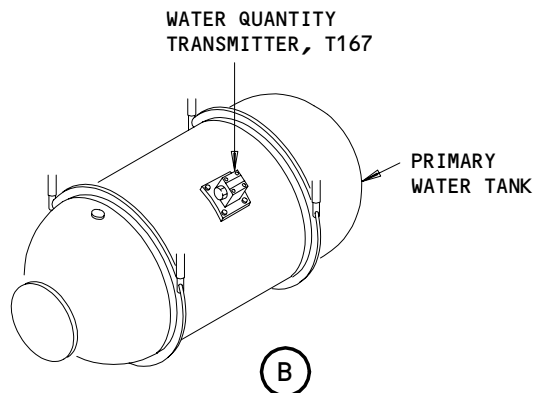
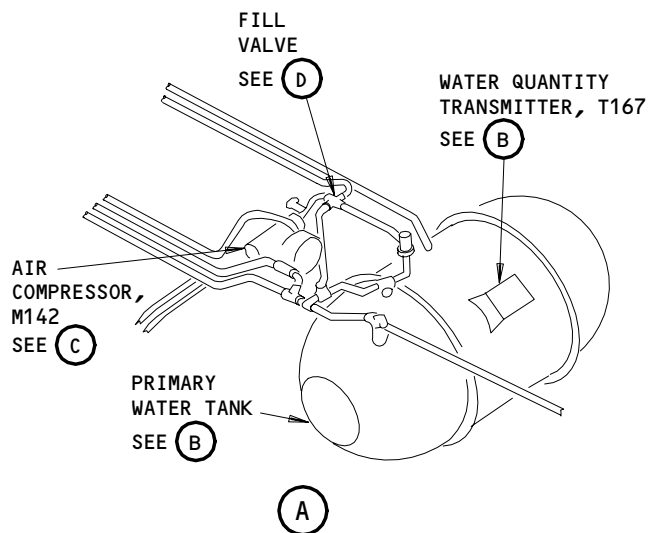
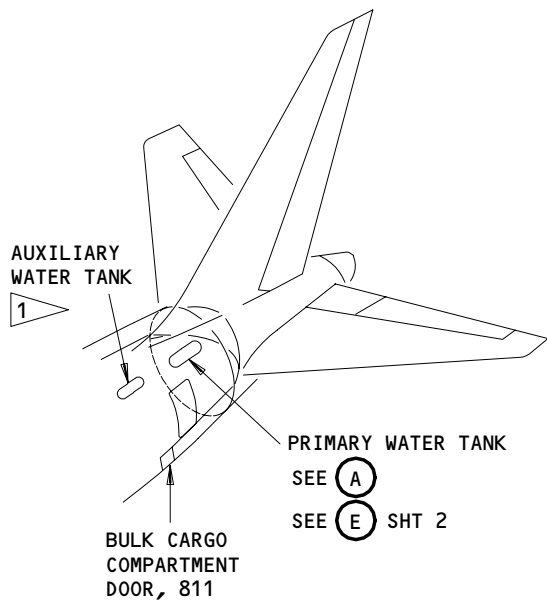
- 1 ALL SAS AIRPLANES
- 2 ALL MTH AIRPLANES
- 3 SAS 050, 051, 150-155, 162-165 MTH 275, 276
- 4 ALL EXCEPT SAS 050, 051, 150-155, 162-165;  
ALL EXCEPT MTH 275, 276
- 5 SAS 001-167;  
MTH 275-280
- 6 SAS 168-999;  
MTH 281-999

Potable Water - Component Index  
Figure 101

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1 AIRPLANES WITH AN AUXILIARY WATER TANK

Potable Water - Component Location  
Figure 102 (Sheet 1)

EFFECTIVITY	ALL

**38-10-00**

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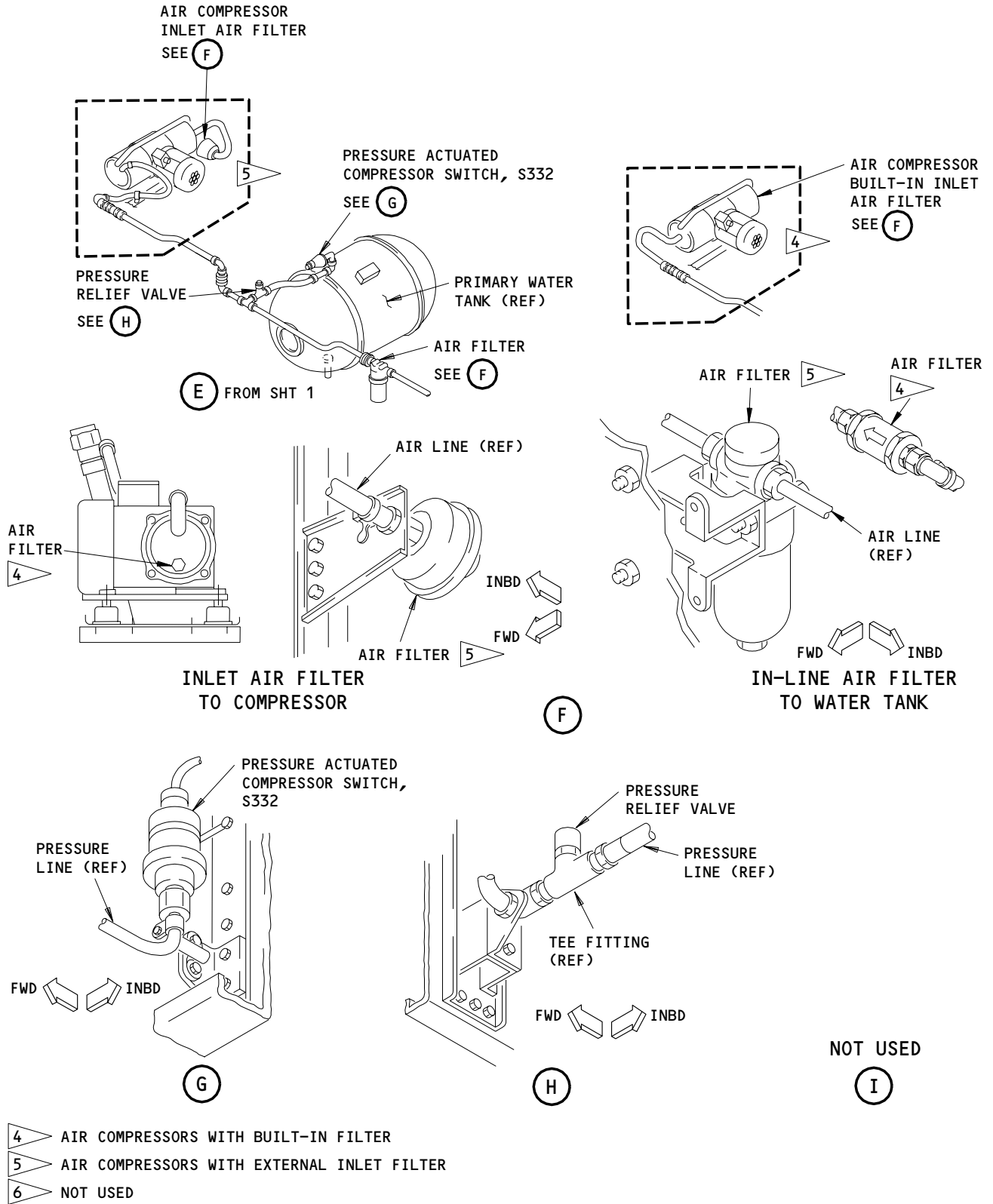
Page 102  
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# BOEING

## 767

### FAULT ISOLATION/MAINT MANUAL



Potable Water - Component Location  
Figure 102 (Sheet 2)

EFFECTIVITY	ALL
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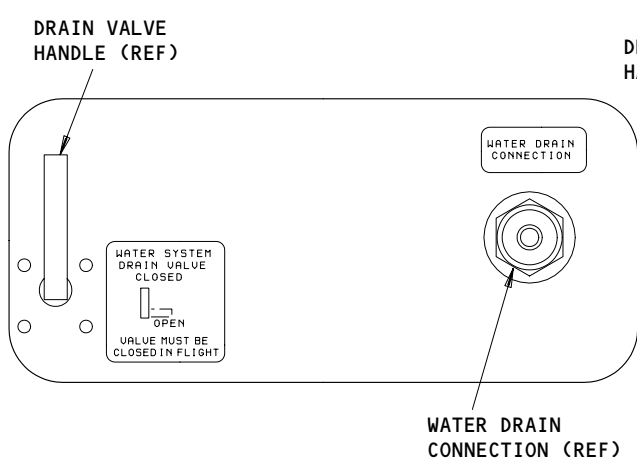
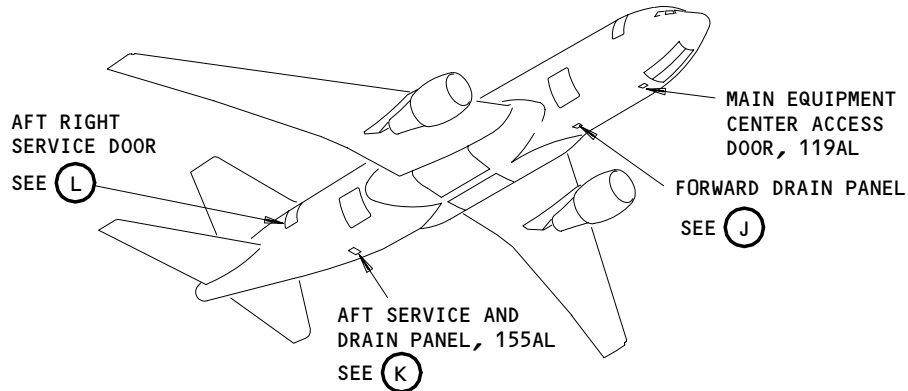
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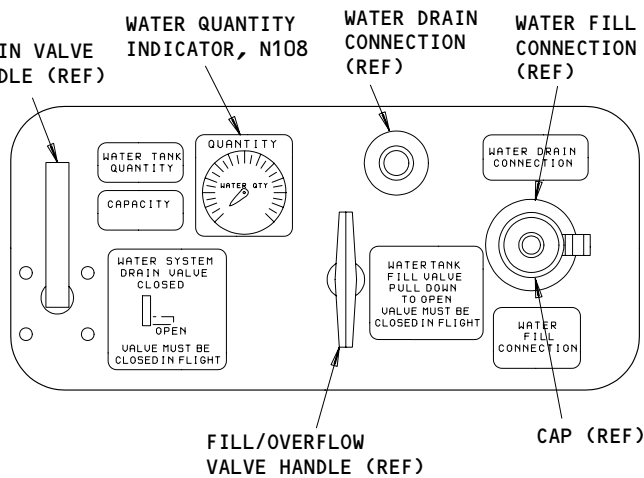
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**BOEING**  
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FAULT ISOLATION/MAINT MANUAL



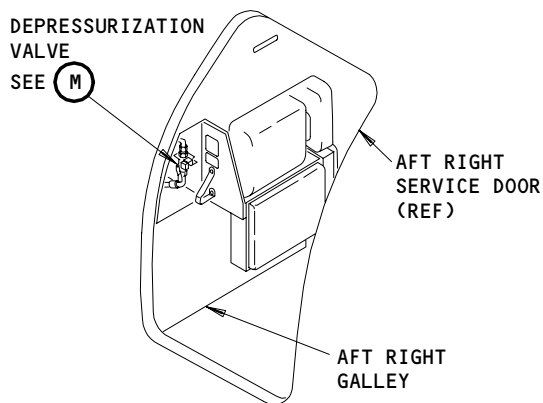
**FORWARD DRAIN PANEL**

**(J)**



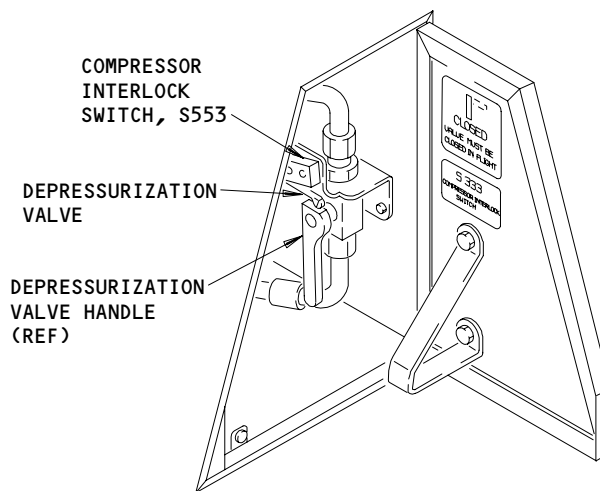
**AFT SERVICE AND DRAIN PANEL**

**(K)**



**AFT RIGHT SERVICE DOOR**

**(L)**



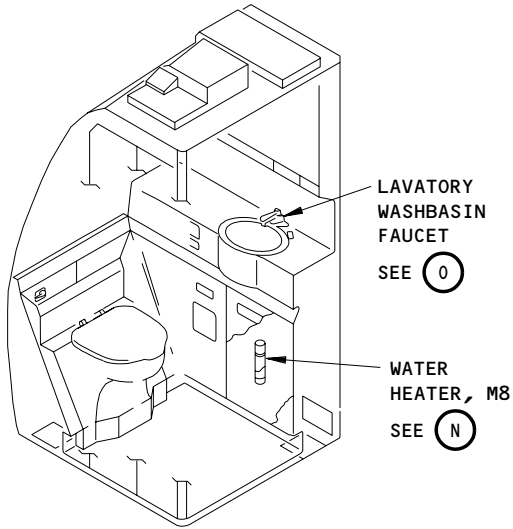
**DEPRESSURIZATION VALVE**

**(M)**

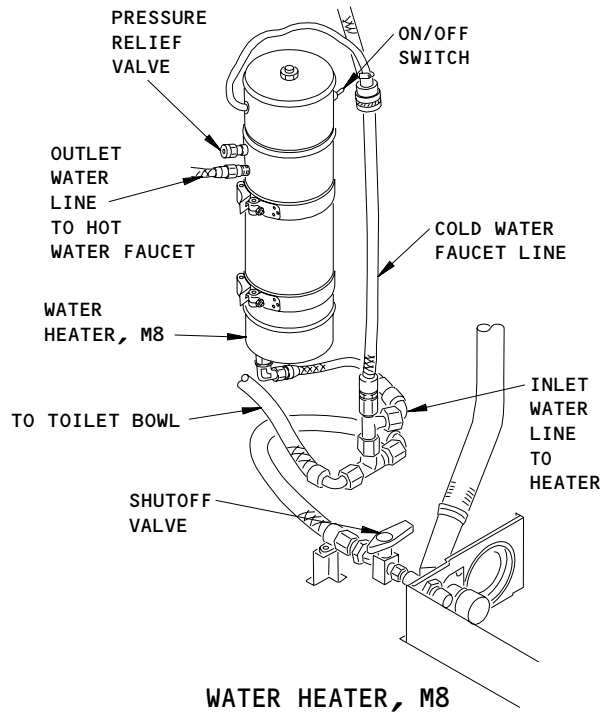
**Potable Water - Component Location  
Figure 102 (Sheet 3)**

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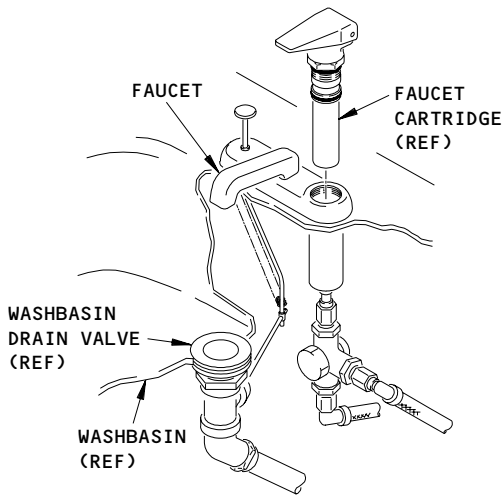
**38-10-00**



**LAVATORIES  
(EXAMPLE)**

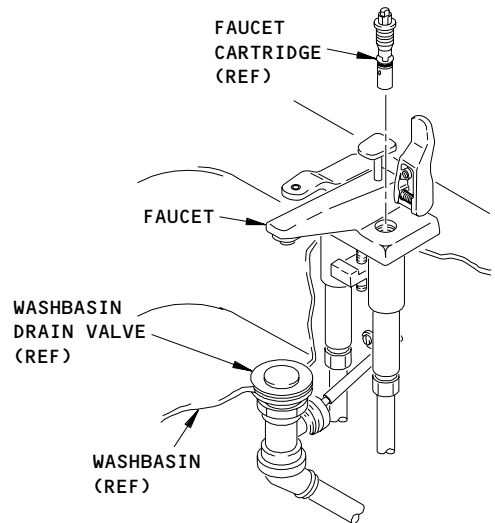


(N)



**LAVATORY WASHBASIN FAUCET**

(0) 2



**LAVATORY WASHBASIN FAUCET**

(0) 3

- 2 ALL SAS AIRPLANES
- 3 ALL MTH AIRPLANES

Potable Water - Component Location  
Figure 102 (Sheet 4)

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POTABLE WATER SYSTEM – MAINTENANCE PRACTICES

1. General

- A. This procedure contains these tasks:
- (1) Release the pressure in the potable water system.
  - (2) Pressurize the potable water system.
  - (3) Disinfect the potable water system.
  - (4) Manually clean the potable water tank.

TASK 38-10-00-042-001

2. Release the Pressure from the Potable Water System

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 36-00-00/201, Pneumatic – General
- (4) AMM 52-36-00/001, Bulk Cargo Door
- (5) AMM 52-49-00/001, Exterior Service Doors

B. Access

- (1) Location Zones
  - 119/120 Main Equipment Center
  - 211/212 Control Cabin
- (2) Access Panel
  - 124BR Potable Water Drain Panel (Forward)
  - 155AL Potable Water Service and Drain Panel (Aft)

C. AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
Release Pressure from the Potable Water System

S 862-002

- (1) Supply electrical power (AMM 24-22-00/201).

S 862-003

- (2) Remove pneumatic power (AMM 36-00-00/201).

S 862-004

- (3) Open these circuit breakers, and attach a DO-NOT-CLOSE tag:
  - (a) On the overhead panel, P11:
    - 1) 11U28, ENT LTS/POT WATER (or POT WATER)
  - (b) On the APU external power panel, P34:
    - 1) 34P11, POTABLE WATER/ENTRY LTS (or WATER QTY/PRES)

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MAINTENANCE MANUAL

- (c) On the forward miscellaneous electrical equipment panel, P33:
  - 1) 33H6, WATER SYS AIR CPRSR
- (d) On the left miscellaneous electrical equipment panel, P36:
  - 1) 36D6 and/or 36D7 or 36E7, LAV WATER HTR (SYS 1)
- (e) On the right miscellaneous electrical equipment panel, P37:
  - 1) 37H7 or 37E7, LAV WATER HTR (SYS 2)

S 042-010

- (4) ALL MTH AIRPLANES;

Do these steps:

- (a) Open the door for the potable water service panel and pull the handle for the WATER TANK FILL VALVE down.

NOTE: This opens the WATER TANK FILL VALVE.

- (b) When no more air comes out of the overflow port, close the WATER TANK FILL VALVE.

S 042-011

- (5) ALL SAS AIRPLANES;

Do these steps:

- (a) Open the access door for the pressurization valve (on the aft right galley) and move the handle for the depressurization valve to the OPEN position.
- (b) When no more air comes out of the overflow port, move the handle for the pressurization valve to the CLOSED position.

- D. AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); Release Pressure from the Potable Water System (when electrical power is available)

S 862-222

- (1) Supply electrical power (AMM 24-22-00/201).

S 862-223

- (2) Remove pneumatic power (AMM 36-00-00/201).

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- S 012-224
- (3) Open the door for the potable water service panel (AMM 52-49-00/001).
- S 042-229
- (4) Turn the WATER SYSTEM FILL/DRAIN VALVE to OPEN.
- S 712-232
- (5) Make sure the indicator light is on.
- S 042-235
- (6) When no more air comes out of the overflow port, turn the handle for the WATER SYSTEM FILL/DRAIN VALVE to CLOSED.
- S 862-236
- (7) Open these circuit breakers, and attach a DO-NOT-CLOSE tag:
- (a) On the overhead panel, P11:
    - 1) 11U28, ENT LTS/POT WATER (or POT WATER)
  - (b) On the APU external power panel, P34:
    - 1) 34P11, POTABLE WATER/ENTRY LTS (or WATER QTY/PRES)
  - (c) On the forward miscellaneous electrical equipment panel, P33:
    - 1) 33H6, WATER SYS AIR CPRSR
  - (d) On the left miscellaneous electrical equipment panel, P36:
    - 1) 36D6 and/or 36D7 or 36E7, LAV WATER HTR (SYS 1)
  - (e) On the right miscellaneous electrical equipment panel, P37:
    - 1) 37H7 or 37E7, LAV WATER HTR (SYS 2)
- E. AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); Release Pressure from the Potable Water System (when electrical power is not available)
- S 012-014
- (1) Open the bulk cargo door (AMM 52-36-00/001).
- S 012-015
- (2) Remove the aft right bulkhead lining at the aft end of the bulk cargo compartment (AMM 25-52-01/401).
- S 042-016
- (3) Manually move the handle for the OVERFLOW VALVE to the open position.
- NOTE:** Without electrical power the indicator light on the potable water service panel will not come on.
- S 042-017
- (4) When no more air comes out of the overflow port, manually move the handle for the overflow valve to the closed position.

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S 422-104

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING COULD LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

(5) Install the aft right bulkhead lining (AMM 25-52-01/401).

S 412-019

(6) Close the bulk cargo door (AMM 52-36-00/001).

TASK 38-10-00-442-085

3. Pressurize the Potable Water System

A. References

- (1) AMM 12-14-01/301, Potable Water System - Servicing
- (2) AMM 24-22-00/201, Manual Control

(3) AMM 52-49-00/001, Exterior Service Doors

B. Access

(1) Location Zones

119/120	Main Equipment Center
211/212	Control Cabin

(2) Access Panel

124BR	Potable Water Drain Panel (Forward)
155AL	Potable Water Service and Drain Panel (Aft)

C. Pressurize the Potable Water System

**NOTE:** Electrical power is necessary to pressurize the airplanes with the one-port service panel (combined fill/drain valve).

S 862-145

- (1) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN); Make sure the handle for the WATER TANK FILL VALVE (on the potable water service panel) is pushed in.

S 862-146

- (2) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); Make sure the handle for the WATER SYSTEM FILL/DRAIN VALVE (in the potable water service panel) is turned to CLOSED.

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- S 612-022
- (3) If the potable water tank does not have water in it, fill the potable water tank with water (AMM 12-14-01/301).
- S 412-023
- (4) Close the door for the potable water service panel (AMM 52-49-00/001).
- S 862-026
- (5) ALL SAS AIRPLANES;  
Do these steps:
- (a) Make sure the depressurization valve, in the aft right galley sidewall, is closed.
  - (b) Close the access door for the depressurization valve, on the aft right galley.
- S 862-029
- (6) Supply electrical power (AMM 24-22-00/201).
- S 862-031
- (7) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
- (a) On the overhead panel, P11:
    - 1) 11U28, ENT LTS/POT WATER (or POT WATER)
  - (b) On the forward miscellaneous electrical equipment panel, P33:
    - 1) 33H6, WATER SYS AIR CPRSR
  - (c) On the APU external power panel, P34:
    - 1) 34P11, POTABLE WATER/ENTRY LTS (or WATER QTY/PRES)
- S 862-033
- (8) After the potable water system has become pressurized, remove the DO-NOT-CLOSE tags and close these circuit breakers:
- (a) On the left miscellaneous electrical equipment panel, P36:
    - 1) 36D6 and/or 36D7 or 36E7, LAV WATER HTR (SYS 1)
  - (b) On the right miscellaneous electrical equipment panel, P37:
    - 1) 37H7 or 37E7, LAV WATER HTR (SYS 2)

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TASK 38-10-00-672-035

4. Disinfect the Potable Water System

A. General

- (1) The intent of this task is to provide a solution of disinfectant to the potable water system that achieves a concentration of 100 ppm (parts per million). When preparing the disinfectant solution, the stabilized chlorine dioxide (Purogene) and the citric acid are both measured by volume (fluid ounces or liters).

B. References

- (1) AMM 12-14-01/301, Potable Water System  
(2) AMM 38-10-00/201, Depressurize/Pressurize Potable Water System

C. Consumable Materials

- (1) G00022 Compound, Water purifying Chlorine Dioxide (stabilized 2% solution) - Purogene or Oxine  
(2) B00637 Acid, Citric (crystals or powder), Commercially Available - A-A-59147  
(3) G50448 Acid, Citric 50% (liquid)

D. Access

(1) Location Zones

- 124 Area Below Forward Cargo Compartment (Right)  
155 Area Below Aft Cargo Compartment (Left)  
200 Upper Half of Fuselage

(2) Access Panel

- 124BR Potable Water Drain Panel (Forward)  
155AL Potable Water Service and Drain Panel (Aft)

E. Prepare to Disinfect the Potable Water System.

S 682-138

**WARNING:** DRAIN, OR USE THE POTABLE WATER SYSTEM A MINIMUM OF ONE TIME EACH THREE DAYS. IF YOU DO NOT DRAIN, OR USE THE WATER SYSTEM FREQUENTLY, BACTERIA CAN GROW IN THE WATER. IF YOU DRINK WATER WITH BACTERIA IN IT, ILLNESS CAN OCCUR.

- (1) Drain the potable water system (AMM 12-14-01/301).

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S 842-038

- (2) AIRPLANES WITH WATER FILTERS;  
Remove and discard the water filter cartridges (as installed) from the water tube in the lavatories, the galleys, and the drinking fountain.  
(a) Install the empty filter housing after you remove the filter cartridge.

S 842-100

- (3) In the galleys with a coffeemaker or water boiler, they may be disconnected, if desired.

NOTE: If coffeemakers and boilers are disconnected, and do not have individual shutoff valves, the lines must be capped. If the lines are capped, disinfectant may not enter the feeder line.

F. Disinfect the Potable Water System.

S 842-045

- (1) Fill the potable water system approximately half full with water (AMM 12-14-01/301). Use the water quantity gauge on the service panel.

NOTE: The filter cartridge should not be installed in the water service cart.

S 672-086

- (2) Make the disinfectant that follows:

NOTE: The disinfectant mixtures will provide the full system with a solution of chlorine dioxide at 100 parts per million.

- (a) Recommended disinfectant:  
1) Chlorine dioxide (stabilized 2%) and citric acid (crystals or powder)

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**WARNING:** DO NOT BREATHE THE CHLORINE DIOXIDE GAS. WHEN THE TWO CHEMICALS ARE MIXED, CHLORINE DIOXIDE GAS IS PRODUCED WHICH CAN CAUSE INJURY TO PERSONS IF THEY BREATHE THE GAS.

- a) AIRPLANES WITH RIGHT MAIN AND AUXILLIARY TANKS;  
(164 GAL CAPACITY);  
Mix the following amounts of chlorine dioxide with citric acid in a clean, closed plastic container:  
105 fluid ounces (3.10 liters) chlorine dioxide,  
13.1 fluid ounces (0.39 liter) citric acid (crystals or powder) or  
21.0 fluid ounces (0.62 liter) citric acid 50% (liquid).
- b) Use a clean instrument to mix the solution fully.
- c) Stop for 5 minutes (activation period).
- d) Add 5 gallons of water to the solution.

S 672-046

- (3) Add the disinfectant solution to the potable water system through the water fill connection at the potable water service panel.

S 672-047

- (4) Add water to the potable water system until full (AMM 12-14-01/301).

S 672-048

- (5) Pressurize the potable water system (AMM 38-10-00/201).

S 672-254

- (6) Open the forward-most lavatory and galley water faucets and let run for 8 minutes.

S 672-049

- (7) Open each of the other lavatory faucets and galley faucets in the potable water system.
  - (a) Let the water flow until the disinfectant appears at the faucets.

**NOTE:** The disinfectant may be noticeable by its slight yellow color.

S 672-148

- (8) If installed, open each of the coffemaker and water boiler valves in the galleys.
  - (a) Let the water flow until the disinfectant appears.

**NOTE:** The disinfectant may be noticeable by its slight yellow color.

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- S 672-139
- (9) Flush each toilet at least twice with a 15 second delay between flushes or until clear chlorinated water appears.
- S 172-261
- (10) Fill the remainder of the potable water system with water until it is full (AMM 12-14-01/301).
- S 672-101
- (11) Let the disinfectant stay in the potable water system for one hour.
- S 682-052
- (12) Release the pressure from the potable water system (AMM 38-10-00/201).
- S 682-053
- (13) Drain the potable water system (AMM 12-14-01/301).
- (a) Momentarily, open each of the lavatory and galley faucets and coffeemakers and water boiler valves to drain water in the lavatory and galley supply lines.
- G. Flush the Potable Water System with Clean Water.
- S 172-061
- (1) Fill the potable water system with clean water (AMM 12-14-01/301).
- S 172-062
- (2) Pressurize the potable water system (AMM 38-10-00/201).
- S 172-063
- (3) Open each of the lavatory and galley faucets, and coffeemaker and water boiler valves until water flows through each for a minimum of one (1) minute.
- S 172-150
- (4) Flush each toilet at least twice with 15 second delay between flushes.
- S 172-072
- (5) If the taste, odor, or color of the water is bad, do these tasks:
- (a) Drain the potable water system.
- (b) Do the Flush the Potable Water System with Clean Water, procedure again.
- H. Put the Airplane Back to its Usual Condition
- S 042-162
- (1) Release pressure from the potable water system (AMM 38-10-00/201).
- S 862-102
- (2) In the galleys that have a coffeemaker or water boiler, install the coffemaker or water boiler, if previously removed.

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- S 862-103
- (3) AIRPLANES WITH WATER FILTERS;  
Install a new water filter cartridge(s) (as installed) in the cold water tubes for the lavatory, the galley, and the drinking fountain.
- S 442-159
- (4) Pressurize the potable water system.
- S 862-160
- (5) Open each of the lavatory faucets until water flows for 15 seconds.
- S 792-161
- (6) AIRPLANES WITH WATER FILTERS;  
Make sure there is no leakage at the filters.
- S 612-089
- (7) Fill the potable water system with clean water (AMM 12-14-01/301).

TASK 38-10-00-142-163

5. Manually Clean the Potable Water Tank(s)

A. General

- (1) This task is used to manually clean a potable water tank. This should only be used when the disinfecting task is not effective. This task only cleans the water tank, not the entire potable water system. The normal process for maintenance of the potable water system is Disinfect the Potable Water System, AMM 38-10-00/201.

B. Equipment

- (1) For airplanes with YRC main (120 gallon) water tank, use 2MIT1A264-0281-1 - Adapter Plate for end cap (Yokohama Aerospace America).
- (2) For airplanes with YRC auxiliary (45 gallon) water tank, use 2MIT2A264-0812-1 - Adapter Plate for end cap (Yokohama Aerospace America).
- (3) Water service cart
- (4) Soft bristle brush with handle
- (5) Gloves
- (6) Utility knife
- (7) Soft mallet

C. Consumable Materials

- (1) G00022 Compound, Water purifying Chlorine Dioxide (stabilized 2% solution) - Purogene or Oxine
- (2) B00637 Acid, Citric (crystals or powder) - A-A-59147
- (3) B00402 Compound, Cleaning - MIL-C-87936

D. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 25-52-01/401, Bulkhead Lining
- (3) AMM 30-71-04/401, Potable water Tank Heater Blanket
- (4) AMM 36-00-00/201, Pneumatic Power
- (5) AMM 38-10-00/201, Potable Water System - Pressure Release

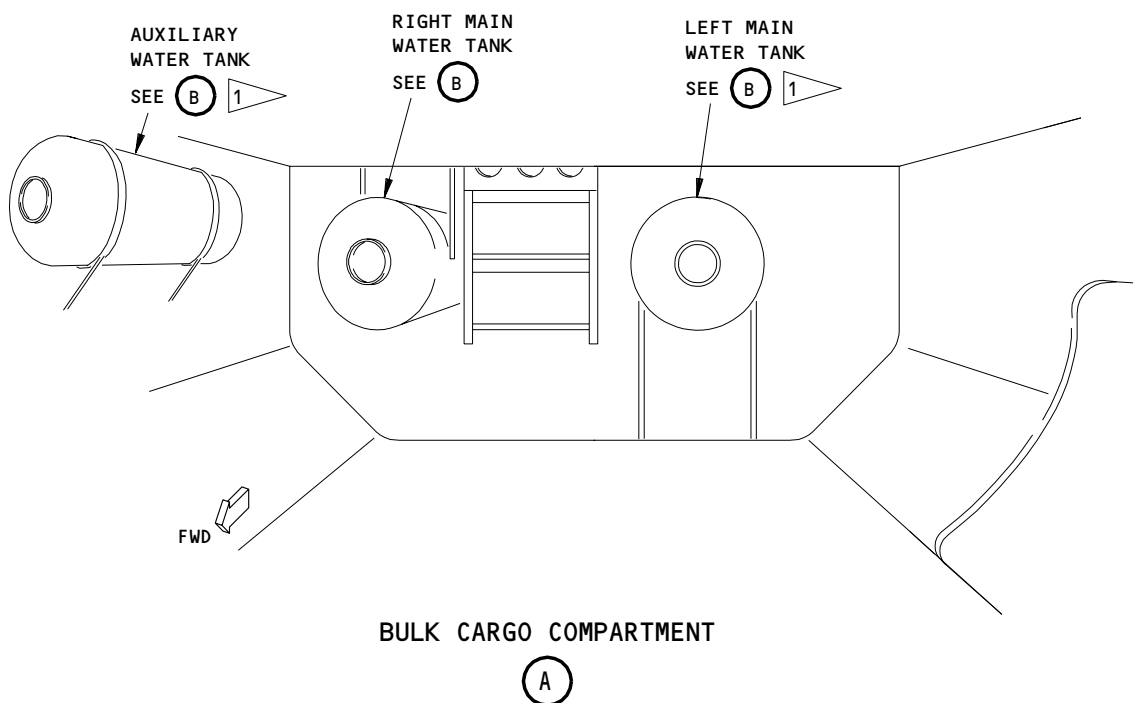
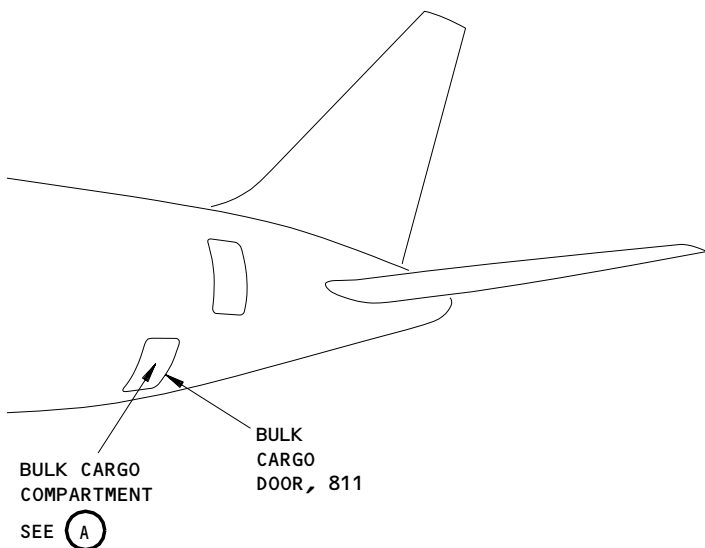
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1 IF/AS INSTALLED

Potable Water Tank Cleaning  
Figure 201 (Sheet 1)

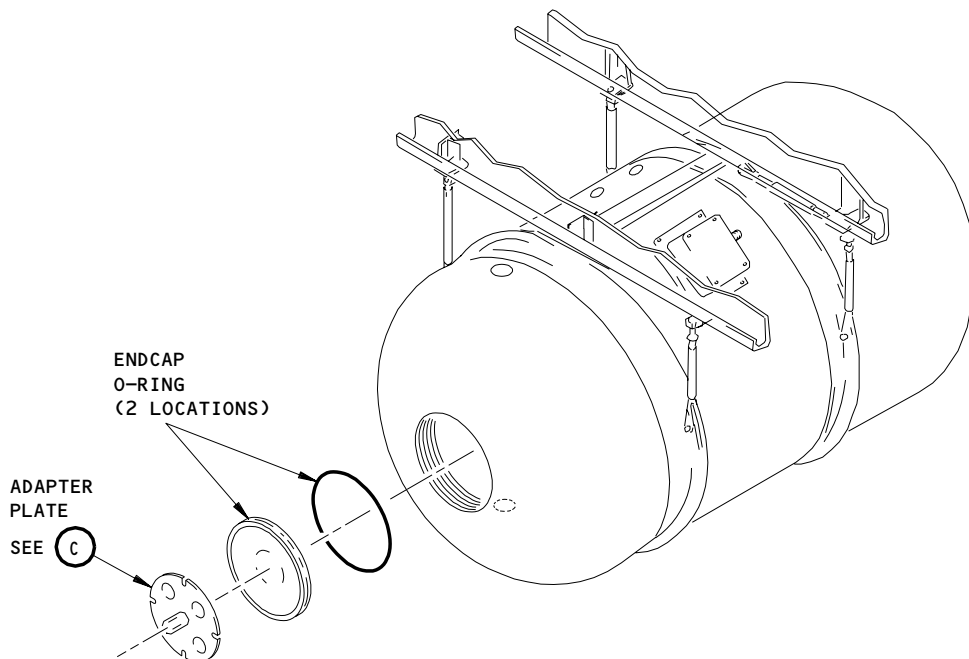
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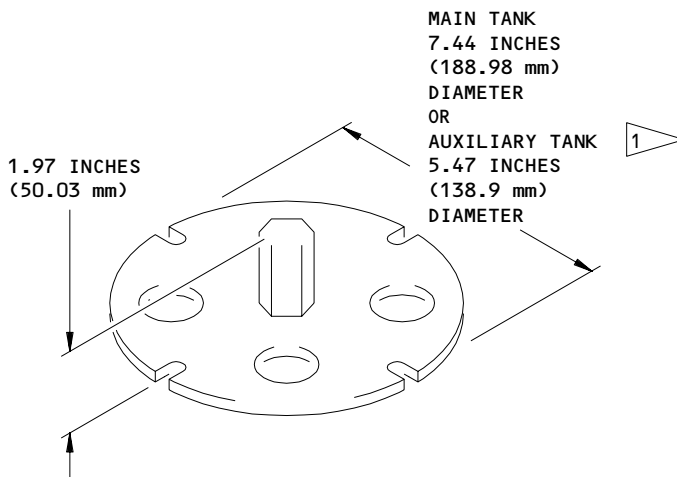
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WATER TANK  
(EXAMPLE)

(B)



ADAPTER PLATE

(C)

Potable Water Tank Cleaning  
Figure 201 (Sheet 2)

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- (6) AMM 52-36-00/001, Bulk Cargo Door
- E. Access
  - (1) Location Zone
    - 166 Area Aft of Bulk Cargo Compartment, Right
  - (2) Access Panel
    - 155AL Service Panel, Potable Water
    - 811 Bulk Cargo Door

F. Prepare to Clean Tank

- S 612-164
- (1) Drain the potable water system (AMM 12-14-01/301).
- S 872-189

**WARNING:** DEPRESSURIZE WATER TANK BEFORE OPENING TANK END CAP.  
IF THE TANK END CAP IS REMOVED PRIOR TO TANK DEPRESSURIZATION,  
THE TANK END CAP CAN INJURE MAINTENANCE PERSONEL.

- (2) To release the pressure from the potable water system, do this task:  
Potable Water System - Pressure Release (AMM 38-10-00/201).

- S 012-198
- (3) To get access to the potable water tank, open the bulk cargo door,  
811 (AMM 52-36-00/001).

- S 012-166
- (4) Remove the aft cargo compartment rear bulkhead liner  
(AMM 25-52-01/401).

- S 122-197
- (5) To access each end cap, do this task: Potable Water Tank Heater  
Blanket Removal (AMM 30-71-04/401).

G. Manually Clean the Water Tank.

- S 012-193
- (1) YRC OR TOLO WATER TANK (THREADED END CAPS);  
Do these steps to gain access to the inside of the water tank:
  - (a) Put the 2MIT1A264-0281-1 (Main Tank) or 2MIT2A264-0812-1 (Aux  
Tank) adapter plate in its position on the end cap(s) and then  
remove the end cap(s).
  - (b) Pull the end caps from the tank.

- S 672-168
- (2) Mix a disinfectant solution as follows:
  - (a) Mix 19 fluid ounces (0.57 liter) chlorine dioxide with 2.00  
ounces (56.6 grams) of citric acid in a 5 gallon (20 liter)  
plastic container.
  - (b) Mix thoroughly with a clean instrument.
  - (c) Let stand for 5 minutes to activate.

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(d) Add clean water to make 4 or 5 gallons of solution (16 to 20 liters).

S 672-170

(3) Put the mixture into the water tank.

S 672-171

(4) Clean the inside of the tank with a soft bristle brush.

S 682-173

(5) Drain the tank (AMM 12-14-01/301).

S 162-174

(6) Mix 16 fluid ounces (0.5 liter) of detergent and 2.5 gallons (10 liters) of water in a 5 gallon (20 liter) plastic container.

S 162-175

(7) Put the mixture into the water tank.

S 142-176

(8) Clean the inside of the tank and caps with a soft bristle brush.

S 682-177

(9) Drain the tank (AMM 12-14-01/301).

S 172-178

(10) Flush the inside of the tank with water and drain the tank (AMM 12-14-01/301).

S 172-179

(11) Do the step above for three times.

S 162-180

(12) Wash the tank end caps with clean water.

S 422-196

(13) YRC OR TOLO WATER TANK (WITH SCREW IN END CAPS);

Do these steps to install the end caps on the water tank:

(a) Make sure the O-ring is not dislodged, pinched or damaged during assembly.

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- (b) Put the 2MIT1A264-0281-1 (Main Tank) or 2MIT2A264-0812-1 (Aux Tank) adapter plate in its position on the end cap and install the end cap so that the spherical surface is inside the tank.
- (c) Tighten the end cap to 600-800 lbs-inches (68-90 Newton-meters).
- (d) Remove the tool.
- (e) Install the lockwire.
- (f) Repeat the above steps for the other end cap.

S 412-183

- (14) Close the drain valve.

S 612-184

- (15) Fill the potable water tank (AMM 12-14-01/301).

S 612-185

- (16) Restore pressure to the potable water system, AMM 38-10-00/201.

S 792-186

- (17) Examine all the connections for leakage. Make sure there is no leakage.

H. Put the Airplane in its Usual Condition

S 412-187

- (1) To replace the water tank insulation, do this task: Potable Water Tank Heater Installation (AMM 30-71-04/401).

S 412-188

- (2) Install rear bulkhead liner for the aft cargo compartment (AMM 25-52-01/401).

S 422-199

- (3) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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POTABLE WATER SYSTEM – ADJUSTMENT/TEST

1. General

A. This procedure gives the instructions to do these tasks:

- (1) A Functional Check of the pressure switch is given to make sure the air compressor starts and stops at the correct pressure.
- (2) An Operational Test of the water quantity indicator is given.
- (3) A Leakage Test of the potable water system is given to make sure the potable water system and the drain lines do not have a leak.

TASK 38-10-00-725-001

2. Pressure Switch – Functional Check (Fig. 501 and Fig. 502)

A. General

- (1) Use this procedure to make sure the air compressor (in the potable water system) stops and starts at the correct pressures.

NOTE: The air compressor is controlled by the pressure switch.

B. Equipment

- (1) Gage, Pressure, 0-75 psig (0-500 kPa) –  
Commercially Available

C. References

- (1) AMM 12-14-01/301, Potable Water Servicing
- (2) AMM 24-22-00/201, Electrical Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 52-36-00/001, Bulk Cargo Door

D. Access

- (1) Location Zone
  - 155 Area Below the Aft Cargo Compartment (Left)
  - 166 Area Aft of Bulk Cargo Compartment (Right)

- (2) Access Panels

- 155AL Potable Water Service Panel
- 811 Bulk Cargo Door

E. Procedure

S 865-002

- (1) Supply electrical power (AMM 24-22-00/201).

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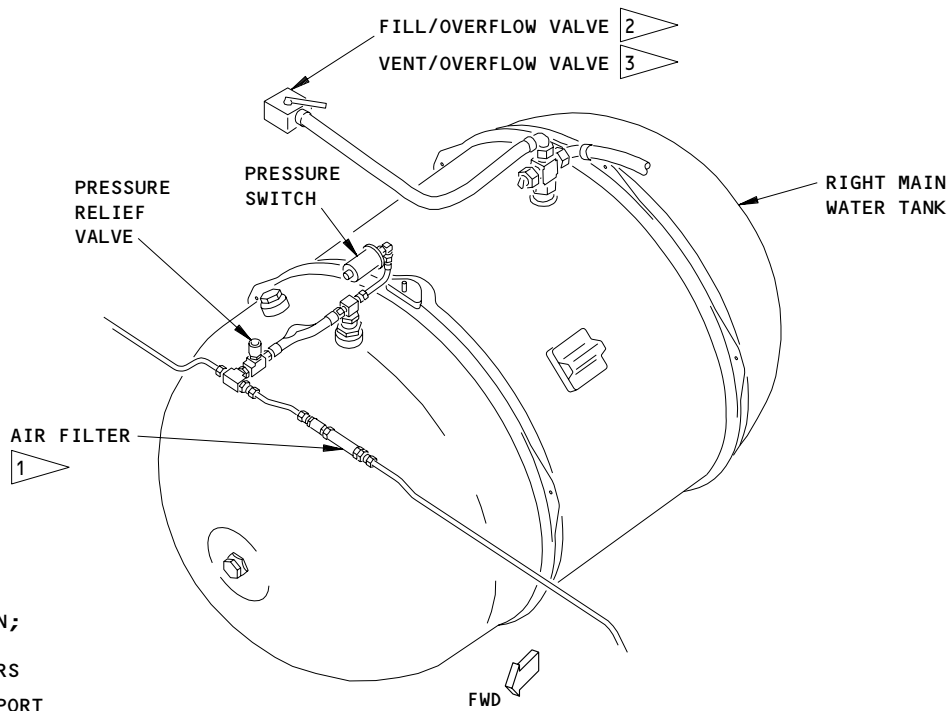
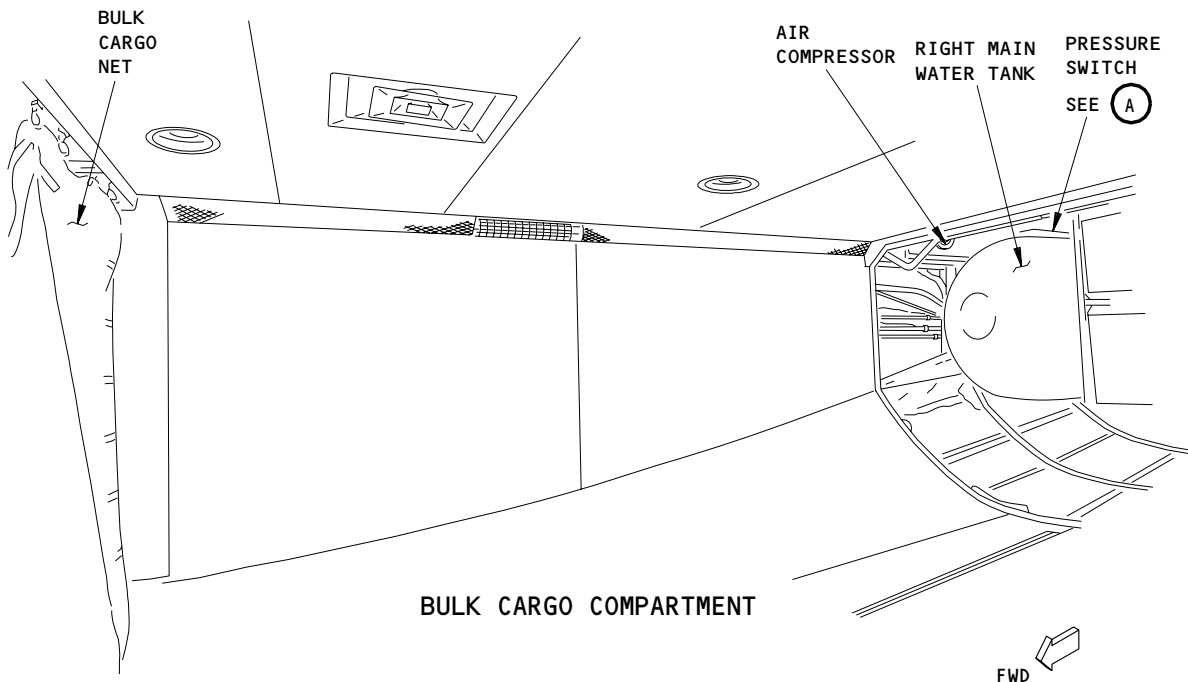
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- 1 IN-LINE FILTER SHOWN;  
SOME AIRPLANES HAVE  
CANISTER TYPE FILTERS
- 2 AIRPLANES WITH TWO-PORT  
SERVICE PANEL (SEPARATE  
FILL AND DRAIN PORTS)
- 3 AIRPLANES WITH ONE-PORT  
SERVICE PANEL (COMBINED  
FILL/DRAIN PORT)

PRESSURE SWITCH

(A)

Potable Water System Test  
Figure 501

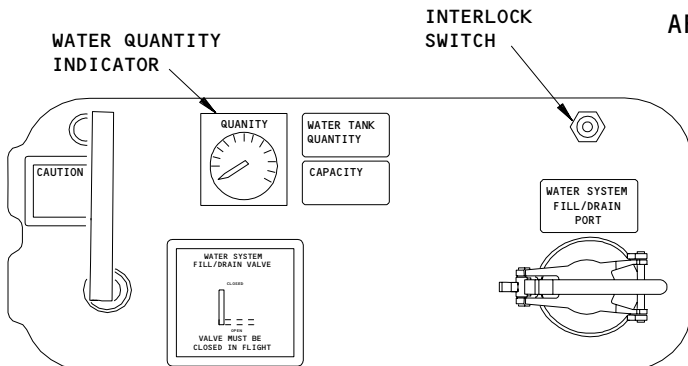
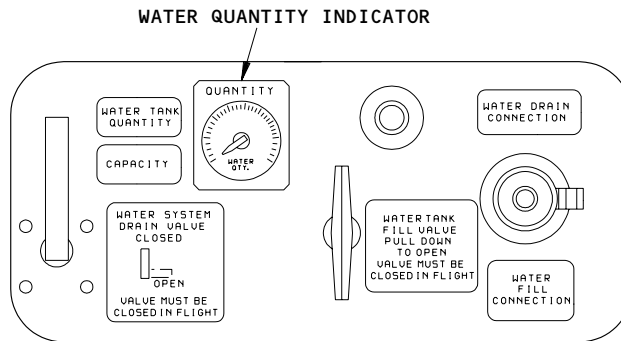
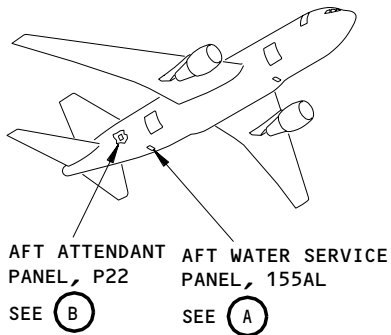
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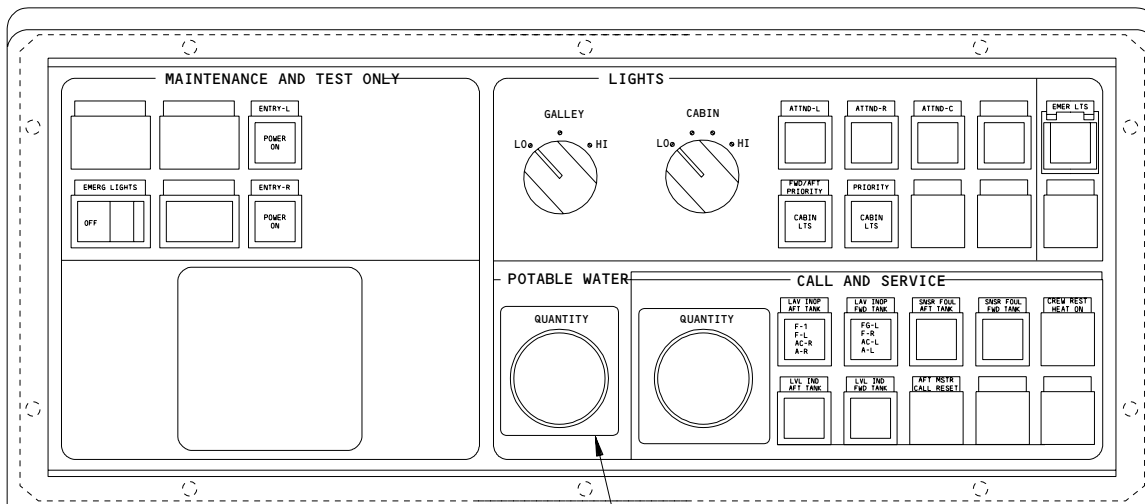
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AFT WATER SERVICE PANEL, 155AL

(A) 2



WATER QUANTITY INDICATOR

AFT ATTENDANT PANEL, P22  
(EXAMPLE)

(B)

- 1 AIRPLANES WITH SEPARATE FILL AND DRAIN PORTS
- 2 AIRPLANES WITH COMBINED FILL/DRAIN PORT

Potable Water System Adjustment  
Figure 502

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K92258

- S 615-260
- (2) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN); Fill the potable water system (AMM 12-14-01/301). Do not close the WATER TANK FILL VALVE.
- S 615-261
- (3) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); Fill the potable water system (AMM 12-14-01/301).
- NOTE: Do not close the service panel door.
- (a) Make sure the potable water system is full.
- S 865-286
- (4) Depressurize the pneumatic system, as necessary (AMM 36-00-00/201).
- S 015-004
- (5) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 015-005
- (6) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 485-006
- (7) Find the airplane pneumatic supply air filter, that is on the aft side of the floor beam that is immediately forward of the right main the water tank.
- S 025-284
- (8) Disconnect the air line from the outlet (right) side of the airplane pneumatic supply air filter assembly, and install the pressure gauge.
- S 445-007
- (9) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN); At the water service panel (155AL), push the WATER TANK FILL VALVE handle in, to the stop.

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- S 445-240
- (10) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
To pressurize the water system, close the service panel door.
- S 725-181
- (11) Make sure the air compressor stops when the pressure gets to  
 $39.5 \pm 1.5$  psig.
- S 875-267
- (12) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
Slowly bleed the air from the potable water system by manually  
opening the WATER TANK FILL VALVE (also known as the FILL/OVERFLOW  
VALVE) located above and to the right of the right main water tank.  
At the same time, hold the compressor interlock switch on the WATER  
TANK FILL VALVE closed.
- S 875-268
- (13) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
Slowly bleed the air from the potable water system by manually  
opening the vent/overflow valve with the actuator found on the valve  
above and to the right of the right main water tank.
- S 725-195
- (14) Make sure the air compressor starts when the pressure gets to  
 $30 \pm 1.0$  psig.
- S 875-272
- (15) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
Open the WATER TANK FILL VALVE to release the pressure from the  
potable water system.
- S 875-273
- (16) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
Open the WATER TANK FILL VALVE to release the pressure from the  
potable water system.
- S 085-047
- (17) Remove the pressure gage from the potable water system.

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S 425-287

(18) Re-connect the air line to the pneumatic supply air filter assembly.

S 865-051

(19) Close the WATER TANK FILL VALVE.

S 415-122

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

(20) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

S 415-123

(21) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 865-050

(22) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-10-00-715-176

3. Water Quantity Indicator - Operational Test

A. General

- (1) Use this procedure to do a test of the operation for the water quantity indicators.
- (2) The water quantity indicator is not adjustable. If the indicator is in operation, but does not read the correct water quantity, refer to the Water Quantity Transmitter - Adjustment (AMM 38-14-01/501).

B. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 38-10-00/501, Potable Water System

C. Access

- (1) Location Zones
  - 155 Area Below the Aft Cargo Compartment (Left)
  - 256 Passenger Cabin - Section 46 (Right)
- (2) Access Panel
  - 155AL Potable Water Service Panel

D. Procedure

S 865-133

- (1) Supply electrical power (AMM 24-22-00/201).

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- S 865-135
- (2) Open these circuit breakers, and attach DO-NOT-CLOSE tags:
- (a) On the left miscellaneous electrical equipment panel, P36:
    - 1) 36 ROW D or ROW E, LAV WATER HTR SYS 1 or (LAV #)
  - (b) On the right miscellaneous electrical equipment panel, P37:
    - 1) 37 ROW H, LAV WATER HTR SYS 2 or (LAV #)
  - (c) On the forward miscellaneous equipment panel, P33:
    - 1) 33H6, WATER SYS AIR CPRSR

- S 615-138
- (3) Fill the potable water system (AMM 12-14-01/301).

NOTE: The potable water tank must be wet but empty to read the water quantity indicator correctly for the empty condition.

- S 685-139
- (4) Drain the potable water tank (AMM 12-14-01/301).

- S 225-207
- (5) Read the water quantity indicator at the aft attendant panel, P22, and make sure the water quantity indicator shows zero or empty (E).

- S 615-177
- (6) If the water quantity indicator does not show zero or empty (E), adjustment is necessary (AMM 38-14-01/501).

- S 615-145
- (7) Fill the potable water tank (AMM 12-14-01/301).

- S 865-146
- (8) Stop for 5 minutes to let the water movement stop.

- S 225-253
- (9) Read the water quantity indicator at the aft attendant panel, P22, and make sure the water quantity indicator shows:
- (a) AIRPLANES WITH ONE MAIN TANK AND ONE AUXILIARY TANK;  
150 gallons, or 560 liters, or FULL.

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S 825-254

- (10) If the water quantity indicator does not show the correct quantity, adjustment is necessary (AMM 38-14-01/501).

**NOTE:** Make sure that an electrical bonding jumper is attached to the tank ground stud on the bottom of the tank near the tank inlet fitting.

S 685-163

- (11) Drain the potable water tank (AMM 12-14-01/301).

S 225-203

- (12) Read the water quantity indicator at the P22 panel and make sure the water quantity indicator shows zero or empty (E).

S 825-204

- (13) If the water quantity indicator does not show zero or empty (E), adjustment is necessary (AMM 38-14-01/501).

S 865-172

- (14) Remove the DO-NOT-CLOSE tags and close these circuit breaker:
- (a) On the left miscellaneous electrical equipment panel, P36:
    - 1) 36 ROW D or ROW E, LAV WATER HTR SYS 1 or (LAV #)
  - (b) On the right miscellaneous electrical equipment panel, P37:
    - 1) 37 ROW H, LAV WATER HTR SYS 2 or (LAV #)
  - (c) On the forward miscellaneous equipment panel, P33:
    - 1) 33H6, WATER SYS AIR CPRSR

S 865-175

- (15) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-10-00-795-210

4. Potable Water System - Leakage Test (Fig 501, Fig. 502)

A. General

- (1) Use this procedure to make sure the potable water system and the drain lines (for the lavatories and galleys) do not have a leak.

B. Equipment

- (1) Pressure Gage - 0-75 psig - Commercially Available
- (2) Pressurization Valve - Commercially Available
- (3) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); A38014-1, Door Switch Actuator - Potable Water Service Panel
- (4) Drain mast plug.
- (a) Plug Equipment - Waste Water Drain Mast, C38001-1 (Preferred)
  - (b) Plug Equipment - Waste Water Drain Mast, A38011-1 (First Alternate)
  - (c) Plug Equipment - Drain Mast, B21004-91 (Second Alternate)

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- (5) Pressure Source - 0-75 psig - Clean Air, or Nitrogen - Commercially Available

C. References

- (1) AMM 12-14-01/301, Potable Water Servicing
- (2) AMM 24-22-00/201, Electric Power Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 52-36-00/001, Bulk Cargo Door

D. Access

- (1) Location Zone
  - 100 Lower Half of Fuselage
  - 200 Upper Half of Fuselage

- (2) Access Panels

- 811 Bulk cargo door

E. Procedure for Potable Water Supply System

S 865-102

- (1) Supply electrical power (AMM 24-22-00/201).

S 865-292

- (2) Depressurize the pneumatic system, as necessary (AMM 36-00-00/201).

S 015-103

- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 015-104

- (4) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

S 495-289

- (5) Find the airplane pneumatic supply air filter, that is on the aft side of the floor beam that is immediately forward of the right main the water tank.

S 025-288

- (6) Disconnect the air line from the outlet (right) side of the airplane pneumatic supply air filter assembly.

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- S 485-290
- (7) Connect the pressure gauge, pressurization valve, and the pressure source to the air line you disconnected from the filter assembly.
- S 615-106
- (8) Fill the potable water system (AMM 12-14-01/301).
- S 025-248
- (9) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); Install the actuator tool on the interlock switch on the service panel.
- S 865-107
- (10) Pressurize the potable water system to 50 psig (345 kPa).
- NOTE: Use clean air or nitrogen. Do not use "shop" air.
- S 875-108
- (11) Open the faucets in each lavatory and galley and let the water flow for 2 minutes.
- NOTE: Keep the pressure (in the potable water system) at 50 psig.
- S 865-109
- (12) Close all the water faucets.
- S 795-110
- (13) Keep the pressure (in the potable water system) at 50 psig for 5 minutes.
- S 795-111
- (14) Make sure there are no air or water leaks in these locations:
- (a) At the water fill connection on the potable water service panel
  - (b) At the water drain connection on the potable water service panel

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(c) At the overflow port on the fuselage.

(d) In the water lines that supply lavatory and galley water.

F. Procedure for the Gray Water Drain System

S 485-112

- (1) Install a plug in the drain hole of the forward drain mast.

S 795-113

- (2) If the airplane has floor drains, put water in the sink in a forward lavatory until the water reaches the top of the floor drains.

NOTE: The drain line is full of water when water stays in the drain for five minutes.

S 795-282

- (3) If the airplane does not have floor drains, put water in the sink in a forward lavatory until the water nearly fills the sink.

NOTE: The drain line is full of water when water stays in the sink for five minutes.

NOTE: Do not try to fill the galley sink to the top with water. Water may overflow the lavatory sink and flood the floor.

S 795-114

- (4) Make sure none of the drain lines connected to the forward drain mast have a leak.

S 085-115

- (5) Remove the plug from the forward drain mast and let the water drain.

S 485-116

- (6) Install a plug in the drain hole of the aft drain mast.

S 795-279

- (7) If the airplane has floor drains, put water in the sink in an aft lavatory until the water reaches the top of the floor drains.

NOTE: The drain line is full of water when water stays in the drain for five minutes.

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S 795-281

- (8) If the airplane does not have floor drains, put water in the sink in an aft lavatory until the water nearly fills the sink.

**NOTE:** The drain line is full of water when water stays in the sink for five minutes.

**NOTE:** Do not try to fill the galley sink to the top with water. Water may overflow the lavatory sink and flood the floor.

S 795-118

- (9) Make sure none of the drain lines connected to the aft drain mast have a leak.

S 085-119

- (10) Remove the plug from the aft drain mast and let the water drain.  
G. Put the Airplane Back to its Usual Condition

S 085-251

- (1) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); Remove the actuator tool from the interlock switch on the service panel.

S 865-120

- (2) Open the WATER TANK FILL VALVE (on the potable water service panel) to release the pressure from the potable water system.

S 085-121

- (3) Remove the pressurization valve, pressure source, and the pressure gage from the potable water system.

S 425-295

- (4) Re-ccnect the air line to the pneumatic supply air filter assembly.

S 865-052

- (5) Close the WATER TANK FILL VALVE.

S 415-053

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (6) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

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- S 415-054  
(7) Close the bulk cargo door, 811 (AMM 52-36-00/001).
- S 865-055  
(8) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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WATER TANK - MAINTENANCE PRACTICES

TASK 38-11-01-802-062-001

1. Tank - Water, Right Main

A. General

(1) This configuration is NOT USED.

EFFECTIVITY  
CONFIGURATION NOT USED

**38-11-01**

CONFIG 1

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WATER TANK - MAINTENANCE PRACTICES

1. General

- A. This Chapter/Section/Subject/Page Block uses Configurations (CONFIGs) to identify different water tank configurations used by operators:
- CONFIG 1: airplanes with a single 120 gal water tank (right main tank).
  - CONFIG 2: airplanes with 120 gal tank + 45 gal tank (right main tank + auxiliary tank).
  - CONFIG 3: airplanes with (2) 120 gal tanks for 767-400 (right main tank + left main tank - 767-400).
  - CONFIG 4: airplanes with (2) 120 gal tanks + 45 gal tank (right main tank + left main tank + auxiliary tank).
- B. If an operator does not have a particular configuration in their fleet, that CONFIG's procedure will be marked as NOT USED and will contain no instructions.
- C. This procedure is for 767 model airplanes with one 120 gallon (454 liter) main tank (RH) and one 45 gallon (170 liter) auxiliary tank for potable water.

The main tank is located aft of the aft cargo compartment, behind the bulkhead lining. The auxiliary tank is located to the right of the aft cargo compartment, behind the sidewall lining .

The right main tank is supported by tie-rods attached to the STA 1562 and 1582 main deck floor beams. The right main tank is centered on RBL 42.

The auxiliary tank is supported from below by tie-rods attached to the STA 1439 and 1461 body frames. The auxiliary tank is centered on RBL 76.

- D. This procedure gives the instructions to do these tasks:
- (1) Remove the right main water tank
  - (2) Remove the auxiliary water tank
  - (3) Install the right main water tank
  - (4) Install the auxiliary water tank
  - (5) Examine the shear pin in the support structure for the RH main water tank.

NOTE: You must examine the shear pin to make sure the support structure for the RH main water tank is serviceable.

TASK 38-11-01-002-001-002

2. Right Main Water Tank - Removal (Fig. 201)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 20-10-21/401, Electrical Bonding
- (3) AMM 21-26-01/401, Aft Equip/Lavatory/Galley Ventilation Fan
- (4) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining

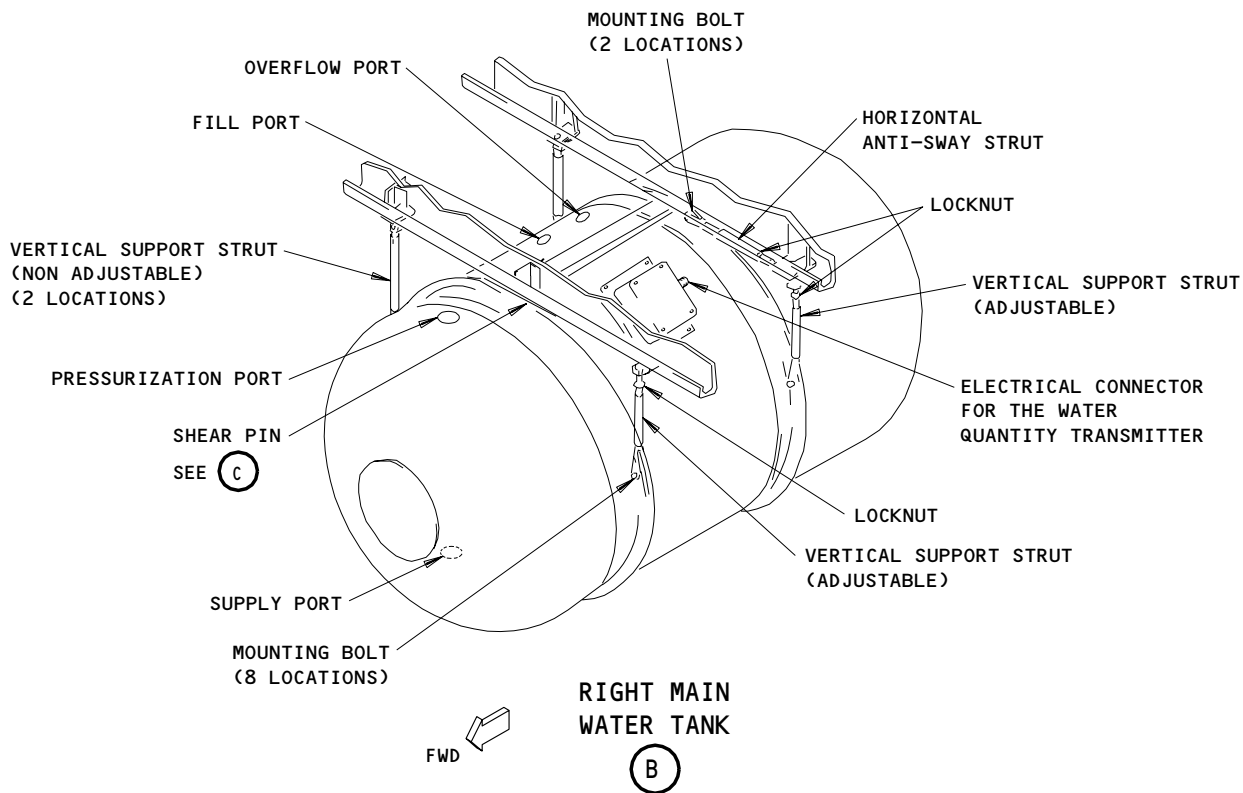
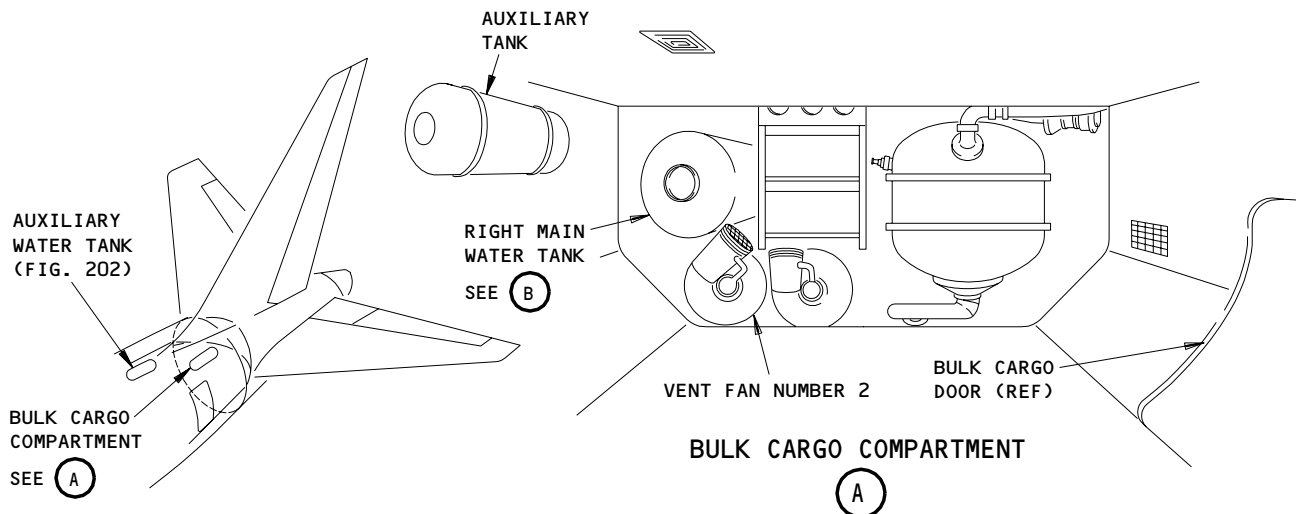
EFFECTIVITY  
AIRPLANES WITH RIGHT MAIN TANK AND  
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# BOEING

## 767 MAINTENANCE MANUAL



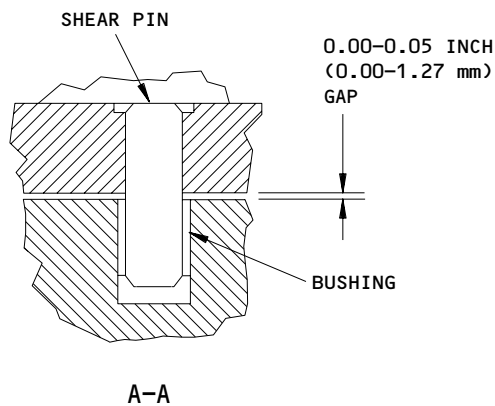
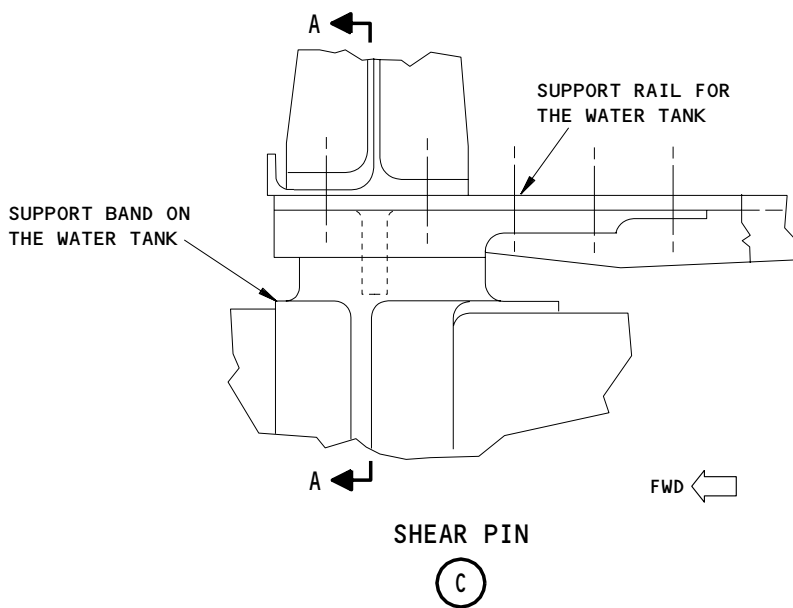
Potable Water Tank Installation  
Figure 201 (Sheet 1)

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Potable Water Tank Installation  
Figure 201 (Sheet 2)

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AIRPLANES WITH RIGHT MAIN TANK AND  
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- (5) AMM 30-71-04/401, Potable Water Tank Heater Blankets
- (6) AMM 38-10-00/201, Potable Water System
- (7) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 811 Bulk Cargo Door

C. Procedure

- S 862-002-002
  - (1) Release the pressure from the potable water system (AMM 38-10-00/201).
- S 612-003-002
  - (2) Drain the potable water system (AMM 12-14-01/301).
- S 012-004-002
  - (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 012-005-002
  - (4) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 012-006-002
  - (5) Remove the vent fans as required (AMM 21-26-01/401).
- S 862-007-002
  - (6) The tank is suspended from the ceiling in the right side aft of the aft cargo area.
- S 022-079-002
  - (7) AIRPLANES LINE NUMBER 535 AND SUBSEQUENT WITH BONDING JUMPER;  
Disconnect the electrical bonding jumper from the supply/drain fitting at the bottom of the tank.
- S 032-009-002
  - (8) Disconnect the water lines from the water tank.
- S 032-010-002
  - (9) Put a cap on the water lines and the ports in the water tank to keep contamination out.
- S 032-011-002
  - (10) AIRPLANES WITH WATER QUANTITY TRANSMITTERS MOUNTED ON TANK;  
Disconnect the electrical connector from the water quantity transmitter.

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AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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S 022-066-002

- (11) AIRPLANES WITH REMOTELY LOCATED WATER QUANTITY TRANSMITTERS;  
Do the following steps to unplug the transmitter cable from the quantity sensor on the tank:
- (a) Remove the screws that attach the cover plate assembly to the sensor mounting pad on the water tank.
  - (b) Remove the cover plate assembly.
  - (c) Remove the sealant that is around the plug.
  - (d) Unplug the transmitter cable connector from the tank sensor.

S 012-069-002

- (12) AIRPLANES WITH WATER TANK HEATER BLANKETS;  
Remove the heater blankets from the water tank (AMM 30-71-04/401).

S 022-012-002

- (13) Remove the bolts from the support struts (four locations) and the horizontal anti-sway strut (one location).

NOTE: Support the water tank before you remove the attach bolts.

S 022-013-002

- (14) Lower the water tank until it is clear of the shear pin.

S 022-014-002

- (15) Remove the right main water tank.

TASK 38-11-01-002-015-002

3. Auxiliary Water Tank - Removal (Fig. 202)

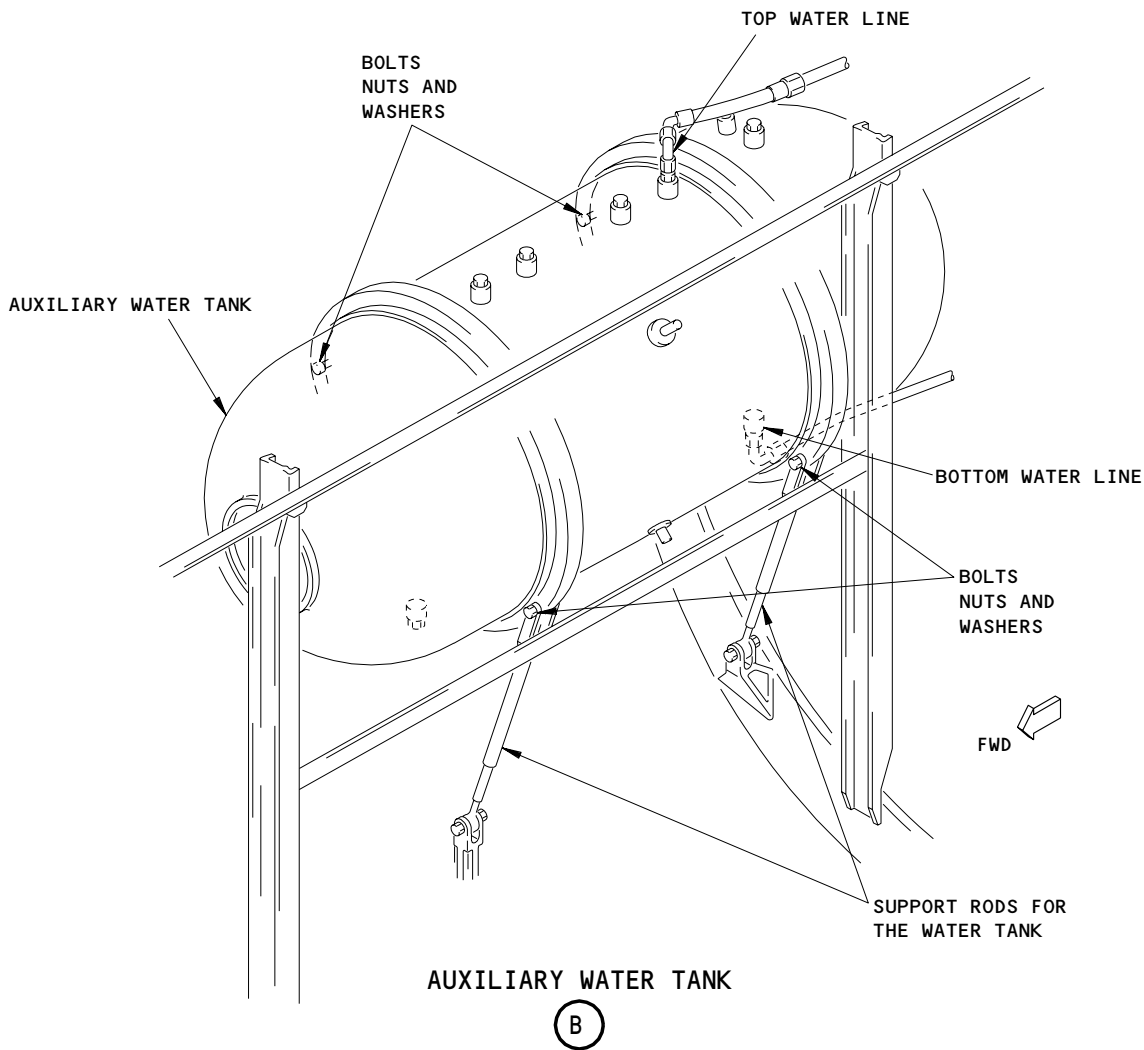
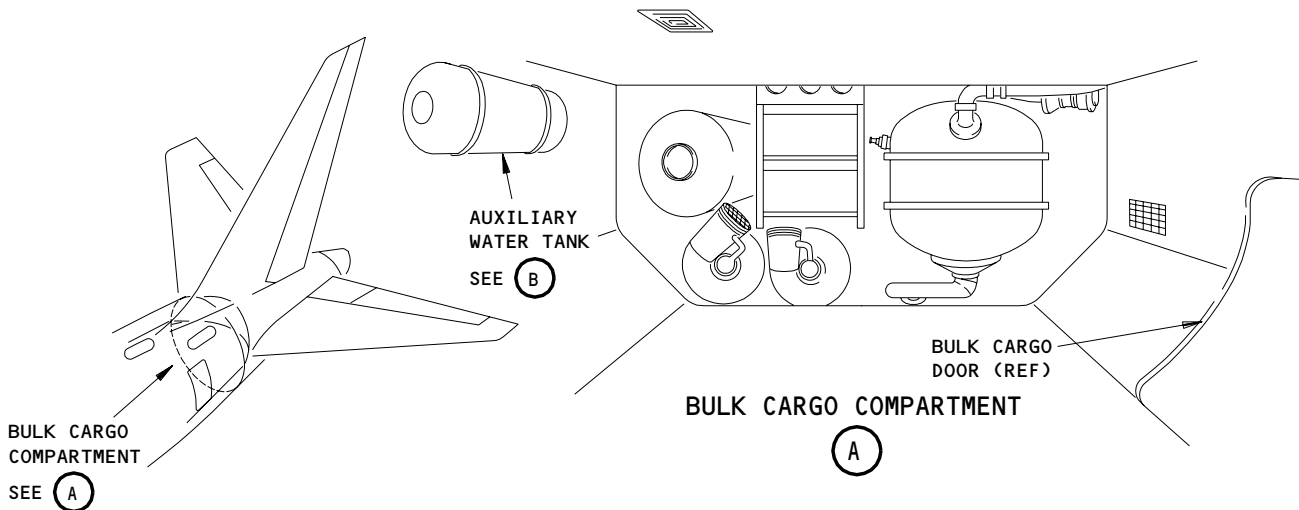
A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 20-10-21/401, Electrical Bonding
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 30-71-04/401, Potable Water Tank Heater Blankets

EFFECTIVITY  
AIRPLANES WITH RIGHT MAIN TANK AND  
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Auxiliary Water Tank Installation  
Figure 202

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AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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- (5) AMM 38-10-00/201, Potable Water Systems
  - (6) AMM 52-36-00/001, Bulk Cargo Door
- B. Access
- (1) Location Zones
    - 166 Area Aft of Bulk Cargo Compartment (Right)
    - 811 Bulk Cargo Door

C. Procedure

- S 862-016-002
- (1) Release the pressure from the potable water system (AMM 38-10-00/201).
  
- S 612-017-002
- (2) Drain the potable water system (AMM 12-14-01/301).
  
- S 012-018-002
- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).
  
- S 012-019-002
- (4) Remove the right (forward, upper, and middle) sidewall lining from the bulk cargo compartment (AMM 25-52-01/401).
  
- S 032-020-002
- (5) Disconnect the water tubes from the auxiliary water tank. The tubes are found one on the top of the tank and one on the bottom of the tank.
  
- S 032-021-002
- (6) Put a cap on the water tubes and the tank ports to keep out the contamination.
  
- S 012-072-002
- (7) AIRPLANES WITH WATER TANK HEATER BLANKETS;  
Remove the heater blankets from the water tank (AMM 30-71-04/401).
  
- S 022-022-002
- (8) Remove the bolts that attach the support rods to the auxiliary water tank.
  
- S 022-023-002
- (9) Carefully remove the auxiliary water tank.

TASK 38-11-01-402-024-002

4. Right Main Water Tank - Installation (Fig. 201)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 20-10-21/401, Electrical Bonding
- (3) AMM 21-26-01/401, Aft Equip/Lavatory/Galley Ventilation Fan

EFFECTIVITY  
AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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- (4) AMM 24-22-00/201, Manual Control
- (5) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (6) AMM 30-71-04/401, Potable Water Tank Heater Blankets
- (7) AMM 38-10-00/201, Potable Water System
- (8) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 811 Bulk Cargo Door

C. Procedure

S 822-025-002

- (1) Put the water tank in a position that aligns the shear pin with its hole.

S 422-026-002

- (2) Move the water tank in the up direction to engage the shear pin.

S 022-027-002

- (3) Install the bolts that attach the support struts (four locations). Do not tighten the bolts.

NOTE: To make the struts shorter or longer you turn the adjustable end of the strut for the correct length.

S 022-028-002

- (4) Install the bolts that attach the horizontal anti-sway strut. Do not tighten the bolts.

S 822-029-002

- (5) If it is necessary, move the support struts to get the shear pin clearance shown in Fig. 201.

NOTE: It is not necessary for the support surfaces to be parallel.

S 432-030-002

- (6) Tighten all of the mounting bolts to 18-25 pound-inches (2.0-2.8 Newton-meters).

S 432-031-002

- (7) Tighten the locknuts on the adjustable end of the strut.

S 412-070-002

- (8) AIRPLANES WITH WATER TANK HEATER BLANKETS;  
Install the heater blankets on to the water tank (AMM 30-71-04/401).

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AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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- S 432-033-002
- (9) AIRPLANES WITH WATER QUANTITY TRANSMITTERS MOUNTED ON TANK;  
Connect the electrical connector to the water quantity transmitter.
- S 422-067-002
- (10) AIRPLANES WITH REMOTELY LOCATED WATER QUANTITY TRANSMITTER;  
Do the following steps to connect the transmitter:
- (a) Make sure that the water quantity sensor on the tank is clean and free from all sealant and debris.
  - (b) Connect the water quantity transmitter cable plug to the water quantity sensor on the tank.
  - (c) Apply BMS 5-95 sealant to the plug area.
  - (d) Put the plug cover plate assembly in its place over the sensor plug on the water tank.
  - (e) Install the plug cover plate assembly screws to the tank mount.
  - (f) Install lockwire in two places.
- S 432-034-002
- (11) Connect the water lines to the water tank.
- S 422-080-002
- (12) AIRPLANES LINE NUMBER 535 AND SUBSEQUENT WITH BONDING JUMPER;  
Connect the electrical bonding jumper at the supply/drain fitting on the bottom of the tank.  
See Electrical Bonding (AMM 20-10-21/401).
- S 612-036-002
- (13) Fill the water tank (AMM 12-14-01/301).
- S 862-037-002
- (14) Supply electrical power (AMM 24-22-00/201).
- S 862-038-002
- (15) Pressurize the potable water system (AMM 38-10-00/201).
- S 792-039-002
- (16) When the potable water system has pressurized, make sure the connections on the water tank do not have leaks.
- S 412-040-002
- (17) Install the vent fans as required (AMM 21-26-01/401).

EFFECTIVITY  
AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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S 412-041-002

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

(18) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

S 412-042-002

(19) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 862-043-002

(20) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-11-01-402-044-002

5. Auxiliary Water Tank - Installation (Fig. 202)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 20-10-21/401, Electrical Bonding
- (3) AMM 24-22-00/201, Electrical Power - Control
- (4) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (5) AMM 30-71-04/401, Potable Water Tank Heater Blankets
- (6) AMM 52-36-00/001, Bulk Cargo Door

B. Access

(1) Location Zones

- |     |  |
|-----|--|
| 166 | Area Aft of Bulk Cargo Compartment (Right) |
| 811 | Bulk Cargo Door                            |

C. Procedure

S 822-045-002

(1) Put the auxiliary water tank in a position that aligns its bolt holes with the bolt holes in the support brackets. If it is necessary, install shims at the aft support bracket to make a correct fit.

S 422-046-002

(2) Attach the support rods to the auxiliary water tank with the bolts, the washers, and the nuts.

S 822-047-002

(3) Make sure the auxiliary water tank is level. If the auxiliary water tank is not level, do these steps to adjust the support struts:

- (a) Remove the bolt that attaches the support rod to the auxiliary water tank.
- (b) Loosen the locknut on the support rod.
- (c) Turn the rod end to adjust the length of the support rod.

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AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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- (d) Tighten the locknut on the support rod.
- (e) Install the support rod to the water tank with the bolts, the washers, and the nuts.

S 412-071-002

- (4) AIRPLANES WITH WATER TANK HEATER BLANKETS;  
Install the heater blankets on to the water tank (AMM 30-71-04/401).

S 432-048-002

- (5) Connect the water lines to the water tank (use new o-rings).

S 862-049-002

- (6) Supply electrical power (AMM 24-22-00/201).

S 612-050-002

- (7) Fill the potable water system (AMM 12-14-01/301).

S 862-051-002

- (8) Pressurize the potable water system.

**NOTE:** Stop for 5 minutes to stop the water movement.

S 792-052-002

- (9) Make sure the water tank does not have a leak.

S 412-053-002

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (10) Install the right (forward, upper, and middle) sidewall lining of the bulk cargo compartment (AMM 25-52-01/401).

S 012-054-002

- (11) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 862-055-002

- (12) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-11-01-212-056-002

6. Inspection of Shear Pin in the Right Main Tank Support Structure (Fig. 201)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-11-02/401, Water Tank Shear Fitting

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AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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- (3) AMM 52-36-00/001, Bulk Cargo Door
- B. Access
  - (1) Location Zones
    - 166 Area Aft of Bulk Cargo Compartment (Right)
    - 811 Bulk Cargo Door

C. Procedure

- S 012-057-002
  - (1) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 012-058-002
  - (2) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 212-059-002
  - (3) Do the steps that follow to make sure the shear pin is serviceable:
    - (a) Lightly push on the water tank and make sure the shear pin prevents movement of the water tank.
    - (b) Look at the structure around the shear pin for deformation or damage.
- S 962-075-002
  - (4) If the shear pin is damaged, then replace these parts:
    - (a) The shear pin
    - (b) The shear pin fitting (AMM 38-11-02/401)
    - (c) The vertical support struts
    - (d) The horizontal anti-sway strut.
- S 822-074-002
  - (5) Adjust the shear pin clearance as shown on Fig. 201.

**NOTE:** Adjust the support struts to get the correct clearance.

S 412-060-002

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (6) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 212-061-002
  - (7) Close the bulk cargo door, 811 (AMM 52-36-00/001).

EFFECTIVITY  
AIRPLANES WITH RIGHT MAIN TANK AND  
AUXILIARY TANK

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POTABLE WATER TANK SHEAR FITTING – REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the shear fitting, that holds the shear pin, for the potable water tank.

TASK 38-11-02-004-034

2. Shear Fitting Removal (Fig. 401)

A. References

- (1) AMM 38-11-01/201, Potable Water Tank

B. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment

C. Procedure

S 014-003

- (1) Remove the potable water tank (AMM 38-11-01/201).

S 024-002

- (2) Remove the five bolts and nuts that attach the shear fitting to the airplane.

S 024-004

- (3) Remove the shear fitting from the airplane.

S 034-005

- (4) If the shear pin is broken, replace the four vertical support struts and the antisway strut (that hold the potable water tank).

TASK 38-11-02-404-038

3. Shear Fitting Installation (Fig. 401)

A. Consumable Materials

- (1) A00247 Sealant, BMS 5-95

B. References

- (1) AMM 38-11-01/201, Potable Water Tank

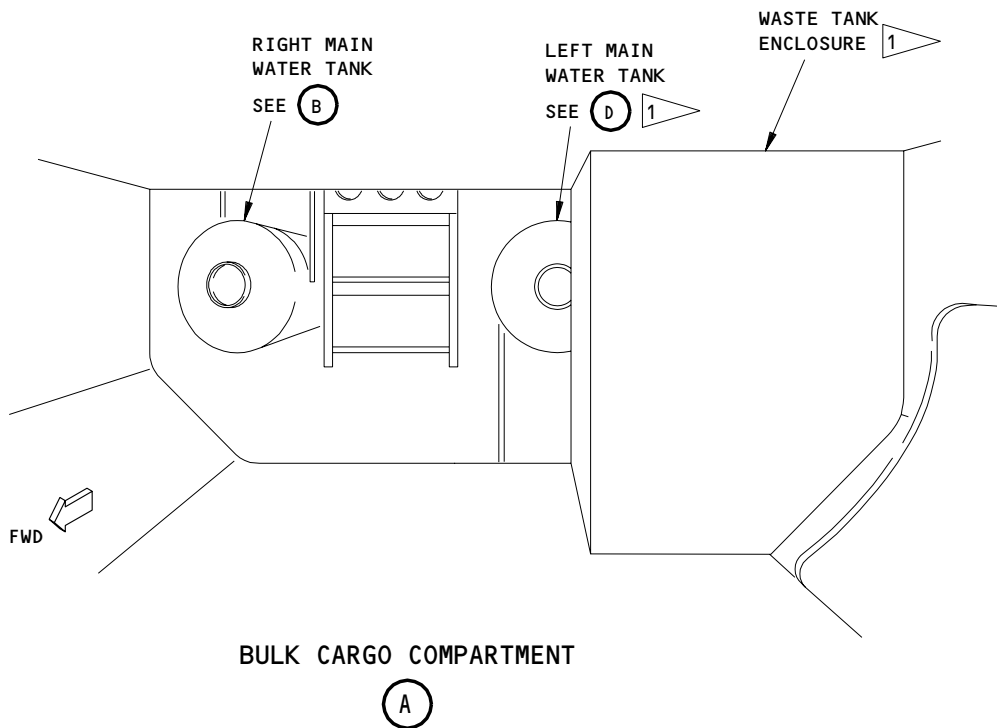
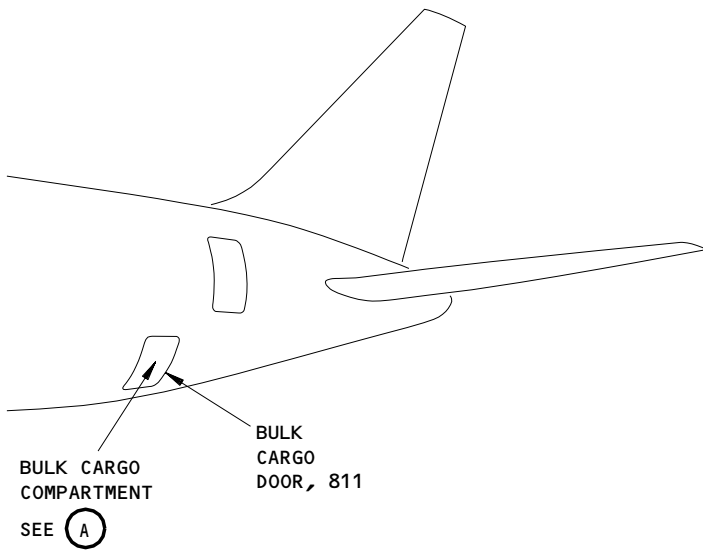
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1 AIRPLANES WITH TWO MAIN TANKS

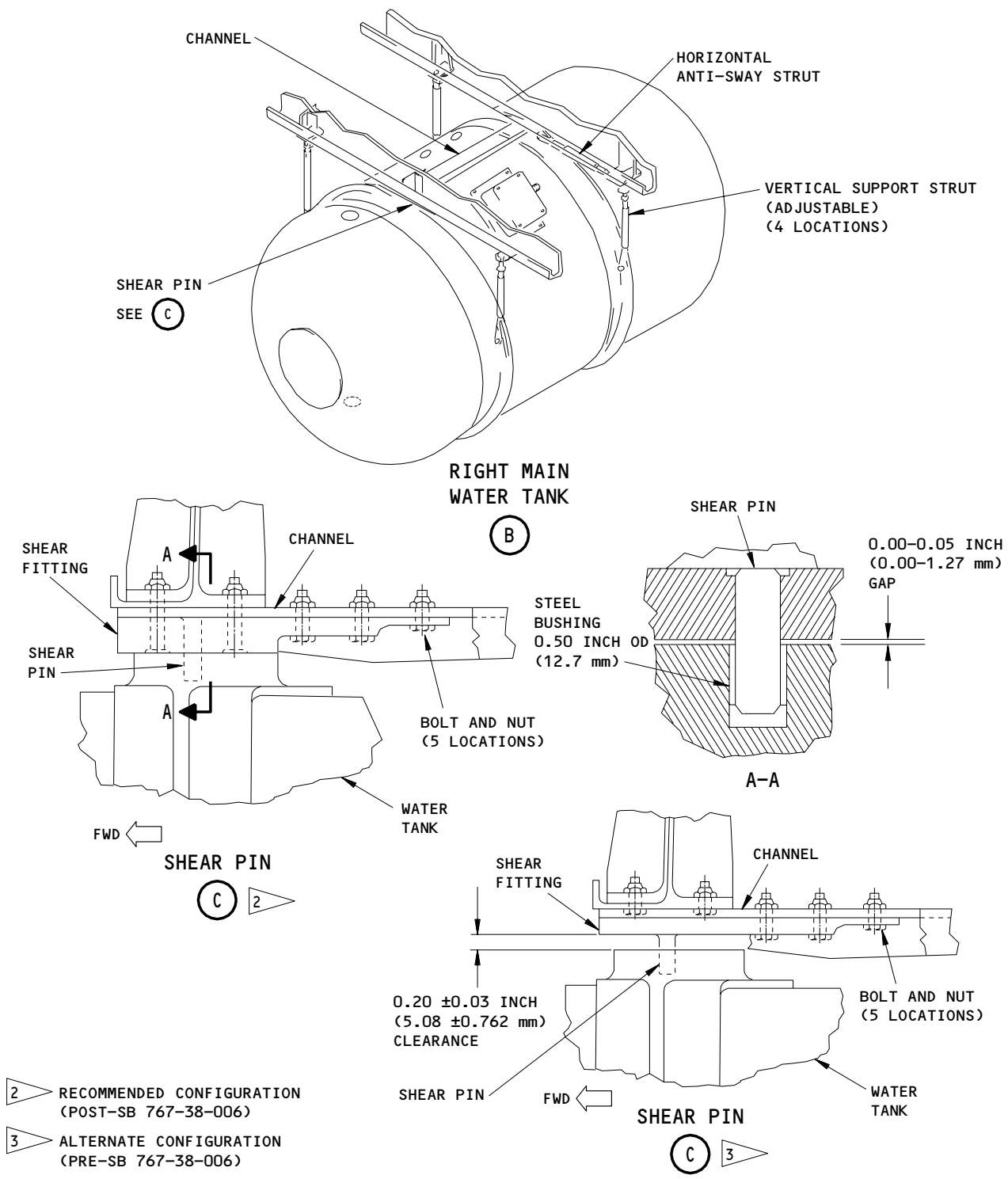
Potable Water Tank Shear Fitting Installation  
Figure 401 (Sheet 1)

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Potable Water Tank Shear Fitting Installation  
Figure 401 (Sheet 2)

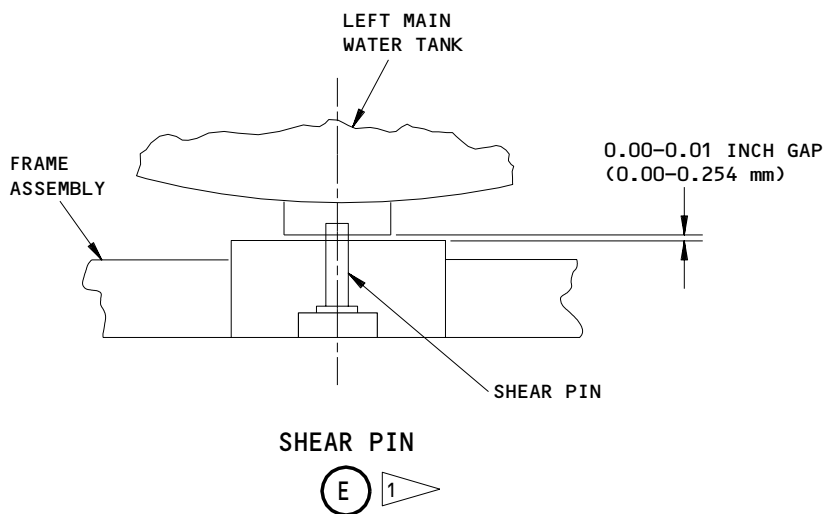
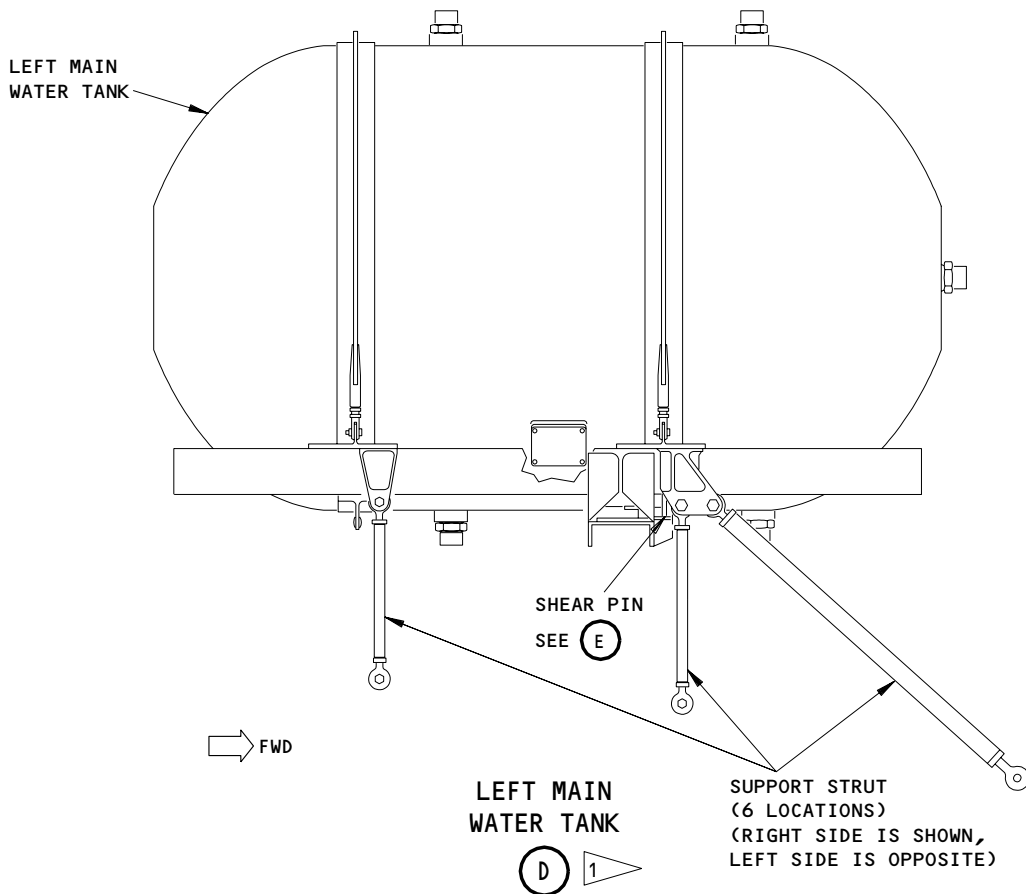
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Potable Water Tank Shear Fitting Installation  
Figure 401 (Sheet 3)

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AIRPLANES WITH TWO MAIN WATER TANKS

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C. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment

D. Procedure

S 424-013

- (1) If the shear fitting does not have holes for the bolts, then do these steps:
- (a) Put the shear fitting in its position at the forward edge of the channel.

NOTE: The forward edge of the shear fitting must be aligned with the front edge of the channel. Also, the shear fitting must be in the center of the channel.

- (b) Use the holes in the channel to identify the location and dimension of the holes on the shear fitting.
- (c) Remove the shear fitting.
- (d) At the locations that you identified, drill three 0.190 +0.009/-0.000 inch diameter holes.
- (e) At the locations that you identified, drill two 0.250 +0.011/-0.000 inch diameter holes.
- (f) Countersink the 0.250 inch holes, 100 degrees by 0.405 +0.010/-0.000 inch diameter on the side that will point at the water tank.

S 424-010

- (2) Put the shear pin and the shear fitting in their position on the channel.

S 424-009

- (3) Apply sealant to the bolts.

S 424-011

- (4) Install the five bolts and nuts to attach the shear fitting to the airplane.

S 414-012

- (5) Install the potable water tank (AMM 38-11-01/201).

EFFECTIVITY

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WATER TANK FILL VALVE – REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the water tank fill valve (referred to as the valve). The valve also has the name fill/overflow valve.

TASK 38-11-03-004-040

2. Water Tank Fill Valve Removal (Fig. 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-10-00/201, Potable Water System
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 811 Bulk Cargo Door

C. Procedure

S 864-001

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-002

- (2) Release the pressure from the potable water system (AMM 38-10-00/201).

S 684-003

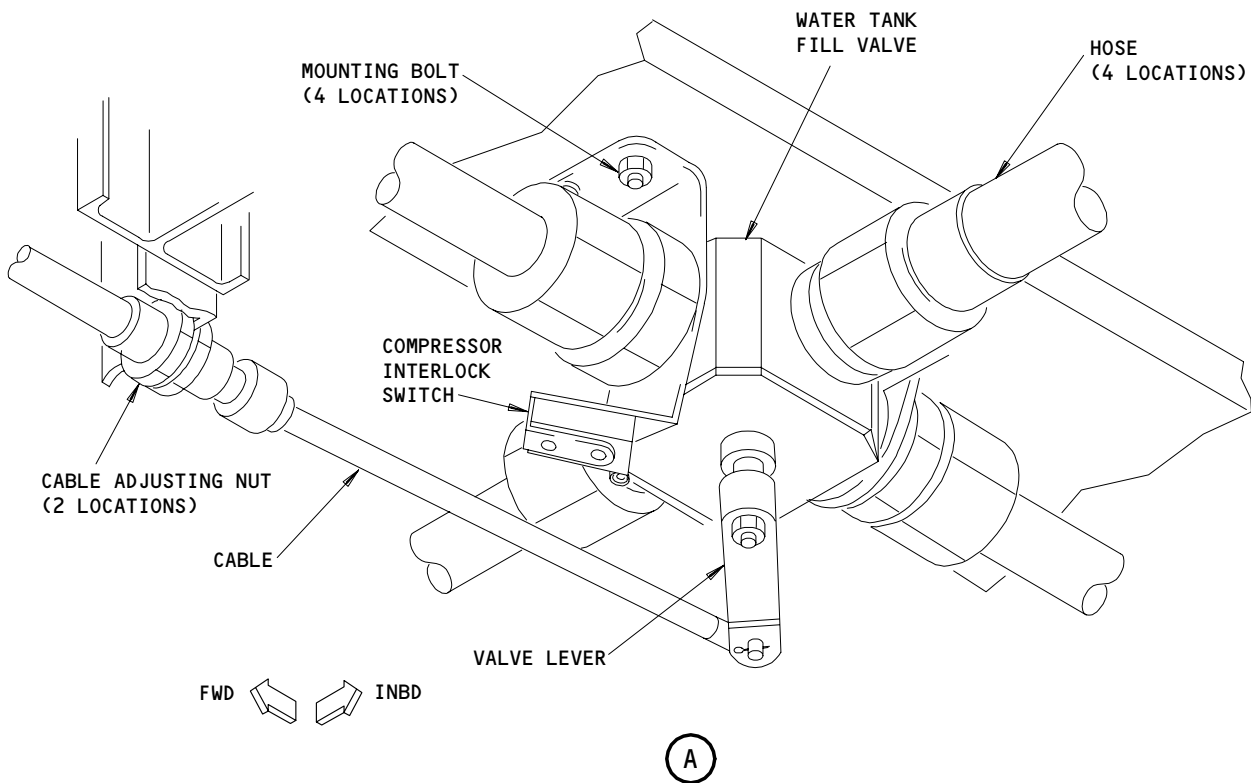
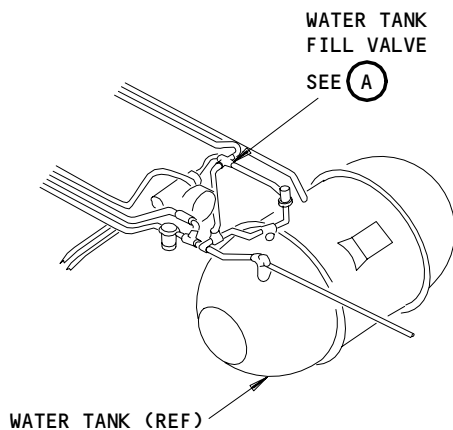
- (3) Drain the potable water system (AMM 12-14-01/301).

S 014-007

- (4) To gain access, do these steps:
  - (a) Open the bulk cargo door, 811 (AMM 52-36-00/001).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

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Water Tank Fill Valve Installation  
Figure 401

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

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(b) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

S 034-013

(5) Disconnect the cable from the valve lever.

S 034-014

(6) Disconnect the wires, for the compressor interlock switch, at the nearest splice.

S 034-015

(7) Disconnect the hoses from the valve.

S 034-016

(8) Put caps on the fittings of the valve and on the hoses to keep contamination out.

S 024-017

(9) Remove the mounting bolts that attach the valve to the airplane and remove the valve.

TASK 38-11-03-404-018

3. Water Tank Fill Valve - Installation (Fig. 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 24-22-00/201, Electrical Power - Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-10-00/201, Potable Water System
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 811 Bulk Cargo Door

C. Procedure

S 424-019

(1) Put the valve in its position and install the mounting bolts.

S 434-020

(2) Remove the caps from the fittings of the valve and from the hoses.

S 434-021

(3) Connect the hoses to the valve.

S 434-022

(4) Connect the electrical wires for the compressor interlock switch.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

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- S 434-024
- (5) Connect the cable to the valve lever.
- S 824-028
- (6) Make sure the valve opens and closes fully when you operate it from the service panel for the potable water. If it does not, turn the cable adjusting nuts to adjust the cable.
- S 614-030
- (7) Fill the potable water tank (AMM 12-14-01/301).
- S 864-031
- (8) Pressurize the potable water system (AMM 38-10-00/201).
- S 714-032
- (9) Open and close the valve to make sure the compressor interlock switch operates correctly. The air compressor must operate when you close the valve, and stop when you open the valve.
- S 794-033
- (10) Make sure the valve does not have a leak.
- S 414-034

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (11) Do these steps:
- (a) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).
- (b) Close the bulk cargo door, 811 (AMM 52-36-00/001).
- S 864-039
- (12) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

**38-11-03**

TASK 38-11-03-004-048

4. Water Tank Fill Valve Control Cable Removal (Fig. 402)

A. Access

(1) Location Zone

166	Area Aft of Bulk Cargo Compartment (Right)
811	Bulk Cargo Door

B. Prepare for the Removal

S 014-117

(1) To gain access, do these steps:

(a) Open the bulk cargo door, 811 (AMM 52-36-00/001).

(b) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

C. Water Tank Fill Valve Control Cable Removal

S 024-054

(1) Disconnect the cable from the valve lever.

S 024-055

(2) Remove the nut and tab washer from the control cable.

S 024-056

(3) Pull the clevis end of the control cable through the bracket.

S 424-058

(4) Loosely install the nut and tab washer on the control cable.

S 024-060

(5) Remove the clamps that attach the control cable to the brackets on the water line or the structure.

S 024-061

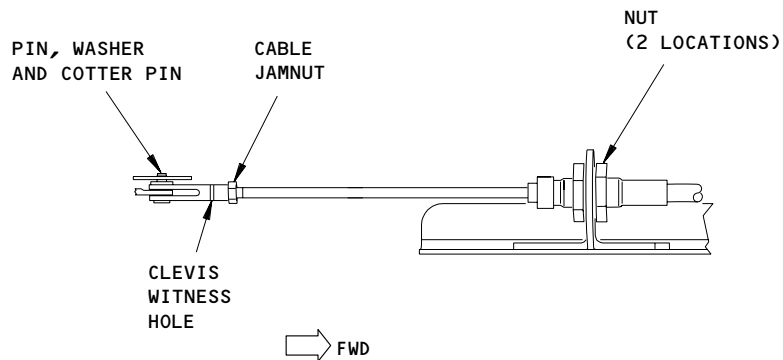
(6) Remove the handle from the control cable.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

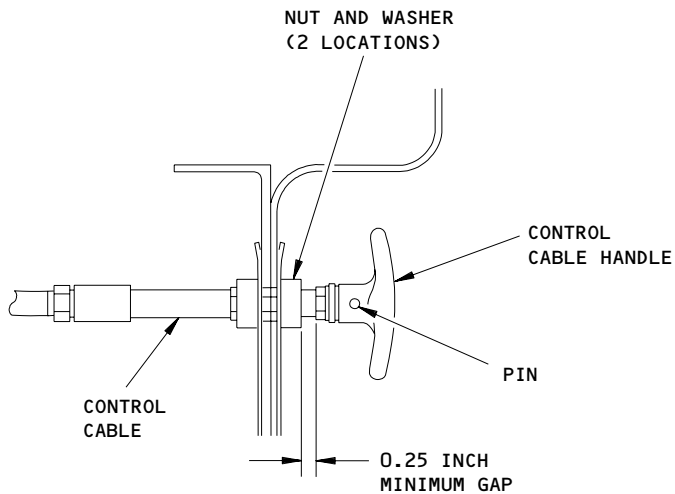
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CONTROL CABLE  
(EXAMPLE)



CONTROL CABLE HANDLE

Control Cable Installation  
Figure 402

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

38-11-03

- S 024-062
- (7) Remove the nut and tab washer from the control cable.
  
- S 024-063
- (8) Pull the control cable into the airplane to remove the control cable.
  
- S 424-064
- (9) Loosely install the handle, nut, and tab washer on the control cable.
  
- S 024-065
- (10) Remove the control cable for the waste drain ball valve.

TASK 38-11-03-404-077

5. Water Tank Fill Valve Control Cable Installation (Fig. 401)

A. Consumable Materials

- (1) A00679 sealant, Pressure and Environmental - Chromate Type - BMS5-95, Type I, Class B
- (2) D00015 grease, BMS3-24, Corrosion Preventive

B. Access

(1) Location Zone

- 166 Area Aft of Bulk Cargo Compartment (Right)
- 811 Bulk Cargo Door

C. Water Tank Fill Valve Control Cable Installation

S 024-078

- (1) Remove the handle and the first nut and tab washer from the control cable.

S 394-079

- (2) Apply sealant to the handle end of the control cable for a fay surface seal at the service panel.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

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- S 424-080  
(3) Put the control cable in its position on the service panel.
- S 424-081  
(4) Install the tab washer and nut.
- S 424-082  
(5) Tighten the nut 200 to 300 pound-inches.
- S 424-083  
(6) Install the handle on the control cable.  
(a) Make sure that there is a minimum gap of 0.25 inch between the control cable handle and the nut, at the service panel.
- NOTE: When the service panel door is closed, the closed panel door provides a constant compressive force on the control cable which helps to keep the valve shut.
- S 424-084  
(7) Put the control cable in its position to connect the clamps to the brackets or the structure.
- S 024-085  
(8) Loosen the cable jamnut to remove the clevis from the control cable.
- S 024-087  
(9) Remove one of the nut and tab washer from the clevis end of the control cable.
- S 424-088  
(10) Put the control cable through the bracket.
- S 424-089  
(11) Install the tab washer and nut to loosely attach the control cable to the bracket.

S 424-092

- (12) Install the cable jamnut and clevis on the control cable.

S 644-093

- (13) Put a thin layer of grease on the surfaces of the pin and the clevis.

S 414-094

- (14) Put the clevis for the control cable on the valve arm.

S 424-095

- (15) Install the pin, washer, and cotter pin.

D. Water Tank Fill Valve Control Cable Installation Test

S 864-110

- (1) Move the valve arm to the fully closed position.

S 224-111

- (2) Make sure there is a minimum gap of 0.25 inch between the control valve handle and the service panel (with the valve arm in the fully closed position).

S 824-112

- (3) If the drain valve handle is in the fully closed position, adjust the control cable to get a minimum gap of 0.25 inch (between the control cable handle and the service panel) with the valve arm in the fully closed position.

S 424-113

- (4) Install the lockwire for the nuts and tab washer for the control cable.

S 714-114

- (5) Pull and then push the handle for the fill valves to make sure the control cable moves freely.

E. Put the Airplane Back to the Usual Condition

S 414-119

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Do these steps:

- (a) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

**38-11-03**

 **BOEING**  
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MAINTENANCE MANUAL

(b) Close the bulk cargo door, 811 (AMM 52-36-00/001).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

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WATER TANK FILL VALVE – ADJUSTMENT/TEST

1. General

- A. This procedure has this task:
  - (1) The adjustment of the control cable for the water tank fill valve.
- B. The compressor interlock switch is attached to the fill valve. The fill valve lever operates the compressor interlock switch. The operational test for the water tank fill valve makes sure that the air compressor stops when you pull the handle for the fill valve. This adjustment makes sure the air compressor stops when you pull the fill valve when the water tank fill valve is closed.

TASK 38-11-03-705-001

2. Water Tank Fill Valve Control Cable – Adjustment (Fig. 501)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 811 Bulk Cargo Door

C. Procedure

- S 845-008
  - (1) Remove electrical power (AMM 24-22-00/201).
- S 845-009
  - (2) Release the pressure from the potable water system (AMM 38-10-00/201).
- S 015-010
  - (3) Do these steps to get access to the control cable for the water tank fill valve:
    - (a) The water tank fill valve is aft of the bulk cargo compartment.
      - 1) Open the bulk cargo door, 811 (AMM 52-36-00/001).

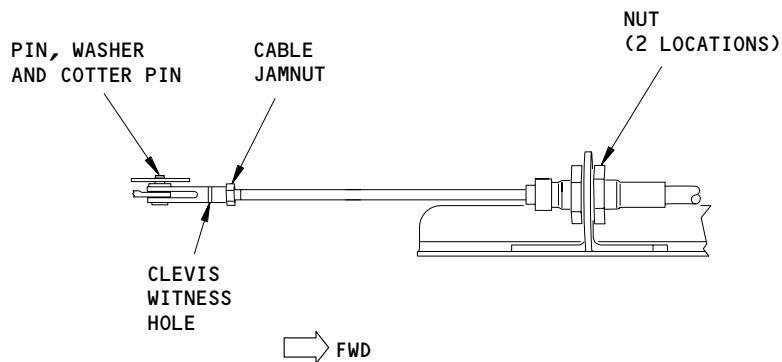
EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

**38-11-03**

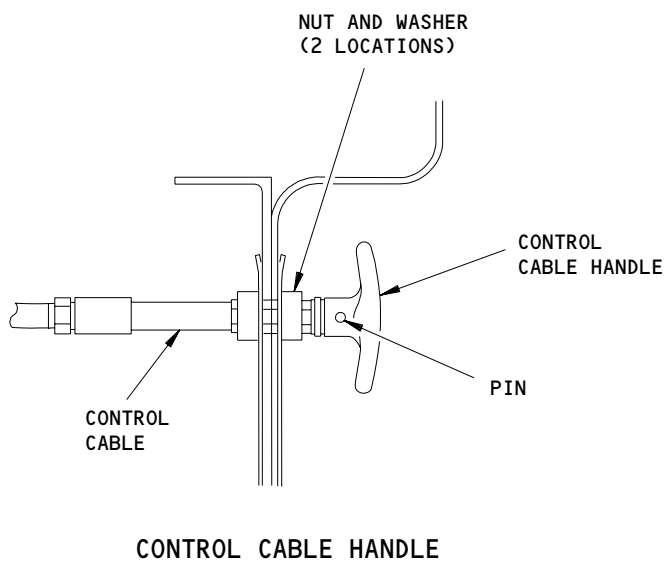
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CONTROL CABLE  
(EXAMPLE)



Control Cable Adjustment  
Figure 501

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

**38-11-03**

- 2) Remove the bulkhead lining of the cargo compartment (AMM 25-52-01/401).

S 015-011

- (4) Remove connector D1290 from the cut-out switch for the water pressure.

S 715-012

- (5) Pull the handle at the aft service and drain panel for the fill valve.

S 765-013

- (6) Do a continuity test from pin 3 to GND for connector D1290.

S 765-014

- (7) If there is continuity, adjust as follows:
- (a) Push the handle at the aft service and drain panel for the fill valve.
  - (b) Disconnect the control cable clevis from the fill valve lever.
  - (c) Decrease the length of the cable by one turn.
  - (d) Install the control cable clevis.

NOTE: Do not tighten the control cable clevis or attach the cotter pin.

- (e) Pull the handle at the aft service and drain panel for the fill valve and do the continuity test again.
- (f) If there is no continuity, the system operation is correct.
- (g) If there is continuity, do the adjustment procedure again.
- (h) Tighten the control cable clevis and install the cotter pin.
- (i) Push the handle for the fill valve at the aft service and drain panel.

S 415-015

- (8) Install connector D1290 on the cut-out switch for water pressure.

EFFECTIVITY \_\_\_\_\_  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

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S 845-016

- (9) Pressurize the potable water system (AMM 38-10-00/201).

S 715-017

- (10) Open and then close the fill valve for the water tank.

S 715-018

- (11) Make sure the air compressor stops when the valve is open.

S 715-019

- (12) Make sure the air compressor operates when the fill valve is closed.

S 415-020

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (13) Do these steps:

- (a) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- (b) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 865-023

- (14) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH TWO  
PORTS (SEPARATE FILL AND DRAIN)

**38-11-03**

POTABLE WATER FILL/DRAIN VALVE – REMOVAL/ INSTALLATION

1. General

- A. This procedure gives the instructions necessary to remove and install the fill/drain valve for the potable water system. There is one fill/drain valve on each airplane. The fill/drain valve is on the bottom of the airplane at the centerline, located just above the potable water service/drain panel, just aft of the aft cargo door at STA 1374.

TASK 38-11-04-004-001

2. Remove the Fill/Drain Valve for the Potable Water System (Fig. 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 52-35-00/001, Aft Cargo Door
- (4) AMM 53-01-01/401, Floor Panels

B. Access

- (1) Location Zones
  - 155 Area Below Aft Cargo Compartment (Left)
  - 156 Area Below Aft Cargo Compartment (Right)
  - 822 Aft Cargo Door

C. Procedure (Fig 401)

S 044-002

- (1) Release pressure from the potable water system (AMM 38-10-00/201).

S 684-003

- (2) Drain the potable water system (AMM 12-14-01/301).

S 014-005

- (3) For removal of the aft fill/drain valve, open the aft cargo door (AMM 52-35-00/001).

S 014-006

- (4) Remove the cargo lining floor panel located above the fill/drain valve (AMM 53-01-01/401).

S 034-007

- (5) Disconnect the tee fitting from the fill/drain valve.

S 034-008

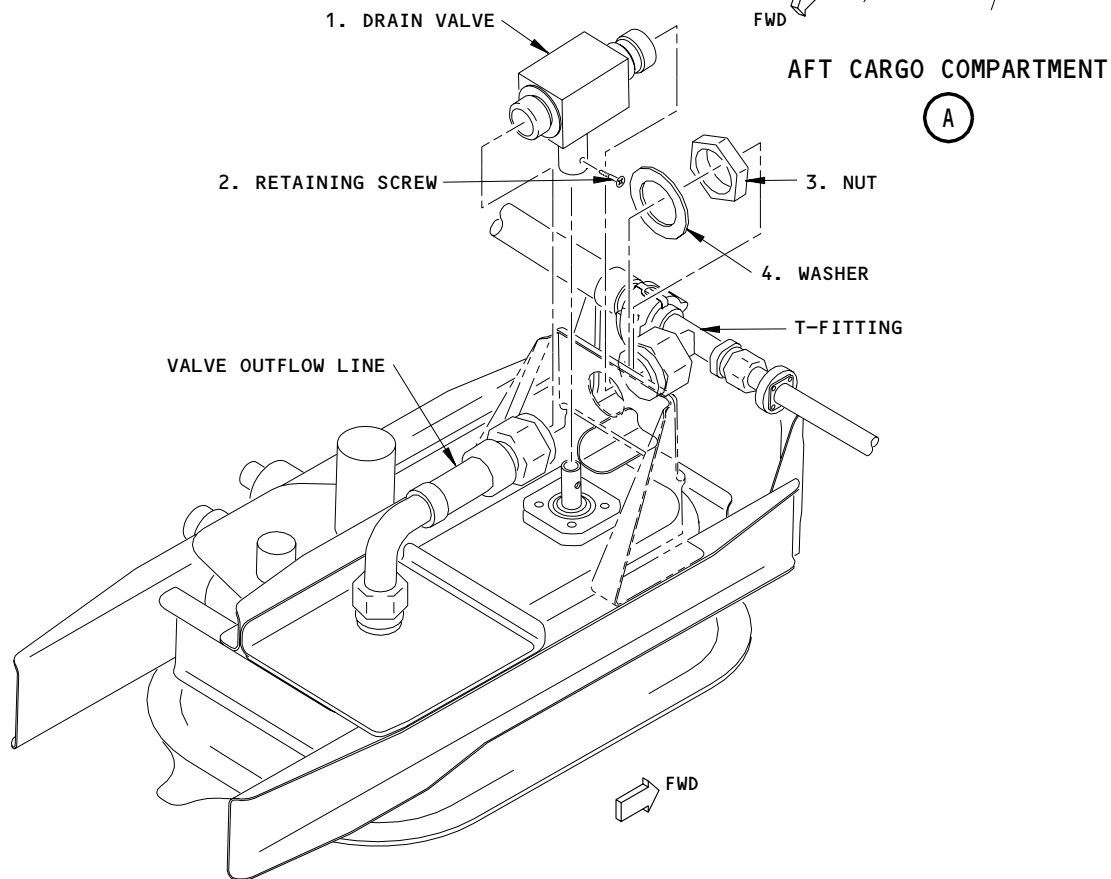
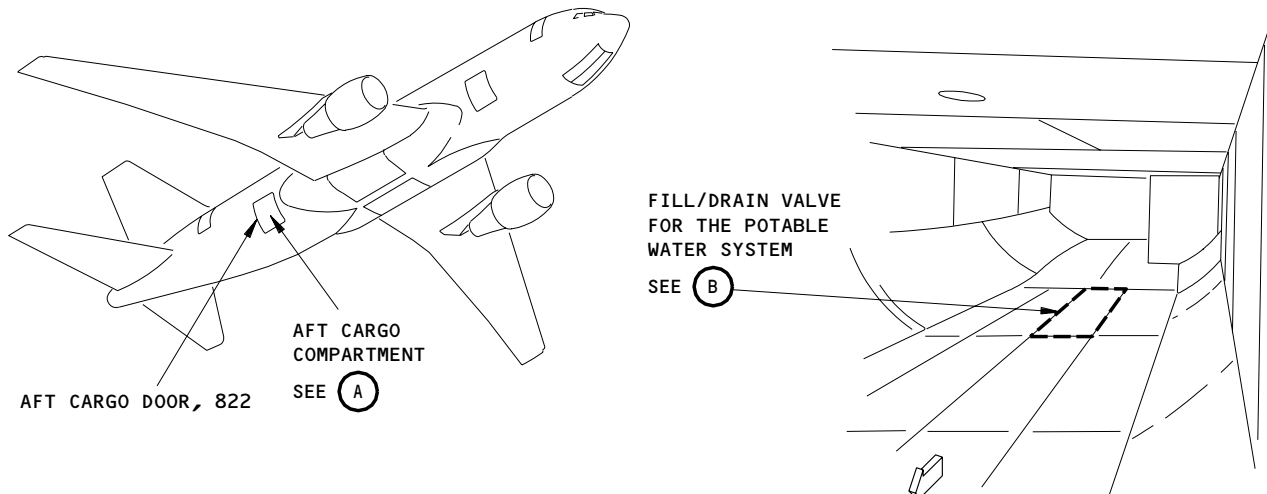
- (6) Disconnect the valve outflow line from the fill/drain valve.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

**38-11-04**

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FILL/DRAIN VALVE FOR THE POTABLE WATER SYSTEM  
(EXAMPLE)

(B)

Potable Water Fill/Drain Valve Installation  
Figure 401

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

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- S 034-009  
(7) Disconnect the handle from the fill/drain valve. To do this, remove the retaining screw for the handle.

- S 024-010  
(8) Remove the retaining nut and washer from the fill/drain valve.

- S 024-011  
(9) Remove the fill/drain valve.

TASK 38-11-04-404-012

3. Install the Fill/Drain Valve for the Potable Water System (Fig. 401)

A. References

- (1) AMM 52-35-00/001, Aft Cargo Door
- (2) AMM 53-01-01/401, Floor Panels

B. Access

- (1) Location Zones
  - 155 Area Below Aft Cargo Compartment (Left)
  - 156 Area Below Aft Cargo Compartment (Right)
  - 822 Aft Cargo Door

C. Procedure

- S 424-013  
(1) Install the fill/drain valve with the washer and retaining nut.

- S 434-014  
(2) Connect the fill/drain valve to the handle with the retaining screw and nut.

**NOTE:** When connecting the fill/drain valve to the handle make sure the two are in the closed position.

- S 434-015  
(3) Connect the valve outflow line to the fill/drain valve.

- S 434-016  
(4) Connect the tee fitting to the fill/drain valve.

- S 714-017  
(5) Make sure the fill/drain valve turns easily.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

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- S 614-020  
(6) Fill the potable water tank (AMM 12-14-01/301).
- S 864-021  
(7) Pressurize the potable water system (AMM 38-10-00/201).
- S 794-022  
(8) Make sure the valve does not have a leak.
- S 414-018  
(9) Install the floor panel (AMM 53-01-01/401).
- S 414-023  
(10) Close the cargo door, 822 (AMM 52-35-00/001).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

**38-11-04**

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VENT/OVERFLOW VALVE - REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the vent/overflow valve (referred to as the valve). The valve is located above and outboard of the right main potable water tank.

The valve is controlled by the service panel door switch.

During normal operation, the valve is in the CLOSED position. This allows the potable water system to be pressurized.

When the service panel door is opened, the plunger switch on the service panel door actuates the valve into the OPEN position, which allows filling/venting of the potable water system.

TASK 38-11-05-004-001

2. Valve - Removal (Fig 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Aft Cargo Compartment (Right)
- (2) Access Panels
  - 811 Bulk Cargo Door

C. Procedure

S 044-003

- (1) Release pressure from the potable water system (AMM 38-10-00/201).

S 684-004

- (2) Drain the potable water system (AMM 12-14-01/301).

S 014-005

- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-006

- (4) Remove the aft bulkhead lining from the bulk cargo compartment (AMM 25-52-01/401).

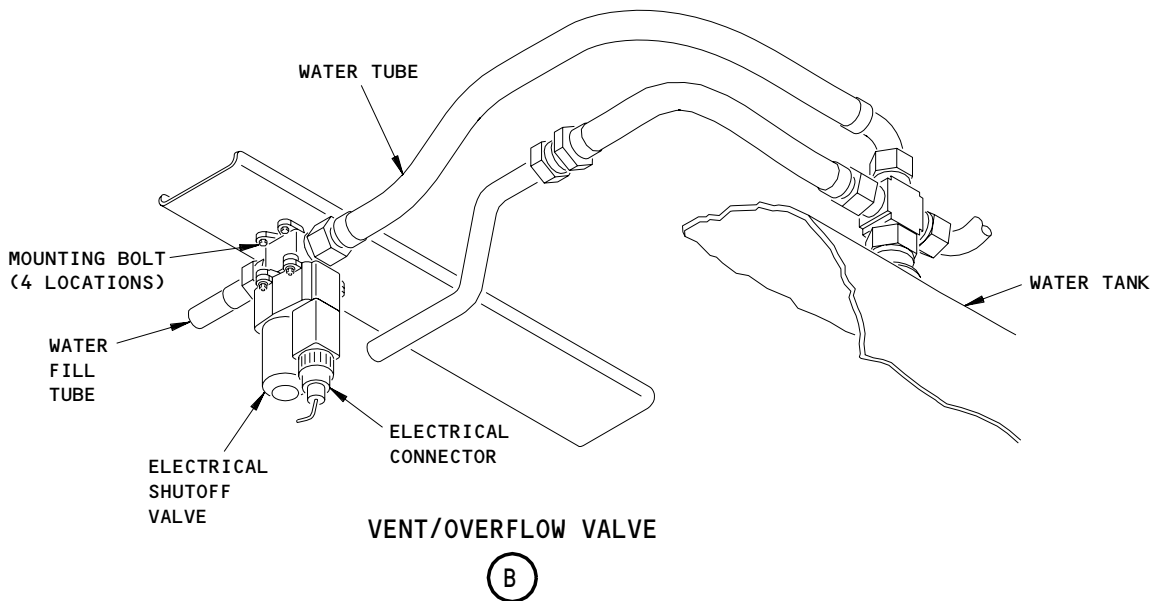
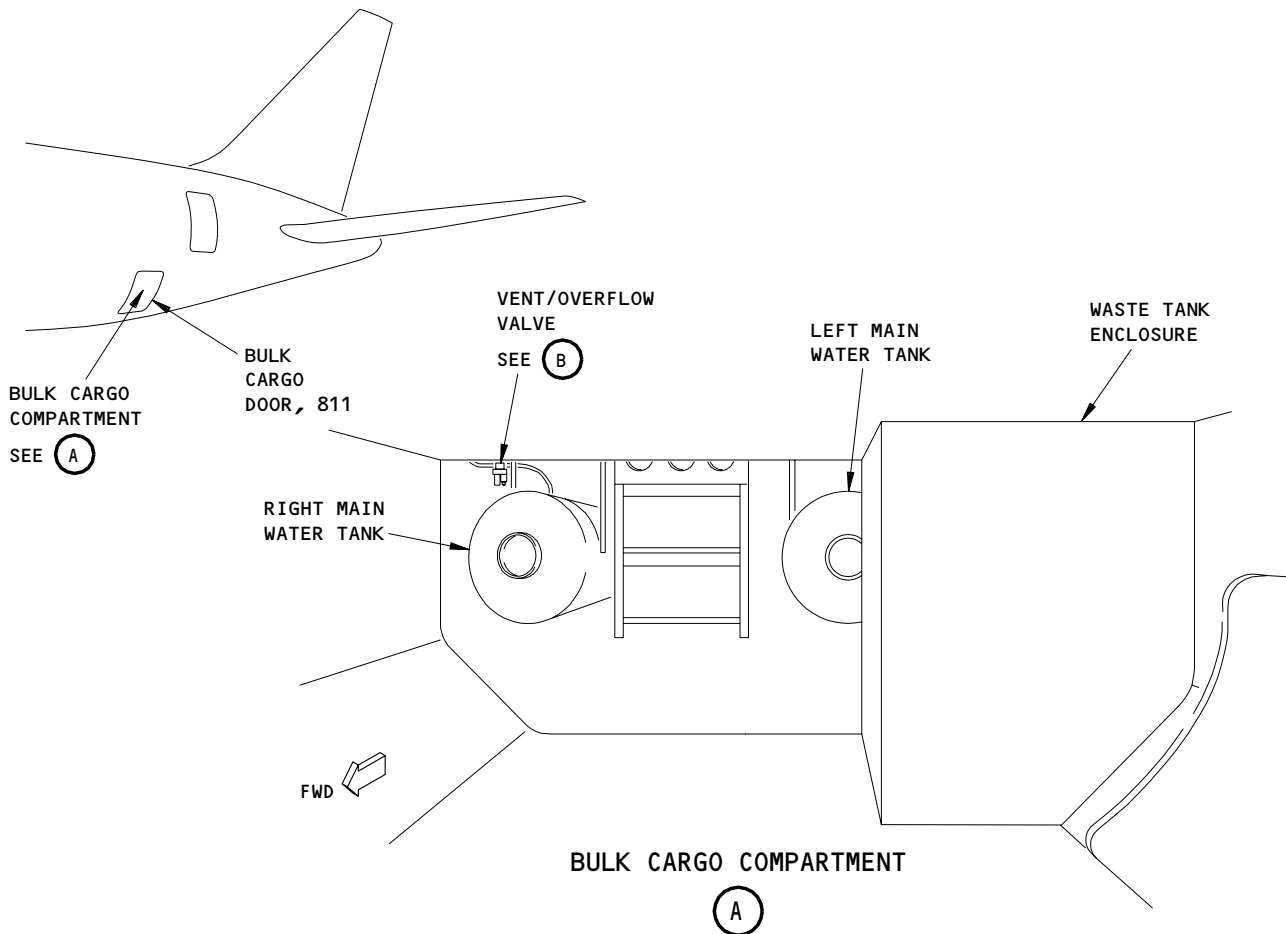
EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

**38-11-05**

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Vent/Overflow Valve Installation  
Figure 401

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

38-11-05

- S 034-007
- (5) Disconnect the electrical connector from the valve.
  
- S 034-008
- (6) Disconnect the water lines from the valve.
  
- S 034-009
- (7) Put a cap on the water lines to keep contamination out of the potable water system.
  
- S 024-010
- (8) Remove the attach bolts and remove the valve.

TASK 38-11-05-404-011

3. Valve - Installation (Fig 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-10-00/201, Potable Water System
- (5) AMM 52-36-00/001, Bulk Cargo Door
- (6) AMM 52-49-00/001, External Service Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Aft Cargo Compartment (Right)
  
- (2) Access Panels
  - 811 Bulk Cargo Door

C. Procedure

- S 424-012
- (1) Put the valve in its position and install the attach bolts.
  
- S 434-013
- (2) Remove the caps from the water lines.
  
- S 434-014
- (3) Connect the water lines to the valve.
  
- S 434-015
- (4) Connect the electrical connector to the valve.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

**38-11-05**

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D. Valve Installation Test

S 864-027

- (1) Pressurize the potable water system, (AMM 38-10-00/201).

S 714-028

- (2) Make sure the vent/overflow valve opens when the potable water service panel door is open.

S 714-029

- (3) Close the potable water service panel door (AMM 52-49-00/001).

S 714-022

- (4) Make sure the vent/overflow valve closes.

S 714-026

- (5) Make sure the potable water system pressurizes.

E. Put the Airplane Back to its Usual Condition

S 414-023

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 414-024

- (2) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 864-025

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
ONE PORT (COMBINED FILL/DRAIN)

**38-11-05**

LAVATORY WASHBASIN FAUCET – REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) The removal and installation of the standard washbasin faucet.
  - (2) The removal and installation of the cartridge of the standard washbasin faucet.
  - (3) The removal and installation of the drain valve for the washbasin.
  - (4) An adjustment of the lavatory basin drain valve.
- B. To make the drain plug non-removable, do these steps:

**NOTE:** The non-removable drain plug is a modified drain plug with a hole opposite the slot for the rod assembly connection. This is part of the 767 SRP 38-0008.

- (1) Remove the rod assembly from the drain valve body.
- (2) Remove the drain plug from the drain valve body.
- (3) Align the hole in the drain plug with the rod assembly and then install the drain plug.
- (4) Install the rod assembly in the hole instead of the slot of the drain plug.

TASK 38-11-06-004-001-001

2. Remove the Washbasin Faucet or the Faucet Cartridge (Fig. 401)

A. Access

- (1) Locatin Zone  
200 Upper Half of Fuselage

B. Procedure

S 014-003-001

- (1) Remove the access panel that is below the washbasin.

S 864-004-001

- (2) Put the water heater switch (14) in the OFF position.

S 864-005-001

- (3) Close the shutoff valve for the water supply (15).

S 024-115-001

- (4) ALL MTH AIRPLANES;

To remove the faucet, do these steps:

- (a) Disconnect the water lines (13) from the faucet (6).
- (b) Put a cap on the water lines to keep contamination out.
- (c) Disconnect the spring (7) from the actuator rod (8).

EFFECTIVITY  
AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

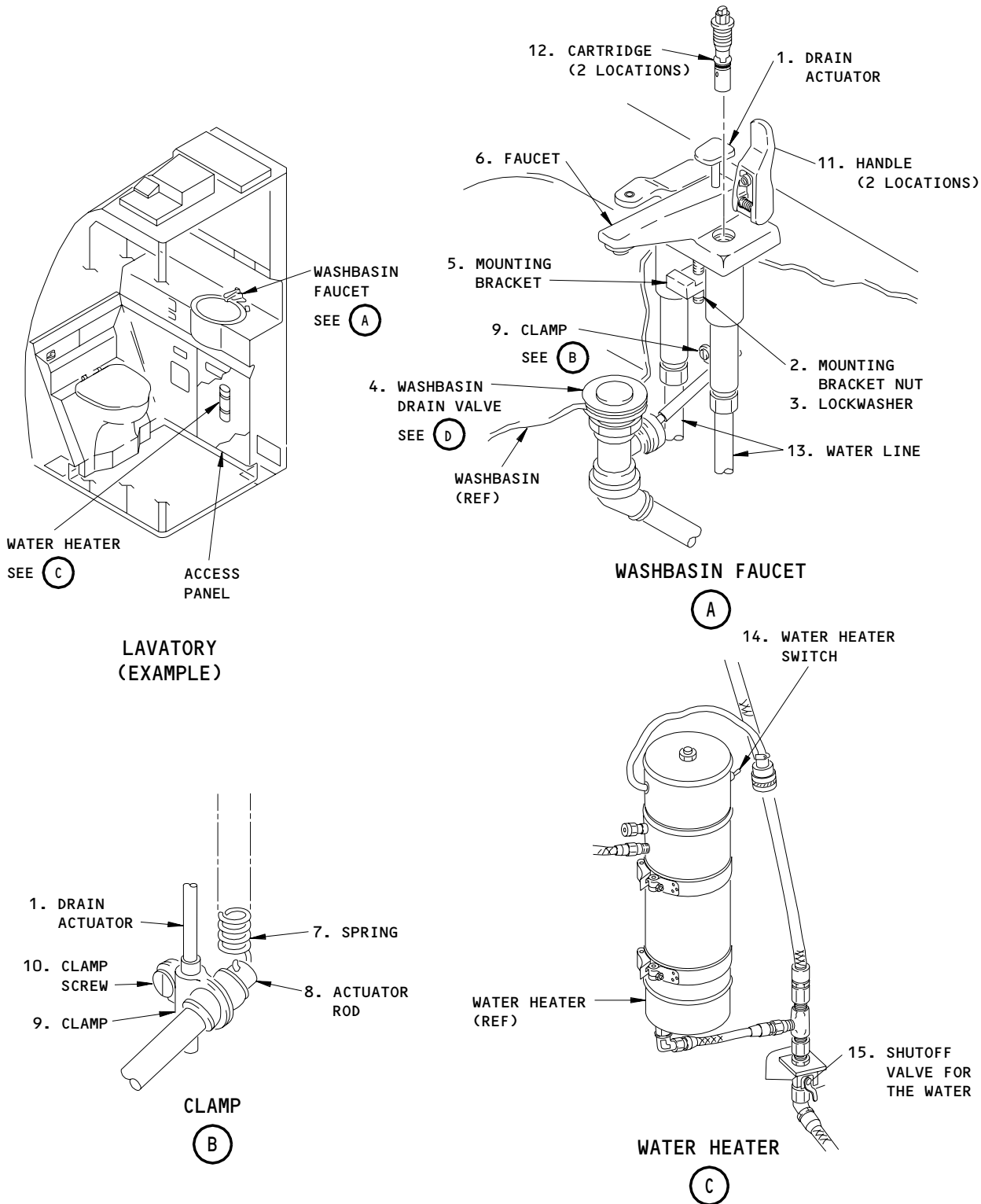
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CONFIG 1

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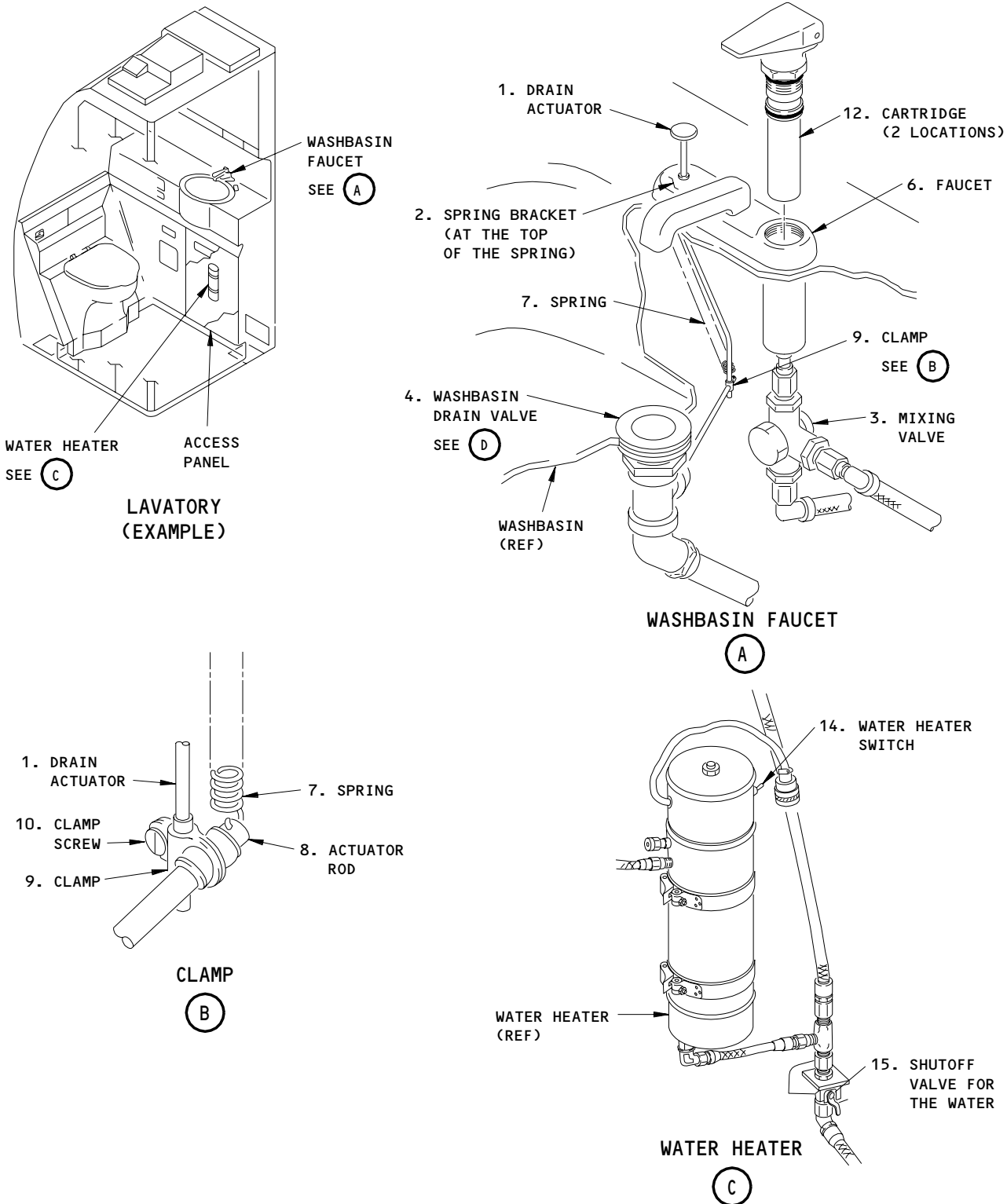


Washbasin Standard Faucet Installation  
Figure 401 (Sheet 1)

EFFECTIVITY  
ALL MTH AIRPLANES

**38-11-06**  
CONFIG 1  
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Washbasin Standard Faucet Installation  
Figure 401 (Sheet 2)

EFFECTIVITY  
ALL SAS AIRPLANES

38-11-06

CONFIG 1

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- (d) Loosen the clamp screw (10) and move the clamp (9) off the drain actuator (1).
- (e) Remove the mounting bracket nut (2), the lockwasher (3), and the mounting bracket (5).
- (f) Remove the faucet (6).

S 024-013-001

- (5) ALL SAS AIRPLANES;

To remove the faucet, do these steps:

- (a) Remove the nut that holds the spring bracket (2).
- (b) Remove the spring bracket (2).
- (c) Remove the mounting screws.
- (d) Disconnect the mixing valve (3) from the faucet (6).
- (e) Put a cap on the mixing valve (3) to keep contamination out.
- (f) Remove the faucet.

C. Remove the Faucet Cartridge

S 014-014-001

- (1) Remove the access panel that is below the washbasin.

S 864-015-001

- (2) Put the water heater switch (14) in the OFF position.

S 864-016-001

- (3) Close the shutoff valve for the water supply (15).

S 014-018-001

- (4) ALL MTH AIRPLANES;  
Lift the faucet handle (11) to the vertical position.

S 024-019-001

- (5) Turn the cartridge (12) to remove it from the faucet (6).

TASK 38-11-06-404-020-001

3. Install the Washbasin Faucet or the Faucet Cartridge (Fig. 401)

A. Parts

- (1) MTH ALL;  
AMM/IPC Parts Table:

EFFECTIVITY  
AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

**38-11-06**  
CONFIG 1  
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AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	6	Faucet Cartridge	38-11-06	01	5
	12				10

(2) SAS ALL;  
AMM/IPC Parts Table:

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Drain Actuator	38-11-06	01	TBD
	2	Spring Bracket			TBD
	3	Mixing Valve			TBD
	4	Washbasin Drain Valve			170
	6	Faucet			TBD
	7	Spring			TBD
	8	Actuator Rod			260
	9	Clamp			235
	10	Clamp Screw			240
	12	Cartridge			10

B. Access

(1) Locatin Zone  
200 Upper Half of Fuselage

C. Procedure

S 424-117-001

(1) ALL MTH AIRPLANES;  
To install the faucet, do these steps:  
(a) Put the faucet (6) in its position.

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AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

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- (b) Install the mounting bracket (5), the lockwasher (3), and the nut (2).

S 424-025-001

- (2) ALL SAS AIRPLANES;  
To install the faucet, do these steps:
  - (a) Remove the cap from the mixing valve (3).
  - (b) Put the faucet (6) in its position.
  - (c) Connect the faucet (6) to the mixing valve (3).
  - (d) Install the mounting screws.
  - (e) Install the spring bracket (2).
  - (f) Install the nut that holds the spring bracket.

S 434-026-001

- (3) Put the clamp (9) on the drain actuator (1).

S 434-027-001

- (4) Connect the spring (7) to the actuator rod (8).

S 824-028-001

- (5) Adjust the clamp (9) on the drain actuator (1) until the drain actuator (1) is up when the washbasin drain valve (4) is closed.

S 434-029-001

- (6) Tighten the clamp screw (10).

S 714-030-001

- (7) Make sure the washbasin drain valve (4) opens when you push the drain actuator (1) down. Make sure it closes when you release the drain actuator (1). If it is necessary, adjust the clamp (9) on the drain actuator (1).

S 424-119-001

- (8) ALL MTH AIRPLANES;  
To connect the water lines, do these steps:
  - (a) Remove the caps from the water lines (13).
  - (b) Connect the water lines (13) to the faucet (6).

S 864-034-001

- (9) Open the shutoff valve for the water supply (15).

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AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

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S 794-035-001

(10) Make sure the faucet does not have a leak.

S 864-036-001

(11) Put the water heater switch (14) in the ON position.

S 414-037-001

(12) Install the access panel below the washbasin.

D. Install the Faucet Cartridge (Fig. 401)

S 424-038-001

(1) Install the cartridge (12) in the faucet (6).

S 414-040-001

(2) ALL MTH AIRPLANES;  
Push the handle (11) down.

S 864-041-001

(3) Open the shutoff valve for the water supply (15).

S 794-042-001

(4) Make sure the cartridge (12) does not have a leak.

S 864-043-001

(5) Put the water heater switch (14) in the ON position.

S 414-044-001

(6) Install the access panel below the washbasin.

TASK 38-11-06-004-045-001

4. Washbasin Drain Valve Removal (Fig. 401)

A. General

(1) The washbasin drain valve will be referred to as the drain valve in this procedure.

B. Access

(1) Location Zone  
200 Upper Half Fuselage

C. Prepare for the Removal

S 014-046-001

(1) Remove the access panel for the sink cabinet.

S 864-047-001

(2) Turn the water heat switch to the OFF position.

EFFECTIVITY  
AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

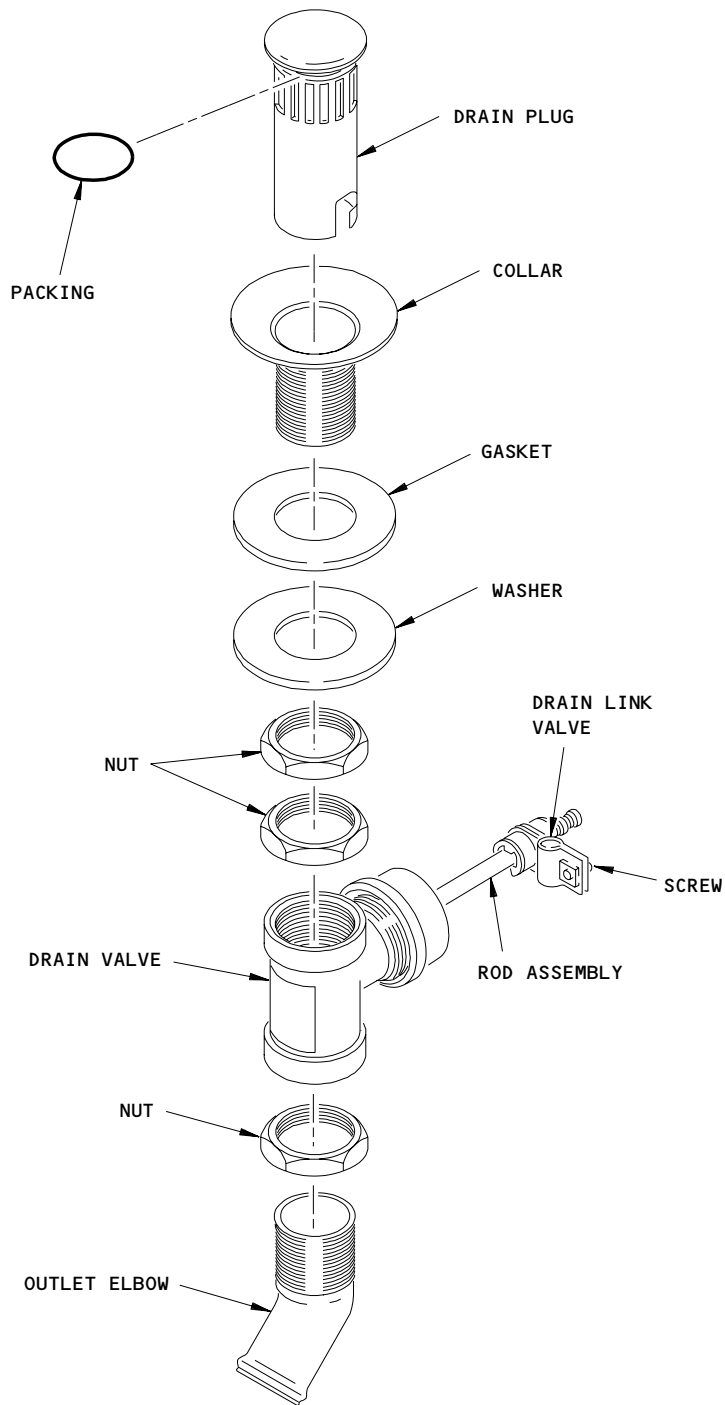
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WASHBASIN DRAIN VALVE

(D)

Washbasin Standard Faucet Installation  
Figure 401 (Sheet 3)

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AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

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- S 864-048-001  
(3) Close the shutoff valve for the lavatory water supply.

- S 864-049-001  
(4) Open the hot and cold water faucets momentarily to release the pressure on the line.

D. Washbasin Drain Valve Removal

- S 024-050-001  
(1) Disconnect the drain hose from the outlet elbow of the drain valve.

- S 024-051-001  
(2) Disconnect the drain valve link from the faucet rod.

- S 024-052-001  
(3) Remove the rod assembly from the drain valve body.

- S 024-053-001  
(4) Loosen the upper nut to remove the collar.

- S 024-054-001  
(5) Remove the drain valve body, gasket and washer.

TASK 38-11-06-004-055-001

5. Washbasin Drain Valve Installation (Fig. 401)

A. Access

- (1) Location Zone  
200 Upper Half Fuselage

B. Washbasin Drain Valve Installation

- S 424-056-001  
(1) Put the collar and gasket in their position.

- S 424-057-001  
(2) Install the washer and nut on the collar.

- S 424-058-001  
(3) Install the valve body in the collar with the lower nut.

- S 424-059-001  
(4) Connect the drain valve link to the faucet.

- S 424-060-001  
(5) Connect the drain hose to the outlet elbow of the drain valve.

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AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

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S 424-061-001

- (6) Tighten the nuts that attach the drain valve to the collar and outlet elbow.

C. Washbasin Drain Valve Installation Test

S 864-062-001

- (1) Open the shutoff valve for the water supply.

S 794-063-001

- (2) Do a check to make sure the drain valve has no leakage.

S 714-064-001

- (3) Make sure the drain plug holds the water in the washbasin until you push the drain button on the faucet.
  - (a) If the water does not stay in the washbasin, do this task:  
Washbasin Drain Valve Adjustment, AMM 38-11-06/401.

D. Put the Airplane Back to its Usual Condition

S 864-065-001

- (1) Turn the water heater switch to the ON position.

S 414-066-001

- (2) Install the access panel for the sink cabinet.

TASK 38-11-06-824-067-001

6. Washbasin Drain Valve Adjustment (Fig. 401)

A. Access

- (1) Location Zone  
200 Upper Half Fuselage

B. Washbasin Drain Valve Adjustment

S 014-068-001

- (1) If it is necessary, remove the access panel for the sink cabinet.

S 024-069-001

- (2) Loosen the screw for the drain valve link.

S 864-070-001

- (3) Push the end of the rod assembly up until the drain plug is fully engaged against the collar.

S 424-071-001

- (4) Tighten the screw for the drain valve link.

EFFECTIVITY  
AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

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- S 714-072-001
- (5) Fill the sink with water to approximately half full.  
(a) Make sure the water stays in the lavatory basin.
- S 714-073-001
- (6) Push the drain button on the lavatory faucet.  
(a) Make sure the drain valve opens and the operation of the lavatory basin drain is satisfactory.
- S 414-074-001
- (7) Install the access panel for the sink cabinet.

EFFECTIVITY  
AIRPLANES WITH STANDARD MECHANICAL  
FAUCET

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LAVATORY WASHBASIN FAUCET – REMOVAL/INSTALLATION

TASK 38-11-06-804-001-002

1. Washbasin Faucet – Mechanically Timed

A. General

(1) This configuration is NOT USED.

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CONFIGURATION NOT USED

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POTABLE WATER DRAIN VALVE – REMOVAL INSTALLATION

1. General

- A. This procedure gives the instructions necessary to remove and install the drain valve for the potable water system.
- (1) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN); There are two drain valves on each airplane. Each drain valve is on the bottom of the airplane at the centerline. One is aft of the forward cargo door, the other is aft of the aft cargo door.
  - (2) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); There is one drain valve on each airplane. The drain valve is on the bottom of the airplane at the centerline, aft of the forward cargo door.

TASK 38-11-10-004-019

2. Remove the Drain Valve for the Potable Water System (Fig. 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 52-33-00/001, Large Forward Cargo Door
- (4) AMM 52-35-00/001, Aft Cargo Door
- (5) AMM 53-01-01/401, Floor Panels

B. Access

- (1) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
Location Zones
  - 124 Area Below Forward Cargo Compartment (Right)
  - 155 Area Below Aft Cargo Compartment (Left)
  - 821 Forward Cargo Compartment Door
  - 822 Aft Cargo Door
- (2) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
Location Zones
  - 124 Area Below Forward Cargo Compartment (Right)
  - 821 Forward Cargo Compartment Door

C. Procedure (Fig. 401)

- S 044-001
  - (1) Release pressure from the potable water system (AMM 38-10-00/201).
- S 684-002
  - (2) Drain the potable water system (AMM 12-14-01/301).
- S 014-003
  - (3) For removal of the forward drain valve, open the forward cargo door, 821 (AMM 52-33-00/001).

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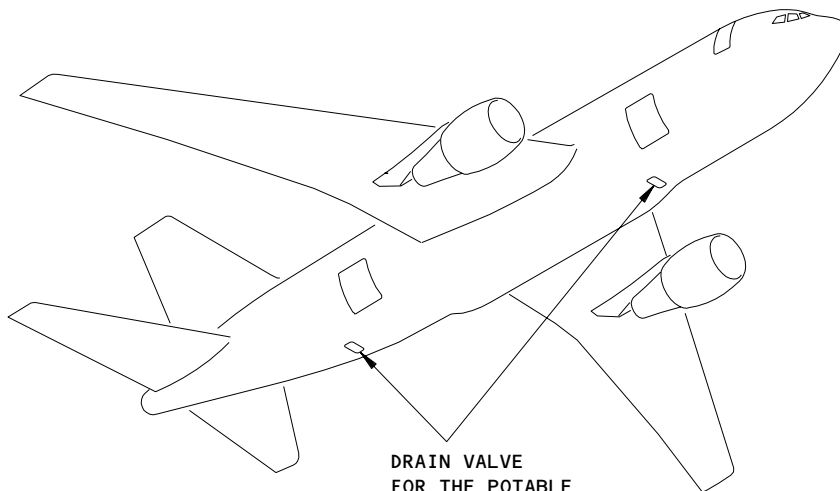
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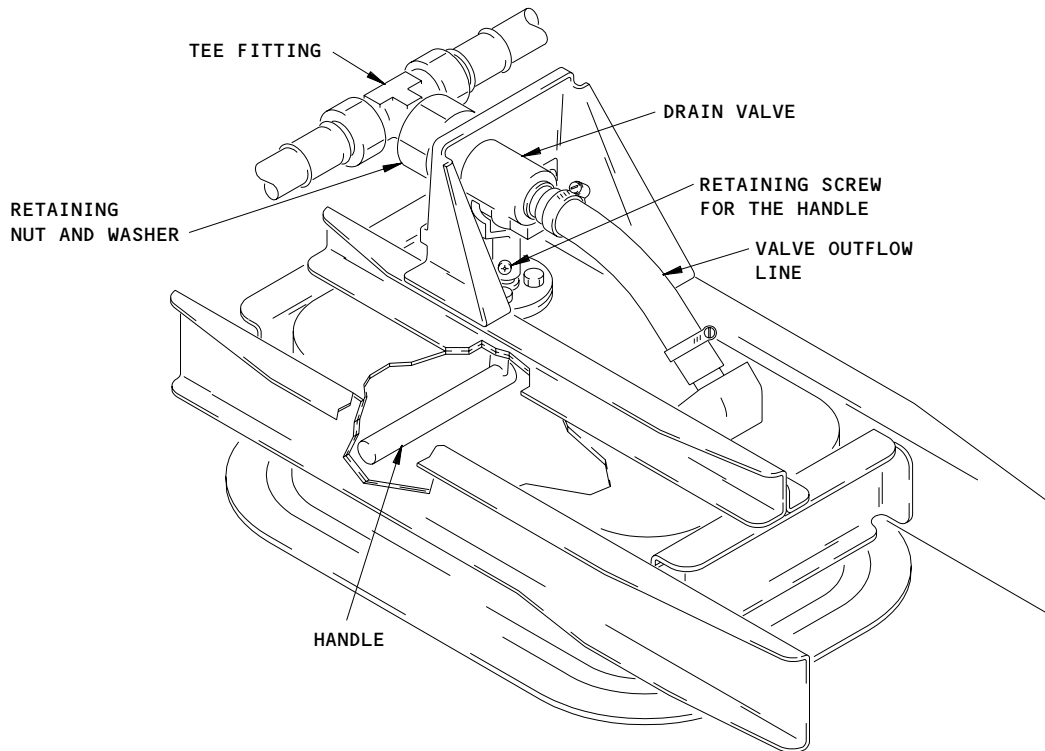
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DRAIN VALVE  
FOR THE POTABLE  
WATER SYSTEM

SEE (A) 1



DRAIN VALVE FOR THE POTABLE WATER SYSTEM  
(EXAMPLE)

1 DRAIN VALVE ON FORWARD PANEL ONLY  
ON AIRPLANES WITH AFT SERVICE PANEL  
WITH COMBINED FILL/DRAIN VALVE.

(A) 1

Potable Water Drain Valve Installation  
Figure 401

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- S 014-004
- (4) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN); For removal of the aft drain valve open the aft cargo door, 822 (AMM 52-35-00/001).
- S 014-005
- (5) Remove the floor panel approximately 6 feet aft of the cargo door (AMM 53-01-01/401).
- S 034-006
- (6) Disconnect the tee fitting from the drain valve.
- S 034-007
- (7) Disconnect the valve outflow line from the drain valve.
- S 034-008
- (8) Disconnect the handle from the drain valve. To do this, remove the retaining screw for the handle.
- S 024-009
- (9) Remove the retaining nut and washer from the drain valve.
- S 024-010
- (10) Remove the drain valve.

TASK 38-11-10-404-011

3. Install the Drain Valve for the Potable Water System (Fig. 401)

A. References

- (1) AMM 52-33-00/001, Large Forward Cargo Door  
(2) AMM 52-35-00/001, Aft Cargo Door  
(3) 53-01-01/401, Floor Panels

B. Access

- (1) AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
Location Zones
- |     |  |
|-----|--|
| 124 | Area Below Forward Cargo Compartment (Right) |
| 155 | Area Below Aft Cargo Compartment (Left)      |
| 821 | Forward Cargo Door                           |
| 822 | Aft Cargo Door                               |
- (2) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
Location Zones
- |     |  |
|-----|--|
| 124 | Area Below Forward Cargo Compartment (Right) |
| 821 | Forward Cargo Door                           |

C. Procedure

- S 424-012
- (1) Install the drain valve with the washer and retaining nut.

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S 434-013

- (2) Connect the drain valve to the handle with the retaining screw and nut.

NOTE: When connecting the drain valve to the handle make sure the two are in the closed position.

S 434-014

- (3) Connect the valve outflow line to the drain valve.

S 434-015

- (4) Connect the tee fitting to the drain valve.

S 714-016

- (5) Make sure the drain valve turns easily.

S 864-021

- (6) Pressurize the potable water system, AMM 38-10-00/201.

S 414-017

- (7) Install the floor panel (AMM 53-01-01/401).

S 414-018

- (8) Close the applicable cargo door(s).

S 864-022

- (9) Remove electrical power if it is not necessary, AMM 24-22-00/201.

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WATER SHUTOFF VALVE – REMOVAL/INSTALLATION

1. General

- A. Each lavatory has a shutoff valve for the potable water. It is below the water heater in the area below the washbasin.

TASK 38-11-11-004-009

2. Remove the Water Shutoff Valve (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Manual Control  
(2) AMM 38-10-00/201, Potable Water System

B. Access

- (1) Location Zone  
200 Upper Half of Fuselage

C. Procedure

S 864-001

- (1) Supply electrical power (AMM 24-22-00/201).

S 864-002

- (2) Release the pressure from the potable water system, AMM 38-10-00/201.

S 684-003

- (3) Open the faucet, in the applicable lavatory, to let the water drain.

S 014-004

- (4) Remove the access panel for the cabinet that is below the washbasin.

S 014-005

- (5) Open the plumbing access door that is in the cabinet.

S 034-006

- (6) Loosen coupling nuts and disconnect the water lines from the valve.

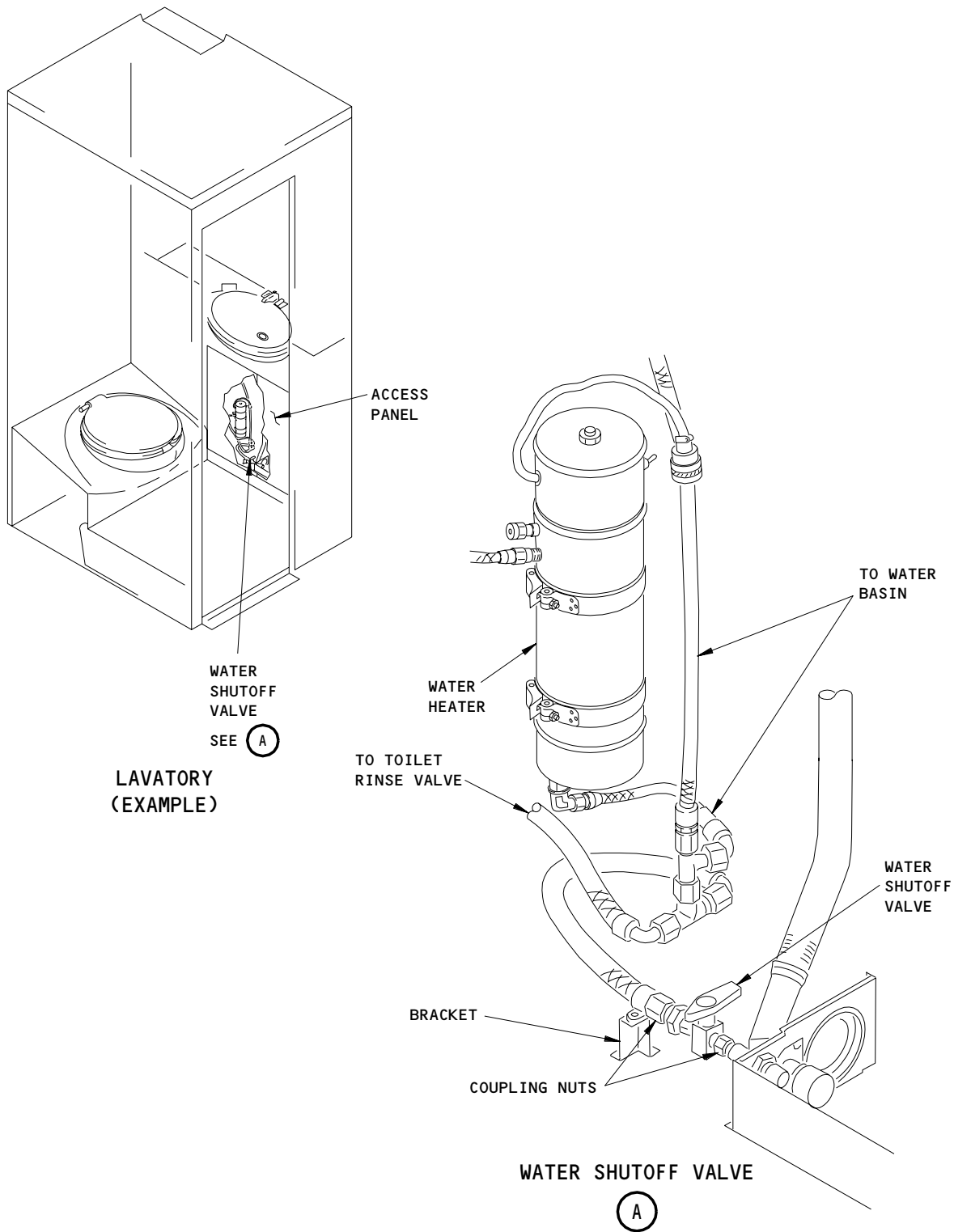
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Water Shutoff Valve Installation  
Figure 401

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- S 024-026  
(7) Remove the jamnut from the valve.

- S 024-008  
(8) Remove the valve from the bracket.

TASK 38-11-11-404-010

3. Install the Water Shutoff Valve (Fig. 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 38-10-00/201, Potable Water System

B. Access

- (1) Location Zone  
200 Upper Half of Fuselage

C. Procedure

- S 424-011  
(1) Put the valve in its position in the bracket.
- S 424-027  
(2) Attach the valve to the bracket with the jamnut.
- S 434-013  
(3) Connect the water lines to the valve and tighten the coupling nuts.
- S 864-014  
(4) Put the valve in the open position.
- S 614-015  
(5) If the potable water tank is empty, fill the potable water tank (AMM 12-14-01/301).
- S 864-016  
(6) Pressurize the potable water system (AMM 38-10-00/201).
- S 714-017  
(7) Make sure you can get water from the washbasin faucet.
- S 794-018  
(8) Make sure the valve does not have a leak.
- S 864-019  
(9) Close the water shutoff valve.
- S 714-020  
(10) Make sure you can not get water from the washbasin faucet.

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- S 864-021  
(11) Open the water shutoff valve.
- S 414-022  
(12) Close the plumbing access door.
- S 414-023  
(13) Install the access panel for the cabinet below the washbasin.
- S 864-024  
(14) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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POTABLE WATER FILTER – MAINTENANCE PRACTICE

1. General

- A. This procedure gives the instructions to replace the filter cartridge in the water filter case.

TASK 38-11-15-902-001

2. Water Filter Cartridge Replacement (Fig. 201)

A. Access

- (1) Location Zone  
200 Upper Half of Fuselage

B. Procedure

- S 862-002  
(1) Close the water shutoff valve.
- S 862-003  
(2) Open the faucet to release the water pressure.
- S 422-014  
(3) Close the faucet.
- S 032-004  
(4) Loosen the wingnut and remove the clamp at the top of the water filter case.
- S 022-005  
(5) Remove the filter cartridge from the filter case.
- S 162-006  
(6) Clean the inner side of the filter case with a clean cloth.
- S 422-007  
(7) Install a clean filter cartridge in the water filter case.
- S 432-008  
(8) Put the gasket on the top of the filter.
- S 412-009  
(9) Close the filter case top and tighten the clamp.
- S 862-010  
(10) Open the water shutoff valve.
- S 872-011  
(11) Open the vent at the top of the water filter case to bleed air.

EFFECTIVITY

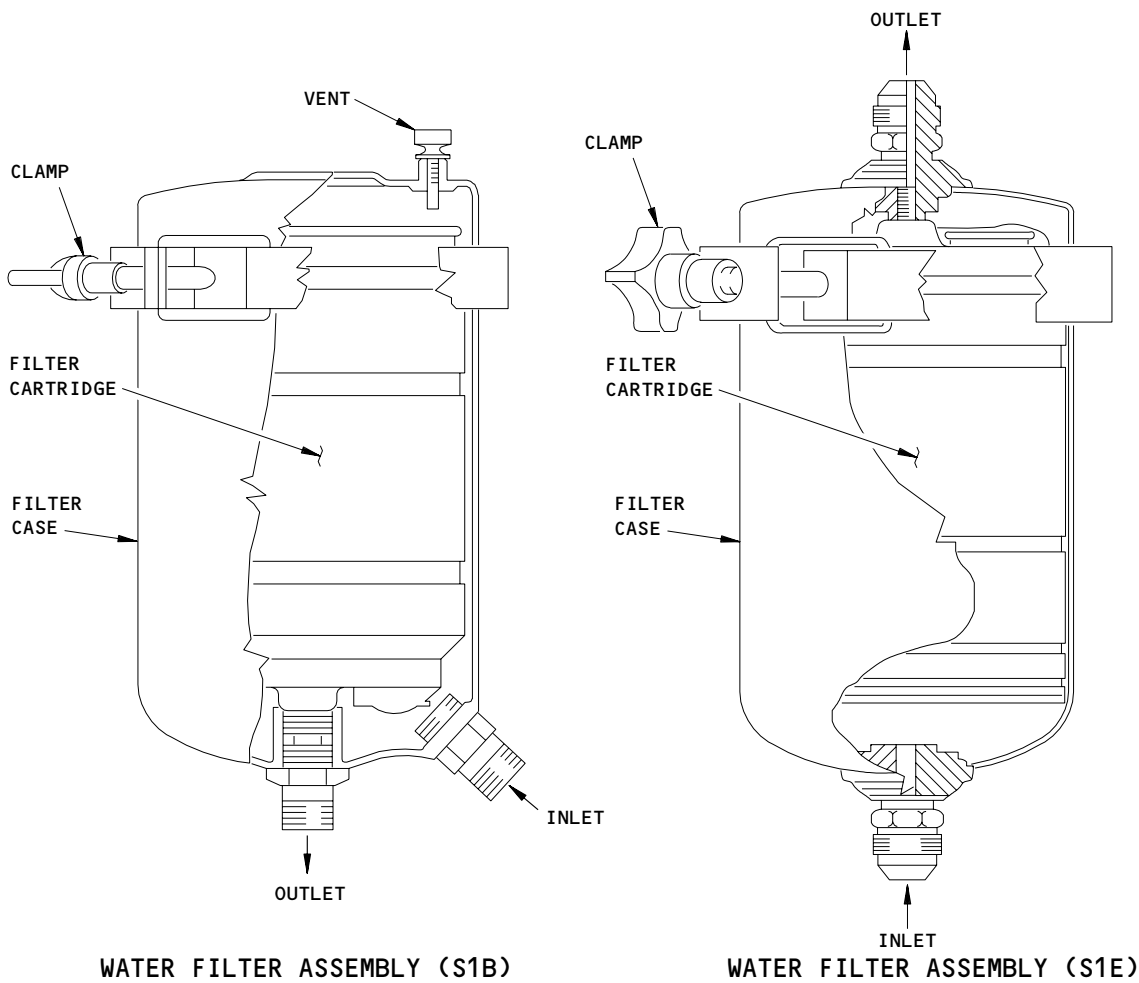
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**NOTE:** THE WATER FILTER IS USED IN THE GALLEY, THE LAVATORY SINK, AND THE DRINKING FOUNTAIN.

Potable Water Filter Installation  
Figure 201

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S 862-012

(12) Close the vent and open the faucet.

S 792-013

(13) Make sure the water filter does not have a leak.

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WATER HEATER - REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the water heaters that are in each lavatory.

TASK 38-13-01-004-014

2. Remove the Water Heater (Fig. 401)

A. Access

- (1) Location Zones  
200 Upper Half of Fuselage

B. Procedure

S 864-001

- (1) Open the following circuit breaker(s) for the applicable system and attach DO-NOT-CLOSE tags:  
(a) On the left miscellaneous electrical equipment panel, P36:  
1) On Row E (or D), WTR HTR LAV (SYS 1)  
(b) On the right miscellaneous electrical equipment panel, P37:  
1) On Row E (or H), WTR HTR LAV (SYS 2)

S 014-003

- (2) Remove the access door for the washbasin cabinet.

S 014-004

- (3) Open the plumbing access door below the washbasin to get access to the water heater.

S 864-005

- (4) Close the water shutoff valve in the applicable lavatory.

S 864-006

- (5) Put the water heater switch in the OFF position.

S 864-007

- (6) Open the hot water faucet to release the pressure from the water heater.

S 034-008

- (7) Disconnect the electrical connector from the water heater.

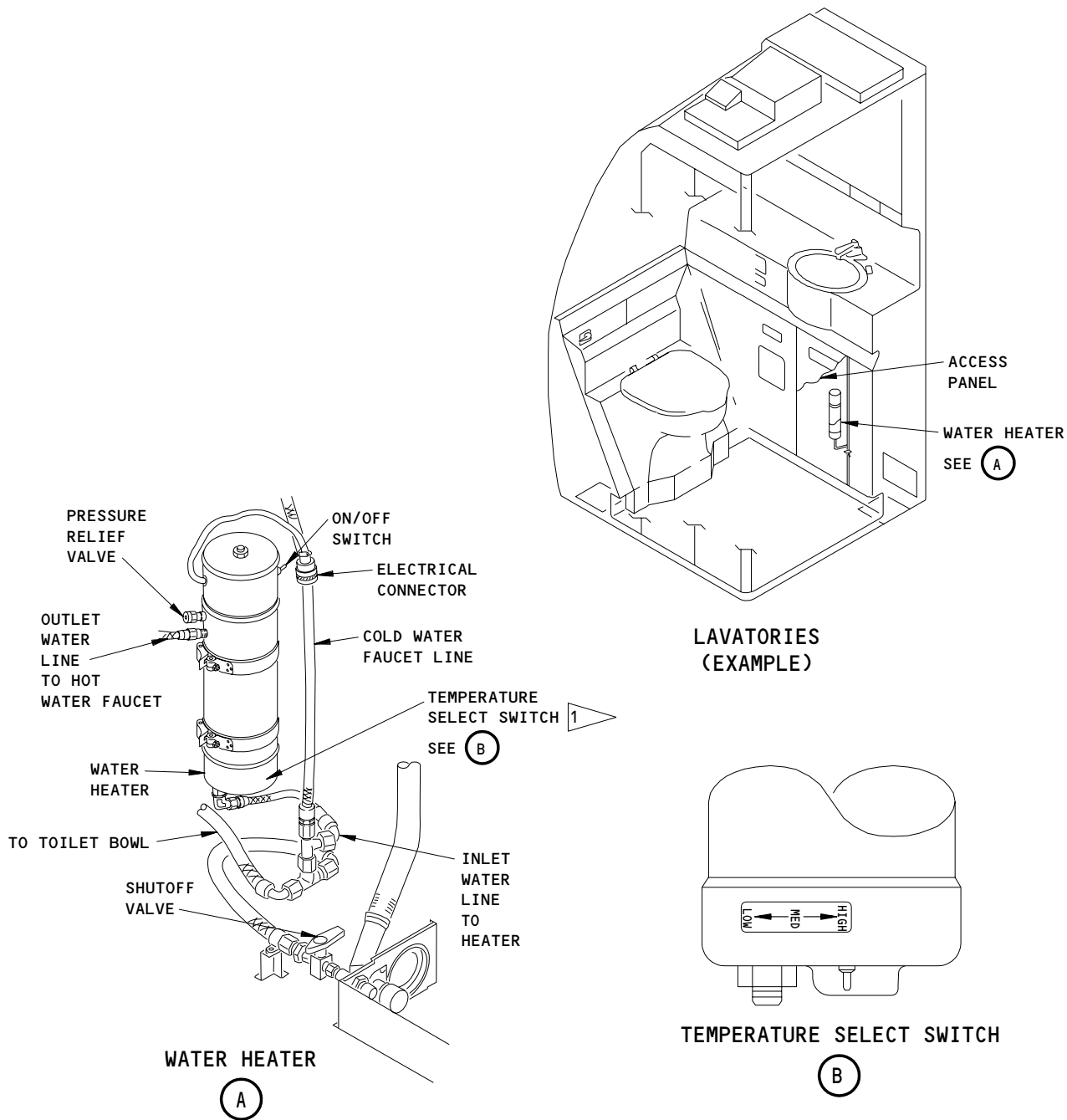
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1 WATER HEATERS WITH THE TEMPERATURE SELECT SWITCH

Water Heater Installation  
Figure 401

EFFECTIVITY	ALL
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- S 494-009
- (8) Put a container below the water heater to catch the water that is in the water heater.
- S 034-010
- (9) Disconnect the inlet and outlet water lines from the water heater.
- S 034-011
- (10) Put caps on the water lines to keep contamination out.
- S 024-012
- (11) Disconnect the clamps that hold the water heater, and remove the water heater.

TASK 38-13-01-404-013

3. Install the Water Heater (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Manual Control

B. Access

- (1) Location Zones  
200 Upper Half of Fuselage

C. Procedure

- S 424-015
- (1) Put the water heater in its position and attach it with the clamps.
- S 434-016
- (2) Connect the inlet and outlet water lines to the water heater.
- S 864-017
- (3) Open the water shutoff valve for the lavatory.
- S 864-018
- (4) Open the hot water faucet until water comes out of it.
- S 794-019
- (5) Make sure the water heater does not have a leak.
- S 434-022
- (6) Connect the electrical connector to the water heater.
- S 864-021
- (7) Supply electrical power (AMM 24-22-00/201).
- S 864-030
- (8) Remove the DO-NOT-CLOSE tags and close the circuit breakers for the applicable system:
  - (a) On the left miscellaneous electrical equipment panel, P36:
    - 1) On Row E (or D), WTR HTR LAV (SYS 1)

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- (b) On the right miscellaneous electrical equipment panel, P37:  
1) On Row E (or H), WTR HTR LAV (SYS 2)

S 714-025

- (9) Put the water heater switch in the ON position. Make sure the light on the water heater comes on.

S 794-029

- (10) After five minutes, make sure you get hot water from the hot water faucet.

S 864-033

- (11) WATER HEATERS WITH THE TEMPERATURE SELECT SWITCH;  
If the water is not at the correct temperature, move the temperature select switch to a higher or lower temperature position.

S 414-026

- (12) Close the plumbing access door.

S 414-027

- (13) Install the access door for the washbasin cabinet.

S 864-028

- (14) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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WATER QUANTITY TRANSMITTER – REMOVAL/INSTALLATION

1. General

- A. There is one water quantity transmitter found inboard of the right main potable water tank. The transmitter receives signals from a water quantity sensor which is mounted to the water tank wall. A banana plug electrically connects the transmitter to the quantity sensor. There are two connections on the sensor mounting pad, either of which can connect to the transmitter. If one connection is bad, the water quantity transmitter can be connected to the secondary connection on the sensor mounting pad.

TASK 38-14-01-004-001

2. Water Quantity Transmitter – Removal (Fig 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panels
  - 811 Bulk Cargo Door

C. Procedure

S 864-002

- (1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
  - (a) 11U28, ENT LTS/POT WATER (or POT WATER) (or POT WATER PRESS)

S 864-003

- (2) Open this circuit breaker on the APU external power panel, P34, and attach a DO-NOT-CLOSE tag:
  - (a) 34P11, POTABLE WATER/ENTRY LTS /(or WATER QTY/PRES)

S 014-004

- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-005

- (4) Remove the aft bulkhead lining from the bulk cargo compartment (AMM 25-52-01/401).

EFFECTIVITY

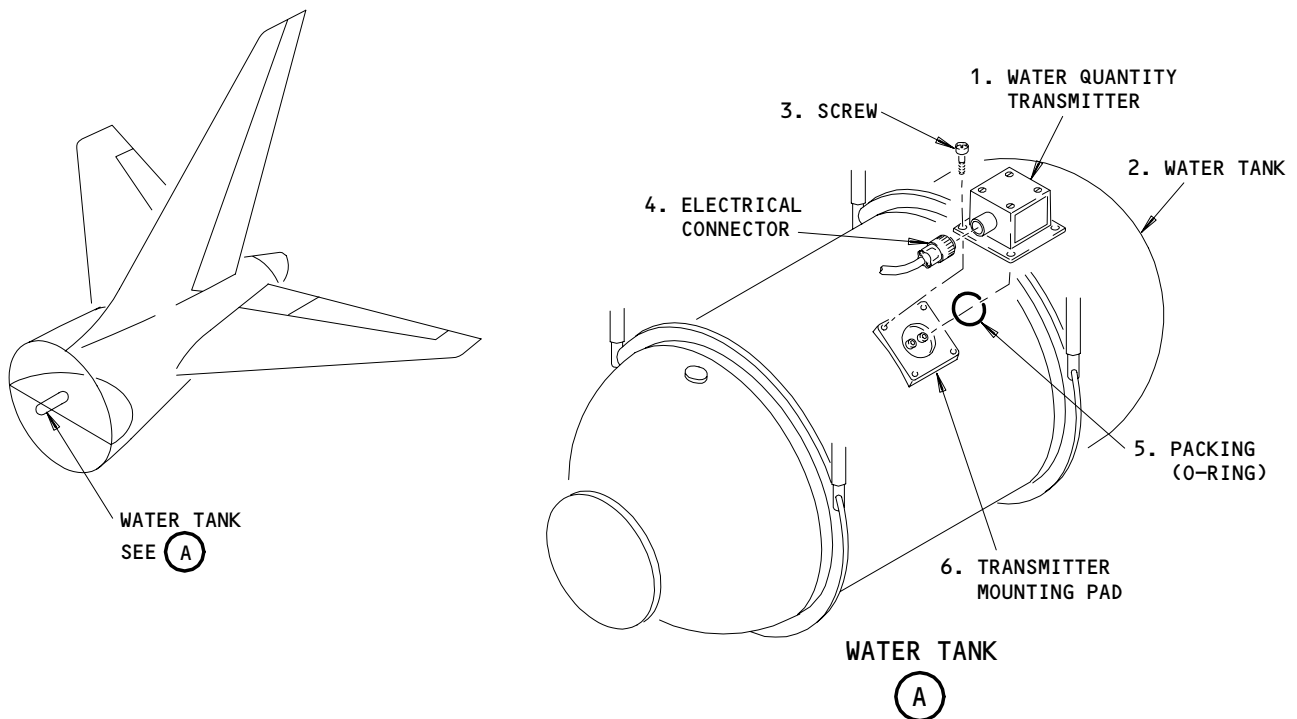
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- S 034-026
- (5) Find the water quantity transmitter:  
(a) The water quantity transmitter is found on the inboard side of the right main water tank.
- S 024-034
- (6) Disconnect the electrical connector (4) from the water quantity transmitter (1).



Water Quantity Transmitter Installation  
Figure 401

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S 024-007

- (7) Remove the screws (3) that attach the water quantity transmitter (1) to the transmitter mounting pad (6).

S 024-008

- (8) Remove the water quantity transmitter (1) from the transmitter mounting pad (6).

TASK 38-14-01-404-009

3. Water Quantity Transmitter - Installation (Fig. 401)

A. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Potable Water System Quantity Transmitter	38-14-51	01	10, 305
	3	Screw			15, 310
	5	Packing (O-ring)			15, 325

B. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 24-22-00/201, Electrical Power - Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-10-00/501, Potable Water System Adjustment Test
- (5) AMM 38-14-01/501, Water Quantity Transmitter
- (6) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)

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- (2) Access Panels  
811 Bulk Cargo Door

D. Procedure

S 024-036

- (1) Find the water quantity transmitter mounting location:
  - (a) The water quantity transmitter is found on the inboard side of the right main water tank.

S 424-038

- (2) Do these steps to install the water quantity transmitter:
  - (a) Install new packing (O-ring) (5) on the transmitter mounting pad (6).
  - (b) Put the water quantity transmitter (1) on the transmitter mounting pad (6).
  - (c) Install the screws (3).
  - (d) Connect the electrical connector (4) to the water quantity transmitter (1).

S 864-017

- (3) Supply electrical power (AMM 24-22-00/201).

S 864-018

- (4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the overhead panel, P11:
  - (a) 11U28, ENT LTS/POT WATER (or POT WATER) (or POT WATER PRESS)

S 864-019

- (5) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the APU external power panel, P34:
  - (a) 34P11, POTABLE WATER/ENTRY LTS /(or WATER QTY/PRES)

S 724-020

- (6) Do these steps to make sure the water quantity transmitter operates correctly.

**NOTE:** Refer to AMM 38-10-00/501 for the operational test and AMM 38-14-01/501 for procedures to adjust the water quantity system.

- (a) Drain the potable water system (AMM 12-14-01/301).
- (b) Make sure the water quantity indicators show zero.
- (c) Fill the potable water tank (AMM 12-14-01/301).

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- (d) Make sure the water quantity indicators show approximately the following value for the given configuration:
- 1) One main tank,  
110 gallons (410 liters), scale of 0-120 gals (450 liters)
  - 2) One main tank + one aux tank,  
150 gallons (560 liters), scale of 0-160 gals (600 liters)
  - 3) Two main tanks,  
220 gallons (820 liters), scale of 0-240 gals (900 liters)
  - 4) Two main tanks + one aux tank,  
260 gallons (970 liters), scale of 0-280 gals (1050 liters)
  - 5) Various configurations,  
FULL, scale of E - F in 1/8th increments

S 414-023

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (7) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 414-021

- (8) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 864-022

- (9) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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WATER QUANTITY TRANSMITTER – ADJUSTMENT/TEST

1. General

- A. This procedure gives the instructions to adjust the water quantity transmitter.
- B. The adjustment for the water quantity transmitter has two procedures.

**NOTE:** The water quantity transmitter must be adjusted to ZERO then to FULL. If you use the opposite sequence for the adjustment, the water quantity indicator will not be accurate during the operations.

- (1) The recommended procedure is the "Voltage Procedure".
- (2) The alternative procedure is the "Indicator Procedure".
- (3) The location of the water quantity transmitter is as follows:
  - (a) The water quantity transmitter is found on the inboard side of the right main water tank.
- C. AIRPLANES WITH ONE OR MORE MAIN AND ONE AUXILIARY WATER TANK;  
The water quantity transmitter is connected to the right main water tank. The fill water from the service panel will first fill the auxiliary tank then go through to fill the main tank(s).
- D. This procedure also contains the water quantity sensor functional test.
- E. Also see procedure AMM 38-10-00/501 for an operational test for the water quantity system.

TASK 38-14-01-825-001

2. Water Quantity Transmitter – Adjustment (Fig. 501, Fig. 502)

A. References

- (1) AMM 12-14-01/301, Potable Water System Servicing
- (2) AMM 24-22-00/201, Electrical Power Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-10-00/501, Potable Water System Adjustment Test
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Equipment

- (1) Test Cable – Potable Water Quantity Xmtr  
A38010-11 (Recommended)  
A38010-1 (Alternative)
- (2) Voltmeter – 0-15 VDC commercially available

C. Access

- (1) Location Zones  
166 Area Aft of Bulk Cargo Compartment (Right)

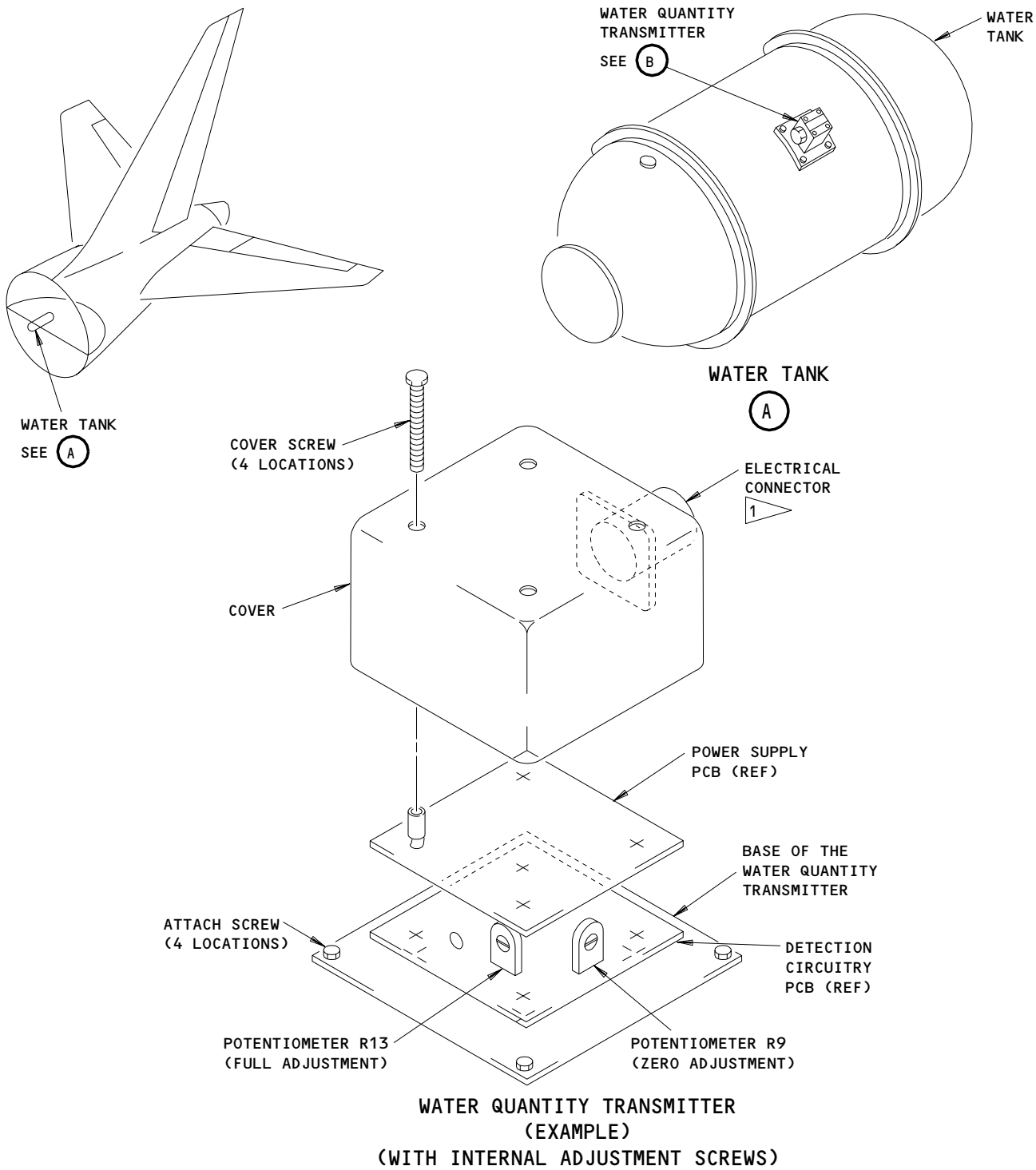
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1 THE WIRES FROM THE ELECTRICAL CONNECTOR TO THE PRINTED CIRCUIT BOARDS (PCB) ARE NOT SHOWN

Water Quantity Transmitter Adjustment  
Figure 501

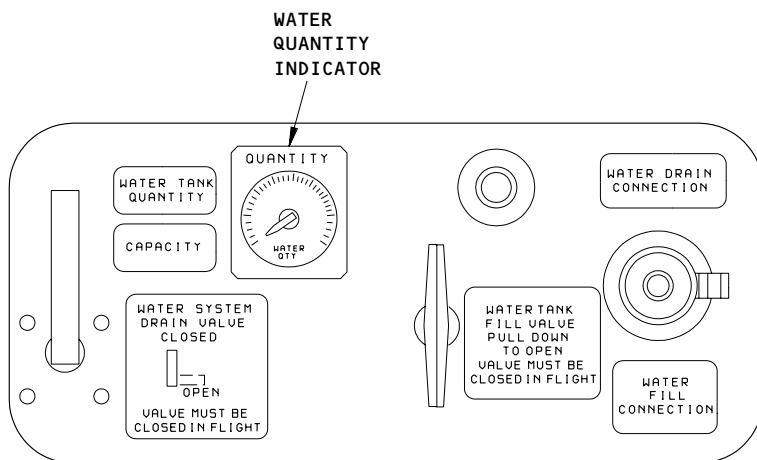
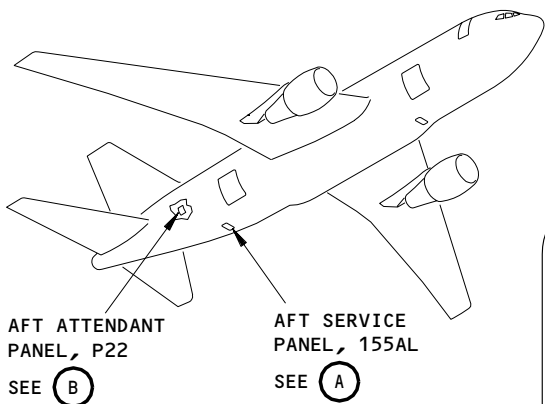
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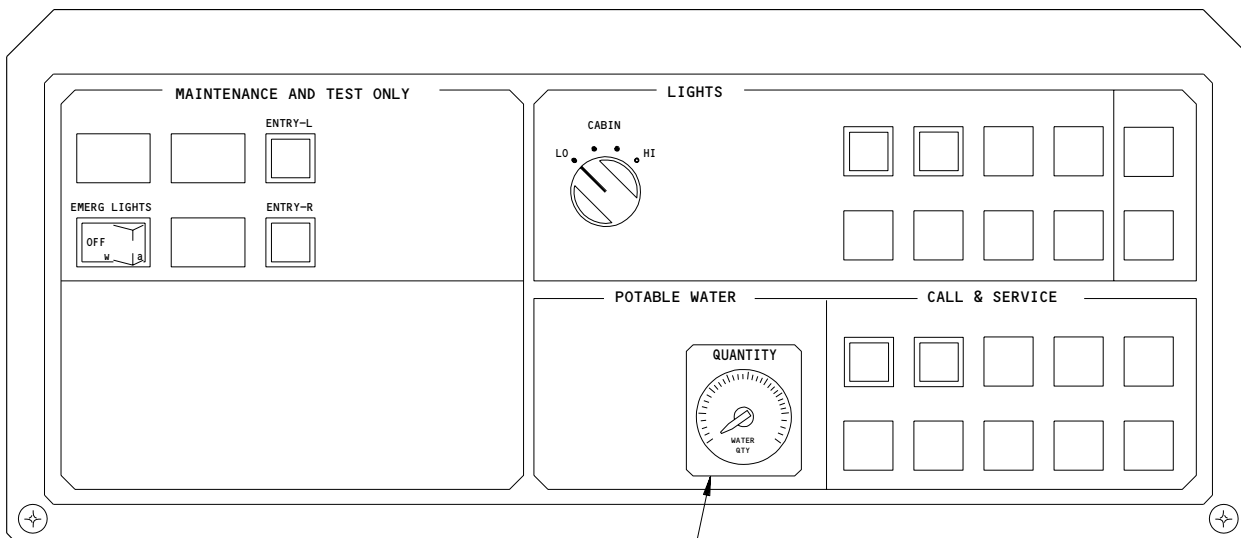
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AFT SERVICE PANEL, 155AL  
(EXAMPLE)

(A)



AFT ATTENDANT PANEL, P22  
(EXAMPLE)

(B)

Water Quantity Indicator Adjustment  
Figure 502

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- (2) Access Panels  
811 Bulk Cargo Door

D. Prepare for the Adjustment

S 865-004

- (1) Supply electrical power (AMM 24-22-00/201).

S 615-005

- (2) Fill the potable water tank (AMM 12-14-01/301).

**NOTE:** The potable water tank must be wet but empty to adjust the potentiometer, at R9, for the empty tank condition.

S 685-006

- (3) Drain the potable water tank (AMM 12-14-01/301).

S 015-007

- (4) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 015-008

- (5) Remove the aft bulkhead lining from the bulk cargo compartment (AMM 25-52-01/401).

S 015-009

- (6) TRANSMITTER WITH INTERNALLY LOCATED ADJUSTMENT SCREWS;  
Remove the four screws that attach the cover to the water quantity transmitter (Fig. 501).

**NOTE:** Do not remove the attach screws for the water quantity transmitter.

E. Voltage Procedure - Recommended

S 825-033

- (1) Adjust to 0, plus or minus 0.2 VDC, the water quantity transmitter as follows:
  - (a) Remove the electrical connector D3446 from the water quantity transmitter.

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- (b) Install the Test Cable between the water quantity transmitter and the electrical connector D3446.
- (c) Connect the Voltmeter to the test points of the Test Cable.
- (d) Measure the voltage between the test points of the Test Cable.

**CAUTION:** DO NOT PULL THE WIRES THAT ARE IN THE WATER QUANTITY TRANSMITTER. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

- (e) If the voltage is not 0, plus or minus 0.2 VDC, get access to the adjustment screw for the potentiometer R9.
- (f) Adjust the potentiometer at R9 until the voltmeter reads 0, plus or minus 0.2 VDC.

**NOTE:** Potentiometer R9 is on the detection circuit PCB (printed circuit board). It is opposite the side where the wires attach to the PCB.

S 615-036

- (2) Fill the potable water tank (AMM 12-14-01/301).

S 865-037

- (3) Stop for five minutes to let the water movement stop.

S 825-038

- (4) Adjust the maximum range of the water quantity transmitter as follows:
  - (a) Measure the voltage between the test points of the Calibration Test Harness.
  - (b) AIRPLANES WITH ONE MAIN TANK AND ONE AUXILIARY TANK; do the steps that follow:
    - 1) Make sure the voltage measures 9.3 VDC, plus or minus 0.2 VDC.

**CAUTION:** DO NOT PULL THE WIRES THAT ARE IN THE WATER QUANTITY TRANSMITTER. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

- 2) If the voltage is not 9.3 VDC, plus or minus 0.2 VDC, get access to the adjustment screw for the potentiometer R13.
- 3) Adjust the potentiometer at R13 until the voltmeter reads 9.3 VDC, plus or minus 0.2 VDC.

**NOTE:** Potentiometer R13 is on the detection circuit PCB (printed circuit board) and is adjacent to where the wires attach to the PCB.

S 035-040

- (5) Remove the voltmeter from the test points of the Test Cable.

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S 415-045

- (6) TRANSMITTERS WITH INTERNAL ADJUSTMENT SCREWS;  
Install the cover on the water quantity transmitter with the four screws.

S 035-041

- (7) Remove the Test Cable between the water quantity transmitter and the electrical connector D3446.

S 435-042

- (8) Install the electrical connector D3446 to the water quantity transmitter.

S 415-059

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (9) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 415-047

- (10) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 865-048

- (11) Remove electrical power if it is not necessary (AMM 24-22-00/201).

F. Indicator Procedure - Alternative

S 825-049

- (1) Adjust to zero the water quantity transmitter as follows:  
(a) Make sure the water quantity indicator reads zero.

**CAUTION:** DO NOT PULL THE WIRES THAT ARE IN THE WATER QUANTITY TRANSMITTER. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

- (b) If the indicator is not zero, get access to the adjustment screw of the potentiometer R9.  
(c) Use a screwdriver to adjust the potentiometer, at R9, until the water quantity transmitter reads zero.

**NOTE:** Potentiometer R9 is on the detection circuit PCB (printed circuit board). It is opposite the side where the wires attach to the PCB.

S 615-051

- (2) Fill the potable water tank (AMM 12-14-01/301).

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S 865-052

- (3) Stop for five minutes to let the water movement stop.

S 825-053

- (4) Adjust the maximum range of the water quantity transmitter as follows:

(a) Make sure the water quantity indicators show approximately the following value for the given configuration:

- 1) One main tank,  
110 gallons (410 liters), scale of 0-120 gals (0-450 liters).
- 2) One main tank + one aux tank,  
150 gallons (560 liters), scale of 0-160 gals (0-600 liters).
- 3) Two main tanks,  
220 gallons (820 liters), scale of 0-240 gals (0-900 liters).
- 4) Two main tanks + one aux tank,  
260 gallons (970 liters), scale of 0-280 gals (0-1050 liters).
- 5) Various configurations,  
FULL, scale of E - F in 1/8th increments.

**CAUTION:** DO NOT PULL THE WIRES THAT ARE IN THE WATER QUANTITY TRANSMITTER. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

- (b) If the indicator does not show the correct quantity, get access to potentiometer R13.
- (c) Use a screwdriver to adjust the potentiometer, at R13, until the water quantity indicator reads correctly.

**NOTE:** Potentiometer R13 is on the detection circuit PCB (printed circuit board). It is adjacent to where the wires attach to the PCB.

S 415-054

- (5) TRANSMITTERS WITH INTERNAL ADJUSTMENT SCREWS;  
Install the cover on the water quantity transmitter with the four screws.

S 415-060

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (6) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

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- S 415-056  
(7) Close the bulk cargo door, 811 (AMM 52-36-00/001).

- S 865-057  
(8) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-14-01-805-075

3. Water Quantity Sensor Functional Test

A. General

- (1) The water quantity sensor can become inoperative when the tank liner leaks and water contaminates the sensor. The sensor is embedded between the liner and structure shell to prevent direct contact with the water. Contact with the water can cause dirt/scale build up that can provide inaccurate water quantity readings.

B. Reference

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining  
(2) AMM 38-11-01/201, Removal of Potable Water Tank  
(3) AMM 52-36-00/001, Bulk Cargo Door

C. Equipment

- (1) LCR Meter (Inductance, Capacitance, Resistance) -  
875B Low-Ohm LCR Meter,  
+/- 0.1 milliHenries  
878A Universal LCR Meter,  
20 to 10M Ohms,  
2K microHenries to 100 Henries @ 120 HZ  
20 milliHenries to 1 kHenries @ 120 HZ  
878 LCR Bridge Meter  
+/- 0.1 milliHenries  
B&K Precision Corporation  
22820 Savi Ranch Parkway  
Yorba Linda, CA 92887

D. Access

- (1) Location Zones  
166 Area Aft of Bulk Cargo Compartment (Right)  
  
(2) Access Panels  
811 Bulk Cargo Door

E. Prepare for Test

- S 865-076  
(1) OPEN this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:  
(a) 11U28, ENT LTS/POT WATER (or POT WATER) (or POT WATER PRESS)

- S 865-077  
(2) OPEN this circuit breaker on the APU external power panel, P34, and attach a DO-NOT-CLOSE tag:  
(a) 34P11, POTABLE WATER/ENTRY LTS (or WATER QTY/PRES)

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- S 415-078  
(3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

- S 025-079  
(4) Remove the aft bulkhead lining from the bulk cargo compartment (AMM 25-52-01/401).

F. Procedure

- S 025-085  
(1) Disconnect the tank sensor wire (single wire coming from near the top of the tank) from its wire termination with the transmitter, isolating the tank sensor from its transmitter interface.

- S 485-080  
(2) Turn the LCR meter (Inductance, Capacitance, Resistance) to the ON - LCR setting (for capacitance measurement).

- S 485-081  
(3) Turn the LCR meter (Inductance, Capacitance, Resistance) capacitance setting to 20 nF (nano farads).

- S 865-082  
(4) Connect the red lead from the LCR meter (Inductance, Capacitance, Resistance) to the tank sensor wire (while disconnected from the transmitter).

- S 865-083  
(5) Connect the black lead from the LCR meter (Inductance, Capacitance, Resistance) to the braded/uninsulated return (ground) wire connected to the water outlet fitting at the bottom of the tank.

- S 825-084  
(6) Expected measurements in pico Farads (pF):  
(a) The sensor output range is 0 to 100 pF (Empty) and 3600 to 5400 pF (Full).  
1) If the sensor capacitance is not within the limits, delamination of the tank inner liner maybe occuring and the tank may need to be replaced. To remove the tank, do this task, Potable Water Tank Removal (AMM 38-11-01/201).

G. Put the Airplane Back to its Usual Condition

- S 415-091  
(1) Re-connect the tank sensor wire (single wire coming from near the top of the tank) to its wire termination with the transmitter.

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S 415-087

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (2) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 415-088

- (3) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 865-089

- (4) Remove the DO-NOT-CLOSE tag and CLOSE this circuit breaker on the overhead panel, P11:  
(a) 11U28, ENT LTS/POT WATER (or POT WATER) (or POT WATER PRESS)

S 865-090

- (5) Remove the DO-NOT-CLOSE tag and CLOSE this circuit breaker on the APU external power panel, P34:  
(a) 34P11, POTABLE WATER/ENTRY LTS (or WATER QTY/PRES)

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WATER QUANTITY INDICATORS – REMOVAL/INSTALLATION

1. General

- A. There are two water quantity indicators on the airplane (Fig. 401). One is on the aft attendant panel, P22, and one is on aft the service panel for the potable water, 155AL.

TASK 38-14-02-004-001

2. Water Quantity Indicator – Removal (Fig. 401)

A. References

- (1) AMM 06-46-00/201, Entry, Service, and Cargo Doors
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 52-35-00/001, Aft Cargo Door

B. Access

(1) Location Zones

- 155 Area Below the Aft Cargo Compartment (Left)
- 256 Passenger Cabin – Section 46 (Right)

(2) Access Panel

- 155AL Potable Water Service Panel
- 822 Aft Cargo Door

C. Procedure

S 864-020

- (1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
  - (a) 11U28, ENT LTS/POT WATER (or POT WATER PRESS) (or POT WATER)

S 864-018

- (2) Open this circuit breaker on the APU external power panel, P34, and attach a DO-NOT-CLOSE tag:
  - (a) 34P11, POTABLE WATER/ENTRY LTS (or WATER QTY/PRES)

S 024-004

- (3) To remove the water quantity indicator from the attendant panel, do these steps:
  - (a) Loosen the 1/4-turn screws (2 locations) at the bottom corners of the aft attendant panel.
  - (b) Move the attendant panel up.
  - (c) Remove the nuts and washers from the rear of the water quantity indicator.
  - (d) Remove the wiring screws and disconnect the electrical wires from the water quantity indicator.
  - (e) Remove the water quantity indicator from the rear of the attendant panel.

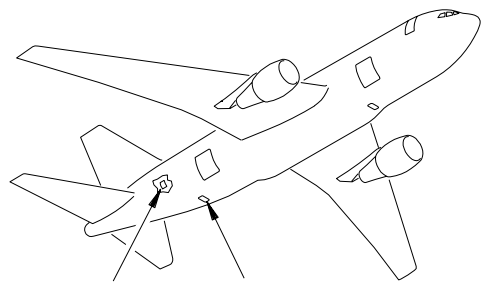
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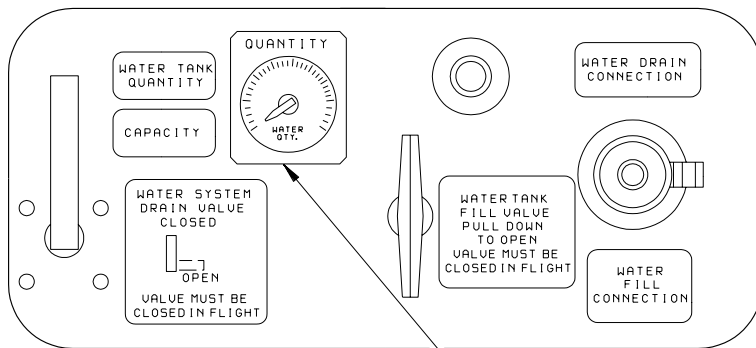


AFT ATTENDANT  
PANEL

SEE (B)

AFT SERVICE  
PANEL, 155AL

SEE (A)

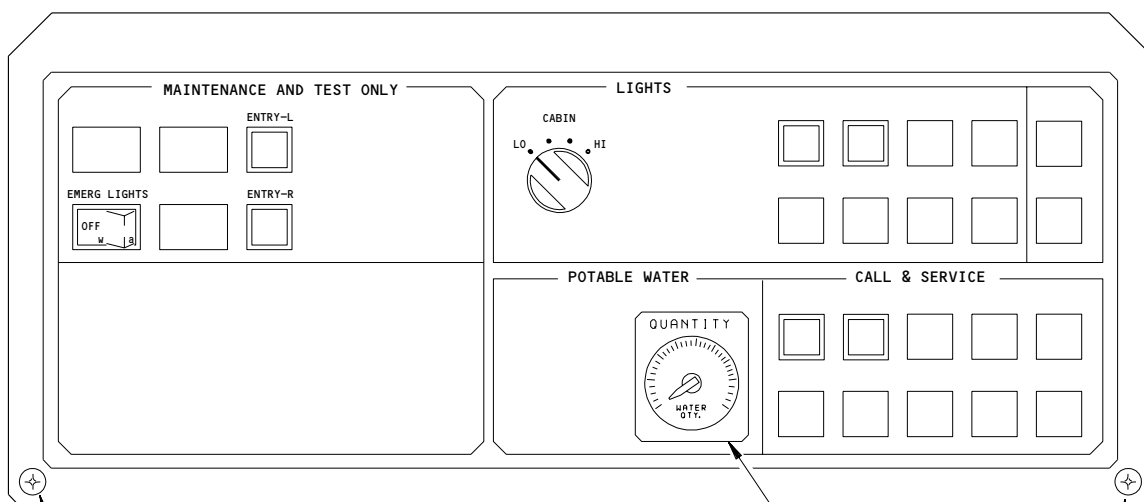


AFT SERVICE PANEL, 155AL  
(EXAMPLE)

(A)

WATER QUANTITY INDICATOR

SEE (C)



1/4-TURN  
SCREW

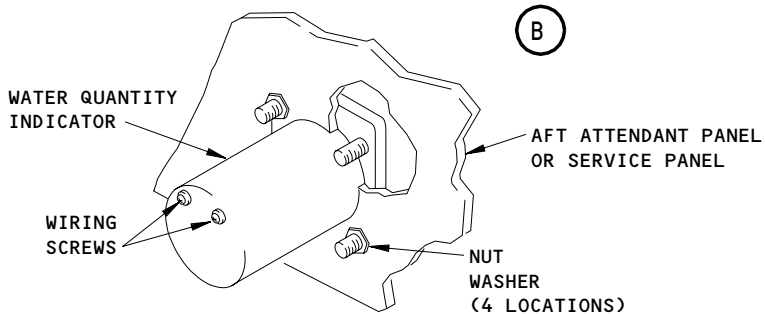
AFT ATTENDANT PANEL  
(EXAMPLE)

(B)

WATER QUANTITY INDICATOR

SEE (C)

1/4-TURN  
SCREW



WATER QUANTITY INDICATOR  
(EXAMPLE)

(C)

Water Quantity Indicator Installation  
Figure 401

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S 024-019

- (4) To remove the water quantity indicator from the service panel for the potable water, do these steps:
- (a) Open the aft cargo door, 822 (AMM 52-35-00/001).
  - (b) Remove the floor panel that is approximately 6 feet aft of cargo door.

NOTE: This is to get access to the inner side of the service panel for the potable water.

- (c) Remove the insulation that is above the service panel.
- (d) Remove the nuts and washers from the inner side of the water quantity indicator.
- (e) Remove the wiring screws and disconnect the electrical wires from the water quantity indicator.
- (f) Remove the water quantity indicator from the outer side of the service panel.

TASK 38-14-02-404-006

3. Water Quantity Indicator - Installation (Fig. 401)

A. Consumable Materials

- (1) Adhesive, Silicone Rubber, RTV 102 - BAC5010, Type 60

B. References

- (1) AMM 06-46-00/201, Entry, Service, and Cargo Doors
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-10-00/501, Potable Water System
- (5) AMM 38-14-01/501, Water Quantity Transmitter
- (6) AMM 51-31-01/201, Seals and Sealing
- (7) AMM 52-35-00/001, Aft Cargo Door

C. Access

(1) Location Zones

- 155 Area Below the Aft Cargo Compartment (Left)
- 256 Passenger Cabin - Section 46 (Right)

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- (2) Access Panels
  - 155AL Potable Water Service Panel
  - 822 Aft Cargo Door

D. Procedure

- S 424-007
    - (1) Put the water quantity indicator in the panel and install the washers and the nuts.
  - S 434-008
    - (2) Connect the electrical wires to the water quantity indicator with the wiring screws.
  - S 394-009
    - (3) If you installed the water quantity indicator in the service panel for the potable water, then do this step:
      - (a) Apply sealant to make a pressure seal around the water quantity indicator (AMM 51-31-01/201).
  - S 864-010
    - (4) Supply electrical power (AMM 24-22-00/201).
  - S 864-011
    - (5) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the overhead panel, P11:
      - (a) 11U28, ENT LTS/POT WATER (or POT WATER) (or POT WATER PRESS)
  - S 864-012
    - (6) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the overhead panel, P34:
      - (a) 34P11, POTABLE WATER/ENTRY LTS (or WATER QTY/PRES)
  - S 714-013
    - (7) Make sure the water quantity indicator shows the volume of water in the water tank.
- NOTE:** Refer to AMM 38-10-00/501 for the operational test procedure and AMM 38-14-01/501 for procedures to calibrate the water quantity system.
- S 414-014
    - (8) If you installed the water quantity indicator in the service panel for the potable water, then do these steps:
      - (a) Install the insulation above the service panel.
      - (b) Install the floor panel or lining used to gain access to the service panel.

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**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

(c) Close the cargo door.

S 414-015

(9) If you installed the water quantity indicator in the attendant panel, then do this step:

(a) Close the attendant panel and tighten the 1/4-turn screws.

S 864-017

(10) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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AIR COMPRESSOR - REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to do the tasks as follows:
  - (1) A removal of the air compressor.
  - (2) An installation of the air compressor.
- B. A procedure to use an alternate compressor is also included if the installed compressor part number is not available.

TASK 38-15-01-004-028

2. Air Compressor with the External Inlet Filter - Removal (Fig. 401)

A. General

- (1) It is optional to install the air compressor (p/n 60B50012-9) which has a built-in (p/n 44367) or attached (p/n 47179) inlet filter as a replacement to the installation of the air compressor (p/n 60B50012-6,-8) which connects to the external inlet filter (p/n 76367). However, it will be necessary to make these modifications:

- Replace the outlet hose for the air compressor.
- Remove and discard the inlet hose and external inlet filter assembly.
- Replace the fasteners which attach the air compressor to the shockmounts and adapter plate.

For additional information about the compressor modification, you can refer to AIPC 38-15-03, Figs. 01, 02, 03, 04, 05 and 51, and drawing 417T2037 (PL General Notes).

B. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment (Right)

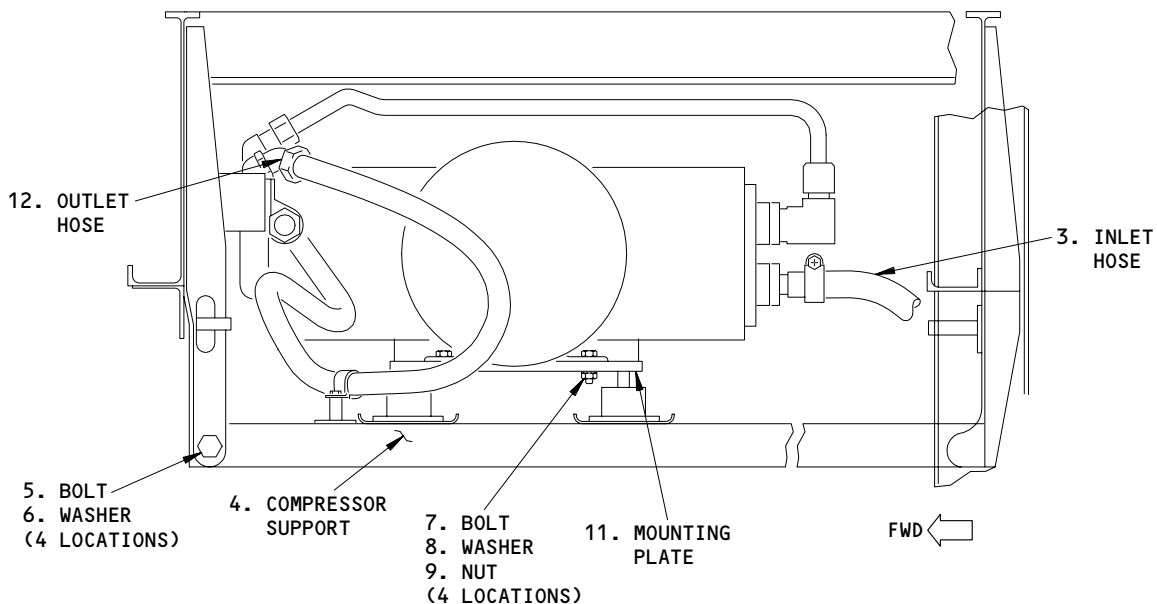
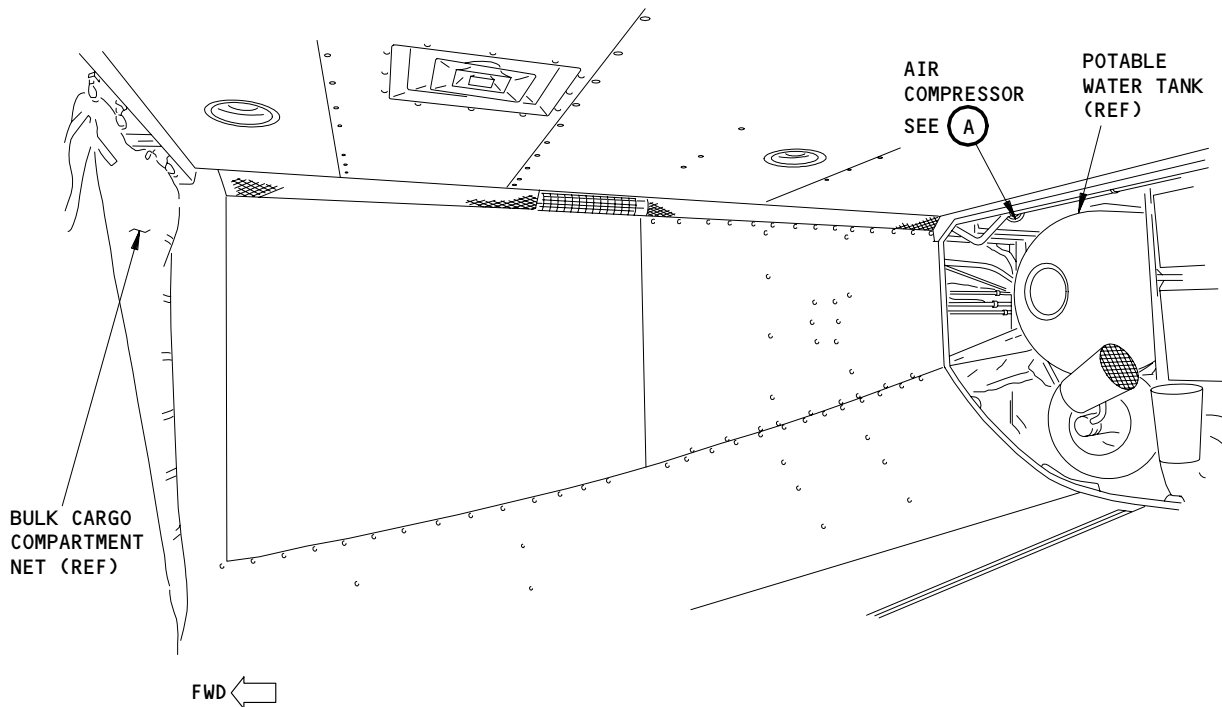
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### AIR COMPRESSOR



- 1 AIR COMPRESSOR WITH EXTERNAL INLET FILTER
- 2 AIR COMPRESSOR WITH BUILT-IN INLET FILTER

Air Compressor Installation  
Figure 401 (Sheet 1)

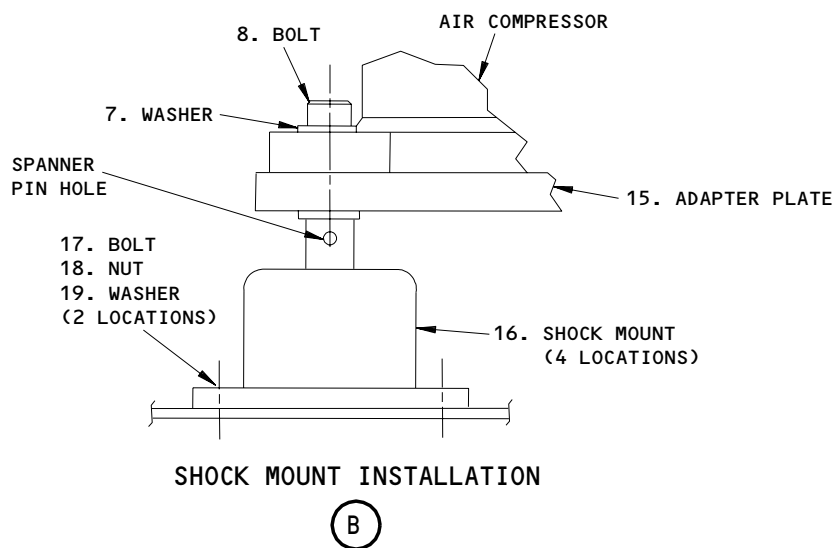
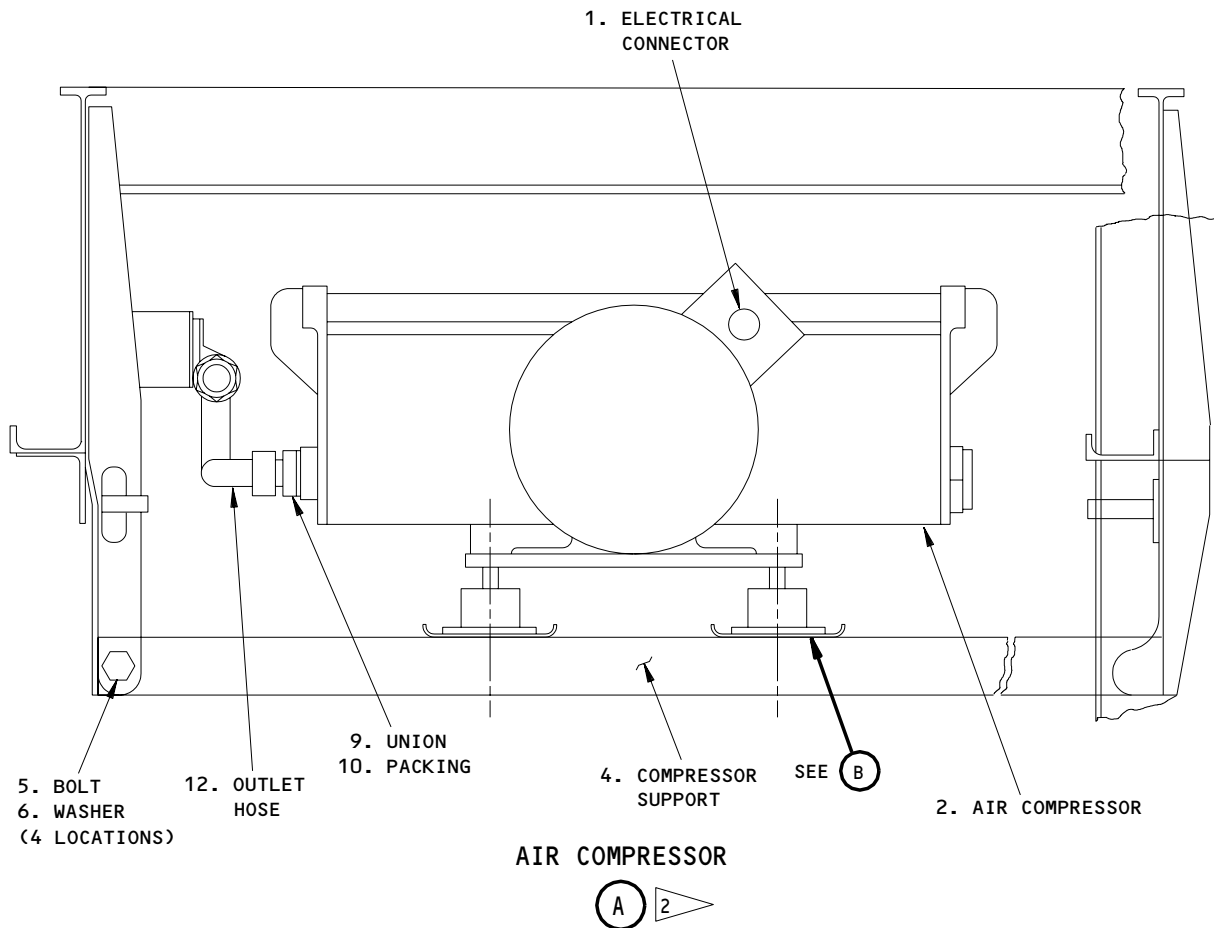
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Air Compressor Installation  
Figure 401 (Sheet 2)

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- (2) Access Panel  
811 Bulk Cargo Door

D. Procedure

S 864-002

- (1) Release the pressure from the potable water system (AMM 38-10-00/201).

S 014-003

- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-004

- (3) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

S 034-005

- (4) Disconnect the electrical connector (1) from the air compressor (2).

S 034-006

- (5) Loosen the clamp and disconnect the inlet hose (3) from the air compressor (2).

S 034-007

**CAUTION:** HOLD THE OUTLET TUBE OF THE AIR COMPRESSOR WITH A WRENCH WHILE YOU LOOSEN THE OUTLET HOSE. IF YOU APPLY TORQUE TO THE OUTLET TUBE, DAMAGE CAN OCCUR.

- (6) Hold the fitting on the end of the outlet tube (10) of the air compressor with a wrench. Disconnect the outlet hose (12) from the outlet tube (10).

S 034-008

- (7) Put a cap on the hoses and the fittings to keep contamination out.

S 024-009

- (8) Remove the bolts (5) and remove the air compressor (2) with the compressor support (4) attached.

S 024-010

- (9) Remove the air compressor (2) from the mounting plate (11).

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TASK 38-15-01-404-029

3. Air Compressor with the External Inlet Filter - Installation (Fig. 401)

A. General

(1) It is optional to install the air compressor (p/n 60B50012-9) which has a built-in (p/n 44367) or attached (p/n 47179) inlet filter as a replacement to the installation of the air compressor (p/n 60B50012-6,-8) which connects to the external inlet filter (p/n 76367). However, it will be necessary to make these modifications:

- Replace the outlet hose for the air compressor.
- Remove and discard the inlet hose and external inlet filter assembly.
- Replace the fasteners which attach the air compressor to the shockmounts and adapter plate.

For additional information about the compressor modification, you can refer to AIPC 38-15-01, Figs. 06, 07, 08, and 09, and drawing 417T2037 (PL General Notes).

B. Consumable Materials

- (1) G00091 - Leak detection compound, MIL-PRF-25567
- (2) G00034 - Clean cotton wiper

C. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 38-15-02/401, Air Filter
- (5) AMM 38-15-10/401, Check Valve
- (6) AMM 52-36-00/001, Bulk Cargo Door

D. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panel  
811 Bulk Cargo Door

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E. Procedure

S 424-013

- (1) Install the air compressor (2) on the mounting plate (11) with the bolts (7), washers (8), and nuts (9).

NOTE: Install the bolts in the direction that is necessary.

S 424-014

- (2) Put the air compressor (2), with the compressor support (4) attached, in its position.

S 424-015

- (3) Install the bolts (5) and the washers (6).

S 434-016

- (4) Remove the caps from the hoses and the fittings.

S 434-017

- (5) Connect the inlet hose (3) to the air compressor (2) and tighten the clamp.

S 024-084

- (6) Remove the check valve (AMM 38-15-10/401), which is downstream of the air compressor.

S 164-082

- (7) Clear the line, between air compressor and check valve, of any debris or contamination, using pressurized clean air or nitrogen.

NOTE: To clean the line, use 40 to 100 PSIG clean shop air or nitrogen, applied to the check valve end of the line, for approximately 1 to 2 minutes.

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S 424-081

- (8) Install a serviceable check valve (AMM 38-15-10/401).

S 434-018

**CAUTION:** HOLD THE OUTLET TUBE OF THE AIR COMPRESSOR WITH A WRENCH WHILE YOU TIGHTEN THE OUTLET HOSE. IF YOU APPLY TORQUE TO THE OUTLET TUBE, DAMAGE CAN OCCUR.

- (9) Hold the fitting on the end of the outlet tube (10) with a wrench. Connect the outlet hose (12) to the outlet tube (10).

S 214-080

- (10) Inspect, and clean or replace as necessary, the air compressor inlet filter (AMM 38-15-02/401).

S 434-019

- (11) Connect the electrical connector (1) to the air compressor (2).

F. Air Compressor Installation Test.

S 864-068

- (1) Supply electrical power (AMM 24-22-00/201).

S 614-070

- (2) Make sure that the potable water tanks are filled with water (AMM 12-14-01/301).

S 864-071

- (3) Pressurize the potable water system (AMM 38-10-00/201).

S 794-072

- (4) Apply the leak detection compound, G00091, to all the fittings and connections.
- (a) Look for bubbles to find all the leaks.
  - (b) If you find leaks, tighten the fittings and connections.
  - (c) Remove the leak detection compound, G00091, with a clean cotton wiper, G00034, immediately after the check.
  - (d) Make sure the fittings and connections are dry.

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S 714-067

- (5) Make sure that after approximately 7 minutes, the system is fully pressurized and the compressor stops.

**NOTE:** The amount of time necessary for the system to pressurize is dependent on the number of potable water tanks installed. The following is the estimated air compressor run time for the airplane configuration. This is advisory information and not a maintenance limit.

Single RH main potable water tank tank only - 3.5 minutes  
RH main and auxiliary potable water tanks - 4.5 minutes  
RH main, LH main and auxiliary potable water tanks- 6.5 minutes.

**NOTE:** If the compressor does not stop, trouble shooting of the potable water pressurization system may be necessary.

S 794-085

- (6) After the compressor stops, listen for air leakage internal to the check valve.

**NOTE:** This may be difficult when airplane systems are active. Best results may be obtained if done while systems are off, eg, engines or APU off, vents/chillers inactive, etc.

- (a) Replace the check valve if you can hear internal air leakage.

S 414-076

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (7) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 414-074

- (8) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 864-075

- (9) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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TASK 38-15-01-004-051

4. Air Compressor with Built-in or Attached Inlet Filter - Removal (Fig. 401)

A. General

- (1) If the air compressor with the external inlet filter is not available, the air compressor with the built-in or attached inlet filter can be used as the replacement. The mounting hardware required to change to either part number air compressor is listed in the IPC. This modification is applicable to all air compressor installations with part number 28823-1 or 28823-5 with the external inlet filter and replacement with part number 28823-7 with the built-in air filter or with part number 28823-10 with the attached filter.
- (2) If the air compressor with the built-in inlet filter is not available, the air compressor with the external inlet filter can be used as the replacement. The mounting hardware changes are listed in the IPC with either part number air compressor. To use the air compressor with the external inlet filter you must remove the built-in inlet filter from the air compressor you replace and with a new O-ring, install the built-in air filter in the replacement compressor. This modification is applicable to all air compressor installations with part number 28823-7 with the built-in inlet filter and the replacement compressor part number 28823-5 without the built-in air filter.

B. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panel  
811 Bulk Cargo Door

D. Procedure

- S 864-053
- (1) Release the pressure from the potable water system (AMM 38-10-00/201).
- S 014-054
- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 014-055
- (3) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 034-056
- (4) Disconnect the electrical connector (1) from the air compressor (2).

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S 034-057

- (5) Disconnect the outlet hose (12) from the air compressor (2).

S 024-058

- (6) Put a cap on the hose and the fitting to keep contamination out.

S 024-059

- (7) Remove the bolts (5) and remove the air compressor (2) with the compressor support (4) attached.

S 024-077

**CAUTION:** USE A SPANNER WRENCH IN THE .06 INCH (1.5 MM) PINHOLE TO HOLD THE SHOCK MOUNT IN PLACE WHILE REMOVING THE BOLT. IF YOU DO NOT USE THE SPANNER WRENCH, DAMAGE CAN OCCUR TO THE SHOCK MOUNT.

- (8) Remove and discard the bolt (8) and washers (7) from the shock mount (16).

S 024-061

- (9) Remove the air compressor (2) from the adapter plate (15).

TASK 38-15-01-404-041

5. Air Compressor with Built-in or Attached Filter - Installation (Fig. 401)

A. General

- (1) If the air compressor with the external inlet filter is not available, the air compressor with the built-in inlet filter can be used as the replacement. The mounting hardware required to change to either part number air compressor is listed in the IPC. This modification is applicable to all air compressor installations with part number 28823-1 or 28823-5 with the external inlet filter and replacement with part number 28823-7 with the built-in air filter.
- (2) If the air compressor with the built-in inlet filter is not available, the air compressor with the external inlet filter can be used as the replacement. The mounting hardware changes are listed in the IPC with either part number air compressor. To use the air compressor with the external inlet filter you must remove the built-in inlet filter from the air compressor you replace and with a new O-ring, install the built-in air filter in the replacement compressor. This modification is applicable to all air compressor installations with part number 28823-7 with the built-in inlet filter and the replacement compressor part number 28823-5 without the built-in air filter.

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B. Consumable Materials

- (1) G00091 - Leak detection compound, MIL-PRF-25567
- (2) G00034 - Clean cotton wiper

C. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 38-15-02/401, Air Filter
- (5) AMM 38-15-10/401, Check Valve
- (6) AMM 52-36-00/001, Bulk Cargo Door

D. Access

- (1) Location Zone
  - 166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panel
  - 811 Bulk Cargo Door

E. Procedure

S 424-042

- (1) Install the air compressor (2) on the adapter plate (15).

S 424-078

**CAUTION:** USE A SPANNER WRENCH IN THE 0.06 INCH (1.5 MM) PINHOLE TO HOLD THE SHOCK MOUNT IN PLACE WHILE INSTALLING THE BOLT. IF YOU DO NOT USE THE SPANNER WRENCH, DAMAGE CAN OCCUR TO THE SHOCK MOUNT.

- (2) Using retaining compound, install new bolt (8) and washers (7) and tighten to 15-20 pound-inch (1.7-2.2 Nt-m) with a pin spanner wrench in the 0.06 inch (1.5 mm) hole in the shock mount (16).

S 424-043

- (3) Put the air compressor (2), with the compressor support (4) attached, in its position.

S 424-044

- (4) Install the bolts (5) and the washers (6).

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- S 024-087
- (5) Remove the caps from the hose and the fitting.
- S 024-088
- (6) Remove the check valve (AMM 38-15-10/401), which is downstream of the air compressor.
- S 174-090
- (7) Clear the line, between the air compressor and the check valve, of any contamination, using pressurized clean air or nitrogen.

**NOTE:** To clean the line, use 40 to 100 PSIG clean shop air or nitrogen, applied to the check valve end of the line, for approximately 1 to 2 minutes.

- S 424-092
- (8) Install a serviceable check valve (AMM 38-15-10/401).
- S 424-093
- (9) Connect the line between the air compressor and the check valve.
- S 214-095
- (10) Inspect, and clean or replace as necessary, the air compressor inlet filter (AMM38-15-02/401).
- S 434-048
- (11) Connect the electrical connector (1) to the air compressor (2).

F. Air Compressor Installation Test

- S 614-063
- (1) Make sure that the potable water tanks are filled with water (AMM 12-14-01/301).
- S 864-022
- (2) Pressurize the potable water system (AMM 38-10-00/201).
- S 794-024
- (3) Apply the leak detection compound, G00091, to all the fittings and connections.
- (a) Look for bubbles to find all the leaks.
- (b) If you find leaks, tighten the fittings and connections.
- (c) Remove the leak detection compound, G00091, with a clean cotton wiper, G00034, immediately after the check.
- (d) Make sure the fittings and connections are dry.

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S 714-096

- (4) Make sure that after approximately 7 minutes, the system is fully pressurized and the compressor stops.

**NOTE:** The amount of time necessary for the system to pressurize is dependent on the number of potable water tanks installed. The following is the estimated air compressor run time for the airplane configuration. This is advisory information and not a maintenance limit.

Single RH main potable water tank only - 3.5 minutes  
RH main and auxiliary potable water tanks - 4.5 minutes  
RH main, LH main and auxiliary potable water tanks- 6.5 minutes.

**NOTE:** If the compressor does not stop, trouble shooting of the potable water pressurization system may be necessary.

S 794-086

- (5) After the compressor stops, listen for air leakage internal to the check valve.

**NOTE:** This may be difficult when airplane systems are active. Best results may be obtained if done while systems are off, eg, engines or APU off, vents/chillers inactive, etc.

- (a) Replace the check valve if you can hear internal air leakage.

**NOTE:** The unloader check valve will release a small quantity of air externally, for approximately one to two minutes after the compressor stops. This operation is normal. Do not confuse this correct operation of the unloader function with incorrect internal leakage through the check valve seal.

S 414-025

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (6) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 414-026

- (7) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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- S 864-027  
(8) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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AIR FILTER - REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the air filters of the potable water system.

TASK 38-15-02-004-002

2. Air Filter Element - Removal (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment
  - 811 Bulk Cargo Door

C. Prepare for Removal

S 014-001

- (1) Open the bulk cargo door (AMM 52-36-00/001).

S 014-003

- (2) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

D. Remove the Filter Element from the Replaceable Element Air Filter (for the Engine Bleed Air or the Air Compressor Air)

S 044-024

- (1) Release the pressure from the potable-water system (AMM 38-10-00).

S 024-025

- (2) Turn the filter case (5) to remove it from the air filter head (1).

S 024-026

- (3) Remove the filter element (4).

S 034-027

- (4) Remove the O-ring retainer (12) and the O-ring (13) from the air filter head (1).

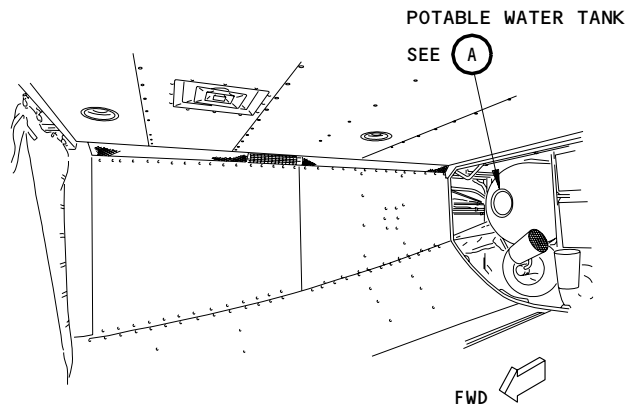
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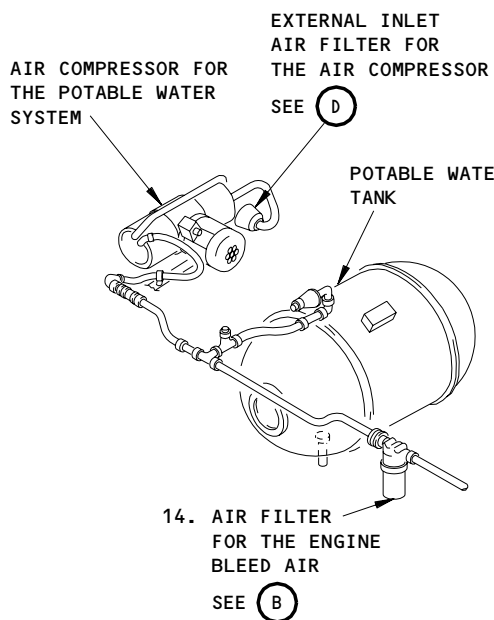
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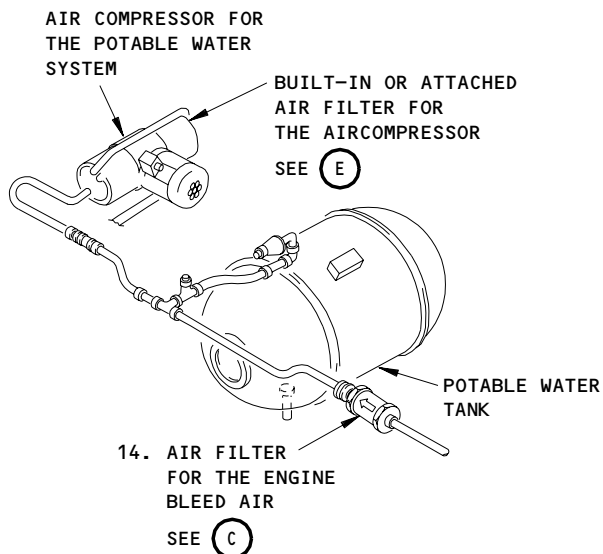
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**BULK CARGO COMPARTMENT**



POTABLE WATER TANK



POTABLE WATER TANK

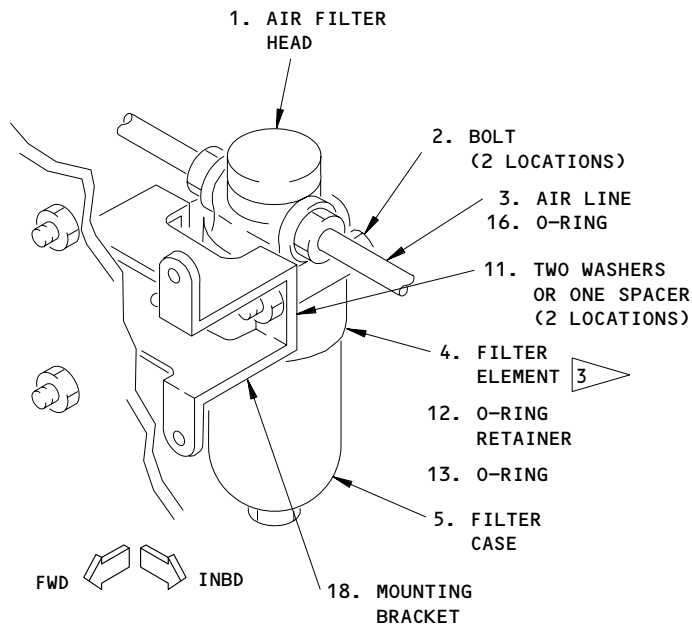


- 1 AIR COMPRESSOR WITH EXTERNAL INLET FILTER
- 2 AIR COMPRESSOR WITH BUILT-IN OR ATTACHED INLET FILTER
- 3 REMOVE THE FILTER CASE TO FIND THE FILTER ELEMENT

Air Filter Installation  
Figure 401 (Sheet 1)

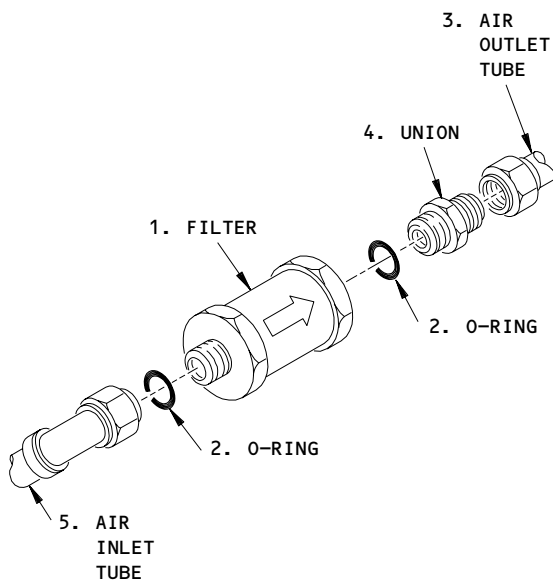
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AIR FILTER FOR THE ENGINE BLEED AIR  
(REPLACEABLE ELEMENT)

(B)



AIR FILTER FOR THE ENGINE BLEED AIR  
(CLEANABLE ELEMENT)

(C)

Air Filter Installation  
Figure 401 (Sheet 2)

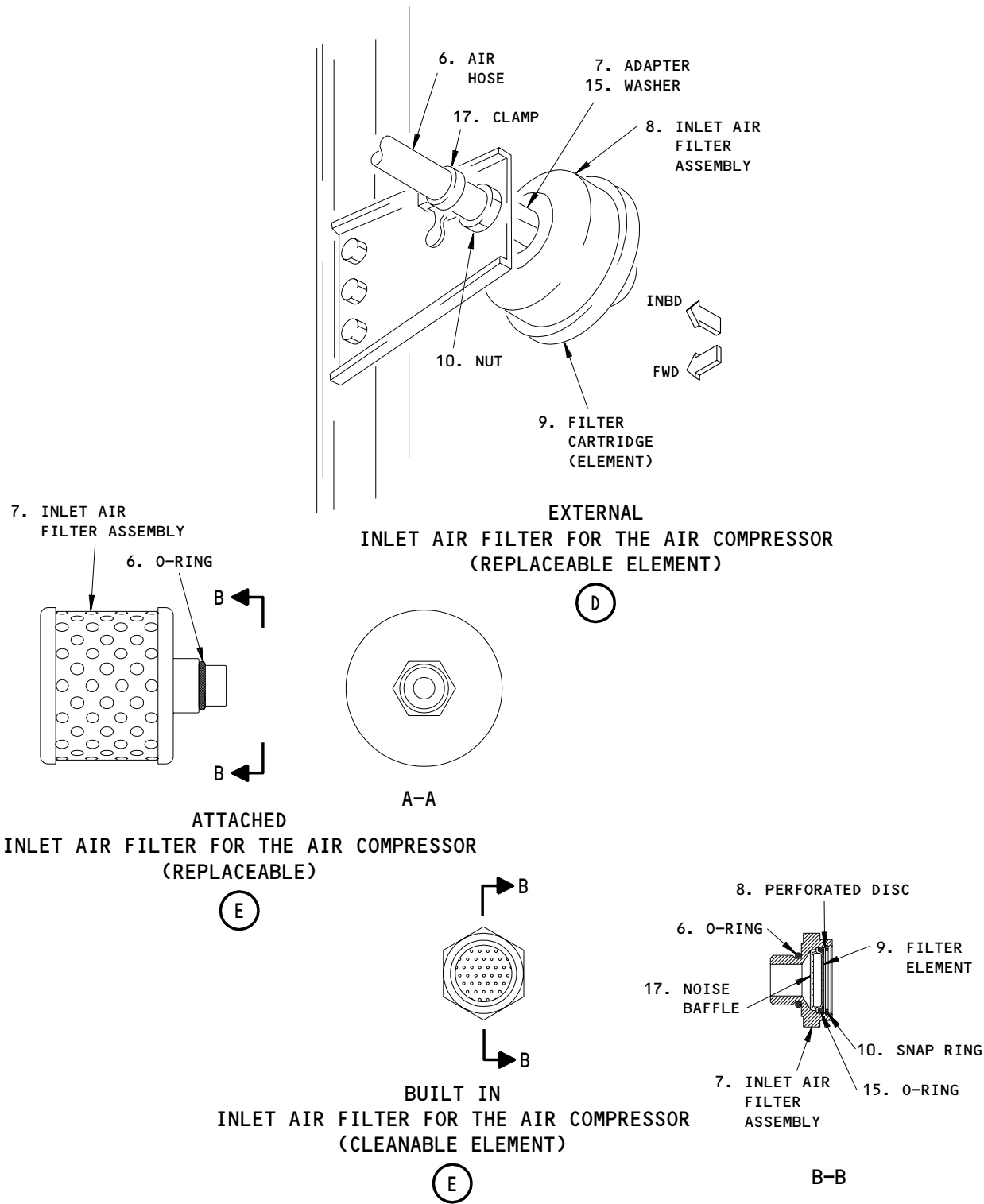
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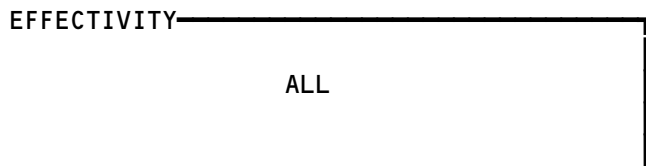
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Air filter Installation  
Figure 401 (Sheet 3)



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E. Remove the Filter Cartridge from the External Inlet Filter

S 024-028

- (1) Pull on the filter cartridge (9).

F. Remove the Cleanable Air Filter for Cleaning (for the Engine Bleed Air)

S 044-102

- (1) Release the pressure from the potable water system (AMM 38-10-00/201).

S 024-060

- (2) Loosen the air outlet tube (3) and the air inlet tube (5).

S 024-103

- (3) Remove the filter (1) and O-ring (2).

S 434-105

- (4) Put a cap on the air outlet line (3) and the air inlet line (5) to keep contamination out.

S 034-061

- (5) Remove the union (4) and O-ring (2) from the filter (1).

G. Remove the Filter Element from the Built-in Inlet Filter

S 024-101

- (1) Remove the snap ring (10), perforated disc (8), and the O-ring (15).

S 024-062

- (2) Remove the filter element (9).

H. Remove the Attached Inlet Filter

S 024-109

- (1) Remove the attached inlet filter (7).

S 624-111

- (2) Place a cap in the air compressor inlet port to keep contamination out.

S 024-110

- (3) Discard the filter (7) and its O-ring (6).

TASK 38-15-02-404-006

3. Air Filter Element - Installation (Fig. 401)

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A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 36-00-00/201, Pneumatic Power
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment
  - 811 Bulk Cargo Door

C. Install the Filter Element from the Replaceable Element Air Filter (for the Engine Bleed Air or the Air Compressor Air)

S 164-029

- (1) Clean the filter case (5).

S 434-030

- (2) Install the O-ring retainer (12) and a new O-ring (13) in the air filter head (1).

S 424-031

- (3) Put the filter element (4) in the filter case (5).

S 024-032

- (4) Install the filter case (5) on the air filter head (1). Torque the filter case (5) to 150 +/- 5 lb-in.

S 434-033

- (5) Install a lockwire.

S 844-132

- (6) If installing the bleed air filter, supply pneumatic power (AMM 36-00-00/201).

S 444-034

- (7) Pressurize the potable water system (AMM 38-10-00/201).

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S 794-035

(8) Make sure the air filter (14) does not have a leak.

D. Install the Filter Cartridge in the External Inlet Filter

S 164-036

(1) Clean the inlet air filter assembly (8).

S 424-037

(2) Push the filter cartridge (9) into the inlet air filter (8) until the filter cartridge touches the shoulder of the inlet air filter.

E. Install the Cleanable Air Filter (for the Engine Bleed Air)

S 164-072

(1) Clean the filter (1) as follows:

(a) Soak the filter element in aliphatic naphtha or Methyl Ethyl Ketone (MEK).

(b) Reverse flow blow dry with low air pressure.

(c) Make sure the filter is in servicable condition.

S 434-073

(2) Install a new O-ring (2) and the union (4) in the filter (1).

S 034-104

(3) Remove the caps from the air outlet line (3) and the air inlet line (5).

S 424-074

(4) Install the O-ring (2) on the filter (1).

S 424-075

(5) Install the air outlet tube (3) and the air inlet tube (5) on the filter (1).

S 844-133

(6) Supply pneumatic power (AMM 36-00-00/201).

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S 444-077

- (7) Pressurize the potable water system (AMM 38-10-00/201).

S 794-078

- (8) Make sure the filter (1) does not have a leak.
- F. Install the Filter Element in the Built-in Inlet Filter

S 164-079

- (1) Clean the inlet air filter assembly (7) as follows:
  - (a) Soak the filter element in aliphatic naphtha or Methyl Ethyl Ketone (MEK).
  - (b) Reverse flow blow dry with low air pressure.
  - (c) Make sure the filter is in servicable condition.

S 424-080

- (2) Push the filter element (9) into the inlet air filter (7) until the filter element touches the shoulder of the inlet air filter.

S 434-064

- (3) Install a new O-ring (15), the perforated disc (8), and the snap ring (10) in the inlet filter assembly (7).

- G. Install the Attached Inlet Filter

S 414-107

- (1) Make sure the O-ring (6) is installed on the inlet filter (7).

S 634-112

- (2) Remove the protective cap from the air compressor inlet port.

S 424-108

- (3) Install the filter (7) with its O-ring (6) on the air compressor.

S 424-113

- (4) Turn the filter a quarter turn past where the o-ring seats against the air compressor.

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H. Put the Airplane Back to Its Usual Condition

S 414-022

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 414-010

- (2) Close the bulk cargo door (AMM 52-36-00/001).

TASK 38-15-02-004-011

4. Air Filter Assembly - Removal (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment
  - 811 Bulk Cargo Door

C. Prepare for Removal

S 014-012

- (1) Open the bulk cargo door (AMM 52-36-00/001).

S 014-013

- (2) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

D. Remove the Replaceable Element Air Filter (for Engine Bleed Air or for the Air Compressor Air)

S 044-038

- (1) Release the pressure from the potable water system (AMM 38-10-00/201).

S 034-039

- (2) Disconnect the air lines (3) from the air filter head (1).

S 034-040

- (3) Put a cap on the air lines (3) to keep contamination out.

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- S 024-041  
(4) Remove the bolts (2) that attach the air filter to the airplane.
- S 024-042  
(5) Remove the air filter (14).
- E. Remove the Cleanable Air Filter (for the Engine Bleed Air)
- S 044-081  
(1) Release the pressure from the potable water system (AMM 38-10-00/201).
- S 024-082  
(2) Loosen the air outlet lines (3) and the air inlet line (5) from the filter (1).
- S 024-100  
(3) Remove the filter (1) and O-ring (2).
- S 434-083  
(4) Put a cap on the air outlet line (3) and the air inlet line (5) to keep contamination out.
- S 024-084  
(5) Remove the O-ring (2) and union (4) from the filter (1).
- F. Remove the External Inlet Filter
- S 034-043  
(1) Loosen the clamp (17).
- S 034-044  
(2) Remove the air hose (6) from the inlet air filter (8).
- S 034-045  
(3) Put a cap on the air hose (6) to keep contamination out.
- S 024-046  
(4) Remove the nut (10).
- S 024-047  
(5) Remove the inlet air filter (8) with the adapter (7) attached.

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G. Remove the Built-in Inlet Filter

S 034-087

- (1) Remove the air inlet filter assembly (7) and O-ring (6).

S 034-088

- (2) Put a plug in the air compressor to keep contamination out.

TASK 38-15-02-404-016

5. Air Filter Assembly - Installation (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining  
(2) AMM 36-00-00/201, Pneumatic Power  
(3) AMM 38-10-00/201, Potable Water System  
(4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones  
166 Area Aft of Bulk Cargo Compartment  
811 Bulk Cargo Door

C. Install the Replaceable Element Air Filter (for Engine Bleed Air or for the Air Compressor Air)

S 434-048

- (1) Remove the cap from the air line (3).

S 024-049

- (2) Hold the air filter (1) in its position and install the bolts (2).

**NOTE:** Use two washers or one spacer (11) on each bolt (2).  
Put the washers or the spacer between the air filter head (1) and its mounting bracket (18).

S 434-050

- (3) Install new O-rings (16) and connect the air lines (3) to the air filter head (1).

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- S 844-131
- (4) If installing a bleed-air line filter,  
Supply pneumatic power (AMM 36-00-00/201).
- S 444-051
- (5) Pressurize the potable water system (AMM 38-10-00/201).
- S 794-052
- (6) Make sure the air filter (14) does not have a leak.
- D. Install the Cleanable Air Filter (for the Engine Bleed Air)
- S 434-091
- (1) Remove the caps from the air outlet line (3) and the air inlet line (5).
- S 434-093
- (2) Install a new O-ring (2) and the union (4) on the filter (1).
- S 034-076
- (3) Remove the caps from the air outlet line (3) and the air inlet line (5).
- S 424-077
- (4) Install the O-ring (2) on the filter (1).
- S 424-078
- (5) Install the air outlet tube (3) and the air inlet tube (5) on the filter (1).
- S 844-130
- (6) Supply pneumatic power (AMM 36-00-00/201).
- S 444-094
- (7) Pressurize the potable water system (AMM 38-10-00/201).

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S 794-095

- (8) Make sure the filter (1) does not have a leak.

E. Install the External Inlet Filter

S 434-053

- (1) Put the washer (15) on the adapter (7).

S 424-054

- (2) Hold the inlet air filter (8) in its position on the mounting bracket. Install the nut (10) on the inlet air filter (8).

S 434-055

- (3) Remove the cap from the air hose (6).

S 434-056

- (4) Install the air hose on the inlet air filter (8).

S 434-057

- (5) Tighten the clamp (17).

F. Install the Built-in Inlet Filter

S 434-096

- (1) Put the O-ring (6) on the inlet air filter assembly (7).

S 034-097

- (2) Remove the plug from the air compressor.

S 424-099

- (3) Install the inlet air filter assembly (7).

G. Put the Airplane Back to Its Usual Condition

S 414-023

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

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- S 414-021  
(2) Close the bulk cargo door (AMM 52-36-00/001).

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COMPRESSOR INTERLOCK SWITCH - REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the compressor interlock switch. The compressor interlock switch stops the air compressor when you fill the potable water tank.
- B. AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN); The compressor interlock switch is located on the fill valve above and to the right of the right main water tank.
- C. AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN); The compressor interlock switch (a plunger switch) is located on the aft water service panel.
- D. AIRPLANES WITH A DEPRESSURIZATION VALVE; A similar compressor interlock switch is used. The compressor interlock switch stops the air compressor when the door for the depressurization valve is open.

TASK 38-15-03-004-001

2. Remove the Compressor Interlock Switch (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 52-35-00/001, Aft Cargo Door
- (4) AMM 52-36-00/001, Bulk Cargo Door
- (5) AMM 52-49-00/001, External Service Door

B. Access

- (1) Location Zone
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 256 Passenger Cabin - Section 46 (Right)
- (2) Access Panel
  - 811 Bulk Cargo Door

C. Procedure

S 864-002

- (1) Release the pressure from the potable water system (AMM 38-10-00/201).

S 014-003

- (2) AIRPLANES WITH AFT TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN); To remove the compressor interlock switch, do these steps:
  - (a) The compressor interlock switch is found on the fill valve above and to the right of the right main water tank.

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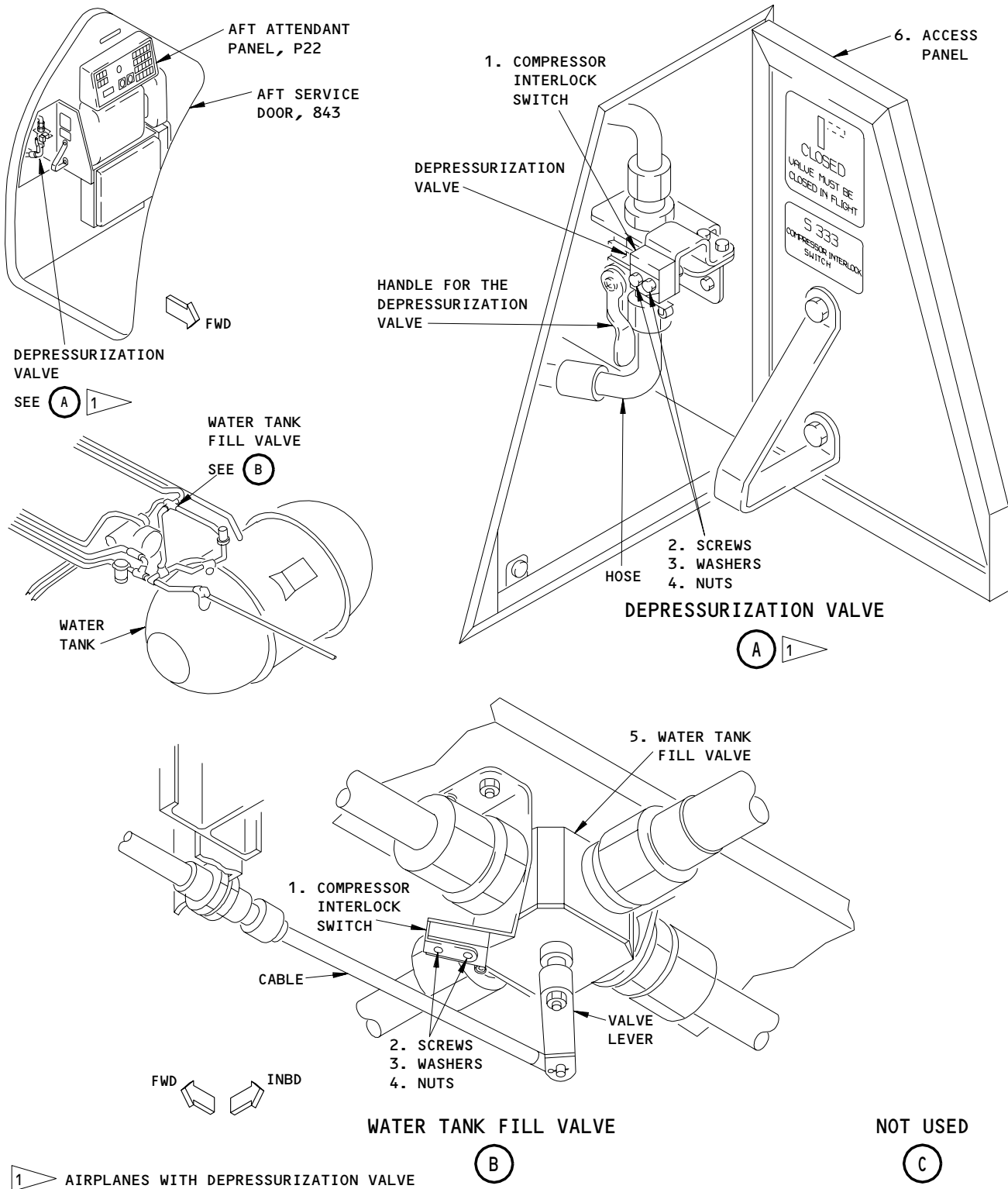
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Compressor Interlock Switch Installation  
Figure 401 (Sheet 1)

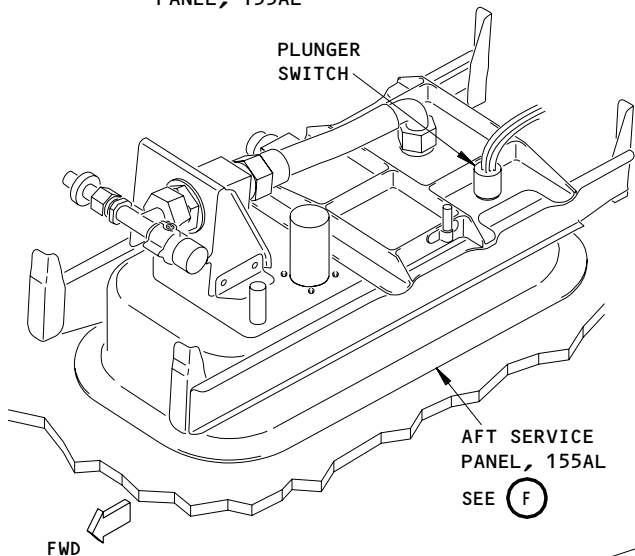
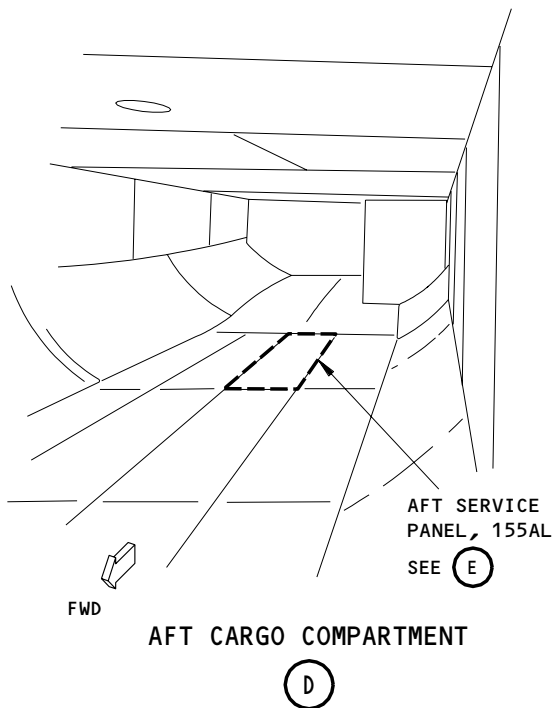
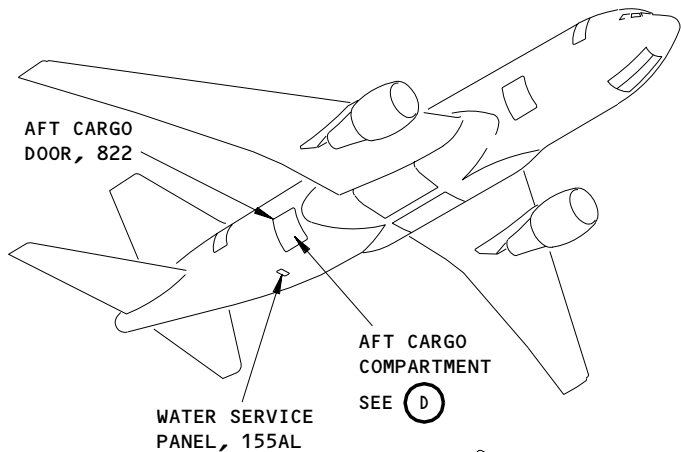
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AIRPLANES WITH AFT SERVICE PANEL WITH  
TWO PORTS (SEPARATE FILL AND DRAIN)

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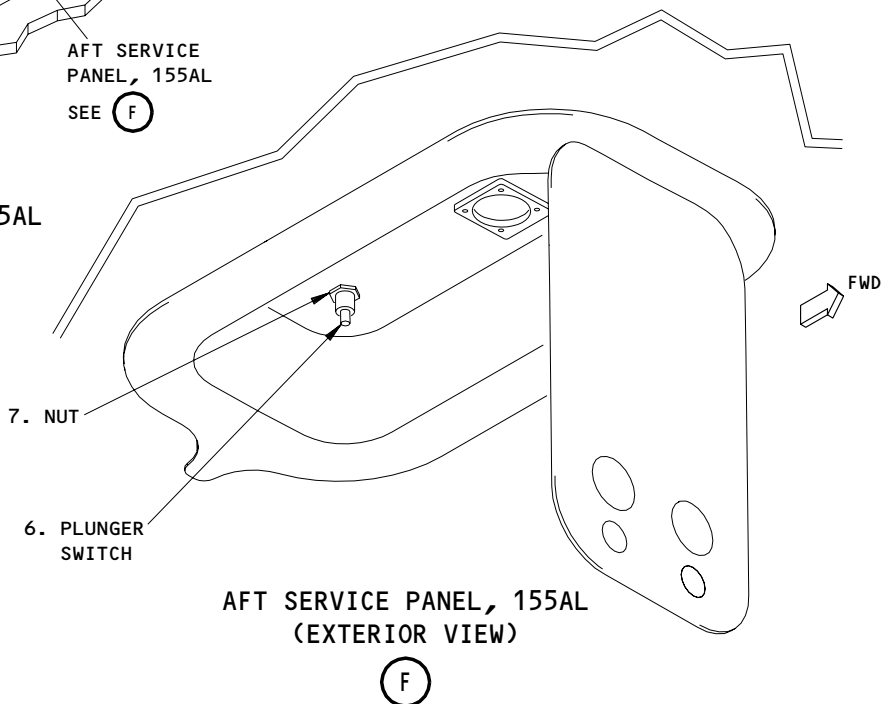
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AFT SERVICE PANEL, 155AL  
(INTERIOR VIEW)  
(E)



Compressor Interlock Switch Installation  
Figure 401 (Sheet 2)

EFFECTIVITY  
AIRPLANES WITH AFT SERVICE PANEL  
WITH ONE PORT (COMBINED FILL/DRAIN)

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- (b) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- (c) Remove the bulkhead lining of the cargo compartment (AMM 25-52-01/401).
- (d) Open this circuit breaker on the forward miscellaneous electrical equipment panel, P33, and attach DO-NOT-CLOSE tags:  
1) 36H6, WATER SYS AIR CPRSR
- (e) Disconnect the electrical connection from the compressor interlock switch (1).
- (f) Remove the screws (2), washers (3), and nuts (4), and then remove the compressor interlock switch (1).

S 014-042

- (3) AIRPLANES WITH THE DEPRESSURIZATION VALVE;  
To get access to the compressor interlock switch, do these steps:
  - (a) The compressor interlock switch is found on the depressurization valve adjacent to the aft attendant panel.
  - (b) Open the access panel, 256.
  - (c) Disconnect the electrical connection from the compressor interlock switch (1).
  - (d) Remove the screws (2), washers (3), and nuts (4), and then remove the compressor interlock switch (1).

S 014-044

- (4) AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
To get access to the compressor interlock switch, do these steps:
  - (a) A compressor interlock switch is found on the aft potable water service panel.
  - (b) Open the water service panel door (AMM 52-49-00/001).
  - (c) Open the aft cargo door (AMM 52-35-00/001).
  - (d) Remove the floor lining of the cargo compartment to gain access to the back side of service panel (AMM 25-52-01/401).
  - (e) Disconnect the electrical connection from the compressor interlock switch (1).
  - (f) Remove washer and nut (7), and then remove the compressor plunger switch (6).

TASK 38-15-03-404-007

3. Install the Compressor Interlock Switch (Fig. 401)

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A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-10-00/201, Potable Water System
- (3) AMM 38-15-03/501, Compressor Interlock Switch
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 256 Passenger Cabin - Section 46 (Right)
- (2) Access Panel
  - 811 Bulk Cargo Door

C. AIRPLANES WITH THE TWO-PORT SERVICE PANEL (SEPARATE FILL AND DRAIN);  
Procedure

S 424-010

- (1) Put the compressor interlock switch (1) in its position and install the screws (2), washers (3), and nuts (4).

S 434-011

- (2) Connect the electrical connection to the compressor interlock switch (1).

S 864-012

- (3) Pressurize the potable water system (AMM 38-10-00/201).

S 714-013

- (4) Open and close the water tank fill valve. Make sure the air compressor does not operate when the valve is open. Make sure the air compressor operates when the valve is closed.
  - (a) If the air compressor does not operate correctly, adjust the compressor interlock switch (AMM 38-15-03/501).

S 414-014

- (5) AIRPLANES WITH THE DEPRESSURIZATION VALVE;  
Open and close the access panel door (6).

**NOTE:** Make sure the air compressor does not operate when the door is open. Make sure the air compressor operates when the door is closed.

D. AIRPLANES WITH THE ONE-PORT AFT SERVICE PANEL (COMBINED FILL/DRAIN);  
Procedure

S 424-030

- (1) Put the compressor interlock switch (1) in its position and then install the fastener.

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- S 424-034
- (2) Connect the electrical connection to the compressor interlock switch (1).
- S 414-037
- (3) Close the water service panel door.
- S 864-040
- (4) Pressurize the potable water system (AMM 38-10-00/501).
- S 394-046
- (5) While the system pressurizes, open and close the water service panel door.
- (a) Make sure the air compressor does not operate when the panel door is open.
- (b) Make sure the air compressor operates when the panel door is closed.
- E. Put the Airplane Into Its Usual Condition.

S 414-018

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the lining of the cargo compartment which was removed to gain access to the interlock switch (AMM 25-52-01/401).

S 414-021

- (2) Close the bulk cargo door (AMM 52-36-00/001).

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COMPRESSOR INTERLOCK SWITCH - ADJUSTMENT/TEST

1. General

- A. This procedure has two tasks for the compressor interlock switch:
  - (1) An operational test of the compressor interlock switch is given.
  - (2) The adjustment of the compressor interlock switch is given.
- B. The compressor interlock switch is attached to the fill valve. The fill valve lever operates the compressor interlock switch. The operational test makes sure that the air compressor stops when you pull the handle for the fill valve. The adjustment makes sure the air compressor stops when you pull the fill valve.

TASK 38-15-03-705-000

2. Compressor Interlock Switch - Operational Test (Fig. 501)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 811 Bulk Cargo Door

C. Procedure

S 845-001

- (1) Supply electrical power (AMM 24-22-00/201).

S 015-003

- (2) Do these steps to get access to the compressor interlock switch:

NOTE: The compressor interlock switch (1) is found on the fill valve in the bulk cargo compartment.

- (a) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- (b) Remove the bulkhead lining of the cargo compartment (AMM 25-52-01/401).

S 715-003

- (3) Pull the handle at the aft service and drain panel for the fill valve.

S 715-004

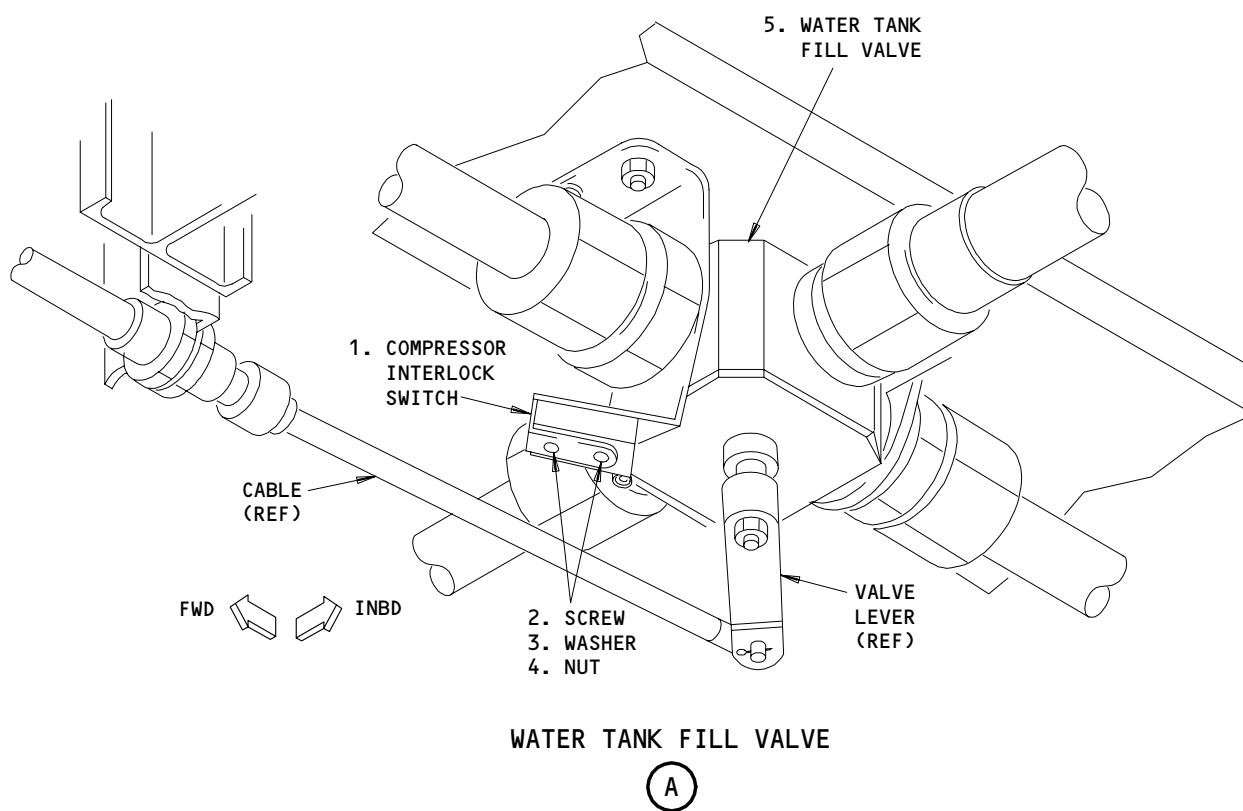
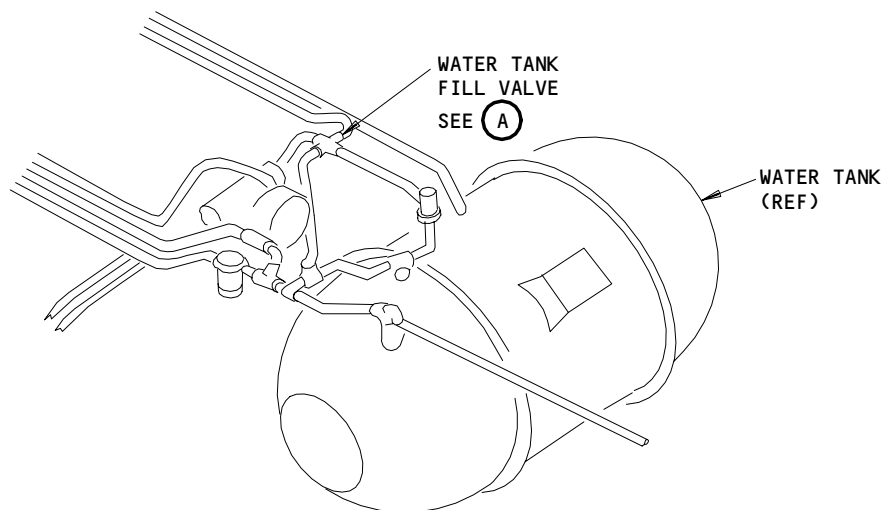
- (4) Make sure the air compressor stops.
  - (a) If the air compressor does not stop, do the adjustment of the compressor interlock switch.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
TWO PORTS (SEPARATE FILL AND DRAIN)

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Compressor Shutoff Switch Adjustment  
Figure 501

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
TWO PORTS (SEPARATE FILL AND DRAIN)

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(b) If the air compressor stops, the system operation is correct.

S 715-005

(5) Push the handle at the aft service and drain panel for the fill valve.

TASK 38-15-03-825-005

3. Compressor Interlock Switch - Adjustment (Fig. 501)

A. References

- (1) AMM 06-46-00/201, Entry, Service, and Cargo Doors
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 24-22-00/201, Manual Control
- (4) AMM 38-10-00/201, Potable Water System
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 166 Area Aft of Bulk Cargo Compartment (Right)
  - 811 Bulk Cargo Door

C. Procedure

S 845-006

(1) Remove electrical power (AMM 24-22-00/201).

S 845-007

(2) Release the pressure from the potable water system (AMM 38-10-00/201).

S 015-008

- (3) Do these steps to get access to the compressor interlock switch:
  - (a) The compressor interlock switch is on the fill valve in the bulk cargo compartment.
    - 1) Open the bulk cargo door, 811 (AMM 52-36-00/001).
    - 2) Remove the bulkhead lining of the cargo compartment (AMM 25-52-01/401).

S 015-009

(4) Remove connector D1290 from the cut-out switch for the water pressure.

S 715-010

(5) Pull the handle at the aft service and drain panel for the fill valve.

S 765-011

(6) Do a continuity test from pin 3 to GND for connector D1290.

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
TWO PORTS (SEPARATE FILL AND DRAIN)

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S 765-012

- (7) If there is continuity, adjust as follows:
- (a) Push the handle at the aft service and drain panel for the fill valve.
  - (b) Disconnect the control cable clevis from the fill valve lever.
  - (c) Decrease the length of the cable by one turn.
  - (d) Install the control cable clevis.

**NOTE:** Do not tighten the control cable clevis or attach the cotter pin.

- (e) Pull the handle at the aft service and drain panel for the fill valve and do the continuity test again.
- (f) If there is no continuity, the system operation is correct.
- (g) If there is continuity, do the adjustment procedure again.
- (h) Tighten the control cable clevis and install the cotter pin.
- (i) Push the handle for the fill valve at the aft service and drain panel.

S 415-013

- (8) Install connector D1290 on the cut-out switch for water pressure.

S 845-014

- (9) Pressurize the potable water system (AMM 38-10-00/201).

S 715-015

- (10) Open and close the fill valve for the water tank.

S 715-016

- (11) Make sure the air compressor stops when the valve is open.

S 715-017

- (12) Make sure the air compressor operates when the fill valve is closed.

S 415-012

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (13) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
TWO PORTS (SEPARATE FILL AND DRAIN)

**38-15-03**



S 415-015

(14) Close the cargo door.

S 865-017

(15) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY  
AIRPLANES WITH SERVICE PANEL WITH  
TWO PORTS (SEPARATE FILL AND DRAIN)

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PRESSURE ACTUATED COMPRESSOR SWITCH – REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the pressure-actuated compressor switch (referred to as the pressure switch). The pressure switch starts and stops the air compressor for the potable water system.

TASK 38-15-05-004-018

2. Remove the Pressure Switch (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

- S 864-001
- (1) Supply electrical power (AMM 24-22-00/201).
- S 044-002
- (2) Release the pressure from potable water system (AMM 38-10-00/201).
- S 014-003
- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 014-021
- (4) Remove the aft right bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 034-005
- (5) Disconnect the electrical connector (2) from the pressure switch (1).
- S 024-006
- (6) Remove the pressure switch (1).
- S 034-007
- (7) Put a cap on the pressure line (3) to keep contamination out of the portable water system.

TASK 38-15-05-404-008

3. Install the Pressure Switch (Fig. 401)

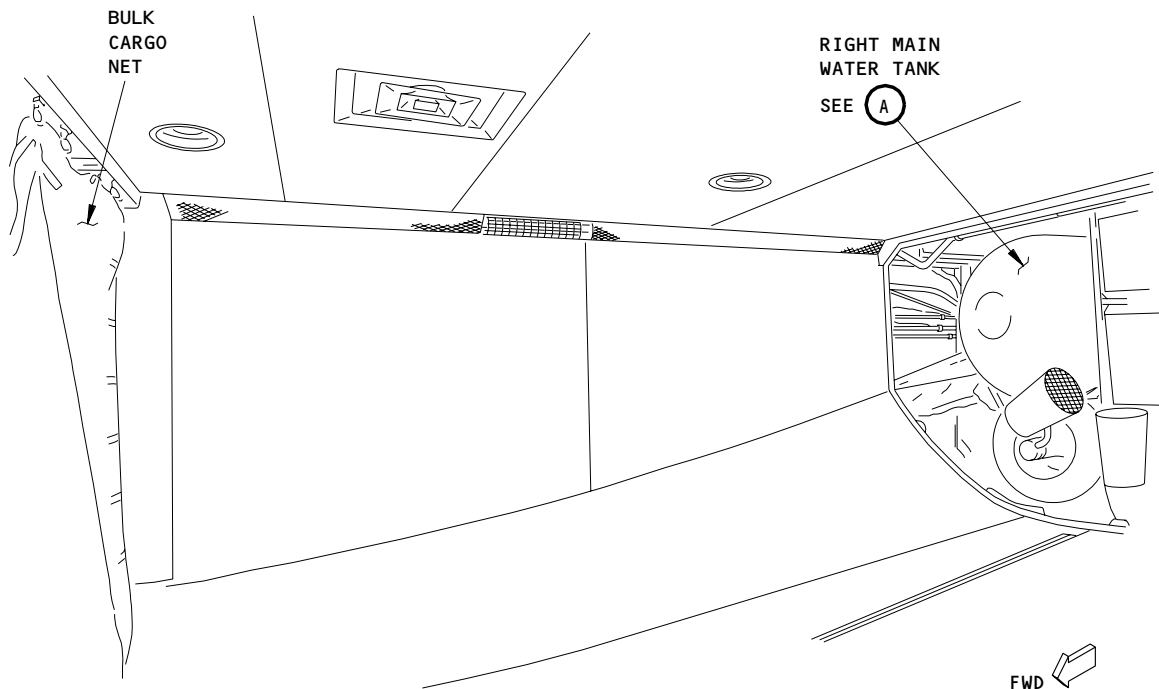
EFFECTIVITY

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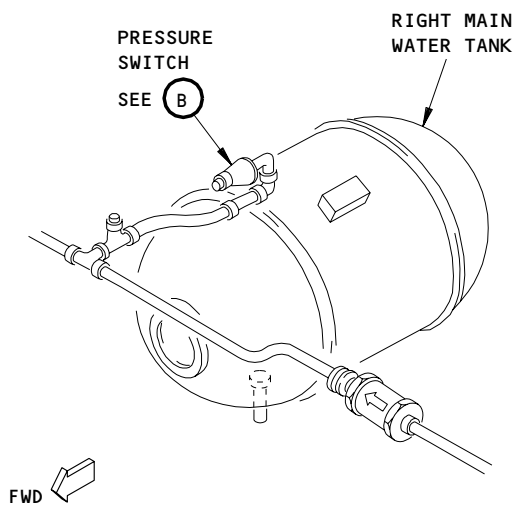
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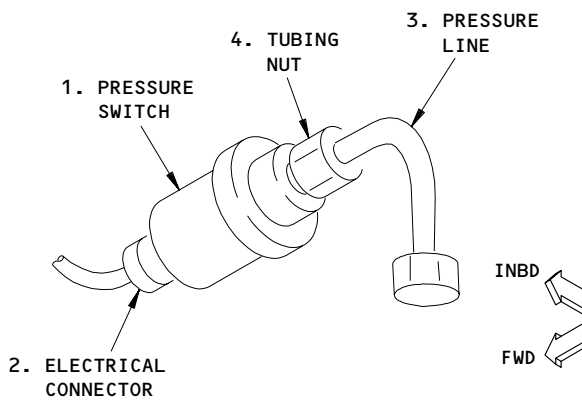


BULK CARGO COMPARTMENT



RIGHT MAIN WATER TANK

A



PRESSURE SWITCH

B

Pressure Actuated Compressor Switch  
Figure 401

EFFECTIVITY	
ALL	

38-15-05

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

- S 434-009
- (1) Remove the cap from the pressure line (3).
- S 424-010
- (2) Connect the pressure switch (1) to the pressure line (3).
- S 434-011
- (3) Connect the electrical connector (2) to the pressure switch (1).
- S 444-012
- (4) Pressurize the potable water system (AMM 38-10-00/201).
- S 714-013
- (5) Make sure the air compressor operates and the water tank pressurizes.
- S 794-014
- (6) Make sure there are no leaks at the pressure switch.
- S 414-019

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (7) Install the aft right bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

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- S 414-016
- (8) Close the bulk cargo door, 811 (AMM 52-36-00/001).
- S 864-017
- (9) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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PRESSURE RELIEF VALVE – MAINTENANCE PRACTICES

1. General

- A. This procedure includes three tasks.
- (1) The removal of the pressure relief valve.
  - (2) The functional test of the pressure relief valve.
  - (3) The installation of the pressure relief valve.

TASK 38-15-06-002-001

2. Pressure Relief Valve – Removal (Fig. 201)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 38-10-00/201, Potable Water System – Release Pressure
- (3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panel  
811 Bulk Cargo Compartment Door

C. Removal Procedure

S 862-003

- (1) To release pressure from the potable water system, do this task:  
Potable Water System – Release Pressure (AMM 38-10-00/201).

S 012-004

- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 012-005

- (3) Disconnect the quick-disconnect fasteners and remove the aft bulkhead lining of the bulk cargo compartment.

S 022-029

WARNING: PRE SB 38-0051 AIRPLANES;  
DO NOT TURN THE DEFLECTOR CAP WHEN YOU REMOVE OR INSTALL THE PRESSURE RELIEF VALVE. THE PRESSURE AT WHICH THE RELIEF VALVE RELEASES PRESSURE CAN CHANGE IF THE DEFLECTOR CAP TURNS. IF THE PRESSURE RELIEF VALVE DOES NOT RELEASE AT THE CORRECT PRESSURE, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (4) Remove the pressure relief valve from the tee fitting.

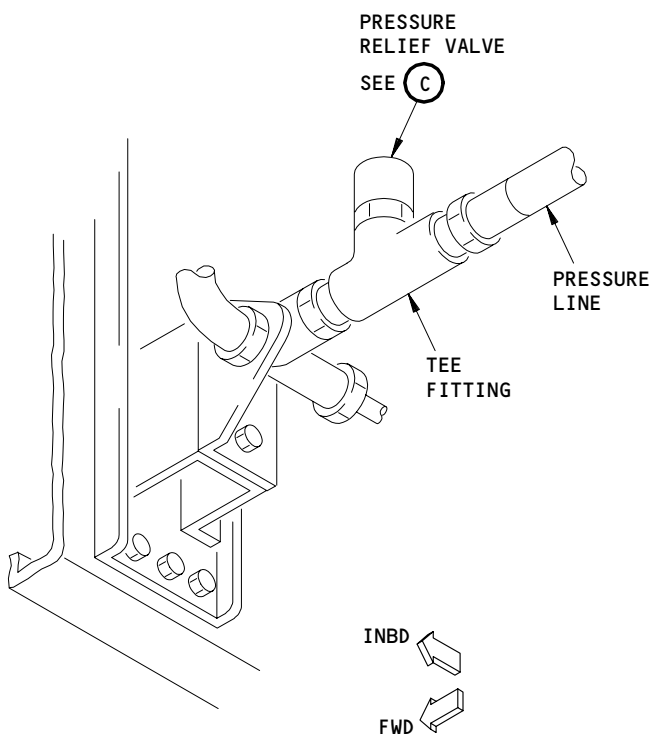
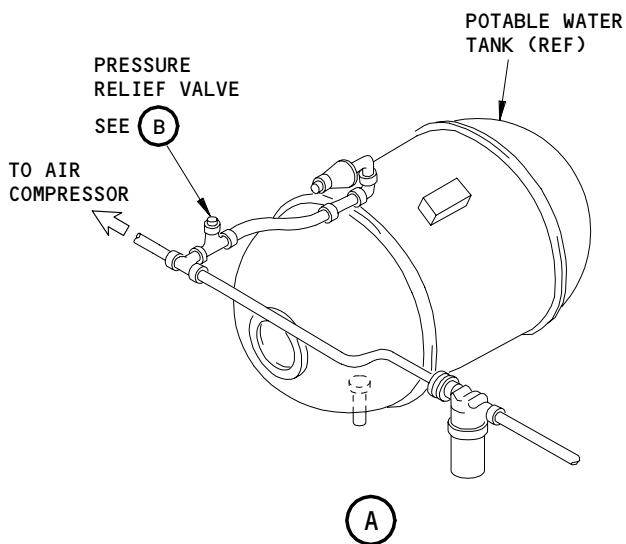
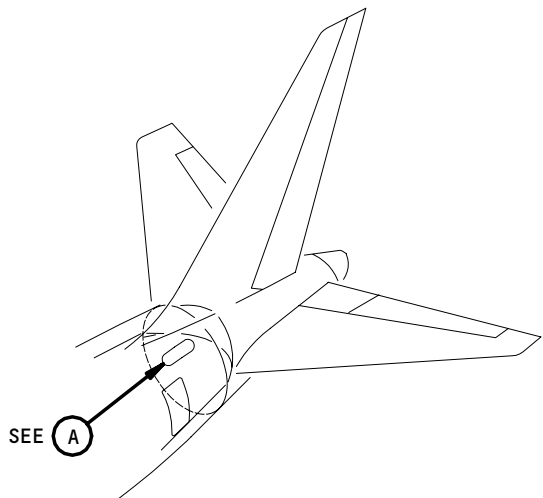
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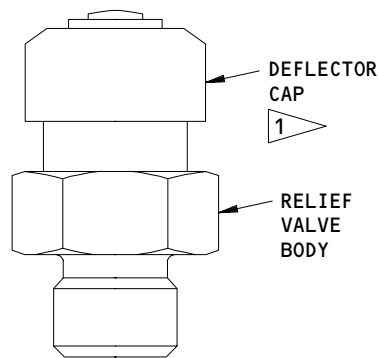
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PRESSURE RELIEF VALVE

(B)



PRESSURE RELIEF VALVE

(C)

1 PRESSURE RELIEF VALVES WITH PART NUMBER 524TP6D60; DO NOT TURN THE DEFLECTOR CAP WHEN YOU REMOVE OR INSTALL THE PRESSURE RELIEF VALVE

Pressure Relief Valve Installation  
Figure 201

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S 032-007

- (5) Put a cap on the tee fitting to keep contamination out of the potable water system.

TASK 38-15-06-702-018

3. Pressure Relief Valve Test (Fig. 202)

A. General

- (1) This functional test checks the pressure at which pressure relief occurs and also the pressure at which the pressure relief valve resets.

B. Standard Tools and Equipment

- (1) Gage - Pressure (0-75 psig  $\pm$ 0.5 psig)
- (2) Valve - Control (pressure rating 150 psig minimum, 3/8 inch minimum globe type, 15 scfm minimum flow at 50 psid).
- (3) Regulator - Pressure (pressure rated for air source, outlet pressure adjustable, zero to 80 psig, 3/8 inch minimum).
- (4) Filter - Air (in-line type)
- (5) Compressed Air Supply (80 psig, 15 scfm minimum)

C. Test Procedure

S 022-031

**WARNING:** PRE SB 38-0051 AIRPLANES;  
DO NOT TURN THE DEFLECTOR CAP WHEN YOU REMOVE OR INSTALL THE PRESSURE RELIEF VALVE. THE PRESSURE AT WHICH THE RELIEF VALVE RELEASES PRESSURE CAN CHANGE IF THE DEFLECTOR CAP TURNS. IF THE PRESSURE RELIEF VALVE DOES NOT RELEASE AT THE CORRECT PRESSURE, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) If the valve has not been removed from the airplane, do the task: Pressure Relief Valve Removal.

S 722-034

- (2) Connect these components to a source of compressed air that does not have oil, as shown in Fig. 202.
  - (a) Relief valve
  - (b) Control valve
  - (c) Pressure gage

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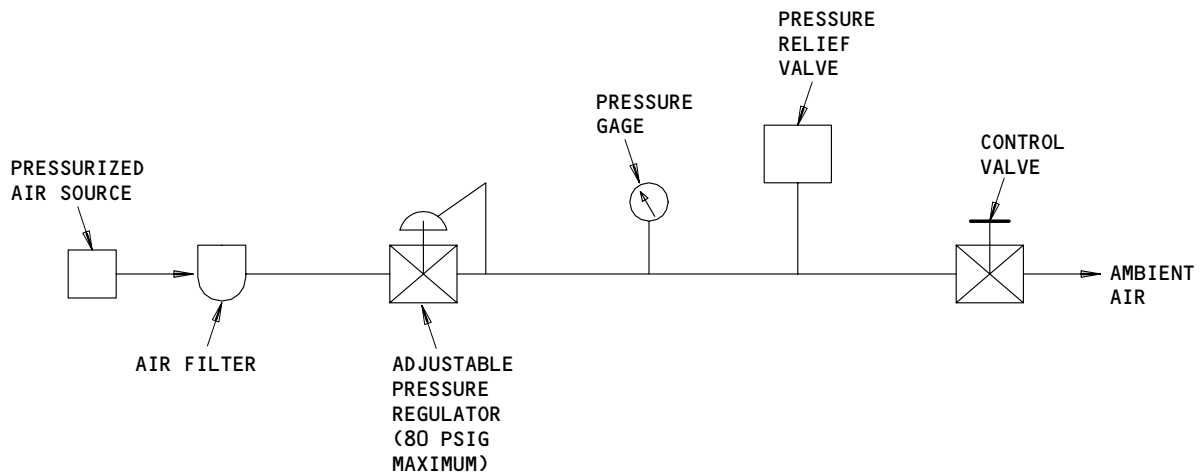
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Pressure Relief Valve Test  
Figure 202

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- (d) Pressure regulator
- (e) Air filter

S 722-020

- (3) To do a check of the relief pressure, do the following steps:
  - (a) Close the control valve.
  - (b) With the initial pressure at zero psig, slowly open the pressure regulator.
  - (c) Look at the pressure gage while you increase pressure.
  - (d) Keep a record of the initial pressure at which you find airflow or a sudden increase in airflow through the pressure relief valve.

NOTE: This pressure must be less than 75 psig.

- (e) If the initial relief pressure is less than 57 psig or more than 75 psig, replace the pressure relief valve.

S 782-027

- (4) To do a check of the reset pressure of the pressure relief valve, do the steps that follow:
  - (a) With the pressure at relief pressure, slowly close the pressure regulator.
  - (b) Look at the pressure gage while you decrease pressure.
  - (c) Keep a record of the reset pressure at which you find that airflow stops or the decrease of pressure stops through the pressure relief valve.

NOTE: This pressure must be more than 53 psig.

- (d) If the reset pressure of the relief valve is less than 53 psig, replace the pressure relief valve.

S 782-024

- (5) Reduce pressure to zero psig.

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S 782-025

- (6) Do a subsequent test of the pressure relief valve.
- (a) Keep a record of the subsequent pressure at which you find airflow or a sudden increase in airflow through the pressure relief valve.

NOTE: This pressure must be between 57 and 63 psig.

- (b) If the subsequent relief pressure is not in the 57 to 63 psig range, replace the pressure relief valve.

S 422-032

**WARNING:** PRE SB 38-0051 AIRPLANES;  
DO NOT TURN THE DEFLECTOR CAP WHEN YOU REMOVE OR INSTALL THE PRESSURE RELIEF VALVE. THE PRESSURE AT WHICH THE RELIEF VALVE RELEASES PRESSURE CAN CHANGE IF THE DEFLECTOR CAP TURNS. IF THE PRESSURE RELIEF VALVE DOES NOT RELEASE AT THE CORRECT PRESSURE, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (7) To reinstall the pressure relief valve on the airplane, do the task: Pressure Relief Valve Installation.

TASK 38-15-06-402-035

4. Pressure Relief Valve - Installation (Fig. 201)

A. References

- (1) AMM 24-22-00/201, Manual Control  
(2) AMM 38-10-00/201, Potable Water System - Restore Pressure  
(3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment (Right)
- (2) Access Panel  
811 Bulk Cargo Compartment Door

C. Installation Procedure

S 432-036

- (1) Remove the cap from the tee fitting.

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S 422-037

**WARNING:** PRE SB 38-0051 AIRPLANES;  
DO NOT TURN THE DEFLECTOR CAP WHEN YOU REMOVE OR INSTALL THE PRESSURE RELIEF VALVE. THE PRESSURE AT WHICH THE RELIEF VALVE RELEASES PRESSURE CAN CHANGE IF THE DEFLECTOR CAP TURNS. IF THE PRESSURE RELIEF VALVE DOES NOT RELEASE AT THE CORRECT PRESSURE, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Install the new O-ring packing on the pressure relief valve. Then install the valve in the Tee fitting.

S 862-038

- (3) To restore pressure to the potable water system, do this task: Potable Water System - Restore Pressure (AMM 38-10-00/201).

S 792-039

- (4) Make sure there are no air leaks at the pressure relief valve.

S 412-040

- (5) Install the aft bulkhead lining of the bulk cargo compartment.

S 412-041

- (6) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 862-042

- (7) (1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

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DEPRESSURIZATION VALVE – REMOVAL/INSTALLATION

TASK 38-15-09-004-001

1. Remove the Depressurization Valve (Fig. 401)

A. References

- (1) 38-10-00/201, Potable Water System

B. Access

- (1) Location Zone  
252 Passenger Cabin – Section 46 (Right)

C. Procedure

S 864-002

- (1) Release the pressure from the potable-water system (Ref 38-10-00).

S 864-003

- (2) Open the depressurization valve.

S 034-004

- (3) Disconnect the electrical connector from the compressor interlock switch.

S 034-005

- (4) Disconnect the hoses from the depressurization valve.

S 034-006

- (5) Put caps on the hoses to keep contamination out.

S 024-007

- (6) Remove the mounting bolts and remove the depressurization valve.

TASK 38-15-09-404-008

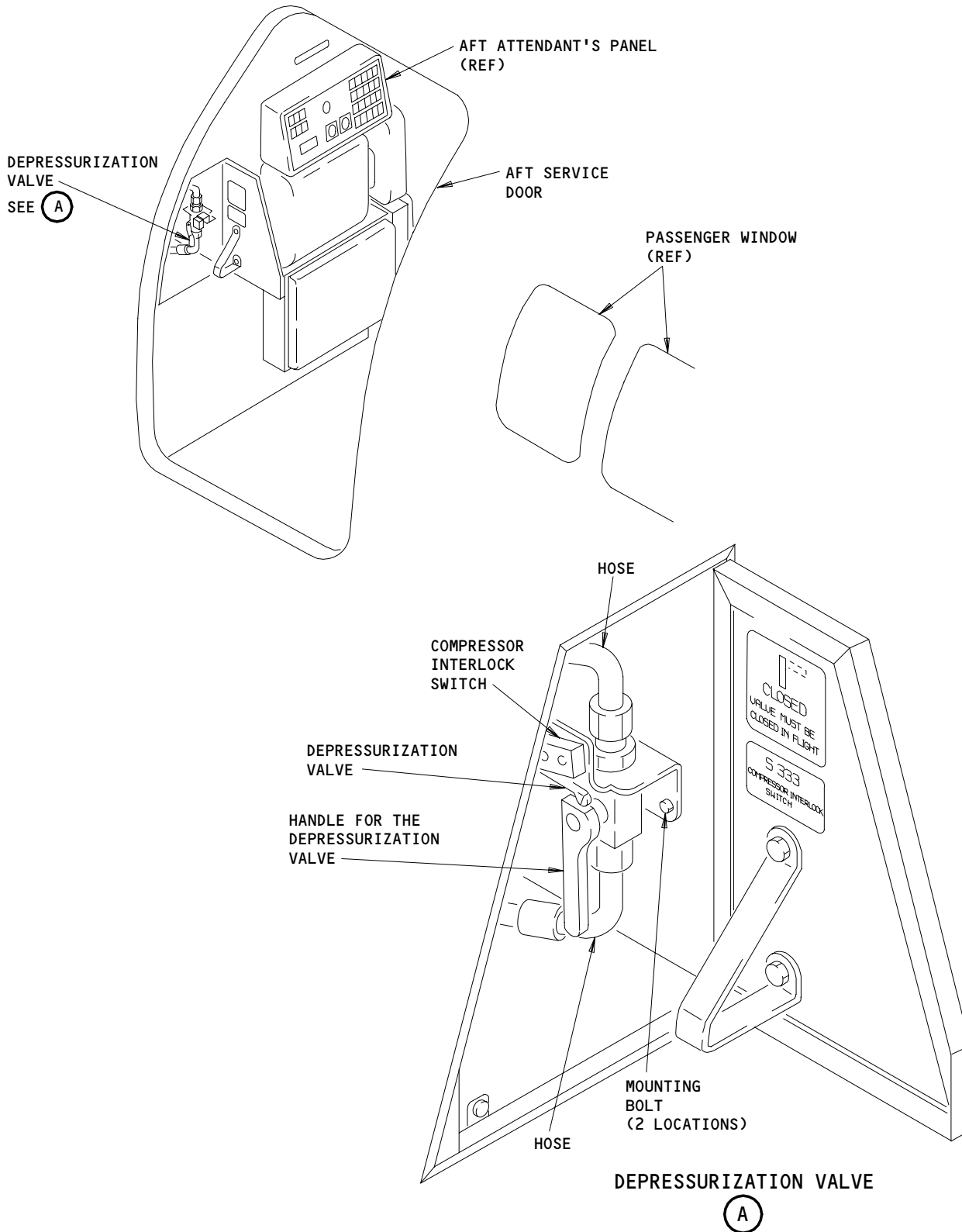
2. Install the Depressurization Valve (Fig. 401)

A. References

- (1) 24-22-00/201, Electrical Power – Control

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Depressurization Valve Installation  
Figure 401

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- (2) 38-10-00/201, Potable Water System
- B. Access
  - (1) Location Zone
    - 252 Passenger Cabin - Section 46 (Right)
- C. Procedure
  - S 424-009
    - (1) Put the depressurization valve in its position and install the mounting bolts.
  - S 434-010
    - (2) Remove the caps from the hoses.
  - S 434-011
    - (3) Connect the hoses to the depressurization valve.
  - S 434-012
    - (4) Connect the electrical connector to the compressor interlock switch.
  - S 864-013
    - (5) Pressurize the potable-water system (Ref 38-10-00).
  - S 714-014
    - (6) Open the depressurization valve and make sure the air compressor does not operate.
  - S 714-015
    - (7) Close the depressurization valve and make sure the air compressor operates.
  - S 794-016
    - (8) Make sure the connections of the hoses to the depressurization valve do not have a leak.
  - S 414-017
    - (9) Close the access door for the depressurization valve.

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S 864-018

(10) Remove electrical power if it is not necessary (Ref 24-22-00).

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CHECK VALVE - REMOVAL/INSTALLATION

1. General

- A. This procedure has the instructions to do these tasks:
  - (1) The removal of the check valve.
  - (2) The installation of the check valve.
- B. The installation task of the check valve includes a leak check with the compressor in operation.
- C. On many airplanes, an unloader check valve is installed downstream of the air compressor. Its purpose is to slowly bleed high pressure air trapped in the line between the air compressor and the unloader check valve. This is done to ease the next compressor activation. The unloader check valve removal and installation is the same as the other check valve.

TASK 38-15-10-004-001

2. Check Valve Removal (Fig. 401)

- A. References
  - (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
  - (2) AMM 38-10-00/201, Potable Water System
  - (3) AMM 52-36-00/001, Bulk Cargo Door
- B. Access
  - (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment
  - (2) Access Panel  
811 Bulk Cargo Door
- C. Prepare to Remove the Check Valve
  - S 864-002
  - (1) Release the pressure from the potable water system (AMM 38-10-00/201).
  - S 014-022
  - (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).
  - S 014-021
  - (3) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- D. Remove the Check Valve
  - S 014-005
  - (1) Disconnect the compressed air lines on both sides of the check valve.

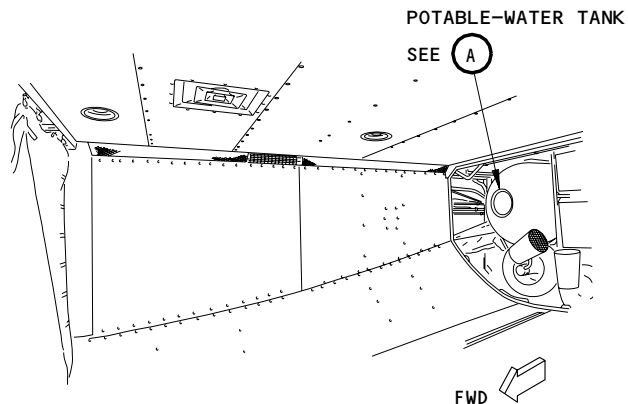
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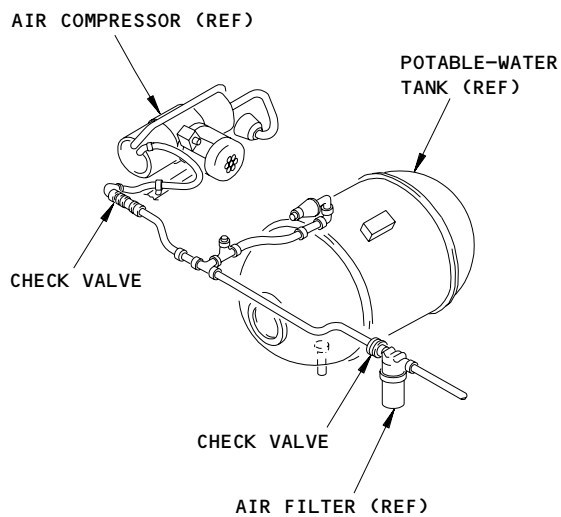
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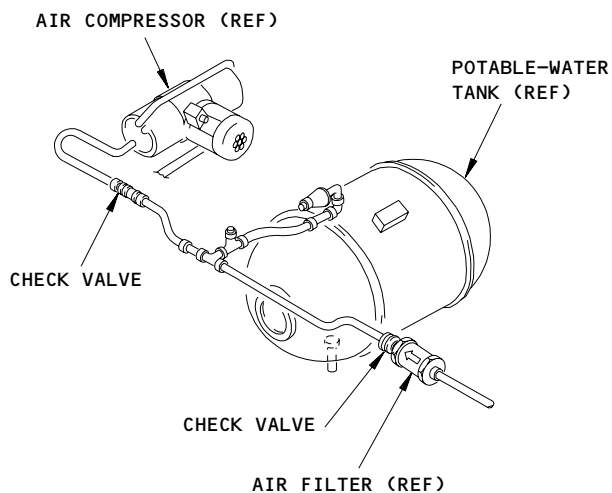
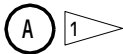
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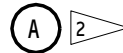
BULK CARGO COMPARTMENT



POTABLE-WATER TANK



POTABLE-WATER TANK



- 1 AIR COMPRESSOR WITH EXTERNAL INLET FILTER
- 2 AIR COMPRESSOR WITH BUILT-IN INLET FILTER

Check Valve Installation  
Figure 401

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- S 014-006
- (2) Remove the check valve.
  
- S 034-008
- (3) Remove and discard the O-rings.
  
- S 434-023
- (4) Put a cap on the open compressed air lines to keep contamination out.

TASK 38-15-10-404-010

3. Check Valve Installation (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 36-00-00/201, Pneumatic Power
- (3) AMM 38-10-00/201, Potable Water System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
166 Area Aft of Bulk Cargo Compartment
  
- (2) Access Panel  
811 Bulk Cargo Door

C. Install the Check Valve

- S 424-011
- (1) Install the new O-rings.
  
- S 434-012
- (2) Connect the check valve to the compressed air lines.

**NOTE:** The torque value between the union and the unloader check valve should be 255 to 285 pound-inches (28.8 to 32.2 newton-meters).

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S 844-026

- (3) If installing the pneumatic (bleed-air) line check valve, supply pneumatic power (AMM 36-00-00/201).

S 024-013

- (4) Pressurize the potable water system (AMM 38-10-00/201).

S 414-014

- (5) Make sure there are no leaks at the check valve connections.

D. Put the Airplane Back to Its Usual Condition

S 414-024

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

S 414-025

- (2) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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WASTE DISPOSAL - DESCRIPTION AND OPERATION

1. General

- A. Grey water is waste water from the galleys and lavatory washbasins. Grey water drains overboard through two heated drain masts. The drain masts are on the bottom of the fuselage; one forward and one aft.
- B. The two independent toilet waste systems remove and store toilet waste in two waste tanks. Two systems are used to ensure continuing toilet waste removal if one system fails. Waste is removed from the toilet bowls by creating a vacuum in the waste tanks. This vacuum draws the waste through waste lines into the waste tank. Vacuum blowers, in the waste tank overboard vent lines, create the vacuum needed for toilet flush at low altitudes and on the ground. Differential pressure supplies the vacuum during high altitude flight.

2. Waste Tanks (Fig. 1)

- A. Each airplane has two waste tanks mounted behind the aft cargo compartment rear bulkhead.
- B. The waste tanks are monofilament spun fiberglass over a stainless steel liner. The waste tanks each hold about 58 gallons of toilet waste. The forward tank and the aft tank are identical. Waste tank construction includes tank mounts which prevent tank movement.
- C. Liquid Separator:
  - (1) A water separator is installed at the top of the waste tank. The water separator removes moisture from the waste tank air before the air flows overboard.
  - (2) The vented air from the water separator goes through the vacuum blower when the airplane is not at flight altitude, or through the vacuum blower check valve when the airplane is at flight altitude.
- D. Waste Tank Quantity Indication System:
  - (1) Level sensor and logic control module information is now contained in Waste Tank Quantity Indication System, AMM 38-33-00/001.
  - (2) Some airplanes have a precharge shutoff valve in each rinse line for the waste tank. It does not let you add more than 6 gallons of chemical precharge to the waste tank during servicing. The precharge shutoff valve was eliminated at production line 870 and on.
- E. Rinse Nozzle:
  - (1) AIRPLANES WITH TWO RINSE NOZZLES ON THE TOP SECTION OF WASTE TANK; Each waste tank has two rinse nozzles near the top. One nozzle is on the same side of the tank as the point level sensors and the other nozzle is on the opposite side. The rinse nozzles rinse the waste tank inner walls and the surface of the Point Level Sensors during servicing.

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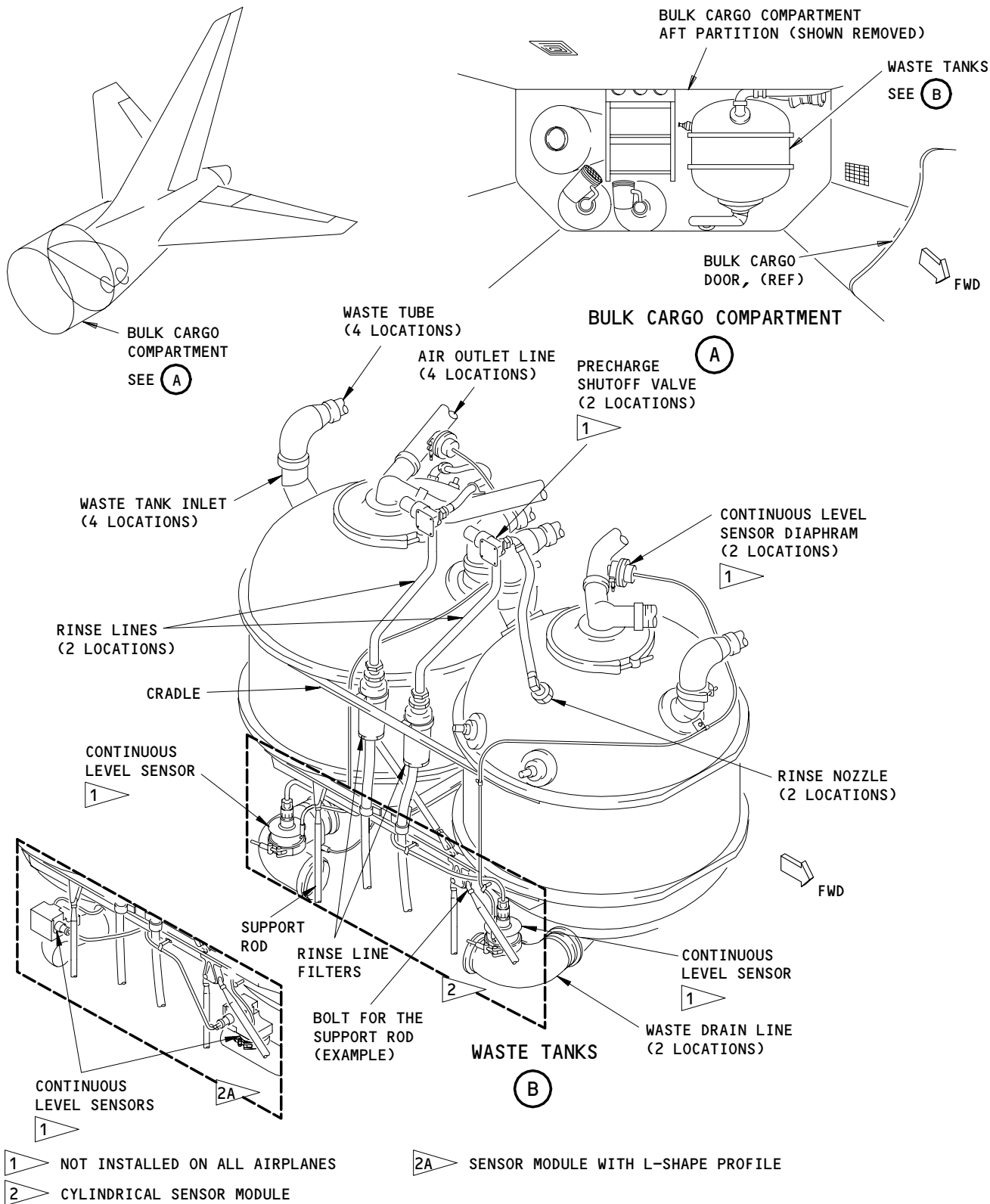
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Waste Tanks  
Figure 1

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(2) AIRPLANES WITH ONE RINSE NOZZLE FOR EACH WASTE TANK;  
The waste tank has a rinse nozzle near the point level sensors. The rinse nozzle cleans the surface of the level sensors during waste tank servicing, and at the same time washes down the inside wall of the tank.

F. AIRPLANES WITH THE RINSE LINE FILTER;

Refer to the data that follows:

(1) The filter is located near the waste tank, each rinse line has a filter. These filters are attached to the waste tank support cradle. They help remove contamination from the rinse solution to prevent blockage of the rinse nozzles.

G. Vacuum Blower:

(1) A vacuum blower is in the air outlet line for the waste tank. The function of the vacuum blower is to create the vacuum needed for flushing and transporting toilet waste at low altitudes and on the ground. The waste tank has two waste system tube connections near the top of the waste tank. One tube connects to the vacuum blower, the other tube connects to the airplane skin.

H. Flush Control Power:

(1) The flush control power for the waste system is switched between the ground handling bus and the flight control bus by separate flight control relays.

3. Waste Service Panel and Drain Ball Valve (Fig. 2)

A. The waste service panel, for the waste disposal system, is on the bottom centerline of the fuselage near the aft end of the airplane. The service panel has two rinse fittings (one for each waste tank), a waste drain valve assembly and a waste valve handle. When the service panel door is opened, two proximity switches stop power to the vacuum blowers. This will stop the toilet system operation during waste tank servicing.

B. The waste service panel has two sensor fouled lights, one for each waste tank. The sensor fouled light comes ON if one of the lever sensors have more than 1/8 inch of waste on the sensor surface.

C. Each waste tank has a drain ball valve located above the waste service panel. Pull the drain valve handle on the waste service panel to open both drain ball valves simultaneously. When the drain ball valves open, the toilet waste drains from the waste tanks through the drain fitting at the waste service panel. Push the drain valve handle to close both the drain ball valves.

4. Vacuum Blower (Figure 3)

A. The vacuum blowers produce the needed vacuum to flush the toilets at low altitudes, and when the airplane is on the ground. There is one vacuum blower for each waste tank in the waste tank overboard vent line. The vacuum blowers get 115 volt ac power from the right miscellaneous electrical equipment panel, P37 and from the left miscellaneous electrical equipment panel, P36. Thermal limit switches open at about 390°F cutting power to the vacuum blowers. The vacuum blowers produce a vacuum of not more than 10 to 11 inches of Hg. The vacuum blowers attach to the frames and stanchions with shock mounts and are connected to the waste tanks with rubber hoses.

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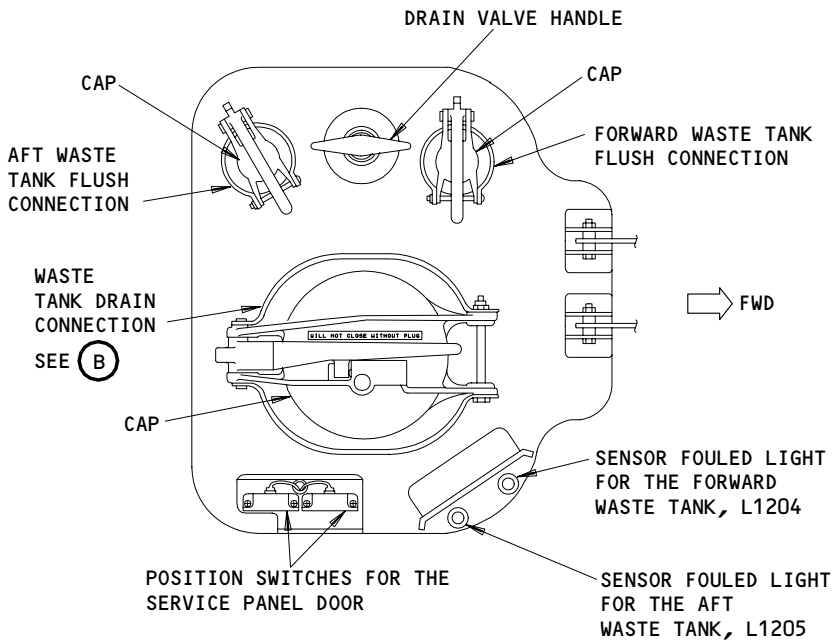
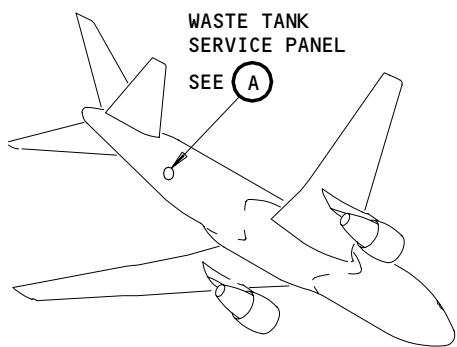
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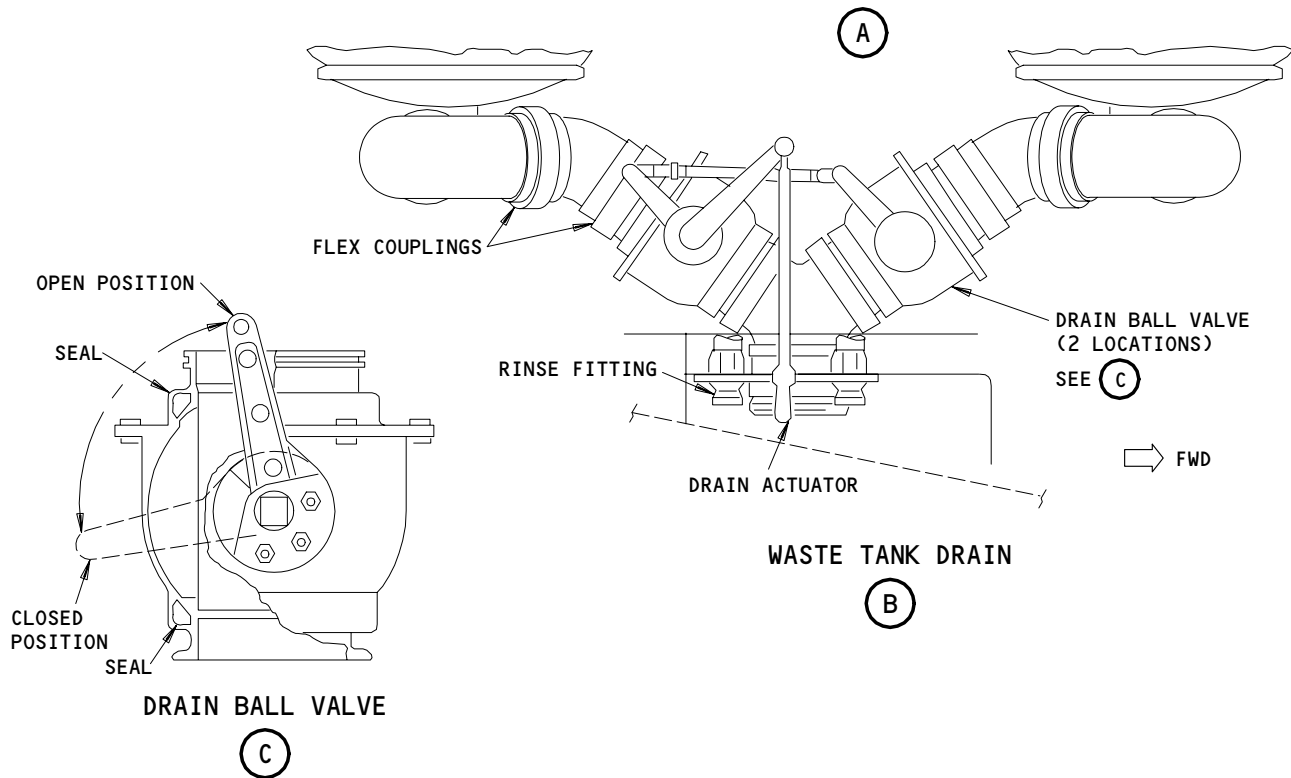
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# BOEING

## 767 MAINTENANCE MANUAL



### WASTE TANK SERVICE PANEL

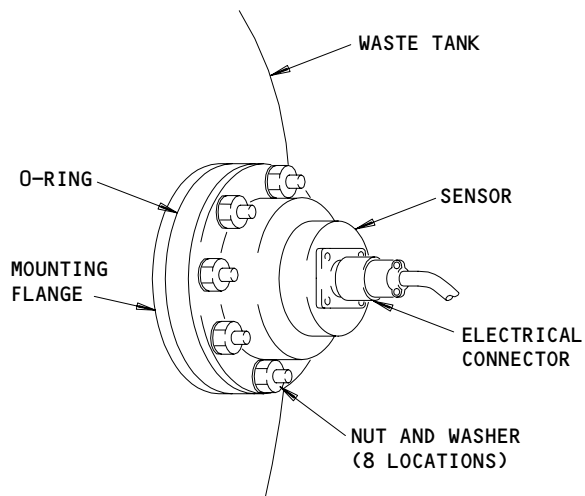
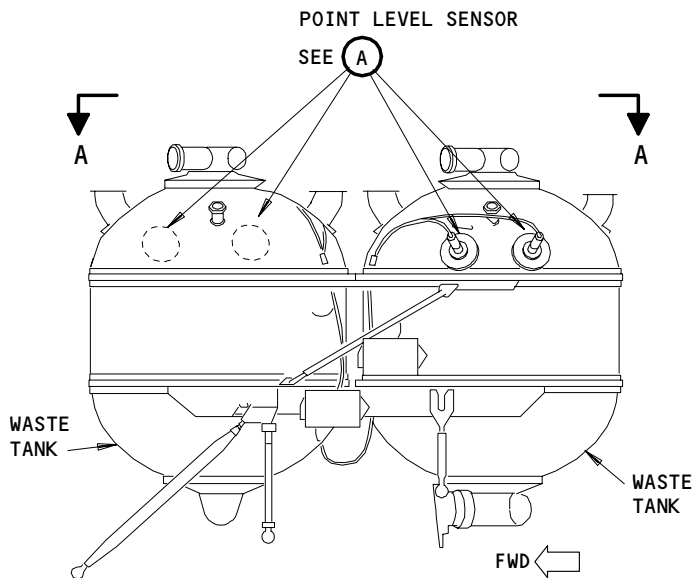


Waste Service Panel  
Figure 2

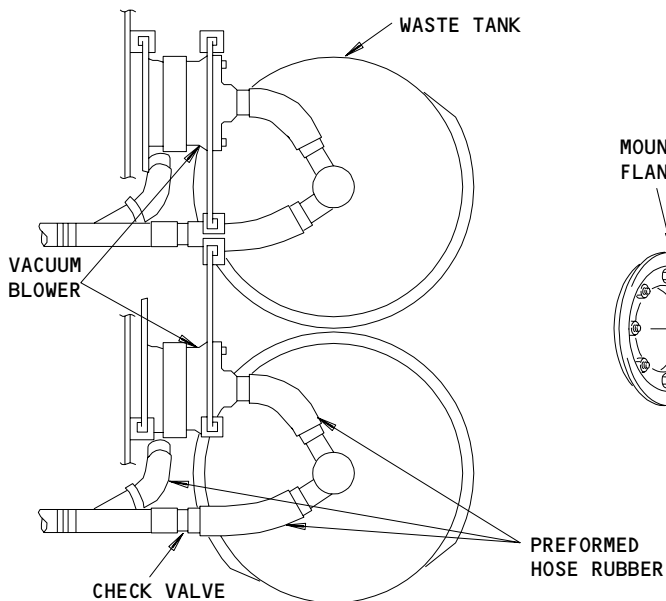
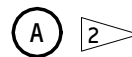
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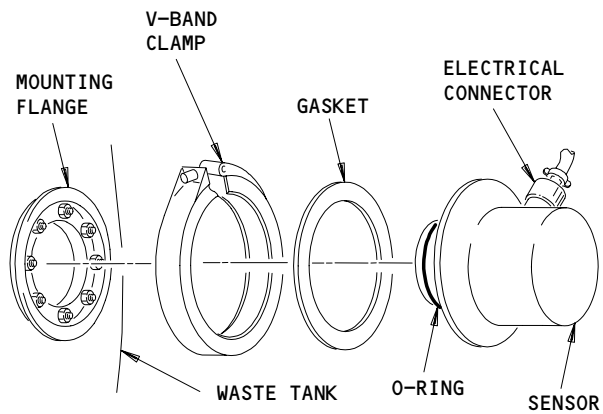




POINT LEVEL SENSOR  
(EXAMPLE)



A-A



POINT LEVEL SENSOR  
(EXAMPLE)



- 1 RECOMMENDED CONFIGURATION
- 2 ALTERNATIVE CONFIGURATION

Point Level Sensor  
Figure 3

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5. Altitude Pressure Switch (Fig 4)

A. An altitude pressure switch controls power to the vacuum blower. When the airplane is climbing, the switch cuts power to the vacuum blower at about 16,000 feet (4900 meters). When the airplane is descending, the altitude sensing switch closes at about 12,000 feet (3700 meters) providing power to the vacuum blower.

6. Toilet Assembly (Fig. 5)

A. The toilet assembly consists of an electronic flush control, a flush valve, a rinse valve with an integral antisiphon valve, and a toilet bowl assembly.

B. AIRPLANES WITH THE MONOGRAM TOILET;

The solenoid-operated rinse valve assembly controls the flow of fresh water during a flush cycle. The manual shutoff valve in the rinse water supply line behind the toilet shroud turns off the water supply to the toilet. The antisiphon valve prevents backflow of rinse water from the flush circuit to the potable water system. The toilet bowl assembly is a stainless steel bowl lined with a nonstick coating. The bowl has a rinse ring to provide rinse water to clean the bowl during the flush cycle. The motor-operated flush valve in the toilet vacuum waste line is a Pinch Tube which is open during the flush cycle and is closed between flush cycles. Monogram offers an Orbital Flush Valve which rotates open during the flush cycle and is closed between flush cycles. The manual flush shutoff valve is a slide valve mounted on the downstream side of the flush valve. The manual flush shut off valve is operated by a handle on the front of the toilet to shut off the vacuum waste line if the flush valve fails. The flush control unit controls the operation of the rinse valve and flush valve and the timing of the flush cycle. Turning the flush handle actuates the flush control unit to start the flush cycle.

C. AIRPLANES WITH THE ENVIROVAC TOILET;

A manual shutoff valve located behind the toilet shroud in the water supply line will stop the water supply to the toilet. The rinse valve connects the water supply to the rinse water header on the toilet bowl. The rinse valve is a solenoid-operated poppet valve which includes an integral antisiphon valve and a filter. The antisiphon valve prevents backflow of rinse water from the flush circuit to the potable water system. The toilet bowl is constructed of stainless steel and is lined with a nonstick coating. The bowl has a rinse header around the outside which connects the rinse water valve to three nozzles inside the bowl to clean the bowl during the flush cycle. The flush valve is connected between the bowl and the vacuum waste system line. The flush valve is a motor-operated, reversible, rotating disc style gate valve. The flush valve is also operated by the manual shutoff valve handle on the front of the toilet. On some toilets, the flush valve has an air bleed line installed on the upper valve case. The air bleed Line will direct airflow to remove waste from the upper casing and the disk. The electronic flush module controls the operation of the rinse valve and flush valve and the timing of the flush cycle. Turning the flush handle actuates the electronic flush module to start the toilet flush cycle.

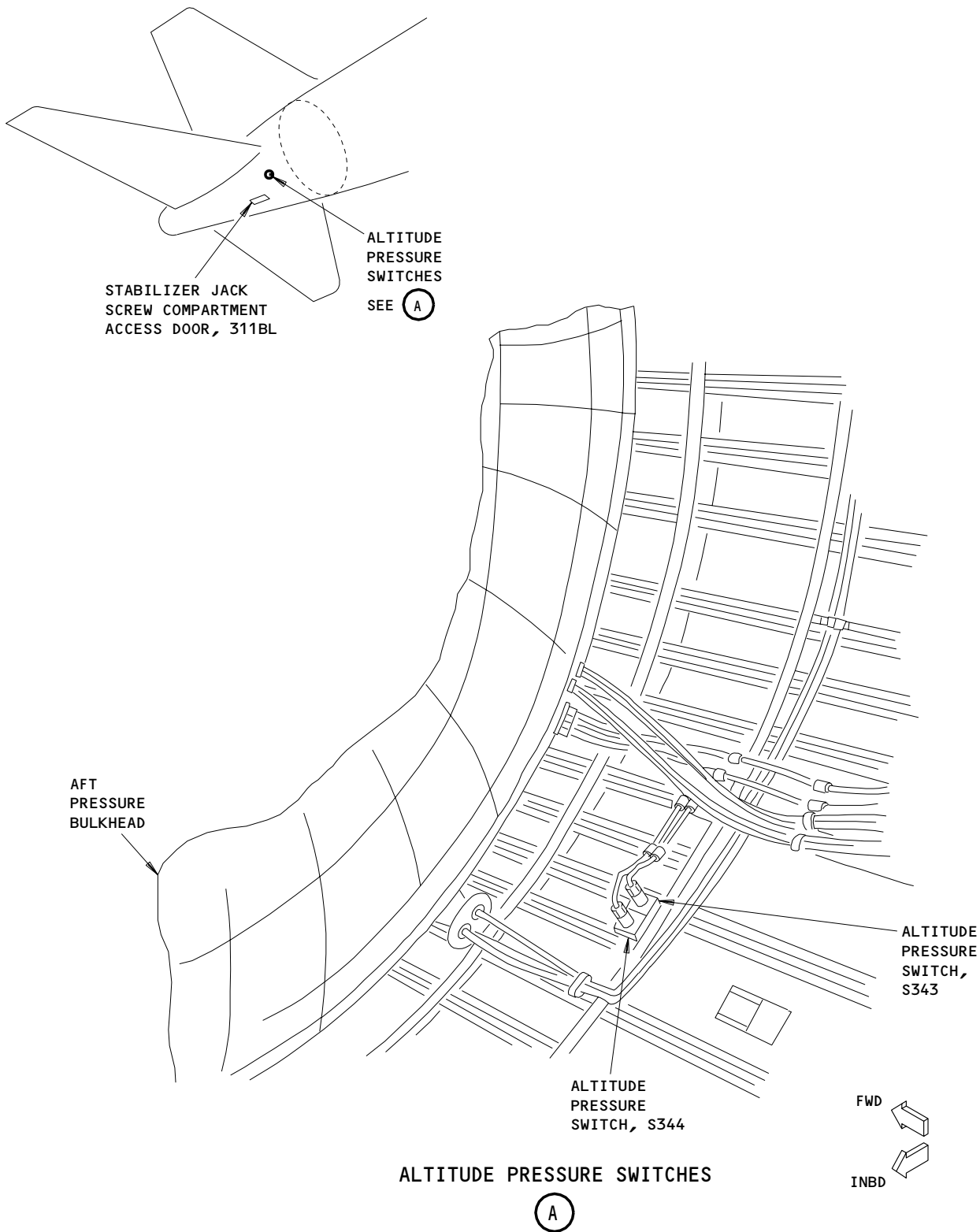
EFFECTIVITY

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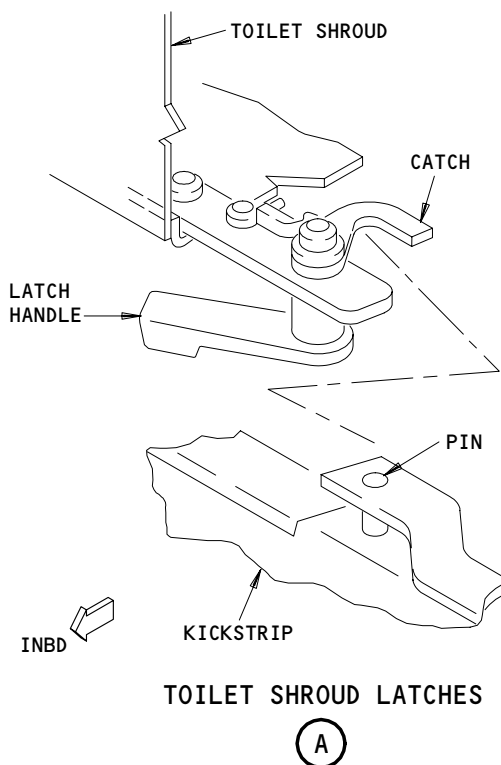
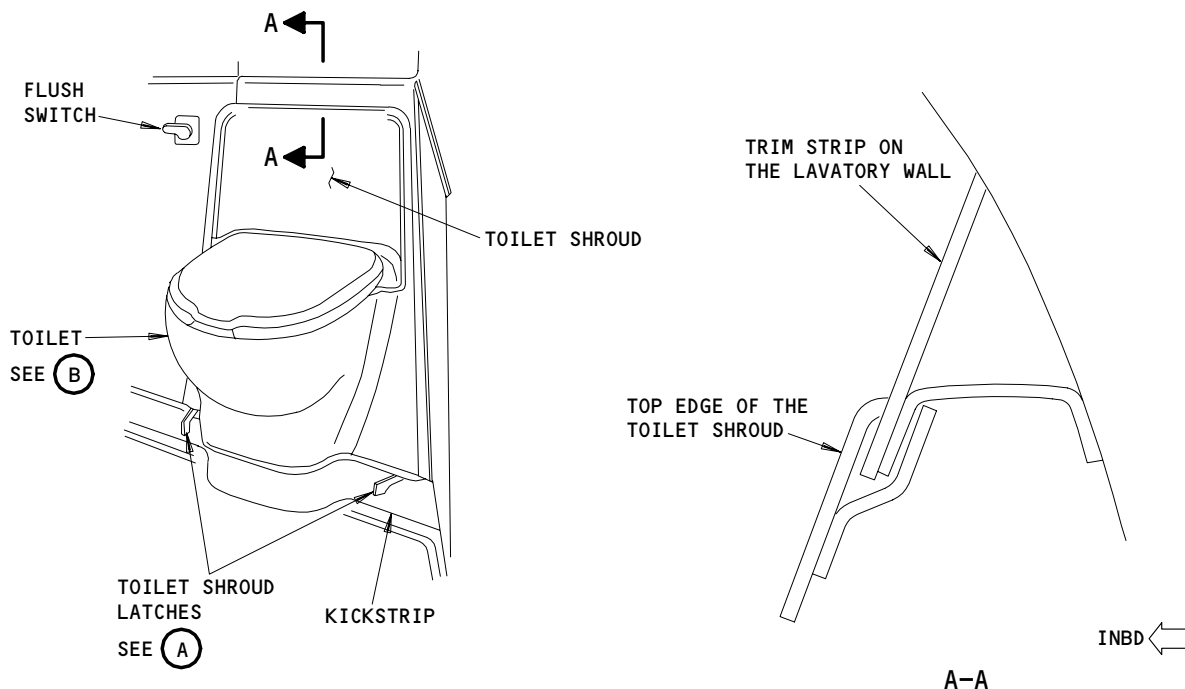
Page 6  
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Altitude Pressure Switch  
Figure 4

EFFECTIVITY	
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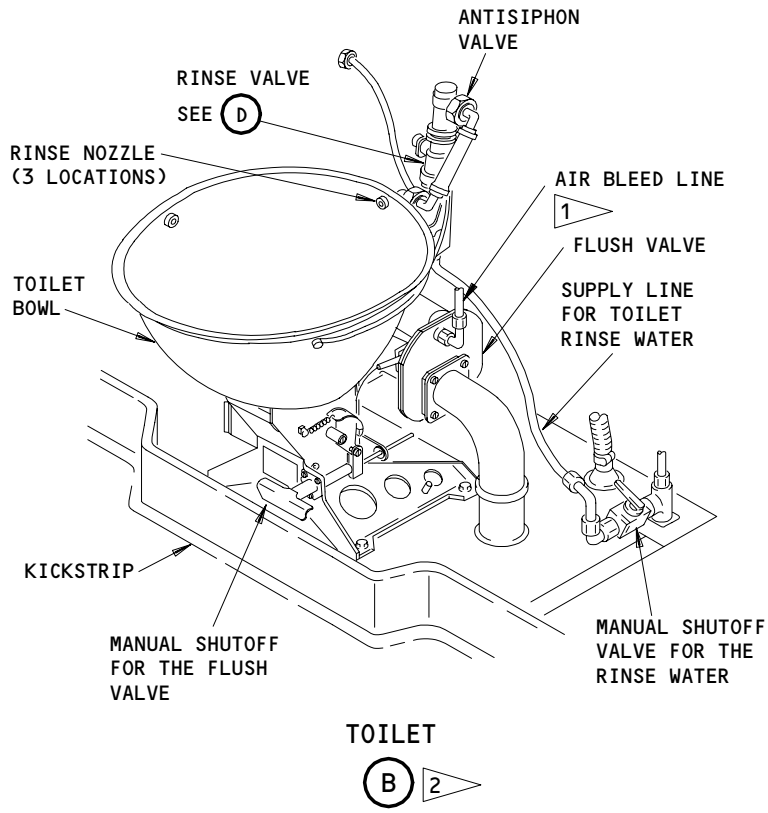
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Toilet  
Figure 5 (Sheet 1)

EFFECTIVITY	ALL
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**38-30-00**



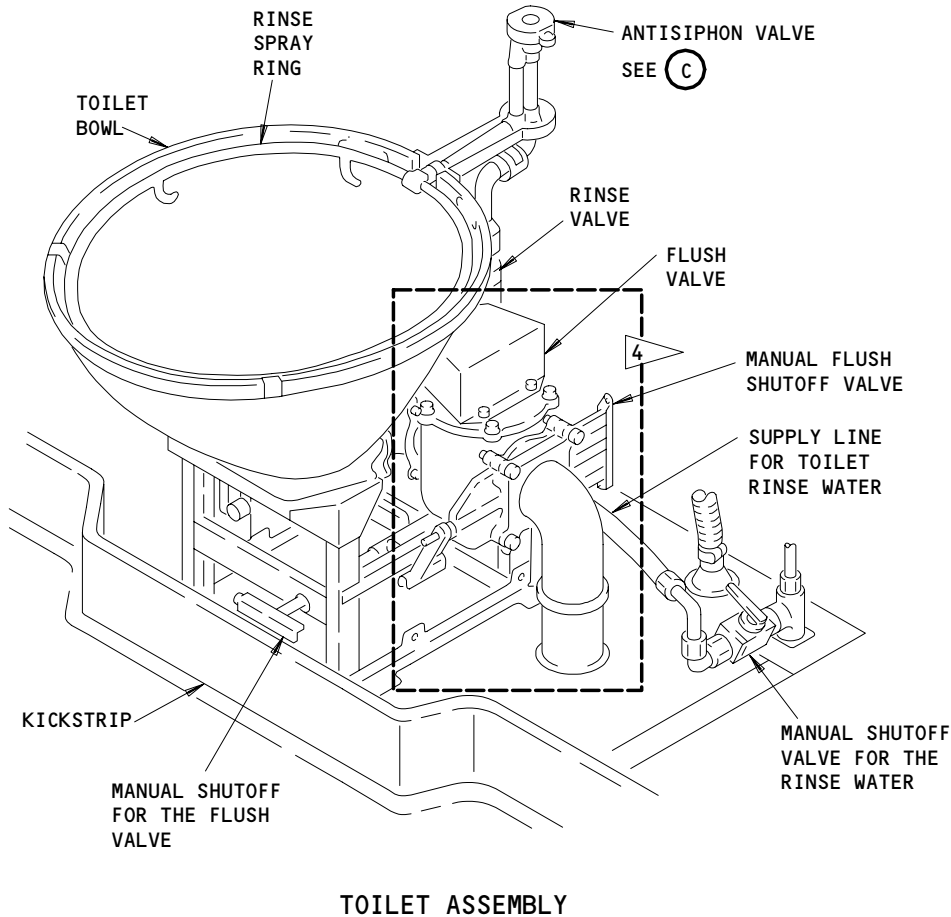
- 1 NOT INSTALLED ON ALL AIRPLANES
- 2 AIRPLANES WITH THE ENVIRVAC TOILET

Toilet  
Figure 5 (Sheet 2)

EFFECTIVITY	ALL
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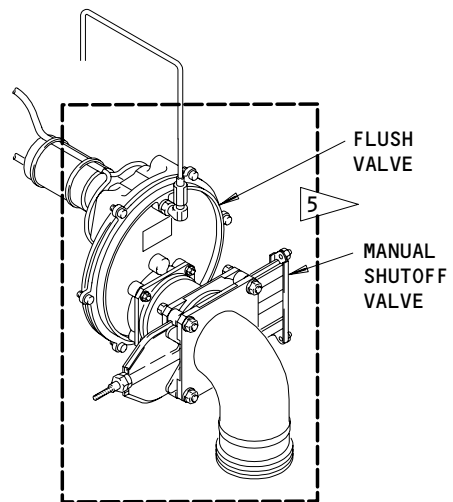
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TOILET ASSEMBLY

(B) 3

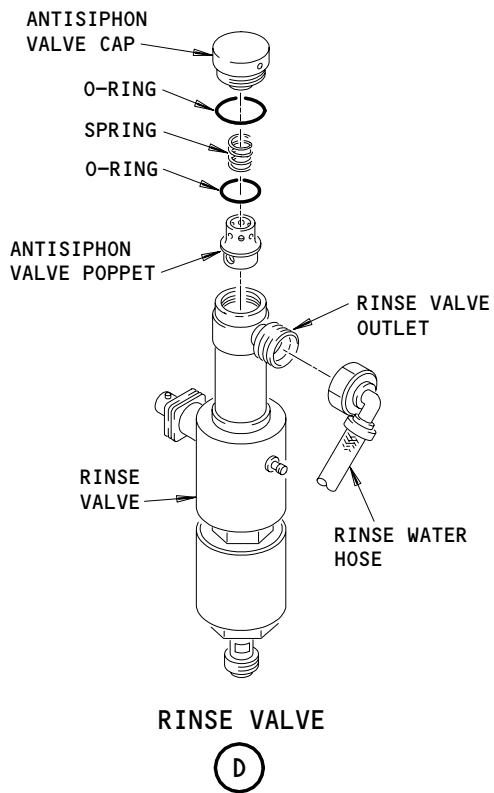
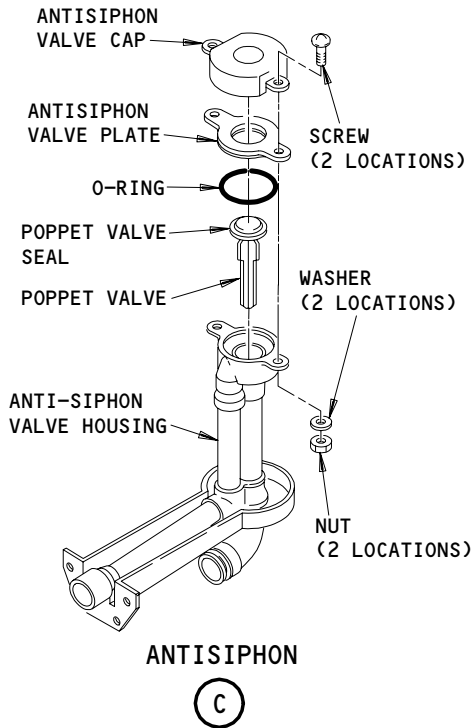


- 3 AIRPLANES WITH THE MONOGRAM TOILET
- 4 MONOGRAM TOILET WITH THE PINCH TUBE FLUSH VALVE
- 5 MONOGRAM TOILET WITH AN ORBITAL FLUSH VALVE

Toilet  
Figure 5 (Sheet 3)

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Toilet  
Figure 5 (Sheet 4)

EFFECTIVITY	
	ALL

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7. Operation

A. Functional Description of the Logic Control Module

(1) See AMM 38-33-00/001.

B. Toilet Operation Control

(1) Pressing a toilet flush switch starts the waste disposal system.  
Operation is automatic and controlled by time switches.

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LIGHTS ON AFT ATTENDANT'S PANEL		
LIGHT NAME	EFF	DISCRIPTION
LAV INOP FWD (AFT) TANK	ALL	<p>The light is usually off. The light comes on if the logic module finds the waste tank is full. To correct the problem, do the servicing procedure for the waste tanks (AMM 12-17-01/301). If the problem continues, clean the point level sensors. (AMM 38-33-01/701). Push the light to make the logic module do its built in test.</p> <p>For airplanes with continuous level sensors, push and hold the light for a minimum of 6 seconds to run the test. This is the first step you need to do if you found the FWD (AFT) WASTE SENSOR indication on EICAS.</p>
SNSR OFF FWD (AFT) TANK	*[1]	<p>The light is usually off. The light comes on if you push it when the LAV INOP light is on. This starts the toilet if they are stopped because one of the two point level sensors indicates the waste tank is full. To correct the problem, do the servicing procedure for the waste tanks (AMM 12-17-01/301). If the problem continues, clean the point level sensors. (AMM 38-33-01/701).</p> <p>Note that the toilets will not start (and the light will not come on) if the two point level sensors indicate the waste tank is full. The LAV INOP light will go out when the SNSR OFF light comes on.</p>

EFFECTIVITY

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MAINTENANCE MANUAL

LIGHTS ON AFT ATTENDANT'S PANEL		
LIGHT NAME	EFF	DISCRIPTION
SNSR FOUL FWD (AFT) TANK	*[2]	The light is usually off. The light comes on the logic module if a point level sensor is dirty. To correct the problem, do the servicing procedure for the waste tanks (AMM 12-17-01/301). If the problem continues, clean the point level sensors. (AMM 38-33-01/701).

\*[1] SAS 050, 051, 155, 162-165

\*[2] ALL EXCEPT SAS 150-154; ALL EXCEPT MTH 275

EFFECTIVITY

ALL

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FAULT ISOLATION/MAINT MANUAL

WASTE DISPOSAL

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ASSEMBLY - TOILET	5		INSIDE LAVATORY	38-32-01
BLOWER - VACUUM, AFT WASTE TANK, M598	2	1	822, AFT OF BULK CARGO COMPT	38-32-06
BLOWER - VACUUM, FWD WASTE TANK, M599	2	1	822, AFT OF BULK CARGO COMPT	38-32-06
CIRCUIT BREAKER - LAVS SYSTEM 1, FLUSH, C1367		1	FLT COMPT, P11	*
LAVS SYSTEM 2, FLUSH, C1368		1	11R8	*
CIRCUIT BREAKER - VACUUM BLOWER, LAVS SYSTEM 1, C389	4	1	11R35	*
VACUUM BLOWER, LAVS SYSTEM 1, C389	5	1	119AL, MAIN EQUIP CTR, P36	*
CIRCUIT BREAKER - VACUUM BLOWER LAVS SYSTEM 2, C388		1	36F6	*
FILTER - RINSE LINE	1	2	36G1	*
LIGHT - SENSOR FOUL, AFT TANK	4	1	119AL, MAIN EQUIP CTR, P37	*
LIGHT - SENSOR FOUL, FWD TANK	4	1	37G7	*
MODULE - SENSOR CONTROL AND LOGIC, AFT WASTE TANK, M965	3	1	822, AFT OF BULK CARGO COMPT	38-32-18
MODULE - SENSOR CONTROL AND LOGIC, FWD WASTE TANK, M964	3	1	WASTE TANK SERVICE PANEL, 163AL	*
NOZZLE - RINSE	1	4	WASTE TANK SERVICE PANEL, 163AL	*
NOZZLE - RINSE	1	2	822, AFT OF BULK CARGO COMPT	38-33-03
RELAY - (FIM 31-01-36/101) LAVATORY FLUSH CONTROL, SYSTEM 1, K2310			822, AFT OF BULK CARGO COMPT	38-33-03
LAVATORY FLUSH CONTROL, SYSTEM 2, K2311				
VACUUM BLOWER, K172				
RELAY - (FIM 31-01-49/101) VACUUM BLOWER, K173				
SENSOR A - LEVEL, AFT WASTE TANK, TS1	1, 2	1	822, AFT OF BULK CARGO COMPT	38-32-17
SENSOR A - LEVEL, FWD WASTE TANK, TS1	1, 2	1	822, AFT OF BULK CARGO COMPT	38-32-17
SENSOR B - LEVEL, AFT WASTE TANK, TS2	1, 2	1	822, AFT OF BULK CARGO COMPT	38-33-01
SENSOR B - LEVEL, FWD WASTE TANK, TS2	1, 2	1	822, AFT OF BULK CARGO COMPT	38-33-01
SENSOR C - CONTINUOUS LEVEL SENSOR, TS3	1	2	822, AFT OF BULK CARGO COMPT	38-33-01
SEPARATOR - WATER, AFT WASTE TANK	1, 2	1	822, AFT OF BULK CARGO COMPT	38-33-02
SEPARATOR - WATER, FWD WASTE TANK	1, 2	1	822, AFT OF BULK CARGO COMPT	38-32-02

\* SEE THE WDM EQUIPMENT LIST

- 1 AIRPLANES WITH A WASTE WATER FILTER IN THE RINSE NOZZLE TUBE (SB 767-38-0014)
- 2 AIRPLANES WITH ONE RINSE NOZZLE PER TANK (SB 767-38-0018)
- 3 AIRPLANES WITH THE WASTE SENSOR OFF SWITCH FOUND ON THE AFT ATTENDANT PANEL
- 4 SAS 001-167, 275-280
- 5 SAS 168-999, 281-999
- 6 SAS 052-099, 156-199, 277-999
- 7 SAS 052, 156, 157, 166, 167, 277-281




Waste Disposal - Component Index  
Figure 101 (Sheet 1)

EFFECTIVITY

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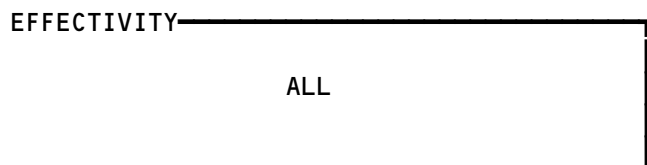
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767  
FAULT ISOLATION/MAINT MANUAL

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
SWITCH - ALTITUDE PRESSURE, S343	6	1	311BL, STAB. JACKSCREW COMPT	38-32-51
SWITCH - ALTITUDE PRESSURE, S344	6	1	311BL, STAB. JACKSCREW COMPT	38-32-51
SWITCH - FLUSH, S2			INSIDE LAVATORY	38-32-04
SWITCH - LAV INOP, AFT TANK, S17	4	1	AFT ATTENDANT PANEL, P22	*
SWITCH - LAV INOP, FWD TANK, S16	4	1	AFT ATTENDANT PANEL, P22	*
SWITCH - SENSOR FOUL, AFT TANK, S15	4	1	AFT ATTENDANT PANEL, P22	*
SWITCH - SENSOR FOUL, FWD TANK, S14	4	1	AFT ATTENDANT PANEL, P22	*
SWITCH - SENSOR OFF, AFT TANK, S22 	4	1	AFT ATTENDANT PANEL, P22	*
SWITCH - SENSOR OFF, FWD TANK, S21 	4	1	AFT ATTENDANT PANEL, P22	*
SWITCH - SERVICE PANEL DOOR, S352	4	1	WASTE TANK SERVICE PANEL, 163AL	*
SWITCH - SERVICE PANEL DOOR, S353	4	1	WASTE TANK SERVICE PANEL, 163AL	*
TANK - WASTE, AFT	1	1	822, AFT OF BULK CARGO COMPT	38-32-11
TANK - WASTE, FWD	1	1	822, AFT OF BULK CARGO COMPT	38-32-11
VALVE - DRAIN, AFT TOILET TANK	2	1	822, AFT OF BULK CARGO COMPT	38-32-03
VALVE - DRAIN, FWD TOILET TANK	2	1	822, AFT OF BULK CARGO COMPT	38-32-03
VALVE - PRECHARGE SHUTOFF, V386, V387 	1	2	822, AFT OF BULK CARGO COMPT	38-32-19

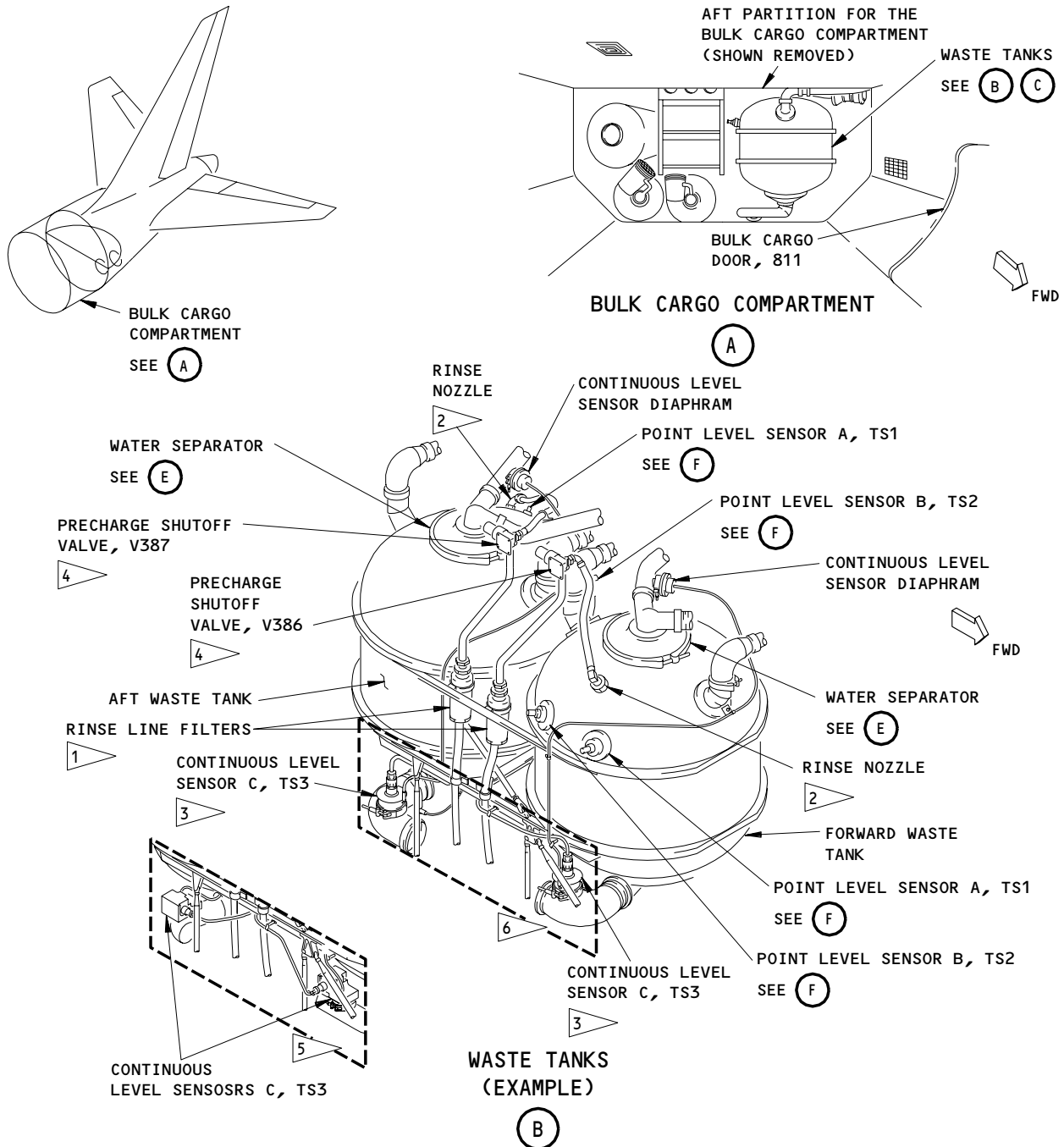
\* SEE THE WDM EQUIPMENT LIST

Waste Disposal - Component Index  
Figure 101 (Sheet 2)



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767  
FAULT ISOLATION/MAINT MANUAL



- 1 AIRPLANES WITH THE RINSE LINE FILTERS (SB 767-38-0014)
- 2 AIRPLANES WITH ONE RINSE NOZZLE ON EACH WASTE TANK
- 3 AIRPLANES WITH THE CONTINUOUS LEVEL SENSORS
- 4 AIRPLANES WITH THE PRECHARGE SHUTOFF VALVE

- 5 AIRPLANES WITH THE CONTINUOUS LEVEL SENSORS WITH L-SHAPE PROFILE
- 6 AIRPLANES WITH THE CONTINUOUS LEVEL SENSORS WITH CYLINDRICAL SENSOR MODULE

Waste Disposal - Component Location  
Figure 102 (Sheet 1)

EFFECTIVITY

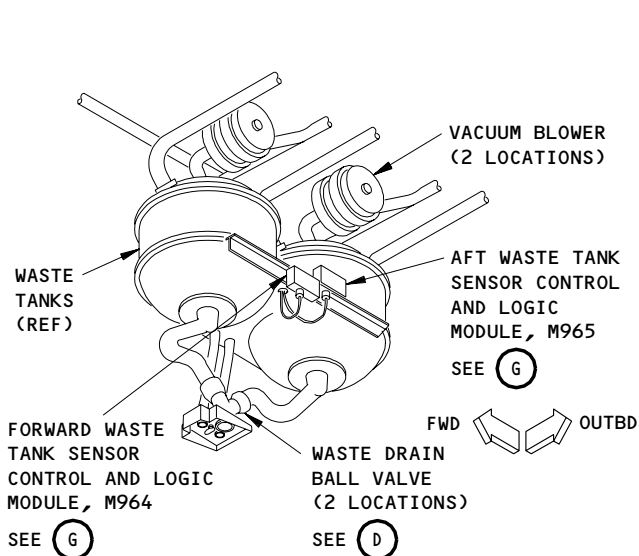
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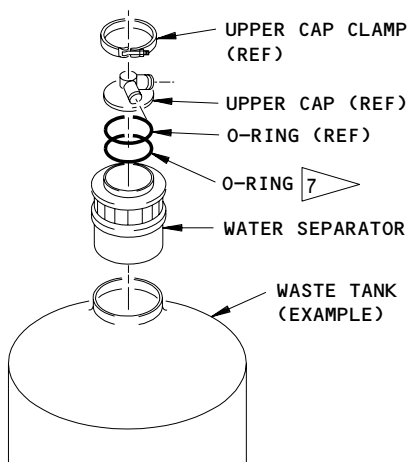
Page 103  
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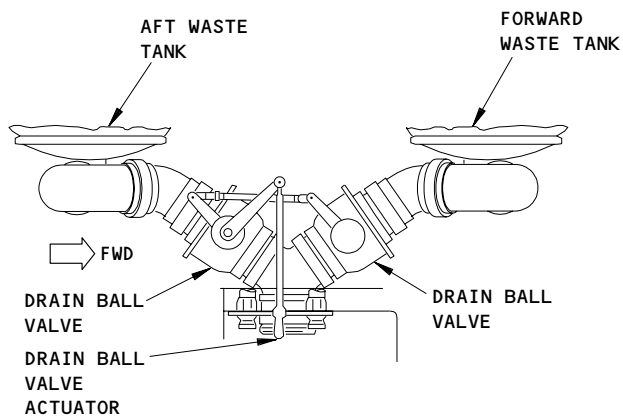
**WASTE TANKS**

(C)



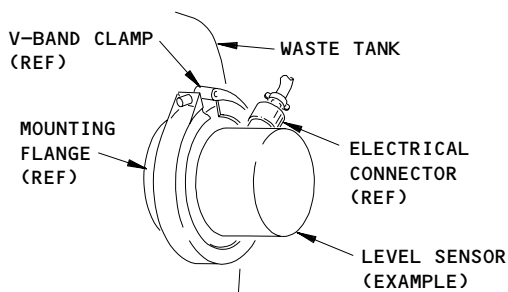
**WATER SEPARATOR**

(E)



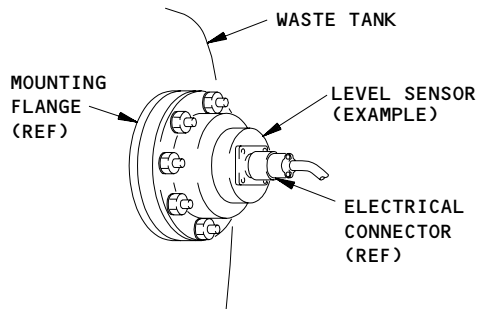
**WASTE DRAIN BALL VALVE**

(D)



**LEVEL SENSOR**

(F) 8



**LEVEL SENSOR**

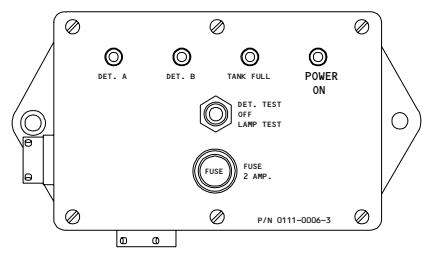
(F) 9

- 7 AIRPLANES WITH TWO O-RINGS
- 8 RECOMMENDED CONFIGURATION
- 9 ALTERNATIVE CONFIGURATION

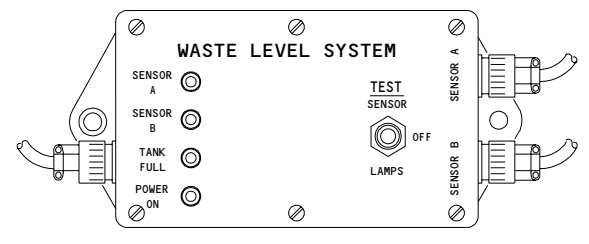
Waste Disposal - Component Location  
Figure 102 (Sheet 2)

EFFECTIVITY	ALL

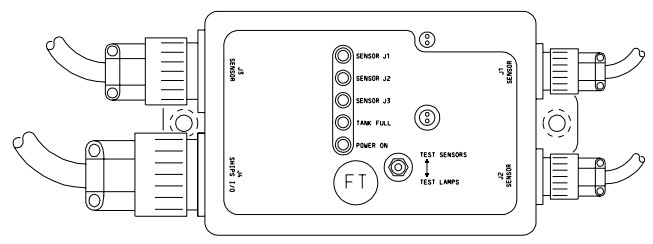
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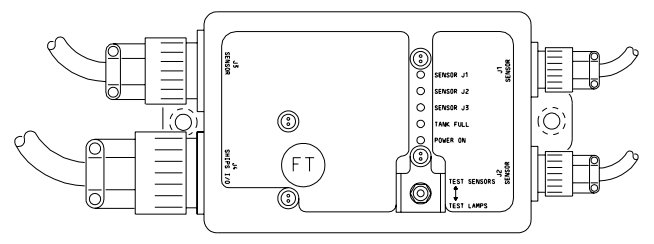
FORWARD/AFT LOGIC CONTROL MODULE  
**G 10**



FORWARD/AFT LOGIC CONTROL MODULE  
**G 11**



FORWARD/AFT LOGIC CONTROL MODULE  
**G 12**



FORWARD/AFT LOGIC CONTROL MODULE  
**G 13**

- 10** AIRPLANES WITH THE KAISER LOGIC CONTROL MODULE
- 11** AIRPLANES WITH THE DREXELBROOK LOGIC CONTROL MODULE
- 12** AIRPLANES WITH ROSEMOUNT LOGIC CONTROL MODULE WITHOUT A GUARD ON THE TEST SWITCH
- 13** AIRPLANES WITH ROSEMOUNT LOGIC CONTROL MODULE WITH A GUARD ON THE TEST SWITCH

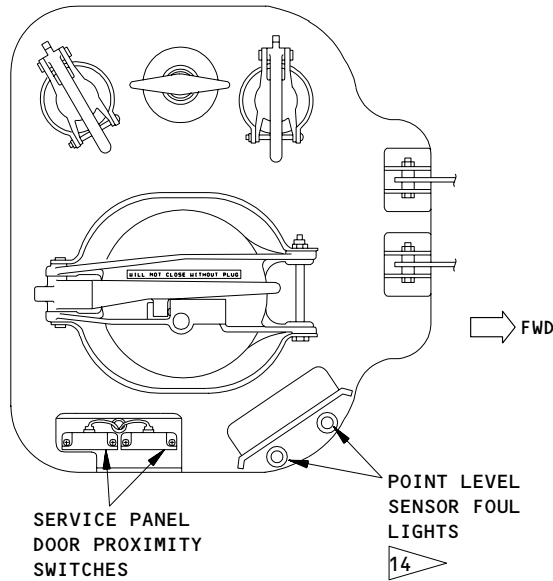
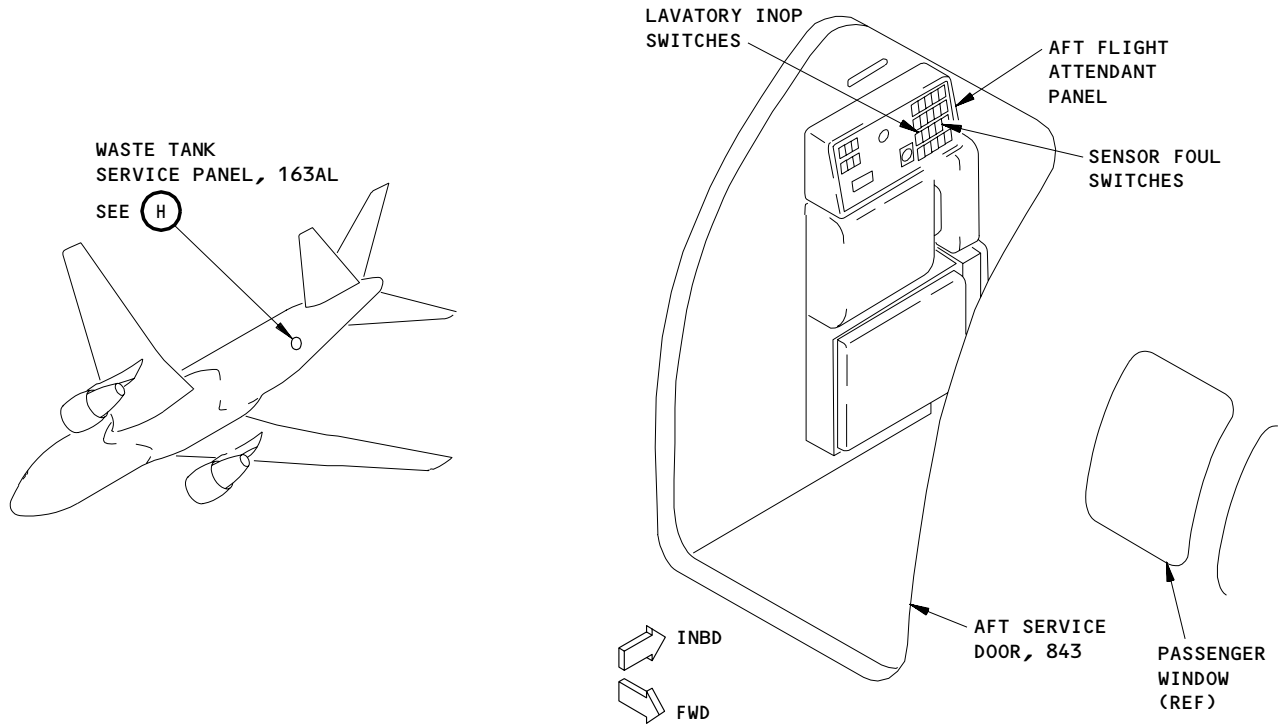
Waste Disposal - Component Location  
Figure 102 (Sheet 3)

EFFECTIVITY	ALL
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FAULT ISOLATION/MAINT MANUAL



14 NOT ON ALL AIRPLANES

(H)

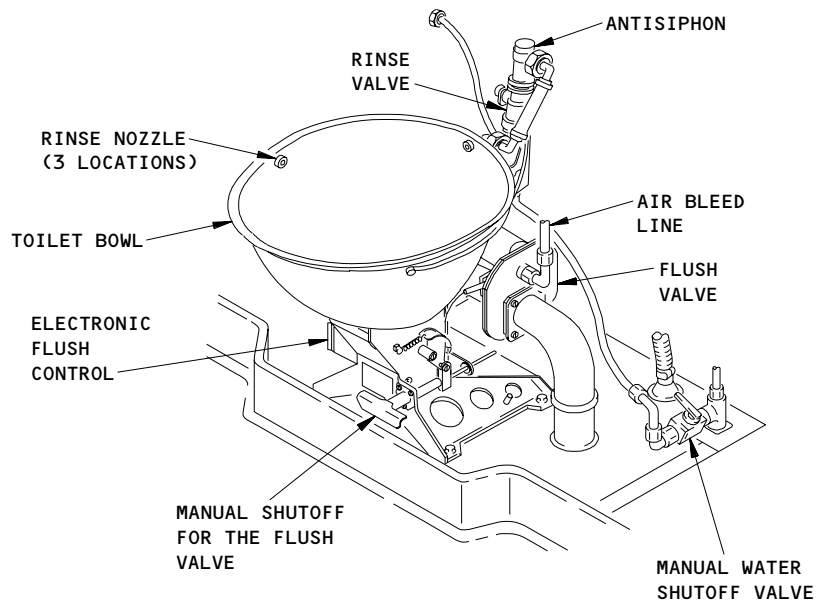
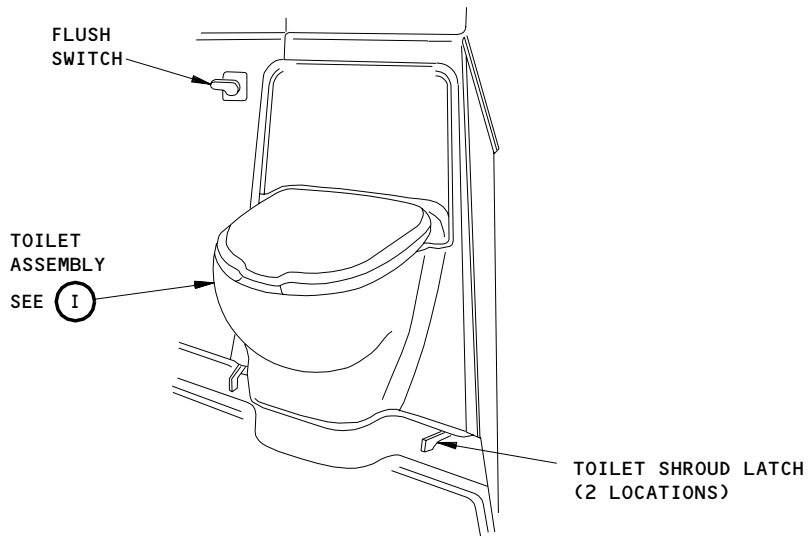
Waste Disposal - Component Location  
Figure 102 (Sheet 4)

EFFECTIVITY	ALL
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**BOEING**  
 767  
 FAULT ISOLATION/MAINT MANUAL



TOILET ASSEMBLY  
(ENVIROVAC)

(I)

Waste Disposal - Component Location  
Figure 102 (Sheet 5)

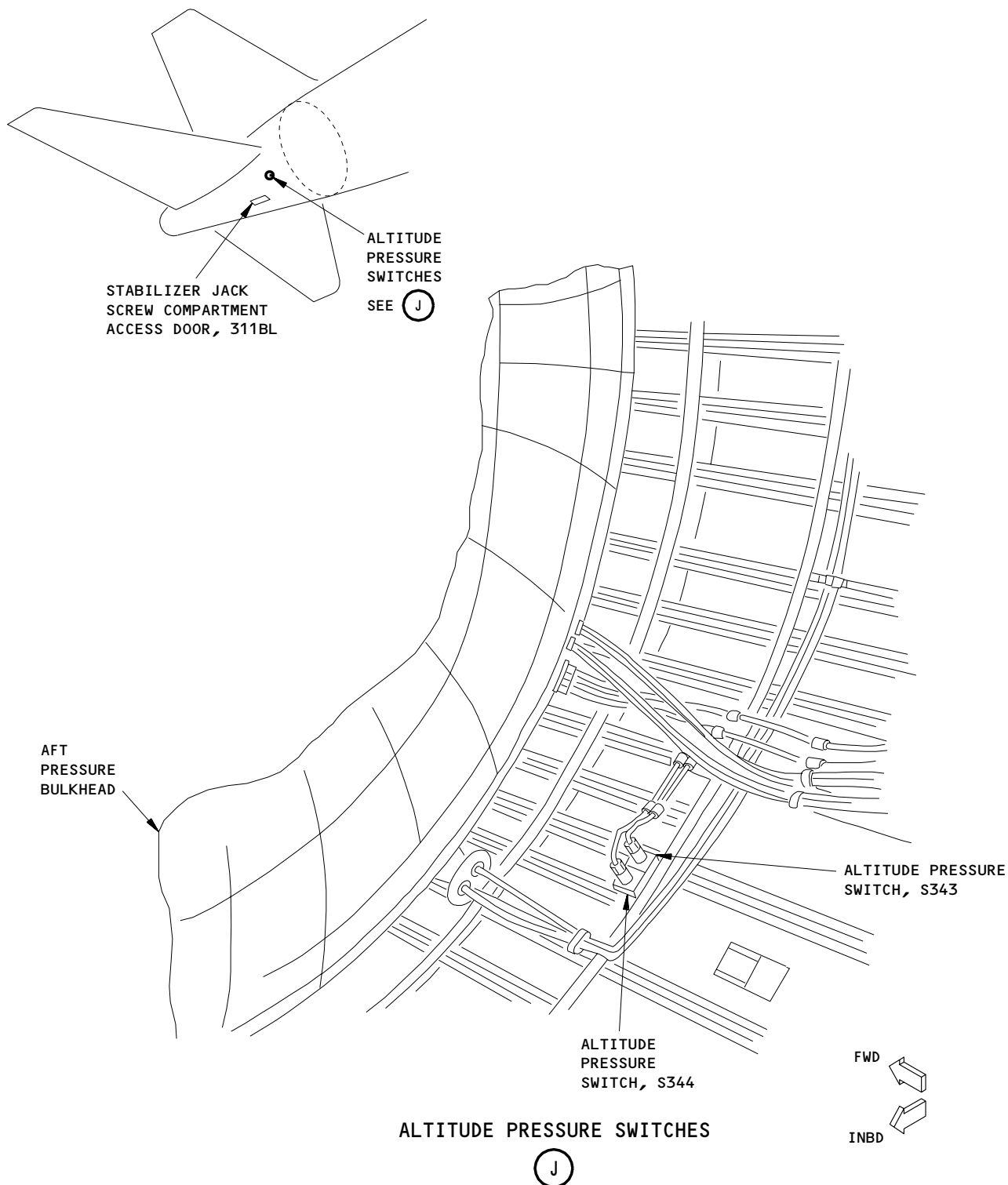
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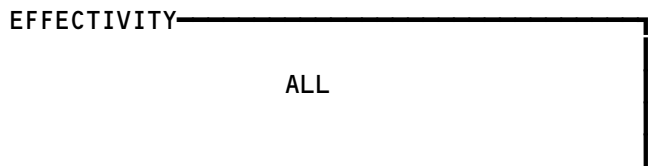


Waste Disposal - Component Location  
Figure 102 (Sheet 6)

EFFECTIVITY	ALL
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Not Used  
Figure 103



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614321

WASTE WATER SYSTEM – DESCRIPTION AND OPERATION

1. General (Fig. 1)

A. The waste water system gathers the waste water from the lavatory compartment washbasins, the galley sinks, floor drains (as equipped) and the drinking fountains (as equipped), and directs the water overboard through drain masts (Fig. 1). The waste water system consists of the tubing leading from the drinking fountain catch basin, floor drains, galley drains, and lavatory washbasin to the drain mast on the underside of the airplane. Included in the waste water system are the sink drain mufflers installed in the overflow line of each washbasin. The sink drain muffler reduces the noise level of the air drawn through the system by differential pressure at the drain masts. The drain masts and the tubing outside the pressurized compartments leading to the drain masts are electrically heated to prevent freezing (AMM 30-71-00). Heated cabin air, drawn through the drain system through the drinking fountain and floor drains (if equipped), and the washbasin overflow lines, warms the lines to the drain masts to prevent waste water from freezing in the lines.

2. Drain Mast

A. Each of the drain systems terminates in an electrically heated drain mast through which waste water from the galley sinks, floor drains (as equipped), drinking fountains (as equipped), and lavatory washbasins is dumped overboard. The drain masts are located on the underside of the fuselage, one forward and one aft. Drain masts are designed to draw waste water out of the system while airplane is in flight.

3. Sink Drain Muffler

A. The washbasin overflow line, having no stopper, is open overboard through the drain mast. To prevent noises resulting from an excessive flow of air down the drain lines, a muffler is installed in the overflow line.

4. Sink Drain Stopper

A. There is a stopper in the wash basin bowl that will let the water drain if it is open. If the stopper is closed the water cannot drain from the wash basin. An actuator is mounted in the faucet assembly. The actuator operates the stopper with an actuator arm. Push the actuator down to open the drain line. Pull the actuator up to close the drain line. To remove the stopper, push the actuator down and turn the basin stopper 1/4 turn, and then lift the stopper up.

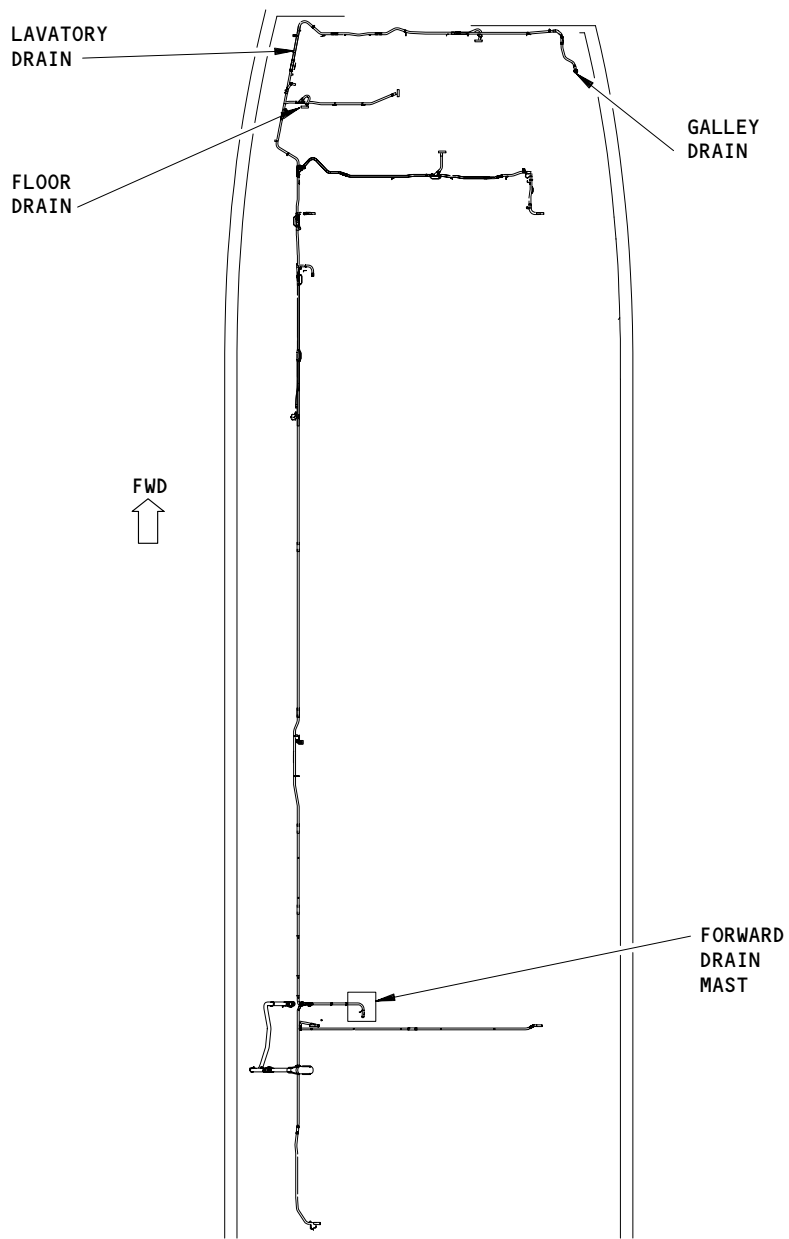
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FORWARD SECTION

Waste Water System - Component Location  
Figure 1 (Sheet 1)

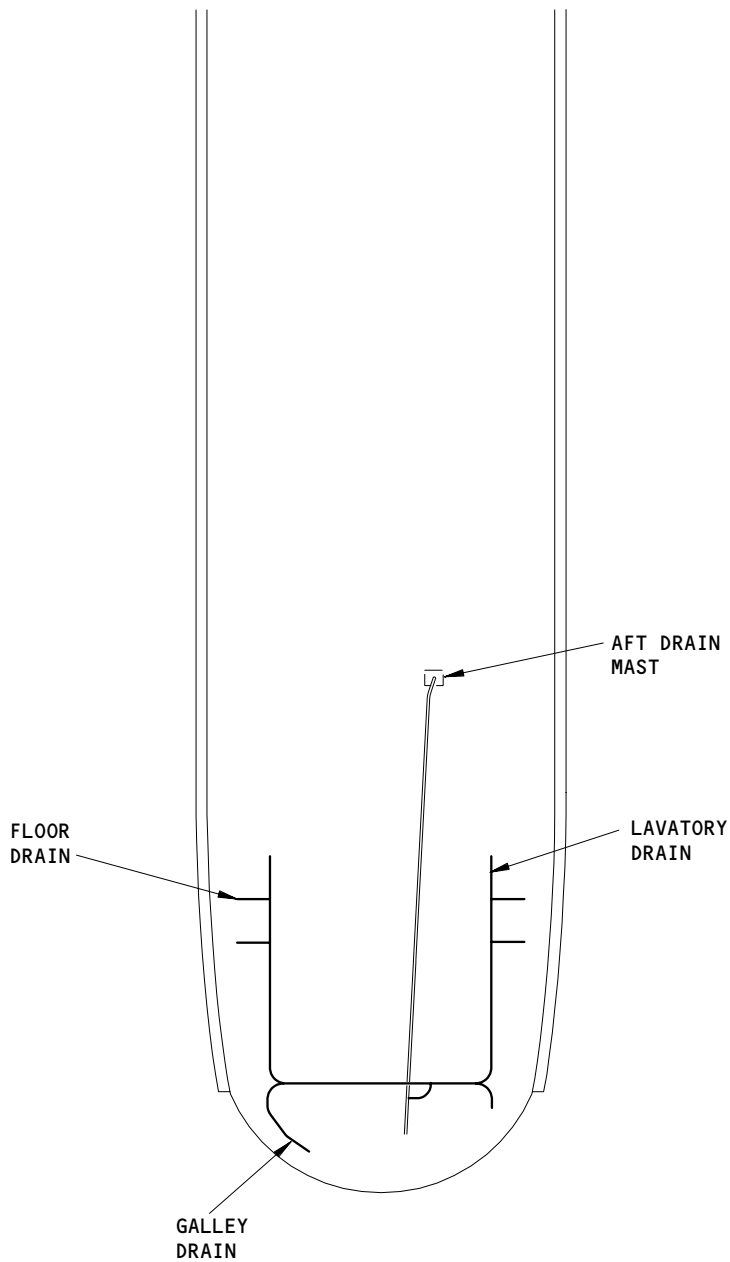
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AFT SECTION

Waste Water System - Component Location  
Figure 1 (Sheet 2)

EFFECTIVITY

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5. Operation

A. Functional Description

- (1) The waste water system operation depends on gravity flow of water assisted by airflow due to the differential pressure existing between the pressurized cabin and the exhaust end of the drain mast. The washbasin stoppers are spring-loaded to the closed position to reduce cabin pressure loss. When the stopper plunger (between the faucets) is depressed by hand, the basin stopper is raised to allow waste water to flow down the drain. When all waste water has passed down the drain, the plunger is released and the stopper returns to the closed position. The washbasin overflow line, the drinking fountain drains and floor drains (as equipped) are not stoppered, therefore, there is a constant flow of air through the drain system overboard through the drain masts. A sink drain muffler, just downstream of the basin overflow connection, reduces the noise level resulting from the flow of air through the drain. The flow of warm cabin air through the drain system and heated drain hoses in some critically cold areas warms the lines to prevent water freezing.

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WASTE WATER SYSTEM – MAINTENANCE PRACTICES

1. General

- A. This procedure gives the steps to make a clogged drain line clear.
- B. The lavatory and galley drain lines get clogged when material other than water is put in the drains. Only use the drains for water.

TASK 38-31-00-102-001

2. Drain Line Blockage Removal/Cleaning (Fig. 201)

A. General

- (1) Use one or more of the procedures that follow to make a clogged drain line clear.
  - (a) Start with procedure 1 if the drain line has a strainer (filter).
  - (b) Procedures 2, 3, and 4 are best for small blockages.
  - (c) Procedure 5 is best for large blockages.

B. Equipment

- (1) Flexible rotating cable (referred to as a snake),  
Commercially Available
- (2) Drain mast plug.
  - (a) C38001-23 – Plug Equipment, Waste Water Drain Mast  
(Preferred)
  - (b) A38011-1 – Plug Equipment, Waste Water Drain Mast  
(First Alternate)
- (3) Floor drain plugs.
  - (a) Conventional round, solid rubber or silicone stoppers –  
standard size #2 (small end diameter .629 inch (16 mm) and  
large end diameter .787 inch (20 mm)) (qty as required).  
(Preferred)
  - (b) Sticky putty, such as Plasticine (R) or Blu-tack (R).  
(Alternate)

C. Consumable Materials

- (1) B00126 Cleaner, Alkaline (Altrex) BAC5749
- (2) B50113 Acetic Acid (10%/100 grain) JAN-A-465

D. References

- (1) 30-71-01/401, Water Supply and Drain Line Heater Tapes

E. Access

- (1) Location Zones
  - 100 Lower Half of Fuselage
  - 200 Upper Half of Fuselage

EFFECTIVITY

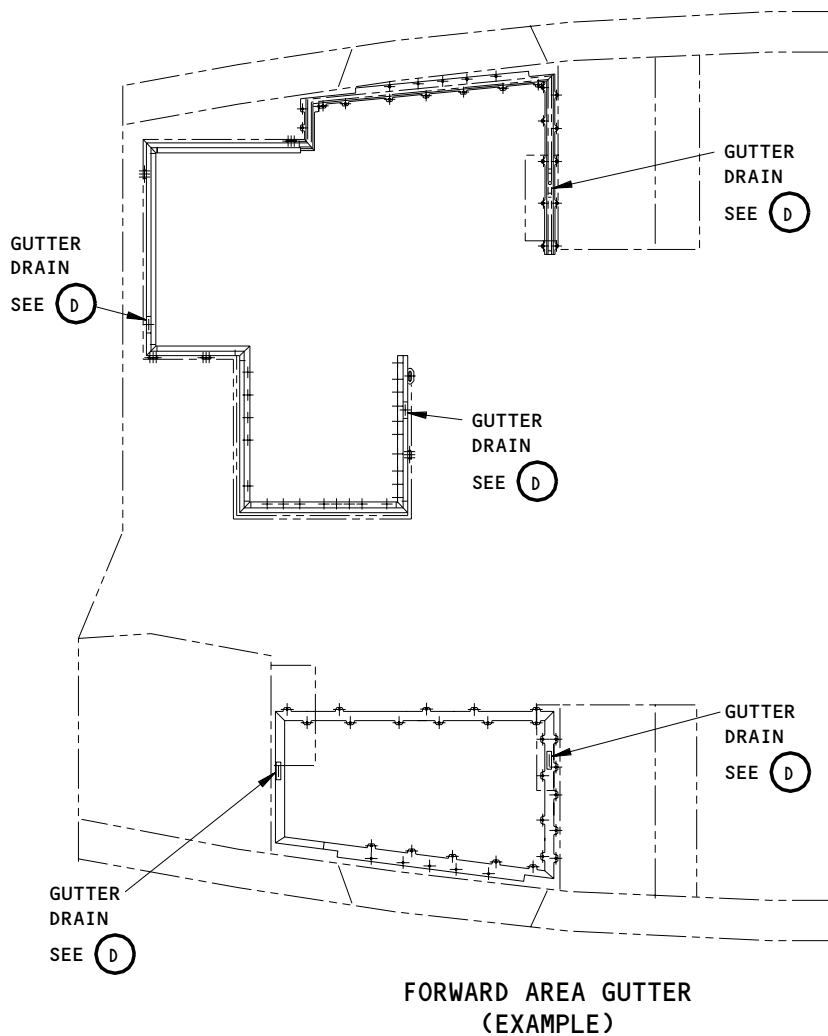
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(A) 1

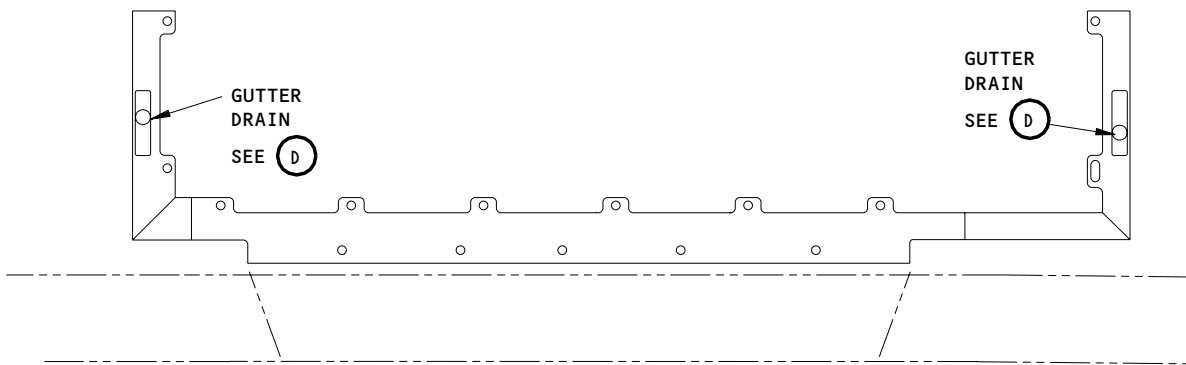
Floor Gutter System  
Figure 201 (Sheet 1)

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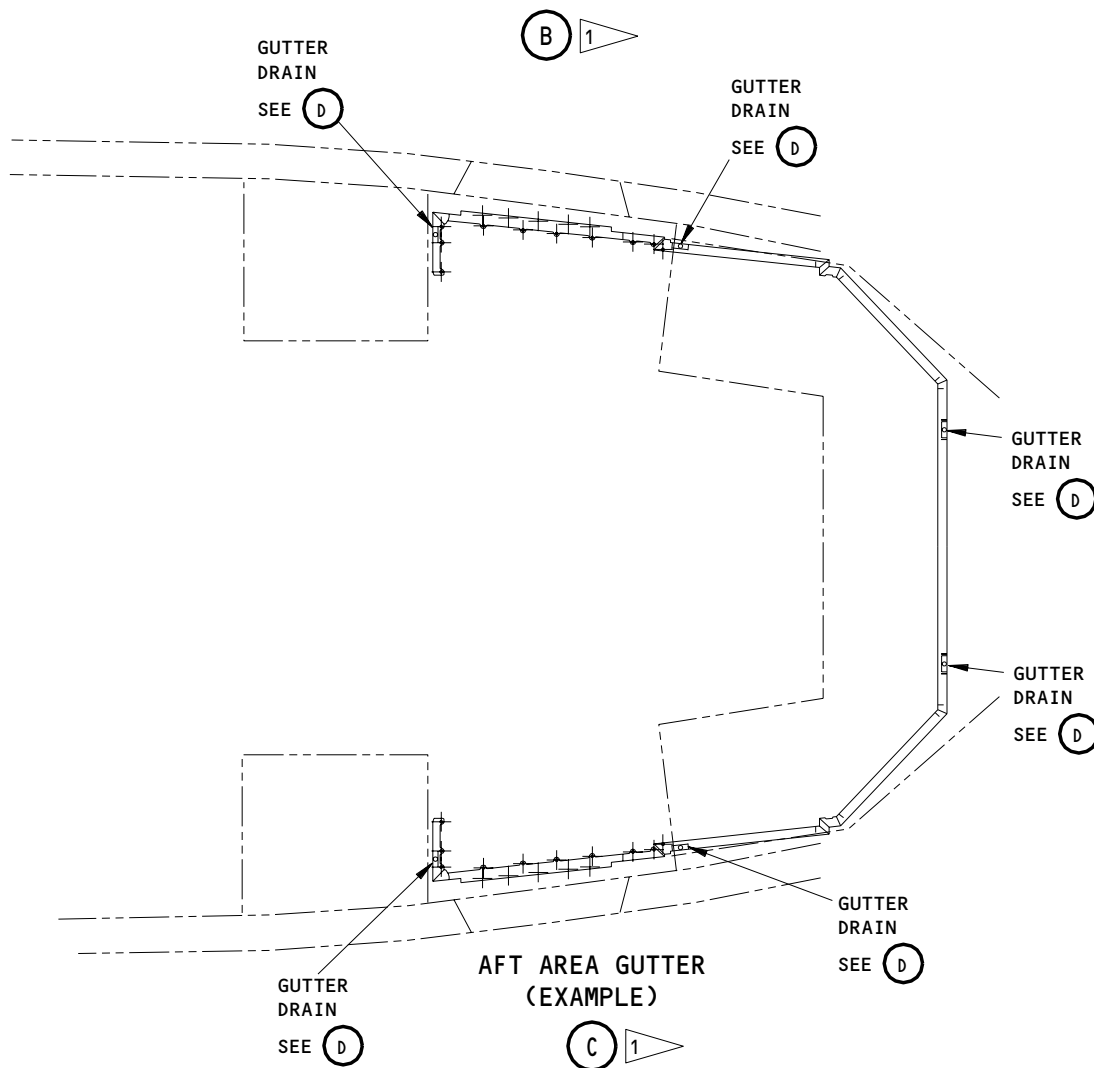
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MID CABIN AREA GUTTER  
(EXAMPLE)



AFT AREA GUTTER  
(EXAMPLE)

Floor Gutter System  
Figure 201 (Sheet 2)

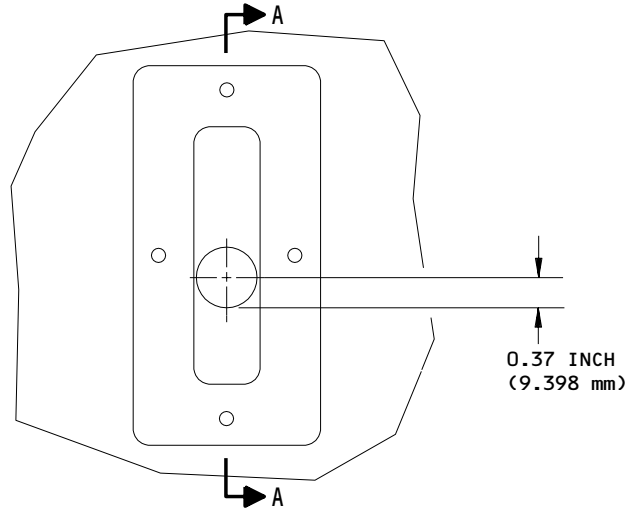
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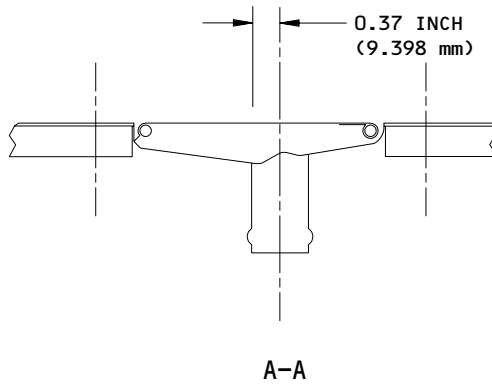
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GUTTER DRAIN  
(EXAMPLE)

(D)



Floor Gutter System  
Figure 201 (Sheet 3)

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1402694

F. Procedure 1

S 022-002

- (1) Remove the strainer (filter) from below the sink.

NOTE: The strainer in the drain tube is found below the galley sink

S 212-003

- (2) Make sure the strainer is not clogged.

S 212-004

- (3) Make sure the drain tube upstream of the strainer is not clogged.

S 102-005

- (4) If you did not find the blockage in the area close to the strainer, use procedure 2, 3, 4, or 5. Do procedure 2, 3, 4, or 5 at the end of the drain tube below the strainer, not at the sink.

G. Procedure 2

S 032-006

- (1) Put a plug in all the gutter drains that are connected to the drain tube you must make clear.

S 172-007

- (2) If the drain tube has a strainer, pressurize the drain tube downstream of the strainer with water (do not use more than 35 psi pressure).

NOTE: The strainer in the drain tube is found below the galley sink

S 172-008

- (3) If the drain tube does not have a strainer, pressurize the drain tube at the sink with water (do not use more than 35 psi pressure).

S 432-009

- (4) After you remove the blockage remove the plugs from the gutter drains.

H. Procedure 3

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S 142-010

**CAUTION:** DO NOT PUSH WITH TOO MUCH FORCE ON THE SNAKE. IF YOU PUSH WITH TOO MUCH FORCE ON THE SNAKE, YOU CAN CAUSE DAMAGE TO THE DRAIN LINE.

- (1) Use a flexible cable (referred to as a snake) to make the drain tube clear.

**NOTE:** If the drain tube has a strainer, put the snake in the drain tube downstream of the strainer.

I. Procedure 4

S 112-011

**WARNING:** OBEY THE VENDOR SAFETY PROCEDURES FOR THE ALKALINE CLEANER. CONTACT WITH THE SKIN OR EYES MAY CAUSE IRRITATION OR BURNS.

**CAUTION:** DO NOT GET THE SOLUTION ON THE AIRPLANE OR IN THE STRAINERS FOR THE DRAIN LINES. IT CAN CAUSE CORROSION.

- (1) If the galley sinks or lavatory wash basins drain slowly, use a chemical cleaner (Turco Altrex 24 or Acetic Acid) to remove the blockage.

**NOTE:** The Turco Altrex 24 solution is a stronger cleaner than the acetic acid, and generally is most effective on organic clogs. The acetic acid is most effective on scale or lime obstructions.

- (a) Open these circuit breakers on the forward miscellaneous electrical equipment panel, P33, and attach DO-NOT-CLOSE tags:
  - 1) 33A1, ICE/RAIN DRAIN MAST HTG GND
  - 2) 33A2, ICE/RAIN DRAIN MAST HTG FLT

**WARNING:** DO NOT TOUCH THE DRAIN MAST UNTIL IT COOLS. DRAIN MASTS GET VERY HOT. HOT DRAIN MASTS CAN INJURE PERSONS AND DAMAGE THE EQUIPMENT

- (b) Put the drain mast plug, Tool C3800-23 (preferred), A38011-1 (alternate), or an equivalent tool, on the drain mast outlet.

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- (c) AFT GREY WATER DRAIN LINES CLEANING;  
To prevent overflow of the drain cleaner solution into the aft galley chiller drain pans, do these steps.
- 1) Open the bulk cargo door 811, and access the bulk cargo compartment (AMM 52-36-00-1).
  - 2) Remove the aft end panels of the bulk cargo compartment to access the chiller drain lines (AMM 25-55-01/401, Bulk Cargo Compartment - Sidewall Lining - Removal/Installation).
  - 3) Locate the chiller drain lines extending below the passenger compartment floor, at approximately STAs. 1548-1582, RBLs. 5-25.
  - 4) Locate the accessible connection(s) between the chiller drain line(s) and the chiller drain pan.
  - 5) Disconnect and plug the chiller drain line(s).
- (d) Prepare the cleaning solution as follows:
- 1) If you are using the Turco Altrex 24 cleaner, mix 8 fl-oz. of Turco Altrex 24 cleaner per 1 gallon of hot water.

NOTE: Make 1-2 gallons of Turco Altrex 24 solution.

- 2) If you are using the Acetic Acid (10%) cleaner, use it at full strength (not diluted) and do these steps:
    - a) Put 1-2 gallons of Acetic acid in a suitable container.
    - b) Heat the Acetic acid to approximately 160 degrees F (71 degrees C).
- (e) Fill the drain line with the chemical cleaner until you see the cleaning solution at the gutter drain.

NOTE: Do not use both chemicals cleaners at the same time.

- (f) FWD GREY WATER DRAIN LINES CLEANING;  
Add the cleaner through the most Forward Galley or Lavatory sink/wash basin, as applicable.

NOTE: This is to prevent the cleaner from overflowing into the most forward sinks/wash basins and spilling, when the airplane nose is down.

- (g) Plug the gutter drains, in the area of the entry doors and the aft galley. (Figure 201)
- (h) Fully fill the drain tube with the solution.

NOTE: If the drain tube has a strainer, put the solution in the drain tube downstream of the strainer.

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- (i) Keep the drain tube full of the solution for about one hour.

NOTE: Let the solution soak for an appropriate amount of time. Use the operators experience to find the appropriate amount of time.

- (j) Open the drain valve on the drain plug tool (C3800-1), or remove the drain plug tool from the drain mast. Drain the solution from the drain tubes.
- (k) Remove the plugs in the gutter drain.
- (l) Remove the drain plug tool from the drain mast, if applicable.
- (m) AFT GREY WATER DRAIN LINES CLEANING;  
If you plugged the aft galley chiller drain lines, do the steps that follow.
- 1) Remove the plugs(s) from the chiller drain line(s), and reconnect the drain line(s).
  - 2) Install the aft lining of the bulk cargo compartment (AMM 25-55- 01/401, Bulk Cargo Compartment - Sidewall Lining - Removal/Inst).
  - 3) Close the bulk cargo compartment door 811 (AMM 52-36-00-1).
- (n) Close these circuit breakers on the forward miscellaneous electrical equipment panel, P33, and remove the DO-NOT-CLOSE tags:
- 1) 33A1, ICE/RAIN DRAIN MAST HTG GND
  - 2) 33A2, ICE/RAIN DRAIN MAST HTG FLT

J. Procedure 5

S 162-012

- (1) Do the steps that follow to remove the section of the drain tube that you think is clogged.

NOTE: You will usually find the blockage at one of these locations:

- The first elbow fitting below the sink
- The drain tubes near the drain mast
- The "Y" fittings where the drain tubes connect together.

- (a) If the drain tube has heater tape on it, then do these steps:
- 1) Open the applicable circuit breaker (AMM 30-71-01/401).
  - 2) Remove the heater tape.
- (b) Remove the fasteners and clamps for the drain tube.
- (c) Remove the drain tube.
- (d) Blow the blockage out of the drain tube with air.
- (e) Clean the drain tube with the alkaline cleaner.
- (f) Install the drain tube.

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 **BOEING**  
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MAINTENANCE MANUAL

- (g) Install the heater tape, on the drain tube, if it was removed (AMM 30-71-01/401).

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DRAIN MAST - REMOVAL/INSTALLATION

1. General

A. This procedure gives the instructions to remove and install the forward and aft drain masts.

B. The composite drain mast can replace the aluminum drain mast.

(1) ALUMINUM DRAIN MAST;

The forward drain mast assembly has two parts, a drain mast and a drain mast extension. The aft drain mast has only one part, the drain mast.

NOTE: The forward drain mast assembly, the drain mast, and the drain mast extension are different LRU's.

NOTE: A rubber seal is used on the aft drain mast installation.

(2) COMPOSITE DRAIN MAST;

The forward drain mast assembly is one part, the mast extension is part of the mast assembly. The aft drain mast is also only one part.

NOTE: Early composite drain mast assemblies (forward and aft) included a bonded-on silicone gasket and an additional silicone seal was used on the aft drain mast installation.

Superceding composite drain masts do not have the bonded-on gasket and the aft drain mast does not require the additional seal. Instead BMS5-95 is used.

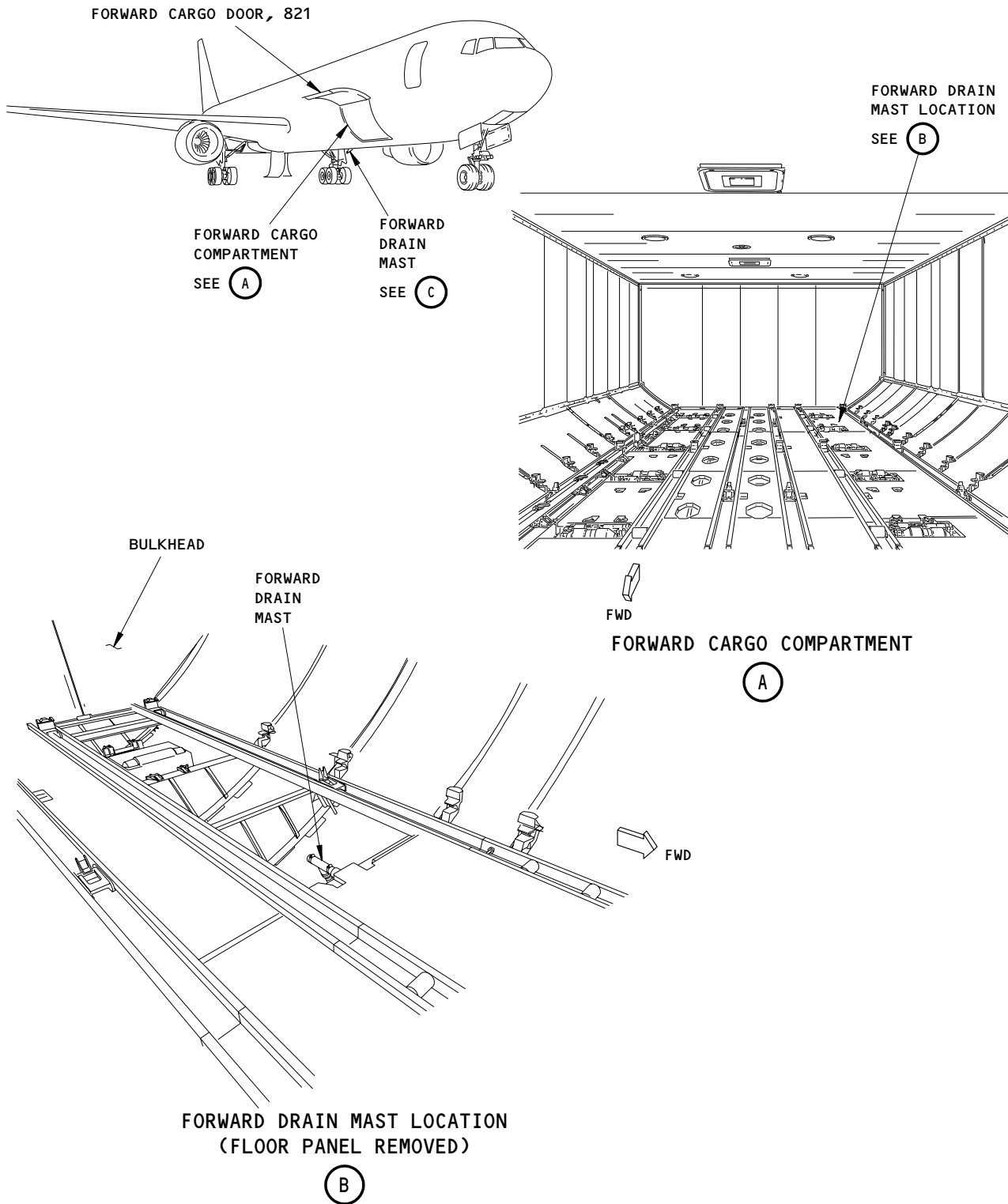
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Forward Drain Mast Installation  
Figure 401 (Sheet 1)

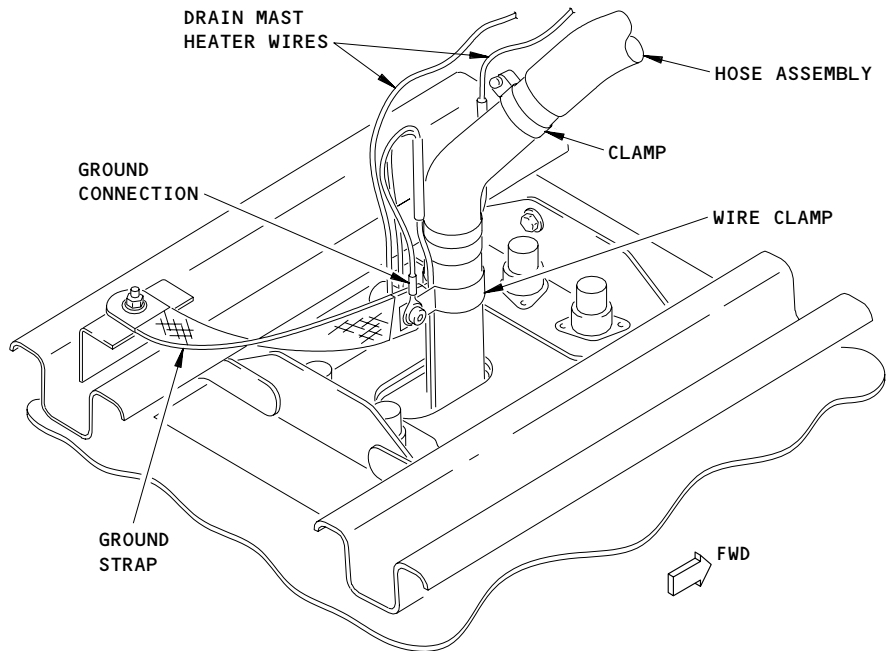
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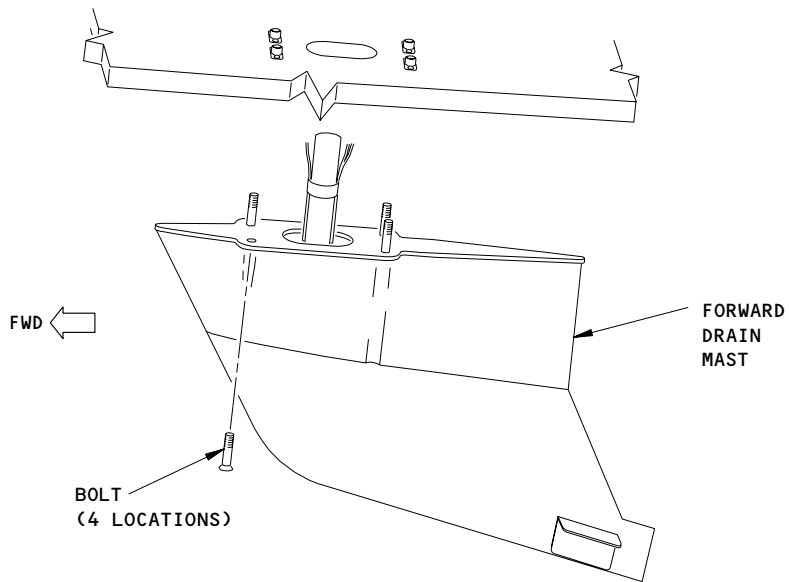
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FORWARD DRAIN MAST WITH GROUND STRAP  
(INTERNAL VIEW, EXAMPLE)

(C)



FORWARD DRAIN MAST INSTALLATION  
(EXTERNAL VIEW)

(C)

Forward Drain Mast Installation  
Figure 401 (Sheet 2)

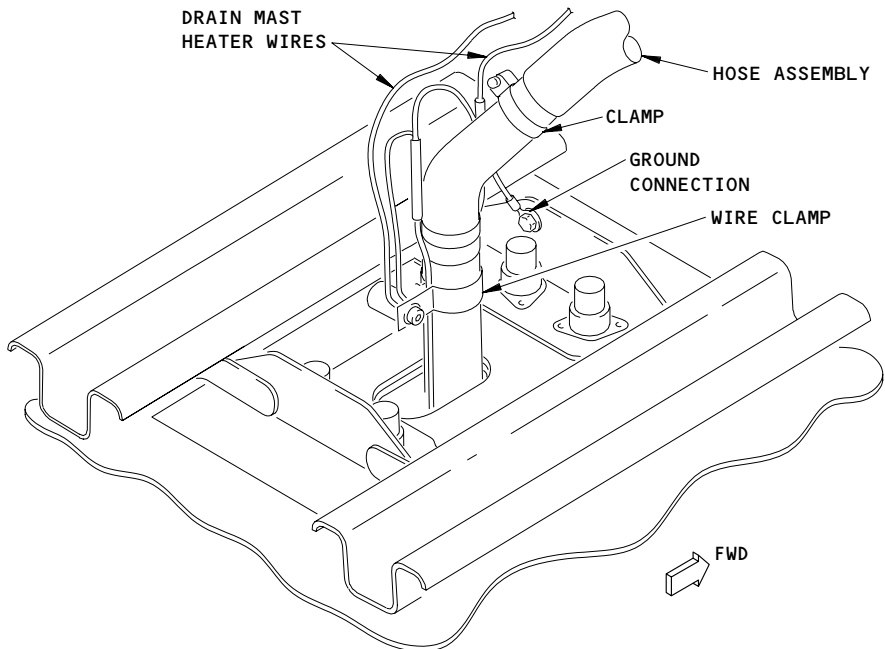
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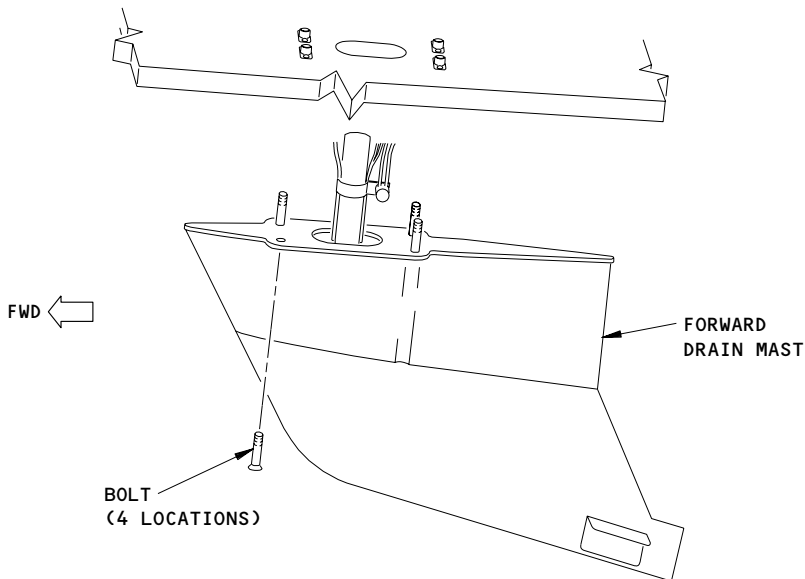
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FORWARD DRAIN MAST WITHOUT GROUND STRAP  
(INTERNAL VIEW, EXAMPLE)

(C)



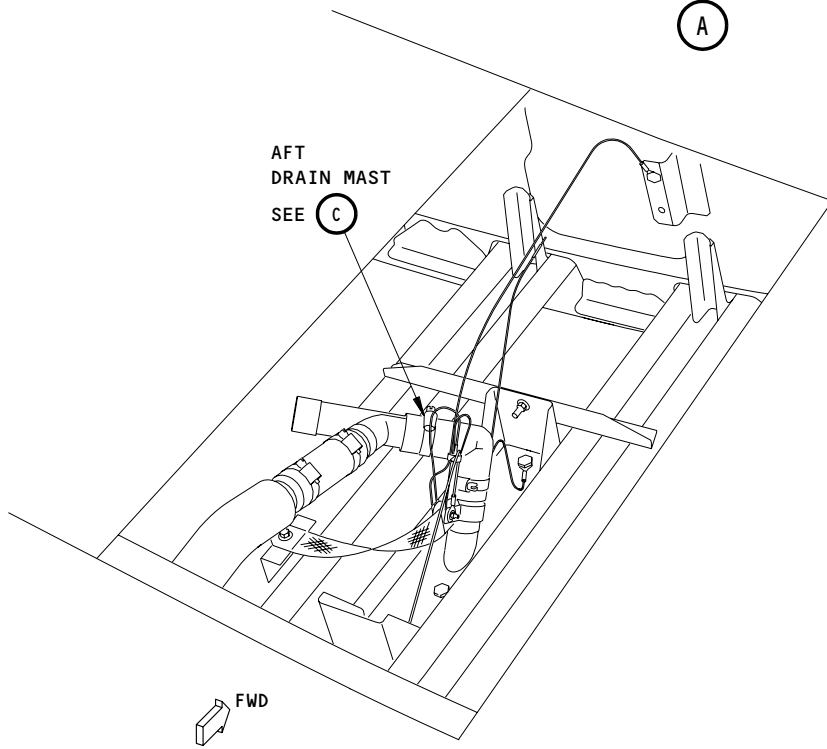
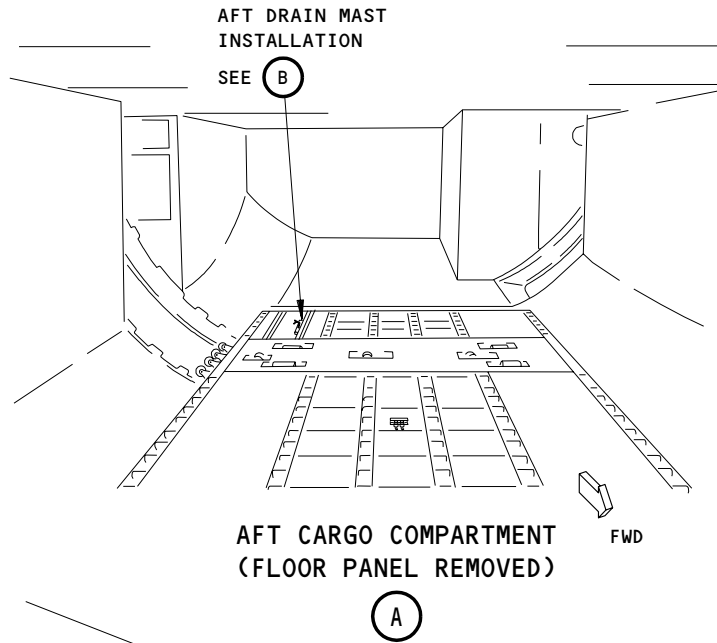
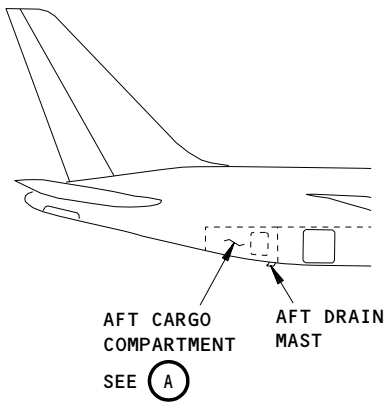
FORWARD DRAIN MAST INSTALLATION  
(EXTERNAL VIEW)

(C)

Forward Drain Mast Installation  
Figure 401 (Sheet 3)

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AFT DRAIN MAST INSTALLATION  
(EXAMPLE)

(B)

Aft Drain Mast Installation  
Figure 402 (Sheet 1)

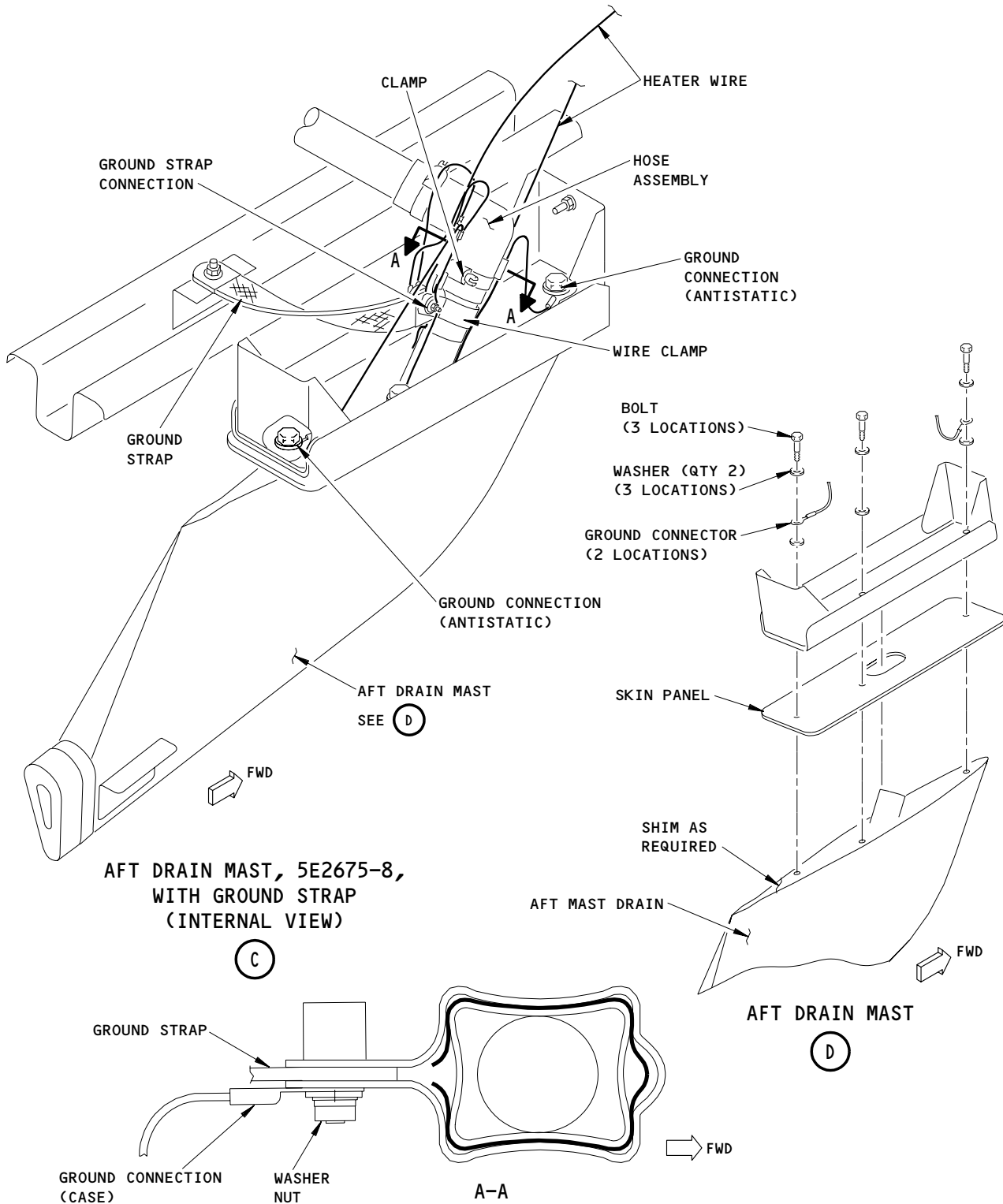
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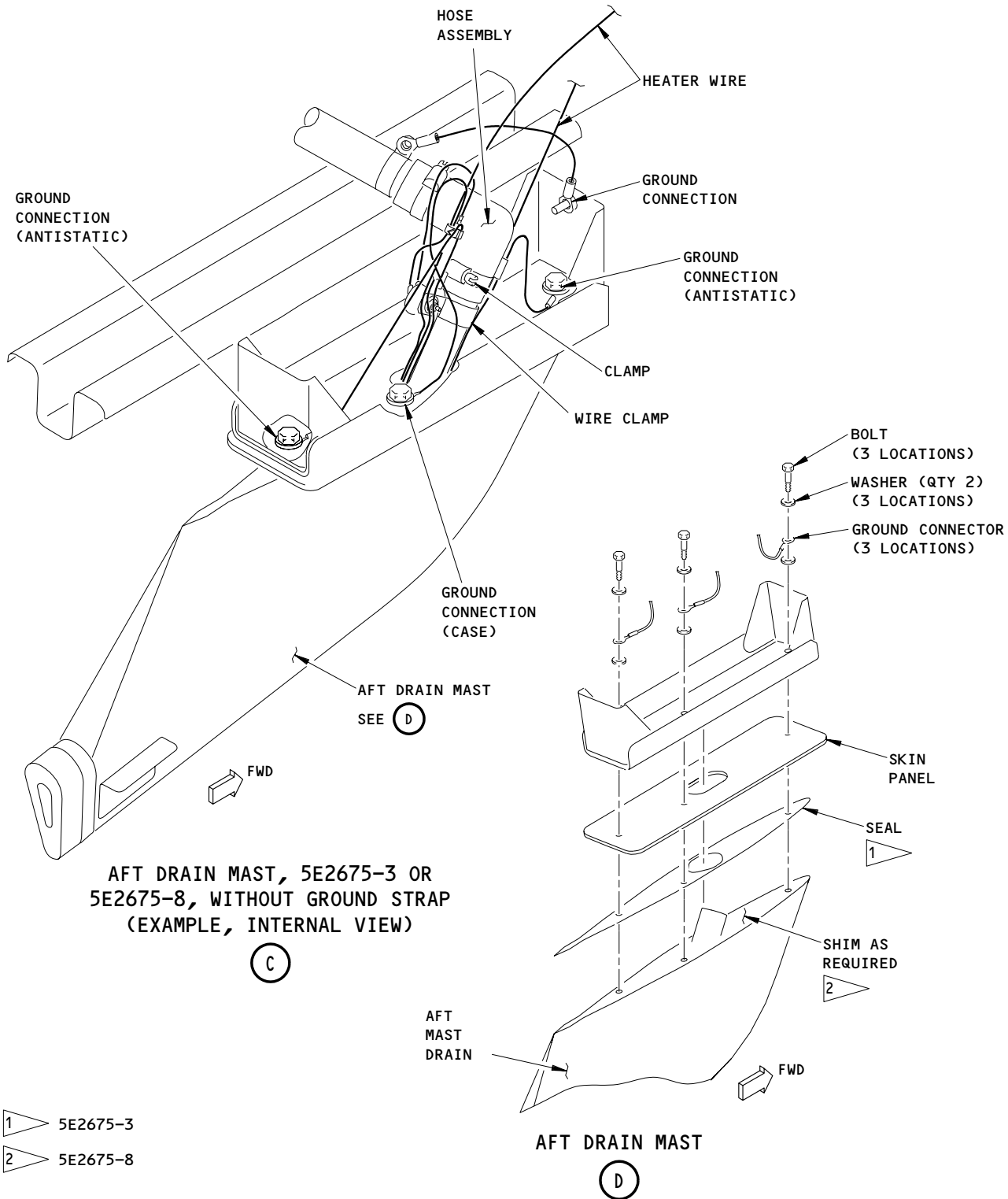
Aft Drain Mast Installation  
Figure 402 (Sheet 2)

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Aft Drain Mast Installation  
Figure 402 (Sheet 3)

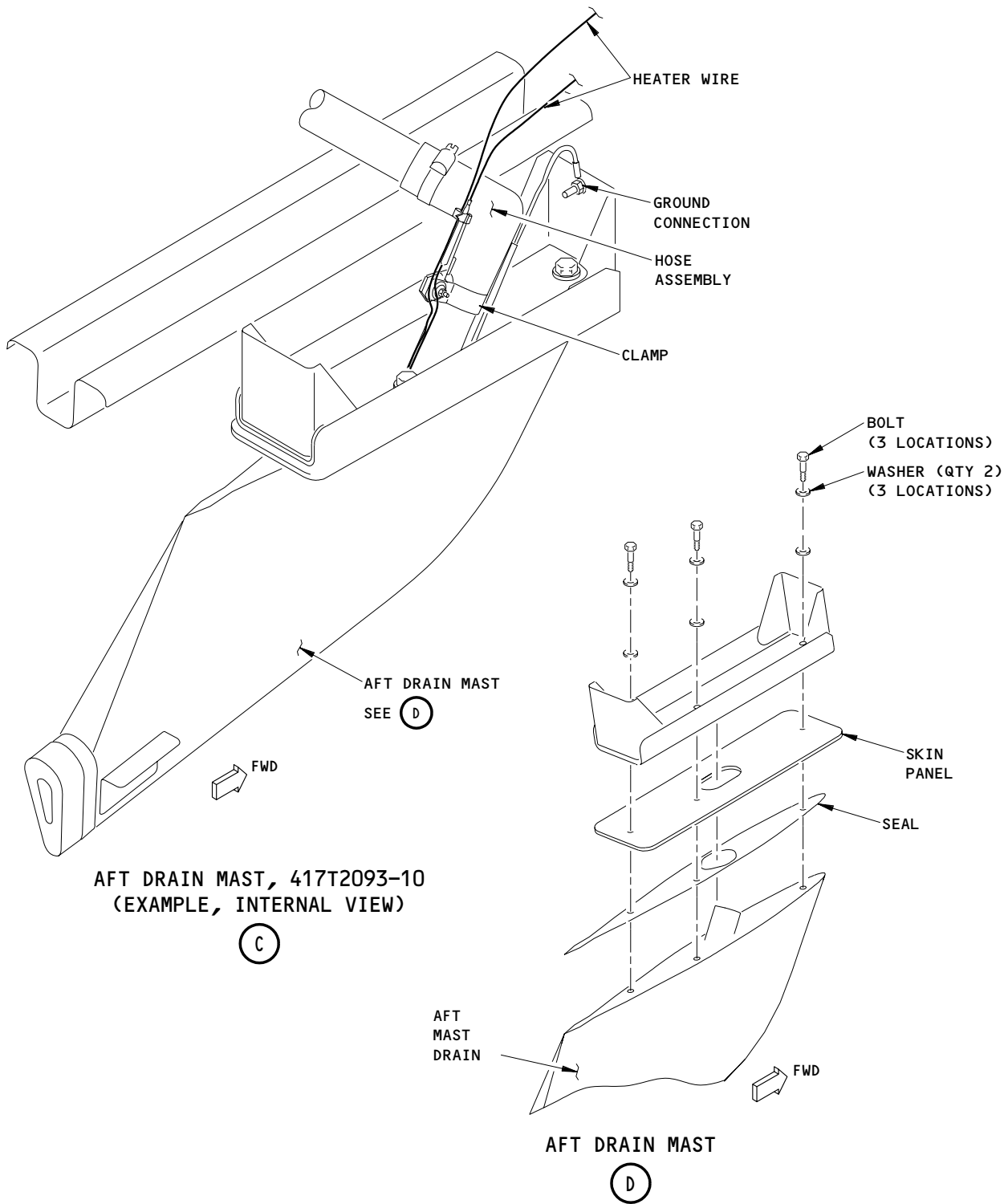
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Aft Drain Mast Installation  
Figure 402 (Sheet 4)

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TASK 38-31-01-004-026

2. Remove the Drain Mast (Fig. 401)

A. References

- (1) AMM 25-52-03/401, Cargo Compartment Insulation
- (2) AMM 30-71-01/401, Water Supply and Drain Line Heater Tapes
- (3) AMM 52-33-00/001, Large Forward Cargo Door
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

(1) Location Zones

- 123 Area Below Forward Cargo Compartment (Left)(Fwd Mast)
- 156 Area Below Aft Cargo Compartment (Right)(Aft Mast)

(2) Access Panels

- 811 Bulk Cargo Door (Aft Mast)
- 821 Forward Cargo Door (Fwd Mast)

C. Procedure

S 864-001

- (1) Open these circuit breakers on the forward miscellaneous electrical equipment panel, P33, and attach DO-NOT-CLOSE tags:
  - (a) 33A1, ICE/RAIN DRAIN MAST HTG GND
  - (b) 33A2, ICE/RAIN DRAIN MAST HTG FLT

S 014-002

- (2) To get access to the forward drain mast, do these steps:
  - (a) Open the forward cargo door, 821.
  - (b) Remove the applicable floor panels and insulation to get access to the drain mast (AMM 25-52-03/401).

NOTE: The drain mast is aft of the forward cargo door and to the left of the center of the airplane.

S 014-003

- (3) To get access to the aft drain mast, do these steps:
  - (a) Open the bulk cargo door, 811 (AMM 52-36-00/001).

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- (b) Remove the applicable floor panels and insulation to get access to the drain mast.

NOTE: The drain mast is forward of the bulk cargo door and to the left of the center of the airplane.

S 034-004

- (4) DRAIN MASTS WITHOUT GROUND STRAP;  
Disconnect the ground connection(s) from the structure (AMM 20-10-21/401).

S 034-049

- (5) DRAIN MASTS WITH GROUND STRAP;  
Remove nut and washers attaching the ground (case) connection and ground strap to the thermostat on the wire clamp. (AMM 20-10-21/401).

S 014-005

- (6) 767-200, 767-300 AIRPLANES;  
Remove the heater tape to get access to the lower hose clamp (AMM 30-71-01/401).

S 034-006

- (7) Disconnect the hose from the drain mast.

S 034-007

- (8) Disconnect the heater wires (for the drain mast) at the splice.

NOTE: Make sure you keep the marker sleeves and aluminum foil markers.

S 024-008

- (9) Remove bolts that attach the drain mast to the airplane.

NOTE: You remove the bolts for the forward drain mast from the outer side of the airplane. You remove the bolts for the aft drain mast from the inner side of the airplane.

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S 024-009

(10) Remove the drain mast.

TASK 38-31-01-404-010

3. Install the Drain Mast (Fig. 401)

A. Consumable Materials

- (1) A02315 - Sealant, aerodynamic, BMS5-142 (AMM 20-30-01/201)
- (2) Adhesive, Silicone Rubber, RTV 102 - BAC5010, Type 60
- (3) A00247 - Sealant, fay surface, BMS 5-95 (AMM 20-30-01/201)

B. Equipment

- (1) C38001-1 Plug Equipment, Waste Water Drain Mast (Preferred)
- (2) Plug Equipment - Waste Water Drain Mast, A38011-1 (First Alternate)
- (3) Drain Mast Plug, B21004-91 (Second Alternate)

C. References

- (1) AMM 20-10-21/401, Electrical Bonding
- (2) AMM 20-30-01/201, Adhesives, Cements, Sealers
- (3) AMM 24-22-00/201, Manual Control
- (4) AMM 25-52-03/401, Cargo Compartment Insulation
- (5) AMM 30-71-01/401, Water Supply and Drain Line Heater Tapes
- (6) AMM 51-31-01/201, Seals and Sealing
- (7) AMM 52-33-00/001, Large Forward Cargo Door
- (8) AMM 52-36-00/001, Bulk Cargo Door

D. Access

(1) Location Zones

- 123 Area Below Forward Cargo Compartment (Left)(Fwd Mast)
- 156 Area Below Aft Cargo Compartment (Right)(Aft Mast)

(2) Access Panels

- 811 Bulk Cargo Door (Aft Mast)
- 821 Forward Cargo Door (Fwd Mast)

E. Procedure (Forward Drain Mast)

S 864-041

- (1) There can be a gap between the heated element and the drain mast body.

**NOTE:** The gap between the heated element and the drain mast body can be between flush and 0.12 inches (3 mm). If there is a gap between the heated element and the drain mast body, do not apply any sealant or aerodynamic filler to the gap.

S 144-047

**CAUTION:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO REMOVE THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

- (2) Clean the mating surfaces (AMM 51-31-01/201).

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S 394-011

- (3) To install the forward drain mast, do this step:
- (a) Put a removable fay seal on the mating surface of the drain mast (AMM 51-31-01/201).
  - (b) Put the drain mast in its position and attach it to the airplane with the bolts.

NOTE: The bolts install from the outer side of the airplane.

- (c) ALUMINUM DRAIN MAST;  
Tighten the bolts to a torque of 45-50 in-lbs (5.08-5.65 N-m).
- (d) COMPOSITE DRAIN MAST;  
Do these steps:
  - 1) Electrically bond the bolts wet between the exposed area around the mounting bolts and airframe (AMM 20-10-21/401).
  - 2) Torque the bolts using run-out torque until the bolts are seated. Torque an additional 50 in-lbs (5.65 N-m) in 10 in-lbs (1.15 N-m) increments in a crosswise pattern.

S 424-071

- (4) DRAIN MASTS WITH GROUND STRAP;  
Position the ground (case) connection and the loose end of the ground strap on the wire clamp. Attach to the ground connection and strap to the thermostat with the nut and washers.

NOTE: The ground (case) connection has a terminal lug and routes from inside the wire bundle sleeve.

S 424-076

- (5) DRAIN MASTS WITHOUT GROUND STRAP;  
Connect the ground connection(s) to the structure (AMM 20-10-21/401).

S 764-045

- (6) COMPOSITE DRAIN MAST;  
Do an electrical conductivity test of the drain mast.
- (a) Check that electrical resistance between the exposed area around the mounting bolts on the mast and the structure of the airplane does not exceed 300,000 ohms.

S 214-027

- (7) Make sure the foil sleeve marker for the drain mast is within 6 inches from where the lead wire joins the drain mast.

NOTE: The sleeve marker slides over the wire. Make sure you keep any sleeve markers on the wire.

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S 434-014

- (8) Connect the wires for the drain mast heater at the splice.

**NOTE:** Use the table that follows to connect the wires correctly.

Number of Wires on Drain Mast	Number of Wires on the Airplane	
	2	4
2	Connect the wires on the drain mast to their mating wires on the airplane.	Connect the ground wire on the drain mast to one of the airplane ground wires. Connect the power wire on the drain mast to one of the airplane power wires. Put a cap on the other two wires on the airplane.
4 (Includes extension tube heater, B218)	Connect the two ground wires on the drain mast to the airplane ground wire. Connect the two power wires on the drain mast to the airplane power wire.	Connect the wires on the drain mast to their mating wires on the airplane.

S 434-015

**CAUTION:** DO NOT PUT THE HOSE TOO FAR ON THE TUBE OF THE DRAIN MAST. THE TUBE MUST NOT GO INTO THE BEND OF THE HOSE OR THE HOSE CAN GET BLOCKED.

- (9) Connect the hose to the drain mast with the clamp.

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S 394-048

**CAUTION:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO APPLY THE FILLET SEAL AND AERODYNAMIC SMOOTHER. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

- (10) From the inside of the airplane put a pressure fillet seal around the drain mast (AMM 51-31-01/201).

S 394-046

- (11) From the outside of the airplane put an aerodynamic smoothing seal around the drain mast (AMM 51-31-01/201).

S 414-018

- (12) 767-200, and 767-300 AIRPLANES:  
Put the heater tape around the lower hose clamp (AMM 30-71-01/401).

F. Procedure (Aft Drain Mast)

S 864-078

- (1) Check the drain mast installation for the correct ground path configuration.

**NOTE:** Aluminum drain masts are conditionally interchangeable with composite drain masts. Composite masts require a 135A bonding jumper and ground support bracket for lightning strike protection. A ground support bracket can be installed per Service Bulletin 30-0047, 30-0048 or 30-0050.

**NOTE:** Line numbers 1-846 may have a composite mast installed without the necessary bonding jumper and ground support bracket. Composite masts require a 135A bonding jumper and ground support bracket for lightning strike protection. A ground support bracket can be installed per Service Bulletin 30-0047, 30-0048 or 30-0050.

S 864-077

- (2) For composite mast installations, check for 135A bonding jumper and structure mounted ground support bracket.

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S 424-079

- (3) Install a ground support and 135A bonding jumper as necessary with 30-0047, 30-0048 or 30-0050.

S 864-051

- (4) There can be a gap between the heated element and the drain mast body.

**NOTE:** The gap between the heated element and the drain mast body can be between flush and 0.12 inches (3 mm). If there is a gap between the heated element and the drain mast body, do not apply any sealant or aerodynamic filler to the gap.

S 144-052

**CAUTION:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO REMOVE THE SEALANT. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

- (5) Clean the mating surfaces (AMM 51-31-01/201).

S 394-054

- (6) To install the drain mast, do these steps:
- (a) 5E2675-3 OR 417T2093-10 DRAIN MAST;  
Put a new seal on the mating surface of the drain mast.
  - (b) 5E2675-8 DRAIN MAST;  
Use BACS40R( ) aluminum shims to fill any gaps at the fastener locations between the drain mast surface and the airplane skin.
    - 1) Add or remove shims between the drain mast surface and the airplane skin until any gap is less than 0.003 inch (0.076 mm).

**NOTE:** You can remove laminations from the shims for exact adjustment.

- 2) Put a fay seal on both sides of shim (AMM 51-31-01/201).
- 3) Apply a removable seal using BMS5-95 (AMM 51-31-01/201).

S 424-072

- (7) 5E2675-3 OR 5E2675-8 DRAIN MAST;  
Position the ground (antistatic) connections and washers on the bolts in preparation for the installation.

**NOTE:** The ground (antistatic) connections have a terminal lug and route outside the wire bundle sleeve.

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S 424-073

- (8) 5E2675-3 OR 5E2675-8 DRAIN MAST WITHOUT GROUND STRAP;  
Position the ground (case) connection and washers on the bolt in preparation for the installation.

NOTE: The ground (case) connections have a terminal lug and route outside the wire bundle sleeve.

S 424-055

- (9) Put the drain mast in its position and attach it to the airplane with the bolts.

NOTE: The bolts for the drain mast install from the inner side of the airplane.

(a) 417T2093-10 DRAIN MAST;

Tighten the bolts to a torque of 45-50 in-lbs (5.08-5.65 N-m).

(b) 5E2675-3 OR 5E2675-8 DRAIN MAST;

Do these steps:

- 1) Electrically bond the bolts wet between the exposed area around the mounting bolts and airframe (AMM 20-10-21/401).
- 2) Tighten the bolts to a torque of 50 +/- 2 in-lbs (5.65 +/- 0.23 N-m). Tighten opposite mounting bolts in an alternate pattern. Initially snug up, then tighten to 50% of full torque, and finally tighten to full torque.

S 424-074

- (10) 5E2675-3 OR 5E2675-8 DRAIN MASTS WITH GROUND STRAP;  
Position the ground (case) connection and the loose end of the ground strap on the wire clamp and attach to the thermostat with the nut and washer.

NOTE: The ground (case) connection has a terminal lug and routes from inside the wire bundle sleeve.

S 424-075

- (11) DRAIN MASTS WITHOUT GROUND STRAP;  
Connect the ground connection(s) to the structure (AMM 20-10-21/401).

S 764-056

- (12) AIRPLANES WITH COMPOSITE DRAN MAST;  
Do an electrical conductivity test of the drain mast.  
(a) Check that electrical resistance between the exposed area around the mounting bolts on the mast and the structure of the airplane does not exceed 300,000 ohms.

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S 214-057

- (13) Make sure the foil marker is within 6 inches from where the lead wire joins the drain mast.

NOTE: The sleeve marker slides over the wire. Make sure you keep any sleeve makers on the wire.

S 434-060

- (14) Connect the wires for the drain mast heater at the splice.

S 434-064

CAUTION: DO NOT PUT THE HOSE TOO FAR ON THE TUBE OF THE DRAIN MAST. THE TUBE MUST NOT GO INTO THE BEND OF THE HOSE OR THE HOSE CAN GET BLOCKED.

- (15) Connect the hose to the drain mast with the clamp.

S 394-067

CAUTION: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO APPLY THE FILLET SEAL AND AERODYNAMIC SMOOTHER. IF YOU DO NOT OBEY THE INSTRUCTIONS, DAMAGE TO THE AIRPLANE SURFACE CAN OCCUR.

- (16) From the inside of the airplane put a pressure fillet seal around the drain mast (AMM 51-31-01/201).

S 394-068

- (17) From the outside of the airplane put an aerodynamic smoothing seal around the drain mast (AMM 51-31-01/201).

S 414-069

- (18) 767-200, and -300 AIRPLANES:  
Put the heater tape around the lower hose clamp (AMM 30-71-01/401).

G. Drain Mast Installation Test

S 484-036

- (1) Install the drain mast plug in the drain mast.

S 714-037

- (2) Fill the drain system until you see water at the first floor drain from the drain mast.

S 794-038

- (3) Make sure there is no leakage in the drain line.

S 084-039

- (4) Remove the drain mast plug.

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S 864-019

- (5) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the forward miscellaneous electrical equipment panel, P33:
- (a) 33A1, ICE/RAIN DRAIN MAST HTG GND
  - (b) 33A2, ICE/RAIN DRAIN MAST HTG FLT

S 864-020

- (6) Supply electrical power (AMM 24-22-00/201).

S 714-021

- (7) Make sure the drain masts get hot.
- H. Put the Airplane Back to its Normal Condition

S 414-022

- (1) Install the insulation and the floor panels (AMM 25-52-03/401).

S 414-024

- (2) If you installed the aft drain mast, close the bulk cargo door, 811 (AMM 52-36-00/001).

S 864-025

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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VACUUM WASTE SYSTEM - MAINTENANCE PRACTICES

1. General

- A. This procedure gives the instructions to do these tasks:
- (1) Standard Procedures for Work with the Toilet Waste and Equipment.
  - (2) Deactivate/Activate the Vacuum Blower and Lav Flush System.
  - (3) Remove a Blockage from the Toilet, if the Blockage is not through the Discharge Valve.
  - (4) Deactivate/Activate the Toilet.
  - (5) Remove a Blockage From the Drain Lines for the Waste Tanks.
  - (6) Removal of Toilet Line Blockage with the Kinetic Water Ram Tool.
  - (7) Toilet Vacuum Line Blockage Verification Test Procedure.
  - (8) Waste Drain Line Inspection to Isolate Blockages.
  - (9) Toilet Vacuum Line Test.
  - (10) Blockage Removal with Air Removal Tool.
  - (11) Deactivate/Activate Precharge Shutoff Valve.
  - (12) Open the Toilet Flush Valve for Maintenance.

TASK 38-32-00-382-067

2. Standard Procedures for Work with the Toilet Waste and Equipment

A. General

- (1) You must obey the standard procedures of your country and local areas when you do work with the toilet waste and toilet waste equipment.
- (2) If you operate the vacuum waste system in hangar areas, attach venting equipment to the vacuum system exhaust to remove the exhaust from personnel and the hangar areas.
- (3) More standard procedures are given below for when you do work on the toilet assembly, drain lines, waste tanks and drain valves.

B. Equipment

- (1) Gloves - Rubber (elbow length)
- (2) Flexible Tubing 1.5 inch - (40mm) Outside Diameter, length as needed (commercially available).

C. Consumable Materials

- (1) G00000 Gown - Disposable
- (2) G00000 Gloves - Disposable
- (3) G00000 Shop Coat - Disposable
- (4) G00000 Mask - Face
- (5) G01915 Glasses - Safety

D. Access

- (1) Location Zones
 

123	Area Below Forward Cargo Compartment (Left)
124	Area Below Forward Cargo Compartment (Right)
155	Area Below Aft Cargo Compartment (Left)
156	Area Below Aft Cargo Compartment (Right)
163	Area Below Bulk Compartment (Left)
165	Area Aft of Bulk Cargo Compartment
200	Upper Half Fuselage

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- (2) Access Panel  
163AL Waste Tank Service Panel

E. Procedure

S 912-279

**WARNING:** FOR SANITARY REASONS, ALWAYS WEAR RUBBER GLOVES WHEN WORKING ON THE TOILET SYSTEM OR WHEN HANDLING PARTS WHICH HAVE BEEN IN CONTACT WITH WASTE MATERIAL. WASH HANDS THOROUGHLY WITH SOAP AND WATER AFTER COMPLETION OF PROCEDURE. PER UNITED STATES PUBLIC HEALTH SERVICE REGULATIONS, PERSONNEL WHO SERVICE OR MAINTAIN WASTE WATER SYSTEMS MAY NOT, UNDER ANY CIRCUMSTANCES, SERVICE POTABLE WATER SYSTEMS CONCURRENTLY.

**WARNING:** ALL TOILET COMPONENTS MUST BE SANITIZED AND CLEANED PRIOR TO HANDLING AND SHIPPING OR ROUTING. REFER TO OPERATORS GENERAL PROCESS MANUALS FOR DETAILED MATERIALS AND PROCESSES.

- (1) If you do work or do servicing on the toilet waste equipment, make sure you wear the clothes that give you protection.

**NOTE:** This is a list of the clothes that you can wear to give you protection when it is necessary.

- (a) Rubber or disposable gloves
- (b) Disposable gown
- (c) Disposable shop coat
- (d) Face mask
- (e) Safety glasses

S 912-069

- (2) You must not put contamination on other areas after you touch the toilet waste equipment that has contamination. Make sure you remove the protective clothing that has contamination before you do a different task.

S 912-070

- (3) If you remove an item with toilet waste contamination, use an approved antibacterial material.

S 912-071

- (4) Apply the antibacterial material with a spray gun to these parts:
- (a) the toilet bowl
  - (b) the discharge valve
  - (c) all of the other parts with the contamination.

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S 912-072

**WARNING:** MAKE SURE YOU FOLLOW THE MANUFACTURER'S INSTRUCTIONS WHEN YOU TOUCH THE CHEMICAL PRECHARGE. THE CHEMICAL PRECHARGE CONTAINS MATERIALS WHICH CAN CAUSE INJURY TO YOU IF YOU DO NOT OBEY THE INSTRUCTIONS.

**CAUTION:** DO NOT ADD THE CHEMICAL PRECHARGE TO THE TANKS IF THE AIRPLANE WILL BE KEPT IN AN AREA WHERE IT CAN FREEZE. THE CHEMICAL PRECHARGE CAN CAUSE DAMAGE TO THE WASTE SYSTEM IF IT FREEZES.

- (5) Add approximately 1 quart of chemical precharge to the toilet bowl before you remove the waste material from the bowl.

**NOTE:** Chlorine bleach used to clean clothing can be used as an alternative to chemical precharge.

S 162-073

- (6) Do these steps to remove the contents of the toilet bowl, if a waste system is serviceable:
- (a) Install a length of 1.5 inch flexible tubing from a serviceable toilet to the blocked toilet.
  - (b) Flush the serviceable toilet to drain the toilet bowl of the blocked toilet.
  - (c) Make sure the toilet bowl is empty.
  - (d) If the toilet bowl is not empty, flush the serviceable toilet again.
  - (e) Remove the 1.5 inch flexible tubing.

S 162-098

- (7) If no waste system is serviceable, manually remove the contents of the toilet bowl.

S 912-099

- (8) Do the steps that follow before you remove these parts:
- (a) Toilet waste tank
  - (b) Waste tank components
  - (c) Drain valve
  - (d) Drain lines downstream from the waste tank.
    - 1) Drain the tank (AMM 12-17-01/301).
    - 2) Flush the tank with water (AMM 12-17-01/301).
    - 3) Flush the tank with one to three gallons of chemical precharge (AMM 12-17-01/301).

**NOTE:** Chlorine bleach used to clean clothing can be used as an alternative to chemical precharge.

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TASK 38-32-00-002-274

3. Deactivate Vacuum Blower and Lav Flush System

A. References

- (1) AMM 24-22-00/201, Manual Control

B. Access

- (1) Location Zone
- |     |                        |
|-----|------------------------|
| 100 | Lower Half of Fuselage |
| 200 | Upper Half of Fuselage |
| 212 | Flight Compartment     |

(2) Access Panel

- 119AL Main Equipment Center

C. Deactivate the Vacuum Blower and Lav Flush System

S 862-272

- (1) OPEN the following circuit breakers for the applicable system, and attach a DO-NOT-CLOSE TAG:
- (a) On the overhead panel, P11:
- |    |   |
|----|---|
| 1) | 11R8, FLUSH CONT LAV SYS 1, or<br>LAVS SYS 1 FLUSH, or<br>LAVATORY FLUSH CONT (Lav Nos.), or<br>LAVS SYS 1 FLUSH CONT (Lav Nos.)  |
| 2) | 11R35, FLUSH CONT LAV SYS 2, or<br>LAVS SYS 2 FLUSH, or<br>LAVATORY FLUSH CONT (Lav Nos.), or<br>LAVS SYS 2 FLUSH CONT (Lav Nos.) |
- (b) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
On the APU external power panel, P34:
- |    |                             |
|----|-----------------------------|
| 1) | 34N10, LAV FLUSH CONT SYS 1 |
| 2) | 34N11, LAV FLUSH CONT SYS 2 |
- (c) On the left miscellaneous electrical equipment panel, P36:
- |    |  |
|----|--|
| 1) | 36G1, WATER/WASTE LAV SYSTEM 1 VACUUM BLOWER, or<br>36F6, VACUUM BLOWER LAV SYSTEM 1 |
|----|--|
- (d) On the right miscellaneous electrical equipment panel, P37:
- |    |  |
|----|--|
| 1) | 37G7, WATER/WASTE LAV SYSTEM 2 VACUUM BLOWER, or<br>VACUUM BLOWER LAV SYSTEM 2 |
|----|--|

TASK 38-32-00-402-275

4. Activate Vacuum Blower and Lav Flush System

A. References

- (1) AMM 24-22-00/201, Manual Control

B. Access

- (1) Location Zone
- |     |                        |
|-----|------------------------|
| 100 | Lower Half of Fuselage |
| 200 | Upper Half of Fuselage |
| 212 | Flight Compartment     |

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- (2) Access Panel  
119AL Main Equipment Center

C. Activate the Vacuum Blower and Lav Flush System

S 862-273

- (1) Remove the DO-NOT-CLOSE tags and CLOSE the following circuit breakers for the applicable system:
  - (a) On the overhead panel, P11:
    - 1) 11R8, FLUSH CONT LAV SYS 1, or  
LAVS SYS 1 FLUSH, or  
LAVATORY FLUSH CONT (Lav Nos.), or  
LAVS SYS 1 FLUSH CONT (Lav Nos.)
    - 2) 11R35, FLUSH CONT LAV SYS 2, or  
LAVS SYS 2 FLUSH, or  
LAVATORY FLUSH CONT (Lav Nos.), or  
LAVS SYS 2 FLUSH CONT (Lav Nos.)
  - (b) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
On the APU external power panel, P34:
    - 1) 34N10, LAV FLUSH CONT SYS 1
    - 2) 34N11, LAV FLUSH CONT SYS 2
  - (c) On the left miscellaneous electrical equipment panel, P36:
    - 1) 36G1, WATER/WASTE LAV SYSTEM 1 VACUUM BLOWER, or  
36F6, VACUUM BLOWER LAV SYSTEM 1
  - (d) On the right miscellaneous electrical equipment panel, P37:
    - 1) 37G7, WATER/WASTE LAV SYSTEM 2 VACUUM BLOWER, or  
VACUUM BLOWER LAV SYSTEM 2

TASK 38-32-00-162-001

5. Remove a Blockage from the Toilet (Fig. 201)

- A. Equipment
  - (1) Blockage Remover, Vacuum Toilet - A38003-20
- B. References
  - (1) AMM 24-22-00/201, Manual Control
- C. Access
  - (1) Location Zone  
200 Upper Half of Fuselage
- D. Procedure (Fig. 201)

S 862-002

- (1) Do this task: Deactivate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).

S 492-007

- (2) Carefully insert the blockage remover tool into the toilet bowl.

S 162-008

- (3) Move the blockage remover into the toilet bowl until it touches the blockage or until it is all the way in. Do not push hard on the blockage remover.

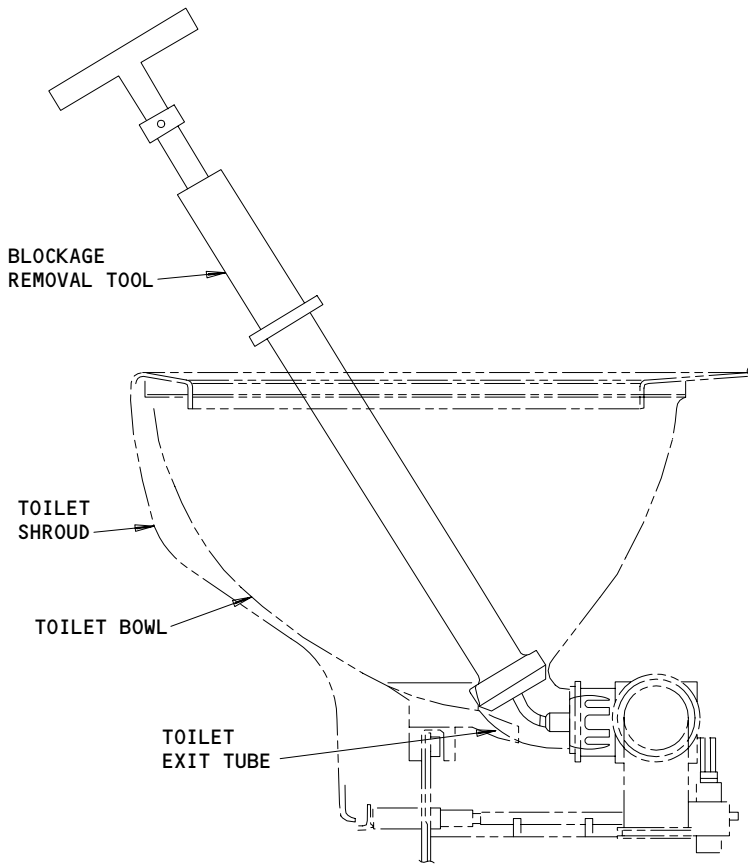
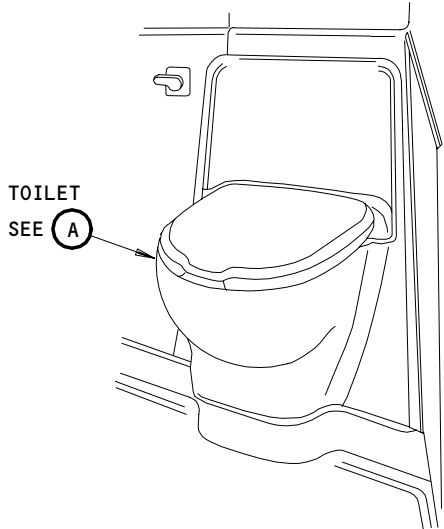
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TOILET  
(A)

Toilet Blockage Removal  
Figure 201

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- S 162-009
- (4) When the blockage remover touches the blockage, turn its handle clockwise to engage the blockage.
- S 162-010
- (5) Carefully pull the blockage remover out of the toilet, to pull the blockage out of the toilet.
- S 862-011
- (6) Do this task: Activate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).
- S 862-016
- (7) Supply electrical power (AMM 24-22-00/201).
- S 712-019
- (8) Put approximately one gallon of water in the toilet bowl.
- S 712-018
- (9) Operate the flush switch for the toilet.
- S 712-020
- (10) Make sure the toilet flushes correctly.
- S 862-021
- (11) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-00-042-022

6. Deactivate the Toilet (Fig. 202)

A. Access

- (1) Location Zone  
200 Upper Half of Fuselage

B. Procedure

- S 042-028
- (1) Pull the manual shutoff handle for the discharge valve out.

**NOTE:** The handle is below the toilet shroud and above the kickstrip.

- S 012-029
- (2) Do these steps to remove the toilet shroud:
- (a) Turn the toilet shroud latches at the bottom of the toilet shroud to open them.
  - (b) Carefully pull out the bottom edge of the toilet shroud.
  - (c) Move the toilet shroud down until the top edge is disengaged from the trim strip on the lavatory wall.

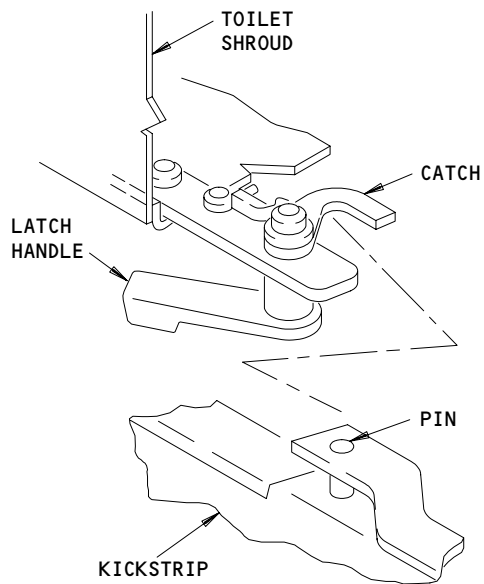
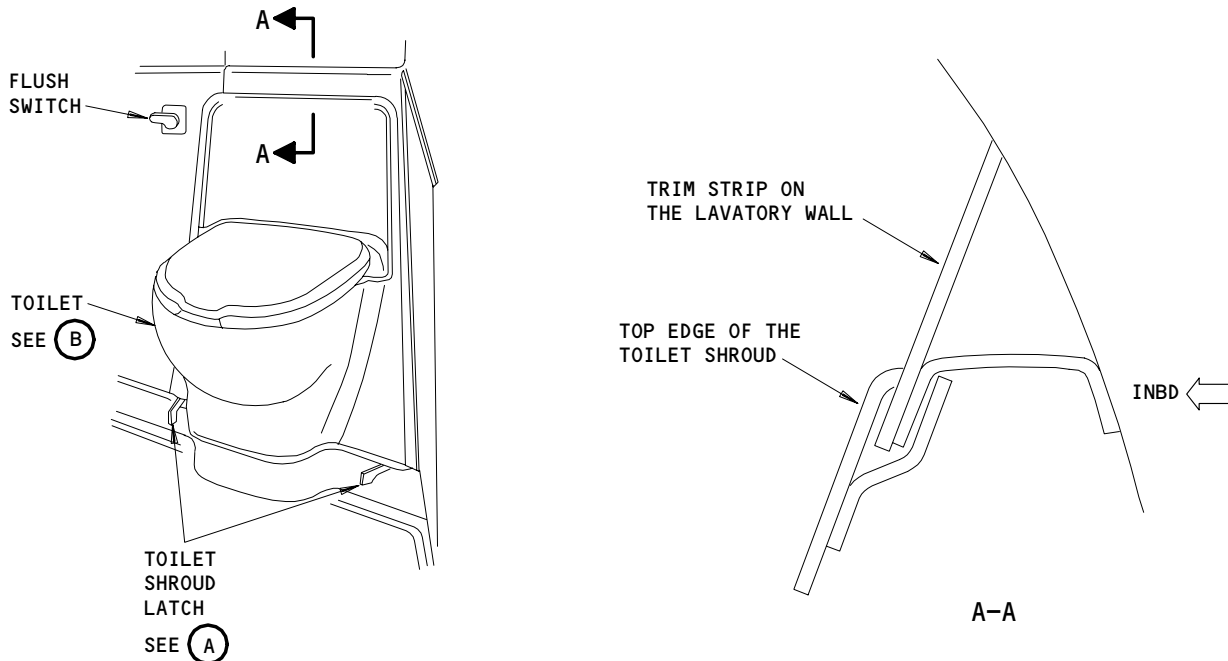
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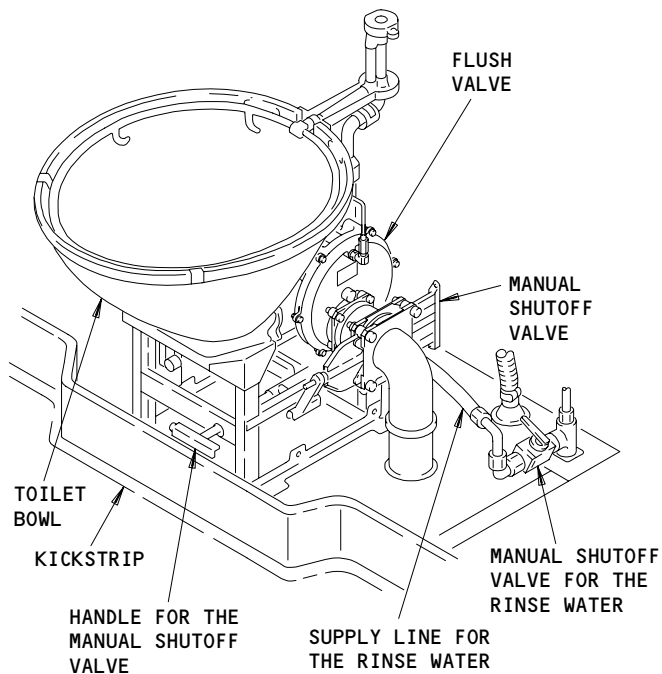
TOILET SHROUD LATCH

(A)

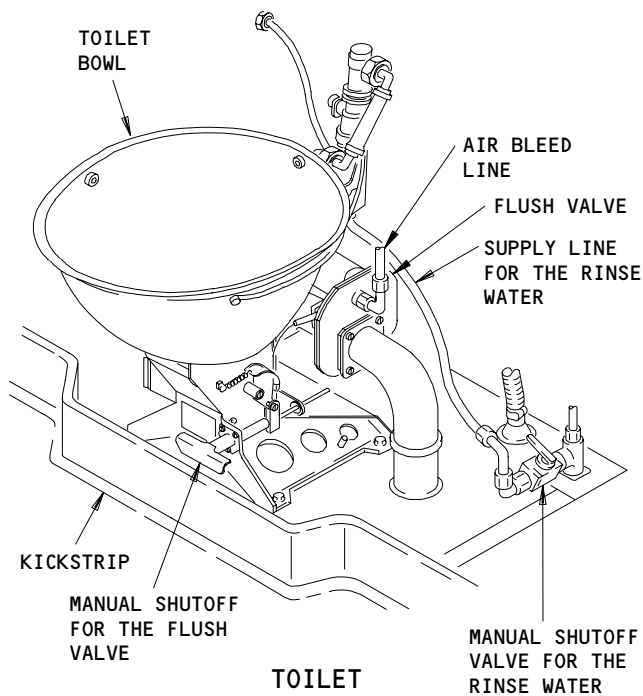
Toilet Deactivation  
Figure 202 (Sheet 1)

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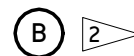
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TOILET



TOILET



- 1 AIRPLANES WITH MONOGRAM TOILET
- 2 AIRPLANES WITH ENVIROVAC TOILET

Toilet Deactivation  
Figure 202 (Sheet 2)

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- S 042-030  
(3) Close the manual shutoff valve for the rinse water.

- S 412-032  
(4) Do these steps to install the toilet shroud:  
(a) Carefully engage the top edge of the toilet shroud with the trim strip on the lavatory wall.  
(b) Push the bottom edge of the toilet shroud in.  
(c) Turn the toilet shroud latches to close the toilet shroud.

- S 042-034  
(5) Identify the applicable lavatory as not serviceable.

TASK 38-32-00-442-033

7. Activate the Toilet (Fig. 202)

A. References

- (1) AMM 24-22-00/201, Manual Control

B. Access

- (1) Location Zone  
200 Upper Half of Fuselage

C. Procedure

- S 012-042  
(1) Do these steps to remove the toilet shroud:  
(a) Turn the toilet shroud latches at the bottom of the toilet shroud to open them.  
(b) Carefully pull out the bottom edge of the toilet shroud.  
(c) Move the toilet shroud down until the top edge is disengaged from the trim strip on the lavatory wall.

- S 442-043  
(2) Open the manual shutoff valve for the rinse water.

- S 442-044  
(3) Push the manual shutoff handle for the discharge valve in to open the valve.

- S 412-045  
(4) Do these steps to install the toilet shroud:  
(a) Carefully engage the top edge of the toilet shroud with the trim strip on the lavatory wall.  
(b) Push the bottom edge of the toilet shroud in.  
(c) Turn the toilet shroud latches to close the toilet shroud.

- S 862-046  
(5) Supply electrical power (AMM 24-22-00/201).

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- S 712-047
- (6) Do these steps to make sure the toilet operates correctly:
- (a) Put approximately 1 gallon of water into the toilet bowl.
  - (b) Operate the flush switch.
  - (c) Make sure the toilet flushes correctly.
- S 442-048
- (7) Remove the not serviceable identifier from the lavatory.
- S 862-049
- (8) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-00-162-050

8. Remove a Blockage from the Drain Lines for the Waste Tanks (Fig. 203)

A. Equipment

- (1) Rooter (P/N A38005-1, -7) - Waste Tank Drain Line

B. Consumable Materials

- (1) D00012 Grease - Silicone DC33

C. References

- (1) AMM 12-17-01/301, Waste Tank - Servicing

D. Access

- (1) Location Zone

165 Area Aft of Bulk Cargo Compartment

- (2) Access Panels

163AL Waste Tank Service Panel

E. Procedure (Fig. 203)

S 012-051

- (1) Open the door for the waste tank service panel.

S 012-052

- (2) Open the cap on the waste tank drain connection.

S 492-054

- (3) Connect the waste drain hose of the toilet service cart to the blockage remover tool.

S 642-055

- (4) Apply grease to the flexible cable of the blockage remover to make a seal between the flexible cable and the blockage remover housing.

S 492-056

- (5) Put the flexible cable into the drain line that is blocked.

S 492-057

- (6) Connect the blockage remover to the waste tank drain connection.

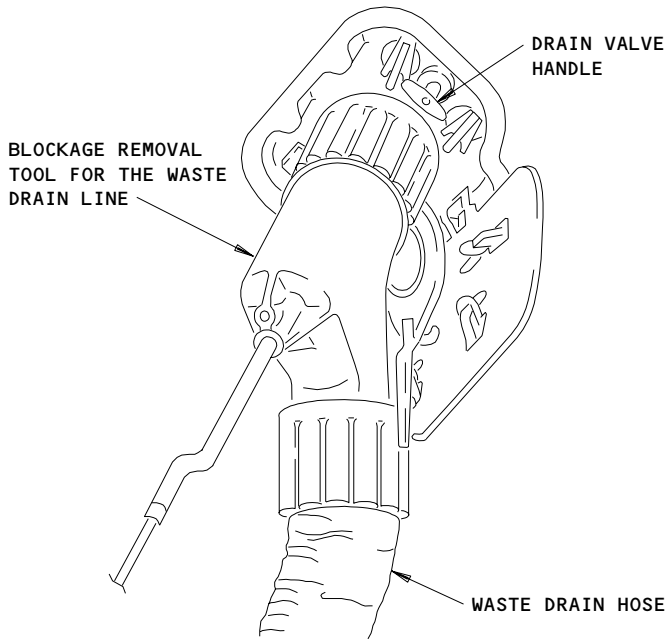
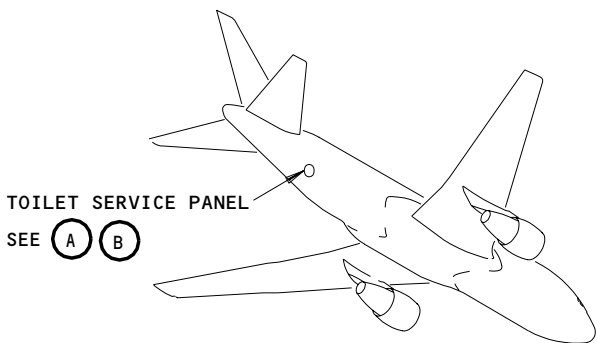
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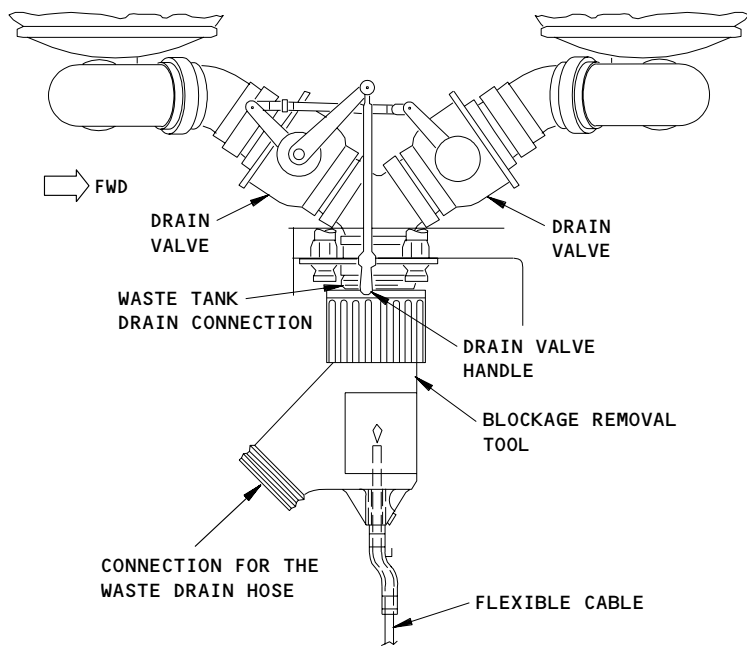
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TOILET SERVICE PANEL  
(EXAMPLE)

(A)



TOILET SERVICE PANEL  
(EXAMPLE)

(B)

Drain Line Blockage Removal  
Figure 203

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- S 862-060
- (7) Pull the drain valve handle down to open the drain valves.
- S 162-061
- (8) Do these steps until you remove the blockage:
- NOTE:** The blockage is removed when you feel or hear the flow of fluid in the waste drain line of the toilet service cart.
- (a) Turn the handle on the blockage remover and at the same time push the flexible cable in.
- (b) If the flexible cable catches, turn the handle the other direction and keep pushing the flexible cable in.
- S 682-062
- (9) After you removed the blockage, let the waste tanks drain fully.
- S 092-063
- (10) Pull the flexible cable out of the drain line.
- S 092-066
- (11) Disconnect the blockage remover from the waste tank drain connection.
- S 612-065
- (12) Do the servicing procedure for the waste tanks (AMM 12-17-01/301).

TASK 38-32-00-102-201

9. Toilet Line Blockage Removal with the Kinetic Water Ram Tool (Fig. 204)

A. General

- (1) This procedure is applicable to blockages after the toilet discharge valve. Removal of the toilet assembly is necessary to do this procedure.
- (2) This procedure is also applicable to material in the lines that are sealed with a cap. This condition can be from the removal of a toilet module or sealed lines for possible toilet module locations. The removal of the line cap and the possible removal of access panels is necessary to do this procedure.

B. Equipment

- (1) G38004-10 Kinetic Water Ram

C. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 38-32-00/501, Toilet Waste System
- (3) AMM 38-32-01/401, Toilet Assembly

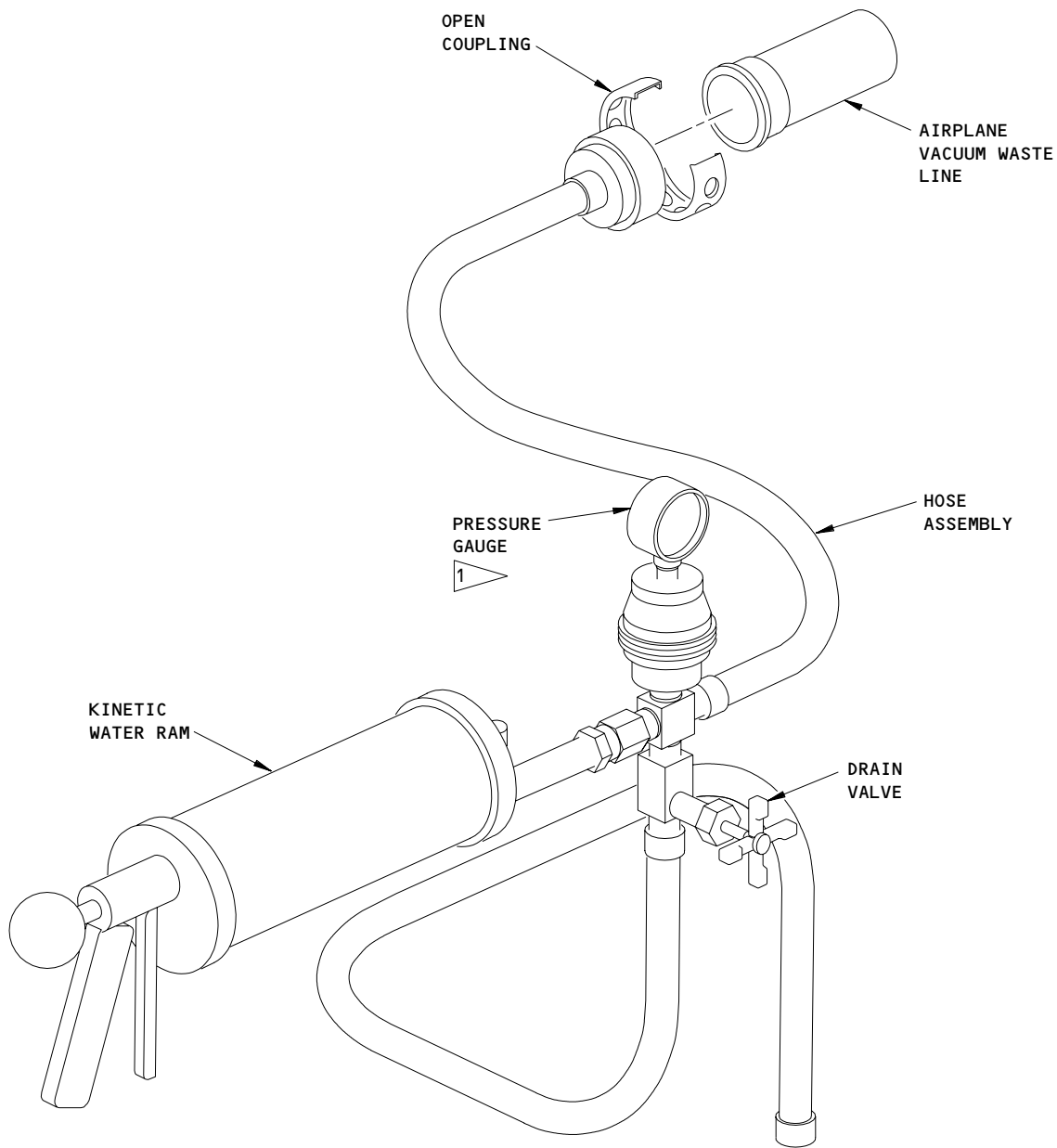
D. Access

- (1) Location Zone  
200 Upper Half Fuselage

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VACUUM WASTE LINE CONNECTION  
(EXAMPLE)

1 GAUGE INDICATES RESIDUAL PRESSURE  
IN VACUUM LAVATORY SYSTEM

Vacuum Line Blockage Removal  
Figure 204

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E. Procedure

S 862-202

- (1) Supply electrical power (AMM 24-22-00/201).

S 712-203

- (2) Do these steps to find the location of the blockage:
- (a) Flush the first toilet away from the waste tank to make sure the toilet is serviceable.
  - (b) If the toilet bowl is not clear, the blockage is between this toilet and the waste tank.
  - (c) Flush each toilet on the line away from the waste tank until you find the blockage.

S 862-204

- (3) Open these circuit breakers, for the applicable waste system, and attach a DO-NOT-CLOSE tag:
- (a) On the P11 panel:
    - 1) 11R8, LAVS SYS 1 FLUSH (or LAVATORY FLUSH CONT <Lav #'s>)
    - 2) 11R35, LAVS SYS 2 FLUSH (or LAVATORY FLUSH CONT <Lav #'s>)
  - (b) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
on the P34 panel:
    - 1) 34N10, LAV SYS 1 FLUSH
    - 2) 34N11, LAV SYS 2 FLUSH

S 162-205

- (4) Remove the contents of the toilet bowl with the discharge valve open, if it is necessary. (Refer to the task for Standard Practices for Work with the Toilet Waste and Equipment.)

S 012-206

- (5) Remove the toilet assembly to get access to the outlet pipe connection for the lavatory upstream of the blockage (AMM 38-32-01/401).

S 422-207

- (6) Install the kinetic water ram tool on the outlet pipe connection.

S 612-208

- (7) Fill the waste line with water from a toilet upstream of the blockage or through the kinetic water ram tool.

S 612-209

- (8) AIRPLANES WITH A BLEED LINE ON THE FLUSH VALVE;  
monitor the air bleed line while you fill the system and stop when you see water at the bleed line exit. Do this for all toilets upstream of the blockage.

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S 482-211

- (9) AIRPLANES WITH A BLEED LINE ON THE FLUSH VALVE;  
disconnect the air bleed line and put a cap on the air bleed  
connection of all toilets upstream of the blockage.

S 612-213

- (10) AIRPLANES WITH ENVIROVAC TOILETS WITHOUT BLEED LINES;  
manually open the toilet flush valve that is most upstream of the  
blockage and monitor the toilet for water flow.

S 482-214

- (11) AIRPLANES WITH ENVIROVAC TOILETS WITHOUT BLEED LINES;  
manually close the flush valve.

S 862-215

- (12) AIRPLANES WITH MONOGRAM TOILETS WITH PINCH-TYPE FLUSH VALVES;  
remove the shroud on all of the toilets upstream of the blockage and  
close the manual shutoff valve.

S 862-217

- (13) Make sure the pressure of the kinetic water ram tool is 70 to 80  
psi.  
NOTE: A shop air source can be used to get this pressure.

S 042-218

WARNING: MAKE SURE YOU ATTACH A DO-NOT-OPERATE TAG TO THE TOILET FLUSH  
HANDLES FOR ALL TOILETS UPSTREAM OF THE BLOCKAGE. DURING THIS  
PROCEDURE, IF YOU FLUSH TOILETS UPSTREAM OF THE BLOCKAGE,  
INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (14) Attach a DO-NOT-OPERATE tag to the toilet flush handles for all  
toilets upstream of the blockage.

S 862-219

- (15) Remove the DO-NOT-CLOSE tags and close these circuit breakers, for  
the applicable waste system:
- (a) On the P11 panel:
    - 1) 11R8, LAVS SYS 1 FLUSH (or LAVATORY FLUSH CONT <Lav #'s>)
    - 2) 11R35, LAVS SYS 2 FLUSH (or LAVATORY FLUSH CONT <Lav #'s>)
  - (b) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
on the P34 panel:
    - 1) 34N10, LAV SYS 1 FLUSH
    - 2) 34N11, LAV SYS 2 FLUSH

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S 712-220

- (16) Flush a toilet in the same waste system with the blockage and then pull the handle of the kinetic water ram tool.

NOTE: Flush the toilet and pull the handle of the kinetic water ram tool at the same time to have the most effect on the blockage.

S 712-221

- (17) Make sure the blockage is clear.

S 162-222

- (18) If the blockage is not clear, pressurize the kinetic water ram tool and do the blockage removal procedure again until the line is clear.

S 862-223

- (19) If the blockage is clear, open these circuit breakers and attach DO-NOT-CLOSE tags for the applicable waste system.

(a) On the P11 panel:

- 1) 11R8, LAVS SYS 1 FLUSH (or LAVATORY FLUSH CONT <Lav #'s>)
- 2) 11R35, LAVS SYS 2 FLUSH (or LAVATORY FLUSH CONT <Lav #'s>)

(b) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
on the P34 panel:

- 1) 34N10, LAV SYS 1 FLUSH
- 2) 34N11, LAV SYS 2 FLUSH

S 022-224

- (20) Remove the kinetic water ram tool on the outlet pipe connection.

S 082-225

- (21) AIRPLANES WITH A BLEED LINE ON THE FLUSH VALVE;  
remove the cap on the air bleed connection and connect the air bleed line for all toilets upstream of the blockage.

S 862-227

- (22) AIRPLANES WITH MONOGRAM TOILETS WITH PINCH-TYPE FLUSH VALVES;  
open the manual shutoff valve and install the shroud on all of the toilets upstream of the blockage.

S 422-229

- (23) Install the toilet (AMM 38-32-01/401).

S 442-230

- (24) Remove the DO-NOT-OPERATE tag to the toilet flush handles for all toilets upstream of the blockage.

S 712-231

- (25) Flush the toilet to make sure the toilet operates correctly.

EFFECTIVITY

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TASK 38-32-00-202-175

10. Toilet Vacuum Line Blockage Test

A. General

- (1) This procedure does a test of the waste system with a blower inoperative condition to determine if there are blockages that would prevent in-flight operation of the toilets.
- (2) The procedure uses vacuum pressure from the waste system with an operative blower to do the test of the waste system with an inoperative blower.

**NOTE:** With both tanks interconnected via the drain lines, the negative pressure differential created in the tank connected to the inoperative blower will be trying to pull the water separator into the tank. We recommend use of the water separator with the stainless steel retaining ring.

B. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 38-32-00/201, Standard Practices for Work with the Toilet Waste and Equipment
- (3) AMM 38-33-00/501, LCM BITE Test

C. Access

- (1) Location Zones  
200 Upper Half Fuselage
- (2) Access Panels  
163AL Service Panel Toilet Drain

D. Prepare for the Test

S 162-176

- (1) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 162-177

- (2) Do this task: Toilet Waste Tank Servicing (AMM 12-17-01/301).

**NOTE:** Do not add chemical precharge at this time.

S 742-178

- (3) Do this task: LCM BITE test (AMM 38-33-00/501).

**NOTE:** The system must pass this test before the procedure can continue.

EFFECTIVITY

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E. Toilet Vacuum Line Blockage Test

S 012-179

- (1) Remove the waste drain hose.

S 412-180

- (2) Close the waste drain cap.

S 482-280

- (3) Do these steps to operate the vacuum blower with the ball valves open:

- (a) Put a magnet on the proximity switch at the service panel.

NOTE: This will complete the electrical circuit and let the vacuum blowers operate with the service panel door open.

- (b) Pull the handle on the service panel to open the waste drain ball valve(s).

S 712-190

- (4) Flush the INOP toilet as follows:

- (a) Flush a toilet in a lavatory that is connected to the waste system with the operative blower.

- (b) Wait 5 to 10 seconds for the flush valve to close.

- (c) Flush the most upstream toilet on the waste system with the inoperative blower.

NOTE: The blower will operate for approximately 15 seconds. You must flush the toilet on the inoperative system while the operative blower is still in operation.

- (d) Make sure air flows through the toilet during the flush cycle.

NOTE: Airflow indicates that the waste lines are not blocked.

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- S 712-187
- (5) Flush each toilet on the waste system with the inoperative blower until you complete the check of the waste system.
- S 082-188
- (6) Remove the magnet from the proximity switch(es).
- S 612-189
- (7) Do this task: Toilet Waste Tank Servicing (AMM 12-17-01/301).

TASK 38-32-00-202-105

11. Waste Drain Line Inspection to Isolate Blockages

A. General

- (1) This task uses the "coin tap" test to isolate blockages in the waste drain lines. Use a lightweight metal object (e.g., a coin, etc.) when you do this test.

B. References

- (1) AMM 38-32-00/201, Toilet Line Blockage Removal with the Kinetic Water Ram Tool
- (2) AMM 38-32-00/701, Vacuum waste System - Cleaning

C. Consumable Materials

- (1) G00000 Gown - Disposable
- (2) G00000 Gloves - Disposable
- (3) G00000 Shop Coat - Disposable
- (4) G00000 Mask - Face
- (5) G01915 Goggles - Safety

D. Access

- (1) Location Zone  
100 Lower Half Fuselage

E. Procedure

S 752-106

- (1) Do the "coin tap" test as follows:
- (a) Tap the waste drain line with the metal object at 1-inch intervals.
- 1) A sharp ringing sound would indicate that the section has no waste buildup or blockages.

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- 2) A dull muffled sound would indicate that the section has a waste buildup or a blockage.

S 102-200

- (2) Do one of the following tasks:
  - (a) To use the Kinetic Water Ram, do this task: Toilet Line Blockage Removal with the Kinetic Water Ram Tool, AMM 38-32-00/201.
  - (b) To use one of the in-situ cleaning methods, do one of the tasks: Vacuum Waste System Cleaning, AMM 38-32-00/701.

TASK 38-32-00-792-110

12. Toilet Vacuum Line Test (Fig. 205)

A. General

- (1) This task uses the vacuum toilet tester to examine the vacuum during the operation of the toilet flush system.

B. Equipment

- (1) A38006-1 Tester, Vacuum Toilet

NOTE: "Tester" will be the name for this tool in this procedure.

C. Access

- (1) Location Zone  
200 Upper Half of Fuselage

D. Procedure

S 912-111

- (1) Do this task: Standard Practices for Work with ther Toilet Waste and Equipment, (AMM 38-32-00/201).

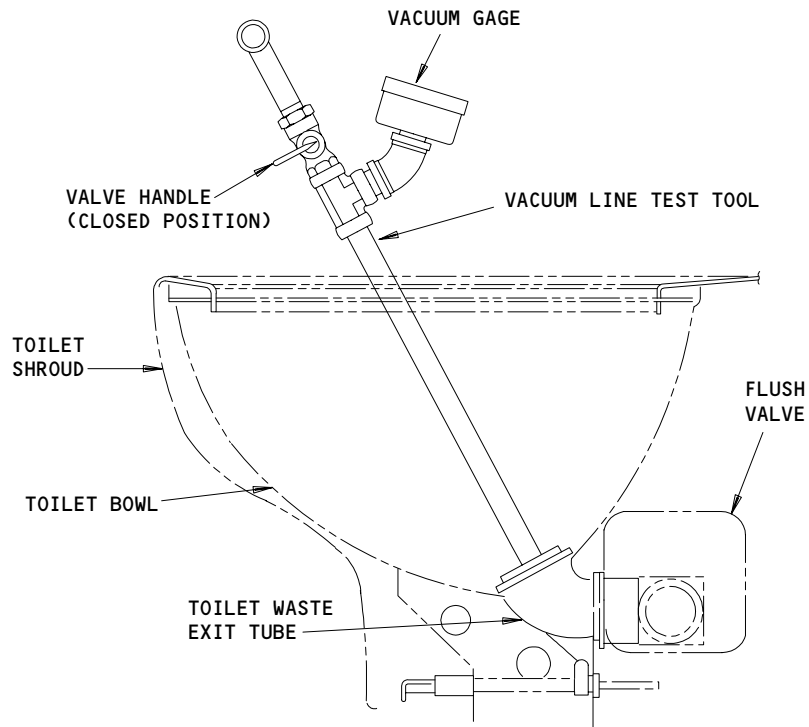
S 862-112

- (2) Put the tester in its position as follows:
  - (a) Make sure the valve on the tester is in the closed position.
  - (b) Put the end of the tester with the flexible seal into the toilet bowl on the exit hole.

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VACUUM LINE TEST

Vacuum Tester - Maintenance Practices  
 Figure 205

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(c) Push and then hold the tester tightly against the exit hole.

S 782-114

- (3) Do these steps to do a test of the vacuum at the toilet.
- (a) Push the flush switch for the toilet.
  - (b) Make sure the water stays in the toilet bowl during the toilet flush operation.
  - (c) Write down the highest indication (inches of mercury) you see on the vacuum gage during the toilet flush operation.
  - (d) Do the steps above two more times.

S 862-115

- (4) Move the valve to the open position and then remove the tester from the toilet.

S 222-116

- (5) Make sure the average of the indications on the vacuum gage is from 5 to 10 inches of mercury.

**NOTE:** An average of less than 5 inches of mercury shows a blockage or leakage of the vacuum waste system. The blockage or leakage is between the toilet and the toilet before it or the waste tank.

TASK 38-32-00-102-125

13. Waste System - Blockage Removal (Fig. 206)

A. General

- (1) This procedure is applicable to blockages between the waste tank and the service panel.

B. Equipment

- (1) G38006-1 Waste Blockage Removal Tool

C. References

- (1) AMM 12-17-01/301, Toilet Tank Servicing  
(2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining

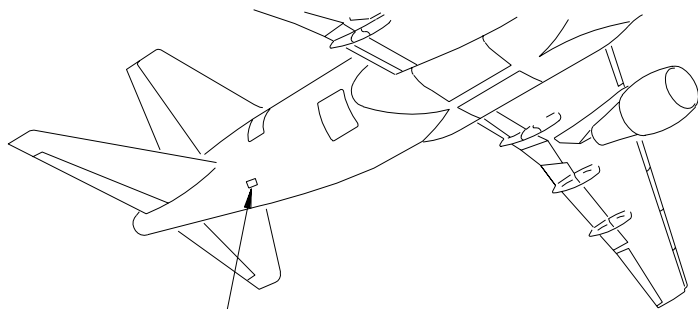
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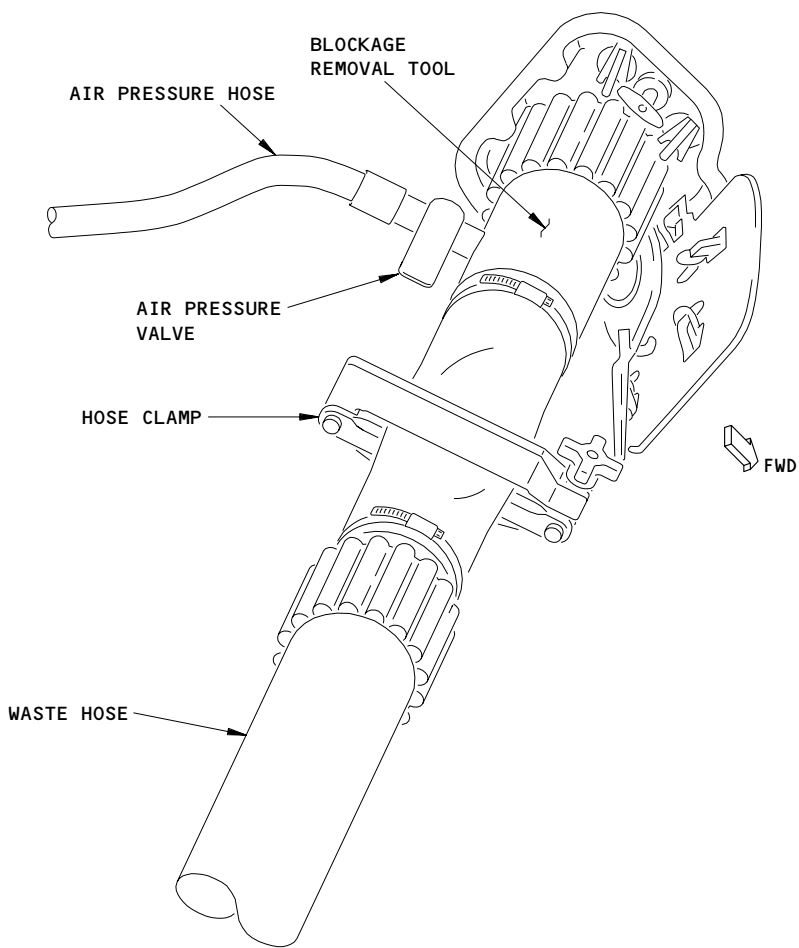
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WASTE SERVICE PANEL  
SEE (A)



WASTE SERVICE PANEL  
(EXAMPLE)

(A)

Waste Blockage Removal Tool  
Figure 206

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	ALL

**38-32-00**

- (3) AMM 38-32-00/201, Toilet Waste System
- D. Access
  - (1) Location Zones
    - 143 Area Below Aft Cargo Container Compartment, Left
    - 144 Area Below Aft Cargo Container Compartment, Right
    - 165 Area Aft of Bulk Cargo Compartment, Left
  - (2) Access Panel
    - 163AL Waste Tank Service Panel

E. Procedure

- S 162-126
- (1) Do this task, Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).
- S 862-127
- (2) Open the door for the service panel, 163AL.
- S 862-128
- (3) Open the cap for the waste drain valve assembly.
- S 482-129
- (4) Install the waste blockage removal tool on the waste drain valve assembly.
- S 862-130
- (5) Attach the waste drain hose from the toilet waste service equipment to the waste blockage removal tool.
- S 862-131
- (6) Make sure the hose clamp is in its position on the hose between the waste drain valve assembly and the waste drain hose.
- S 862-281
- (7) Do these tasks to disconnect the linkage between the waste tank ball valves.
  - (a) Open the bulk cargo door, 811 (AMM 52-36-00/001).
  - (b) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

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**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (c) Remove the linkage between the two ball valves.
- (d) If a tank is empty, make sure its drain ball valve is CLOSED.
- (e) Manually OPEN the drain ball valve of the tank that has the blockage.

S 862-132

- (8) Push the PRESS TO OPEN lever on the drain fitting.

S 862-134

- (9) Make sure the air shutoff valve on the waste blockage removal tool is in the closed position.

S 612-135

- (10) Attach a 0-25 psig (0-170 kPa) air source to the waste blockage removal tool.

S 042-136

**WARNING:** MAKE SURE THE PRESSURE TO THE WASTE BLOCKAGE REMOVAL TOOL IS NOT MORE THAN 25 PSI. IF THE PRESSURE IS MORE THAN 25 PSI, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

- (11) Make sure the pressure to the waste blockage removal tool is 0 to 25 psi (0-170 kPa).

S 862-137

- (12) Open the air pressure valve until the airflow is constant and the pressure does not increase or until the pressure drops, then close the air pressure valve.

S 862-138

- (13) Remove the hose clamp between the waste drain valve assembly and the waste drain hose.

S 712-139

- (14) Make sure the blockage is clear.

S 862-140

- (15) If the blockage is not clear, do the blockage removal procedure again until the line is clear.

S 082-141

- (16) If the blockage is clear, disconnect the waste drain hose and the waste blockage removal tool from the waste drain valve assembly.

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S 412-282

- (17) Do these tasks to re-connect the linkage between the waste tank ball valves.
- (a) Make sure both drain ball valves are CLOSED.
  - (b) Attach the linkage between the two ball valves.
  - (c) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
  - (d) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 612-143

- (18) Do this task: Toilet Waste Tank Servicing (AMM 12-17-01/301).

S 862-144

- (19) Push the LAV INOP switch on the attendant panel to make sure the waste indication system is operational.

TASK 38-32-00-042-267

14. AIRPLANES WITH PRECHARGE SHUTOFF VALVE;

Deactivate the Precharge Shutoff Valve (Fig. 207)

A. General

- (1) Certain operations require the filling of the vacuum waste system's waste tank with rinse fluid, eg, cleaning, quantity indicator level testing, etc. Some waste systems are provided with a precharge shutoff valve. This valve will shutoff the flow of precharge or rinse fluid once it has reached a specified level in the tank, usually about 6 to 7 gallons (23 to 27 liters). To add more than this amount to the tank, the precharge shutoff valve must be temporarily deactivated.

B. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment

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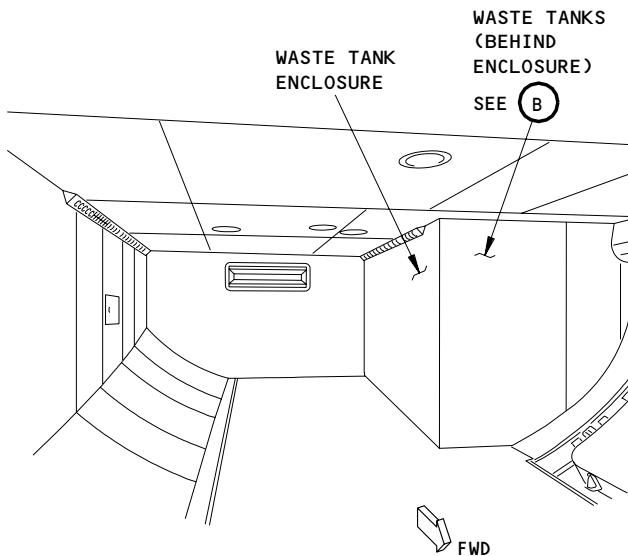
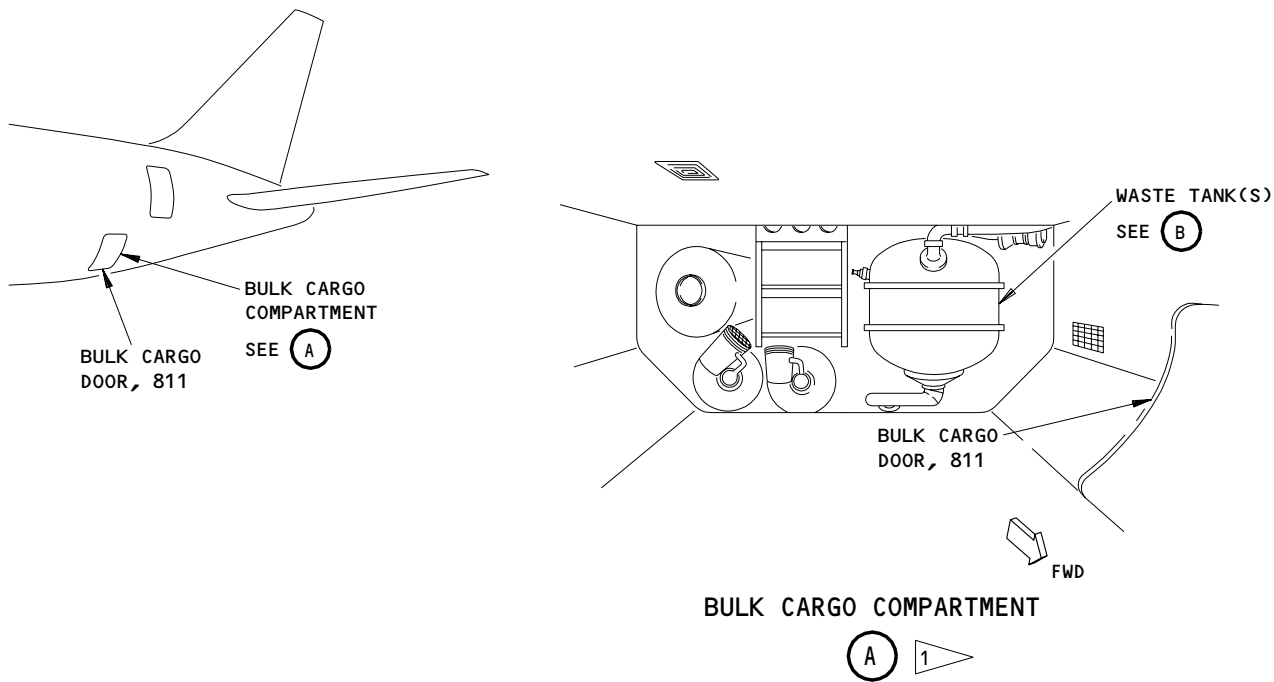
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**BOEING**  
767  
MAINTENANCE MANUAL



**BULK CARGO COMPARTMENT**

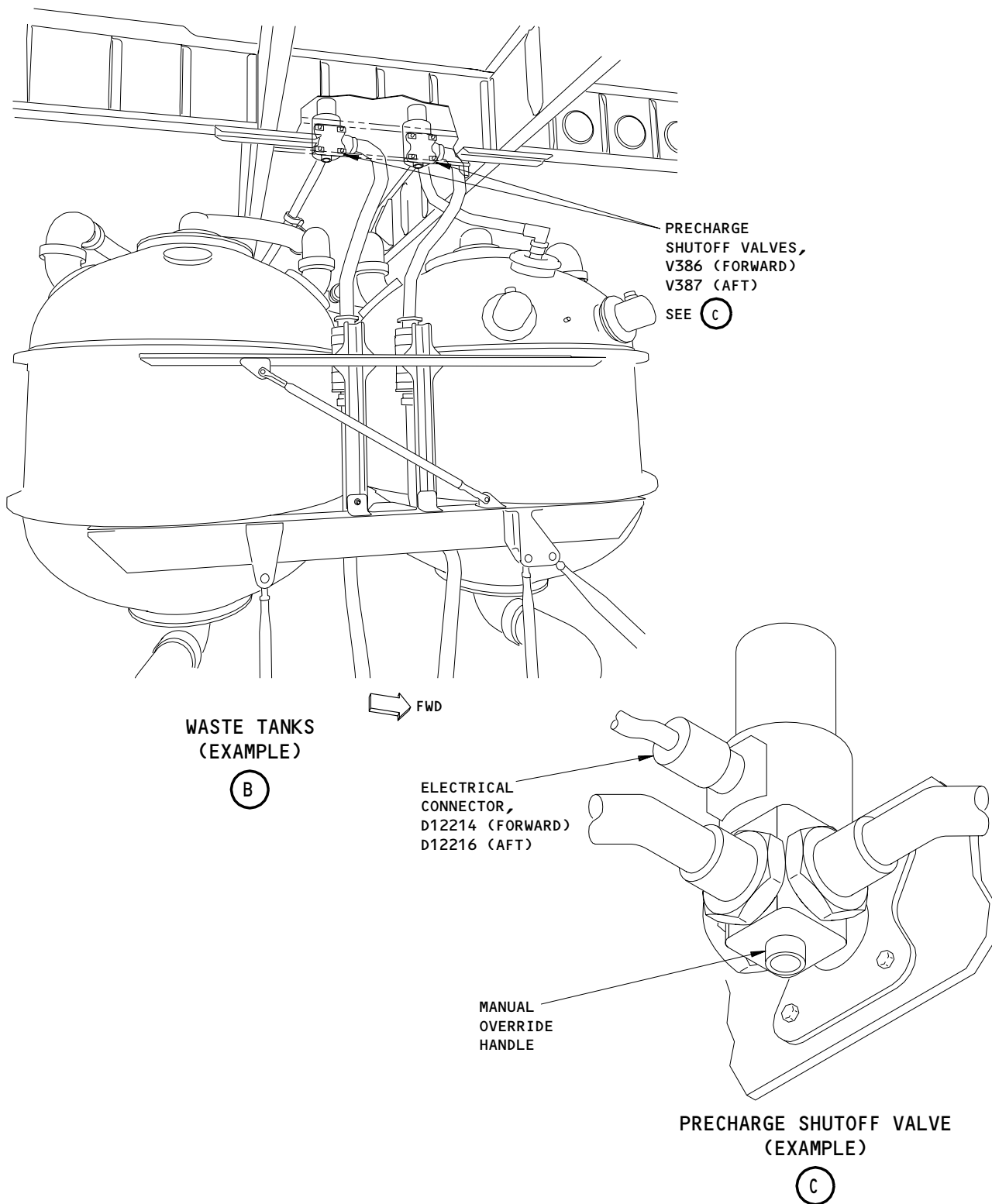
A 2

- 1 AIRPLANES WITH STANDARD CAPACITY TANK(S)
- 2 AIRPLANES WITH INCREASED CAPACITY TANKS

**Deactivate/Activate the Precharge Shutoff Valve**  
Figure 207 (Sheet 1)

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Deactivate/Activate the Precharge Shutoff Valve  
Figure 207 (Sheet 2)

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**38-32-00**

- (2) Access Panel  
811 Bulk Cargo Door

D. Deactivate the Precharge Shutoff Valve

S 042-268

- (1) To allow filling of the waste tanks, do the following steps to deactivate the precharge shutoff valve(s):
  - (a) Remove water pressure on rinse system.
  - (b) Open the bulk cargo door (AMM 52-36-00/001).
  - (c) Remove the aft bulkhead lining (standard capacity tanks) or the left sidewall lining (increased capacity tanks) of the bulk cargo compartment to get access to the waste tanks (AMM 25-52-01/401).

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (d) Disconnect connector D12214 from the precharge shutoff valve, V386, for the forward waste tank.

**NOTE:** Pins 4 and 5 of connector may have 28 VDC power applied.

- (e) Disconnect connector D12216 from the precharge shutoff valve, V387, for the aft waste tank.

**NOTE:** Pins 4 and 5 of connector may have 28 VDC power applied.

- (f) Rotate precharge valve(s) to the open position with the manual override handle.

TASK 38-32-00-422-269

15. AIRPLANES WITH PRECHARGE SHUTOFF VALVE;  
Activate the Precharge Shutoff Valve (Fig. 207)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment

- (2) Access Panel  
811 Bulk Cargo Door

C. Activate the Precharge Shutoff Valve

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S 422-287

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Do the following steps to reactivate the precharge shutoff valve(s):
  - (a) Reconnect connector D12216 for precharge shutoff valve, V387, for the aft waste tank.
  - (b) Reconnect connector D12214 for precharge shutoff valve, V386, for the forward waste tank.

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (c) Install the aft bulkhead lining or the waste enclosure panels of the bulk cargo compartment (AMM 25-52-01/401).
- (d) Close the bulk cargo door (AMM 52-36-00/001).

TASK 38-32-00-982-117

16. Toilet Flush Valve - Open for Maintenance (Fig. 208)

A. General

- (1) This task gives the steps to operate the toilet flush valve of the toilet flush system. Instructions are given for Monogram and Envirovac toilets, but not Rogerson toilets.

B. Access

- (1) Location Zone  
200 Upper Half of Fuselage

C. Prepare for Procedure

S 022-118

- (1) Do these steps to remove the toilet shroud:
  - (a) Turn the toilet shroud latches at the bottom of the toilet shroud to open them.
  - (b) Carefully pull out the bottom edge of the toilet shroud.
  - (c) Move the toilet shroud down until the top edge is disengaged from the trim strip on the lavatory wall.
  - (d) Remove the shroud.

D. AIRPLANES WITH MONOGRAM TOILETS;  
Procedure

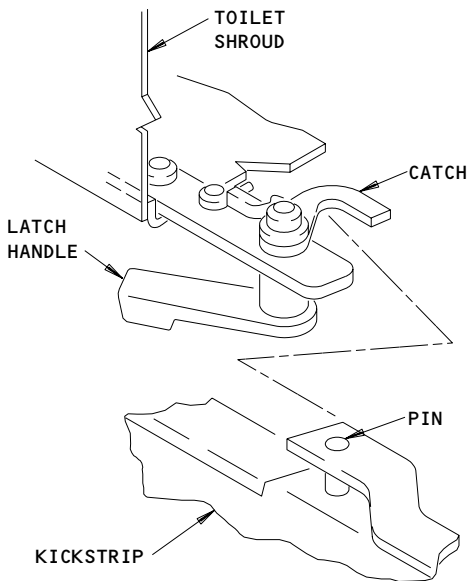
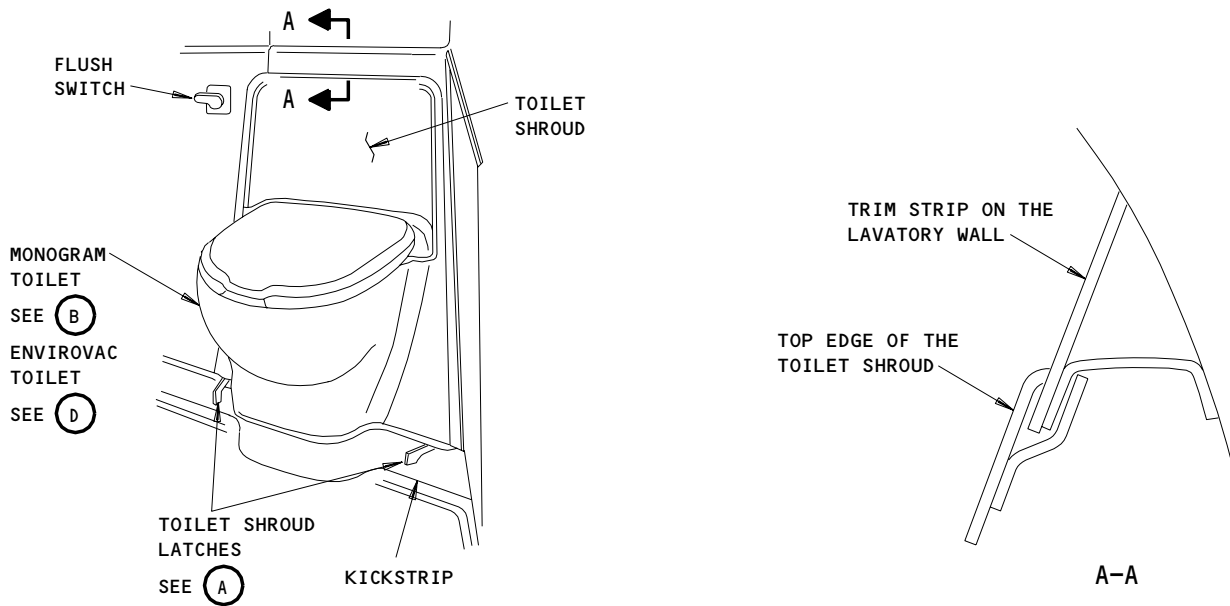
S 862-119

- (1) Push the maintenance switch on the flush control assembly to open the toilet flush valve.

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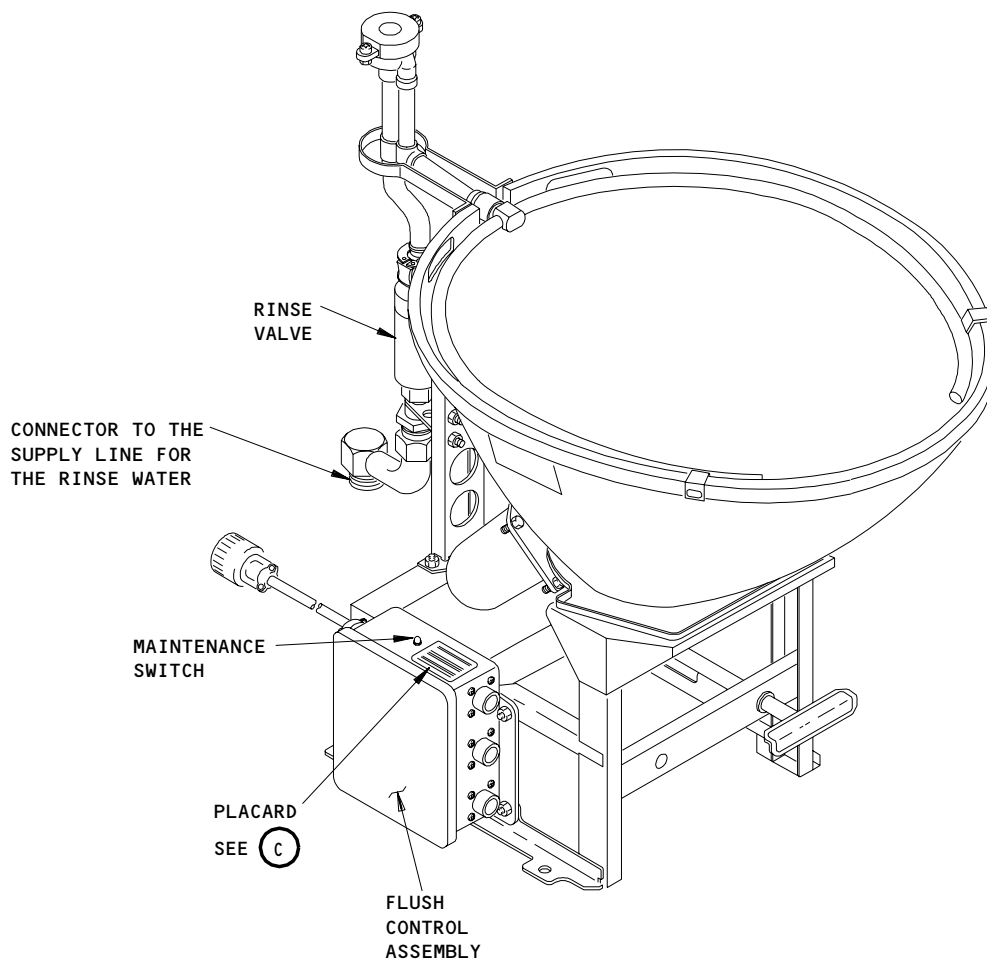
TOILET SHROUD LATCH

(A)

Toilet - Maintenance Practices  
Figure 208 (Sheet 1)

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**MONOGRAM TOILET**

(B)

**MAINTENANCE SWITCH OPERATION**

1. PRESS ONCE TO HOLD VALVE IN THE OPEN POSITION
2. FOR BLOWER OPERATION PRESS AGAIN THEN HOLD FOR TWO SECONDS. BLOWER WILL STOP AFTER TEN SECONDS
3. TO CLOSE VALVE AND RETURN TO NORMAL OPERATION. ACTIVATE THE FLUSH SWITCH

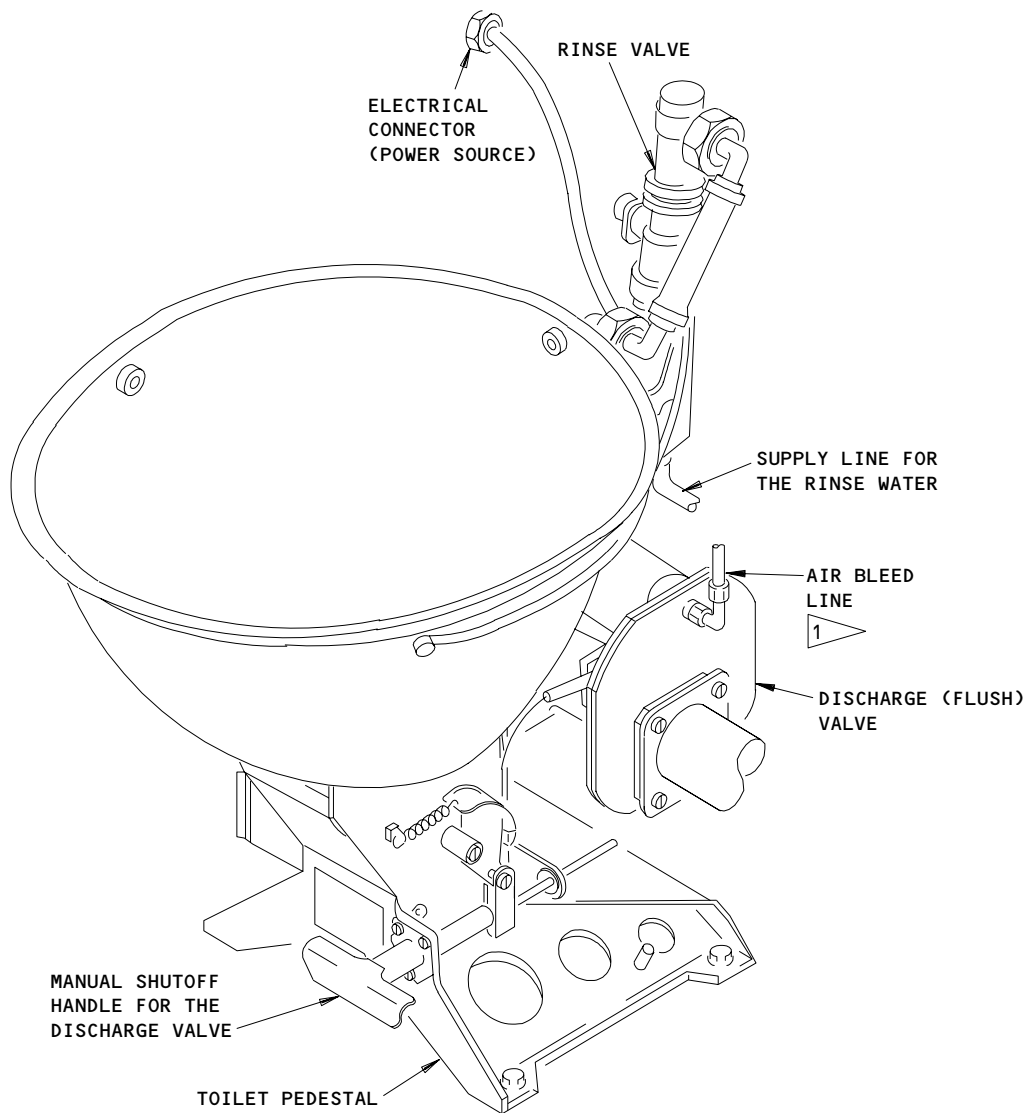
**PLACARD**

(C)

**Toilet - Maintenance Practices  
Figure 208 (Sheet 2)**

EFFECTIVITY  
AIRPLANES WITH MONOGRAM TOILETS

**38-32-00**



ENVIROVAC TOILET

(D)

1 NOT ON ALL TOILETS

Toilet - Maintenance Practices  
Figure 208 (Sheet 3)

EFFECTIVITY  
AIRPLANES WITH ENVIROVAC TOILETS

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S 862-120

- (2) Push the maintenance switch on the flush control assembly again and then hold for approximately 2 seconds to stop the vacuum blower.

S 862-121

- (3) Push the flush switch to close the toilet flush valve.

E. AIRPLANES WITH ENVIROVAC TOILETS;  
Procedure

S 862-264

- (1) Push the flush switch to open the toilet flush valve.

S 022-265

- (2) Disconnect the electrical connector from the power source while the flush valve is still open.

S 022-266

- (3) Reconnect the electrical connector.

S 862-263

- (4) Push the flush switch to close the toilet flush valve.

F. Put the Airplane Back to its Usual Condition

S 422-122

- (1) Do these steps to install the toilet shroud:
  - (a) Carefully engage the top edge of the toilet shroud with the trim strip on the lavatory wall.
  - (b) Push the bottom edge of the toilet shroud.
  - (c) Turn the toilet shroud latches to close the toilet shroud.

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VACUUM WASTE SYSTEM – ADJUSTMENT/TEST

1. General

- A. If you operate the vacuum waste system in hangar areas, attach venting equipment to the vacuum system exhaust to remove the exhaust from personnel and the hangar areas.
- B. This procedure includes these tasks:
  - (1) Leak Test for the Toilet Waste System
  - (2) Operational Test of the Door Position Switches on the Waste Tank Service Panel
  - (3) Operational Test of the Toilet Flush Cycle
  - (4) Operational Test of the Anti-Siphon
  - (5) Operational Test of the Flush Valve
- C. The following Waste Tank Quantity System Tests were moved to AMM 38-33-00/501:
  - (1) A LAVS INOP BITE Test of the waste indication system from the attendant panel.
  - (2) An LCM BITE Test of the quantity indication system for the waste tank.
  - (3) Auto Zero Adjustment.
  - (4) An operational test of the Waste Quantity Indication system at the LCM (logic control module), the attendant panel, and the waste tank.

TASK 38-32-00-795-011

2. Leak Test for the Toilet Waste System (Fig 501 and Fig 502)

- A. General
  - (1) This procedure gives you the instructions you need to make sure the toilet waste system does not have a leak.
- B. Equipment
  - (1) Vacuum Source (minimum 18 inches of HG – 460 mm of HG)  
Vacuum Gage and a Control Valve –  
Commercially Available
  - (2) Spring Scale – 0-100 lbs (0-444 N)  
Commercially Available
  - (3) Vent Plug – A38001
- C. References
  - (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
  - (2) AMM 52-36-00/001, Bulk Cargo Door

EFFECTIVITY

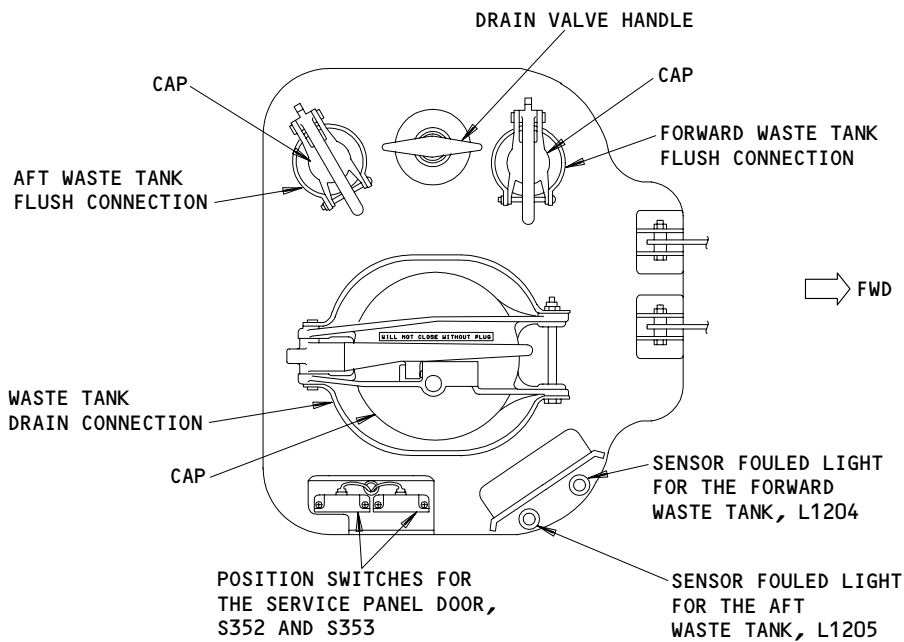
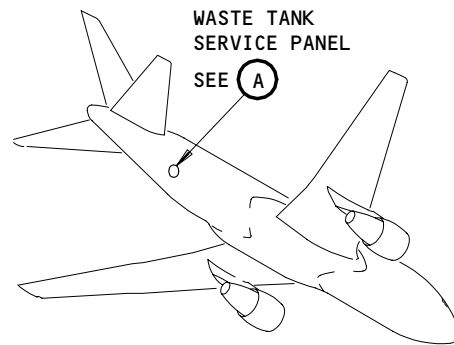
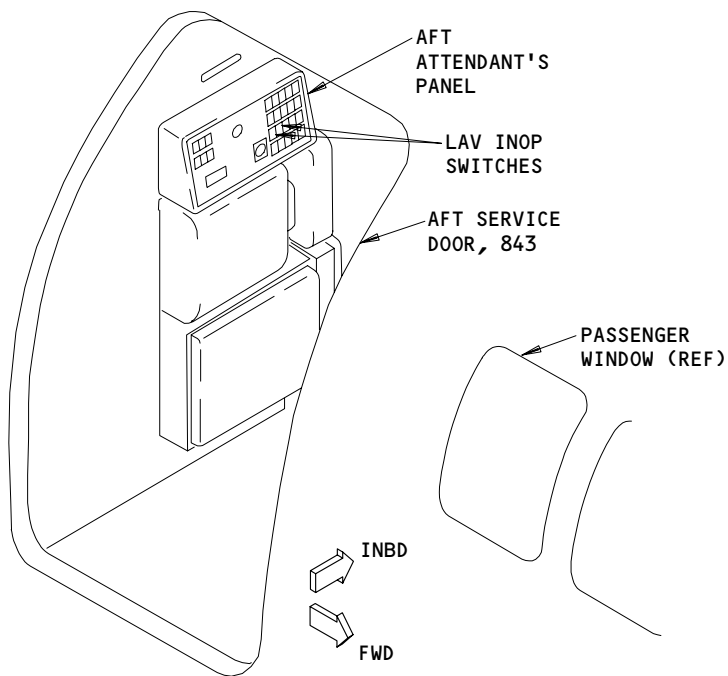
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WASTE TANK SERVICE PANEL

(A)

Toilet System Test  
Figure 501 (Sheet 1)

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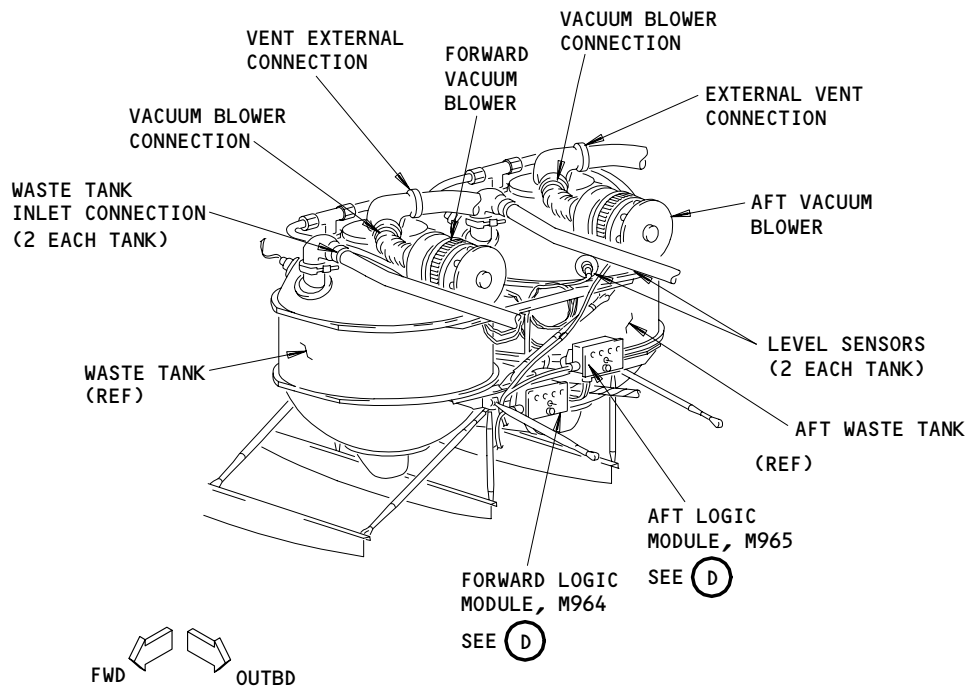
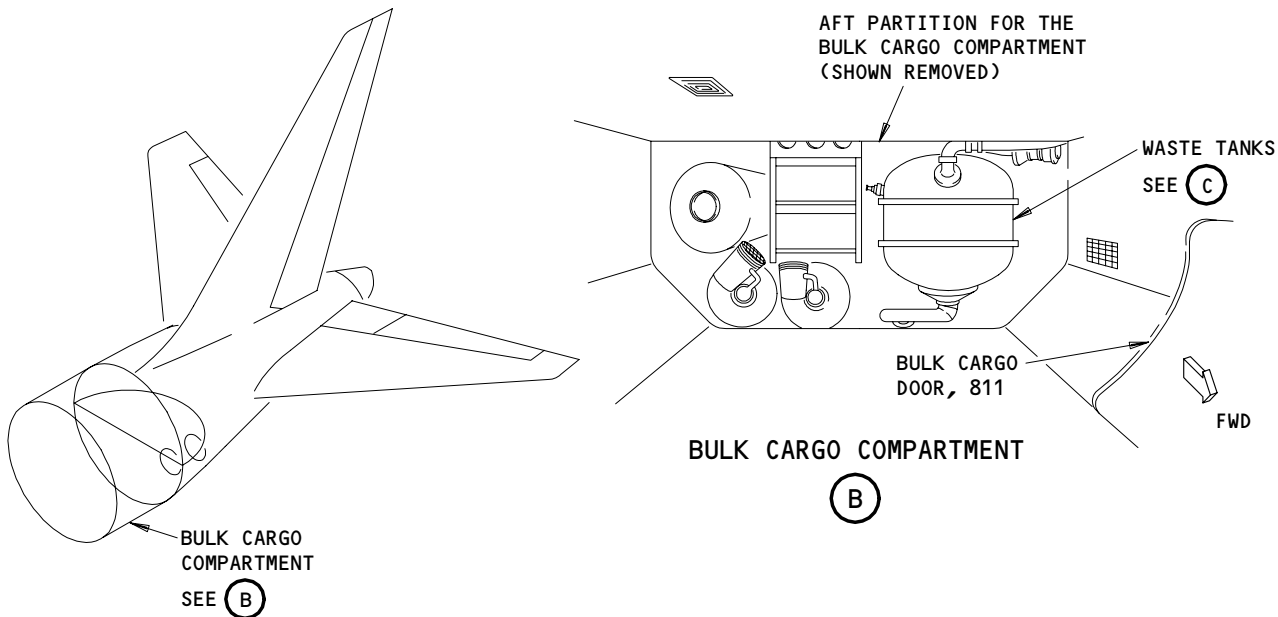
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### WASTE TANKS

(C)

Toilet System Test  
Figure 501 (Sheet 2)

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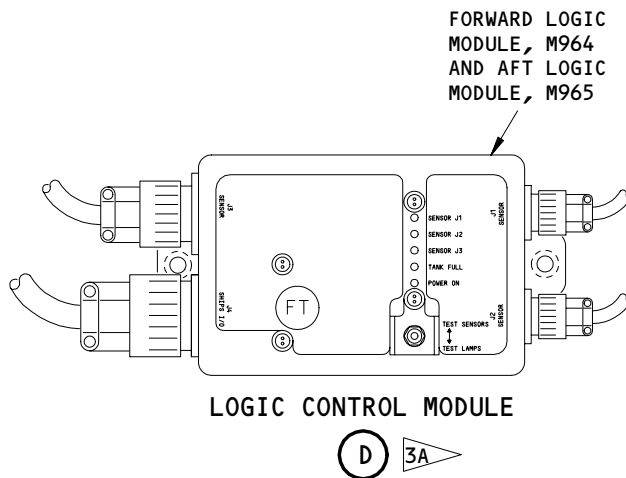
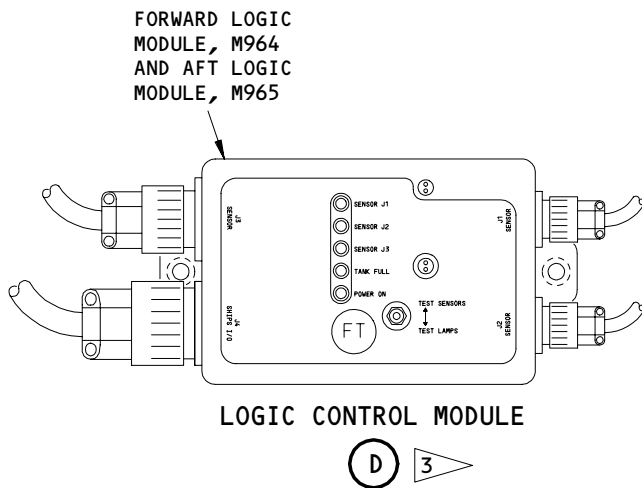
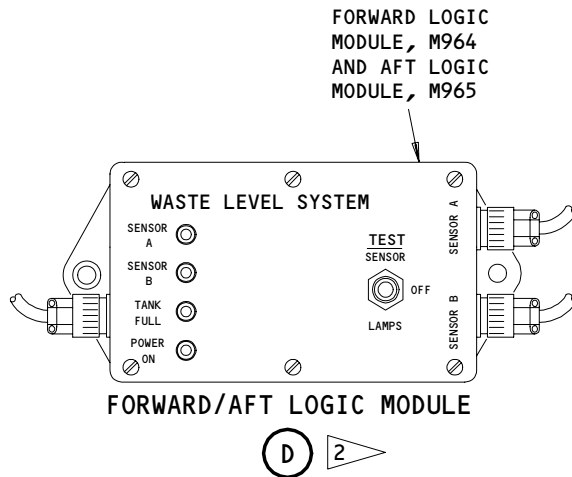
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- 2 AIRPLANES WITH THE DREXELBROOK LOGIC CONTROL MODULE
- 3 AIRPLANES WITH ROSEMOUNT LOGIC CONTROL MODULE WITHOUT A GUARD ON TEST SWITCH
- 3A AIRPLANES WITH ROSEMOUNT LOGIC CONTROL MODULE WITH A GUARD ON TEST SWITCH

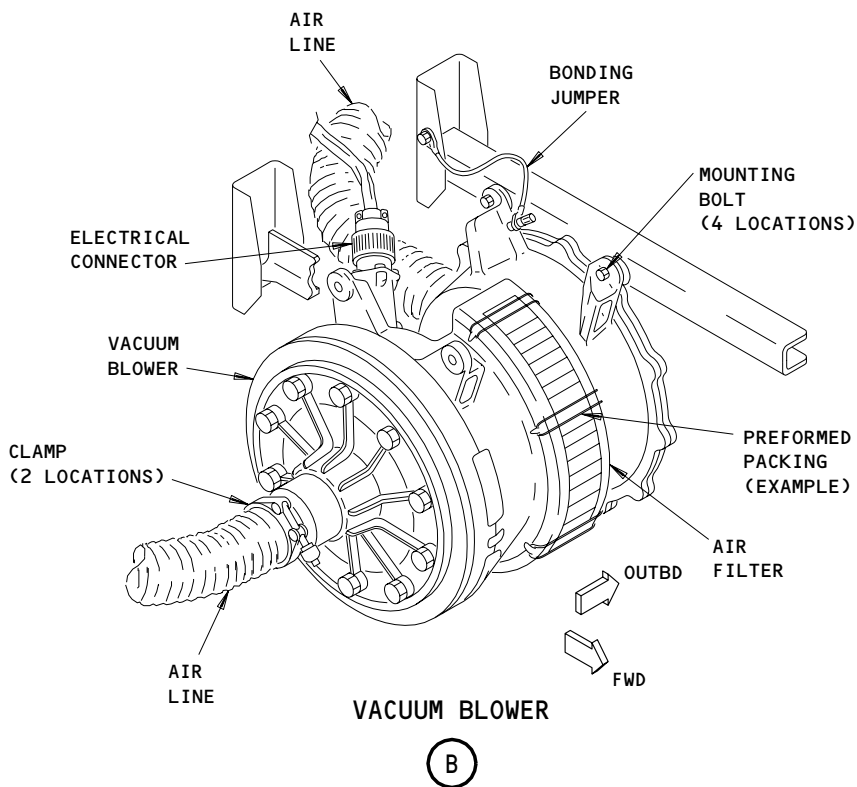
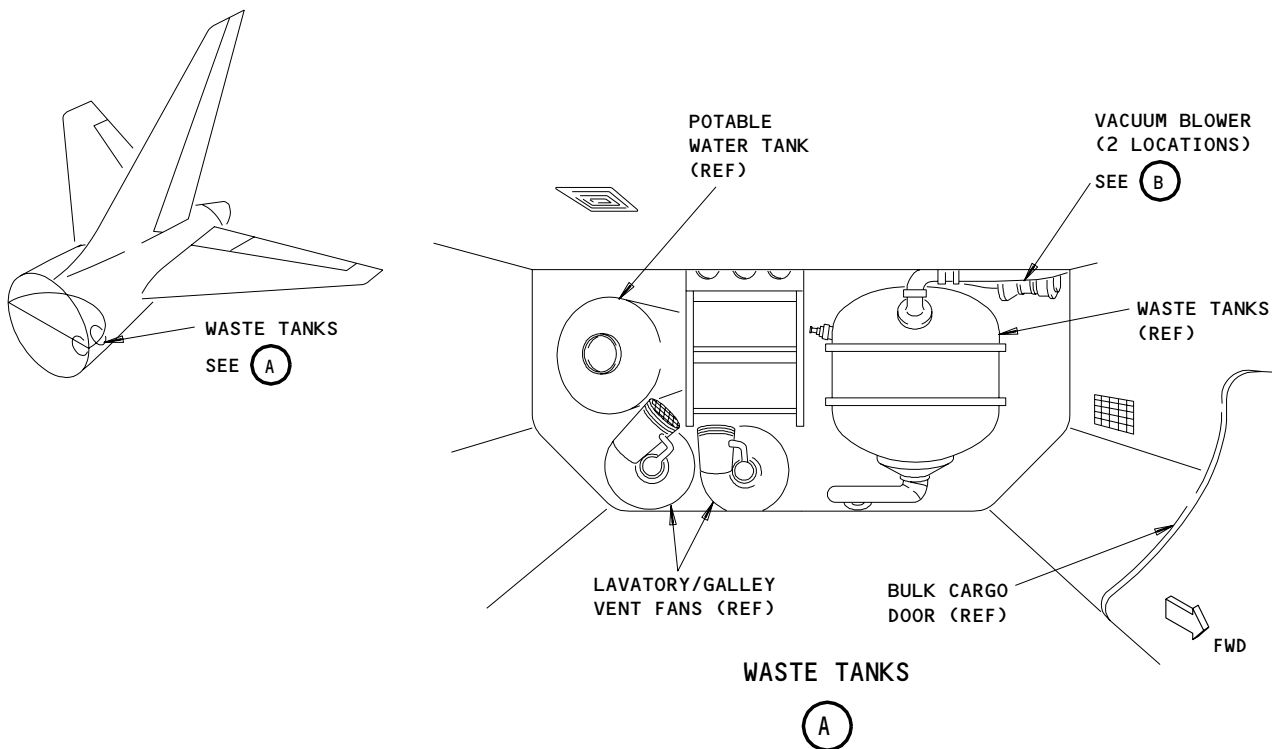
Toilet System Test  
Figure 501 (Sheet 3)

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Vacuum System - Leak Test  
Figure 502 (Sheet 1)

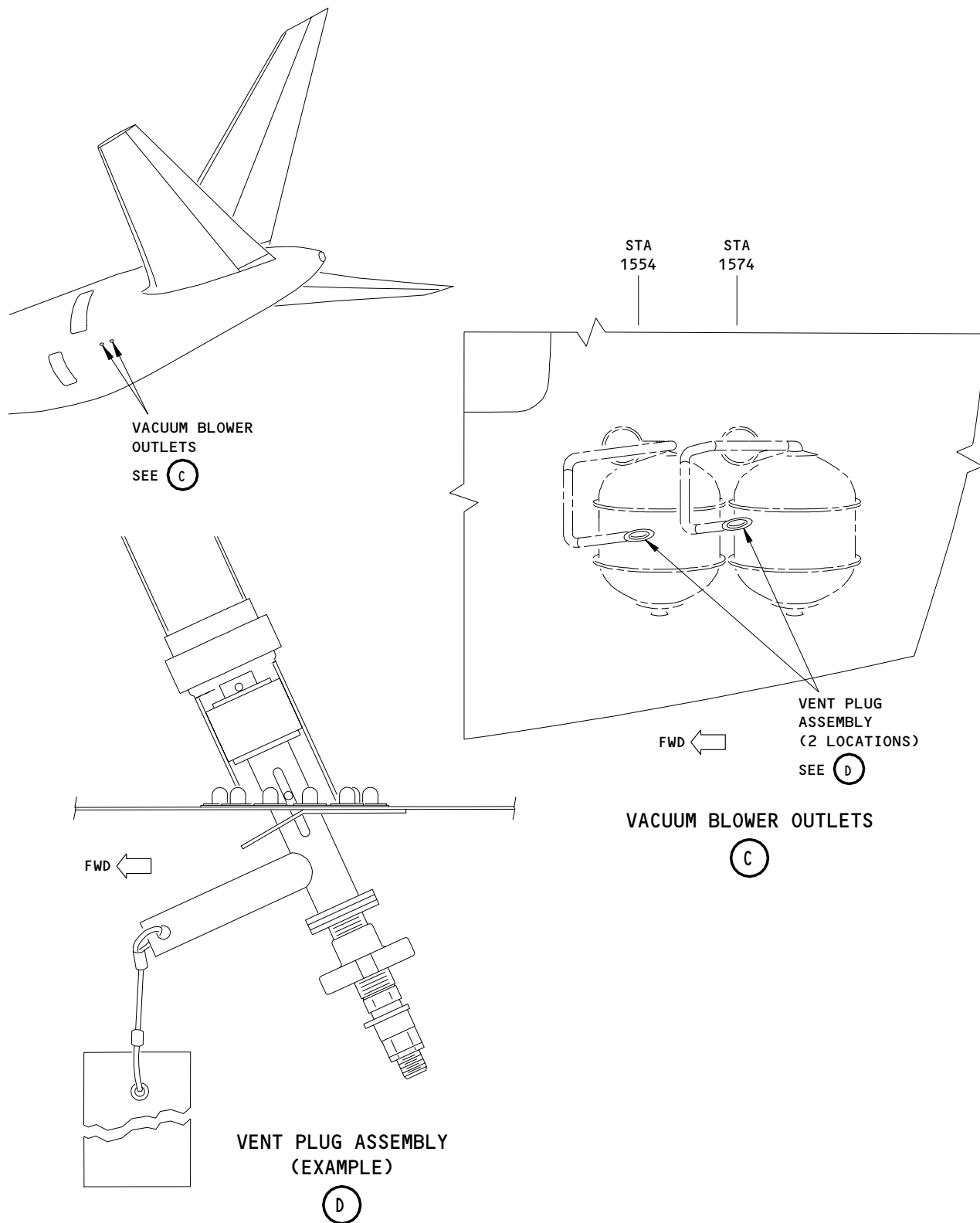
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Vacuum System - Leak Test  
Figure 502 (Sheet 2)

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- (3) AMM 52-49-00/001, External Service Door
- D. Access
  - (1) Location Zones
    - 163 Area Below Bulk Cargo Compartment (Left)
    - 165 Area Aft of Bulk Cargo Compartment (Left)
  - (2) Access Panel
    - 163AL Waste Tank Service Panel
- E. Vacuum Leak Test for the Toilet Waste System (Fig. 502)

S 015-012

- (1) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 485-429

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (2) Prepare for the test:
  - (a) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
  - (b) Isolate the forward waste tank's vacuum blower from the vacuum waste system as follows:
    - 1) Disconnect the vacuum line leading from the waste tank to the vacuum blower.
    - 2) Put a plug in the line from the tank.
    - 3) Disconnect the vacuum line leading from the vacuum blower to external vent.

**NOTE:** This line must be located upstream of the "Y" connection between the blower and the external vent.

- 4) Put a plug in the line from the external vent.
- (c) Put the vent plug assembly tool in the external vent port of the waste tank.
- (d) Connect the vacuum source and the vacuum gage to the vent plug.
- (e) Find the lavatories that are shown on the LAV INOP FWD TANK switch-light on the aft attendant panel, P22.
- (f) Put approximately 1 gallon (4 liters) of water in the toilet bowl of each lavatory found in the step above.

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S 795-014

(3) Do the test:

- (a) Using the vacuum source supply a vacuum of  $18 \pm 1$  inches of HG (430-480 mm of Hg) to the toilet waste system.
- (b) Close the control valve for the vacuum supply.
- (c) Disconnect the vacuum source.

NOTE: Keep the control valve attached to the vent plug.

- (d) Make sure the vacuum in the toilet waste system does not decrease more than 15 inches of Hg (380mm of Hg) in five minutes.
- (e) Open the control valve to let air into the toilet waste system.
- (f) Remove the vent plug assembly tool from the external vent port.
- (g) Remove the plug in the line leading from the waste tank to the vacuum blower.
- (h) Connect the vacuum blower connection to the waste tank.
- (i) Remove the plug in the line leading from the external vent connection to the vacuum blower.
- (j) Connect the vacuum blower connection to the external vent connection.

S 795-015

(4) Do the Inward Leakage Test for the Toilet Waste System again. This time do it for the aft waste tank and the lavatories shown on the LAV INOP AFT TANK switch-light on the aft attendant panel.

S 085-016

- (5) Do these steps to put the airplane back to its usual condition:
- (a) Install the aft bulkhead lining for the bulk cargo compartment (AMM 25-52-01/401).
  - (b) Close the bulk cargo door, 811 (AMM 52-36-00/001).

F. Leak Test for the Waste Tank Rinse System and Functional Test for the Waste Tank Drain System

S 015-017

- (1) Open the door for the waste tank service panel, 163AL (AMM 52-49-00/001).

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S 795-001

- (2) Leak test for the rinse system on the forward waste tank.
  - (a) Make sure the handle for the drain valve is pushed in.
  - (b) Connect the flush line of the toilet service cart to the flush connection for the forward waste tank.
  - (c) Fill the forward waste tank with water (30-50 psig (205-345 kPa) (with a maximum of 80 psig (550 kPa)), for not more than 1 minute.
  - (d) Make sure there is no leakage at any of the hose connections.
  - (e) Make sure the drain line for the forward waste tank does not have a leak.
  - (f) Open the cap on the waste drain connection and make sure the drain valve does not have a leak.

S 795-018

- (3) Do the leak test for the rinse system again; but do it for the aft waste tank.

S 725-002

- (4) Functional test for the waste tank drain system
  - (a) Connect the drain hose of the toilet service cart to the waste drain connection.
  - (b) Connect a spring scale to the drain valve handle.
  - (c) Pull on the spring scale to open the drain valve. Make sure the force required to open the drain valve does not exceed 75 pounds (330 Newtons).
  - (d) Disconnect the toilet service cart from the waste drain connection after the two waste tanks have drained.
  - (e) Look in the drain line to make sure the two drain valves are open.
  - (f) Push the drain valve handle up to close the two drain valves.
  - (g) Make sure the two drain valves are fully closed.
  - (h) Close the cap for the waste drain connection.
  - (i) Close the door for the waste tank service panel.

TASK 38-32-00-795-333

3. Waste Tank Rinse Line, Drain Line, Drain Valve and Drain Cap  
Outward Leakage Test (Fig. 501)

A. Equipment

- (1) Toilet Waste Service Cart (service cart)

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B. References

- (1) AMM 12-17-01/301, Waste Tank
- (2) AMM 52-36-00/001, Bulk Cargo Door
- (3) AMM 52-49-00/001, External Service Door
- (4) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Linings

C. Access

- (1) Location Zone
  - 163 Area Below Bulk Cargo Compartment (Left)
  - 165 Area Aft of Bulk Cargo Compartment, (Right)

- (2) Access Panel

- 163AL Waste Tank Service Panel

D. Prepare for the Test

S 865-371

- (1) OPEN these circuit breakers and then attach the DO-NOT-CLOSE tag:
  - (a) On the overhead panel, P11,
    - 1) 11R8, FLUSH CONT LAV SYS 1
    - 2) 11R35, FLUSH CONT LAV SYS 2
  - (b) On the APU external power panel, P34,
    - 1) 34N10, FLUSH CONT LAV SYS 1
    - 2) 34N11, FLUSH CONT LAV SYS 2

S 615-372

**WARNING:** MAKE SURE THAT YOU WEAR CLOTHING AND EQUIPMENT THAT PROTECTS YOU FROM THE TOILET WASTE THAT CAN COME FROM THE SERVICE PANEL. A FAILURE OF THE DRAIN CAP CAN CAUSE THE CONTAMINATED WATER TO FLOW UNEXPECTEDLY FROM THE SERVICE PANEL.

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (2) Drain and rinse the waste system (AMM 12-17-01/301).

S 865-334

- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 015-373

- (4) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

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E. Waste Tank Rinse Line, Drain Line and Drain Valve Outward Leakage Test

**NOTE:** This test gives the steps for one waste tank. Do the steps again for the other waste tank. When these tests have been completed, do the test for leakage from the cap for the waste drain outlet.

S 015-374

- (1) Open the door to the service panel for the waste system, 163AL (AMM 52-49-00/001).

S 215-376

- (2) Make sure that the drain valve handle is in the closed position.

S 215-379

- (3) Make sure the cap for the waste drain outlet is closed.

**NOTE:** Make sure the expandable plug is installed if it is applicable.

S 485-380

- (4) Connect the water hose from the service cart to the applicable flush connection on the service panel.

S 865-382

- (5) Use the pump on the service cart to put 50 gallons (200 liters) of water into the waste tank.

**NOTE:** Use rinse water at a recommended 30-50 psig (205-345 kPa) with a maximum of 80 psig (550 kPa).

**NOTE:** Keep the water in the waste tank to do the test for leakage around the cap of the waste drain outlet.

S 795-384

- (6) Make sure there are no leaks at the hose connections in the flush line to the waste tank.

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S 795-386

- (7) Make sure that the connection for the drain line from the waste tank does not have a leak.

NOTE: You must wait for not less than 30 minutes after you put the water in the tank before you do this step.

S 865-432

- (8) Open the cap (and expandable plug, if applicable) at the waste drain outlet.

S 795-390

- (9) Make sure there was no leakage at the drain outlet when you opened the cap.

NOTE: The leakage at the waste drain outlet indicates the drain valve has a leak.

S 445-428

- (10) AIRPLANES WITH PRECHARGE SHUTOFF VALVE;  
To close the precharge shutoff valve, do this task:  
Reactivate the Precharge Shutoff Valve, AMM 38-32-00/201.

F. Drain Cap Outward Leakage Test

NOTE: The cap for the waste drain outlet is referred to as the drain cap in this procedure. The drain cap is on the service panel.

S 865-392

- (1) Close the drain cap (and install the expandable plug, if applicable).

S 865-394

- (2) Pull the drain valve handle to the open position.

S 795-396

- (3) After 30 minutes, make sure there is no leakage from the drain cap.

S 795-397

- (4) Make sure there is no leakage from the drain cap at the waste drain outlet.

NOTE: The leakage from the drain cap indicates the seal on the drain cap is damaged.

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- S 865-399
- (5) Remove the DO-NOT-CLOSE tag and CLOSE the following circuit breakers:
- (a) On the overhead panel, P11,
    - 1) 11R8, FLUSH CONT LAV SYS 1
    - 2) 11R35, FLUSH CONT LAV SYS 2
  - (b) On the APU external power panel, P34,
    - 1) 34N10, FLUSH CONT LAV SYS 1
    - 2) 34N11, FLUSH CONT LAV SYS 2
- G. Put the Airplane to Its Usual Condition.

- S 085-400
- (1) Disconnect the waste drain hose from the waste drain fitting.

- S 615-335
- (2) Drain and service the waste system (AMM 12-17-01/301).

- S 415-404
- (3) Install the aft bulkhead lining for the bulk cargo compartment (AMM 25-52-01/401).

- S 415-407
- (4) Close the bulk cargo door.

- S 865-337
- (5) Push the drain valve handle to close the drain valves.

- S 415-338
- (6) Close the door on the waste tank service panel.

TASK 38-32-00-715-125

4. Operational Test of the Door Position Switches on the Waste Tank Service Panel (Fig. 501)

A. General

- (1) Use this procedure to make sure the door position switches on the waste tank service panel operate correctly. The door position switches do not let the toilets operate when the door for the waste tank service panel is open.

**NOTE:** The door position switches are not adjustable. The bracket gives the necessary position without adjustment.

B. References

- (1) AMM 24-22-00/201, Manual Control

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- (2) AMM 52-36-00/001, Bulk Cargo Door
- (3) AMM 52-49-00/001, External Service Door

C. Access

- (1) Location Zones
  - 165 Area Aft of Bulk Cargo Compartment (Left)
  - 200 Upper Half of Fuselage

D. Prepare for the Test

S 865-126

- (1) Supply electrical power (AMM 24-22-00/201).

E. Do the Test on the Door Position Switches

S 015-430

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 015-131

- (2) Disconnect the quick-disconnect fasteners and remove the aft bulkhead lining from the bulk cargo compartment.

S 715-132

- (3) Make sure the test switch on the two logic modules (for the waste tank level sensors) are in the OFF position.

S 715-133

- (4) Make sure the TANK FULL indicators on the two logic modules are off.

S 715-134

- (5) Operate the flush switch in one of the lavatories shown on the LAV INOP AFT TANK switch-light on the aft attendant panel, P22. Make sure the vacuum blower for the aft waste tank operates.

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- S 715-135
- (6) Operate the flush switch in one of the lavatories shown on the LAV INOP FWD TANK switch-light on the aft attendant panel, P22. Make sure the vacuum blower for the forward waste tank operates.
- S 715-136
- (7) Open the door for the waste tank service panel, 163AL (AMM 52-49-00/001).
- S 715-137
- (8) Operate the flush switch in each lavatory. Stop for a minimum of 15 seconds between each flush switch operation. Make sure the two vacuum blowers do not operate.
- F. Put the Airplane Back to its Usual Condition
- S 415-138
- (1) Install the aft bulkhead lining in the bulk cargo compartment and latch the quick-disconnect fasteners.
- S 415-139
- (2) Close the bulk cargo door.
- S 415-140
- (3) Close the door for the waste tank service panel, 163AL (AMM 52-49-00/001).
- S 415-141
- (4) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-00-725-142

5. Operational Test of the Toilet Flush Cycle (Fig. 503)

- A. General
- (1) Use this procedure to make sure toilet flush operation is correct.
- B. References
- (1) AMM 12-17-01/301, Waste Tank - Servicing
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 38-10-00/201, Potable Water System - Maintenance Practices
- C. Access
- (1) Location Zone
- 200 Upper Half of Fuselage

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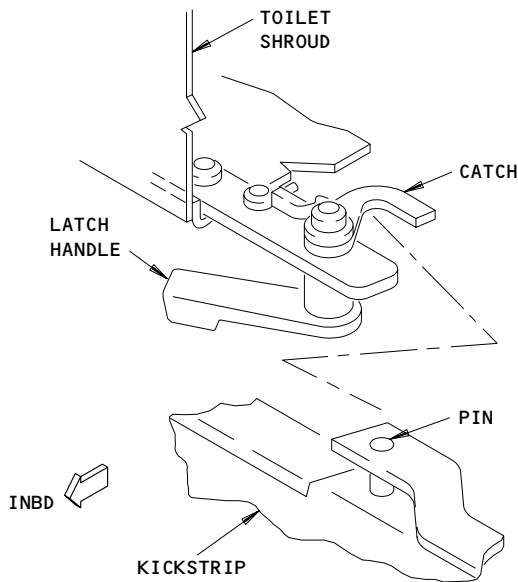
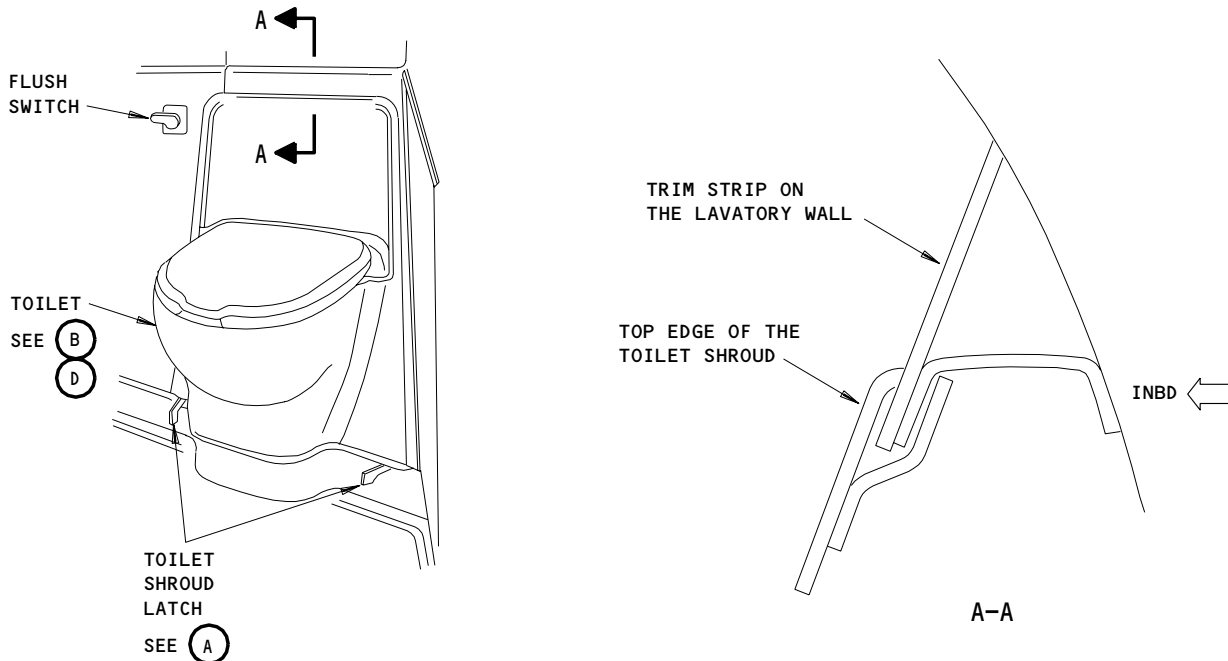
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TOILET SHROUD LATCH

(A)

Toilet Components Test  
Figure 503 (Sheet 1)

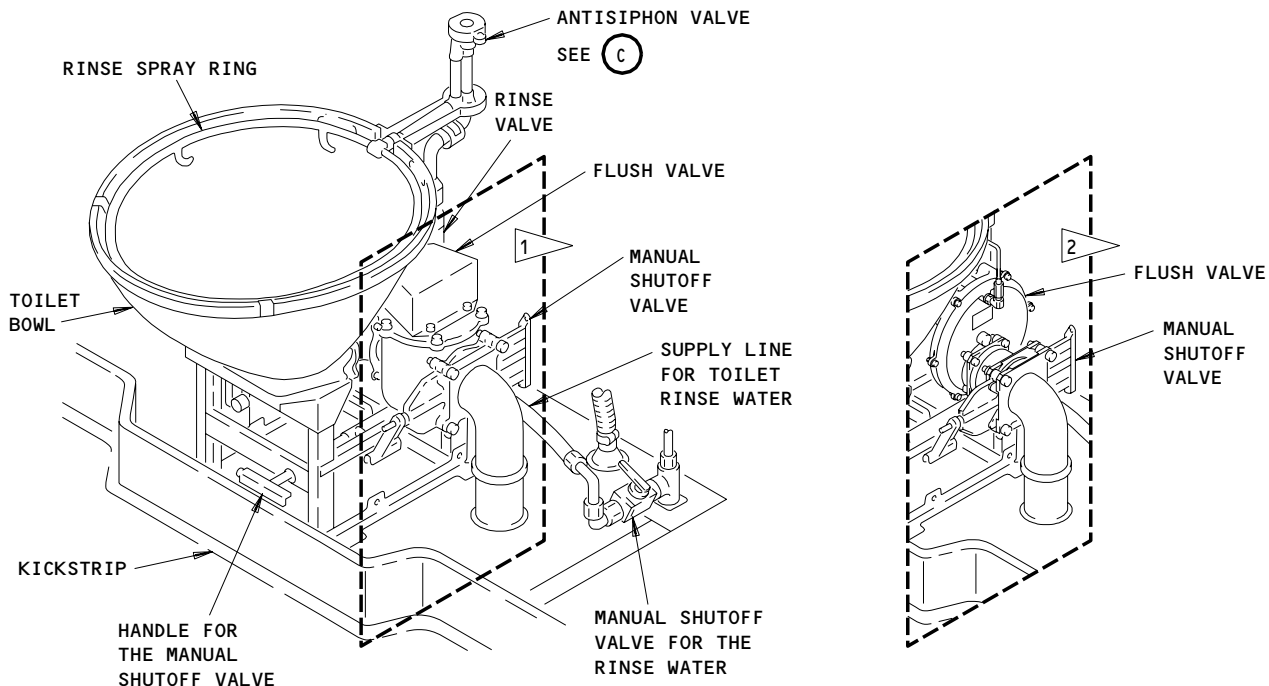
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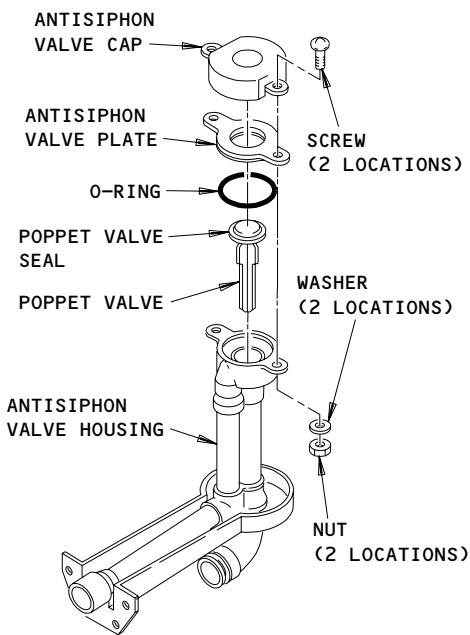
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MONOGRAM TOILET

(B)



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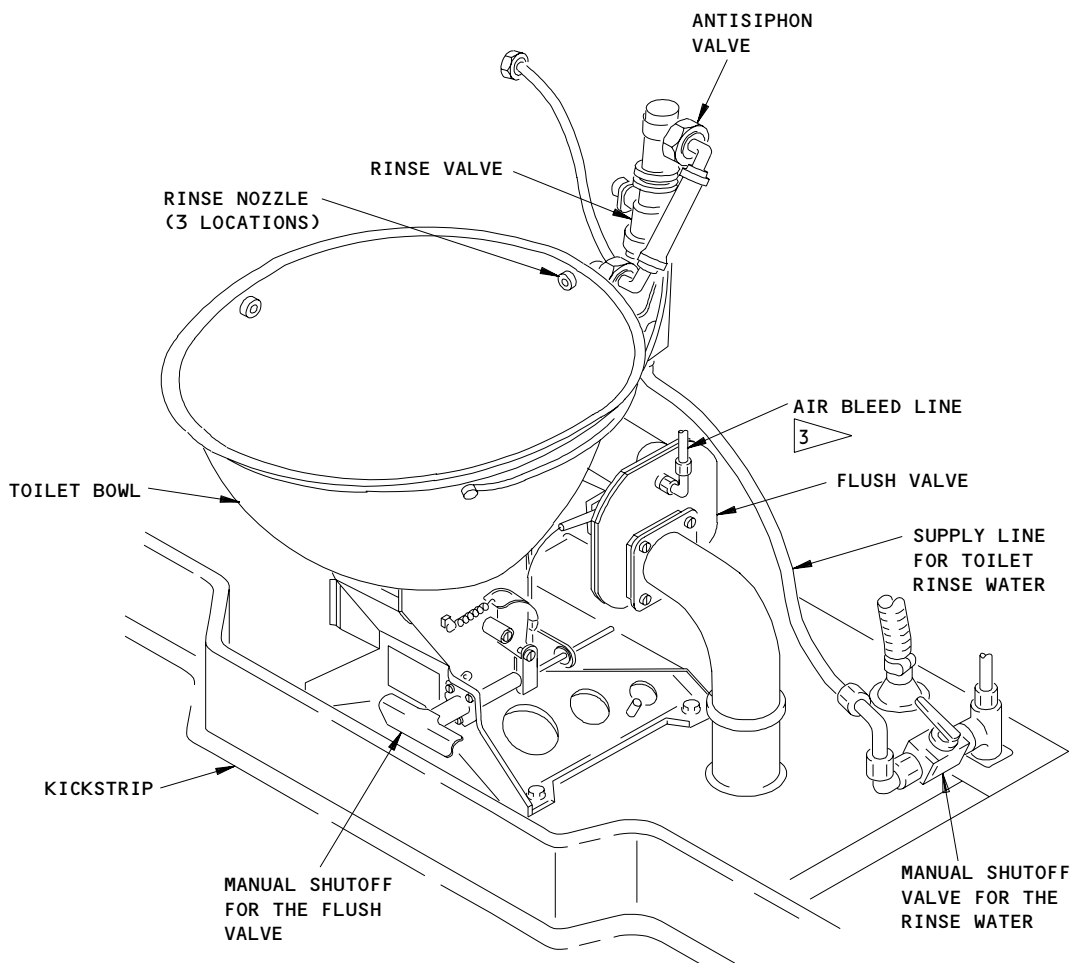
(C)

- 1 PINCH TUBE FLUSH VALVE
- 2 ORBITAL FLUSH VALVE

Toilet Components Test  
Figure 503 (Sheet 2)

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AIRPLANES WITH MONOGRAM TOILETS

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ENVIROVAC TOILET



3 NOT ON ALL TOILETS

Toilet Components Test  
Figure 503 (Sheet 3)

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AIRPLANES WITH ENVIROVAC TOILETS

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D. Prepare for the Test

S 865-143

- (1) Supply electrical power (AMM 24-22-00/201).

S 865-144

- (2) Pressurize the potable water system (AMM 38-10-00/201).

E. Do the Operational Test

S 015-145

- (1) Turn the toilet shroud latches (at the bottom of the toilet shroud) to open the toilet shroud.

S 015-003

- (2) Carefully remove the toilet shroud as follows:
  - (a) Pull out the bottom edge of the toilet shroud.
  - (b) Move the toilet shroud down until the top edge is disengaged from the trim strip on the lavatory wall.

S 795-146

- (3) Make sure there is no water leakage around the toilet.

S 725-147

- (4) Operate the flush switch.

S 725-148

- (5) Make sure the vacuum blower operates immediately.

S 725-149

- (6) Make sure that water flows from all the rinse nozzles in the spray ring. Make sure that water does not come out of the toilet bowl as a mist.

S 725-150

- (7) Make sure the flush valve opens to let the toilet bowl to empty and then closes.

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S 725-151

- (8) Make sure the vacuum blower operates for approximately 15 seconds (after the flush switch was operated) and then stops.

S 725-175

- (9) Put the manual shutoff handle for the rinse water supply valve to the closed position (Fig. 503).

S 865-444

- (10) Put the manual shutoff handle for the flush valve to the closed position (Fig. 503).

S 795-176

- (11) After 5 minutes make sure there are no leaks around the toilet bowl.

S 725-177

- (12) Operate the flush switch.

S 725-178

- (13) Make sure the vacuum blower operates immediately.

S 725-179

- (14) Make sure that no rinse water goes into the toilet bowl and that the flush valve does not open.

**NOTE:** A partially open valve will cause air noise at the toilet when any toilet on the system is activated.

S 725-180

- (15) Make sure the vacuum blower operates for approximately 15 seconds (after the flush switch was operated) and then stops.

F. Put the Airplane Back to its Usual Condition.

S 445-181

- (1) Put the manual shutoff handle for the rinse water supply valve to the OPEN position (Fig. 503).

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- S 445-445
- (2) Put the manual shutoff handle for the flush valve to the OPEN position (Fig. 503).
- S 415-004
- (3) Carefully put the toilet shroud onto the toilet assembly as follows:
  - (a) Engage the top edge of the toilet shroud with the trim strip of the lavatory wall.
  - (b) Push the bottom of the toilet shroud in.
- S 415-205
- (4) Turn the toilet shroud latches to close the toilet shroud.
- S 615-206
- (5) Do the Waste Tank Servicing procedure (AMM 12-17-01/301).
- S 865-207
- (6) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-00-725-210

6. Operation Test of the Anti-Siphon Valve (Fig 503)

A. References

- (1) AMM 24-22-00/201, Control (Supply Power)

B. Prepare for the Test

S 765-435

- (1) Supply electrical power (AMM 24-22-00/201).

C. AIRPLANES WITH ENVIROVAC TOILETS;

Operational Test for the Anti-Siphon Valve:

S 015-236

- (1) Turn the toilet shroud latches (at the bottom of the toilet shroud) to open the toilet shroud.

S 015-009

- (2) Carefully remove the toilet shroud as follows:
  - (a) Pull out the bottom edge of the toilet shroud.
  - (b) Move the toilet shroud down until the top edge is disengaged from the trim strip on the lavatory wall.

S 045-237

- (3) Close the manual shut-off valve for the rinse water.

S 015-238

- (4) Disconnect the rinse water hose from the rinse valve outlet.

S 725-239

- (5) Make sure the top of the anti-siphon valve poppet can be seen through the rinse valve outlet.

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- S 415-240  
(6) Connect the rinse water hose to the rinse valve outlet.
- S 445-241  
(7) Open the manual shutoff valve for the rinse water.
- S 725-242  
(8) Operate the toilet flush switch.
- S 725-243  
(9) Make sure that rinse water comes into the toilet bowl through the rinse nozzles.
- S 795-244  
(10) Make sure there are no leaks of water at the rinse valve outlet or at the anti-siphon valve cap.
- S 415-010  
(11) Carefully put the toilet shroud onto the toilet assembly as follows:  
(a) Engage the top edge of the toilet shroud with the trim strip of the lavatory wall.  
(b) Push the bottom of the toilet shroud in.
- S 415-245  
(12) Turn the toilet shroud latches to close the toilet shroud.
- S 725-246  
(13) Do the operational test for the anti-siphon for all of the other ENVIROVAC toilets on the airplane.
- D. Put the Airplane Back to Its Usual Condition
- S 865-247  
(1) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-00-705-443

7. Operational Test of the Flush Valve

- A. General  
(1) Use this procedure to make sure the flush valves operate correctly.  
The flush valves open and close to drain water from the toilet bowl.
- B. References  
(1) AMM 38-10-00/201, Potable Water System - Maintenance Practices
- C. Access  
(1) Location Zone  
200 Upper Half of Fuselage
- D. Prepare for the Test
- S 865-437  
(1) Supply electrical power (AMM 24-22-00/201).

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S 865-438

(2) Pressurize the potable water system (AMM 38-10-00/201).

E. Do the Operational Test of the Flush Valve

S 865-440

(1) Fill the toilet bowl, on which the flush valve is tested, with water.

S 715-441

(2) Operate the flush switch on another toilet connected to the same vacuum waste line.

(a) Make sure the vacuum blower operates immediately.

(b) Make sure the vacuum blower stops after approximately 15 seconds.

(c) Make sure the water, in the toilet you are testing, does not drain or make noise.

NOTE: Leaking of water into the vacuum system or hearing noises from the flush valve indicates that the flush valve is stuck open or does not close properly. Disable all the toilets on the vacuum waste system and replace the flush valve.

S 725-442

(3) Repeat this test for every toilet to make sure the drain valves close properly.

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VACUUM WASTE SYSTEM – CLEANING/PAINTING

1. General

- A. This procedure gives the instructions to clean the vacuum waste tubes. Use this procedure to decrease the scale that collects in the vacuum waste tubes.
- B. One or more of these tasks may be used as required to keep the waste lines clean. Which task(s) are used and their frequency of application should be based on local conditions and operator experience.
- C. If there is excessive or quickly reoccurring scale buildup, check the operation of the toilet flush valves and make sure the valves are closing completely. A partially open valve can cause a drying effect in the tubes increasing the scale accumulation. A partially open valve will cause air noise at the toilet when anytoilet on the system is activated.
- D. This procedure contains these tasks:
  - (1) Periodic Flush Procedure
  - (2) Pressure Washer Cleaning of the Vacuum Waste Lines
  - (3) Pressure Test (used before the Soak or Recirculate Methods to make sure that the waste lines will not leak)
  - (4) Soak Method of Cleaning the Vacuum Waste Lines
  - (5) Recirculate Method of Cleaning the Vacuum Waste Lines
  - (6) Off-Aircraft Soak Procedure for Cleaning the Vacuum Waste Lines

TASK 38-32-00-177-050

2. Periodic Flush Procedure

- A. Consumable Materials
  - (1) Crushed Ice, (approximately 1/2-inch to 3/4-inch maximum or 1.5 cm to 2.0 cm maximum)
  - (2) Toilet System Cleaners:
    - (a) B00638 – Honey Bee Cleaner 60 (Method I, Recommended)
    - (b) B50113 – Acetic Acid (10%/100 grain)      JAN-A-465  
Commercial Grade  
(Method 1, Optional)
    - (c) B50091 – Glycolic Acid (Gly-Vak)  
(Method II)
- B. References
  - (1) AMM 12-17-01/301, Waste Tanks
  - (2) AMM 24-22-00/201, Manual Control
  - (3) AMM 38-10-00/201, Potable Water System
- C. Access
  - (1) Location Zone  
200      Upper Half of Fuselage
- D. Prepare for the Flush Procedure.
  - S 867-003
  - (1) Supply electrical power (AMM 24-22-00/201).
  - S 617-002
  - (2) Do the procedure for the waste tank servicing (AMM 12-17-01/301).

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S 047-169

- (3) AIRPLANES WITH PRECHARGE SHUTOFF VALVE;  
To hold open the precharge shutoff valve, do this task:  
Deactivate the Precharge Shutoff Valve, AMM 38-32-00/201.

S 177-078

- (4) Add 20 gallons (75 liters) of water to each waste tank.

S 867-004

- (5) Pressurize the potable water system (AMM 38-10-00/201).

E. Procedure

**NOTE:** Use one of the following methods to periodically clean the waste lines.

S 117-005

- (1) Method I (Crushed Ice and Acid)  
Do these steps for each toilet in the airplane, one toilet at a time, if you are using the Honey Bee 60 Cleaner, or the Acetic Acid (B50113).

**CAUTION:** DO NOT USE ICE CUBES AS AN ALTERNATIVE TO CRUSHED ICE. ICE CUBES CAN CAUSE DAMAGE TO THE LEVEL SENSORS IN THE WASTE TANK.

- (a) Add approximately one-half gallon (2 liters) of crushed ice to the toilet bowl.

**WARNING:** DO NOT GET THE TOILET SYSTEM CLEANER IN YOUR EYES OR ON YOUR SKIN. IF YOU DO, FLUSH YOUR EYES OR SKIN WITH WATER AND GET MEDICAL AID. IF YOU DRINK THE TOILET SYSTEM CLEANER, GET MEDICAL AID. THE TOILET SYSTEM CLEANER IS AN ACID AND CAN BURN YOU.

**CAUTION:** DO NOT GET THE TOILET SYSTEM CLEANER ON THE STRUCTURE OF THE AIRPLANE. THE TOILET SYSTEM CLEANER IS AN ACID AND CAN CAUSE DAMAGE TO THE AIRPLANE.

**CAUTION:** FLUSH THE TOILET IMMEDIATELY AFTER YOU ADD THE TOILET SYSTEM CLEANER TO THE TOILET BOWL. THE TOILET SYSTEM CLEANER IS AN ACID AND CAN CAUSE DAMAGE TO THE TOILET IF IT STAYS IN THE TOILET.

- (b) Add approximately one-half gallon (2 liters) of toilet system cleaner to the toilet bowl. Flush the toilet to put the toilet system cleaner into the waste line.

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(c) Flush the toilet with approximately 1.0 gal. (4 liters) of fresh water to remove the toilet system cleaner from the toilet bowl.

S 117-193

(2) Method II (Chemical Without Crushed Ice)

Do these steps for each toilet in the airplane, one toilet at a time, if you are using the Glycolic Acid cleaner, B50091 (Gly-Vak).

**WARNING:** DO NOT GET THE TOILET SYSTEM CLEANER IN YOUR EYES OR ON YOUR SKIN. IF YOU DO, FLUSH YOUR EYES OR SKIN WITH LARGE AMOUNTS OF WATER. IF YOU DRINK THE TOILET SYSTEM CLEANER, GET MEDICAL AID. THE TOILET SYSTEM CLEANER IS AN ACID AND CAN BURN YOU.

**CAUTION:** DO NOT GET THE TOILET SYSTEM CLEANER ON THE STRUCTURE OF THE AIRPLANE. THE TOILET SYSTEM CLEANER IS AN ACID AND CAN CAUSE DAMAGE TO THE AIRPLANE.

**CAUTION:** FLUSH THE TOILET IMMEDIATELY AFTER YOU ADD THE TOILET SYSTEM CLEANER TO THE TOILET BOWL. THE TOILET SYSTEM CLEANER IS AN ACID AND CAN CAUSE DAMAGE TO THE TOILET IF IT STAYS IN THE TOILET BOWL.

(a) Add approximately 1 quart (946 CC) of the vacuum toilet line cleaner, B50091 (Gly-Vak cleaner), to the toilet bowl.

**NOTE:** The quantity of cleaner necessary to clean a vacuum toilet line changes with the length and condition of the line. The material manufacturer recommends one quart (946 cc). Operator experience shows that 1 quart is sufficient for short vacuum toilet lines, but more is necessary for longer vacuum toilet lines. The frequency of waste line cleaning and the quantity of B50091 vacuum toilet line cleaner necessary is established by the operator.

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- (b) Flush the toilet to put the toilet system cleaner into the waste line.
- (c) Flush the toilet with approximately 1.0 gal. (4 liters) of fresh water to remove the toilet system cleaner from the toilet bowl.
- (d) Let the toilet system cleaner stay in the waste lines as long as practical.

F. Return the Airplane to its usual condition.

S 447-170

- (1) AIRPLANES WITH PRECHARGE SHUTOFF VALVE;  
To close the precharge shutoff valve, do this task:  
Reactivate the Precharge Shutoff Valve, AMM 38-32-00/201.

S 617-006

- (2) Do the procedure for the waste tank servicing (AMM 12-17-01/301).

S 867-007

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-00-147-064

3. Pressure Washer Cleaning of the Vacuum Waste Lines (Fig. 701)

A. General

- (1) To clean the vacuum waste lines with the pressure washer, you must get access at one of these locations:
  - (a) In the lavatory with the toilet assembly removed when you do not open the toilet flush valve.
  - (b) At one of the cleanout ports in the forward cargo compartment with which the removal of the bulkhead lining panel is necessary.
  - (c) In the lavatory, with the toilet flush valve open. When you use this procedure, the bends of the pressure washer hose will be more than the other procedures.

B. References

- (1) AMM 12-17-01/301, Waste Tank Servicing
- (2) AMM 24-22-00/201, Manual Control

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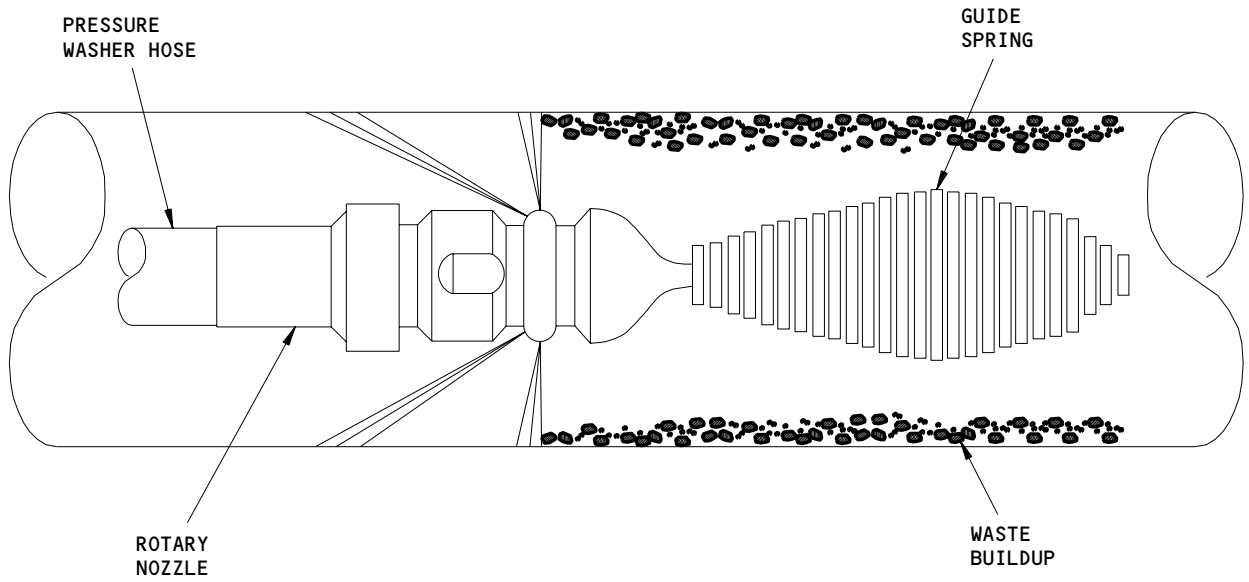
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Pressure Washer Cleaning  
Figure 701

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G25069

- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall
- (4) AMM 38-32-00/501, Vacuum Waste System
- (5) AMM 38-32-00/201, Vacuum Waste System
- (6) AMM 38-32-01/401, Vacuum Toilet Assembly
- (7) AMM 38-32-08/201, Waste System Tubing

C. Equipment

- (1) Equipment - Pressure Washer, Electric or Diesel Drive, 1500 psig to 2500 psig with Adjustable Output Pressure (commercially available)
- (2) Glasses - Safety (commercially available)
- (3) Gloves - Rubber, Elbow Length (commercially available)
- (4) Guide Spring - Nozzle, for 3/8 Inch I.D. Nozzle (commercially available)
- (5) Hose - Pressure Washer, 3/8 Inch I.D. 50 to 150 Foot Length (commercially available)
- (6) Mask - Face (commercially available)
- (7) Nozzle - Rotating, for 3/8 Inch I.D. Hose (Self-Feeding Rotating Nozzle is Recommended) (commercially available)
- (8) Tubing - Flexible, 1.5 Inch (40 mm) Outside Diameter, Length as needed (commercially available)

D. Consumable Materials

- (1) G02315 - Clothing, Disposable gown, gloves for sewage handling
- (2) G00022 - Purogene (Chlorine dioxide, stabilized 2%)
- (3) B00637 - Citric Acid (crystals or powder)

E. Access

- (1) Location Zones  
200 Upper Half of Fuselage

F. Prepare for Cleaning

S 017-010

- (1) Get access to the passenger compartment.

S 017-011

- (2) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

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S 917-012

- (3) For the work on the waste equipment, make sure you wear these items for your protection.

NOTE: These are items that you can wear to give you protection when it is necessary.

- (a) Elbow length gloves
- (b) Face mask
- (c) Safety glasses
- (d) Disposable clothing, disposable gown, gloves for sewage handling

S 617-013

- (4) Do this task: Waste Tank Servicing (AMM 12-17-01/301).

NOTE: After 5 minutes, drain the precharge from the waste tank.

S 867-014

- (5) Start this procedure at a toilet which is upstream of the vacuum waste line to be cleaned.

NOTE: Areas upstream of the bends have the most waste material build-up on the waste tube walls. For the primary layout of the vacuum waste lines, see this reference, (AMM 38-32-08/201).

S 617-029

- (6) If the toilet is full of waste, do these steps to remove the waste in the toilet bowl, if a waste system is serviceable:
- (a) Install a length of 1.5 inch (40 mm) diameter flexible tubing from a serviceable toilet to the blocked toilet.

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- (b) Flush the serviceable toilet to drain the toilet bowl of the blocked toilet.
- (c) Make sure the toilet bowl is empty.
- (d) If the toilet bowl is not empty, flush the serviceable toilet again.
- (e) When the toilet bowl is empty, remove the flexible tubing.

S 167-015

- (7) Use one to three gallons of the disinfectant that follows:

**NOTE:** The disinfectant mixture will be a solution of chlorine dioxide.

- (a) Flush the waste line with a disinfectant solution mixture made of chlorine dioxide (stabilized 2%) and citric acid (crystals or powder) as follows:

**WARNING:** DO NOT BREATHE THE CHLORINE DIOXIDE GAS. USE ADEQUATE VENTILATION. WHEN THE TWO CHEMICALS ARE MIXED, A SMALL AMOUNT OF CHLORINE DIOXIDE GAS CAN BE PRODUCED WHICH CAN CAUSE INJURY TO PERSONS IF THEY BREATHE THE GAS.

- 1) For each gallon (4 liters) of final solution desired, mix 20 fluid ounces (0.6 liter) of chlorine dioxide with 2 ounces (57 grams) of citric acid in a plastic container.
- 2) Stop for 5 minutes (activation period).
- 3) Use a clean instrument to mix the solution fully.
- 4) Add water to make the desired quantity of solution (from the step above).
- 5) Flush the disinfectant solution into the waste line.

S 017-016

- (8) To get access to the waste lines, do one of these steps:
  - (a) To remove the toilet from the lavatory, do this task: Vacuum Toilet Assembly Removal (AMM 38-32-01/401).

**NOTE:** The toilet assembly removal is necessary to do this procedure from the passenger compartment when you do not open the toilet flush valve.

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- (b) To get access and then remove the cap for the cleanout port, do the steps that follow:

NOTE: The removal of the bulkhead lining panel for the forward cargo compartment is necessary to do this procedure.

- 1) Do this task: Station 740 End Wall Removal (AMM 25-52-01/401).
  - 2) Remove the cap on the cleanout port.
- (c) Monogram Toilets; to open the flush valve of the toilet, do this task: Toilet Flush Valve - Open for Maintenance (AMM 38-32-00/201).

NOTE: If you open the flush valve, it is not necessary to do the toilet assembly removal. When you use this procedure, the bends of the pressure washer hose will be more than the other procedures.

S 867-017

- (9) Do this task: Supply Electrical Power (AMM 24-22-00/201)

S 937-018

- (10) Make a mark on the pressure washer hose at approximately 4 feet from the rotating nozzle and nozzle guide spring.

NOTE: This location is for the removal of the pressure washer hose from the waste tube to keep the pressurized water out of the work area.

#### G. Waste Line Cleaning

S 177-019

- (1) Put the pressure washer hose, rotating nozzle and nozzle guide spring of the pressure washer equipment approximately 4 feet (1.5 meters) into the waste line.

NOTE: The distance necessary for the nozzle to be put into the waste tube can be different for different manufacturers nozzles. The distance given is to make sure that no pressurized water goes into the work area during this operation.

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S 177-020

**CAUTION:** DO NOT USE A PRESSURE OF MORE THAN 2500 PSIG (17,250 kPa) WHEN YOU OPERATE THE PRESSURE WASHER EQUIPMENT. MORE THAN 2500 PSIG (17,250 kPa) CAN CAUSE DAMAGE TO THE WASTE SYSTEM EQUIPMENT.

**CAUTION:** HOT WATER TEMPERATURE MUST NOT EXCEED 120 DEGREES FAHRENHEIT (49 DEGREES CELCIUS) MAXIMUM. TEMPERATURES HIGHER THAN 120 DEGREES FAHRENHEIT (49 DEGREES CELCIUS) CAN CAUSE DAMAGE TO THE WASTE SYSTEM EQUIPMENT.

- (2) Do the steps to operate the pressure washer equipment as follows:
- (a) One person must operate the pressure washer equipment at the area you use to get access.
  - (b) A second person is necessary at a different toilet in the same waste system to flush that toilet one time every 45 to 75 seconds.

**NOTE:** It is necessary to flush a toilet to operate the vacuum blower to move the fluids to the waste tank. When the waste tank is full, the waste system automatically stops. You must stop the pressure washer to prevent a more than full condition.

- (c) If the movement of the pressure washer hose is not easy, put a small quantity of non-foaming dish soap on the hose.

**NOTE:** This is to lubricate the pressure washer hose in the waste line.

- (d) Turn on the water.

**NOTE:** If it is available, use hot water.

- (e) Turn on the pressure washer equipment.
- (f) Slowly put the pressure washer hose of the pressure washer equipment into the waste line in approximately 2 feet (0.5 meter) increments.
- (g) Move the hose forward and then back, 3 or 4 times for the maximum effect in each of the 2 feet (0.5 meter) sections.

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- (h) When you put all the hose into the waste line or the nozzle is at the waste tank, remove the hose.

NOTE: Clean the hose while you remove it to prevent contamination of the work area in the airplane.

- (i) When the mark on the pressure washer hose is in the work area, turn the water off.
- (j) Remove the pressure washer hose, nozzle and nozzle guide spring.

S 177-021

- (3) Stop the operation of the vacuum blower.

S 177-022

- (4) Do this cleaning procedure again if it is necessary.

S 177-023

- (5) Clean the work area.

#### H. Put the Airplane Back to Its Usual Condition

S 417-024

- (1) Do one of these steps to close the access:
  - (a) If you removed the toilet from the lavatory, do this task: Vacuum Toilet Assembly Installation (AMM 38-32-01/401).
  - (b) If you removed a cap on the cleanout port, reinstall the cap and do this task: Station 740 End wall Installation (AMM 25-52-01/401).
  - (c) Monogram Toilets; if you opened the flush valve of the toilet, push the flush switch in the lavatory to close the flush valve.

S 617-025

- (2) Do this task: Waste Tank Servicing (AMM 12-17-01/301).

S 617-026

- (3) Do this task: Leak Test for the Toilet Waste System (AMM 38-32-00/501)

S 417-027

- (4) Close the access to the passenger compartment.

S 867-028

- (5) If electrical power is not necessary, do this task: Remove Electrical Power (AMM 24-22-00/201).

TASK 38-32-00-787-164

#### 4. Pressure Test Procedure (Fig. 702)

##### A. General

- (1) This procedure is used before the Soaking or Recirculating procedure to make sure that the waste lines will not leak.

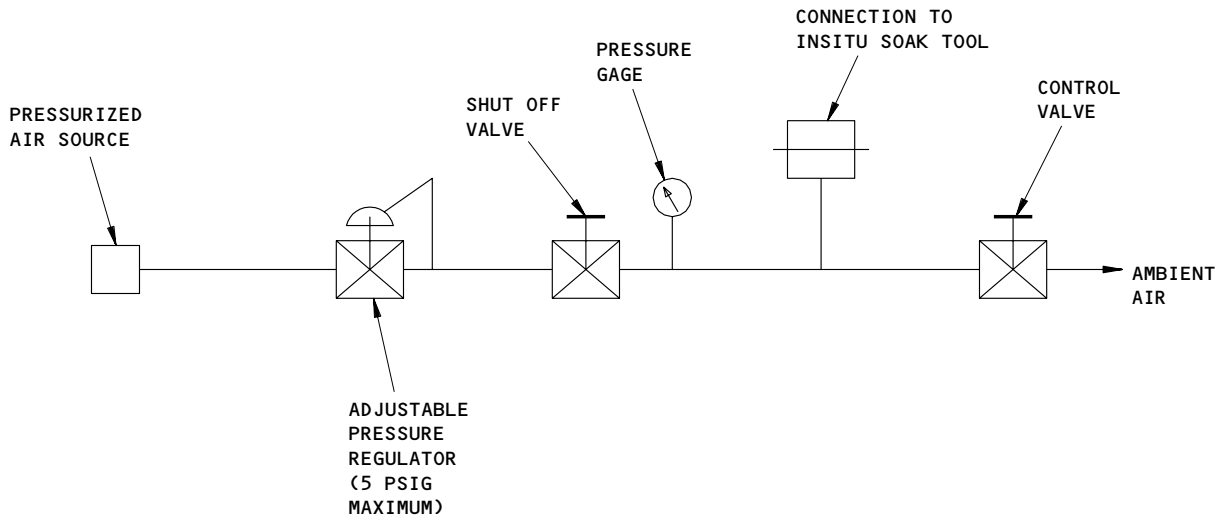
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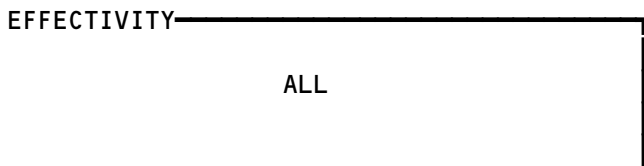
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Pressure Test  
Figure 702



**38-32-00**



B. References

- (1) AMM 12-17-01/301, Toilet Tank
- (2) AMM 38-32-00/201, Toilet Waste System

C. Equipment

- (1) A38012-1 Pump Equipment - Vacuum Lavatory System
- (2) Air Source - Dry Filtered, Regulated , 0-50 psig (0-350 kPa)

D. Access

- (1) Location Zones
  - 200 Upper Half of Fuselage (Passenger Compartment)
  - 165 Area Aft of Bulk Cargo Compartment (Right or Left)
- (2) Access Panel
  - 811 Bulk Cargo Door

E. Prepare for Pressurization

S 017-165

- (1) Get access to the passenger compartment.

S 917-166

- (2) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 617-167

- (3) Do this task: Waste Tank Servicing (AMM 12-17-01/301).

NOTE: After 5 minutes, drain the precharge from the waste tank.

S 787-168

- (4) Do a pressure decay check for each waste line to be cleaned as follows:
  - (a) In the farthest upstream lavatory of the waste line install a Flush Plug Assembly (17) and an Air Pressure Assembly (16).
  - (b) If you want to test more than one line at the same time, install a Flush Plug Assembly (17) in the furthest upstream lavatory of another waste line and connect the lavatories with the Jumper Hose (20). Additional Jumper Hoses must be added when the distance between lavatories exceeds ten feet.

NOTE: Make sure the valves on the Flush Plug and Jumper Hose are open.

- (c) In the end of the waste line in each lavatory between the most upstream toilet and the waste tank, install a Plug (with a bleed valve).
- (d) Install the Drain Valve Assembly (3) at the end of the waste tube inlet where the section of tubing has been removed.

NOTE: Make sure the valve is in the closed position.

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- (e) Connect the pressurization equipment to the Air Pressure Assembly (16) in the lavatory.
- (f) Pressurize the waste line system to 5 to 10 psi (35 to 70 kPa) and then turn off the air pressure source.
- (g) Stop for 5 minutes.
- (h) If the pressure has degraded more than 0.5 psi (3.5 kPa) over the 5 minutes, the system can not safely be cleaned.

NOTE: You must repair all leaks. When you repair the leak, then do this pressure test.

- (i) If the pressure has not degraded by more than 0.5 psi (3.5 kPa), the system is fluid tight.
- (j) Release the pressure from the waste system.
- (k) Disconnect the pressurization equipment, but keep the Air Pressure Assembly (16), the Plugs and the Flush Plugs in their positions.

TASK 38-32-00-117-065

5. Soak Method of Cleaning the Vacuum Waste Lines (Fig. 703)

A. General

- (1) This procedure gives the instructions to clean the vacuum waste tubes. Use this procedure to decrease the scale that collects in the vacuum waste tubes.
- (2) To clean the vacuum waste lines using the in situ soak method, you must get access at these locations:
  - (a) In the lavatory with the toilet assembly removed.
  - (b) At one of the waste tube inlets to the waste tank of the waste line to be cleaned, where removal of the bulkhead lining panel is necessary.

B. References

- (1) AMM 38-32-08/201, Vacuum Waste Tubing
- (2) AMM 12-17-01/301, Waste Tank Servicing
- (3) AMM 24-22-00/201, Manual Control
- (4) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (5) AMM 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
- (6) AMM 38-32-00/501, Vacuum Waste System
- (7) AMM 38-32-00/201, Vacuum Waste System
- (8) AMM 38-32-01/401, Vacuum Toilet Assembly

C. Equipment

- (1) A38012-1 - Soak Tool

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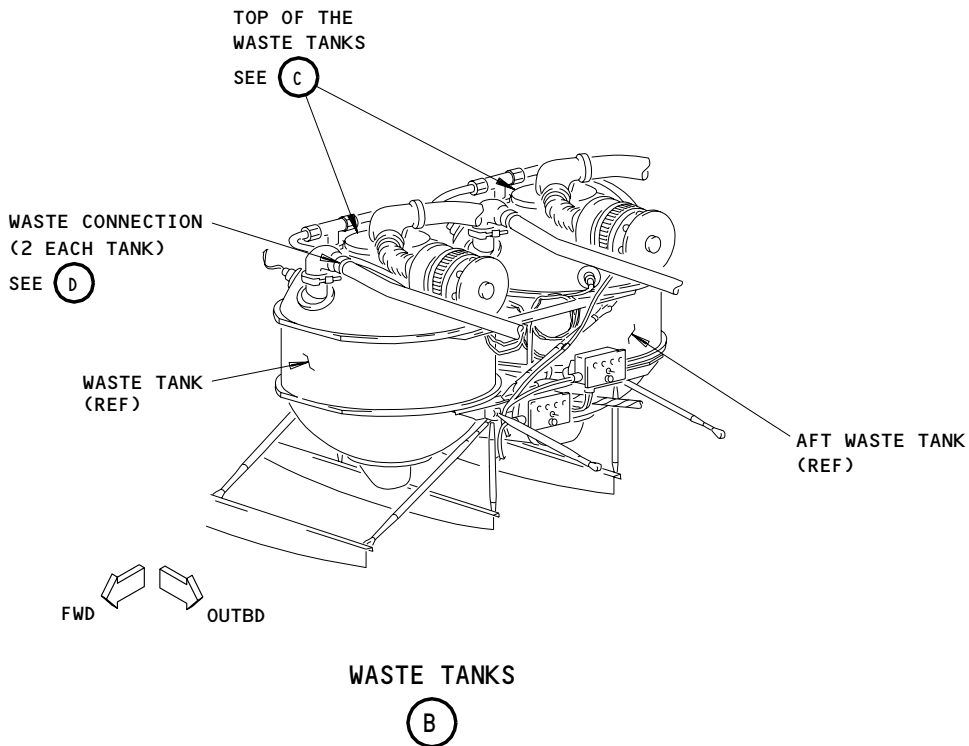
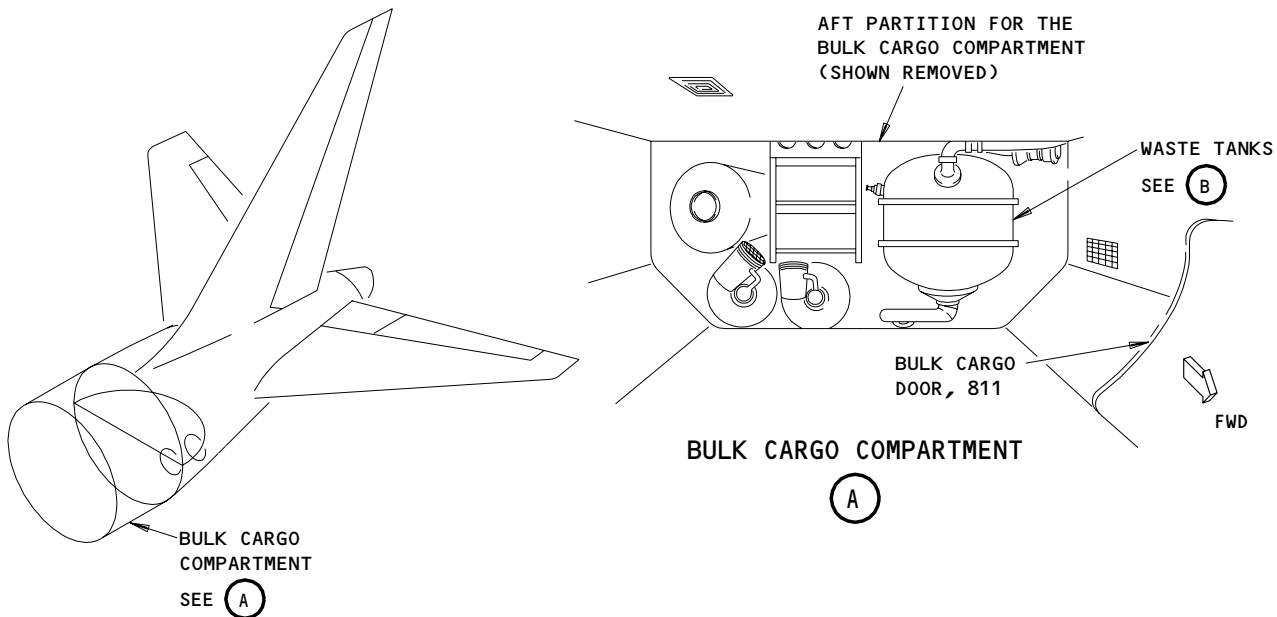
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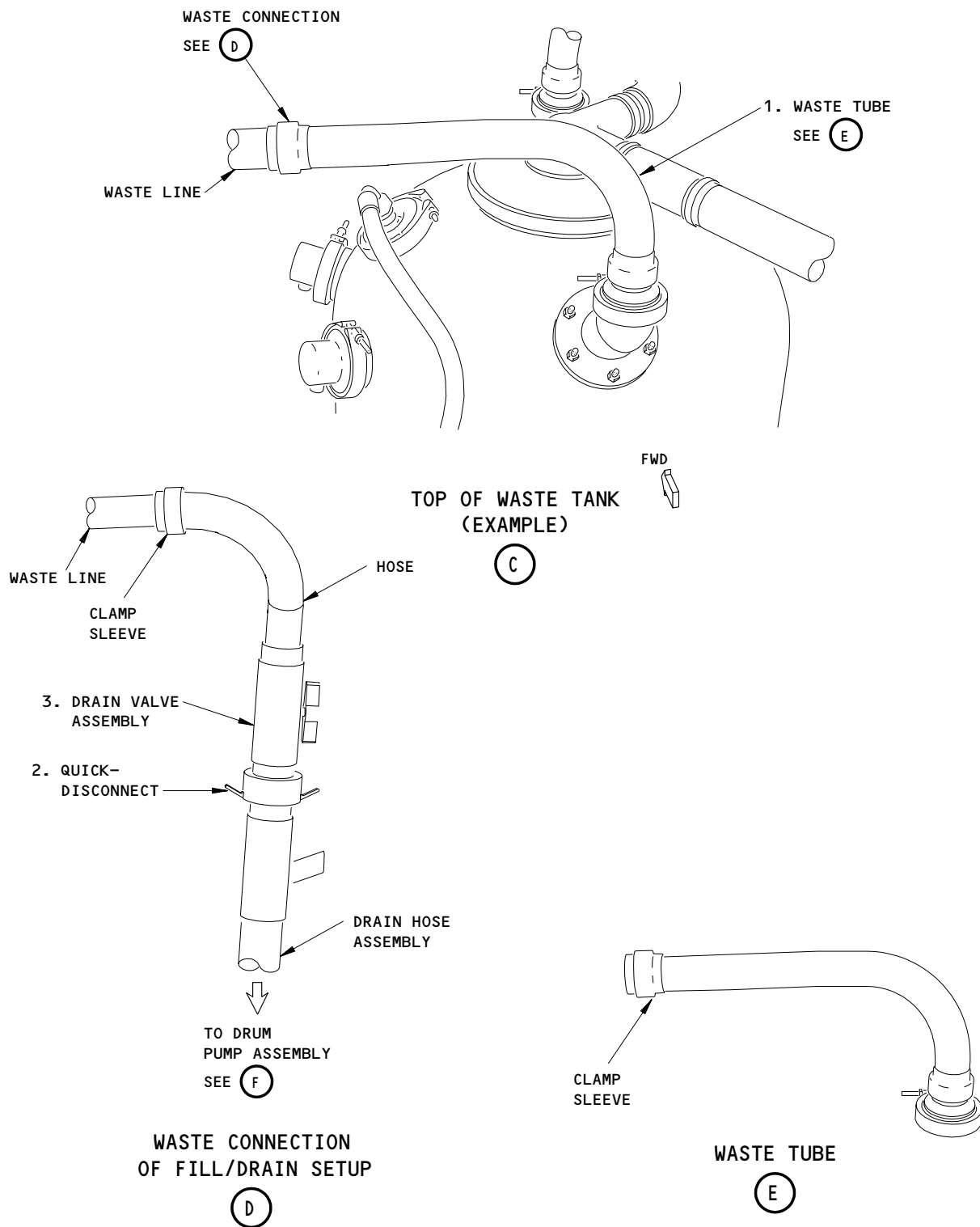
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MAINTENANCE MANUAL



Soak Waste Line Cleaning  
Figure 703 (Sheet 1)

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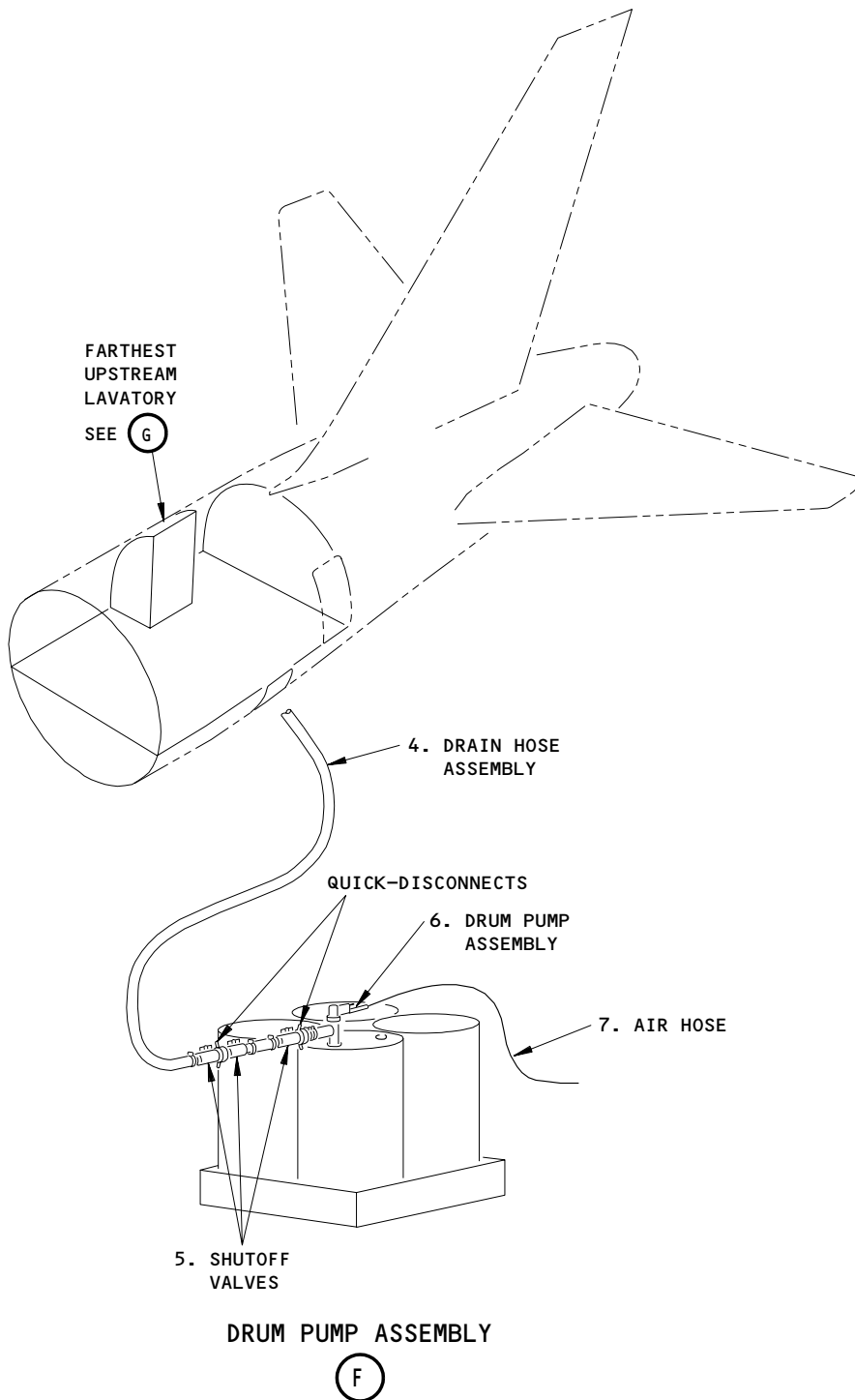
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Soak Waste Line Cleaning  
Figure 703 (Sheet 2)

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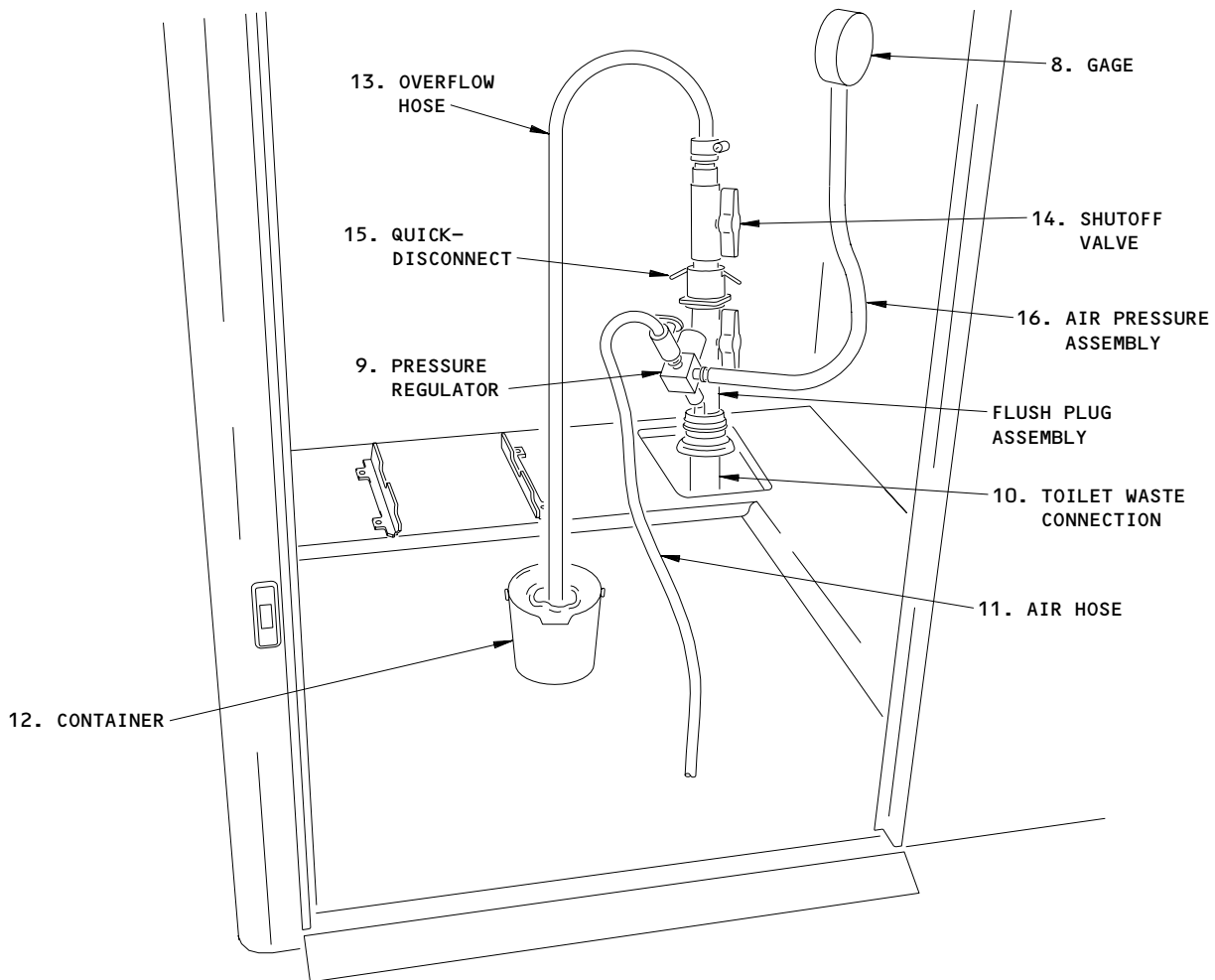
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Soak Waste Line Cleaning  
Figure 703 (Sheet 3)

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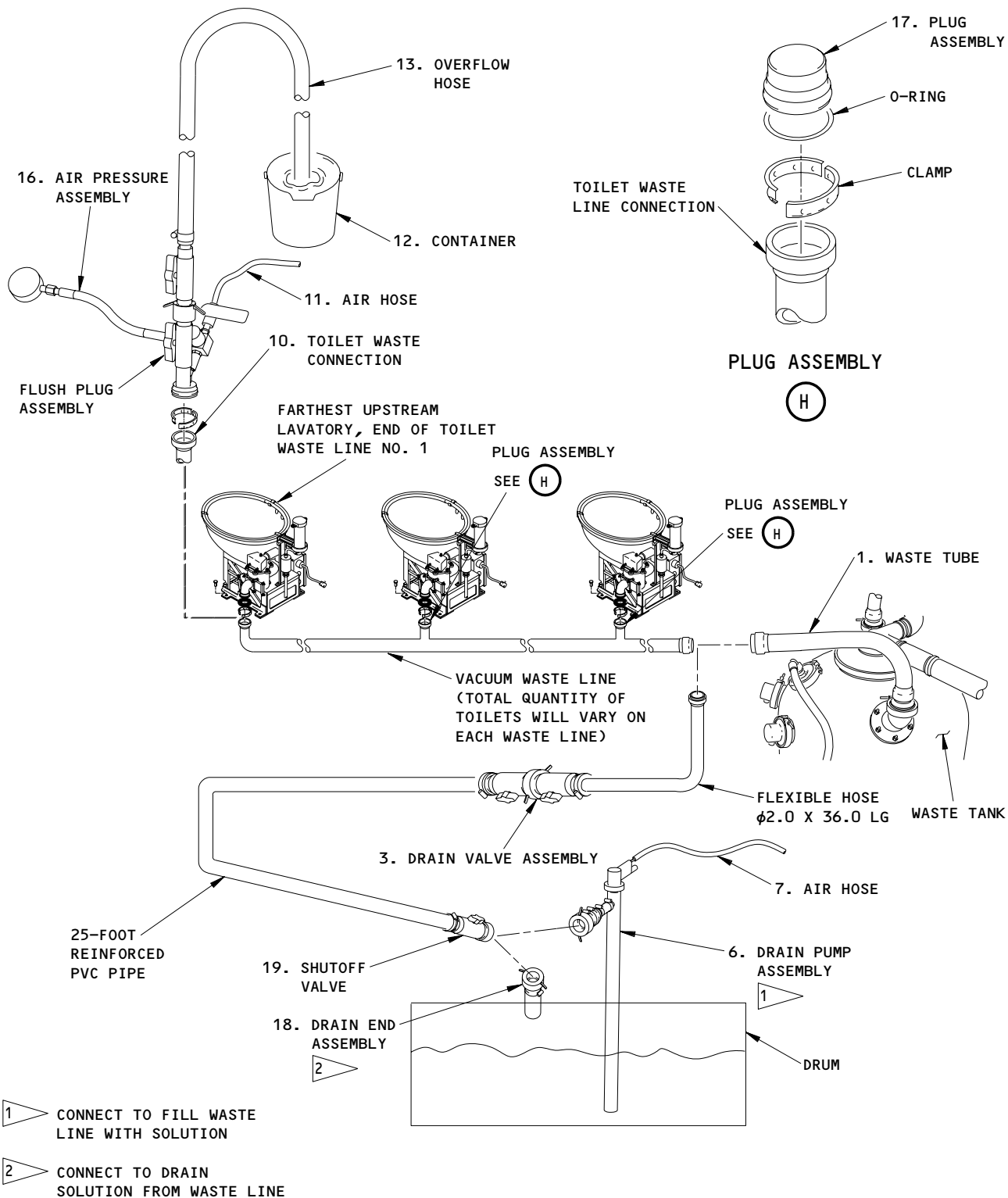
FARTHEST UPSTREAM LAVATORY  
(EXAMPLE)

(G)

Soak Waste Line Cleaning  
Figure 703 (Sheet 4)

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Soak Waste Line Cleaning  
Figure 703 (Sheet 5)

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- (2) Sleeve
- (3) Coupling - AS1655A32
- (4) Glasses - Safety  
(commercially available)
- (5) Gloves - Rubber, Elbow Length  
(commercially available)
- (6) Mask - Face  
(commercially available)
- (7) Containers - Solvent Resistant, Two to five gallons (7 to 20 liters), as required (commercially available)
- (8) Container - Hydraulic Fluid Resistant, Fifty gallons (200 liters), as required (commercially available)
- (9) Water Source - Cold, Regulated, 0-60 psig (0-400 kPa)
- (10) Air Source - Dry Filtered, Regulated, 0-50 psig (0-350 kPa)

D. Consumable Materials

- (1) G02315 - Clothing, Disposable gown, gloves for sewage handling
- (2) G00022 - Purogene (Chlorine dioxide, stabilized 2%)
- (3) B00637 - Citric Acid (crystals or powder)
- (4) B00638 - Honeybee 60, (McGean-Rohco)
- (5) B50113 - Acetic Acid (10%/100 grain)                      JAN-A-465  
Commercial Grade
- (6) B01021 - Dispoz-All Drain Cleaner (enzyme)
- (7) B01022 - Septic Cleaner (enzyme)
- (8) B00046 - 7% solution of Phosphoric Acid

E. Access

- (1) Location Zones
  - 165 Area Aft of Bulk Cargo Compartment (Left)
  - 200 Upper Half of Fuselage (Passenger Compartment)
  - 811 Bulk Cargo Door

F. Prepare for Cleaning

S 017-031

- (1) Get access to the passenger compartment.

S 017-032

- (2) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 917-033

- (3) For the work on the waste equipment, make sure you wear these items for your protection.

**NOTE:** These are items that you can wear to give you protection when it is necessary.

- (a) Elbow length gloves
- (b) Face mask
- (c) Safety glasses
- (d) Disposable clothing, disposable gown, gloves for sewage handling

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S 617-034

- (4) Do this task: Waste Tank Servicing (AMM 12-17-01/301).

NOTE: After 5 minutes, drain the precharge from the waste tank.

S 867-035

- (5) Start this procedure at the toilet that is farthest upstream of the vacuum waste line to be cleaned.

NOTE: Areas near the bends have the most waste material build-up on the waste tube walls. For the primary layout of the vacuum waste lines, see this reference, (AMM 38-32-08/201).

S 167-037

- (6) Use one to three gallons (4 to 12 liters) of the disinfectant that follows:

NOTE: The disinfectant mixture will be a solution of chlorine dioxide.

- (a) Flush the waste line with a disinfectant solution made of chlorine dioxide (stabilized 2%) and citric acid (crystals or powder), from the toilet farthest from the waste tank on the waste line being cleaned, as follows:

WARNING: DO NOT BREATHE THE CHLORINE DIOXIDE GAS. USE ADEQUATE VENTILATION. WHEN THE TWO CHEMICALS ARE MIXED, A SMALL AMOUNT OF CHLORINE DIOXIDE GAS CAN BE PRODUCED WHICH CAN CAUSE INJURY TO PERSONS IF THEY BREATHE THE GAS.

- 1) For each gallon (4 liters) of final solution desired, mix 20 fluid ounces (0.6 liter) of chlorine dioxide with 2 ounces (57 grams) of citric acid in a plastic container.
- 2) Stop for 5 minutes (activation period).
- 3) Use a clean instrument to mix the solution fully.
- 4) Add water to make the desired quantity of solution.
- 5) Flush the chemical solution into the waste line.

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- S 147-067
- (7) Do this task: Periodic Flush Procedure (AMM 38-32-00/701).
- S 177-068
- (8) Rinse the lines with approximately 1/2 gallon (2 liters) of water from the toilet farthest from the waste tank.
- S 867-077
- (9) Turn the water off to the toilet.
- S 687-070
- (10) Flush the toilet without water at least three times.
- S 867-066
- (11) Open these circuit breakers and install DO NOT CLOSE tags:
- (a) Left Miscellaneous Electrical Equipment Panel, P36
    - 1) 36F6 or 36G1, VACUUM BLOWER LAV SYSTEM 1 WATER/WASTE
  - (b) Right Miscellaneous Electrical Equipment Panel, P37
    - 1) 37G7, VACUUM BLOWER LAV SYSTEM 2 WATER/WASTE
  - (c) Overhead Panel, P11
    - 1) 11R8, LAV SYSTEM 1 FLUSH CONT
    - 2) 11R35, LAV SYSTEM 2 FLUSH CONT
- S 017-175

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (12) To get access to the waste lines, do these steps:
- (a) Remove the cargo liners as required to expose the waste tube inlet to the waste tank of the waste line to be cleaned, Containerized Cargo Compartment Sidewall Lining, (AMM 25-52-01/401), and/or Containerized Cargo Compartment Ceiling Lining, (AMM 25-52-02/401).
    - 1) Take off the clamps (and inner sleeves, if applicable) on both ends of the waste tube.
    - 2) Remove the waste tube from its installed position.

**NOTE:** Residual liquid may still be in the waste tubes. Be prepared to collect and dispose of any residual liquid.

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- 3) For all lavatories on the waste line to be cleaned, do this task: Vacuum Toilet Assembly Removal (AMM 38-32-01/401).

NOTE: The toilet assembly removal is necessary to attach tools for the pressure test and for the drain/flush equipment.

S 787-079

- (13) Do this task: Pressure Test Procedure (AMM 38-32-00/701).

G. Waste Line Cleaning

S 847-052

- (1) Prepare the chemical solution to soak the waste line with one of the chemical cleaners that follows:

NOTE: The quantity of the cleaner necessary for a waste line is 0.16 gallons for each linear foot (2.0 liters for each linear meter). Calculate the maximum quantity of the cleaner necessary for each line to prevent a spill when you fill the waste line.

- (a) cleaner, Honey Bee 60 (McGean-Rohco)
- (b) 5 to 10% Acetic acid, JAN-A-465
- (c) 7% Phosphoric Acid solution
- (d) Dispoz-All Drain Cleaner
- (e) Septic (enzyme) Cleaner

S 117-071

- (2) Do these steps to fill the waste line with the cleaner solution:
  - (a) Assemble the Static Soak Tool, A38012-1

NOTE: This procedure is used to clean only one waste line at a time.

- 1) At the most forward toilet, connect the assembly from the soak tool (A38012-1) that includes: The air guage (8), a quick disconnect (15), a shutoff valve (14) an overflow hose (13) and pressure regulator (9) to the toilet waste line connection (10).
- 2) Put the end of the overflow hose (13) in a 5 gallon, 20 liter solvent resistant container (12) to contain all possible flow of the cleaner solution into the work area in the airplane.

NOTE: If the connection between the tool and the waste line is Male-Male refer to: Waste System Tubing (AMM 38-32-08/201).

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- 3) Connect an air hose (11) to the brass nipple on the pressure regulator (9).
- 4) In each lavatory between the most forward toilet and the waste tank, install the waste line plug assembly (17).
- 5) In the Bulk Cargo Compartment, make sure that the first tube segment (1), of the waste line to be cleaned, is disconnected at the elbow on the top of the waste tank.
- 6) Connect the supply hose Quick-Disconnect (2), the Drain Valve Assembly (3), and the flexible hose to the waste line. Use the sleeve and coupling (AS1655A32), as necessary, to make the connection.
- 7) Connect the Drain Hose Assembly (4) with the shutoff (drain) valves (5) and quick-disconnects and connect to the Drum Pump Assembly (6).
- 8) Connect and Air Hose (7) to the air motor on the Drum Pump Assembly (6).
- 9) Put the pump in a 55 gallon, 200 liter Hydraulic Fluid resistant container full of the cleaner solution.

**CAUTION:** CHEMICALS WILL BE HARMFUL TO INTERIOR OF AIRCRAFT. A PERSON WITH SPILLAGE PREVENTION EQUIPMENT (RAGS, ETC) SHOULD HAVE ACCESS TO EACH LAVATORY CONNECTED TO THE EFFECTED SYSTEM DURING THIS SECTION OF THIS PROCEDURE TO MAKE SURE THAT THE CLEANING SOLUTION DOES NOT EXIT THE WASTE SYSTEM INTO THE LAVATORY.

- (b) If you spill any chemicals, do this task: Acid Spillage Condition (AMM 05-51-57/201).
- (c) Turn on the Drum Pump (6) to fill the waste line with the cleaning solution slowly, to prevent spillage in the lavatory modules.

**NOTE:** When you smell some of chemical solutions, they can cause persons to be offended while in the airplane. It can be necessary to supply temporary air removal equipment.

- (d) Fill the waste line until you see chemical solution in the Overflow Hose (13) at the farthest upstream lavatory.
- (e) Stop the Drum Pump that you use to fill the waste line.

**NOTE:** The level of the solution in the waste line can decrease and then adjust after a short time.

- (f) Slowly open the bleed valve in the Waste Line Plug (17) in each of the lavatories between the farthest upstream lavatory and the cargo compartment to bleed all the air out of the waste line.
- (g) Continue to fill the waste line until you see the chemical solution in the Overflow Hose (13) at the farthest upstream lavatory.

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- (h) Close the shutoff valve of the Drain Valve (3) on the waste line at the cargo compartment.
- (i) Close all of the bleed valves on the waste line plugs but open the valve at the farthest upstream lavatory.

NOTE: The farthest point upstream of the waste line must stay open to let all the gases come out of the line. The open valve will prevent pressurization and leakage of the system.

- (j) Make sure you put the Overflow Hose (13) in the farthest upstream lavatory into the solvent resistant container (5 gallon, 20 liter) to prevent leakage into the airplane.

NOTE: It is necessary to empty the container before the cleaner solution flows into the work area of the airplane.

- (k) Close the valve on the Drain Valve in the cargo compartment and then disconnect the supply hose.
- (l) To soak one of the other waste lines, do these steps:
  - 1) Connect the hose to a different Drain Valve on a different waste line.
  - 2) Connect the hose to the other waste line.

NOTE: If you use more than one set of tools, other waste lines can be soaked at the same time.

- 3) Use these steps to fill the other waste line(s).

S 117-061

CAUTION: CHEMICALS WILL BE HARMFUL TO INTERIOR OF AIRCRAFT. A PERSON WITH SPILLAGE PREVENTION EQUIPMENT (RAGS, ETC) SHOULD PERIODICALLY INSPECT ALL LAVATORIES OF THE AFFECTED SYSTEM DURING THE SOAKING PERIOD OF THIS PROCEDURE TO MAKE SURE THAT THE CLEANING SOLUTION DOES NOT EXIT THE WASTE SYSTEM INTO THE LAVATORY.

- (3) Let the cleaner solution stay in the waste line(s) for a minimum of 8 hours.

NOTE: To fully clean the waste line(s), more than 24 hours can be necessary to remove the heavy scale.

Gases are released during the chemical effect of the cleaner solution and the scale. Do a check of the overflow container at regular times to prevent flow of the cleaner solution in the airplane.

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H. Drain the Waste Line

S 847-054

- (1) Do these steps to prepare to drain the chemical solution from the system:
  - (a) Prepare to collect (for disposal) all of the chemical solution and water used to flush the system in the waste lines.
  - (b) Make sure you attach the drain hose to the waste line to be drained.
  - (c) Make sure you attach the Drain End Assembly (18) to the container, (50 gallons, 200 liter) to hold the used chemical solution.
  - (d) Open the Shutoff Valve on the Drain Valve Assembly (3) used to fill the waste line.
  - (e) Open the Shutoff Valve (19) in the hose at the container to drain the waste line.
  - (f) Open the Air Pressure Assembly valve installed in the farthest upstream lavatory to let the air into the waste line.
  - (g) To flush the waste line, do the steps that follow:
    - 1) Connect a water source (0-60 PSIG, 0-400 kPa) to the Air Pressure Assembly (16) in the farthest upstream lavatory.
    - 2) Flush the waste line with a minimum of 5 gallons (20 liters) of water for each toilet on the waste line.
    - 3) Connect an air source (0-50 psig, 0-350 kPa) to the Air Pressure Adapter.
    - 4) Dry the waste line with air flow (under 15 psi, 100 kPa) for approximately 5 minutes.
  - (h) Stop until the cleaning solution and flushing water is fully drained from the waste line.
  - (i) If it is necessary to drain other waste lines, do these steps again to drain waste lines.

S 417-046

- (2) Do these steps to remove the tools:
  - (a) In the farthest upstream lavatory, remove the Air Pressure Assembly (16).
  - (b) In each lavatory between the farthest upstream toilet and the waste tank, remove the Waste Line Plug (17).
  - (c) Do this task: Vacuum Toilet Assembly Installation (AMM 38-32-01/401).
  - (d) Remove the Drain Valve (3) at the connection near the waste tank.

**NOTE:** Remaining liquid can stay in the waste lines. Be prepared to collect and then discard all of the liquid.

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- (e) Make sure all solid material is out of the waste line before you connect the waste line to the waste tank.

NOTE: Remaining solid material in the waste line can cause blocked waste lines after you complete this procedure.

- (f) Put the waste tube in its installed position.
- (g) Connect the last tube section (1) to the waste tank inlet.

NOTE: Repeat this procedure for each line to be cleaned.

#### I. Put the Airplane Back to Its Usual Condition

##### S 867-072

- (1) Close these circuit breakers and remove DO NOT CLOSE tags:
  - (a) Left Miscellaneous Electrical Equipment Panel, P36
    - 1) 36F6 or 36G1, VACUUM BLOWER LAV SYSTEM 1 WATER/WASTE
  - (b) Right Miscellaneous Electrical Equipment Panel, P37
    - 1) 37G7, VACUUM BLOWER LAV SYSTEM 2 WATER/WASTE
  - (c) Overhead Panel, P11
    - 1) 11R8, LAV SYSTEM 1 FLUSH CONT
    - 2) 11R35, LAV SYSTEM 2 FLUSH CONT

##### S 177-049

- (2) To push other solid material out of the waste system, do one of these tasks: Periodic Flush Procedure, or Pressure Washer Cleaning of the Vacuum Waste Lines, or In Situ Soak Method of Cleaning the Vacuum Waste Lines (AMM 38-32-00/701).

##### S 617-074

- (3) Do this task: Waste Tank Servicing, (AMM 12-17-01/301).

##### S 797-075

- (4) Do this task: Leak Test for the Toilet Waste System (AMM 38-32-00/501).

##### S 417-049

- (5) Close the access to the passenger compartment.

##### S 417-076

- (6) Install the cargo liners that were removed to expose the waste tube inlet to the waste tank:
  - Containerized Cargo Compartment Sidewall Lining, (AMM 25-52-01/401), and/or
  - Containerized Cargo Compartment Ceiling Lining, (AMM 25-52-02/401).

##### S 417-052

- (7) Close the access to the cargo compartment.

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S 867-050

- (8) If electrical power is not necessary, do this task: Remove Electrical Power, (AMM 24-22-00/201).

S 557-053

- (9) Obey the local authorities to discard the chemical solution.

TASK 38-32-00-117-138

6. Recirculate Method of Cleaning the Vacuum Waste Lines (Fig. 704)

A. General

- (1) This procedure gives the instructions to clean the vacuum waste tubes. Use this procedure to decrease the scale that collects in the vacuum waste tubes.
- (2) One set of tools can connect two waste lines and will allow separate cleaning of the forward, mid, or aft toilet systems. Additional tool sets will allow the different toilet systems to be cleaned at the same time.
- (3) To clean the vacuum waste lines using the recirculating method, you must get access at these locations:
  - (a) In the lavatory with the toilet assembly removed.
  - (b) At the waste tube inlets to the waste tanks of the waste lines to be cleaned, where removal of the bulkhead lining panel is necessary.

B. References

- (1) AMM 12-17-01/301, Waste Tank Servicing
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
- (5) AMM 38-32-00/201, Vacuum Waste System
- (6) AMM 38-32-00/501, Vacuum Waste System
- (7) AMM 38-32-00/701, Periodic Flush Procedure
- (8) AMM 38-32-00/701, Pressure Test Procedure
- (9) AMM 38-32-01/401, Vacuum Assembly
- (10) AMM 38-32-08/201, Waste System Tubing

C. Equipment

- (1) A38012-18 Pump Equipment - Vacuum Lavatory System

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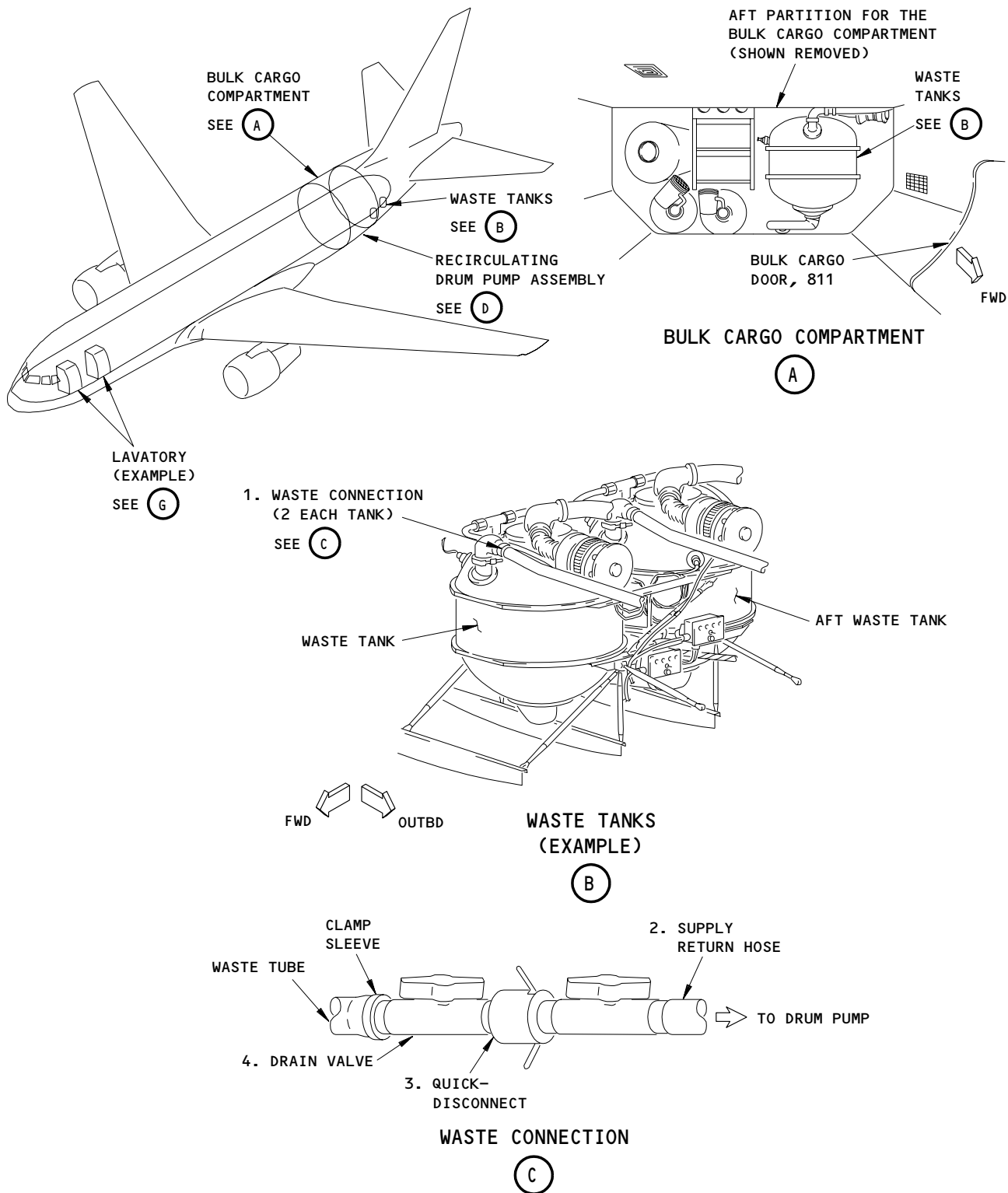
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# BOEING

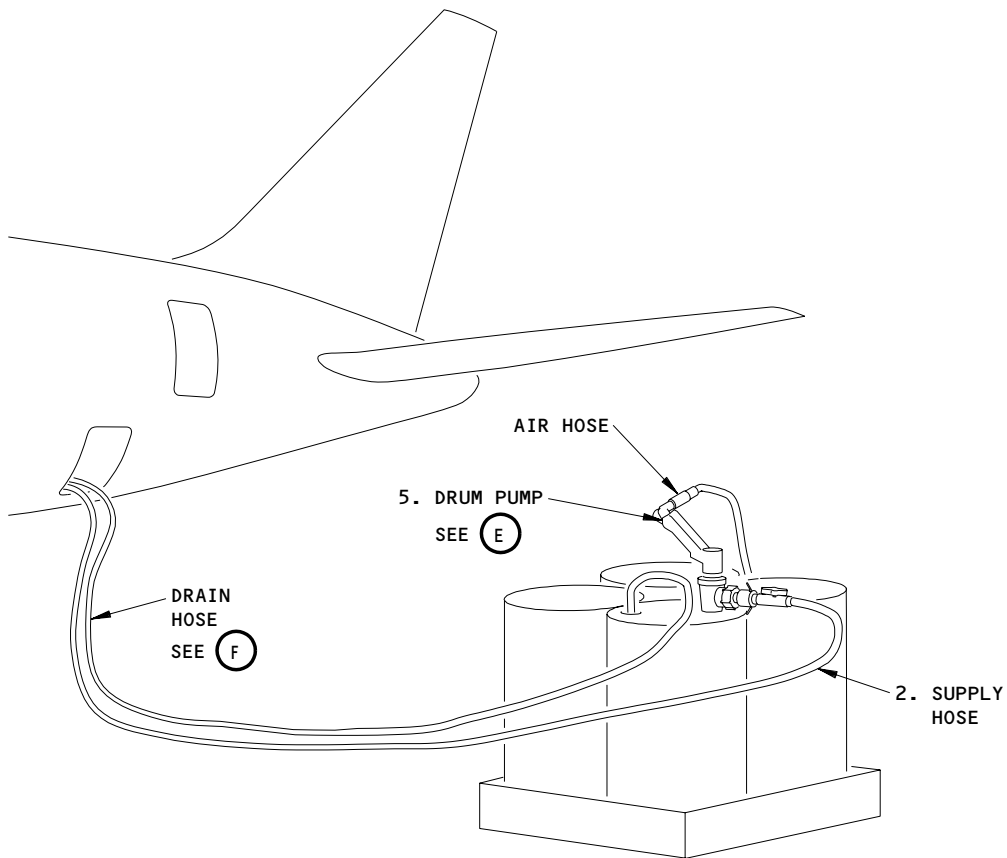
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Recirculating Line Cleaning  
Figure 704 (Sheet 1)

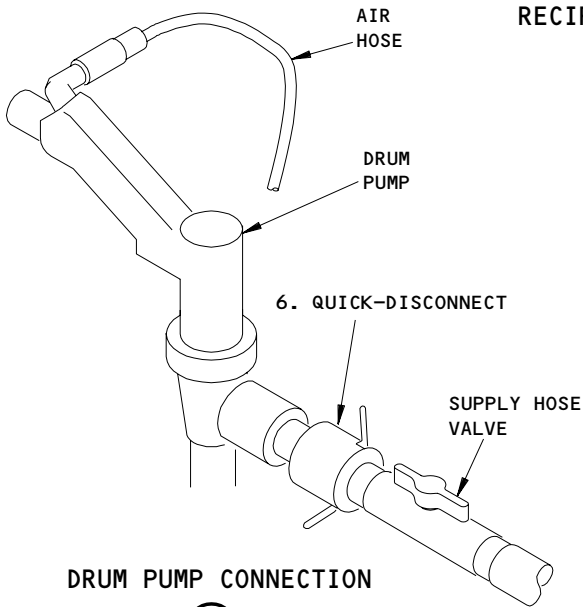
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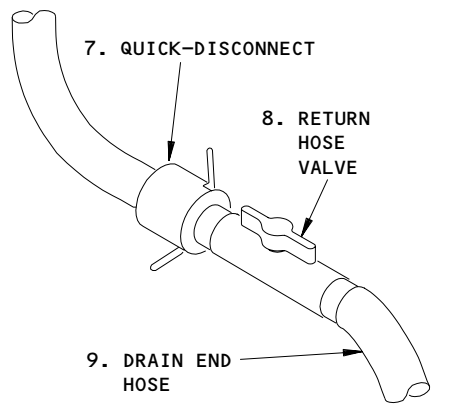
RECIRCULATING DRUM PUMP ASSEMBLY

(D)



DRUM PUMP CONNECTION

(E)



DRAIN HOSE CONNECTION

(F)

Recirculating Line Cleaning  
Figure 704 (Sheet 2)

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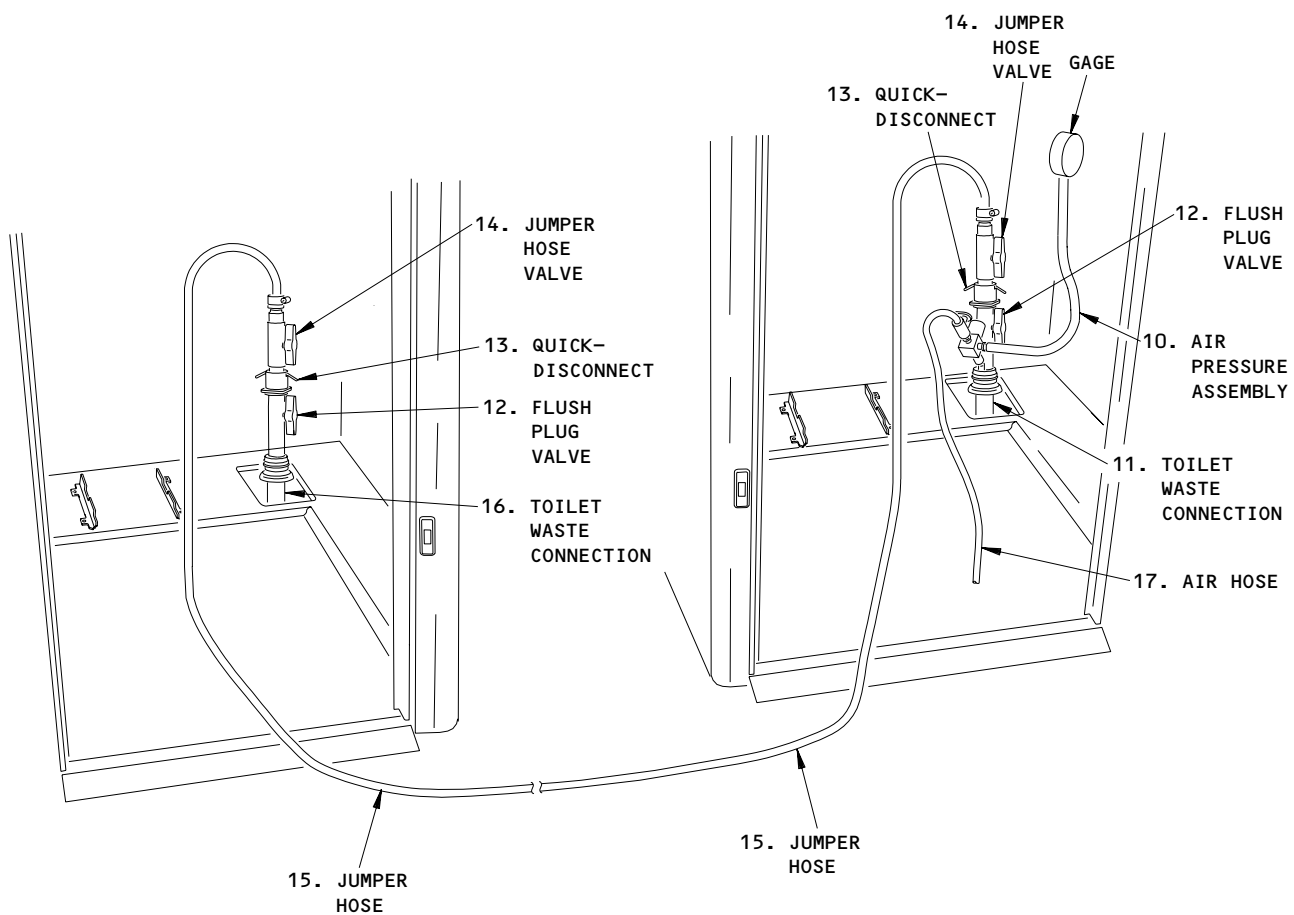
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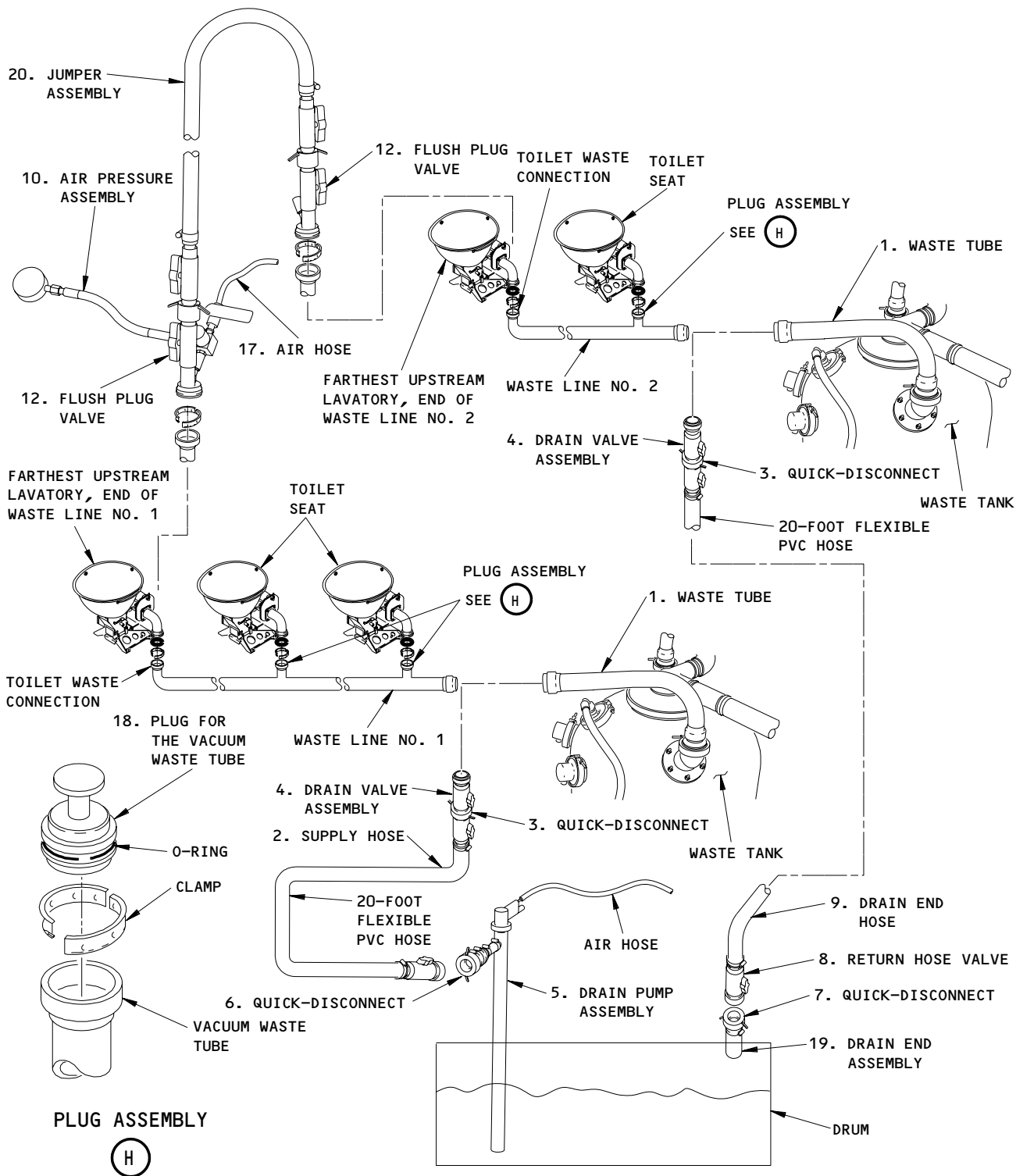
FARTHEST UPSTREAM LAVATORY  
(EXAMPLE)

(G)

Recirculating Line Cleaning  
Figure 704 (Sheet 3)

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Recirculating Line Cleaning  
Figure 704 (Sheet 4)

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- (2) Sleeve
  - (3) Coupling - AS1655A32
  - (4) Glasses - Safety  
(commercially available)
  - (5) Gloves - Rubber, Elbow Length  
(commercially available)
  - (6) Mask - Face  
(commercially available)
  - (7) Containers - Solvent Resistant, Two to five gallons (7 to 20 liters), as required (commercially available)
  - (8) Container - Hydraulic Fluid Resistant, Fifty gallons (200 liters), as required (commercially available)
  - (9) Water Source - Cold, Regulated, 0-60 psig (0-400 kPa)
  - (10) Air Source - Dry Filtered, Regulated, 0-50 psig (0-350 kPa)
- D. Consumable Materials
- (1) G02315 - Clothing, Disposable gown, gloves for sewage handling
  - (2) G00022 - Purogene (Chlorine dioxide, stabilized 2%)
  - (3) B00637 - Citric Acid (crystals or powder)
  - (4) B00638 - Honeybee 60, (McGean-Rohco)
  - (5) B50113 - Acetic Acid (10%/100 grain)                      JAN-A-465  
Commercial Grade
  - (6) B01021 - Dispoz-All Drain Cleaner (enzyme)
  - (7) B01022 - Septic Cleaner (enzyme)
  - (8) B00046 - Phosphoric Acid (7% solution)
- E. Access
- (1) Location Zones
    - 165      Area Aft of Bulk Cargo Compartment (Right or Left)
    - 200      Upper Half of Fuselage (Passenger Compartment)
    - 811      Bulk Cargo Door
- F. Prepare for Cleaning
- S 017-139
- (1) Get access to the passenger compartment.
- S 017-140
- (2) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).
- S 917-141
- (3) For the work on the waste equipment, make sure you wear these items for your protection.
- NOTE:** These are items that you can wear to give you protection when it is necessary.
- (a) Elbow length gloves
  - (b) Face mask
  - (c) Safety glasses
  - (d) Disposable clothing, disposable gown, gloves for sewage handling

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S 617-142

- (4) Do this task: Waste Tank Servicing (AMM 12-17-01/301).

NOTE: After 5 minutes, drain the precharge from the waste tank.

S 867-143

- (5) Start this procedure at the toilet that is farthest upstream of the vacuum waste line to be cleaned.

NOTE: Areas near the bends have the most waste material build-up on the waste tube walls. For the primary layout of the vacuum waste lines, see this reference, (AMM 38-32-08/201).

S 167-144

- (6) Use one to three gallons (4 to 12 liters) of the disinfectant that follows:

NOTE: The disinfectant mixture will be a solution of chlorine dioxide.

- (a) Flush the waste line with a disinfectant solution made of chlorine dioxide (stabilized 2%) and citric acid (crystals or powder), from the toilet farthest from the waste tank on the waste line being cleaned, as follows:

WARNING: DO NOT BREATHE THE CHLORINE DIOXIDE GAS. USE ADEQUATE VENTILATION. WHEN THE TWO CHEMICALS ARE MIXED, A SMALL AMOUNT OF CHLORINE DIOXIDE GAS CAN BE PRODUCED WHICH CAN CAUSE INJURY TO PERSONS IF THEY BREATHE THE GAS.

- 1) For each gallon (4 liters) of final solution desired, mix 20 fluid ounces (0.6 liter) of chlorine dioxide with 2 ounces (57 grams) of citric acid in a plastic container.
- 2) Stop for 5 minutes (activation period).
- 3) Use a clean instrument to mix the solution fully.
- 4) Add water to make the desired quantity of solution (from Step 1, above).
- 5) Flush the chemical solution into the waste line.

S 127-171

- (7) Do this task: Periodic Flush Procedure (AMM 38-32-00/701).

S 177-172

- (8) Rinse the lines from the most forward toilet with approximately 1/2 gallon (2 liters) of water.

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S 047-173

- (9) Turn the water off to the toilet.

S 177-174

- (10) Flush the toilet without water at least three times.

S 867-145

- (11) Open these circuit breakers and install DO NOT CLOSE tags:
- (a) Left Miscellaneous Electrical Equipment Panel, P36
    - 1) 36F6 or 36G1, VACUUM BLOWER LAV SYSTEM 1 WATER/WASTE
  - (b) Right Miscellaneous Electrical Equipment Panel, P37
    - 1) 37G7, VACUUM BLOWER LAV SYSTEM 2 WATER/WASTE
  - (c) Overhead Panel, P11
    - 1) 11R8, LAV SYSTEM 1 FLUSH CONT
    - 2) 11R35, LAV SYSTEM 2 FLUSH CONT

S 017-176

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (12) To get access to the waste lines, do these steps:
- (a) Remove the cargo liners as required to expose the waste tube inlets to the waste tanks of the waste lines to be cleaned: Containerized Cargo Compartment Sidewall Lining, (AMM 25-52-01/401), or Containerized Cargo Compartment Ceiling Lining, (AMM 25-52-02/401).
  - (b) Disconnect the last section of waste tube (1) from the waste lines that you wish to clean.

**NOTE:** These are the waste tube sections where the Supply and Return hoses for the pump equipment will attach. Make sure that there is space to attach the Drain Valve and hose. If there is not sufficient space, a section of waste tubing upstream must be selected.

- 1) Take off the clamps (and inner sleeves, if applicable) on both ends of the waste tube.
- 2) Remove the waste tube from its installed position.

**NOTE:** Residual liquid may still be in the waste tubes. Be prepared to collect and dispose of any residual liquid.

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S 027-147

- (13) For all lavatories on the waste lines to be cleaned, do this task:  
Vacuum Toilet Assembly Removal (AMM 38-32-01/401).

**NOTE:** The toilet assembly removal is necessary to attach tools for the pressure test and for the drain/flush equipment.

S 787-148

- (14) Do this task: Pressure Test Procedure (AMM 38-32-00/701).  
G. Waste Line Cleaning

S 847-149

- (1) Prepare the chemical solution to clean the waste line with one of the chemical cleaners that follows:

**NOTE:** The quantity of the cleaner necessary for a waste line is 0.16 gallons for each linear foot (2.0 liters for each linear meter). Calculate the maximum quantity of the cleaner necessary for each line.

- (a) cleaner, Honey Bee 60 (McGean-Rohco)
- (b) 5 to 10% Acetic acid, JAN-A-465
- (c) 7% Phosphoric Acid solution
- (d) Dispoz-All Drain Cleaner
- (e) Septic (enzyme) Cleaner

S 117-150

- (2) Do these steps to fill the waste lines with the cleaner solution:
- (a) Assemble the Recirculate Pump Equipment, A38012-18.
    - 1) In each lavatory between the farthest upstream toilet and the waste tank, install the Flush Plug Assembly (18).
    - 2) In the Bulk Cargo Compartment, connect one end of the Supply Hose (2), a Quick Disconnect (3) and Drain Valve Assembly (4) to the section of Waste Line #1 where it was disconnected from the Waste Tank. Use the sleeve and coupling (AS1655A32), as necessary, to make the connection.
    - 3) At Waste Line #1, connect the other end of the Supply Line (2) to the Drum Pump (5) at the Quick-Disconnect (6).
    - 4) On the remaining line to be cleaned, Waste Line #2, connect one end of the Drain Hose (9) to the Quick-Disconnect (3) on the drain valve (4) near the waste tank.

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- 5) Connect the other end of the Drain Hose (9) and Return Hose Valve (8) to the Drain End Assembly (19) with the hose end submerged in the container of solution.

NOTE: Put a sufficient amount of the Drain End Hose into the container so that it will not come out when the Drum Pump is turned on.

- 6) At the most forward Toilet Waste Connection (11) of Waste Line #1 install the Air Pressure Assembly (10) and the Flush Plug Valve (12) from the A38012-18 pump equipment.
  - 7) At the most forward Toilet Waste Connection (16) of Waste Line #2 , install the Flush Plug Valve (12)
  - 8) Connect the Jumper Assembly (20) and Jumper Hose (15) at the Quick-Disconnects (13) to join the two Waste Lines.
  - 9) Connect an Air Hose (17) to the brass nipple on the Air Pressure Assembly (10).
- (b) Open all the valves on the hoses and on the Drain Valves.

CAUTION: CHEMICALS WILL BE HARMFUL TO INTERIOR OF AIRPLANE. A PERSON WITH SPILLAGE PREVENTION EQUIPMENT (RAGS, ETC) SHOULD HAVE ACCESS TO EACH LAVATORY CONNECTED TO THE EFFECTED SYSTEM DURING THIS SECTION OF THIS PROCEDURE TO MAKE SURE THAT THE CLEANING SOLUTION DOES NOT EXIT THE WASTE SYSTEM INTO THE LAVATORY.

- (c) If you spill chemical, do this task: Acid Spillage Condition (AMM 05-51-57/201)
- (d) Put the Drum Pump (5) intake into the container of solution and turn the pump on to fill the waste lines.

NOTE: It can take 3 to 4 minutes before the solution starts to come down the Return Hose. It can take more than an hour for all of the air to exit the lines.

- (e) Slowly open the bleed valve in the waste line plug (18) in each of the lavatories to bleed air from the toilet waste lines.
- (f) Close the bleed valve when you hear or see solution start to come through the valve.

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S 117-151

**CAUTION:** CHEMICALS WILL BE HARMFUL TO INTERIOR OF AIRCRAFT. A PERSON WITH SPILLAGE PREVENTION EQUIPMENT (RAGS, ETC) SHOULD PERIODICALLY INSPECT ALL LAVATORIES OF THE AFFECTED SYSTEM DURING THE RECIRCULATING PERIOD OF THIS PROCEDURE TO MAKE SURE THAT THE CLEANING SOLUTION DOES NOT EXIT THE WASTE SYSTEM INTO THE LAVATORY.

- (3) Let the cleaner solution circulate in the waste line(s) for as long as practical (a minimum of 8 hours is suggested).

**NOTE:** To fully clean the waste line(s), more than 24 hours can be necessary to remove the heavy scale.

S 867-152

- (4) To get cleaner lines and to prevent blockage caused by scale material you can reverse the flow of the solution during the procedure.
- (a) Turn off the Drum Pump and close the Drain Valves on the lines near the tanks.
  - (b) Close the valves on the Return and Supply hoses where they connect to the Drain valves near the tanks.
  - (c) Disconnect the Supply and Return hoses from the Drain Valves and reconnect them to the opposite Drain valve on the opposite waste line.
  - (d) Restart the Drum Pump.

#### H. Drain the Waste Line

S 847-153

- (1) Do these steps to prepare to drain the chemical solution from the system:
- (a) Stop the Drum Pump.
  - (b) Close the shutoff valve on the Supply Hose where it connects to the Drum Pump and disconnect it from the Drum Pump.
  - (c) Put the end of the Supply Hose into the container and open the shutoff valve. The solution will start to drain from the hose.
  - (d) To flush the waste line, do the steps that follow:
    - 1) Connect an air source (0-50 psig, 0-350 kPa) to the Air Pressure Assembly to force the solution out of the waste lines and into the container.
    - 2) Connect a water source (0-60 PSIG, 0-400 kPa) to the Air Pressure Assembly adapter in the farthest upstream lavatory
    - 3) Flush the waste line with a minimum of 5 gallons (20 liters) of water for each toilet on the waste line.
    - 4) Connect an air source (0-50 psig, 0-350 kPa) to the pressure adapter.
    - 5) Dry the waste line with air flow (under 15 psi, 100 kPa) for approximately 5 minutes.

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- (e) Stop when the cleaning solution and flushing water is fully drained from the waste line.
- (f) If it is necessary to drain other waste lines, do these steps again to drain waste lines.

S 417-154

- (2) Do these steps to remove the Pump equipment:
  - (a) In the farthest upstream lavatory, remove the Air Pressure assembly (10) and Jumper Hose (15).
  - (b) In each lavatory between the farthest upstream toilet and the waste tank, remove the Flush Plug Assembly.
  - (c) Do this task: Vacuum Toilet Assembly Installation (AMM 38-32-01/401).
  - (d) Remove the Drain valves (4) at the connection near the waste tanks for both the lines that were cleaned.

NOTE: Remaining liquid can stay in the waste lines. Be prepared to collect and then discard all of the liquid.

- (e) Make sure all solid material is out of the waste line before you connect the waste line to the waste tank.

NOTE: Remaining solid material in the waste line can cause blocked waste lines after you complete this procedure.

- (f) Put the waste tubes in their installed position.
- (g) Connect the last tube sections (1) to the waste tank inlet.

I. Put the Airplane Back to Its Usual Condition

S 867-155

- (1) Close these circuit breakers and remove DO NOT CLOSE tags:
  - (a) Left Miscellaneous Electrical Equipment Panel, P36
    - 1) 36F6 or 36G1, VACUUM BLOWER LAV SYSTEM 1 WATER/WASTE
  - (b) Right Miscellaneous Electrical Equipment Panel, P37
    - 1) 37G7, VACUUM BLOWER LAV SYSTEM 2 WATER/WASTE
  - (c) Overhead Panel, P11
    - 1) 11R8, LAV SYSTEM 1 FLUSH CONT
    - 2) 11R35, LAV SYSTEM 2 FLUSH CONT

S 177-156

- (2) To push other solid material out of the waste system, do one of these tasks: Periodic Flush Procedure, or Pressure Washer Cleaning of the Vacuum Waste Lines. (AMM 38-32-00/701).

S 617-157

- (3) Do this task: Waste Tank Servicing, (AMM 12-17-01/301).

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- S 797-158
- (4) Do this task: Leak Test for the Toilet Waste System (AMM 38-32-00/501).
  
- S 417-159
- (5) Close the access to the passenger compartment.
  
- S 417-160
- (6) To install the cargo liners that were removed to expose the waste tube inlet(s) to the waste tank, do this task: Containerized Cargo Compartment Sidewall Lining, (AMM 25-52-01/401), and/or Containerized Cargo Compartment Ceiling Lining, (AMM 25-52-02/401).
  
- S 417-161
- (7) Close the access to the cargo compartment.
  
- S 557-163
- (8) Obey the local authorities to discard the chemical solution.

TASK 38-32-00-117-177

7. Off-Aircraft Soak Procedure for Cleaning the Vacuum Waste Lines

A. General

- (1) This is an optional procedure, used to more thoroughly clean the vacuum waste tubes when they are removed from the aircraft.

B. References

- (1) AMM 12-17-01/301, Waste Tank Servicing
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
- (5) AMM 38-32-00/501, Vacuum Waste System
- (6) AMM 38-32-08/201, Waste System Tubing

C. Equipment

- (1) Container - Hydraulic Fluid Resistant, Fifty gallons (200 liters), as required (commercially available)

D. Consumable Materials

- (1) B00638 - Honeybee 60, (McGean-Rohco)
- (2) B50113 - Acetic Acid (10%/100 grain)                      JAN-A-465  
Commercial Grade
- (3) B00046 - Phosphoric Acid (7% solution)
- (4) B01021 - Dispoz-All Drain Cleaner (enzyme)
- (5) B01022 - Septic Cleaner (enzyme)

E. Access

- (1) Location Zones
  - 200      Upper Half of Fuselage (Passenger Compartment)
  - 811      Bulk Cargo Door
  - 165      Area Aft of Bulk Cargo Compartment (Right or Left)

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F. Waste Line Cleaning

S 017-178

- (1) Gain access to and remove the waste line tubing per AMM 38-32-08/201.

S 847-179

- (2) Prepare the chemical solution to clean the waste line with one of the chemical cleaners that follows:
  - (a) Cleaner, Honey Bee 60 (McGean-Rohco)
  - (b) 10% / 100 grain Acetic acid (B50113) - JAN-A-465
  - (c) 7% Phosphoric Acid solution
  - (d) Dispoz-All Drain Cleaner
  - (e) Septic (enzyme) Cleaner

S 117-180

- (3) Fill a fifty gallon hydraulic fluid resistant container with the cleaning solution.

S 117-181

- (4) Place the sections of waste tube to be cleaned in the container so they are completely submerged in the cleaning solution.

S 117-182

- (5) Let the waste lines soak in the cleaner solution for a minimum of 8 hours.

NOTE: To fully clean the waste line(s), more than 24 hours can be necessary to remove the heavy scale.

S 117-184

- (6) Make sure all solid material is out of the waste lines before re-installation.

G. Put the Airplane Back to Its Usual Position

S 417-183

- (1) Install and refit the vacuum waste lines per AMM 38-32-08/201.

S 617-185

- (2) Do this task: Waste Tank Servicing, (AMM 12-17-01/301).

S 797-186

- (3) Do this task: Leak Test for the Toilet Waste System (AMM 38-32-00/501).

S 417-187

- (4) Close the access to the passenger compartment.

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- S 417-188
- (5) Install the cargo liners that were removed to expose the waste tube inlet to the waste tank:  
Containerized Cargo Compartment Sidewall Lining,  
(AMM 25-52-01/401), and/or  
Containerized Cargo Compartment Ceiling Lining,  
(AMM 25-52-02/401).
- S 417-189
- (6) Close the access to the cargo compartment.
- S 867-190
- (7) If electrical power is not necessary, do this task: Remove Electrical Power,  
(AMM 24-22-00/201).
- S 557-191
- (8) Obey the local authorities to discard the chemical solution.

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TOILET ASSEMBLY – REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install these parts:
- The Envirovac toilet assembly
  - The electronic flush control
  - The discharge valve
  - The rinse valve assembly.
  - The EnviroClean pump assembly (if installed).
  - Replace the chemical solution bag on toilets equipped with EnviroClean.
- B. Removal and installation of each of the toilets is the same.
- C. To remove one of the parts, do the applicable "Prepare for Removal" group of steps.

TASK 38-32-01-004-100

2. Toilet Removal

- A. Equipment
- (1) Plug for the Vacuum Waste System – A38007-1
- B. Consumable Materials
- (1) D00046 Grease – DC4
- C. References
- (1) AMM 20-41-01/201, Electrostatic Discharge Sensitive Devices
  - (2) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
  - (3) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System
- D. Access
- (1) Location Zone  
200 Upper Half of Fuselage
- E. Prepare for the Removal (Fig. 401)
- S 864-002
- (1) Deactivate the vacuum blower and lav flush system (AMM 38-32-00/201).
- S 674-140
- (2) Do the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

EFFECTIVITY

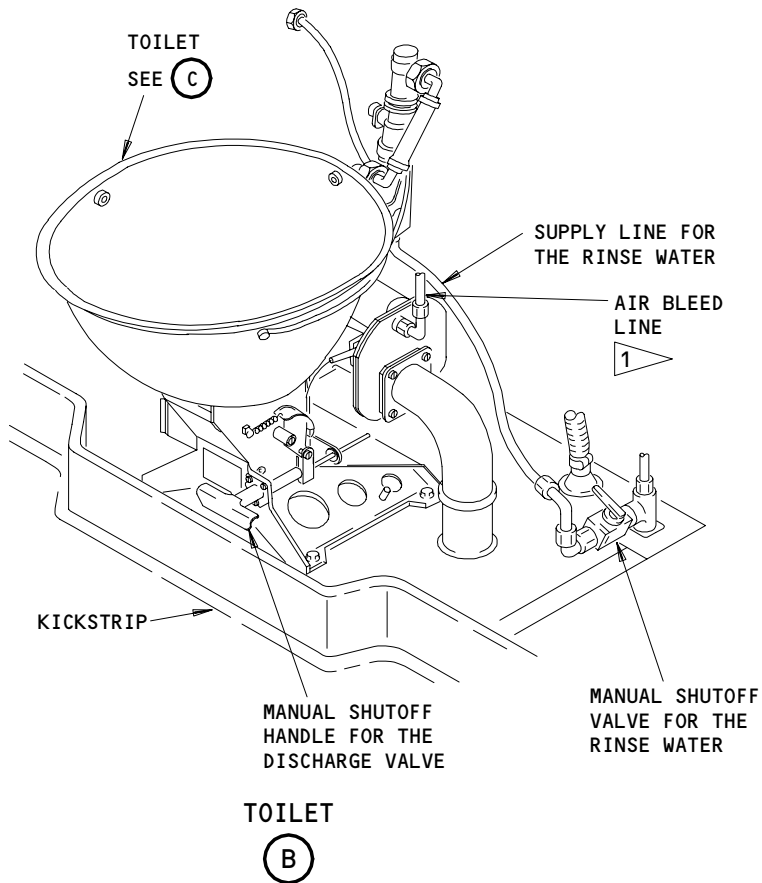
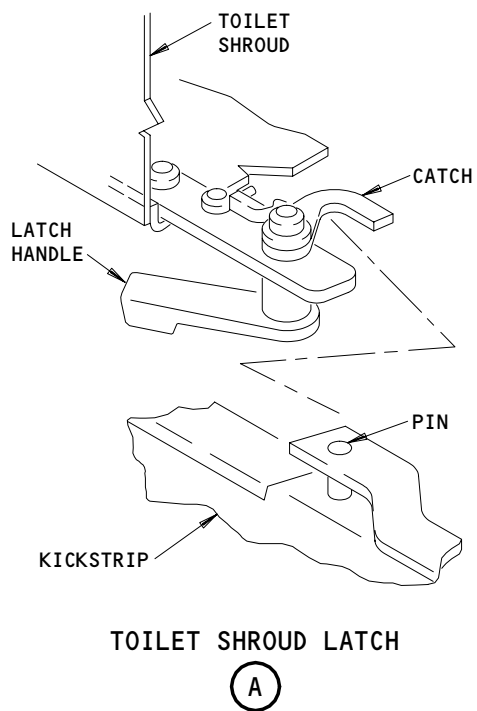
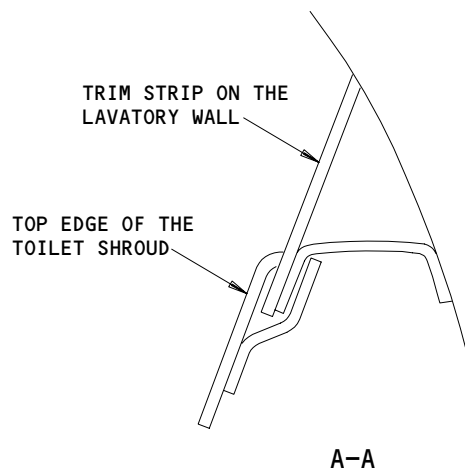
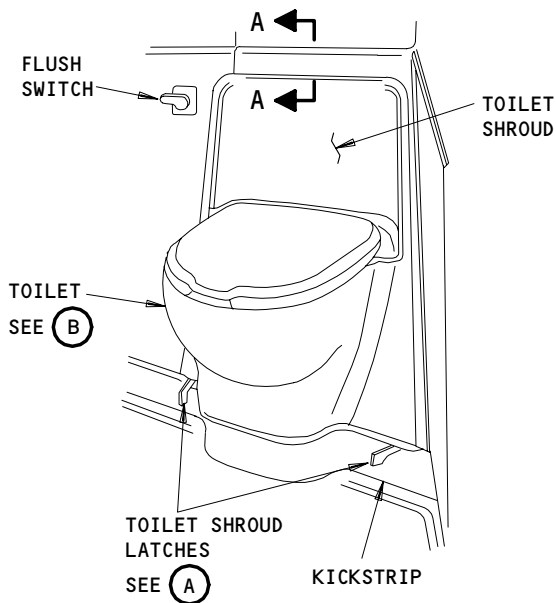
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1 NOT ON ALL TOILETS

Toilet Assembly Installation  
Figure 401 (Sheet 1)

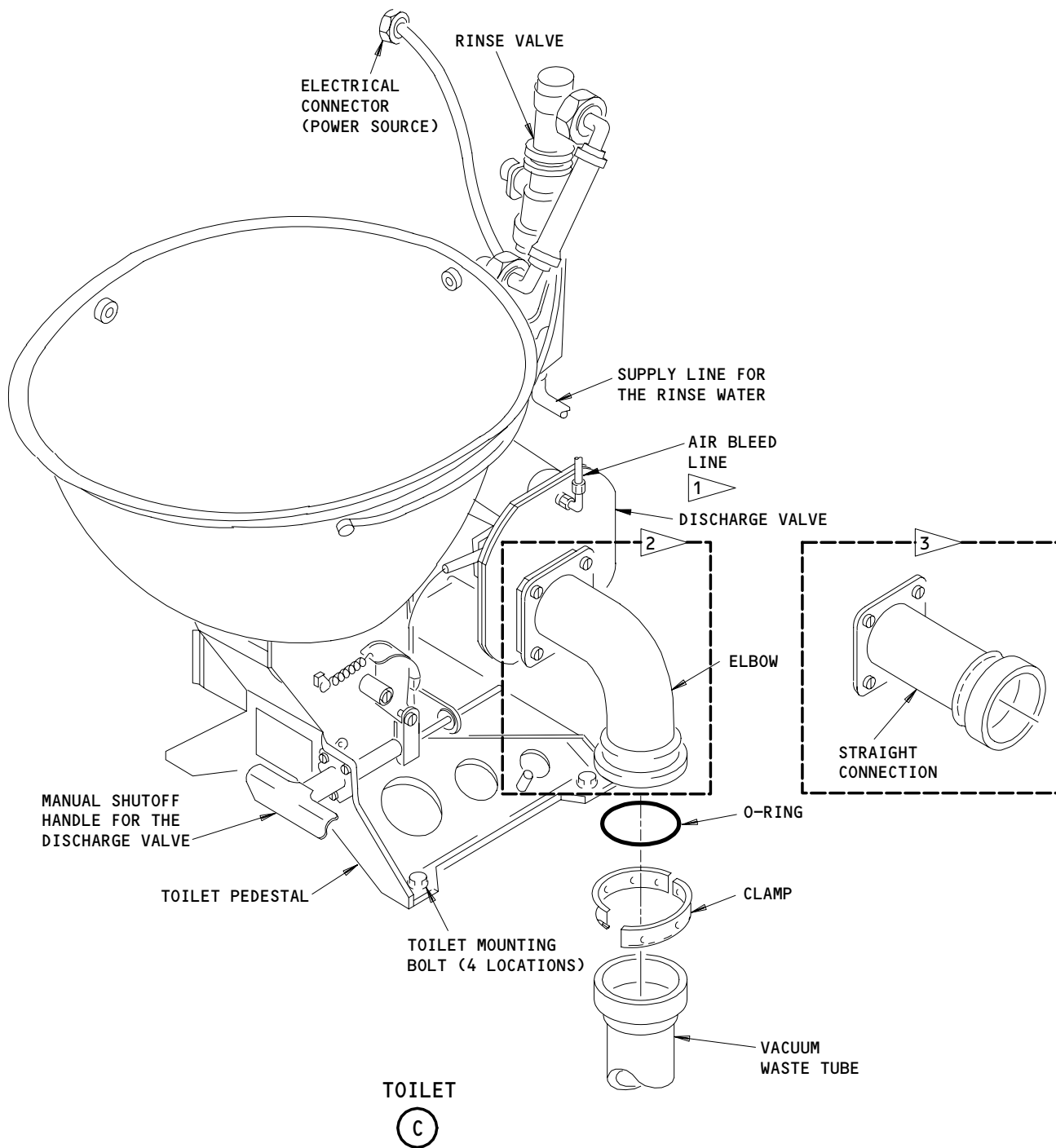
EFFECTIVITY  
AIRPLANES WITHOUT ENVIROCLEAN SYSTEM

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- 1 NOT ON ALL TOILETS
- 2 TOILETS WITH AN ELBOW
- 3 TOILETS WITH A STRAIGHT CONNECTION

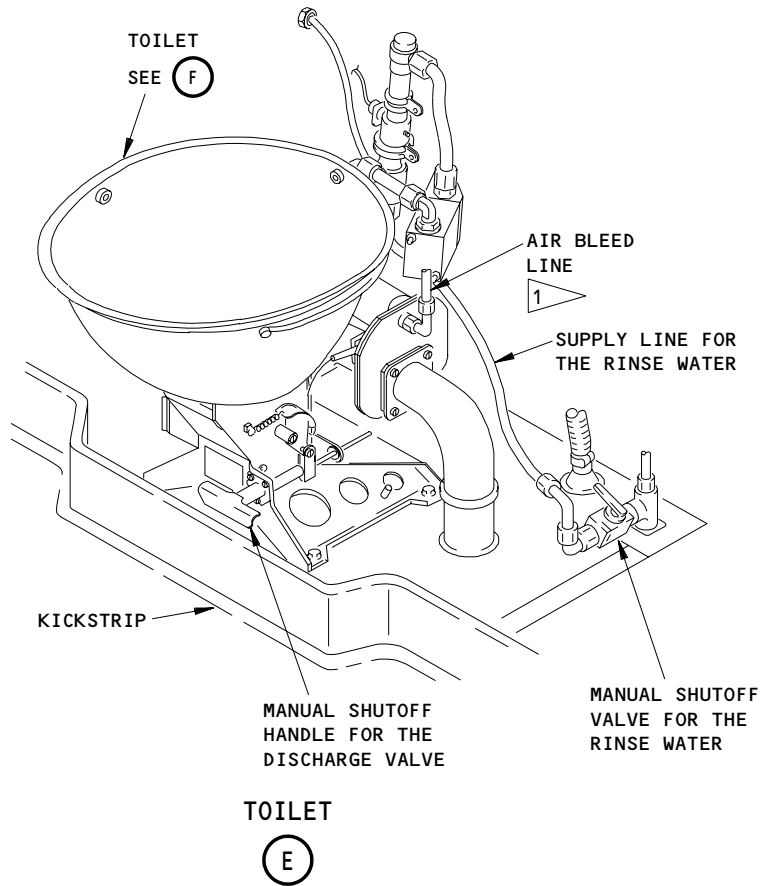
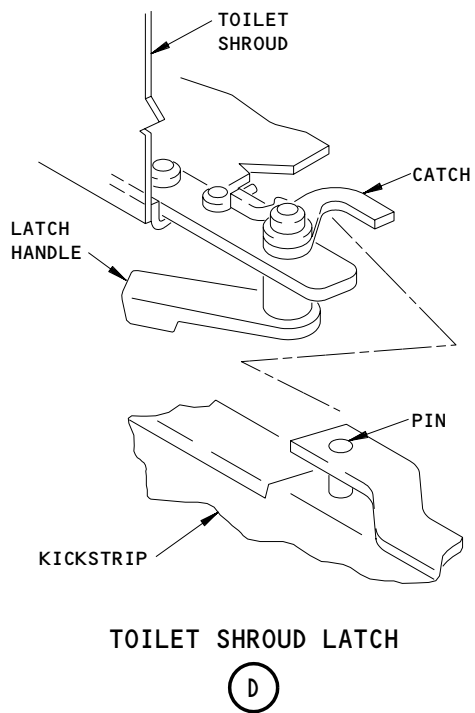
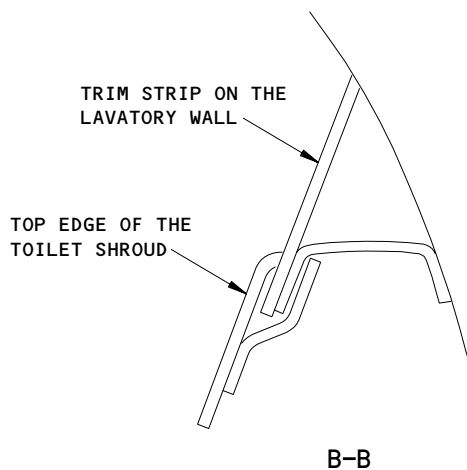
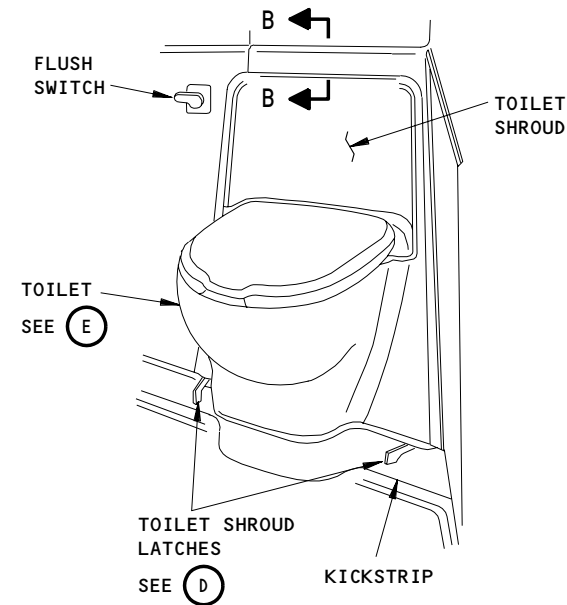
Toilet Assembly Installation  
Figure 401 (Sheet 2)

EFFECTIVITY  
AIRPLANES WITHOUT ENVIROCLEAN SYSTEM

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1 NOT ON ALL TOILETS

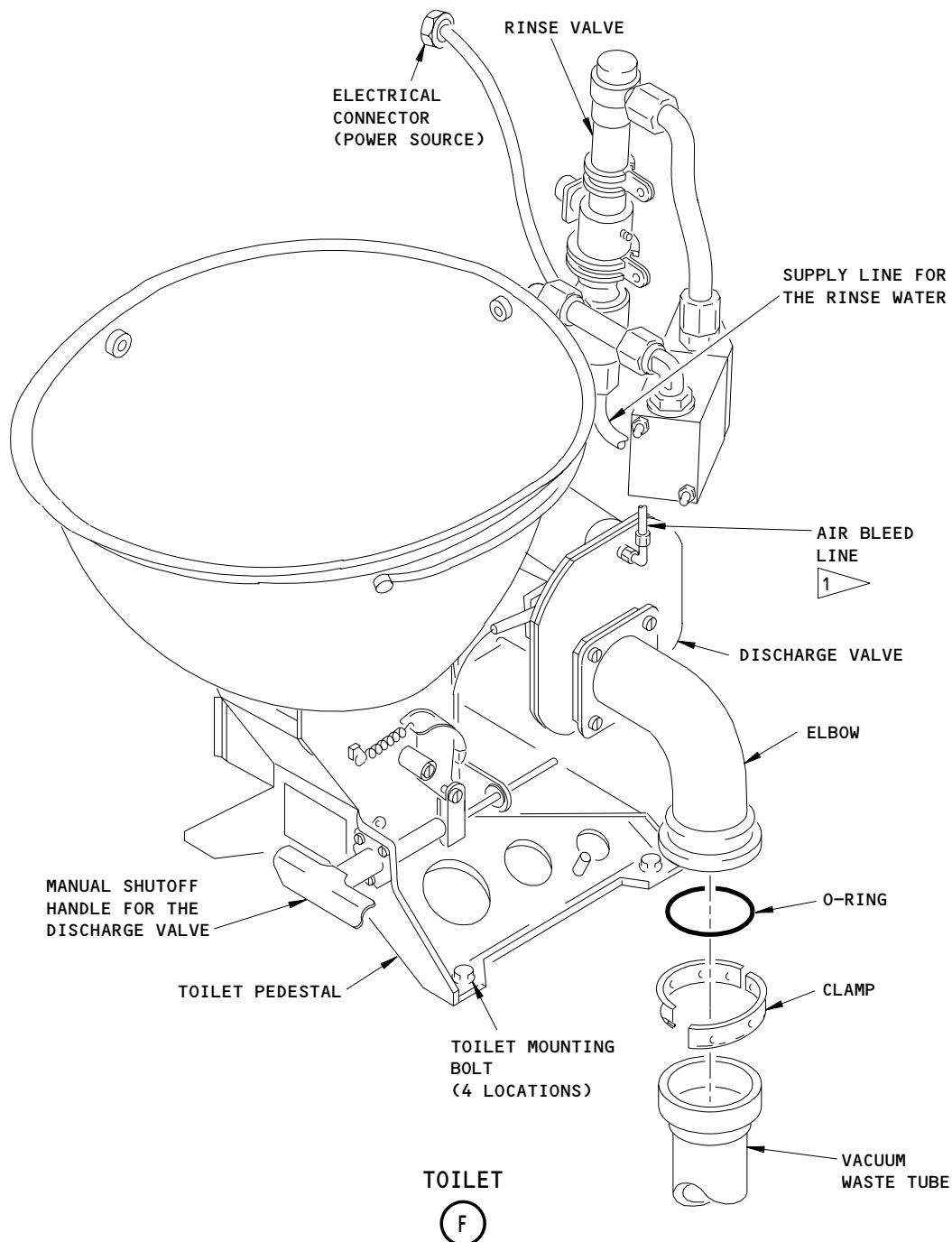
Toilet Assembly Installation  
Figure 401 (Sheet 3)

EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAR SYSTEM

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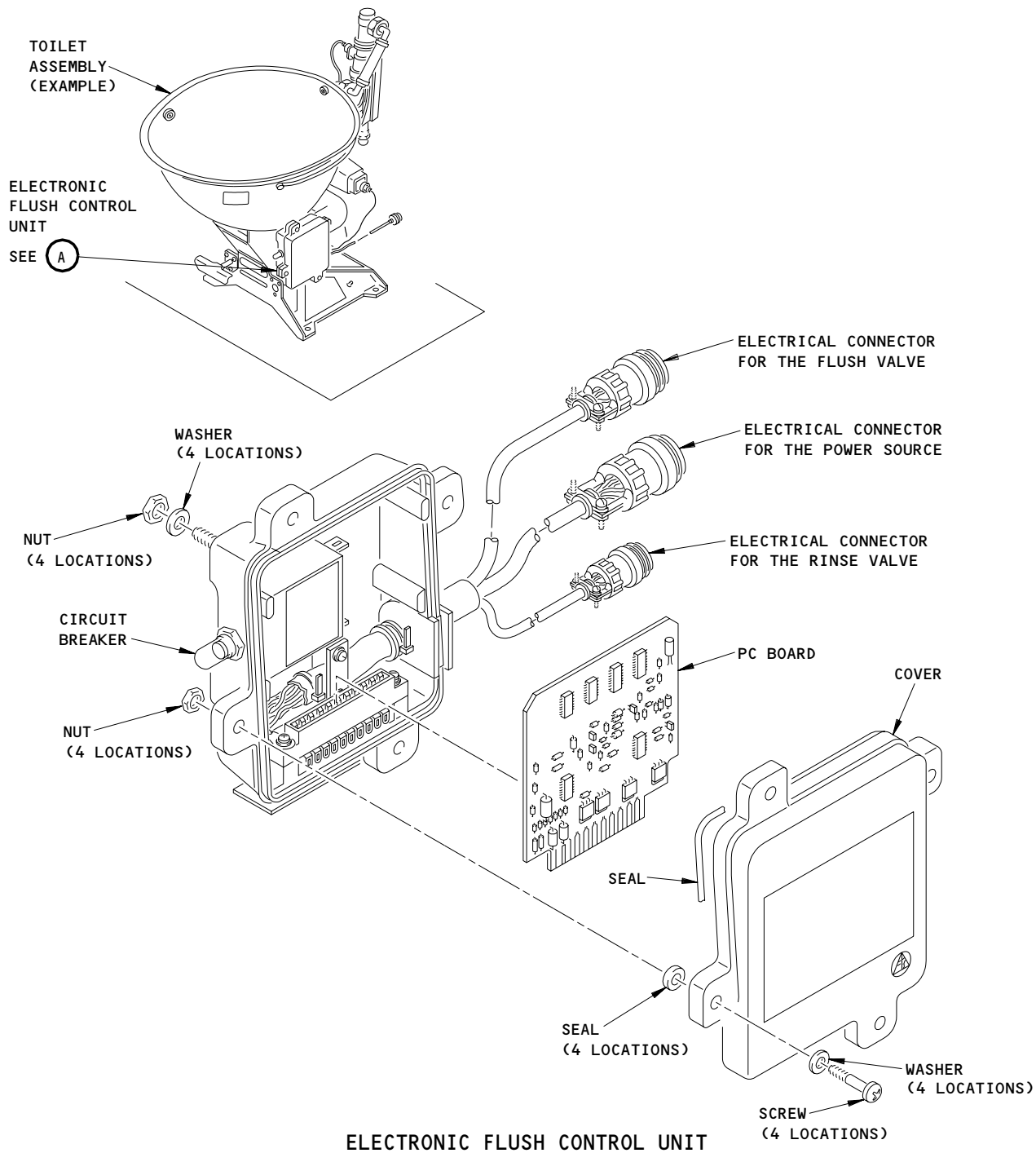
Toilet Assembly Installation  
Figure 401 (Sheet 4)

EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAN SYSTEM

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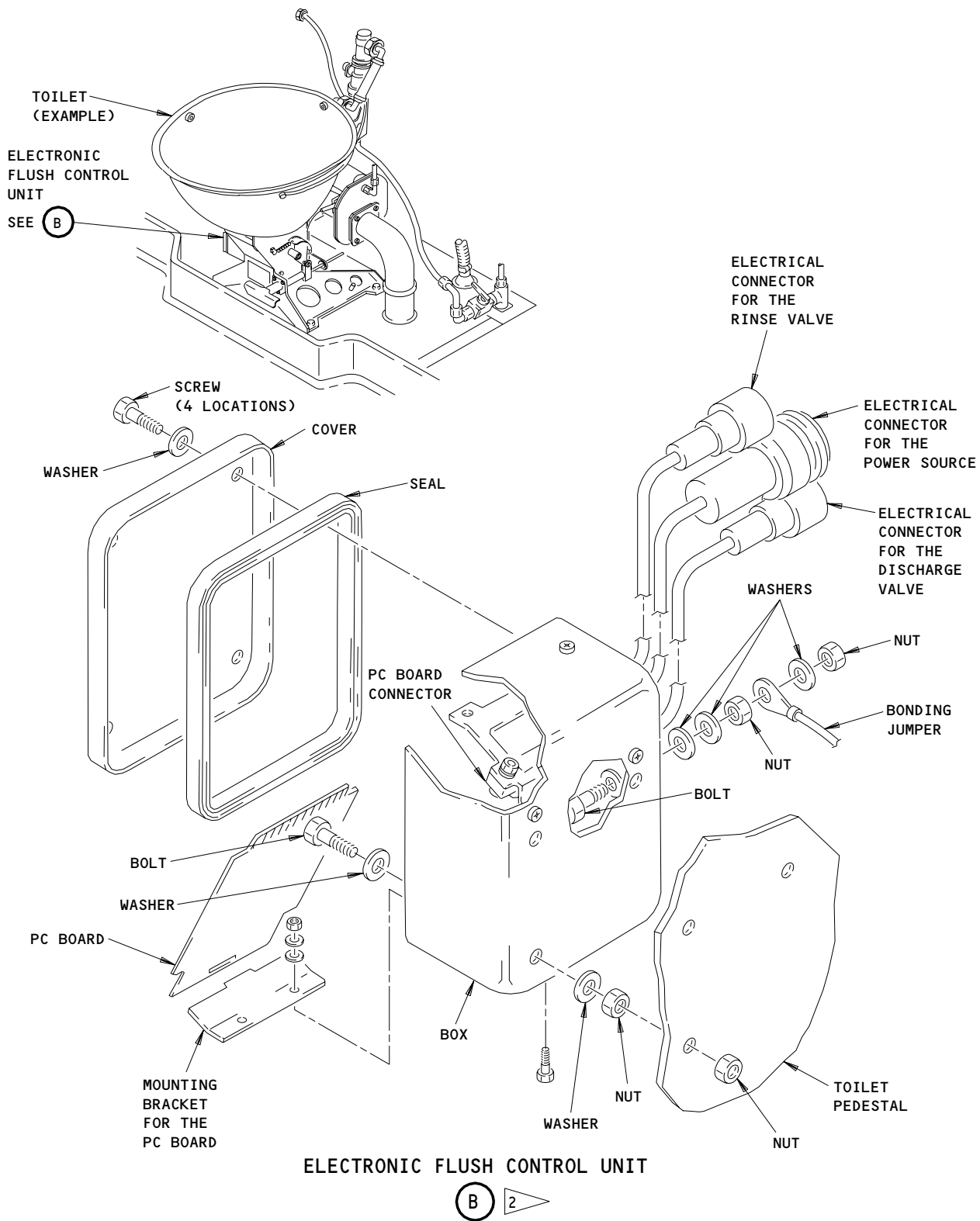
- 1 AIRPLANES WITH A CIRCUIT BREAKER ON THE FLUSH CONTROL UNIT
- 2 AIRPLANES WITHOUT A CIRCUIT BREAKER ON THE FLUSH CONTROL UNIT



Electronic Flush Control Installation  
Figure 402 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITHOUT ENVIROCLEAN SYSTEM

38-32-01



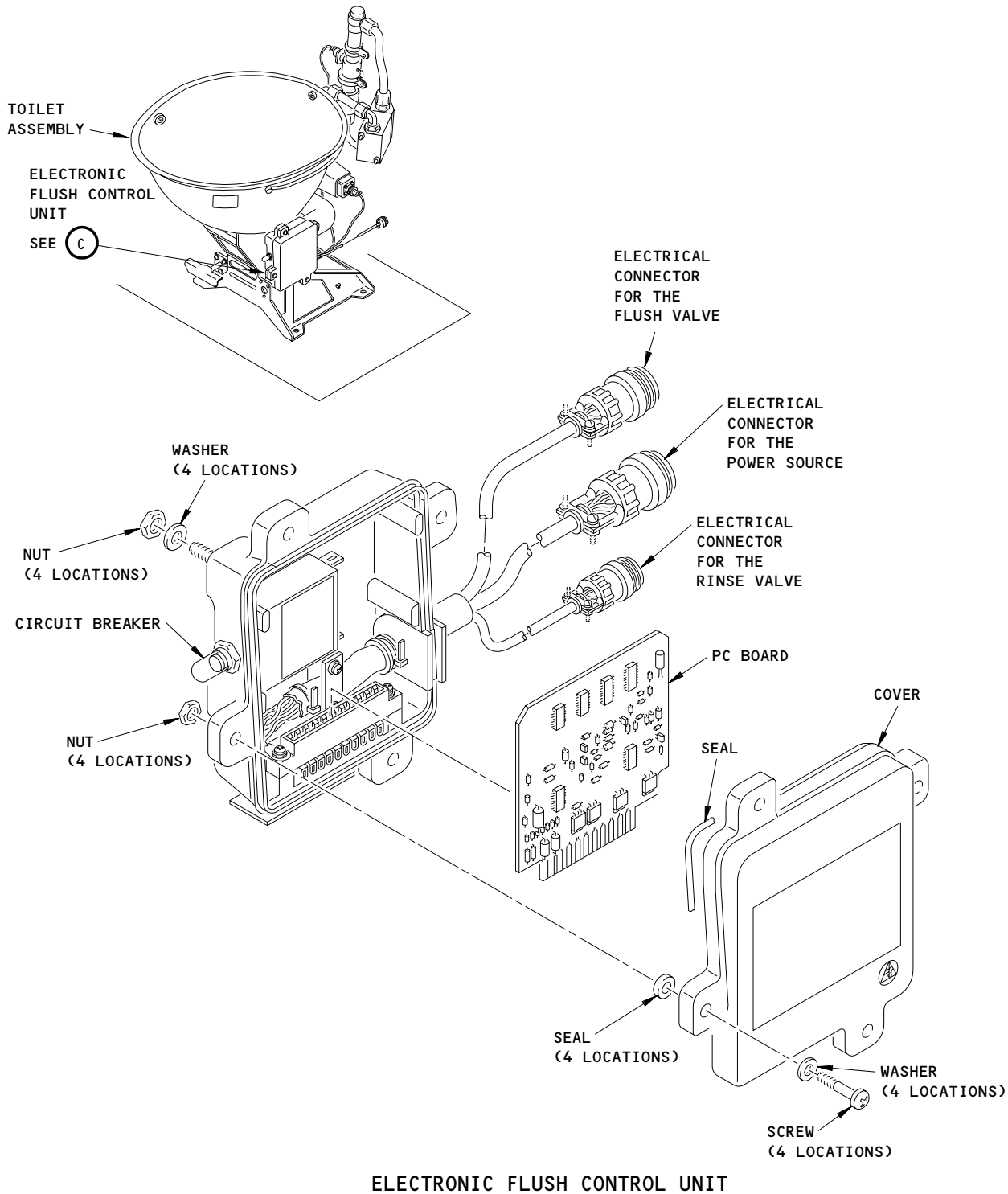
Electronic Flush Control Installation  
Figure 402 (Sheet 2)

EFFECTIVITY  
AIRPLANES WITHOUT ENVIROCLEAN SYSTEM

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1 AIRPLANES WITH A CIRCUIT BREAKER ON THE FLUSH CONTROL UNIT

(C) 1

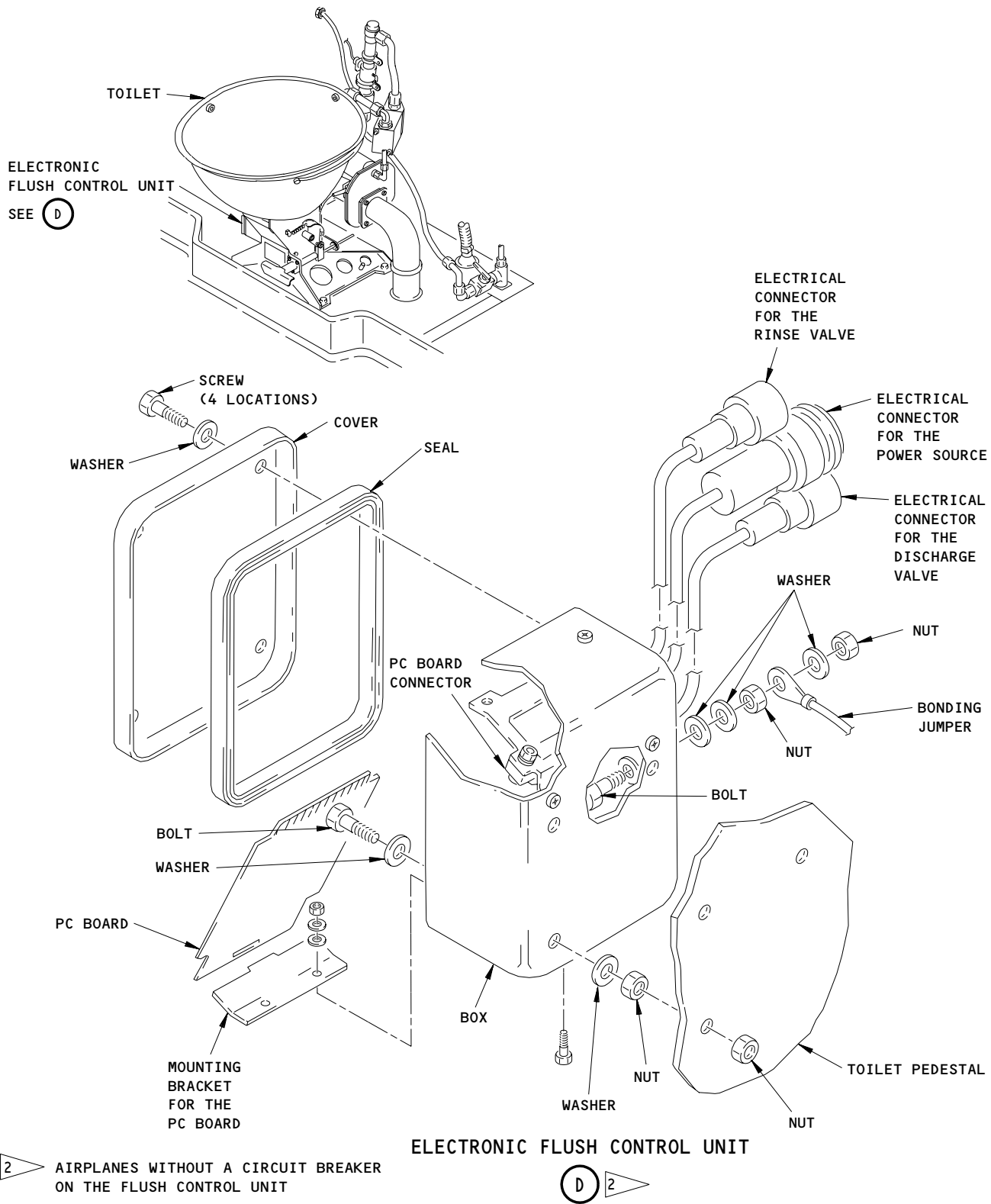
Electronic Flush Control Installation  
Figure 402 (Sheet 3)

EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAR SYSTEM

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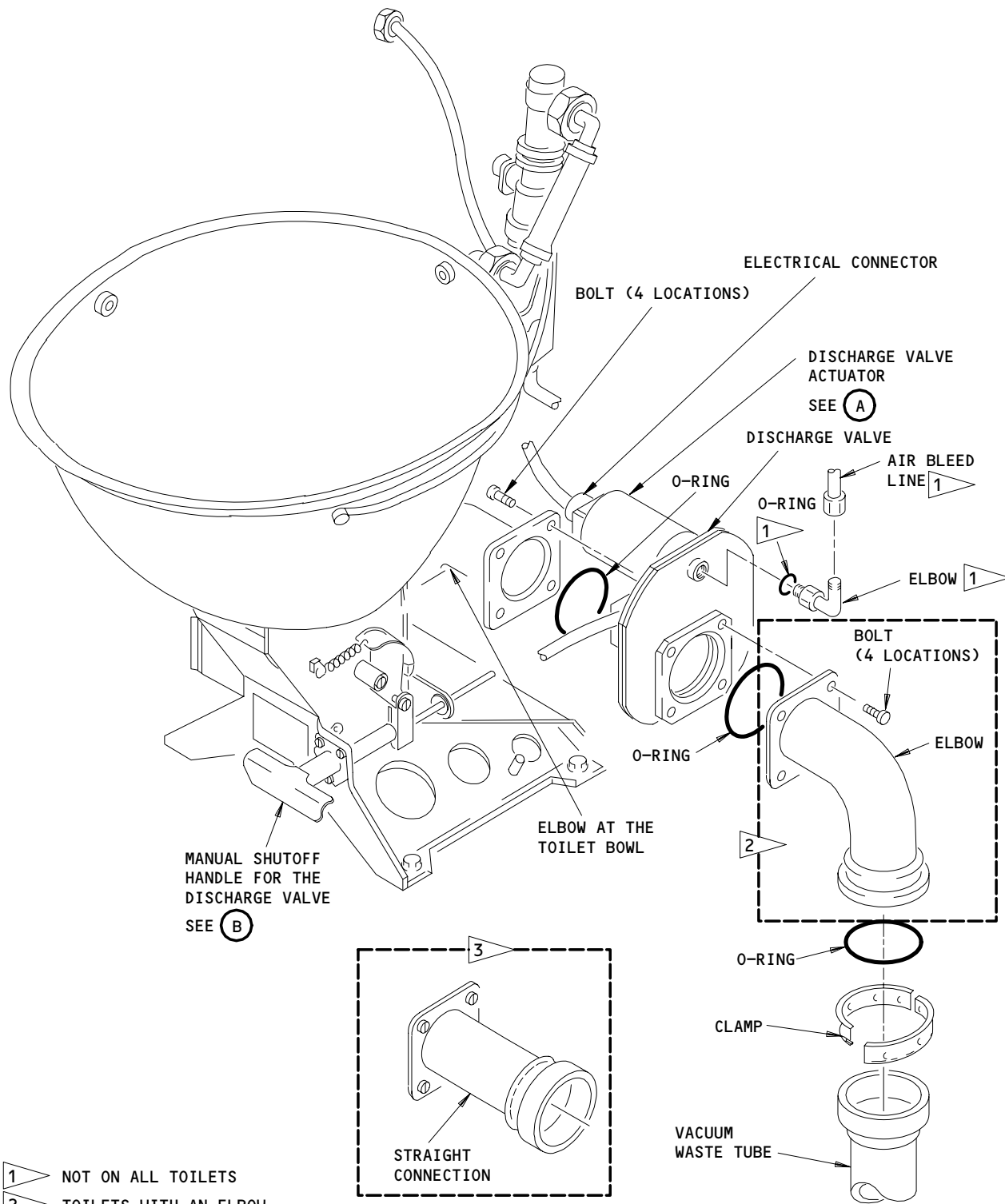
Electronic Flush Control Installation  
Figure 402 (Sheet 4)

EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAN SYSTEM

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- 1 NOT ON ALL TOILETS
- 2 TOILETS WITH AN ELBOW
- 3 TOILETS WITH A STRAIGHT CONNECTION

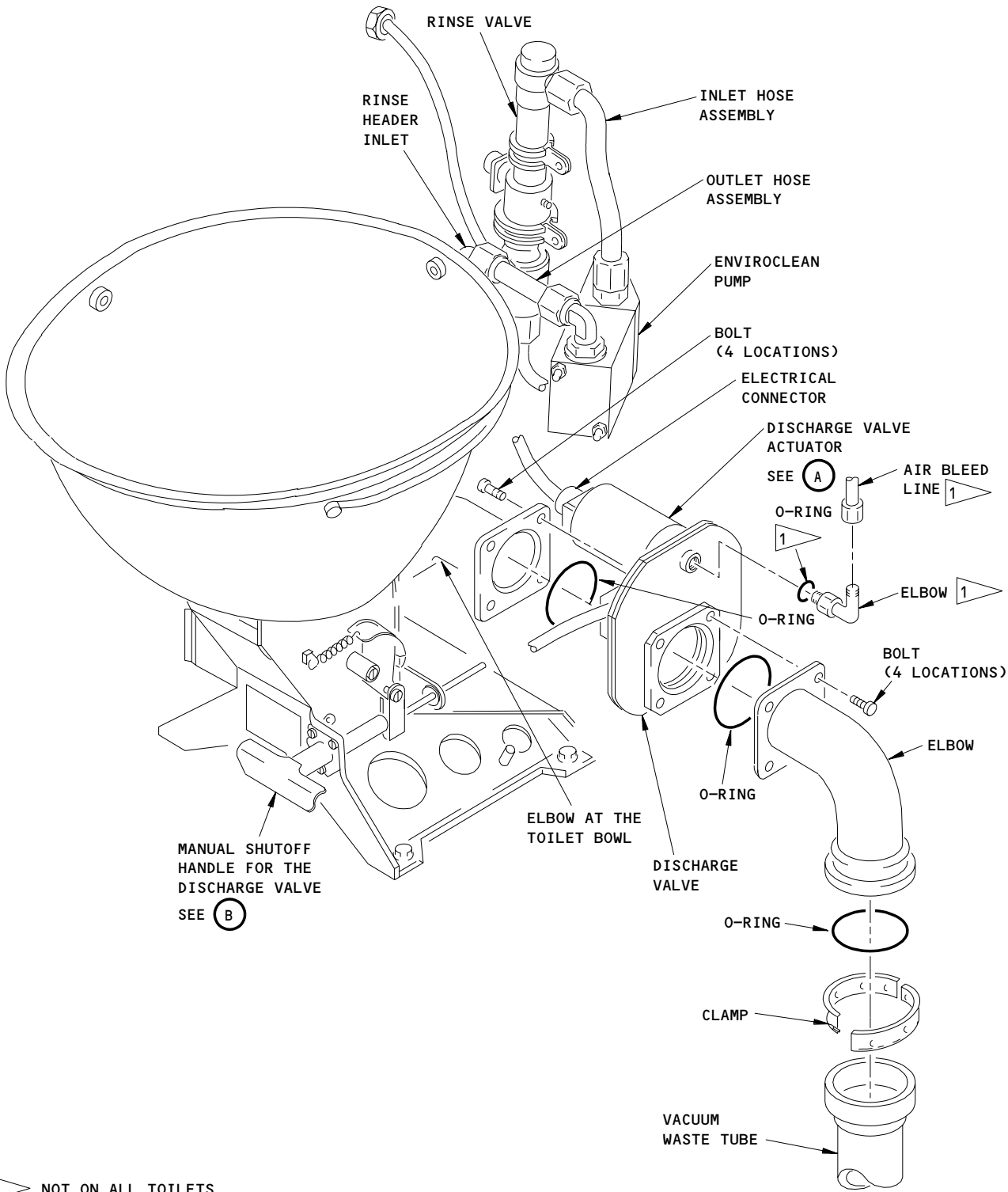
Discharge Valve  
Figure 403 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITHOUT ENVIROCLEAN SYSTEM

**38-32-01**



**BOEING**  
767  
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1 NOT ON ALL TOILETS

Discharge Valve  
Figure 403 (Sheet 2)

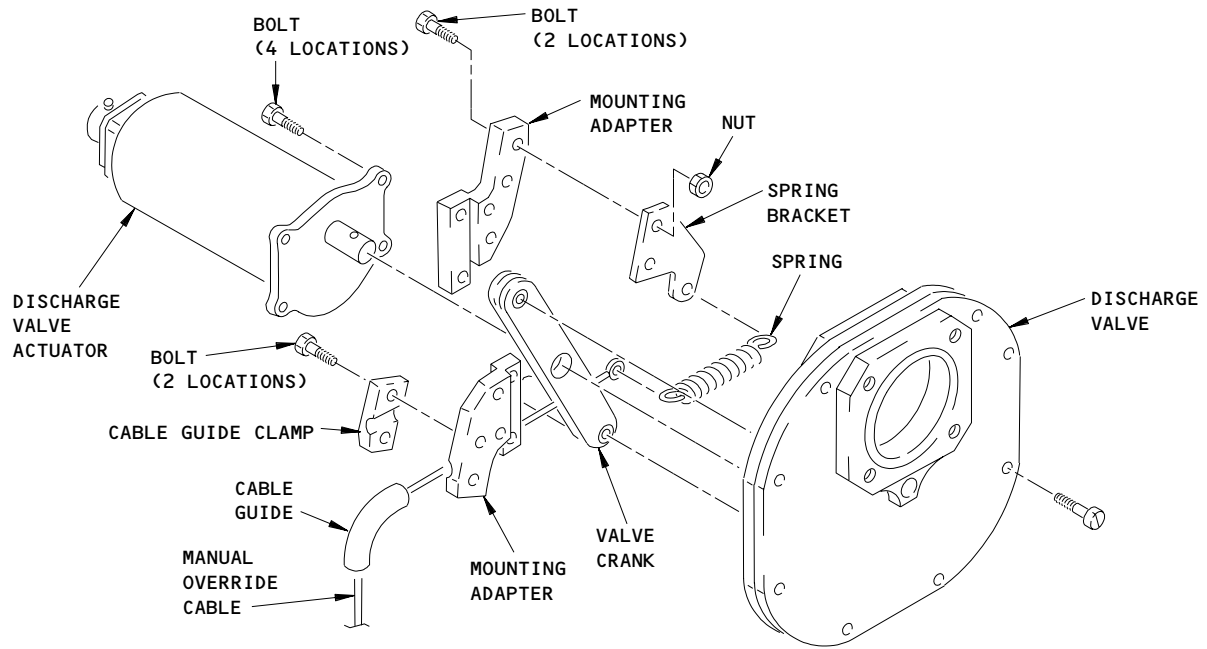
EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAN SYSTEM

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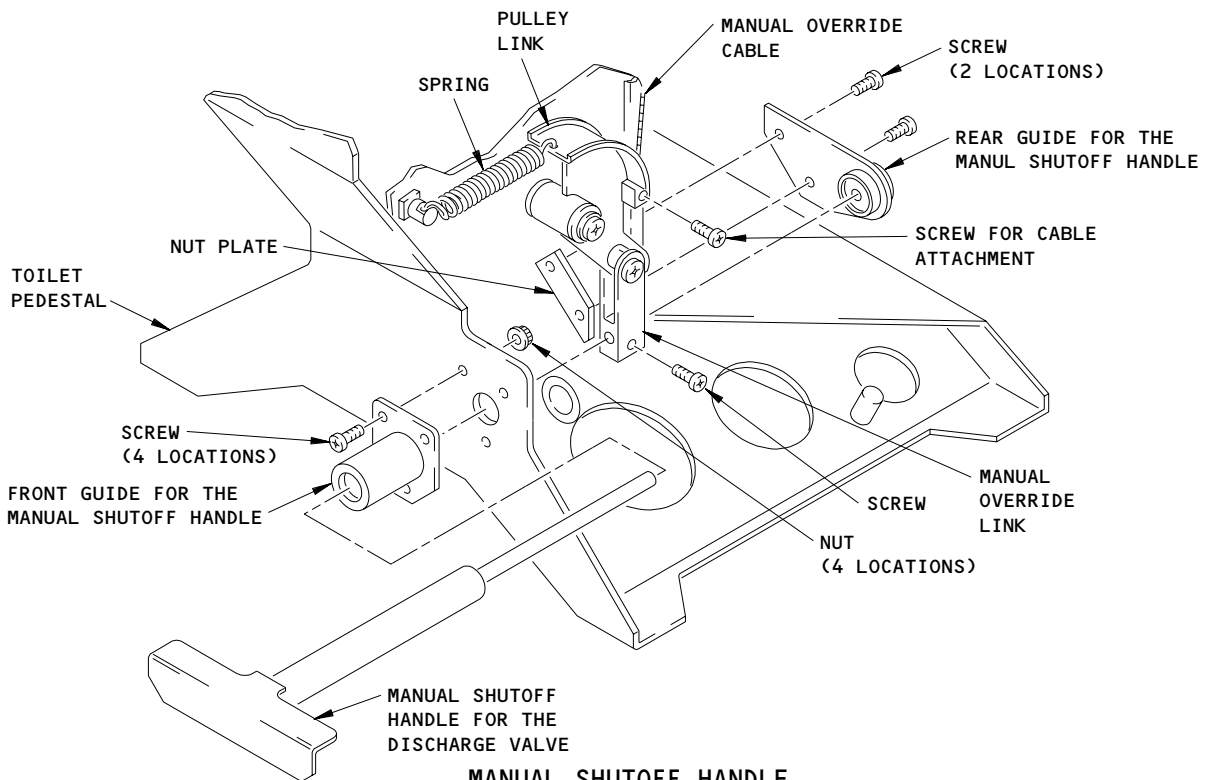
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DISCHARGE VALVE ACTUATOR

(A)



MANUAL SHUTOFF HANDLE

(B)

Discharge Valve  
Figure 403 (Sheet 3)

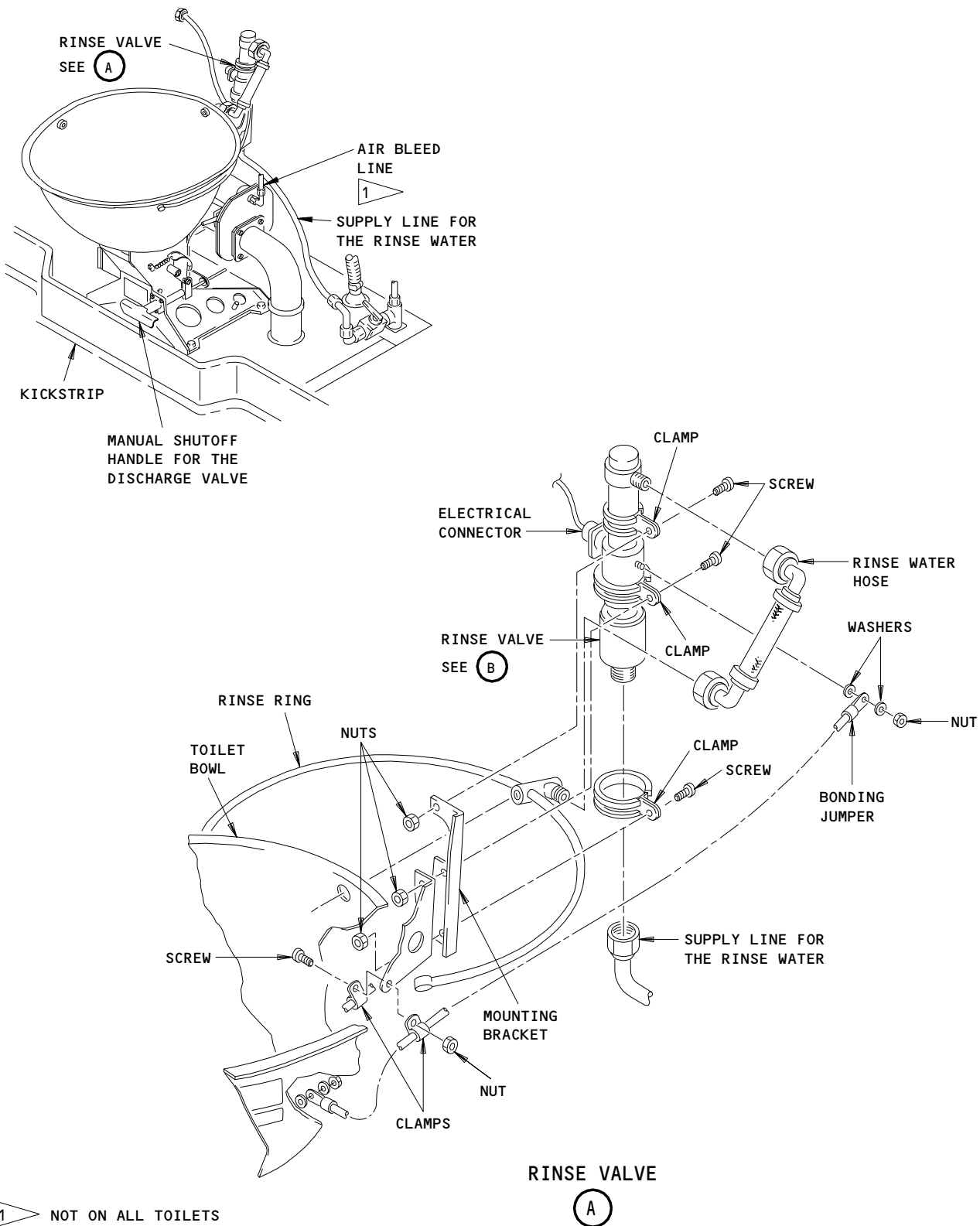
EFFECTIVITY

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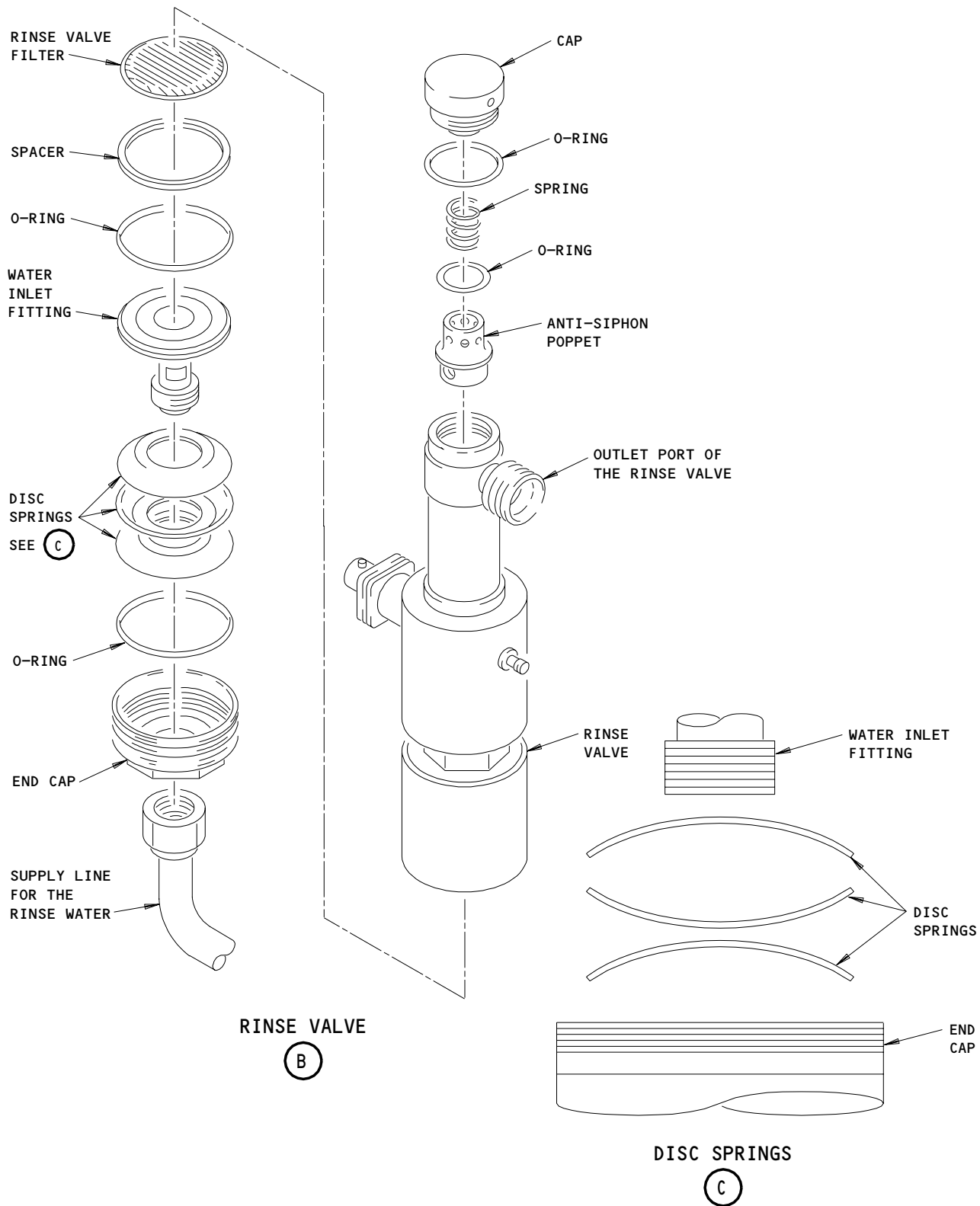
Rinse Valve  
Figure 404 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITHOUT ENVIROCLEAN SYSTEM

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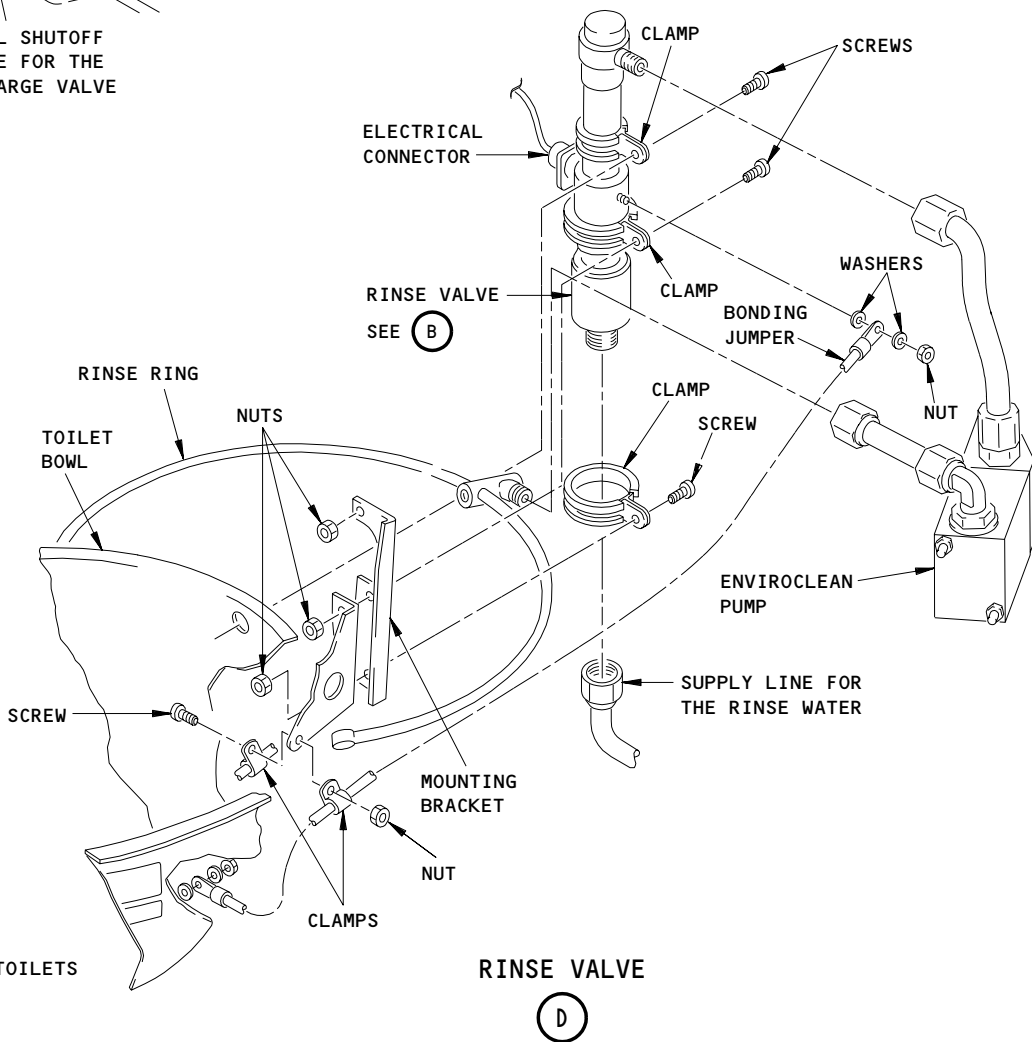
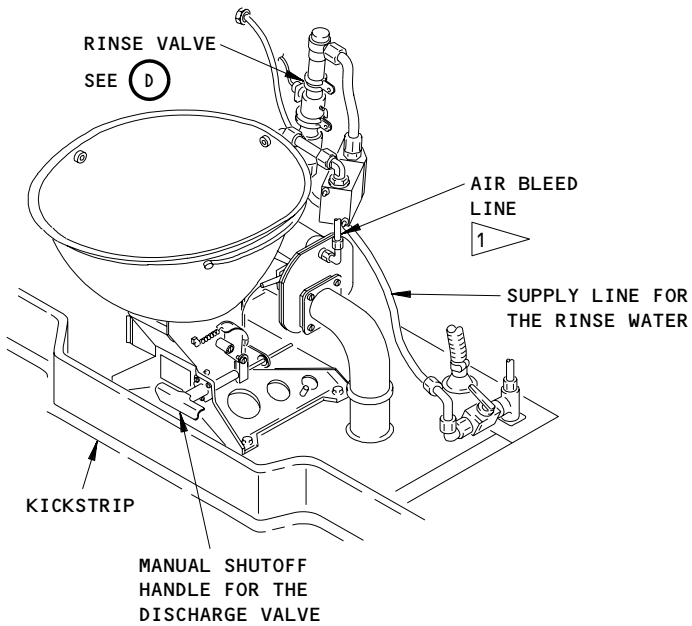
Rinse Valve  
Figure 404 (Sheet 2)

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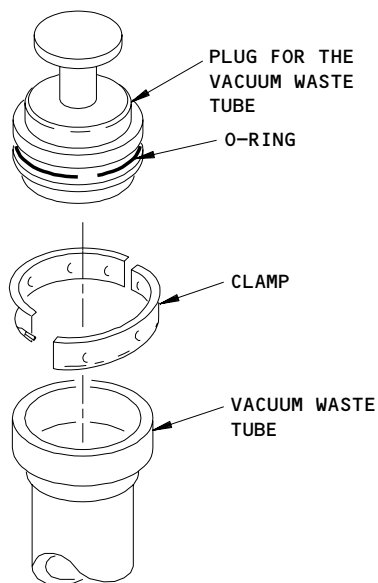
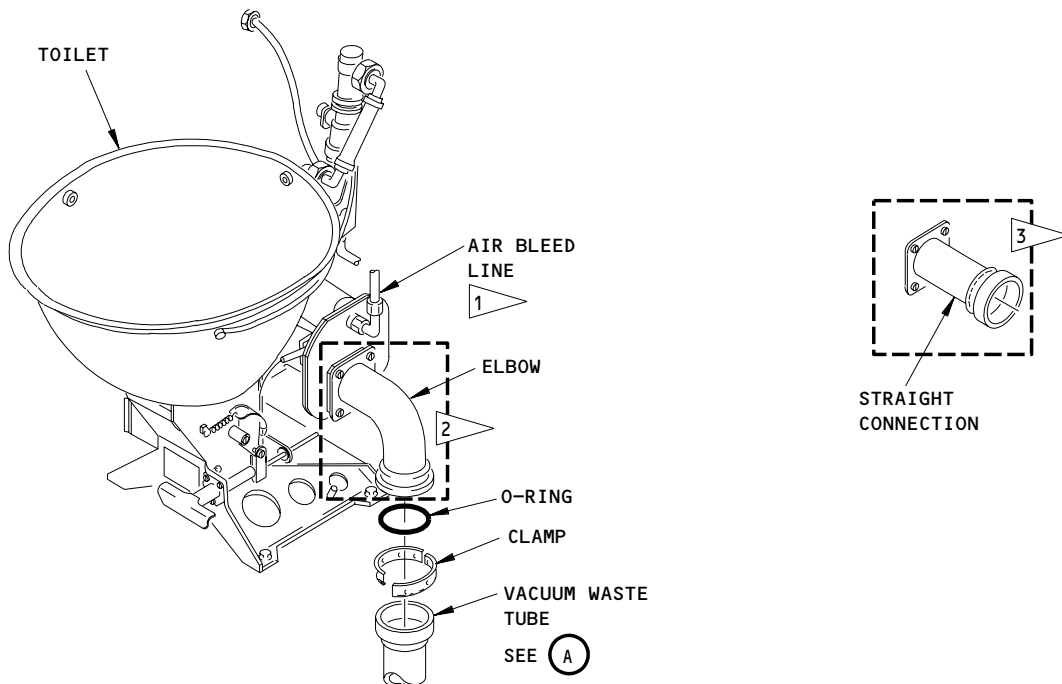
Rinse Valve  
Figure 404 (Sheet 3)

EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAN SYSTEM

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(A)

- 1 NOT ON ALL TOILETS
- 2 TOILETS WITH AN ELBOW
- 3 TOILETS WITH A STRAIGHT CONNECTION

Vacuum Waste System Plug  
Figure 405 (Sheet 1)

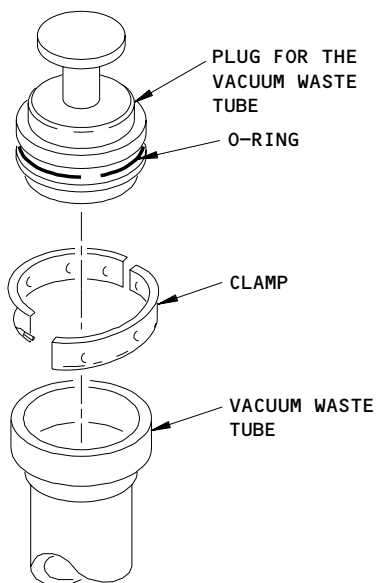
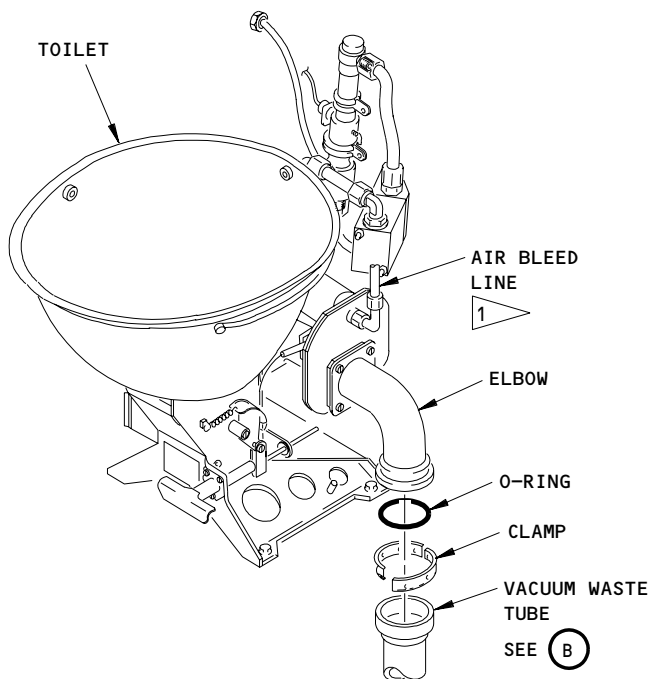
EFFECTIVITY  
AIRPLANES WITHOUT ENVIROCLEAN SYSTEM

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U68803



1 NOT ON ALL TOILETS

(B)

Vacuum Waste System Plug  
Figure 405 (Sheet 2)

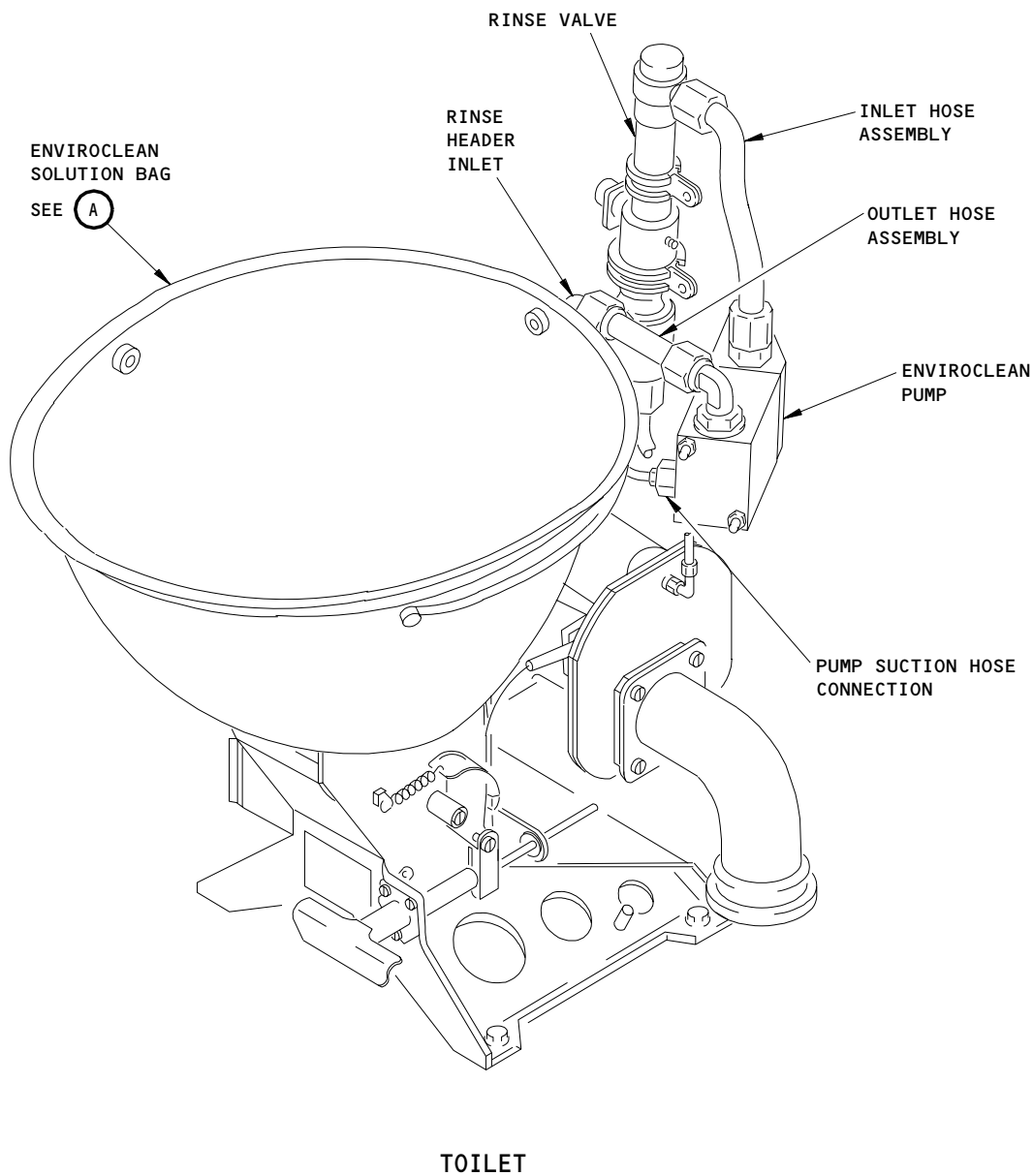
EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAN SYSTEM

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U68817



EnviroClean Pump Installation  
Figure 406 (Sheet 1)

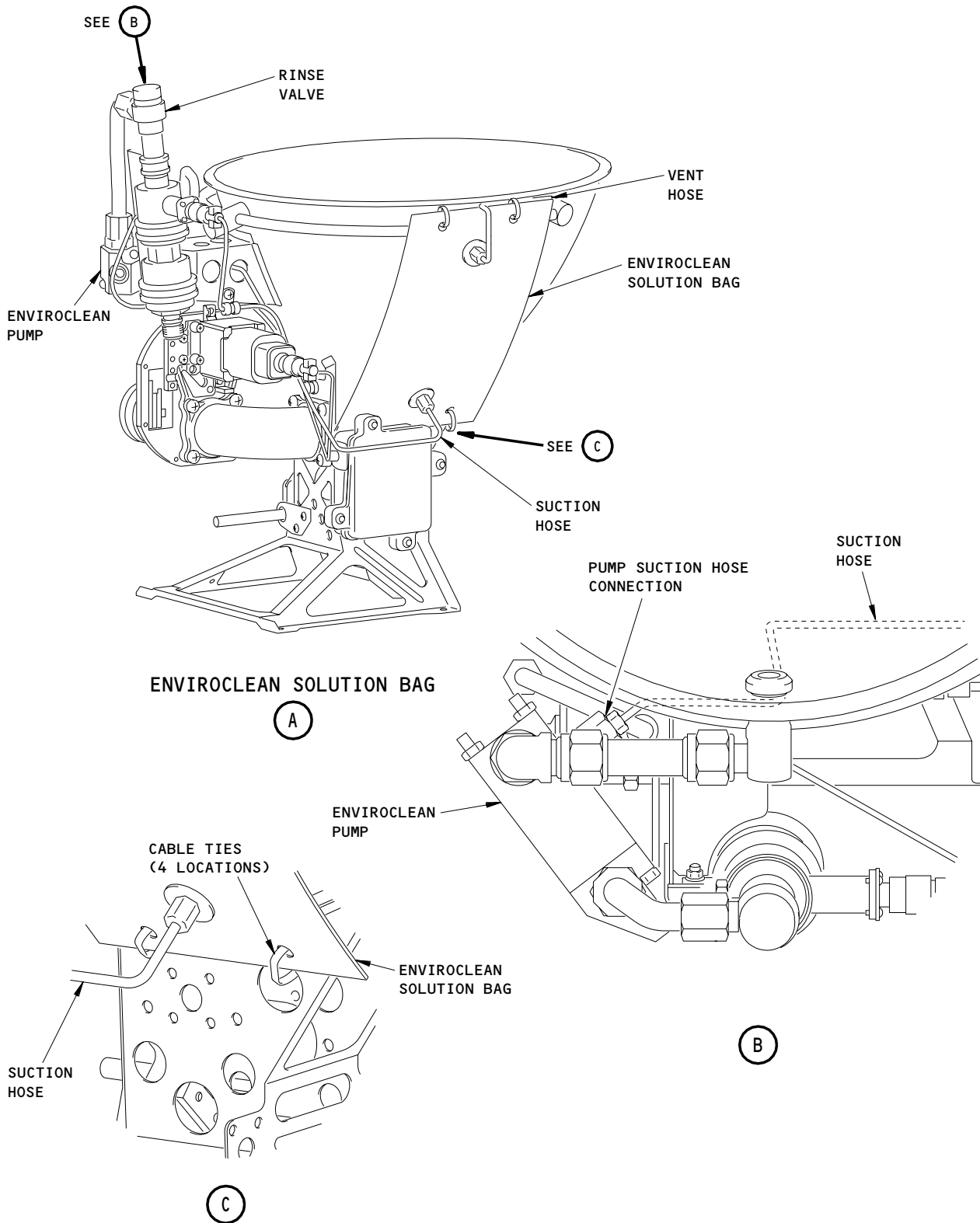
EFFECTIVITY  
AIRPLANES WITH ENVIROCLEAN SYSTEM

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EnviroClean Pump Installation  
Figure 406 (Sheet 2)

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AIRPLANES WITH ENVIROCLEAN SYSTEM

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S 014-003

- (3) Do the steps that follow to remove the toilet shroud:
  - (a) Open the toilet shroud latches at the bottom of the toilet shroud (turn the latches away from the toilet to open them).
  - (b) Pull out the bottom edge of the toilet shroud.
  - (c) Move the toilet shroud down until the top edge is disengaged from the trim strip on the lavatory wall.

S 864-004

- (4) Close the manual shutoff valve for the rinse water.
- F. Remove the Toilet Assembly (Fig. 401)

S 034-005

- (1) Disconnect the electrical connector for the power source of the toilet.

S 914-122

**CAUTION:** DO NOT REMOVE THE TOILET BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE (AMM 20-41-01/201). ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PC BOARD OF THE ELECTRONIC FLUSH CONTROL.

- (2) Do the procedure for devices that are sensitive to electrostatic discharge (AMM 20-41-01/201).

S 024-123

- (3) Hold the fitting, at the bottom of the rinse valve, with a wrench to make sure it does not turn, and do this step:
  - (a) Disconnect the supply line for the rinse water at the rinse valve on the toilet.

S 864-007

- (4) Drain the water that is in the supply line into a container.

S 024-011

- (5) Release and remove the clamp that attaches the elbow or the straight connection (on the discharge valve) to the vacuum waste tube.

S 024-125

- (6) Remove the toilet mounting bolts.

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S 024-141

- (7) Remove the nut and washer to disconnect the bonding jumper from the toilet and then attach the nut and washer.

S 024-126

- (8) Remove the toilet assembly.

S 014-133

- (9) Remove the elbow or the straight connection from the discharge valve.

**NOTE:** This step is not necessary if the toilet assembly that you will install has the correct elbow or straight connection.

S 034-011

- (10) If the vacuum waste system will be operated while the toilet is removed, then do these steps (to install a plug in the vacuum waste tube) (Fig. 405):
- (a) Put grease on the o-ring on the plug.
  - (b) Put the plug in the vacuum waste tube.
  - (c) Attach the plug to the vacuum waste tube with the clamp.

TASK 38-32-01-004-099

3. Toilet Related Assembly Removal

A. General

- (1) To remove one of the parts, do the Prepare for Removal steps. Then, do only the steps that are applicable to the removal of the part.

B. Equipment

- (1) Plug for the Vacuum Waste System - A38007-1

C. Consumable Materials

- (1) D00046 Grease - DC4

D. References

- (1) AMM 20-41-01/201, Electrostatic Discharge Sensitive Devices
- (2) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (3) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System

E. Access

- (1) Location Zone  
200 Upper Half of Fuselage

F. Prepare for the Removal (Fig. 401)

S 864-101

- (1) Deactivate the vacuum blower and lavatory flush system (AMM 38-32-00/201).

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S 674-139

- (2) Use the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

S 014-104

- (3) Do the steps that follow to remove the toilet shroud:
  - (a) Open the toilet shroud latches at the bottom of the toilet shroud (turn the latches away from the toilet to open them).
  - (b) Pull out the bottom edge of the toilet shroud.
  - (c) Move the toilet shroud down until the top edge is disengaged from the trim strip on the lavatory wall.

S 864-105

- (4) Close the manual shutoff valve for the rinse water.
- G. Remove the Electronic Flush Control Unit (Fig. 402)

S 914-013

**CAUTION:** DO NOT REMOVE THE ELECTRONIC FLUSH CONTROL BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE (AMM 20-41-01/201). ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PC BOARD.

- (1) Do the procedure for devices that are sensitive to electrostatic discharge (AMM 20-41-01/201).

S 024-127

- (2) Disconnect the electrical connector for the power source.

S 034-013

- (3) Remove the bolt and nut that attach the clamps, for the rinse valve wires and the bonding jumper, to the toilet pedestal.

S 034-014

- (4) Remove the clamp from the rinse valve wires.

S 034-015

- (5) Disconnect the electrical connectors from the rinse valve and the discharge valve.

S 034-016

- (6) Remove the nut and washer that attach the bonding jumper to the electronic flush control and remove the bonding jumper.

S 024-128

- (7) Remove the nuts which attach the electronic flush control box to the toilet pedestal and remove the electronic flush control.

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H. Remove the Discharge Valve (Fig. 403)

- S 034-019
- (1) Loosen the screw that attaches the manual override cable to the pulley link.
- S 034-020
- (2) Remove the manual override cable from the pulley link.
- S 034-021
- (3) Remove the spring that is connected between the end of the manual override cable and the spring bracket on the discharge valve.
- S 034-022
- (4) Remove the bolts which attach the cable guide clamp to the mounting adapter on the discharge valve.
- S 034-023
- (5) Remove the cable guide clamp from the discharge valve.
- S 034-024
- (6) Remove the manual override cable and the cable guide from the discharge valve.
- S 034-025
- (7) Release and remove the clamp that attaches the elbow (on the discharge valve) to the vacuum waste tube.
- S 034-026
- (8) Remove the bolts that attach the elbow to the discharge valve.
- S 034-027
- (9) Remove the elbow and the o-ring from the discharge valve.
- S 034-028
- (10) Disconnect the electrical connector from the discharge valve actuator.
- S 024-029
- (11) Remove the bolts which attach the discharge valve to the elbow at the toilet bowl.
- S 024-030
- (12) Remove the discharge valve and the o-ring from the elbow at the toilet bowl.
- S 024-031
- (13) Remove the bolts which attach the discharge valve actuator to the discharge valve.

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S 024-032

- (14) Remove the discharge valve actuator and the valve crank from the discharge valve.

I. Remove the Rinse Valve (Fig. 404)

S 034-033

- (1) Hold the water inlet fitting, at the bottom of the rinse valve, with a wrench to make sure it does not turn, and do this step:
  - (a) Disconnect the supply line for the rinse water from the water inlet fitting on the rinse valve.

S 684-034

- (2) Drain the water that is in the supply line into a container.

S 034-035

- (3) Disconnect the rinse water hose from the outlet port of the rinse valve.

S 034-036

- (4) Disconnect the electrical connector from the rinse valve.

S 034-037

- (5) Disconnect the bonding jumper from the rinse valve.

S 024-038

- (6) Remove the screws which attach the three rinse valve clamps to the bracket on the rear of the toilet.

S 024-039

- (7) Remove the rinse valve and the mounting bracket.

S 034-040

- (8) Remove the three clamps from the rinse valve.

S 024-041

- (9) If it is necessary, do these steps to disassemble the anti-siphon valve:
  - (a) Remove the cap from the rinse valve.
  - (b) Remove the spring and the anti-siphon poppet from the rinse valve.
  - (c) Remove the o-rings from the cap.

S 024-042

- (10) If it is necessary, do these steps to remove the rinse valve filter:
  - (a) Remove the end cap from the bottom of the rinse valve.
  - (b) Remove the three disc springs and the water inlet fitting from the rinse valve.
  - (c) Remove the spacer and the rinse valve filter from the rinse valve.

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(d) Remove the o-rings from the water inlet fitting and the end cap.

J. AIRPLANES WITH ENVIROCLEAR SYSTEM;  
Remove the EnviroClean Pump (Fig. 406)

S 024-143

(1) Disconnect the pump outlet hose assembly from the rinse header inlet.

S 024-144

(2) Disconnect the solution bag suction hose from the pump.

NOTE: To avoid spillage, keep the open end of the suction hose above the liquid level in the bag.

S 024-145

(3) Disconnect the pump inlet hose assembly from the outlet port of the rinse valve.

S 014-146

(4) Remove the EnviroClean pump.

TASK 38-32-01-404-043

4. Toilet Installation

A. General

(1) To install one of the parts, do the installation steps that are applicable to the part. Then, do the steps to Put the Airplane Back to Its Usual Condition.

B. Consumable Materials

- (1) G00022 Compound, Water purifying Chlorine Dioxide (stabilized 2% solution) - Purogene or Oxine
- (2) B00637 Acid, Citric (crystals or powder), Commercially Available - A-A-59147
- (3) D00046 Grease - DC4

C. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 20-41-01/201, Electrostatic Discharge Sensitive Devices
- (3) AMM 24-22-00/201, Electrical Power - Control
- (4) AMM 38-10-00/201, Potable Water System
- (5) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (6) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System

D. Access

- (1) Location Zone  
200 Upper Half of Fuselage

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E. Install the Toilet Assembly (Fig. 401)

S 674-137

- (1) Do the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

S 914-012

**CAUTION:** DO NOT INSTALL THE TOILET BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE (AMM 20-41-01/201). ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PC BOARD OF THE ELECTRONIC FLUSH CONTROL.

- (2) Do the procedure for devices that are sensitive to electrostatic discharge (AMM 20-41-01/201).

S 024-008

- (3) If a plug is installed in the vacuum waste tube, then do these steps to remove the plug (Fig. 405):
- (a) Release and remove the clamp that attaches the plug to the vacuum waste tube.
  - (b) Pull the plug from the vacuum waste tube.

S 424-131

- (4) TOILETS WITHOUT AN ELBOW OR STRAIGHT CONNECTION ON DISCHARGE VALVE; Install the elbow or straight connection (from the old toilet) to the discharge valve of the new toilet. Use a new o-ring with grease on it and new screws.

**NOTE:** This step is not necessary if the toilet you will install has the correct elbow or straight connection.

S 644-045

- (5) Put grease on a new o-ring.

S 434-046

- (6) Put the new o-ring on the elbow that is attached to the discharge valve.

S 424-047

- (7) Put the toilet in its position and install the mounting bolts. Do not tighten the bolts.

S 424-004

- (8) Attach the elbow or the straight connection (of the toilet) to the vacuum waste tube with the clamp.

**NOTE:** Turn the clamp (before you latch it) to put it in a position that will give the easiest access to the latch.

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- S 434-094
- (9) Tighten the mounting bolts for the toilet.
- S 424-142
- (10) Remove the nut and washer to connect the bonding jumper to the toilet.
- (a) Install the nut and washer to connect the bonding jumper.
- S 674-050
- (11) Mix 0.65 fluid ounces (20 ml) chlorine dioxide and 0.07 ounces (1.9 grams) of citric acid in one gallon (4 liters) of water to make a disinfectant.
- S 674-051
- (12) Clean the connections on the supply line for the rinse water with the disinfectant.
- S 674-052
- (13) Put about one cup (8 fluid ounces) of the disinfectant in the supply line.
- S 434-053
- (14) Hold the fitting, at the bottom of the rinse valve, with a wrench to make sure it does not turn, and do this step:
- (a) Connect the supply line for the rinse water to the rinse valve and install a lockwire.
- S 434-054
- (15) Connect the electrical connector for the power supply for the toilet.
- F. Put the Airplane Back to Its Usual Condition (Fig. 401)
- S 864-106
- (1) Open the manual shutoff valve for the rinse water.
- S 864-107
- (2) Activate the vacuum blower and lavatory flush system (AMM 38-32-00/201).
- S 864-110
- (3) Supply electrical power (AMM 24-22-00/201).
- S 864-111
- (4) If the potable water tanks are empty, then fill the potable water tanks (AMM 12-14-01/301).
- S 864-112
- (5) Pressurize the potable water system (AMM 38-10-00/201).

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- S 864-113
- (6) Flush the toilet a minimum of two times to make sure it operates correctly.
- S 414-114
- (7) Do these steps to install the toilet shroud:
- (a) Engage the top edge of the toilet shroud with the trim strip of the lavatory wall.
  - (b) Push the bottom edge of the toilet shroud in.
  - (c) Turn the toilet shroud latches to close the toilet shroud.
- S 864-115
- (8) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-01-404-116

5. Toilet Related Assembly Installation

A. General

- (1) To install one of the parts, do the installation steps that are applicable to the part. Then, do the steps to Put the Airplane Back to Its Usual Condition.

B. Consumable Materials

- (1) 7500598-001 - EnviroClean Solution Kit (FT-2), includes cable ties and tube clamp, 1 bag per 10,000 flushes

C. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 20-41-01/201, Electrostatic Discharge Sensitive Devices
- (3) AMM 24-22-00/201, Electrical Power - Control
- (4) AMM 38-10-00/201, Potable Water System
- (5) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (6) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System

D. Access

- (1) Location Zone  
200 Upper Half of Fuselage

E. Prepare for Installation

S 674-138

- (1) Do the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

F. TOILET ASSEMBLY WITH CIRCUIT BREAKER ON FLUSH CONTROL UNIT;

Install the Electronic Flush Control (With Circuit Breaker) (Fig. 402)

S 914-014

**CAUTION:** DO NOT INSTALL THE ELECTRONIC FLUSH CONTROL BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE (AMM 20-41-01/201). ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PC BOARD.

- (1) Do the procedure for devices that are sensitive to electrostatic discharge (AMM 20-41-01/201).

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- S 424-021
- (2) If it is not installed, do these steps to install the PC board in the electronic flush control:
    - (a) Connect the PC board to the electrical connector in the flush control assembly.
    - (b) Do a check to make sure the seal for the cover is not damaged and is in its position.
      - 1) If the seal is damaged or not in its position, replace the seal.
    - (c) Put the cover in its position on the seal for the flush control assembly.
    - (d) Install the screws and washers that attach the cover to the flush control assembly.
- S 424-015
- (3) Put the electronic flush control in its position on the toilet pedestal, and install the mounting nuts.
- S 434-016
- (4) Put the bonding jumper on the bolt on the side of the electronic flush control.
- S 024-015
- (5) Install the nut and washer on the bolt.
- S 434-017
- (6) Connect the electrical connectors to the rinse valve and the discharge valve.
- S 434-018
- (7) Install the clamp on the rinse valve wires.
- S 434-019
- (8) Install the bolt and nut to attach the clamps, for the rinse valve wires and the bonding jumper, to the toilet pedestal.
- S 434-020
- (9) Connect the electrical connector for the power supply for the toilet.
- G. TOILET ASSEMBLY WITHOUT CIRCUIT BREAKER ON FLUSH CONTROL UNIT;  
Install the Electronic Flush Control (Without Circuit Breaker) (Fig. 402)

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S 914-006

**CAUTION:** DO NOT INSTALL THE ELECTRONIC FLUSH CONTROL BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE (AMM 20-41-01/201). ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE PC BOARD.

- (1) Do the procedure for devices that are sensitive to electrostatic discharge (AMM 20-41-01/201).

S 424-007

- (2) If it is not installed, do these steps to install the PC board in the electronic flush control:
  - (a) Connect the PC board to the PC board connector in the box for the electronic flush control.
  - (b) Push the end of the PC board (that is opposite the PC board connector) into the box to engage the tab on the mounting bracket.
  - (c) Put the cover in its position on the seal on the box and install the screws and washers.

S 424-056

- (3) Put the electronic flush control in its position on the toilet pedestal, and install the mounting nuts.

S 434-057

- (4) Put the bonding jumper on the bolt on the side of the electronic flush control. Install the nut and washer on the bolt.

S 434-058

- (5) Connect the electrical connectors to the rinse valve and the discharge valve.

S 434-059

- (6) Install the clamp on the rinse valve wires.

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S 434-060

- (7) Install the bolt and nut to attach the clamps, for the rinse valve wires and the bonding jumper, to the toilet pedestal.

S 434-061

- (8) Connect the electrical connector for the power supply for the toilet.

H. Install the Discharge Valve (Fig. 403)

S 424-062

- (1) Put the discharge valve actuator and the valve crank in their position on the discharge valve.

S 424-063

- (2) Install the bolts to attach the discharge valve actuator to the discharge valve.

S 424-064

- (3) Put a new o-ring and the discharge valve in their position on the elbow at the toilet bowl.

S 424-065

- (4) Install the bolts to attach the discharge valve to the elbow at the toilet bowl.

S 434-066

- (5) Connect the electrical connector to the discharge valve actuator.

S 434-067

- (6) Put the cable guide and the cable guide clamp in their position on the mounting adapter.

S 434-068

- (7) Install the bolts to attach the cable guide to the mounting adapter.

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S 434-069

- (8) Put the manual override cable through the valve crank and the cable guide.

S 434-070

- (9) Install the spring between the end of the manual override cable and the spring bracket on the discharge valve.

S 434-071

- (10) Do these steps to install the manual override cable:
- (a) Hold the valve crank in the position that fully closes the discharge valve
  - (b) Pull the manual override cable against the valve crank
  - (c) Put the manual override cable through the pulley link and tighten the screw to attach it.

S 644-072

- (11) Put grease on a new o-ring.

S 434-073

- (12) Install the new o-ring on the elbow at the end that connects to the vacuum waste tube.

S 434-074

- (13) Put one more new o-ring and the elbow in their position on the discharge valve.

NOTE: Also engage the elbow in the vacuum waste tube at the same time.

S 434-075

- (14) Install the bolts to attach the elbow to the discharge valve.

S 434-076

- (15) Attach the elbow to the vacuum waste tube with the clamp.

NOTE: Turn the clamp (before you latch it) to put it in a position that will give the easiest access to the latch.

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I. Install the Rinse Valve (Fig. 404)

S 424-077

- (1) If it is not assembled, then do these steps to assemble the rinse valve filter:
  - (a) Install new o-rings on the water inlet fitting and the end cap.
  - (b) Install the rinse valve filter, the spacer, and the water inlet fitting in the rinse valve.
  - (c) Put the three disc springs in the position shown in Detail C and install the disc springs in the rinse valve.
  - (d) Install the end cap on the rinse valve.

S 424-078

- (2) If it is not assembled, then do these steps to assemble the anti-siphon valve:
  - (a) Install new o-rings on the cap.
  - (b) Install the spring and the anti-siphon poppet on the cap.
  - (c) Install the cap on the rinse valve.

S 434-079

- (3) Install the three clamps on the rinse valve.

S 424-080

- (4) Put the mounting bracket and the rinse valve in their position on the bracket on the rear of the toilet.

S 424-081

- (5) Install the screws and nuts to attach the rinse valve and the mounting bracket to the bracket on the rear of the toilet.

S 434-082

- (6) Install the washers, bonding jumper, and nut on the stud on the side of the rinse valve.

S 434-083

- (7) Connect the electrical connector to the rinse valve.

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- S 674-134
- (8) Mix 0.65 fluid ounces (20 ml) chlorine dioxide and 0.07 ounces (1.9 grams) of citric acid in one gallon (4 liters) of water to make a disinfectant.
- S 674-135
- (9) Clean the connections on the supply line for the rinse water with the disinfectant.
- S 674-136
- (10) Put about one cup (8 fluid ounces) of the disinfectant in the supply line.
- S 434-084
- (11) Hold the water inlet fitting, at the bottom of the rinse valve, with a wrench to make sure it does not turn, and do this step:
- (a) Connect the supply line for the rinse water to the water inlet fitting on the rinse valve.
- S 434-085
- (12) Connect the rinse water hose to the outlet port of the rinse valve.
- J. AIRPLANES WITH ENVIROCLEAR SYSTEM;  
Install the EnviroClean Pump (Fig. 406)
- S 414-147
- (1) Put the EnviroClean pump in its place.
- S 424-148
- (2) Connect the pump inlet hose assembly, from the pump inlet to the outlet port of the rinse valve.
- S 424-149
- (3) Connect the pump outlet hose assembly, from the pump outlet to the rinse header inlet.

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S 424-150

- (4) Connect the solution bag suction hose to the pump.
- K. AIRPLANES WITH ENVIROCLEAN SYSTEM;  
Replacement of the EnviroClean Chemical Solution Bag (Fig. 406)

**NOTE:** The EnviroClean Solution bag is designed to provide the chemical solution for the EnviroClean Pump System for approximately 10,000 flushes.

S 014-151

- (1) To remove the depleted bag, do the following steps:
- (a) Note the route of the suction hose from the bag to the EnviroClean pump.
  - (b) Disconnect the pump suction hose from the pump.

**NOTE:** To avoid spillage, keep the open end of the suction hose above the level of any remaining liquid in the bag.

- (c) Cut and remove the four cable ties that attach the solution bag to the toilet.
- (d) Remove the solution bag and suction hose and discard.

S 414-152

- (2) To install a new solution bag, do the following steps:
- (a) Note the bag label to determine which end of the bag is to be mounted up.
  - (b) Place the tube clamp on the hose connecting the suction port (lower) and vent port (upper) of EnviroClean solution bag.

**NOTE:** The clamp should be located about 4 inches (10 cm) from the bag's vent (upper) port.

- (c) Cut the hose 20 inches (51 cm) from the bag's suction (lower) port.

**NOTE:** To avoid spillage, keep the open end of the pump suction hose above the liquid level in the bag.

- (d) Route the pump suction hose from the bag suction fitting to the EnviroClean pump suction fitting.
- (e) Insert the hose into the pump port and tighten the fitting.
- (f) Preposition the lower cable ties (included in kit) through the toilet assembly bowl support structure (on same side as the flush control unit).
- (g) Using a cable tie in the upper rear grommet, install the bag to the outside of the rinse header. Do not tighten the cable tie at this time.
- (h) Install a cable tie loosely through the upper front grommet of the bag.

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- (i) Route the vent hose from the bag to the outside of the rinse header. Do not tighten the cable tie at this time.
- (j) Put the bag in its position to the front of the rinse header.
- (k) Eliminate any wrinkles in the top hem of the bag.
- (l) Tighten the upper rear cable tie.
- (m) Put the vent hose in its position from the top of the bag's bulkhead fitting (vent port) into and through the upperfront cable tie.

**CAUTION:** DO NOT PUT STRAIN ON THE BULKHEAD FITTING. DO NOT PINCH THE VENT HOSE. IF THE HOSE IS PINCHED, OR THE FITTING IS STRAINED, THE BAG WILL NOT VENT. IF THE BAG DOES NOT VENT, THE ENVIROCLEAN PUMP WILL NOT WORK.

- (n) Use the lower cable ties to attached the bag's bottom two grommets to the toilet assembly
  - (o) Position and tighten the bottom two cable ties so that the bag is not deflected or strained.
  - (p) Cut the four cable tie tails so that you do not leave an edge to damage the baggage or injure personnel.
  - (q) Cut the vent hose approximately 2 inches (5 cm) after it protruds from the cable tie. Discard the hose clamp.
- L. Put the Airplane Back to Its Usual Condition (Fig. 401)

S 864-086

- (1) Open the manual shutoff valve for the rinse water.

S 864-087

- (2) Activate the vacuum blower and lav flush system (AMM 38-32-00/201).

S 864-088

- (3) Supply electrical power (AMM 24-22-00/201).

S 614-089

- (4) If the potable water tanks are empty, then fill the potable water tanks (AMM 12-14-01/301).

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- S 864-090
- (5) Pressurize the potable water system (AMM 38-10-00/201).
- S 714-091
- (6) Flush the toilet a minimum of two times to make sure it operates correctly.
- S 414-092
- (7) Do these steps to install the toilet shroud:
- (a) Engage the top edge of the toilet shroud with the trim strip of the lavatory wall.
  - (b) Push the bottom edge of the toilet shroud in.
  - (c) Turn the toilet shroud latches to close the toilet shroud.
- S 864-093
- (8) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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WATER SEPARATOR – MAINTENANCE PRACTICES

1. General

- A. This procedure gives the instructions to remove and install the water separator. It also gives the instructions to clean the water separator.
- B. WATER SEPARATORS WITH P/N 00091-005;  
These water separators have a stainless steel ring to keep the water separator in its position in the top of the waste tank. The housing for the previous water separators are made of all plastic materials.

TASK 38-32-02-002-001

2. Remove the Water Separator (Fig. 201)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (4) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

- S 862-002
- (1) Deactivate the vacuum blower and lav flush system (AMM 38-32-00/201).
- S 672-040
- (2) Use standard procedures for work with the toilet waste and equipment (AMM 38-32-00/201).
- S 612-003
- (3) Drain and flush the waste tanks (AMM 12-17-01/301).
- S 012-004
- (4) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 012-005
- (5) Remove the aft bulkhead lining or the waste enclosure panels of the bulk cargo compartment to gain access to the waste tanks (AMM 25-52-01/401).

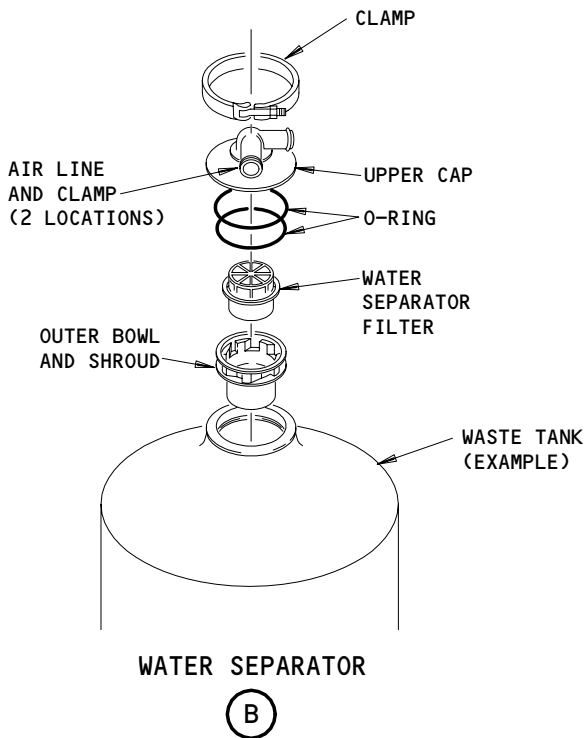
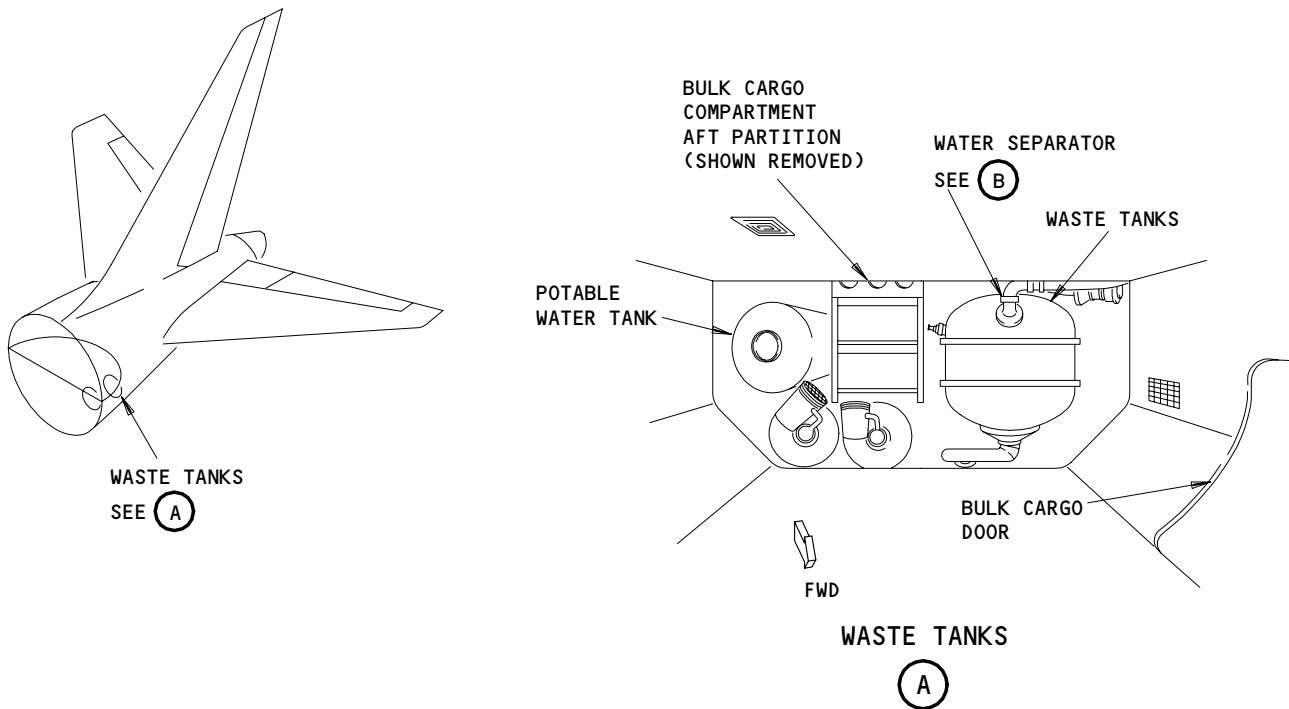
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Water Separator Installation  
Figure 201

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S 012-042

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

(6) Loosen the clamps that attach the air lines to the upper cap.

S 032-007

(7) Disconnect the air lines from the upper cap.

S 022-008

(8) Remove the clamp that attaches the upper cap to the waste tank.

S 022-009

**CAUTION:** DO NOT USE THE SCREWDRIVER AS A WEDGE OR A LEVER. IT CAN CAUSE DAMAGE TO THE WASTE TANK OR UPPER CAP.

(9) Put a blunt screwdriver against the outer edge of the upper cap. Use your hand to hit lightly on the end of the screwdriver to push the upper cap out of the waste tank.

**NOTE:** To prevent damage to the upper cap and make it come out easily, hit only once or twice, then move the screwdriver to a different location on the upper cap.

S 022-010

(10) Remove the water separator filter from the waste tank.

S 022-011

**CAUTION:** YOU MUST HOLD THE OUTER BOWL AND SHROUD PARALLEL WITH THE WASTE TANK WHEN YOU REMOVE IT. THIS KEEPS THE OUTER BOWL AND SHROUD OUT OF THE WASTE TANK. IF THE OUTER BOWL AND SHROUD FALLS INTO THE WASTE TANK CONTAMINATION CAN GET IN THE VACUUM BLOWER.

(11) Lift the outer bowl and shroud straight up and remove it from the waste tank.

TASK 38-32-02-402-012

3. Install the Water Separator (Fig. 201)

A. Consumable Materials

(1) D00150 Petrolatum - VV-P-236

B. References

(1) AMM 24-22-00/201, Manual Control

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- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (4) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System
- (5) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

D. Procedure

S 672-041

- (1) Use standard procedures for work with the toilet waste and equipment (AMM 38-32-00/201).

S 422-013

**CAUTION:** YOU MUST HOLD THE OUTER BOWL AND SHROUD PARALLEL WITH THE WASTE TANK WHEN YOU INSTALL IT. THIS KEEPS THE OUTER BOWL AND SHROUD OUT OF THE WASTE TANK. IF THE OUTER BOWL AND SHROUD FALLS INTO THE WASTE TANK CONTAMINATION CAN GET IN THE VACUUM BLOWER.

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (2) Hold the outer bowl and shroud parallel with the waste tank and lower it into its position. Make sure the outer bowl and shroud does not fall into the waste tank.

S 422-014

- (3) Put the water separator filter in the outer bowl and shroud.

S 432-015

- (4) Replace the O-rings on the upper cap if they are not serviceable.

S 642-016

- (5) Lubricate the O-rings with petrolatum.

S 422-017

- (6) Put the upper cap in its position.

S 422-018

- (7) Make sure you installed the O-ring correctly.

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- S 432-019
- (8) Install the clamp that attaches the upper cap to the waste tank and tighten it to 90-110 pound inches.
- S 432-020
- (9) Connect the air lines to the upper cap.
- S 432-021
- (10) Tighten the clamps for the air lines.
- S 862-022
- (11) Activate the vacuum blower and lav flush system (AMM 38-32-00/201).
- S 862-023
- (12) Supply electrical power (AMM 24-22-00/201).
- S 862-039
- (13) Make a list of the toilets that are identified on the placard on the waste tank.
- S 792-024
- (14) Flush the toilets and make sure the upper cap does not have a leak.
- S 412-025

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (15) Install the aft bulkhead lining or the waste enclosure panels of the bulk cargo compartment (AMM 25-52-01/401).
- S 412-026
- (16) Close the bulk cargo door, 811 (AMM 52-36-00/001).
- S 862-027
- (17) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-02-162-028

4. Clean the Water Separator

A. General

- (1) This procedure gives the steps to clean a water separator that does not have fiber contamination (waste or paper particles) on the upper surface of the demister mesh.

B. Consumable Materials

- (1) B00541 Cleaner - Commercially Available

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C. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
  
- (2) Access Panel  
811 Bulk Cargo Door

D. Procedure

- S 022-029
- (1) Remove the water separator from the waste tank; refer to the procedure above.
- S 162-030
- (2) Mix the cleaner with water in a container.
- S 162-031
- (3) Soak the water separator in the cleaner and water for a minimum of 15 minutes.
- S 172-032
- (4) Flush the water separator with clean water.
- S 422-033
- (5) Install the water separator; refer to the procedure above.

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WASTE TANK DRAIN VALVE – REMOVAL/INSTALLATION

1. General

- A. There are two drain valves, one for each waste tank. The removal and installation of each drain valve is almost the same.

TASK 38-32-03-004-069

2. Waste Drain Ball Valve Removal (Fig 401)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 25-52-01/401, Cargo Compartment Lining
- (3) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
163AL Waste Tank Service Panel

C. Prepare for the Removal

S 864-002

- (1) Do this task: Deactivate Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 614-075

- (2) Do the task to service the waste system, AMM 12-17-01/301.

NOTE: Do not add precharge.

S 014-088

CAUTION: USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (3) Open the bulk cargo door.

D. Procedure

S 014-007

- (1) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

S 034-008

- (2) For the forward drain ball valve (9), do this step:
  - (a) Remove the bolt (3), the washers (4), and the nut (5) that connects the adjustable rod (18) to the drain ball valve (9).

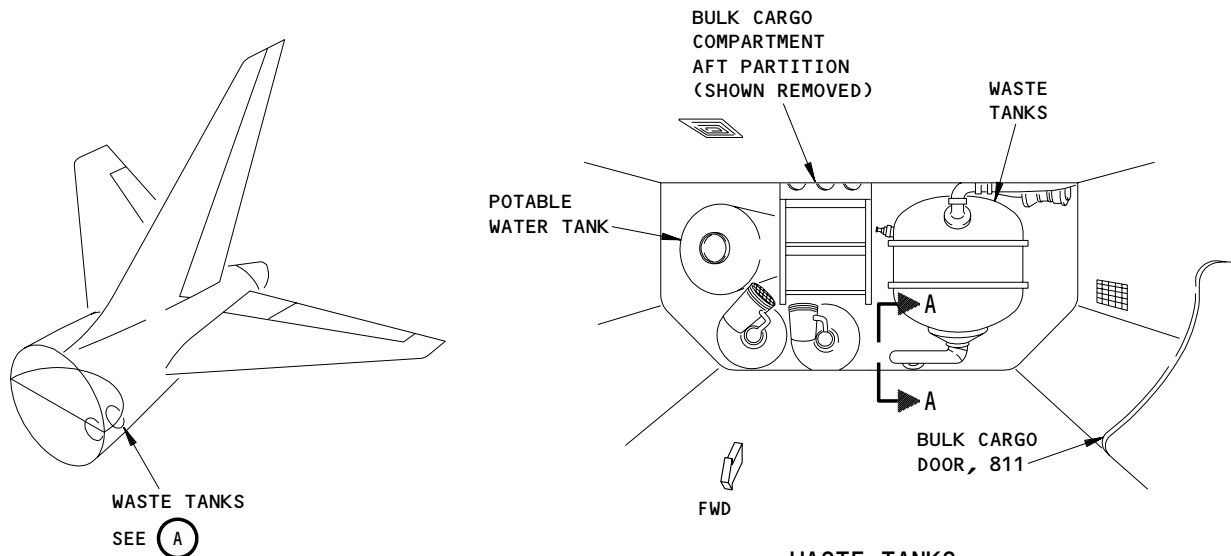
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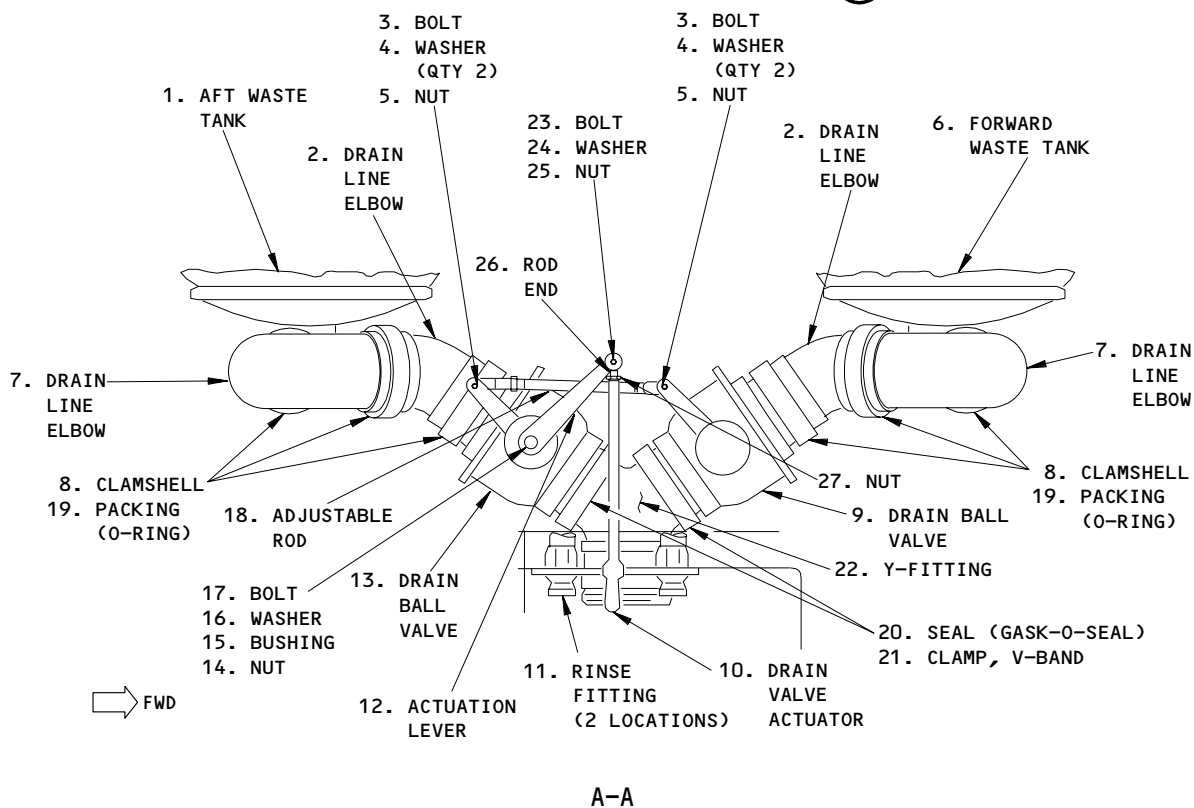
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**WASTE TANKS**

(A)



Waste Tank Drain Ball Valve Installation  
Figure 401

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S 034-009

- (3) For the aft drain ball valve (13), do these steps:
- (a) Remove the bolt (23), the washer (24), and the nut (25), that attaches the drain valve actuator assembly rod end (26) to the actuation lever (12). Disconnect the actuation lever (12) from the drain valve actuator (10) assembly.
  - (b) Remove the bolt (17), the washer (16), the bushing (15), and the nut (14), that attaches the actuation lever (12) to the drain ball valve (13). Remove the actuation lever (12) assembly from the drain valve.
  - (c) Remove the bolt (3), the washers (4), and the nut (5) that connects the adjustable rod (18) to the drain ball valve (13).

S 034-010

- (4) Loosen the clam shells (8) and remove the drain line elbows (2, 7) that are between the drain ball valve (9 or 13) and the waste tank (6 or 1).

S 024-086

- (5) Remove the V-band clamp (21) and seal (20) (gask-o-seal) between the drain ball valve and the Y-fitting (22).

S 024-011

- (6) Remove the drain ball valve (9 or 13).

TASK 38-32-03-404-020

3. Install the Waste Drain Ball Valve (Fig. 401)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 25-52-01/401, Cargo Compartment Lining
- (4) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
163AL Waste Tank Service Panel

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C. Procedure

S 424-089

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Put the drain ball valve (9 or 13) in its position with the Y-fitting. Use a new seal (20) (gask-o-seal).

S 424-087

- (2) Install and tighten the V-bland clamp (21).

S 434-022

- (3) Put the drain line elbows (2, 7) between the drain valve (9 or 13) and the waste tank (6 or 1). Use new packings (19) (O-rings).

S 034-023

- (4) Tighten the clam shells (8) for the drain line elbows (2 and 7)

S 864-024

- (5) Close the drain ball valves (9 and 13). Make sure that both the valves are in the full closed position.

**NOTE:** The valve (9 and 13) is fully closed when the lever on the valve is against its stop.

S 864-025

- (6) At the waste tank service panel, push the waste tank drain valve(s) handle in to the stop.

S 434-026

- (7) For the forward drain ball valve (9), do this step:
  - (a) If necessary, adjust the length of the adjustable rod (18) to align the bolt holes on the rod and the drain valve (9) lever. Install the bolt (3), the washer (4), and the nut (5) to connect the adjustable rod (18) to the drain valve (9) lever. If necessary, tighten the adjustable rod (18) clevis jam nut.

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S 434-027

- (8) For the aft drain ball valve (13), do these steps:
- (a) If necessary, adjust the length of the adjustable rod (18) to align the bolt holes on the rod and the drain ball valve (13) lever. Install the bolt (3), the washer (4), and the nut (5) to connect the adjustable rod (18) to the drain valve (13). If necessary, tighten the adjustable rod (18) clevis jam nut.
  - (b) Install the bolt (17), the washer (16), the bushing (15), and the nut (14) to attach the actuation lever (12) assembly to the drain valve (13).
  - (c) If necessary, adjust the rod end (26) to align the rod end and the actuation lever (12) bolt holes. Install the bolt (23) the washer (24) and the nut (25) that connects the actuation lever (12) to the drain valve actuator(10) assembly.
    - 1) Make sure that the rod end (26) threads are visible in the drain valve actuator (10) shaft inspection hole. Tighten the nut (27) to 55 - 65 in. lbs. (6.2 - 7.3Nm).

D. Drain Ball Valve - Operational Test

S 714-090

- (1) At the waste service panel, pull the tank drain valve handle out to the stop, then push the handle in to the stop. Make sure that the handle does not bind or stick.

S 864-092

- (2) Pull the tank drain valve handle out to the stop.

S 214-093

- (3) Do a visual check of the drain ball valves, and make sure that both the valves are in the full open position.

S 864-096

- (4) At the waste service panel, push the tank drain valve handle in, to the stop.

S 214-097

- (5) Do a visual check of the drain ball valves, and make sure that both the valves are in the full closed position.

**NOTE:** The valve (9 and 13) is fully closed when the lever on the valve is against its stop.

S 214-099

- (6) Close the waste tank service access panel door, 163AL. Make sure that the door closes completely. Make sure that the door does not touch the valve actuator (10) handle when the door is closed and latched.

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S 864-035

- (7) Do this task: Activate Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 794-031

- (8) Put water (50 gallons maximum) in the waste tank through the flush connection on the waste tank service panel (AMM 12-17-01/301).

S 794-032

- (9) Make sure the drain ball valve and drain line connections do not have a leak.

E. Put the Airplane Back to its Usual Condition

S 414-033

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining and/or the floor panel of the bulk cargo compartment (AMM 25-52-01/401).

S 414-034

- (2) Close the bulk cargo door.

S 614-080

- (3) Do the task to service the waste system, AMM 12-17-01/301.

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FLUSH SWITCH - REMOVAL/INSTALLATION

TASK 38-32-04-004-016

1. Remove the Flush Switch (Fig. 401)

A. Reference

- (1) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System

B. Access

- (1) Location Zone  
200 Upper Half of Fuselage

C. Prepare for removal of switch

S 864-001

- (1) Deactivate the vacuum blower and lavatory flush systems, AMM 38-32-00/201.

S 014-004

- (2) Remove the toilet shroud.

D. AIRPLANES WITH LEVER HANDLE SWITCH;  
Removal of the Lever Handle type switch.

S 014-005

- (1) Loosen the set screw and remove the flush handle.

S 014-006

- (2) Remove the cover plate.

S 024-007

- (3) Remove the screws (three locations) that attach the switch bracket to the lavatory.

S 024-008

- (4) Pull the switch bracket out.

S 024-040

- (5) Disconnect the electrical wires at the nearest connectors.

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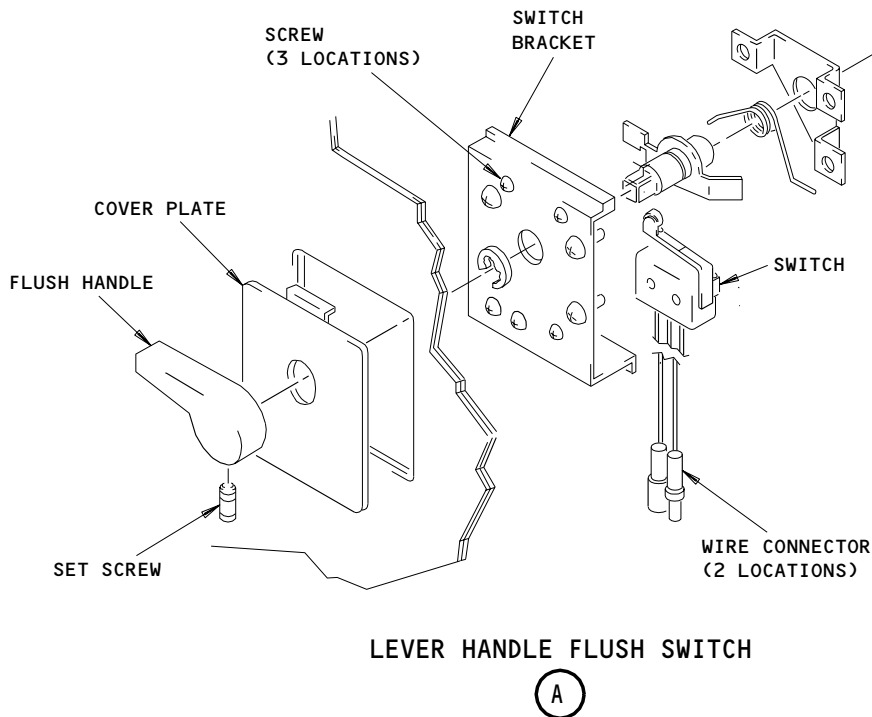
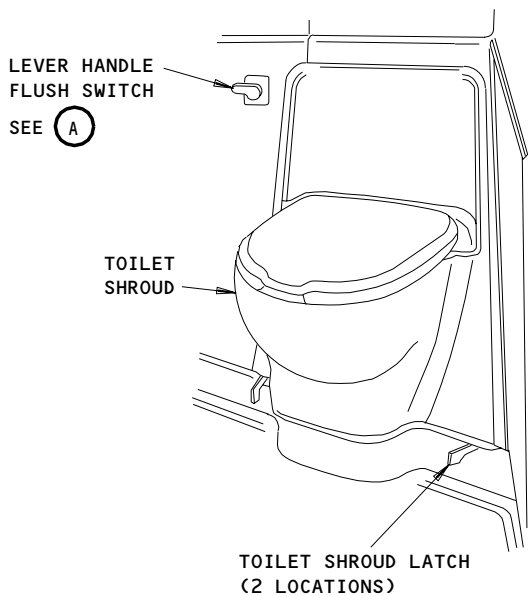
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Flush Switch Installation  
Figure 401

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TASK 38-32-04-404-015

2. Install the Flush Switch (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 38-32-00/201, Re-activate Vacuum Blower and Lav Flush System

B. Access

- (1) Location Zone  
200 Upper Half of Fuselage

C. AIRPLANES WITH LEVER HANDLE SWITCH;

Installation of the Lever Handle type switch.

S 424-042

- (1) Connect the electrical connectors.

S 424-023

- (2) Put the flush switch in its position and install the screws (three locations).

NOTE: Do not bend the actuator arm for the flush switch for the adjustment.

S 414-024

- (3) Install the cover plate.

S 414-025

- (4) Install the flush handle and tighten the set screw.

D. Put the airplane back to its usual condition.

S 414-026

- (1) Carefully install the toilet shroud.

S 864-027

- (2) Re-activate the vacuum blower and lavatory flush systems, AMM 38-32-00/201.

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- S 864-030
- (3) Supply electrical power (AMM 24-22-00/201).
- S 714-031
- (4) Operate the flush switch and make sure the toilet operates.
- S 864-032
- (5) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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VACUUM BLOWERS - REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the vacuum blower.
- B. The procedure for each blower is similar.
- C. VACUUM BLOWERS WITH AIR FILTER;  
This procedure also gives the instructions to remove and install the air filter on the vacuum blower.

NOTE: Blowers without an air filter are completely interchangeable with the blowers that include the air filter.

TASK 38-32-06-004-001

2. Remove the Vacuum Blower (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System
- (3) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
155 Area Below Aft Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

- S 864-002
- (1) Deactivate the vacuum blower and lavatory flush System (AMM 38-32-00/201).
- S 014-004
- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 014-005
- (3) Remove the aft bulkhead lining or waste enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).
- S 674-045
- (4) Use the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

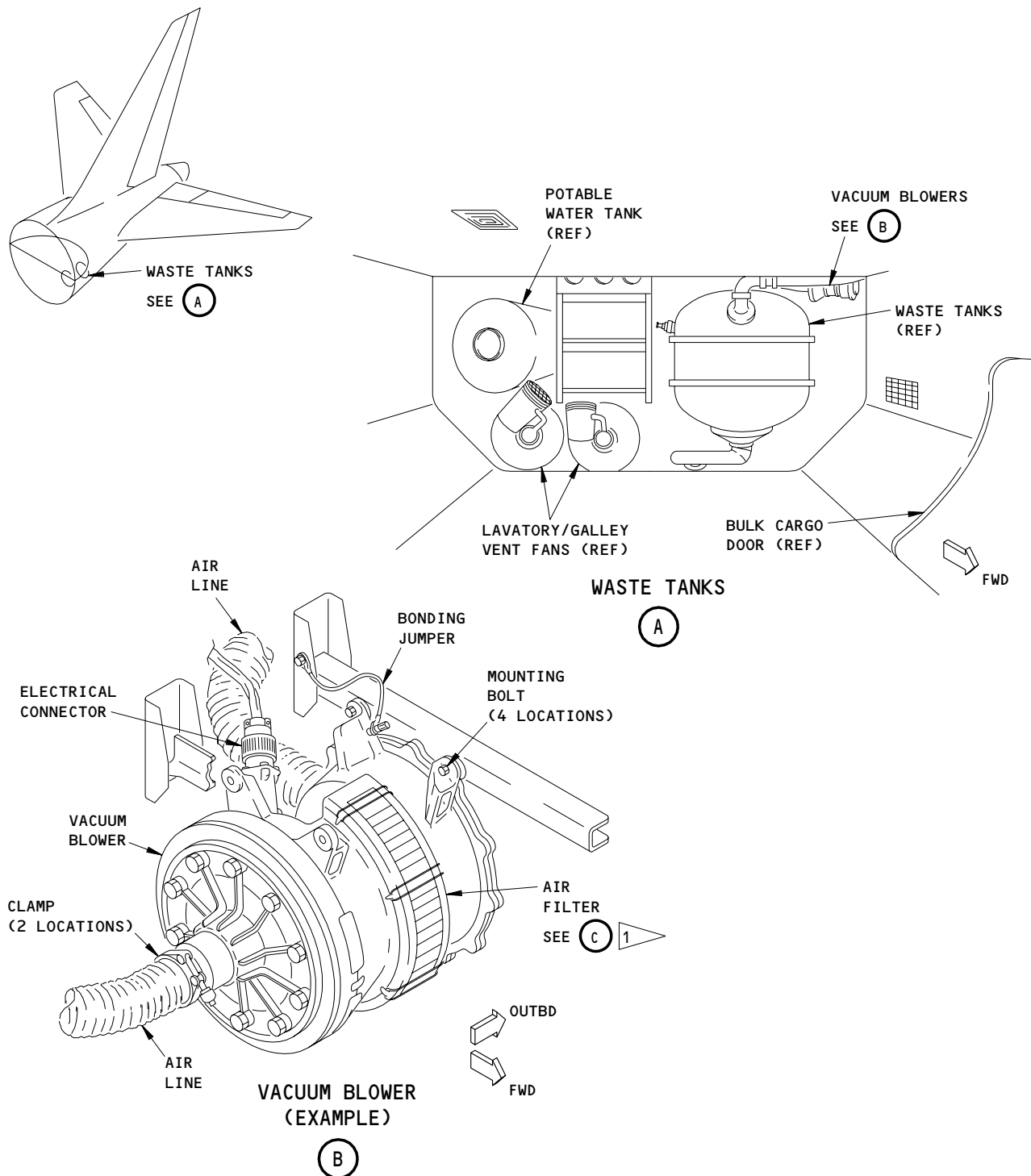
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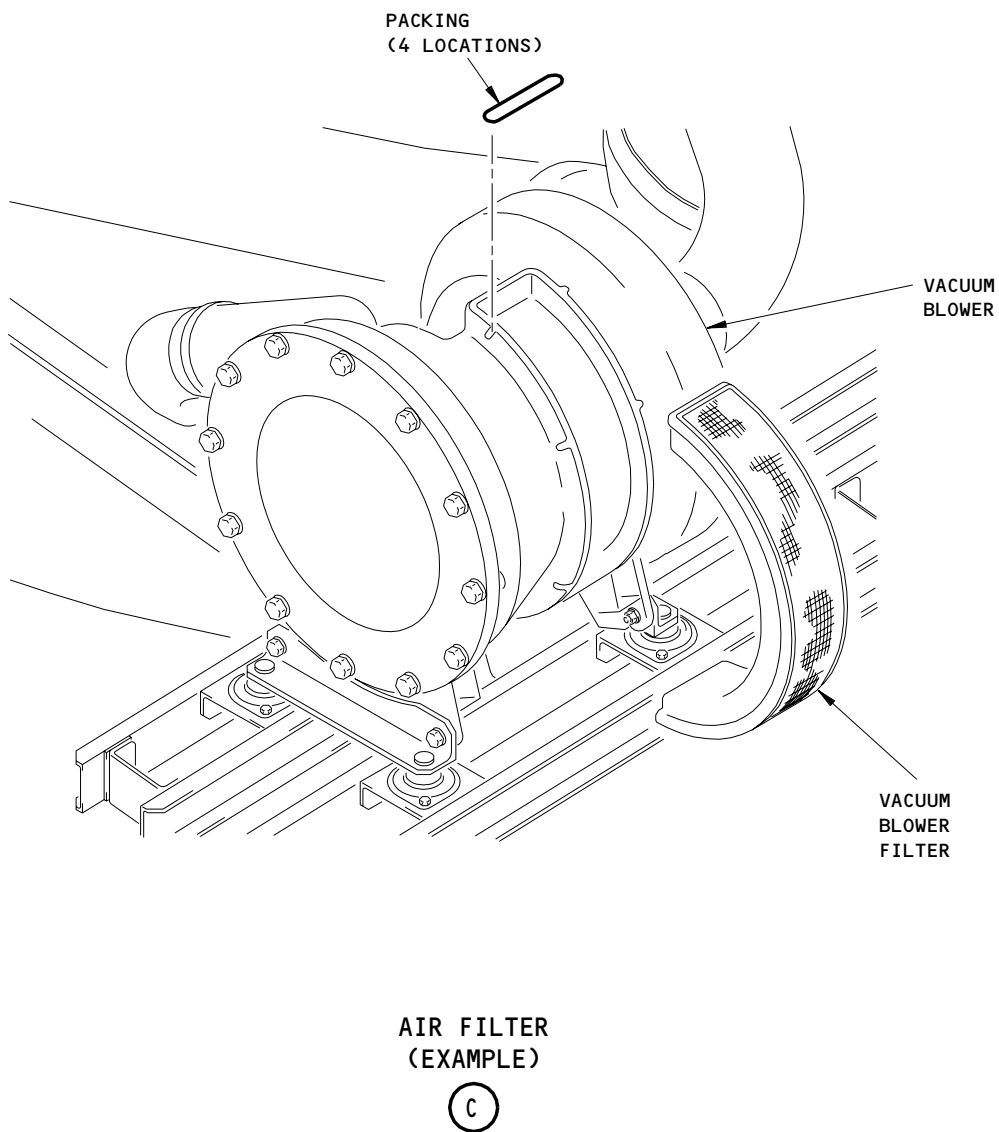


1 AIR FILTER NOT ON ALL BLOWERS

Vacuum Blower Installation  
Figure 401 (Sheet 1)

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Vacuum Blower Installation  
Figure 401 (Sheet 2)

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BLOWER WITH AIR FILTER

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S 024-047

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

(5) Disconnect the air lines from the vacuum blower.

S 034-007

(6) Disconnect the electrical connector from the vacuum blower.

S 034-008

(7) Disconnect the bonding jumper from the vacuum blower.

S 024-009

(8) Remove the mounting bolts and remove the vacuum blower.

TASK 38-32-06-404-010

3. Install the Vacuum Blower (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (4) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
155 Area Below Aft Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 674-046

(1) Use the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

S 424-049

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

(2) Put the vacuum blower in its position and install the mounting bolts.

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- S 434-012
- (3) Connect the bonding jumper to the vacuum blower.
- S 434-013
- (4) Connect the electrical connector to the vacuum blower.
- S 434-014
- (5) Connect the air lines to the vacuum blower.
- S 864-015
- (6) Activate the vacuum blower and lavatory flush system (AMM 38-32-00/201).
- S 864-017
- (7) Supply electrical power (AMM 24-22-00/201).
- S 714-018
- (8) Make sure the vacuum blower operates as follows:
- (a) Make sure the vacuum blower starts when you push the flush switch for a toilet attached to the system for the vacuum blower.
- NOTE:** If the vacuum blower operates before you push the flush switch, there is a problem in the control circuits.
- (b) Make sure the vacuum blower stops approximately 15 seconds after you push the flush switch for the vacuum blower.
- NOTE:** If the vacuum blower continues to operate after approximately 15 seconds, there is a problem in the control circuits.
- S 214-019
- (9) Make sure there are no leaks at the air line connections to the vacuum blower.

S 414-032

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (10) Install the aft bulkhead lining or waste enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 414-021

- (11) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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S 864-022

(12) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-06-904-023

4. VACUUM BLOWERS WITH AN AIR FILTER;

Removal/Installation of the Air Filter on the Vacuum Blower (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-32-00/201, Deactivate/Activate Vacuum Blower and Lav Flush System
- (3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
155 Area Below Aft Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Remove the Air Filter

S 864-041

- (1) Deactivate the vacuum blower and lavatory flush system (AMM 38-32-00/501).

S 014-024

- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-025

- (3) Remove the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 024-048

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (4) Remove the packing that attaches the air filter to the vacuum blower.

S 024-027

- (5) Remove the air filter from the vacuum blower.

D. Vacuum Blower Filter Cleaning

S 164-038

- (1) Clean the vacuum blower filter with an air source with 5 to 30 PSIG in the opposite direction of the usual flow.

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S 214-039

- (2) Do a check of the vacuum blower filter for damage or signs of worn areas.
  - (a) If the vacuum blower filter has damage or signs of worn areas, use a new vacuum blower filter.
  - (b) If the vacuum blower filter is serviceable, then continue.

E. Install the Air Filter

S 424-028

- (1) Put the air filter on the vacuum blower.

S 424-029

- (2) Install the packing to attach the air filter to the vacuum blower.

S 864-043

- (3) Activate the vacuum blower and lavatory flush system (AMM 38-32-00/501).

S 864-034

- (4) Supply electrical power (AMM 24-22-00/201).

S 714-035

- (5) Make sure the vacuum blower operates as follows:
  - (a) Make sure the vacuum blower starts when you push the flush switch for a toilet attached to the system for the vacuum blower.

**NOTE:** If the vacuum blower operates before you push the flush switch, there is a problem in the control circuits.

- (b) Make sure the vacuum blower stops approximately 15 seconds after you push the flush switch for the vacuum blower.

**NOTE:** If the vacuum blower continues to operate after approximately 15 seconds, there is a problem in the control circuits.

S 414-033

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (6) Install the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 414-031

- (7) Close bulk cargo door, 811 (AMM 52-36-00/001).

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VACUUM CHECK VALVES – REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the vacuum check valves.
- (2) An installation of the vacuum check valves.

TASK 38-32-07-004-001

2. Remove the Vacuum Check Valves (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System
- (3) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
155 Area Below Aft Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Prepare for Removal

- S 864-002
- (1) Deactivate the vacuum blower and lavatory flush system (AMM 38-32-00/501).
- S 014-004
- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 014-005
- (3) Remove the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

D. Vacuum Check Valve Removal

- S 674-037
- (1) Do the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

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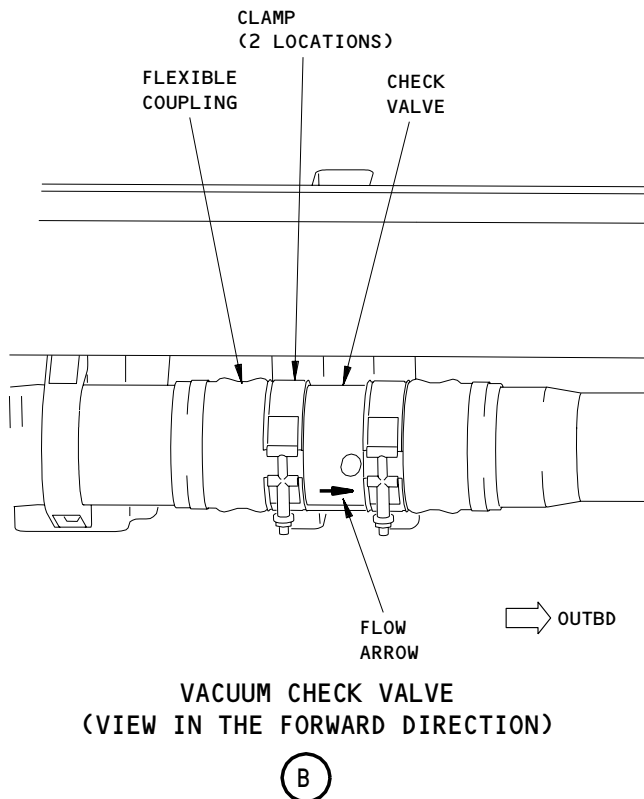
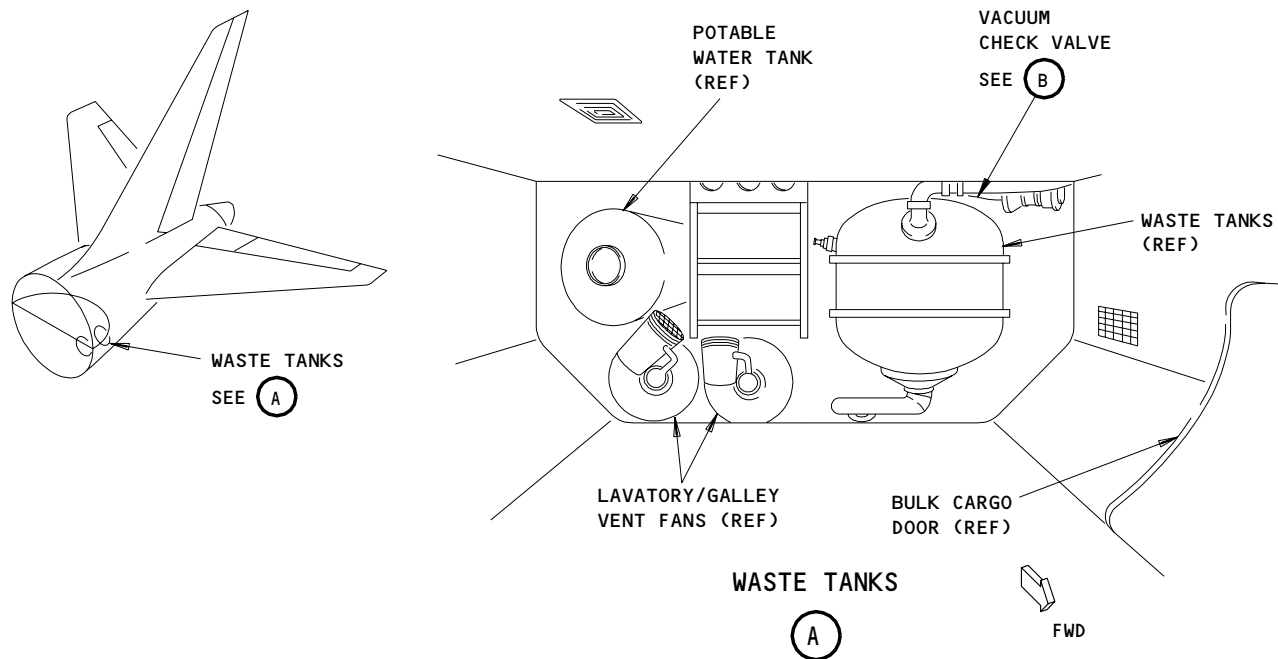
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Vacuum Check Valve Installation  
Figure 401

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S 024-039

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

(2) Disconnect the air lines from the vacuum check valve.

S 024-009

(3) Remove the vacuum check valve.

TASK 38-32-07-404-010

3. Install the Vacuum Check Valves (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Manual Control
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System
- (4) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 155 Area Below Aft Cargo Compartment (Left)
- (2) Access Panel
  - 811 Bulk Cargo Door

C. Vacuum Check Valve Installation

S 674-038

(1) Do the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

S 424-040

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

(2) Put the vacuum check valve in its position.

**NOTE:** Make sure the flow arrow on the vacuum check valve is in the direction of air flow.

S 434-014

(3) Connect the air lines to the vacuum check valve.

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D. Vacuum Check Valve Installation Test

S 864-015

- (1) Activate the vacuum blower and lavatory flush system (AMM 38-32-00/201).

S 864-017

- (2) Supply electrical power (AMM 24-22-00/201).

S 714-018

- (3) Push the flush switch for a toilet attached to the waste system.

S 794-035

- (4) Make sure there are no leaks at the air line connections to the vacuum check valve.

S 414-021

**WARNING:** OBEY THE INSTRUCTIONS IN THE CARGO LINING INSTALLATION PROCEDURE. INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (5) Install the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 414-022

- (6) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 864-023

- (7) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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WASTE SYSTEM TUBING - MAINTENANCE PRACTICES

1. General

- A. This procedure shows the location of the waste system tubes in the airplane. The location of each joint of the waste system tubes is shown and the access to each joint is given. Flexible coupling installation information is also provided.

TASK 38-32-08-012-001

2. Waste System Tube Access

A. General

- (1) Each figure shows a plan view of the waste system tubes. The waste system tubes are located on the figure with station lines and buttock lines. Usually, each station line is at a floor beam. For each joint the figure refers to a detail in Fig. 204 that shows the type of joint. The flag notes at the bottom of the figure give the access to each joint.

NOTE: For data on station lines and buttock lines, see AMM 06-00-00/201.

B. Consumables

- (1) G02353 - Lubricant, Petrolatum, VV-P-236 or MIL-L-4343

C. References

- (1) AMM 06-00-00/201, Dimensions and Areas  
(2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining  
(3) AMM 25-52-02/401, Containerized Cargo Compartment Ceiling Lining  
(4) AMM 53-01-01/401, Floor Panel

D. Access

- (1) Location Zones  
100 Lower Half of Fuselage  
200 Upper Half of Fuselage

E. Get Access to a Waste System Tube

S 012-017

CAUTION: USE TOOLS CAREFULLY WHEN WORKING NEAR THE WASTE TANK, BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Find the part of the airplane (forward, middle, or aft) in which the tube is located.

S 992-003

- (2) Refer to the figure below that shows the part of the airplane in which the tube is installed:  
(a) For the forward part of the airplane, refer to Fig. 201.

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- (b) For the forward part of the airplane, refer to Fig. 201, Fig. 201A, or Fig. 201B.
- (c) For the middle part of the airplane, refer to Fig. 202, Fig. 202A, or Fig. 202B.
- (d) For the aft part of the airplane, refer to Fig. 203 or Fig. 203A.

F. Flexible Coupling Removal Procedure

S 022-024

- (1) To remove the clamshell coupling, do these steps:

**NOTE:** Be prepared to catch unwanted fluid from the waste line.

- (a) Pull the latches up.

**NOTE:** If necessary, remove the shroud over the coupling as required.

- (b) Remove the coupling from the flanges of the two ferrules and the sleeve.
- (c) Move the sleeve from the ferrules.
- (d) Pull the tubes apart.

**NOTE:** If necessary, loosen the support clamps on the adjacent waste lines.

- (e) Remove and discard the o-ring from each ferrule.

S 022-025

- (2) Remove the tube.

**NOTE:** Be prepared to catch unwanted fluid from the waste line.

- (a) If necessary, do this task: Corrosion Removal After Acid Spills AMM 05-51-57/201

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S 622-026

- (3) Put a bag or cap on the ends of the tube that you removed to contain unwanted material.

S 622-027

- (4) Put a bag or cap on the ends of the remaining tubing to contain unwanted material.

G. Flexible Coupling Installation Procedure

S 412-020

- (1) Do these steps to install a Male-Male flexible coupling (Fig 204):
  - (a) Install (1) O-ring on each ferrule.
  - (b) Lubricate the inner diameter of the sleeve with VV-P-236 or MIL-L-4343.
  - (c) Install sleeve over ferrules to cover both O-rings.
  - (d) Inspect retainer clamp to insure that hinge pins are securely staked and rivets are tight.
  - (e) Install retainer clamp enclosing the end flanges of both tube ferrules and the coupling sleeve.
    - 1) Press each latch down separately.
    - 2) Make sure that each latch is down and seated.
  - (f) Visually inspect that all latches are at the same level.

NOTE: Proper installation allows for 2 degrees maximum angular misalignment between tube centerlines, 0.06 inches maximum axial misalignment, and gaps between tubes of 0.01 to 0.28 inch.

S 412-021

- (2) Do these steps to install a Female-Male flexible coupling (Fig 204):
  - (a) Install an O-ring on the male ferrule.
  - (b) Lubricate the inner diameter of the female ferrule with VV-P-236 or MIL-L-4343.

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- (c) Install female ferrule over male ferrule to cover O-ring.
- (d) Inspect retainer clamp to make sure that hinge pins are securely staked and rivets are tight.
- (e) Install retainer clamp enclosing the end flanges of both tube ferrules.
  - 1) Press each latch down separately.
  - 2) Make sure that each latch is down and seated.
- (f) Visually inspect that all latches are at the same level.

NOTE: Proper installation allows for 2 degrees maximum angular misalignment between tube centerlines, 0.06 inches maximum axial misalignment, and gaps between tubes of 0.01 to 0.42 inch.

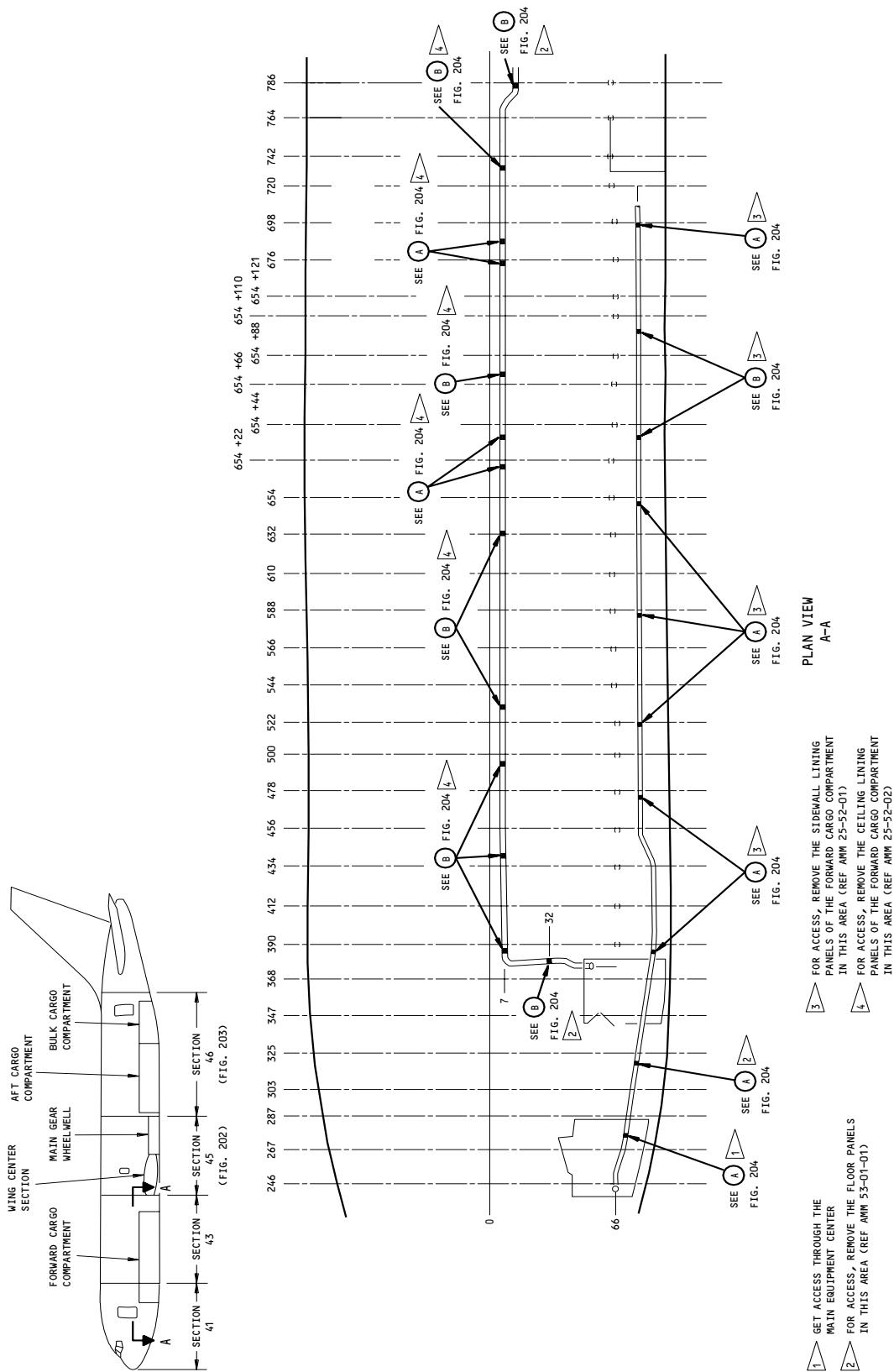
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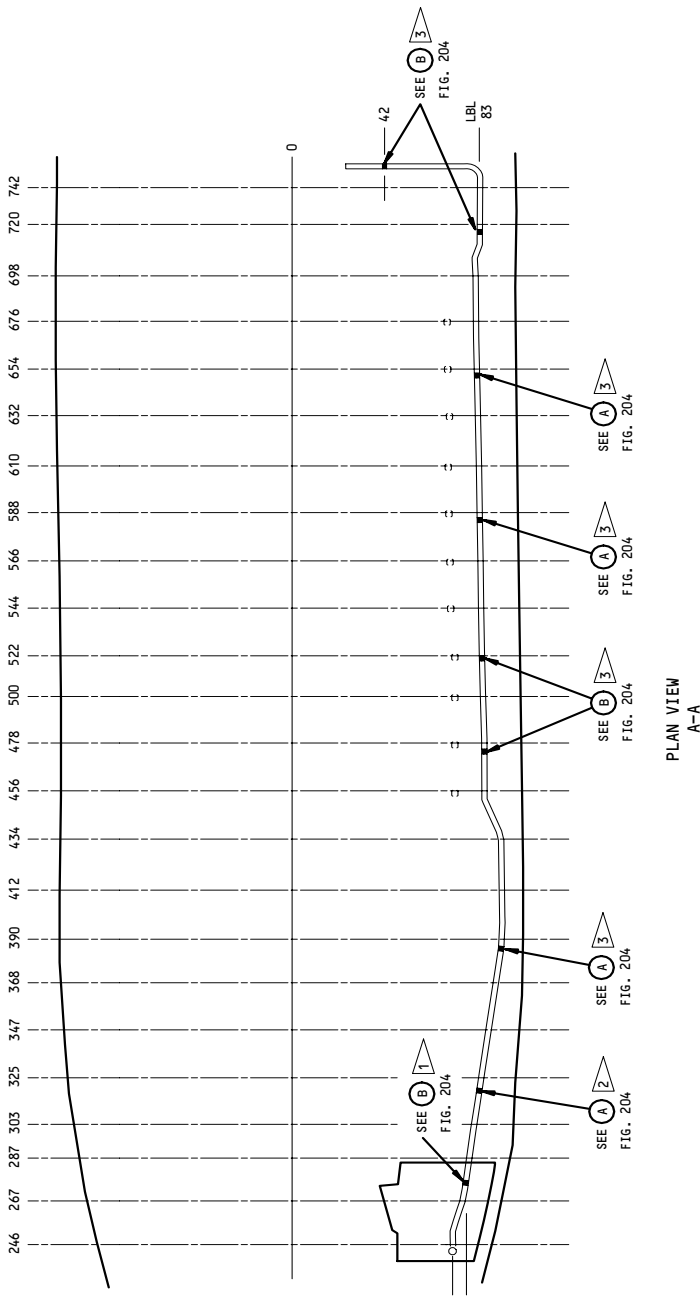
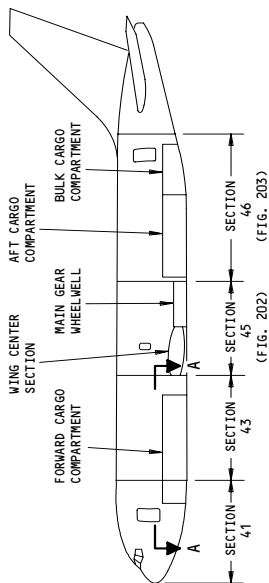
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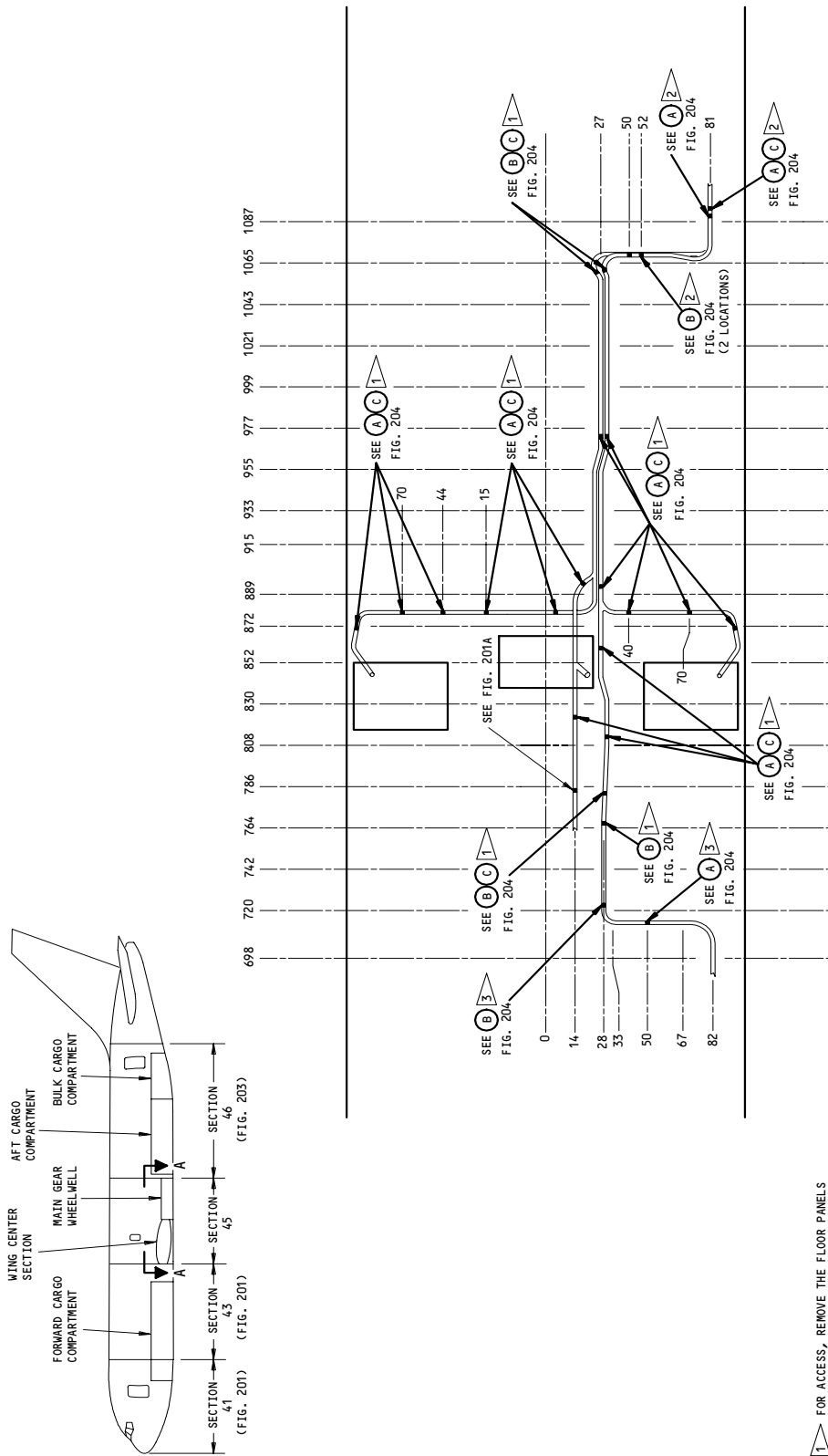


- 1 GET ACCESS THROUGH THE MAIN EQUIPMENT CENTER IN THIS AREA (REF 53-01-01)
- 2 FOR ACCESS, REMOVE THE FLOOR PANELS IN THIS AREA (REF 25-52-01)
- 3 FOR ACCESS, REMOVE THE SIDEWALL LINING PANELS OF THE FORWARD CARGO COMPARTMENT IN THIS AREA (REF 25-52-01)

Waste System Tubing (Sections 41 and 43)  
Figure 201B

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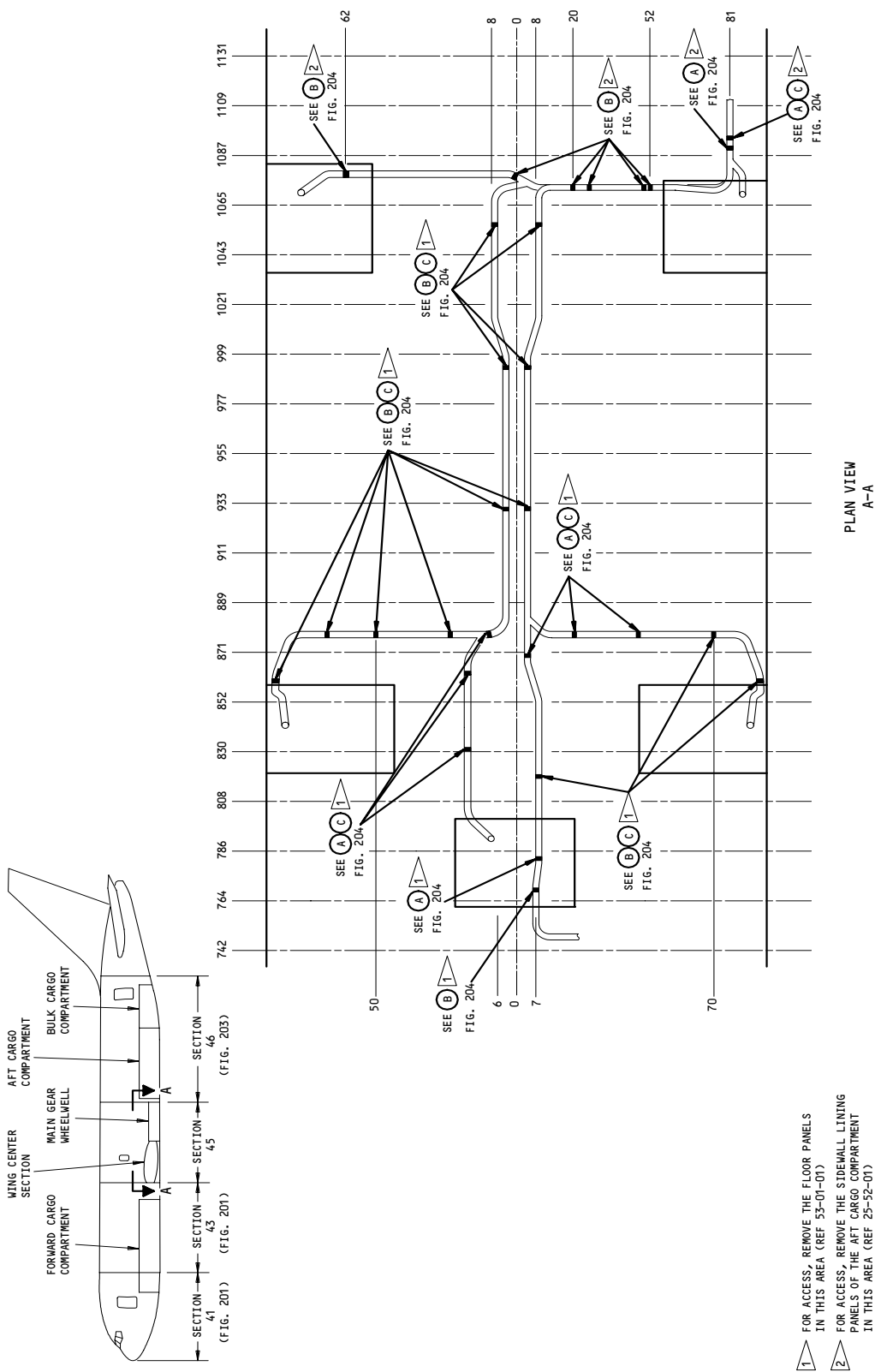


PLAN VIEW  
A-A

Waste System Tubing (Section 45)  
Figure 202A

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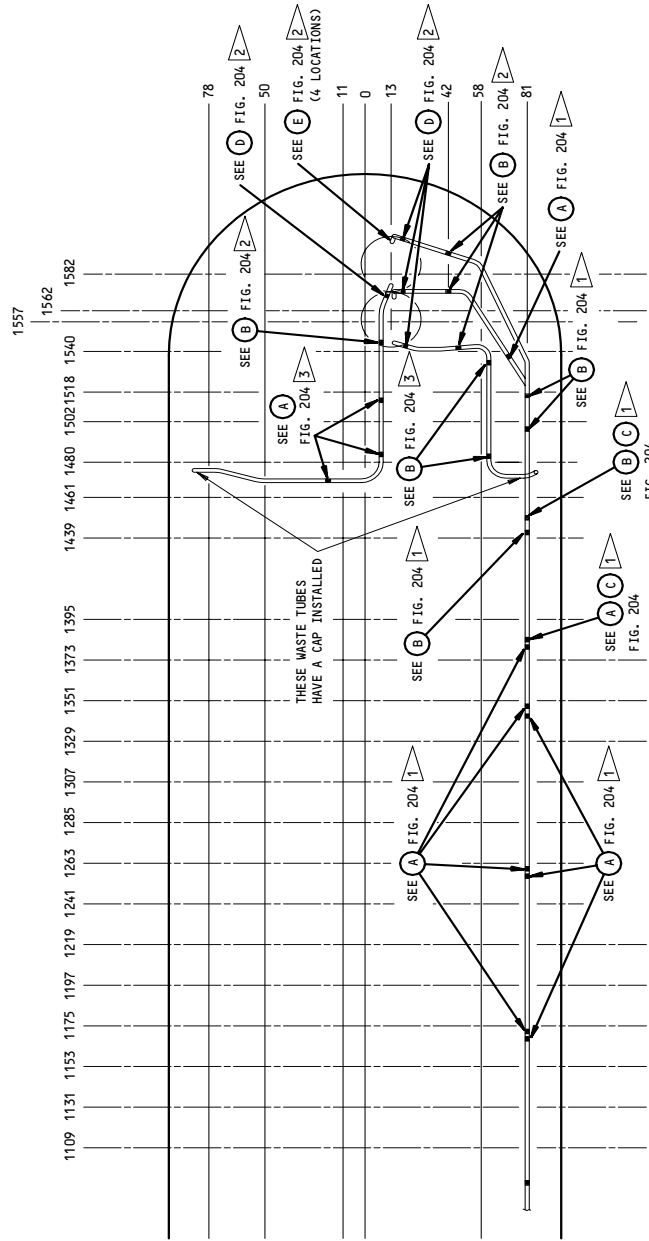
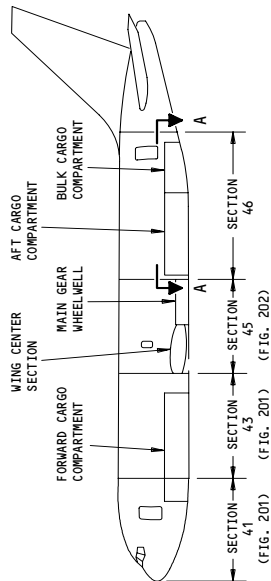
PLAN VIEW  
A-A

Waste System Tubing (Section 45)  
Figure 202B

- 1 FOR ACCESS, REMOVE THE FLOOR PANELS IN THIS AREA (REF 55-01-01)
- 2 FOR ACCESS, REMOVE THE SIDEWALL LINING PANELS OF THE AFT CARGO COMPARTMENT IN THIS AREA (REF 25-52-01)

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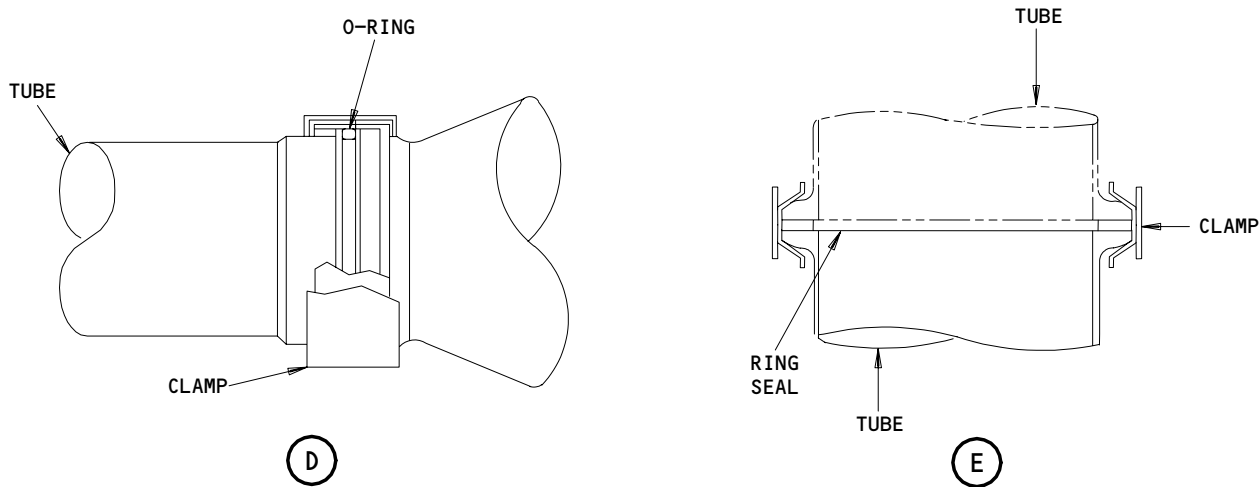
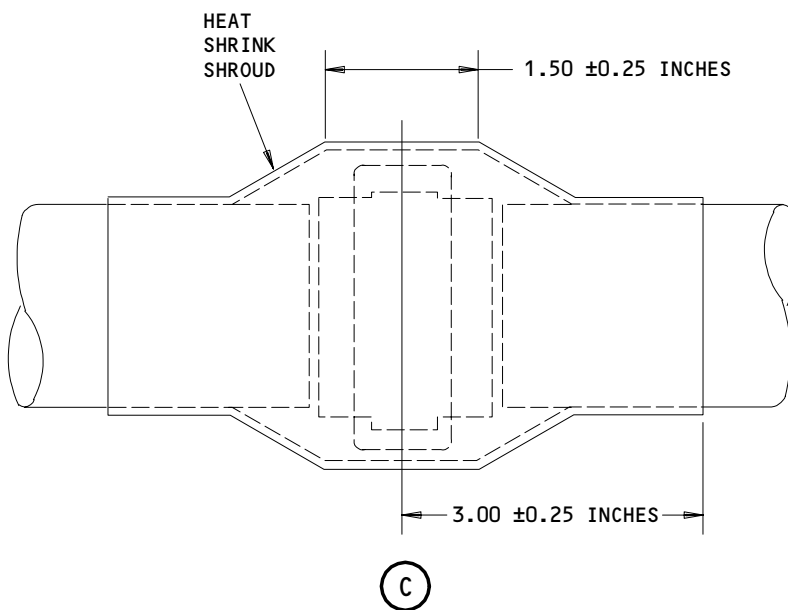
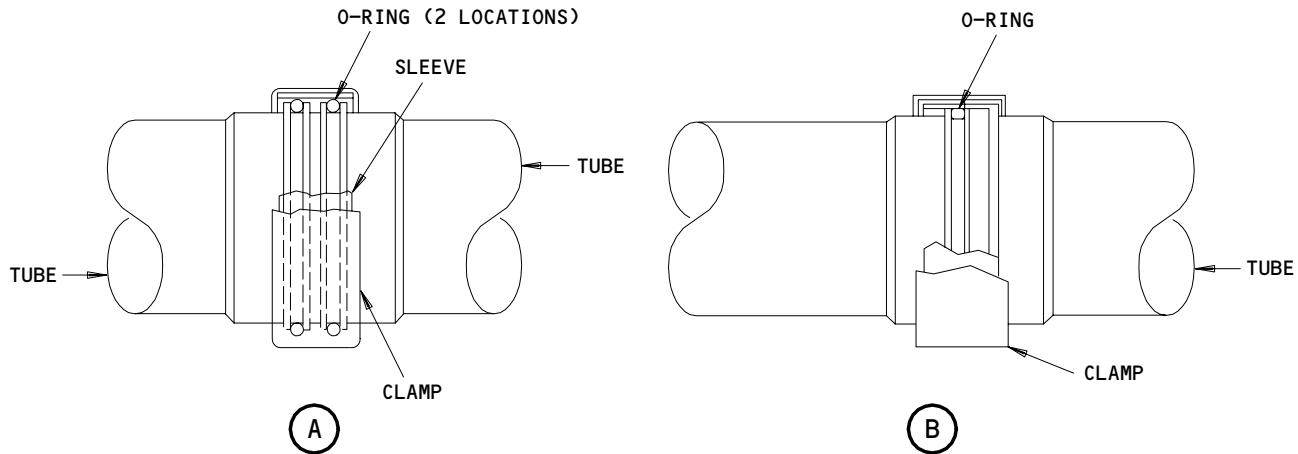
PLAN VIEW  
A-A

- 1 FOR ACCESS, REMOVE THE SIDEWALL LINING PANELS OF THE AFT CARGO COMPARTMENT IN THIS AREA (REF 25-52-01)
- 2 FOR ACCESS, REMOVE THE AFT BULKHEAD LINING OF THE BULK CARGO COMPARTMENT (REF 25-52-01)
- 3 FOR ACCESS, REMOVE THE CEILING LINING PANELS OF THE AFT CARGO COMPARTMENT IN THIS AREA (REF 25-52-02)

Waste System Tubing (Section 46)  
Figure 203A

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Waste System Tubing  
Figure 204

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WASTE TANKS - MAINTENANCE PRACTICES

1. General

- A. This procedure gives the instructions to examine and clean the waste tank. Three different methods to clean the tank are given.
- B. If you find the waste layer size increase on the tank walls, on the level sensors, or on the water separator, you must remove the waste.

TASK 38-32-11-212-001

2. Examine the Waste Tank for Contamination (Fig. 201)

A. References

- (1) AMM 12-17-01/301, Waste Tank
- (2) AMM 24-22-00/201, Manual Control
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (5) AMM 38-32-00/201, Deactivate/Activate Vacuum Blower/Lav Flush System
- (6) AMM 38-32-02/201, Water Separator
- (7) AMM 38-33-01/701, Water Tank Point Level Sensor
- (8) AMM 38-32-17/201, Rinse Nozzle
- (9) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 672-187

- (1) Do the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

S 612-002

- (2) Drain and flush the waste tank but do not add the chemical precharge (AMM 12-17-01/301).

NOTE: Keep the drain line of the toilet service cart connected to the airplane.

S 862-071

- (3) Deactivate the vacuum blower and lavatory flush system (AMM 38-32-00/201).

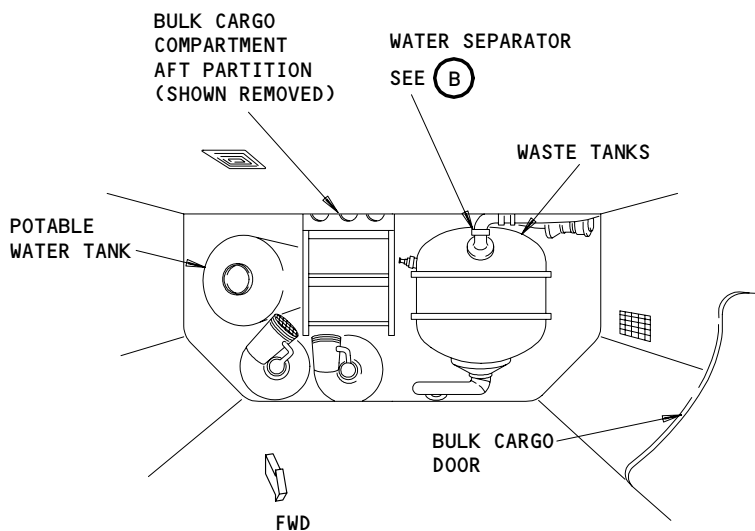
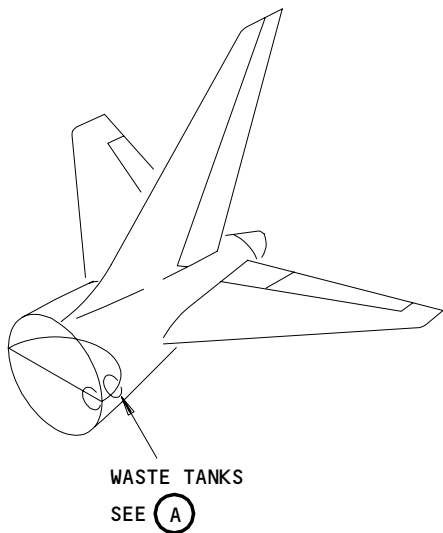
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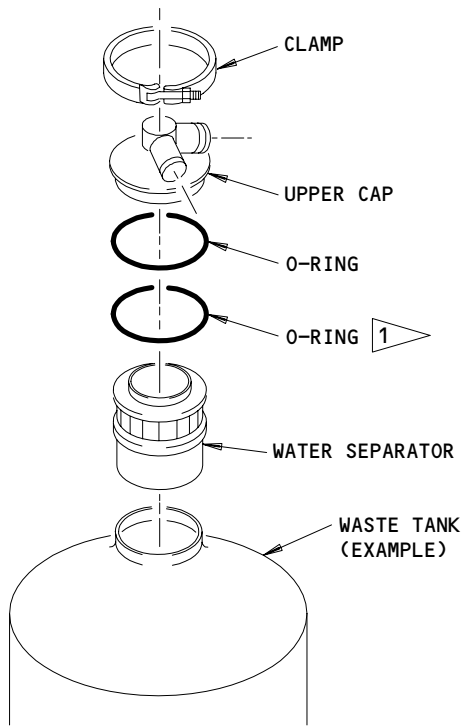
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WASTE TANKS  
(A)



WATER SEPARATOR  
(B)

1 AIRPLANES WITH TWO RINGS

Water Separator and Waste Tank  
Figure 201

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S 012-007

- (4) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 012-008

- (5) Remove the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 012-189

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (6) Remove the water separator from the waste tank (AMM 38-32-02/201).

S 212-010

- (7) Use a flashlight and a mirror to look at the inner surface of the point level sensors in the waste tank. The inner surface of the point level sensors must not have a layer of waste on them.

S 142-011

- (8) If the point level sensors have a layer of waste on the inner surface, clean the point level sensors (AMM 38-33-01/701).

S 222-077

- (9) Make sure the rinse nozzles are serviceable (AMM 38-32-17/201).

S 212-089

- (10) Use a flashlight and a mirror to look for waste on the inner surface of the waste tank. If the inner side of the waste tank has a layer of soft loose waste you must clean the waste tank.

**NOTE:** A thin layer of a hard material (scale) on the inner side of the waste tank is permitted.

S 212-014

- (11) Do these steps to make sure the water separator is serviceable:
- (a) If the water separator is dirty but the top surface of the demister mesh does not have fiber contamination (waste and paper particles), clean the water separator (AMM 38-32-02/201).
  - (b) If the top surface of the demister mesh of the water separator has fiber contamination (waste and paper particles), replace the water separator.

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- S 412-015  
(12) Install the water separator (AMM 38-32-02/201).
- S 612-079  
(13) Do the servicing procedure for the waste system (AMM 12-17-01/301).
- S 212-078  
(14) Use the procedure above to examine the other waste tank.
- S 862-066  
(15) Activate the vacuum blower and lav flush system (AMM 38-32-00/201).
- S 862-083  
(16) Supply electrical power (AMM 24-22-00/201).
- S 792-084  
(17) Flush the toilets and make sure the upper caps on the waste tanks do not have leaks.
- S 862-085  
(18) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-32-11-712-026

3. Clean the Waste Tank (Fig. 201)

A. Special Tools and Equipment

- (1) Toilet Service Cart
- (2) Tank Cleaner Tool (Optional):
  - (a) Tank Cleaner Tool, A38009-11: Replace the Level Sensor (DREXELBROOK) with this cleaner tool.
  - (b) Tank Cleaner Tool, A38004-29: Replace the Water Separator with this cleaner tool.

B. Consumable Materials

- (1) B00041 Disinfectant Solution - Commercially Available

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C. References

- (1) AMM 12-17-01/301, Waste Tank
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Standard Procedure with Lav Waste and Equipment
- (4) AMM 38-32-00/201, Deactivate/Activate Vacuum Blower/Lav Flush System
- (5) AMM 38-32-02/201, Water Separator
- (6) AMM 38-33-01/401, Waste Tank Point Level Sensors
- (7) AMM 52-36-00/001, Bulk Cargo Door

D. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

E. Soak the waste tank with hot water plus a disinfectant solution.

S 862-027

- (1) Deactivate the vacuum blower and lavatory flush system (AMM 38-32-00/201).

S 672-188

- (2) Do the standard procedures for working with toilet waste and equipment (AMM 38-32-00/201).

S 412-030

- (3) Do these steps to get access to the waste tanks:
  - (a) Open the bulk cargo door.
  - (b) Remove the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 412-191

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (4) If it is not installed, install the water separator in the waste tank (AMM 38-32-02/201).

S 682-032

- (5) Drain the chemical precharge fluid from the toilet service cart.

S 862-035

- (6) Make sure the drain valve handle is pushed in to close the drain valve.

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S 492-034

- (7) Connect the drain line and the flush line of the toilet service cart to the waste tank service panel (AMM 12-17-01/301).

S 172-033

- (8) Fill the toilet service cart with a mixture of hot water and a disinfectant solution.

**NOTE:** If you use a soap/disinfectant solution with the hot water soak, be sure to use a soap that will not make foam.

S 172-036

**CAUTION:** FILL THE SOLUTION ONLY TO THE WASTE TANK TOP. TOO MUCH FLUID IN THE WASTE TANK CAN CAUSE DAMAGE TO THE VACUUM BLOWER.

- (9) Put 65 gallons (237 liters) of the water solution in each of the waste tanks.

S 172-037

- (10) Let the solution stay in the tank for 24 hours or as applicable.

S 682-038

- (11) Drain the waste tank (AMM 12-17-01/301).

S 212-092

- (12) Make sure you visually inspect each of the waste tanks after the clean procedure is complete. Remove the waste that can collect around the drain valve.

S 172-039

- (13) Flush the waste tank with clean water (AMM 12-17-01/301).

F. Clean the Waste Tank with a Tank Cleaner Tool.

S 492-042

- (1) Install the tank cleaner tool on the waste tank.

S 492-043

- (2) Connect the drain line from the waste drain connection to a sanitary sewer.

S 862-044

- (3) Pull the drain valve handle down to open the drain ball valve.

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S 492-192

**CAUTION:** DO NOT USE MORE THAN 60 PSIG WATER PRESSURE OR A TEMPERATURE OF 160 DEGREES F TO FLUSH THE TANK. TOO MUCH PRESSURE OR HEAT CAN CAUSE DAMAGE TO THE TANK LINING. TANK LINING DAMAGE CAN CAUSE TANK FAILURE.

(4) Connect a supply of water to the tank cleaner tool.

**NOTE:** Use a 25 - 60 psig water source for the cleaner equipment tool. Use hot water (maximum 160 degrees F) to decrease the length of time necessary to clean the waste tank.

S 172-046

(5) Start the operation of the tank cleaner tool. Operate the cleaner tool for a minimum of 15 minutes.

**NOTE:** We recommend that you operate the waste tank cleaner for about 60 minutes to clean the waste tank fully.

S 172-047

(6) Stop the operation of the tank cleaner tool.

S 092-048

(7) Remove the tank cleaner tool.

S 212-050

(8) Make sure you visually inspect each of the waste tanks after the clean procedure is complete. Remove the waste that can collect around the drain valve.

S 412-051

(9) If you used the tank cleaner tool A38004-29, remove the tool and install the Water Separator (AMM 38-32-02/201).

**NOTE:** You can reinstall the Water Separator.

S 412-091

(10) If you used the tank cleaner tool A38009-11, remove the tool and install the Point Level Sensor (AMM 38-33-01/401).

**NOTE:** You can reinstall the the Point Level Sensor.

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G. Clean the waste tank with the steam clean equipment

S 162-093

- (1) You can use the steam clean equipment according to the waste tank suppliers instructions. You must remove the waste tank from the airplane before you begin the steam clean operation (AMM 38-32-11/401). You must remove the level sensor and the water separator before you begin the steam clean operation.

H. Put the Airplane Back to Its Usual Condition

S 862-080

- (1) Activate the vacuum blower and lavatory flush system (AMM 38-32-00/201).

S 412-064

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (2) Install the aft bulkhead lining or the waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 412-065

- (3) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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WASTE TANKS - REMOVAL/INSTALLATION

TASK 38-32-11-004-056

1. Waste Tank Removal (Fig. 401)

A. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 12-17-01/301, Waste Tanks
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-10-00/201, Depressurize the Potable Water System
- (5) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System
- (6) AMM 38-32-00/201, Standard Procedures for Work with Lav Waste
- (7) AMM 52-36-00/001, Bulk Cargo Door
- (8) AMM 38-33-02/401, Waste Tank Continuous Level Sensor

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

- S 684-003
- (1) Drain the potable water system (AMM 12-14-01/301).
- S 864-002
- (2) To deactivate the vacuum waste system, do this task:  
Deactivate Vacuum Blower and Lav Flush System (AMM 38-32-00/201).
- S 614-004
- (3) Drain and flush the waste system (AMM 12-17-01/301).
- NOTE: Do not add precharge to the waste system.
- S 014-005
- (4) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 014-006
- (5) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

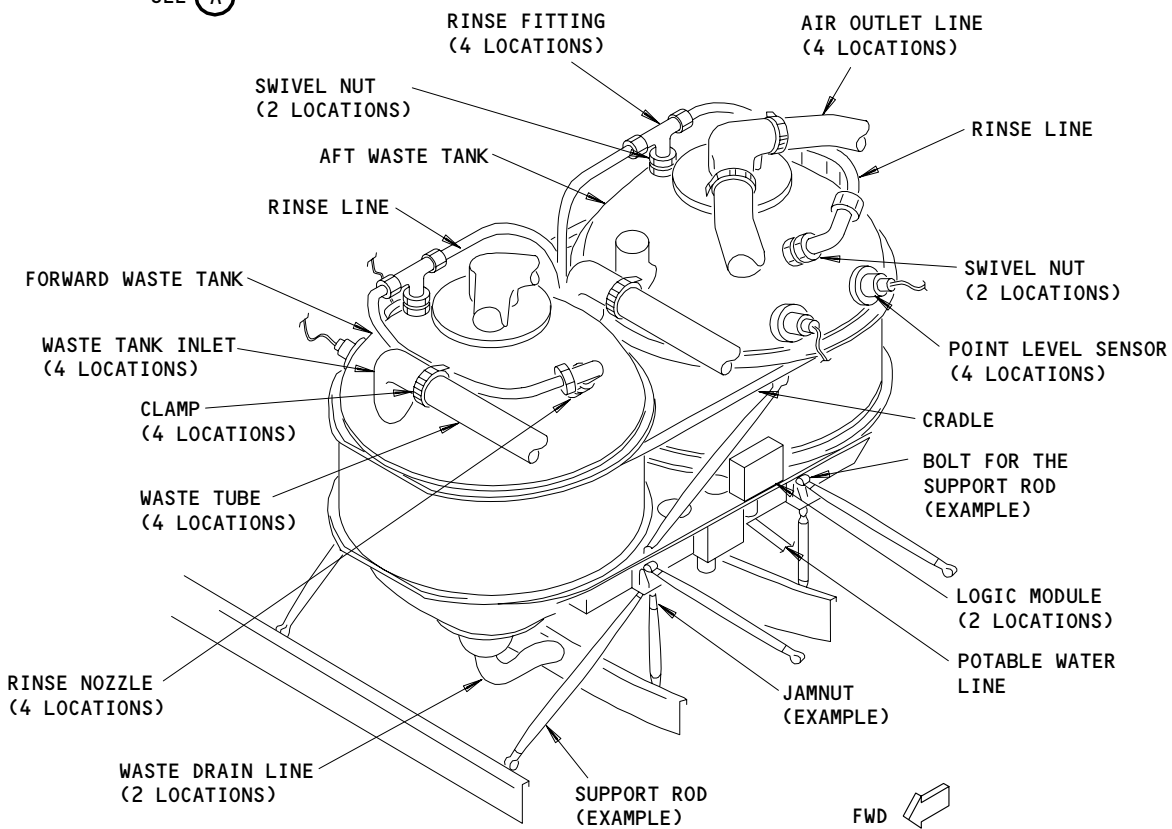
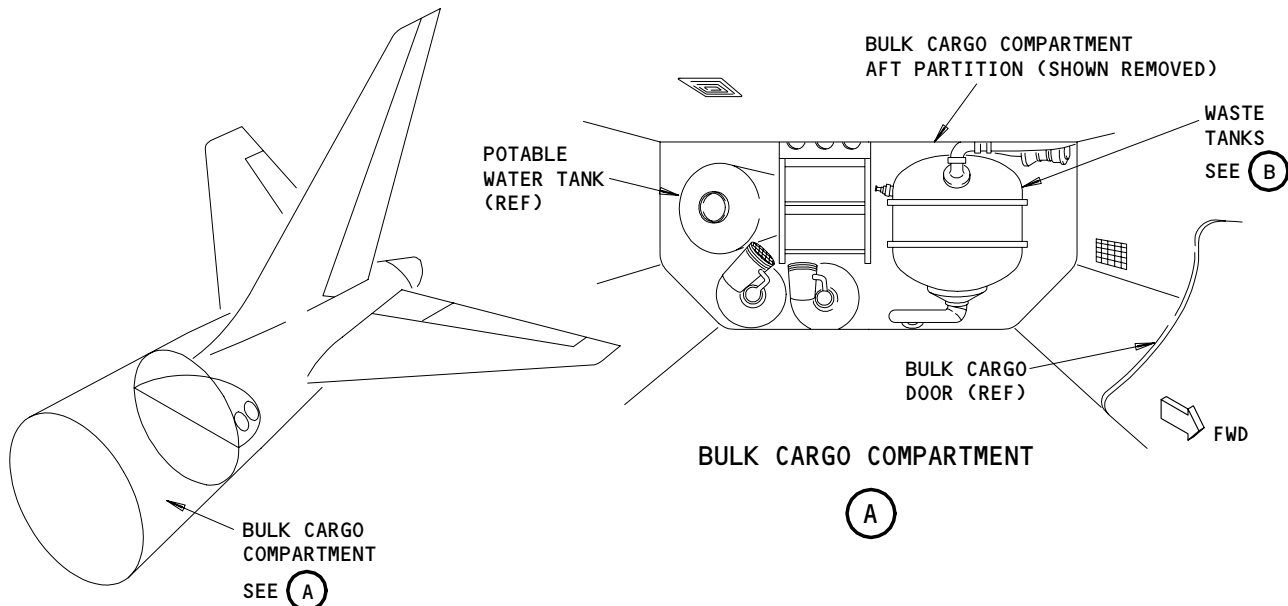
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02

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### WASTE TANKS

- 1 AIRPLANES WITH 4 RINSE NOZZLES
- 2 AIRPLANES WITH 2 RINSE NOZZLES

(B) 1

Waste Tank Installation  
Figure 401 (Sheet 1)

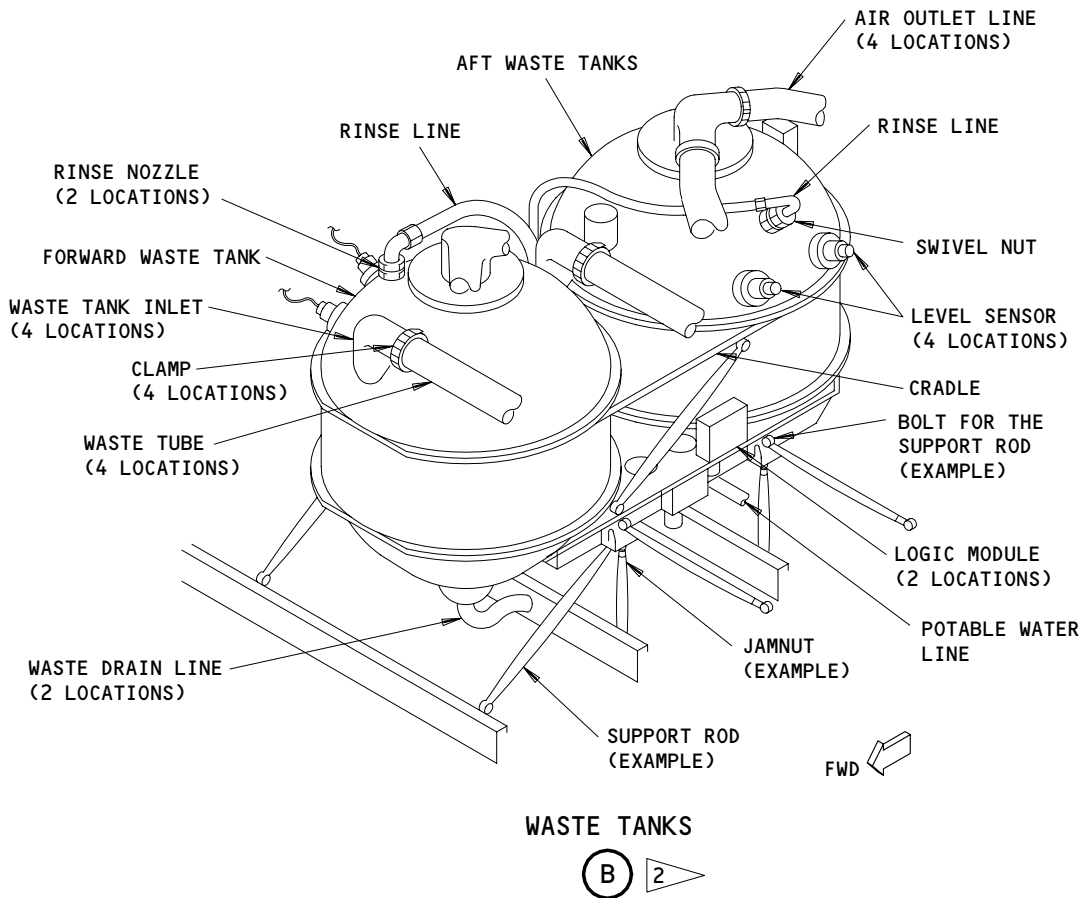
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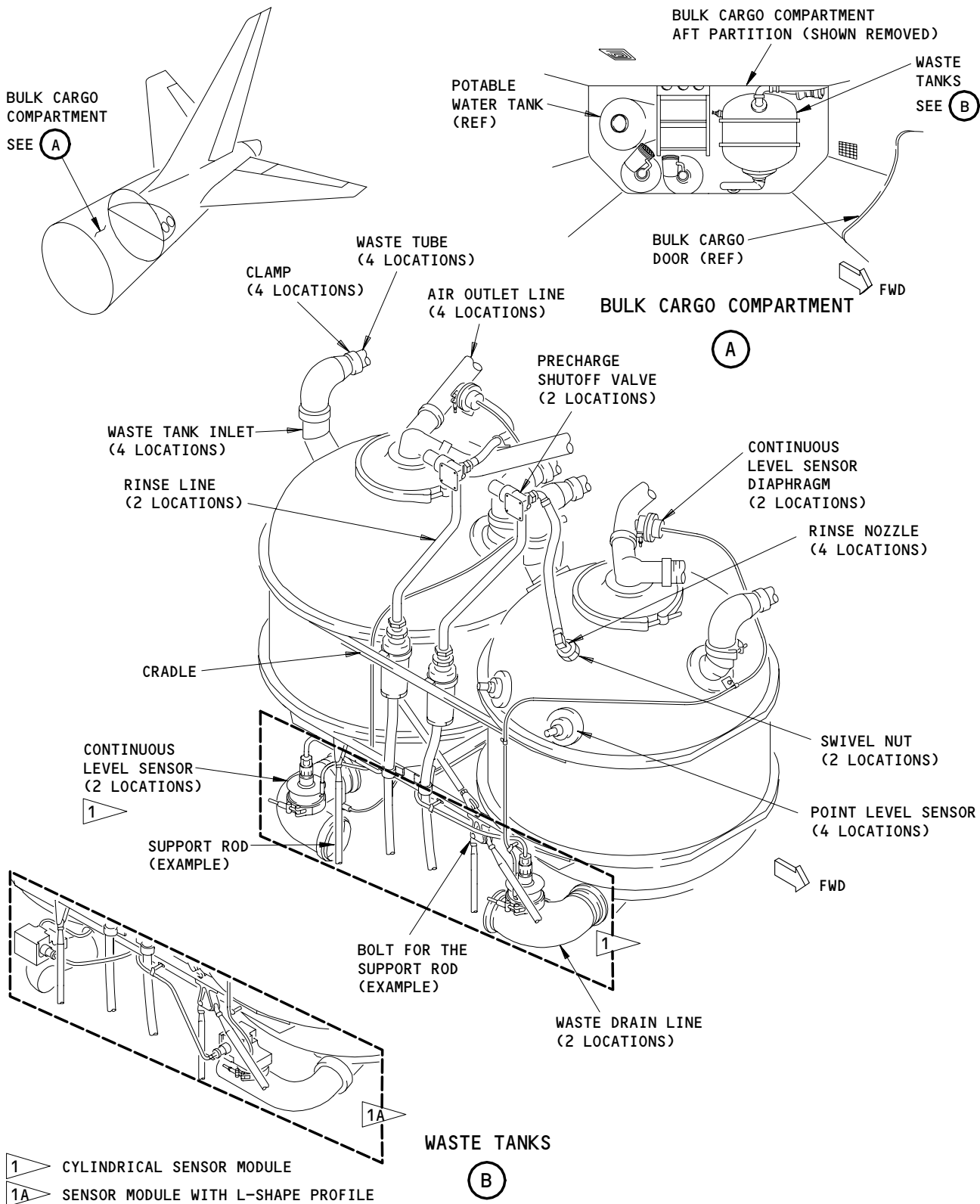
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Waste Tank Installation  
Figure 401 (Sheet 2)

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**38-32-11**



Waste Tank Installation  
Figure 401A

EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSORS

# 38-32-11

S 024-088

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (6) If there are potable water supply or drain lines that pass through the waste tank cradle area, do these tasks:
- (a) Make sure that the potable water system is depressurized (AMM 38-10-00/201).
  - (b) Disconnect and remove the supply lines and drain lines for the potable water system that go through the cradle.
  - (c) To keep out contamination, put protective caps on all disconnected water lines.

S 674-083

- (7) Use the standard procedures for work with the toilet waste and equipment (AMM 38-32-00/201).

S 034-007

- (8) Disconnect the electrical connectors from the logic modules.

S 034-008

- (9) Do these steps to disconnect the waste tubes from the waste tank inlets.

**NOTE:** Use a container to catch the fluid that is in the waste tube.

- (a) Loosen the clamp and move it away from the waste tank inlet.
- (b) Carefully disconnect the waste tube from the waste tank inlet.

S 034-009

- (10) Disconnect all the remaining lines that are connected to the waste tanks.

S 034-011

- (11) AIRPLANES WITH CONTINUOUS LEVEL SENSORS FOR THE WASTE TANKS; Remove the continuous level sensors (AMM 38-33-02/401).
- D. Do the following steps to remove the waste tanks:

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S 014-089

**CAUTION:** MOVE THE WASTE TANK CAREFULLY BECAUSE THE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. IF YOU ROLL, DROP OR HIT THE WASTE TANK, DAMAGE CAN OCCUR.

- (1) Remove the attach bolts for the forward waste tank.

S 024-014

- (2) Remove the forward waste tank.

S 024-015

- (3) Disconnect the support rods from the cradle.

**NOTE:** Do not loosen the jamnuts or change the length of the support rods.

S 024-016

- (4) Remove the aft waste tank and cradle as a unit.

TASK 38-32-11-404-062

2. Waste Tank Installation (Fig. 401)

A. Consumable Materials

- (1) D00633 Grease - BMS 3-33 (Preferred)
- (2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. References

- (1) AMM 12-14-01/301, Potable Water System
- (2) AMM 12-17-01/301, Waste Tanks
- (3) AMM 24-22-00/201, Manual Control
- (4) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (5) AMM 38-10-00/201, Disinfect the Potable Water System
- (6) AMM 38-32-00/201, Standard Procedures for Work with Lav Waste
- (7) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System
- (8) AMM 38-32-00/501, Toilet System
- (9) AMM 38-33-00/501, Waste Tank Quantity Indication System
- (10) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

- D. Do these steps to install the waste tank(s):

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S 674-090

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

**CAUTION:** MOVE THE WASTE TANK CAREFULLY BECAUSE THE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. IF YOU ROLL, DROP OR HIT THE WASTE TANK, DAMAGE CAN OCCUR.

- (1) Use the standard procedures for work with the toilet waste and equipment (AMM 38-32-00/201).

S 424-018

- (2) Put the aft waste tank and cradle in their position.

S 424-019

- (3) Connect the support rods to the cradle.

**NOTE:** Do not tighten the bolts for the support rods.

S 424-020

- (4) Put the forward waste tank in its position.

S 424-021

- (5) Install the mounting screws to attach the forward waste tank to the cradle.

S 434-022

- (6) Tighten the support rod bolts to 165-225 pound-inches.

E. Complete the installation by doing these steps:

S 624-023

- (1) Put grease on the threads of the support rods.

S 434-024

- (2) AIRPLANES WITH CONTINUOUS LEVEL SENSORS FOR THE WASTE TANKS; Install the continuous level sensors (AMM 38-33-02/401).

S 434-027

- (3) Do these steps to connect the waste tubes to the waste tank inlets.
  - (a) Align the waste tube and new gasket seal with the waste tank inlet.
  - (b) Put the clamp in its position and tighten it.

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- S 434-028
- (4) Connect all the remaining lines to the waste tank.
- S 424-085
- (5) If there are potable water supply or drain lines that pass through the waste tank cradle area, do these tasks:
- (a) Remove the protective caps on the disconnected water lines.
  - (b) Connect the supply lines and drain lines for the potable water system that go through the cradle.
  - (c) Disinfect the potable water system (AMM 38-10-00/201).
  - (d) Fill the potable water tank (AMM 12-14-01/301).
  - (e) Pressurize the potable water system (AMM 38-10-00/201).
  - (f) Make sure the lines do not have a leak.
- S 434-029
- (6) Connect the electrical connectors to the logic modules and the level sensors.
- S 864-031
- (7) To activate the vacuum waste system, do this task:  
Activate Vacuum Blower and Lav Flush System (AMM 38-32-00/201).
- S 864-032
- (8) Supply electrical power (AMM 24-22-00/201).
- S 724-033
- (9) Do the leak test for the toilet system and the operational test for the toilet waste storage system (AMM 38-32-00/501).
- S 744-086
- (10) AIRPLANES WITH CONTINUOUS LEVEL SENSORS FOR THE WASTE TANKS;  
Do the AUTO ZERO procedure for the sensors (AMM 38-33-00/501).
- S 744-068
- (11) Do the LCM BITE test for the LCM (AMM 38-33-00/501).
- S 414-034
- WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.
- (12) Install the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 414-035
- (13) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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S 614-036

(14) Do the servicing procedure for the waste system (AMM 12-17-01/301).

S 864-037

(15) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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WASTE DRAIN VALVE ASSEMBLY – REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) Remove the waste drain valve at the service panel.
- (2) Install the waste drain valve at the service panel.

TASK 38-32-12-004-001

2. Waste Drain Valve Removal (Fig. 401)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Linings
- (3) AMM 52-36-00/001, Bulk Cargo Door
- (4) AMM 52-49-00/001, External Service Door

B. Access

- (1) Location Zones  
163 Area Below Bulk Cargo Compartment (Left)
- (2) Access Panels  
163AL Waste Tank Service Panel

C. Procedure

S 024-003

- (1) Open the service panel door for the waste tank, 163AL (AMM 52-49-00/001).

S 614-020

- (2) Drain and flush the waste tanks (AMM 12-17-01/301).

NOTE: Make sure the drain lines are fully drained.

S 014-038

- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-039

- (4) To gain access to the drain valve, remove the aft bulkhead lining or floor panel of the bulk cargo compartment (AMM 25-52-01/401).

S 034-006

- (5) Remove the bolts and washers for the waste drain valve.

S 024-007

- (6) Remove the V-band clamp and gask-o-seal to disconnect the waste drain valve from the waste line.

S 024-021

- (7) Remove the waste drain valve.

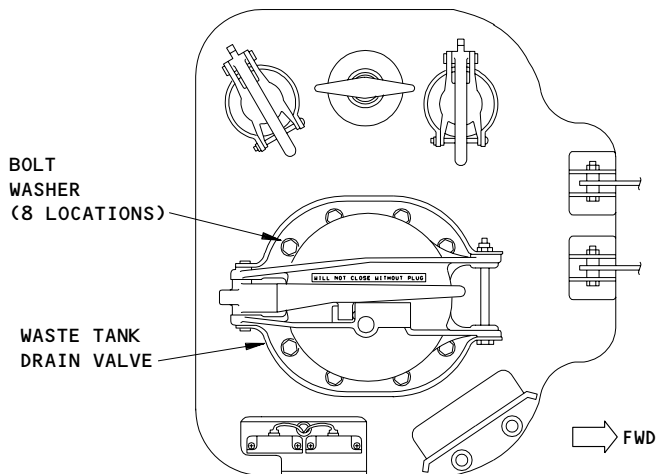
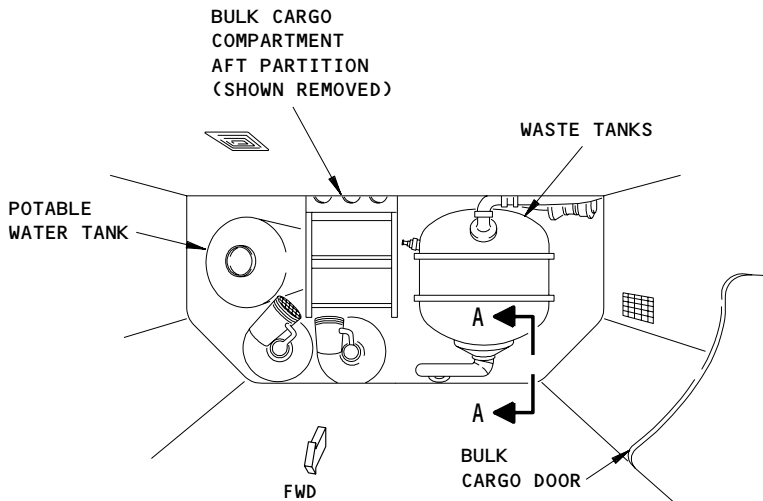
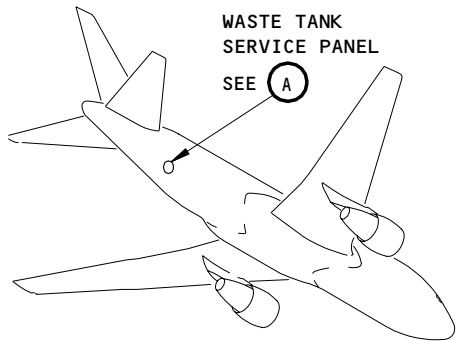
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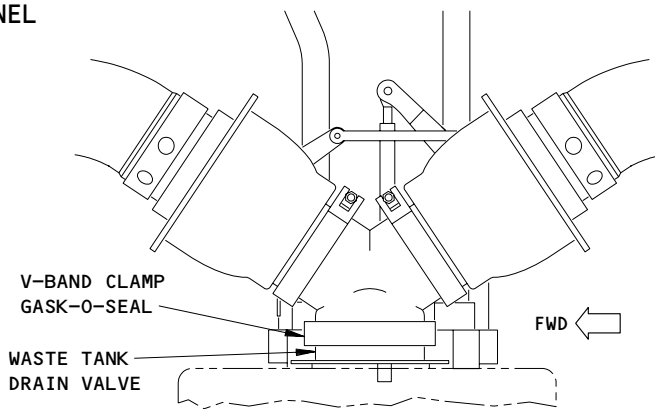


WASTE TANK SERVICE PANEL  
(INTERNAL)

(A)

WASTE TANK SERVICE PANEL  
(EXTERNAL)

(A)



A-A

Waste Drain Valve Installation  
Figure 401

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TASK 38-32-12-404-008

3. Waste Drain Valve Installation (Fig. 401)

A. References

- (1) AMM 12-17-01/301, Waste Tank
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Linings
- (3) AMM 52-36-00/001, Bulk Cargo Door
- (4) AMM 52-49-00/001, External Service Door

B. Access

- (1) Location Zones  
163 Area Below Bulk Cargo Compartment (Left)
- (2) Access Panels  
163AL Waste Tank Service Panel

C. Waste Drain Valve Installation

S 424-009

- (1) Put the waste drain valve in its position.

S 424-022

- (2) Install the V-band clamp and gask-0-seal to connect the waste drain valve to the waste line.

S 424-023

- (3) Install the bolts and washers.

D. Waste Drain Valve Installation Test

S 864-025

- (1) Open the cap on the forward (aft) rinse fitting assembly for the waste tank.

S 614-026

- (2) Connect the flush line, of the toilet service equipment, to the forward (aft) rinse fitting assembly.

S 614-028

- (3) Fill the waste tank with 10 to 11 gallons (38 to 42 liters) of water.

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- S 864-029
- (4) Pull the handle to open the waste drain ball valve and toilet tank drain valve.
- S 794-030
- (5) Let the water sit on the drain valve assembly for 5 minutes.
- S 794-031
- (6) Examine the drain valve assembly and the connections for leakage.
- S 424-035
- (7) Install the aft bulkhead lining or floor panel of the bulk cargo compartment (AMM 25-52-01/401).
- S 424-036
- (8) Close the bulk cargo door, 811 (AMM 52-36-00/001).
- S 614-032
- (9) Service the waste system (AMM 12-17-01/301).
- S 424-014
- (10) Close the door for the waste tank service panel, 163AL (AMM 52-49-00/001).

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WASTE TANK LEVEL SENSORS – MAINTENANCE PRACTICES

TASK 38-32-13-802-128

1. Procedure Tasks

A. General

- (1) The tasks previously contained in this procedure have been moved.  
See the following procedures for the corresponding tasks:

AMM 38-33-00/001, Waste Tank Qty Indication System – Dscrpt & Oper  
AMM 38-33-00/501, Waste Tank Qty Indication System – Test/Adjustment  
AMM 38-33-01/401, Waste Tank Point Level Sensor – Removal/Instl  
AMM 38-33-01/701, Waste Tank Point Level Sensor – Cleaning/Painting  
AMM 38-33-02/401, Waste Tank Continuous Level Sensor – Rmvl/Instl  
AMM 38-33-02/701, Waste Tank Continuous Level Sensor – Clean/Paint  
AMM 38-33-03/201, Waste Tank Logic Control Module – Maint Practices  
AMM 38-33-04/401, Attendant Panel Waste Qty Indicator – Rmvl/Instl

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RINSE FITTING - REMOVAL/INSTALLATION

1. General

- A. There are two rinse fittings on the waste tank service panel. The removal and installation procedures for each rinse fitting is the same.

TASK 38-32-14-004-001

2. Remove the Rinse Fitting (Fig. 401)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 30-71-07/401, Waste Tank Rinse Fitting Heaters
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
163 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 614-019

- (1) Do the task to service the waste system (AMM 12-17-01/301).

NOTE: Do not add precharge.

Make sure the rinse/fill line is fully drained.

S 014-003

- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-004

- (3) To get access to the rinse fitting, remove the aft bulkhead lining or cargo floor lining panel of the bulk cargo compartment (AMM 25-52-01/401).

S 014-005

- (4) Remove the rinse fitting heater from the rinse fitting (AMM 30-71-07/401).

S 034-006

- (5) Loosen the nut that attaches the rinse/fill line to the rinse fitting.

S 034-007

- (6) Remove the rinse/fill line from the rinse fitting.

S 024-008

- (7) Remove the retainer bolts, the washers, and the nuts that attach the rinse fitting to the airplane.

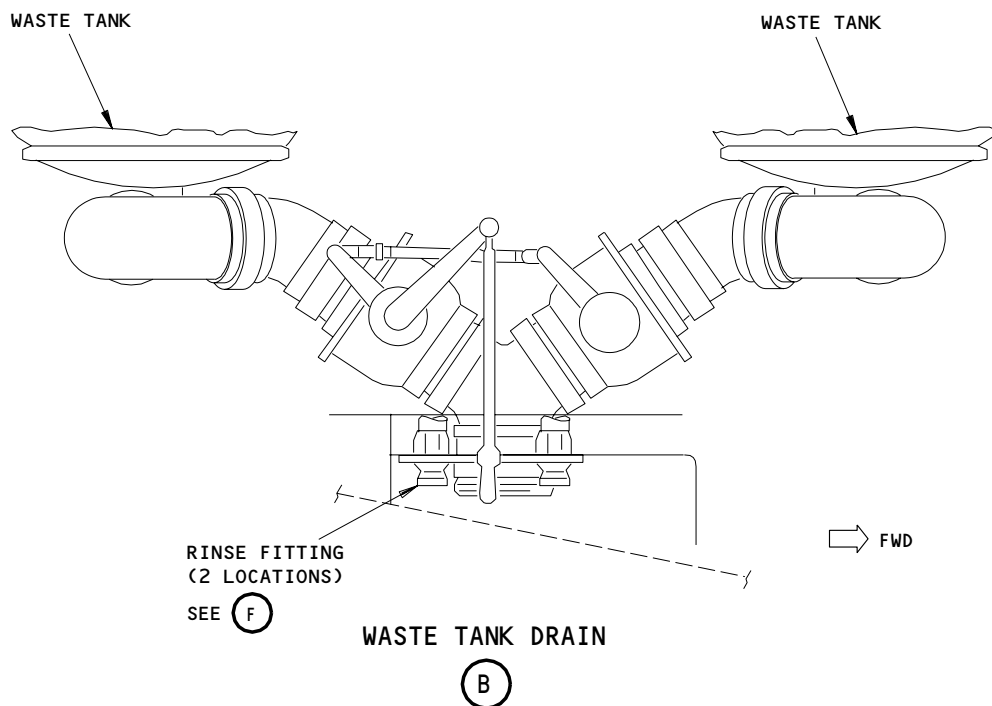
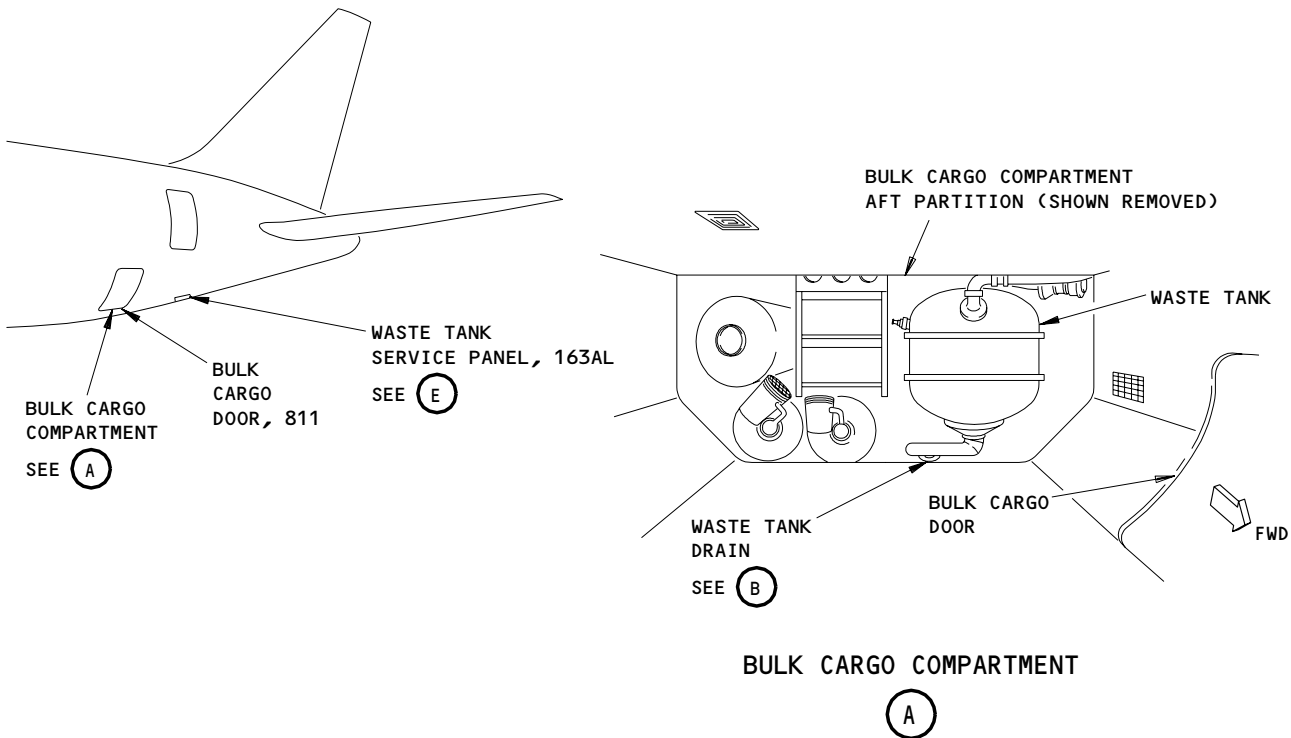
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Rinse Fitting Installation  
Figure 401 (Sheet 1)

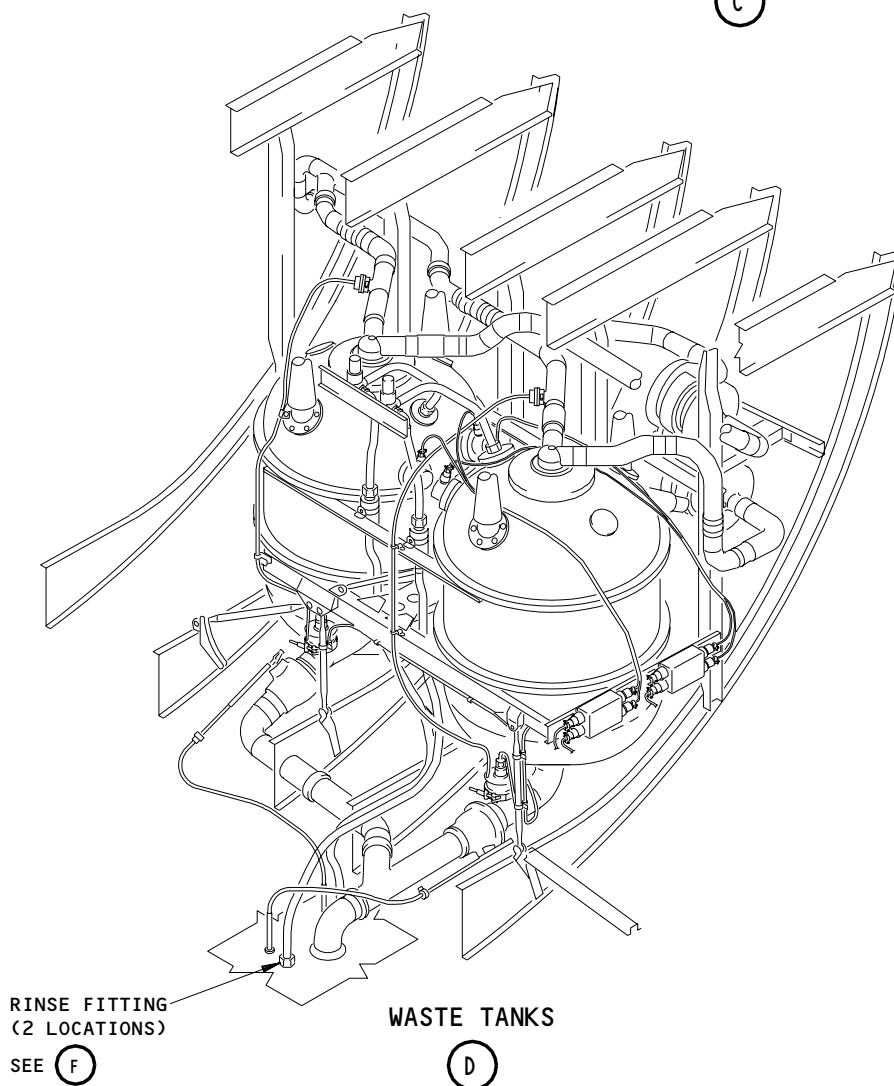
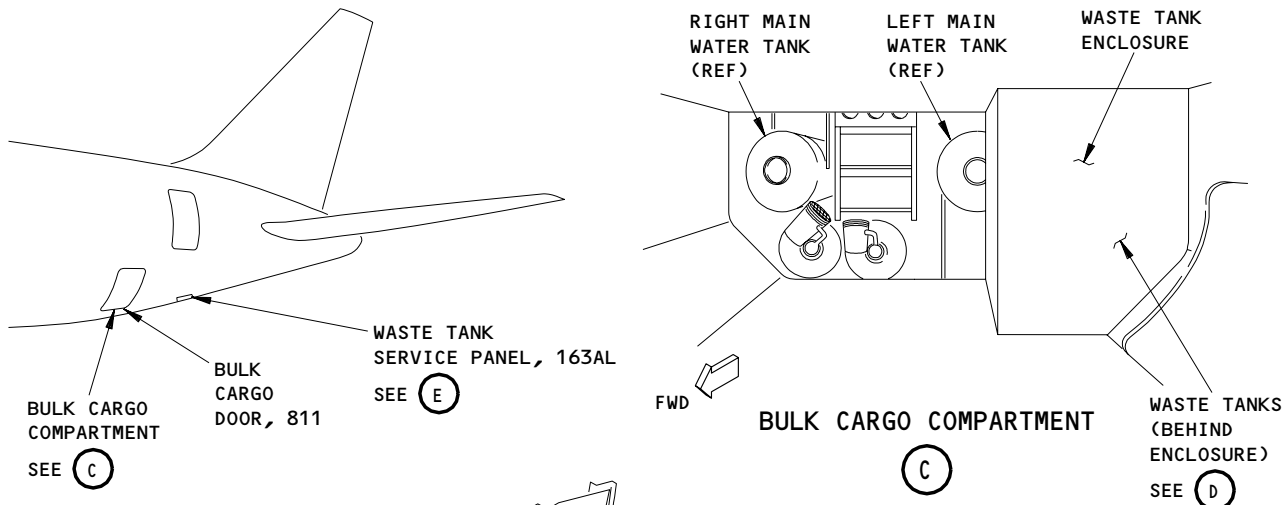
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AIRPLANES WITH STANDARD CAPACITY TANKS

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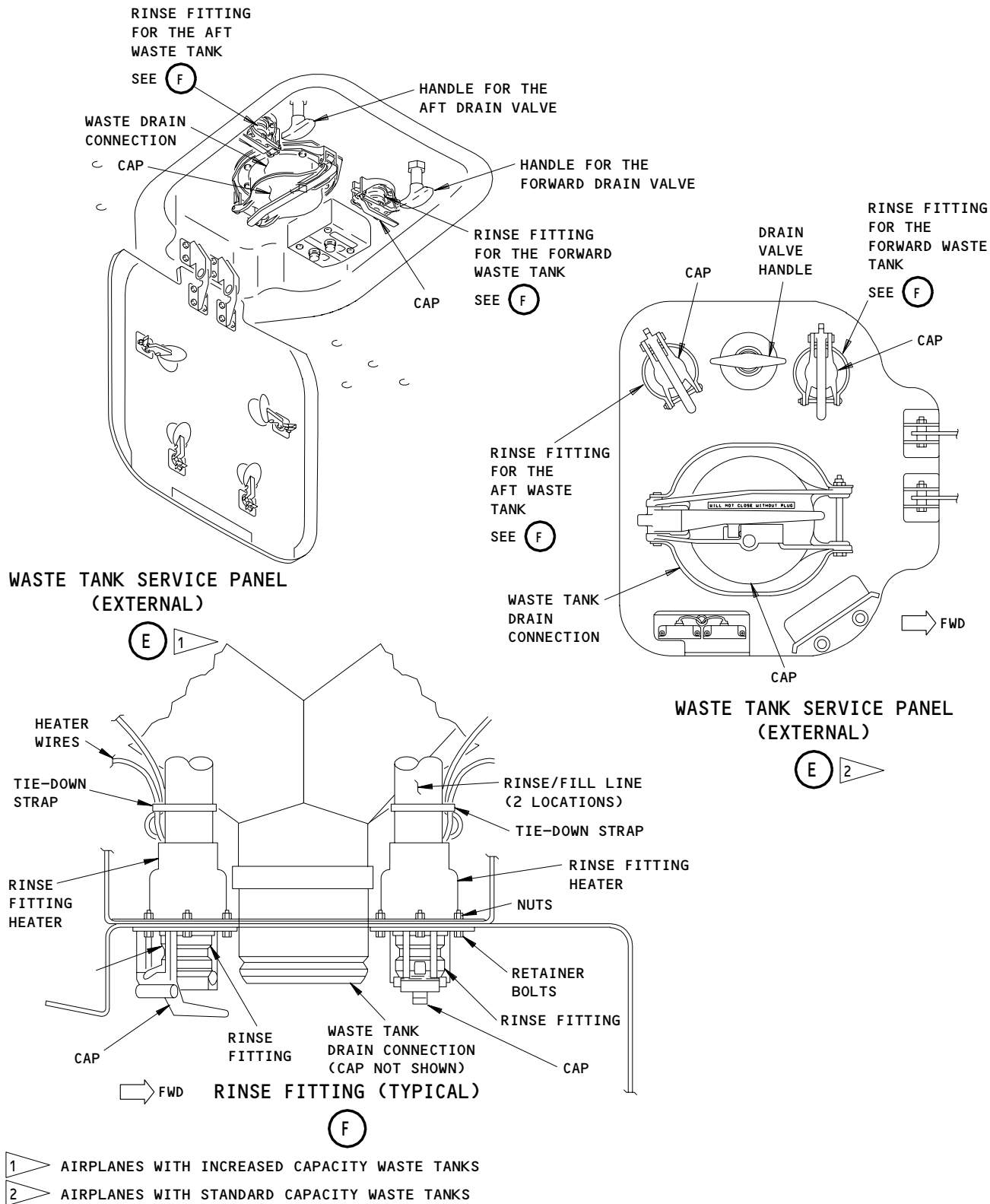




Rinse Fitting Installation  
Figure 401 (Sheet 2)

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AIRPLANES WITH INCREASED CAPACITY TANKS

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Rinse Fitting Installation  
Figure 401 (Sheet 3)

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S 024-009

- (8) Remove the rinse fitting from the airplane.

TASK 38-32-14-404-010

3. Install the Rinse Fitting (Fig. 401)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 30-71-07/401, Waste Tank Rinse Fitting Heaters
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
163 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 424-013

- (1) Put the rinse fitting in its position.

S 424-012

- (2) Install the retainer bolts, the washers, and the nuts to attach the rinse fitting to the airplane.

S 434-014

- (3) Connect the rinse/fill line to the rinse fitting.

S 414-015

- (4) Install the rinse fitting heater on the rinse fitting (AMM 30-71-07/401).

S 794-016

- (5) Do the servicing procedure for the waste system (AMM 12-17-01/301) and make sure the rinse fitting does not have a leak.

**NOTE:** Look for a leak when you flush the waste tank, or when you add the precharge to the waste tank.

S 414-017

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (6) Install the aft bulkhead lining or floor lining of the bulk cargo compartment (AMM 25-52-01/401).

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- S 414-018  
(7) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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RINSE FITTING CAP ASSEMBLY – REMOVAL/INSTALLATION

1. General

- A. This procedure gives the instructions to remove and install the cap for the rinse fitting.

TASK 38-32-16-004-001

2. Remove the Cap for the Rinse Fitting (Fig. 401)

A. References

- (1) AMM 52-49-00/001, External Service Door

B. Access

- (1) Location Zones

163 Area Below Bulk Cargo Compartment (Left)

- (2) Access Panels

163AL Waste Tank Service Panel

C. Procedure

S 014-002

- (1) Open the door for the waste system service panel, 163AL (AMM 52-49-00/001).

S 024-014

- (2) Open the cap of the rinse fitting assembly that you will remove.

S 034-004

- (3) Remove the cotter pin from the hinge pin.

S 024-005

- (4) Remove the washer, the hinge pin, and the cap.

TASK 38-32-16-404-006

3. Install the Cap for the Rinse Fitting (Fig. 401)

A. References

- (1) AMM 52-49-00/001, External Service Door

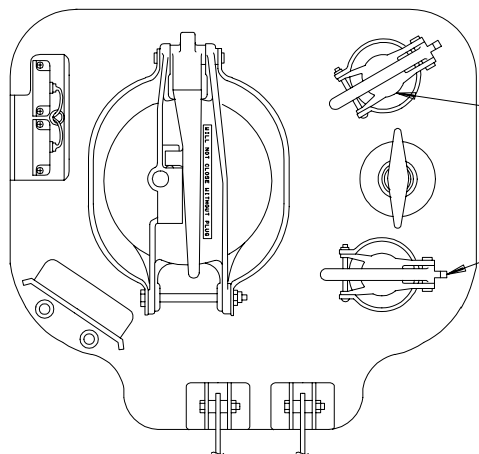
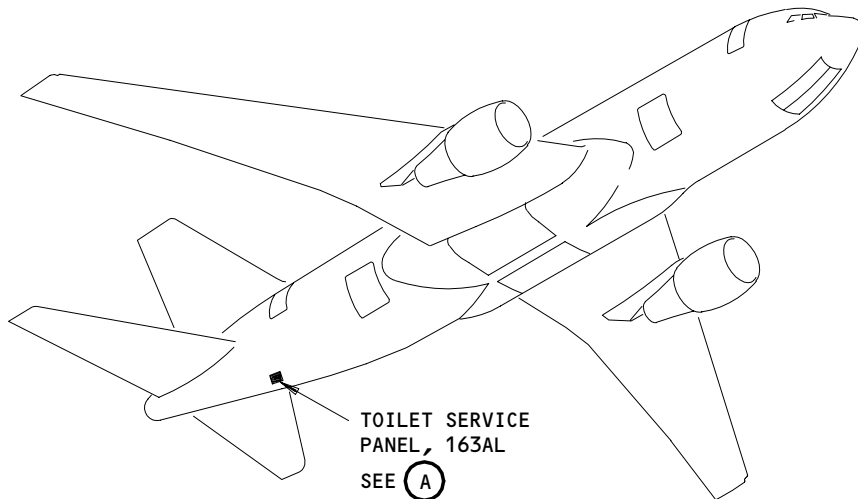
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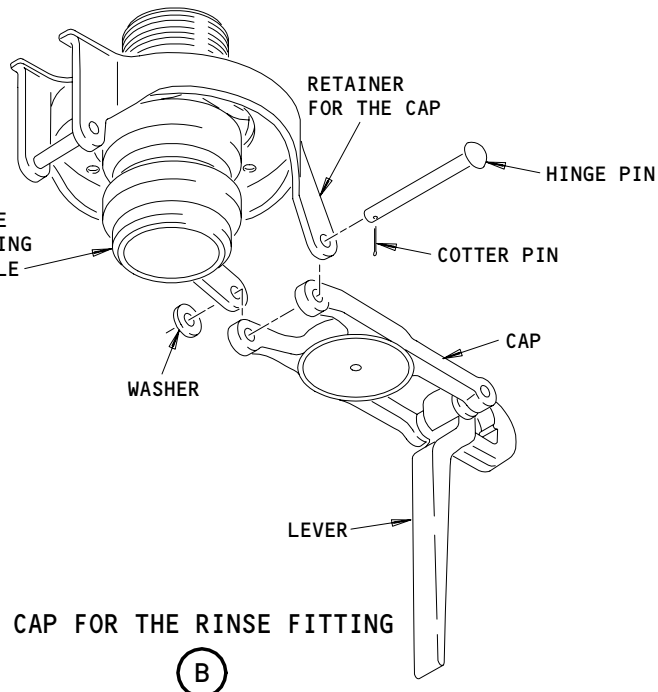
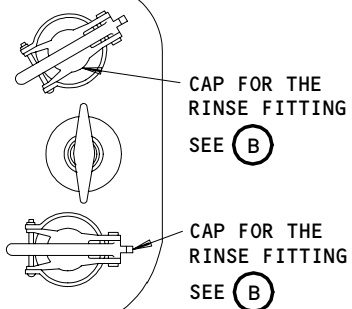
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TOILET SERVICE PANEL

(A)



Rinse Fitting Cap Assembly Installation  
Figure 401

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B. Access

(1) Location Zones  
163 Area Below Bulk Cargo Compartment (Left)

(2) Access Panels  
163AL Waste System Service Panel

C. Procedure

S 424-007

(1) Put the cap in its position and install the hinge pin.

S 434-008

(2) Put the washer on the hinge pin.

S 434-009

(3) Install the cotter pin in the hinge pin.

S 424-010

(4) Close the cap.

S 794-021

(5) Visually inspect cap seal for fit.

S 424-015

(6) Close the door for the waste system service panel, 163AL (AMM 52-49-00/001).

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RINSE NOZZLE - MAINTENANCE PRACTICES

1. General

- A. This procedure gives the following instructions for the rinse nozzle in the waste tank system:
  - (1) The removal of the rinse nozzle assembly.
  - (2) The disassembly (if required) and cleaning of the drop-in rinse nozzle assembly.
  - (3) The installation of the rinse nozzle assembly.
- B. Each waste tank has one rinse nozzle. Some early waste tanks have two rinse nozzles per tank. The instructions for each rinse nozzle are the same.
- C. The 767 airplane waste system has included four basic types of rinse nozzle assemblies during its production run. Which type of nozzle used on an airplane will depend on when the waste tank was produced and which of several Service Bulletins may have been incorporated. Visual inspection can determine which type is used.
  - (1) The first type is the only type that must be accessed from the inside of the tank and requires removal of the water separator for servicing. There are three jets on the nozzle assembly and two nozzles per tank.
  - (2) The second type is attached externally using studs mounted on the waste tank fitting. There are also three jets on the nozzle assembly and two nozzles per tank.
  - (3) The third type is attached to the tank using a v-band clamp. Each nozzle assembly has only two jets and there is only one nozzle assembly used per tank.
  - (4) The fourth and latest type, also employing a v-band clamp mounting feature, uses a rotating nozzle and is also used one per tank.

TASK 38-32-17-002-001

2. Remove the Rinse Nozzle Assembly

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 24-22-00/201, Remove and Supply Power

EFFECTIVITY

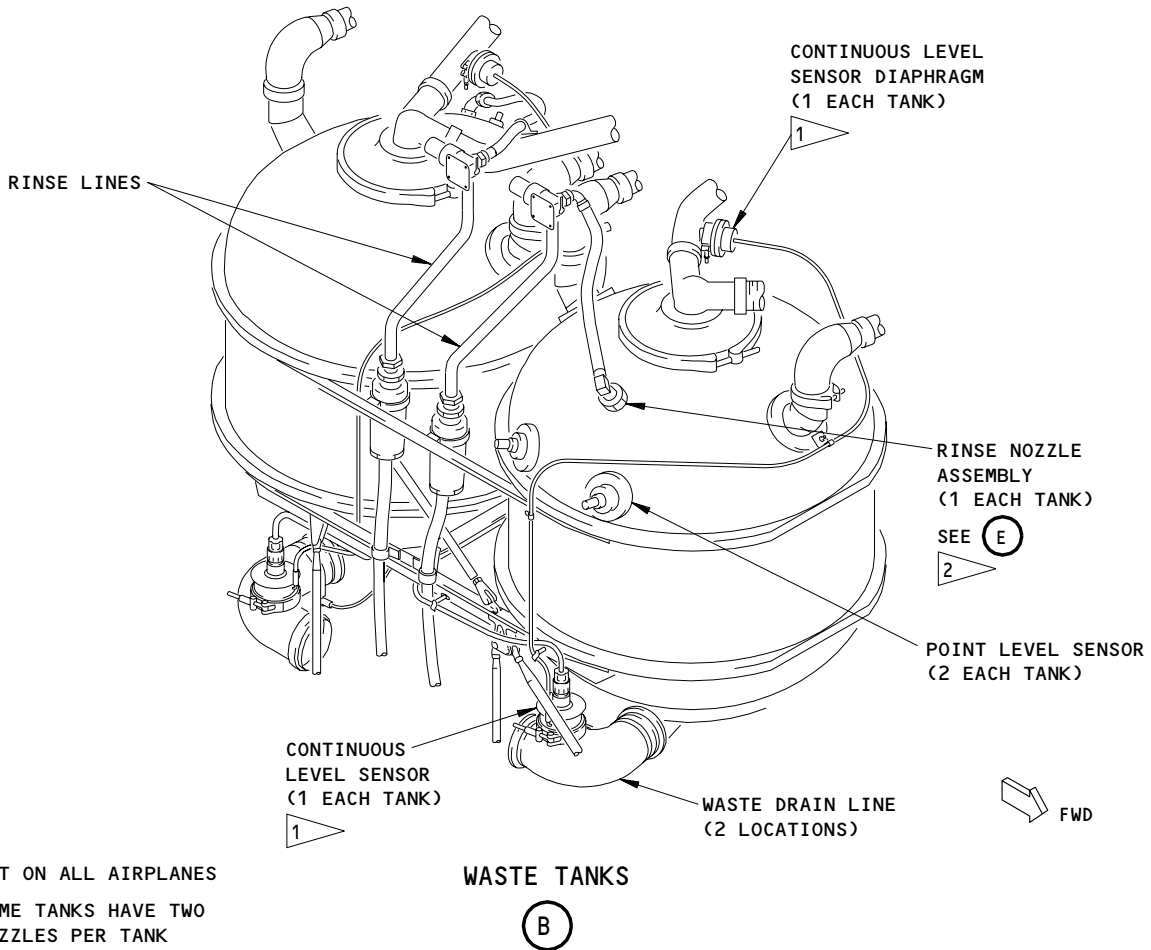
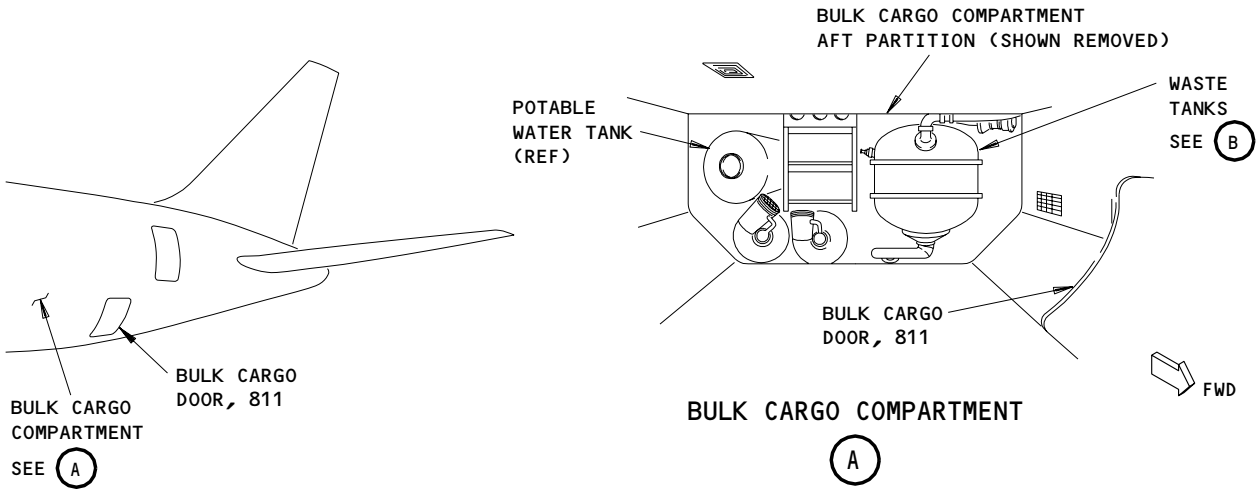
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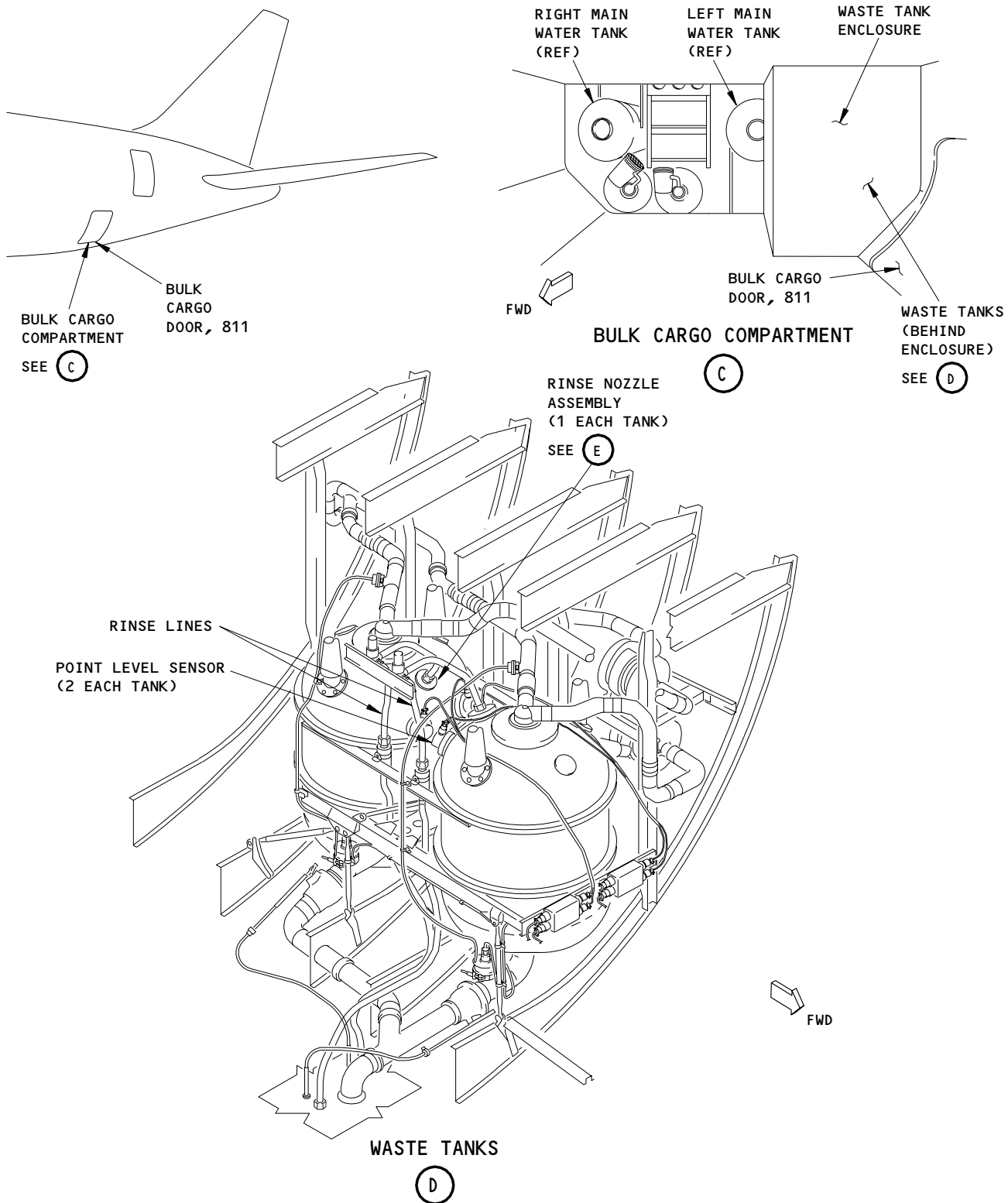




Waste Tank Rinse Nozzle Installation  
Figure 201 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITH STANDARD CAPACITY TANKS

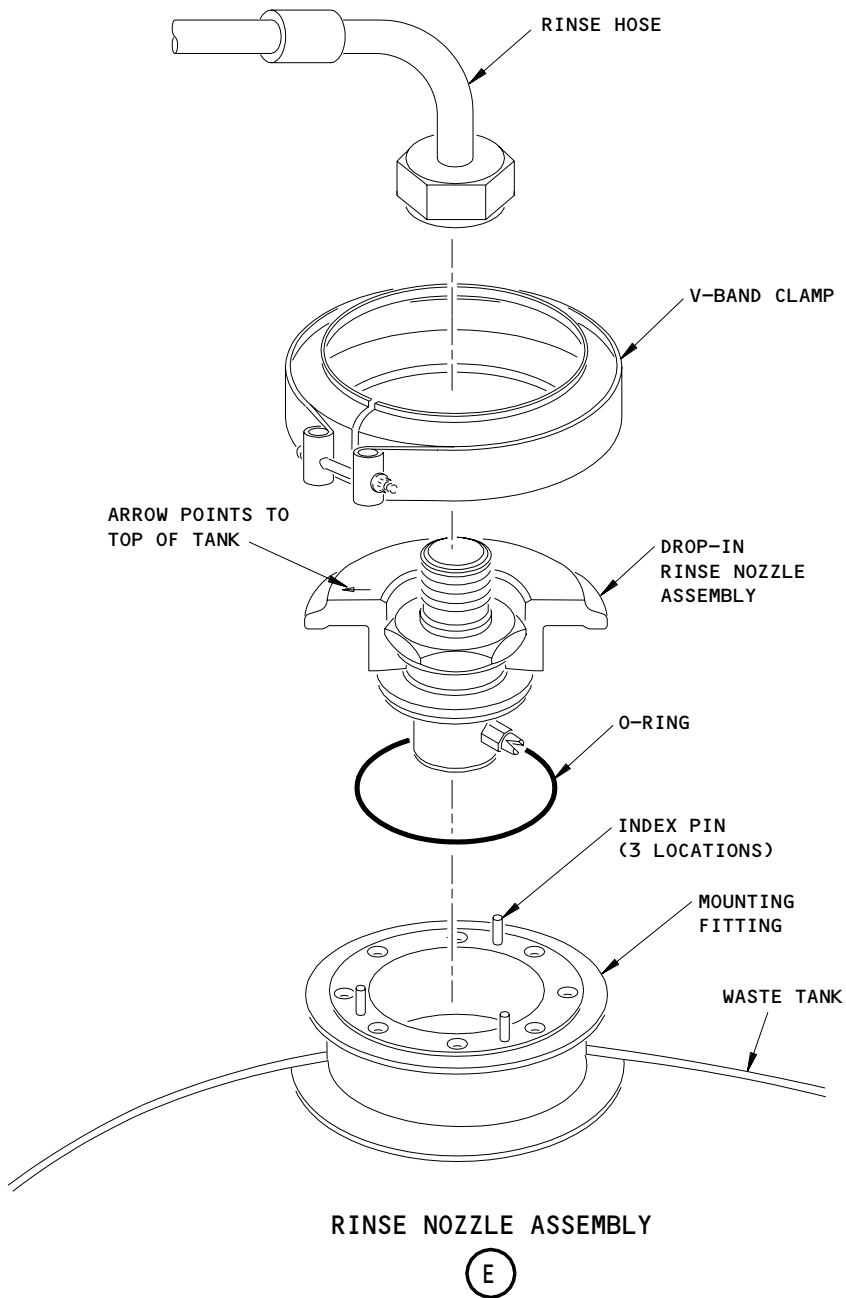
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Waste Tank Rinse Nozzle Installation  
Figure 201 (Sheet 2)

EFFECTIVITY  
AIRPLANES WITH INCREASED CAPACITY TANKS

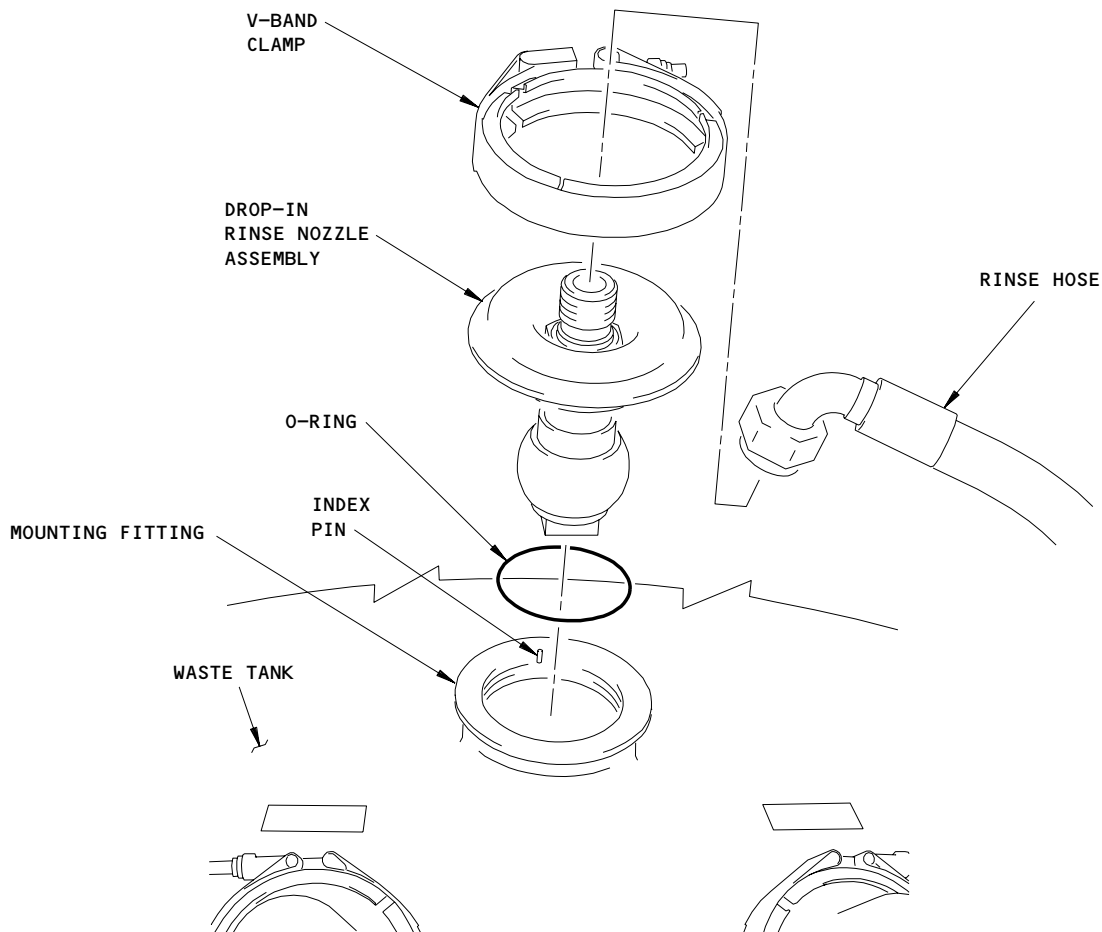
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Waste Tank Rinse Nozzle Installation  
Figure 201 (Sheet 3)

EFFECTIVITY  
NOZZLE ATTACHED WITH V-BAND CLAMP  
(NON-ROTATING)

**38-32-17**



RINSE NOZZLE ASSEMBLY

(E)

Waste Tank Rinse Nozzle Installation  
Figure 201 (Sheet 4)

EFFECTIVITY  
NOZZLE ATTACHED WITH V-BAND CLAMP  
(ROTATING)

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- (3) AMM 38-32-00/201, Deactivate Vacuum Blowers and Lav Flush System
- (4) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Prepare to Remove the Rinse Nozzle Assembly

S 862-002

- (1) Do this task: Deactivate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 672-124

- (2) Use the standard procedures for working with toilet waste and equipment (AMM 38-32-00/201).

S 612-003

- (3) Drain and flush the waste system (AMM 12-17-01/301).

S 012-129

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (4) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 012-005

- (5) To gain access to the waste tanks, remove the aft bulkhead lining or the waste tank enclosure panels of the bulk cargo compartment (AMM 25-52-01/401).

D. RINSE NOZZLE ATTACHED WITH V-BAND CLAMP;  
Remove the Rinse Nozzle Assembly (Fig. 201)

S 022-094

- (1) Disconnect the rinse line to the rinse nozzle assembly.

**NOTE:** There is one nozzle per tank. The nozzle is connected with an elbow.

S 022-095

- (2) Remove the clamp that attaches the mounting flange of the drop-in nozzle assembly to the mounting fitting on the waste tank.

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- S 022-096  
(3) Remove the drop-in rinse nozzle assembly from the waste tank.

- S 022-097  
(4) Remove the O-ring and discard.

TASK 38-32-17-162-099

3. Clean the Rinse Nozzle (Fig. 202)

A. Equipment

- (1) Bristle Brush - Commercially Available

B. Consumable Materials

- (1) Soap - Commercially Available

C. References

- (1) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment

D. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)

- (2) Access Panel  
811 Bulk Cargo Door

E. Procedure

- S 672-125  
(1) Use the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

- S 022-153  
(2) Do this Task: TASK 38-32-17-002-001, Remove the Rinse Nozzle Assembly

- S 022-100  
(3) If necessary, the drop-in nozzle assembly may be disassembled.  
(a) NOZZLE ATTACHED WITH V-BAND CLAMP (NON-ROTATING);  
Some rinse nozzle assemblies have certain components bonded together. They can be identified by an adhesive bead located on the underside of the bonded rinse assembly.

NOTE: Do not attempt to disassemble this bonded type.

- 1) Further disassembly of the non-bonded type may be accomplished by removing the assembly nut from the assembly mounting flange and separating the washer, mounting flange and gasket from the rinse nozzle.

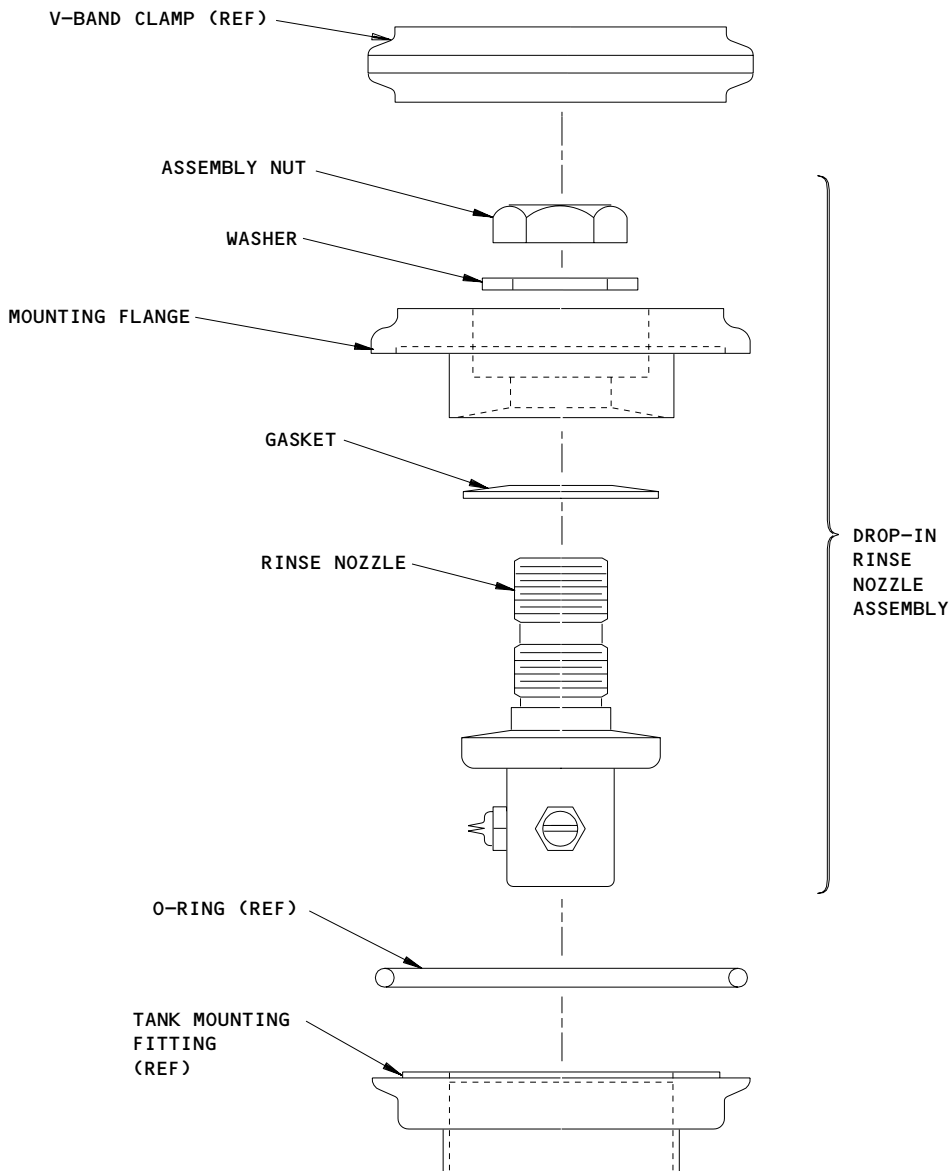
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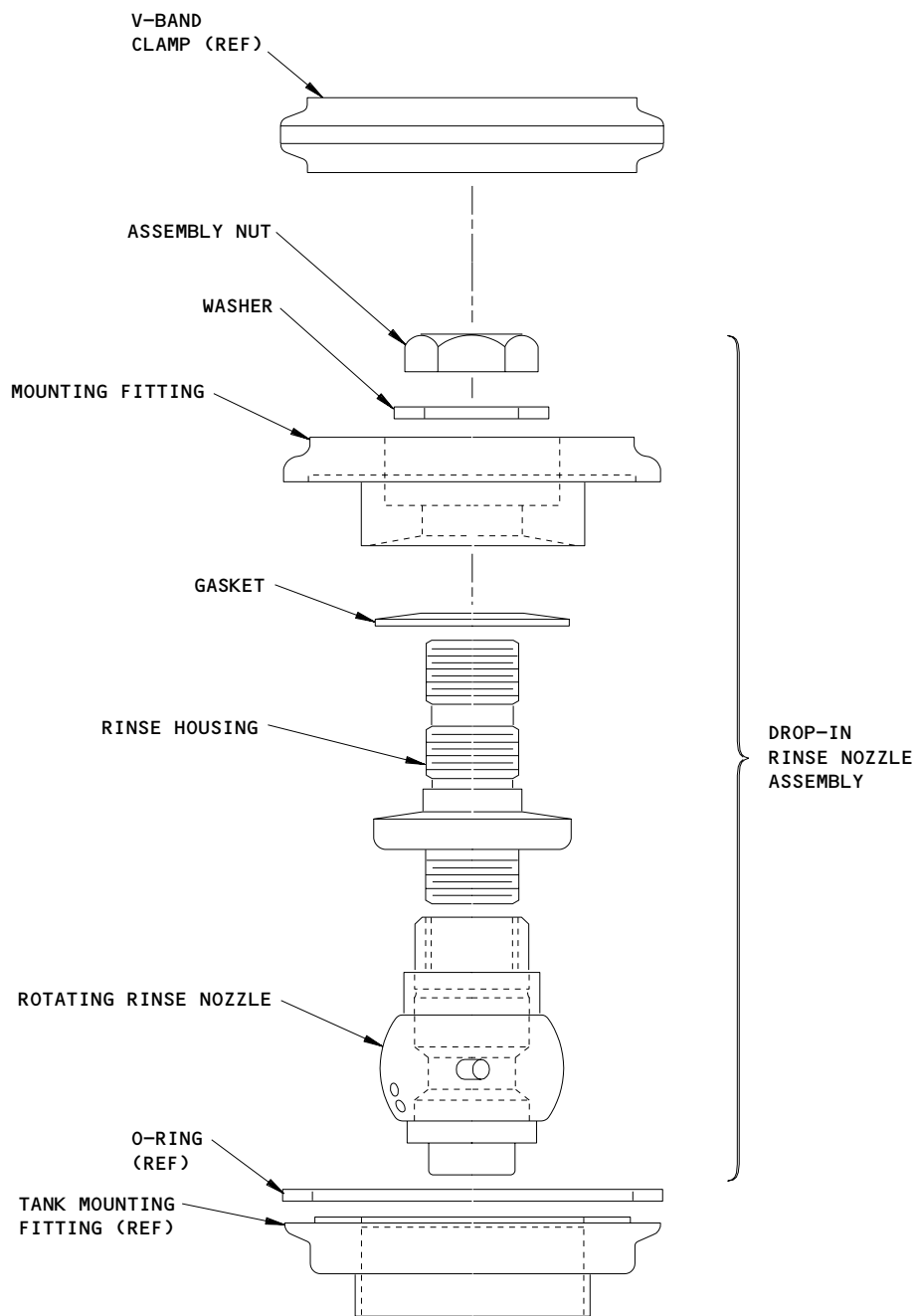
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Rinse Nozzle Cleaning  
Figure 202 (Sheet 1)

EFFECTIVITY  
NOZZLE ATTACHED WITH V-BAND CLAMP  
(NON-ROTATING)

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Rinse Nozzle Cleaning  
Figure 202 (Sheet 2)

EFFECTIVITY  
NOZZLE ATTACHED WITH V-BAND CLAMP  
(ROTATING)

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- (b) NOZZLE ATTACHED WITH V-BAND CLAMP (ROTATING);  
Further disassembly may be required if the rotating rinse nozzle will not rotate. Unscrew rotating rinse nozzle from rinse housing. These parts were assembled using Loctite 242 locking compound and therefore may be difficult to separate.

NOTE: Only perform this step if there is a malfunction with the rotating rinse nozzle.

- 1) Further disassembly may be accomplished by removing the assembly nut from the assembly mounting fitting and separating the washer, mounting fitting and gasket from the rinse housing.

S 142-101

- (4) Remove the dirt from the rinse nozzle with a bristle brush and soap.

S 162-102

- (5) Make sure the jets of the rinse nozzle are clean.

S 172-103

- (6) Flush the rinse nozzle with clean water.

S 412-106

- (7) If necessary, reassemble the drop-in rinse nozzle assembly.

(a) NOZZLE MOUNTED WITH V-BAND CLAMP;

Do these steps:

- 1) Install a new gasket between the mounting flange and the rinse nozzle.

CAUTION: DO NOT TIGHTEN THE RINSE NOZZLE ASSEMBLY NUT TOO MUCH. TOO MUCH TORQUE CAN CAUSE DAMAGE TO THE LOCATING PIN ON THE RINSE NOZZLE OR THE LOCATING PIN HOLE IN THE MOUNTING FLANGE.

- 2) Put the washer and the assembly nut on the rinse nozzle and tighten the assembly nut to 25-30 ft-lbs (34-40 Nm).

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- S 412-152  
(8) Do this task: TASK 38-32-17-402-020, Install the Rinse Nozzle Assembly

- S 722-154  
(9) Do this Task: TASK 38-32-17-725-001 Rinse Nozzle - Test (AMM 38-32-17-5)

TASK 38-32-17-402-020

4. Install the Rinse Nozzle Assembly (Fig. 201)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 24-22-00/201, Remove and Supply Power
- (3) AMM 38-32-00/201, Activate Vacuum Blowers and Lav Flush System
- (4) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Prepare for the installation.

S 672-132

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Use the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).

D. NOZZLE ATTACHED WITH A V-BAND CLAMP;  
Install the Rinse Nozzle Assembly (Fig. 201)

S 422-109

- (1) Install a new O-ring on the mounting fitting.

S 422-110

- (2) Put the drop-in rinse nozzle on the mounting fitting of the waste tank. Engage the index pins on the mounting fitting with the holes in the mounting flange.

**NOTE:** The arrow marked on the mounting flange must point to the top of the waste tank.

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S 422-111

- (3) Install the v-band clamp to attach the mounting flange of the drop-in nozzle assembly to the mounting fitting. Tighten the v-band clamp hex-nut to 40-50 in-lbs (4.5-5.6 Nm).

S 422-112

**CAUTION:** DO NOT TIGHTEN THE RINSE LINE NUT TOO MUCH. TOO MUCH TORQUE CAN DAMAGE TO THE LOCATING PINS ON THE MOUNTING FLANGE OR THE LOCATING PIN HOLES IN THE RINSE NOZZLE ASSEMBLY.

- (4) Connect the rinse line elbow to the rinse nozzle. Tighten the swivel nut on the rinse line elbow to 40-50 in-lbs (4.5-5.6 Nm).

E. Rinse Nozzle Installation Test

S 862-042

- (1) Do this task: Reactivate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 612-045

- (2) Do the servicing procedure for the waste system (AMM 12-17-01/301).

S 792-151

- (3) Make sure that there are no leaks at the rinse line fitting, and at the waste tank connection, during the servicing step.

F. Put the Airplane Back to Its Usual Condition

S 412-043

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 412-044

- (2) Close the bulk cargo door, 811 (AMM 52-36-00/001).

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RINSE NOZZLE - ADJUSTMENT/TEST

1. General

- A. This procedure gives the following instructions for the rinse nozzle in the waste tank system:
  - (1) The testing of the rinse nozzle.
- B. Each waste tank has one rinse nozzle. Some early waste tanks have two rinse nozzles per tank. The instructions for each rinse nozzle are the same.

TASK 38-32-17-725-001

2. Rinse Nozzle - Test

A. Equipment

- (1) Clear Plastic Cup (tapered, with a base of about 2.4 inches or equivalent) - Commercially Available

B. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 38-32-00/201, Standard Procedures with Lav Waste and Equipment
- (3) AMM 38-33-01/401, Waste Tank Level Sensors
- (4) AMM 38-32-17/201, Waste Tank Rinse Nozzle - Maintenance Practices

C. Access

- (1) Location Zone
  - 165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel
  - 811 Bulk Cargo Door

D. Procedure

- S 675-006
  - (1) Use the standard procedures for working with the toilet waste and equipment (AMM 38-32-00/201).
- S 865-007
  - (2) Do this task: Deactivate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.
- S 015-008
  - (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).
- S 015-009
  - (4) To gain access to the waste tanks, remove the aft bulkhead lining or the waste tank enclosure panels of the bulk cargo compartment (AMM 25-52-01/401).

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S 615-010

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (5) Drain and flush the waste system (AMM 12-17-01/301).

**NOTE:** Keep the toilet service cart connected and do not add precharge to the waste system.

S 795-011

- (6) Make sure there are no leaks at the rinse nozzle.

S 025-012

- (7) Remove the point level sensors (AMM 38-33-01/401).

S 495-013

- (8) Put the bottom of a clear plastic cup in the opening in the waste tank for each point level sensor. Hold the cups in the waste tank.

S 725-014

- (9) Pump fluid through the flush connection on the toilet service panel (AMM 12-17-01/301).

S 725-015

- (10) Make sure the fluid that comes out of the rinse nozzles flushes the bottom of each clear plastic cup.

**NOTE:** If not much fluid hits the bottom of the cups, the rinse nozzle jets can be clogged. Or, the rinse nozzle can be in the incorrect position because of a damaged locating pin.

S 725-016

- (11) Stop the flow of fluid.

S 085-017

- (12) Remove the clear plastic cups from the waste tank.

S 425-018

- (13) Install the point level sensors (AMM 38-33-01/401).

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S 865-019

- (14) Do this task: Reactivate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

E. Put the Airplane Back to Its Usual Condition

S 415-005

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining or waste tank enclosure panel of the bulk cargo compartment (AMM 25-52-01/401).

S 415-003

- (2) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 615-002

- (3) Do the servicing procedure for the waste system, as necessary (AMM 12-17-01/301).

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RINSE LINE FILTER – MAINTENANCE PRACTICES

1. General

- A. This procedure has these tasks:
- (1) A removal of the waste tank rinse line filter.
  - (2) A cleaning of the waste tank rinse line filter. If the filter element is clogged, replace it.
  - (3) An installation of the waste tank rinse line filter.
- B. There is one rinse line filter for each waste tank. The procedures are identical for each filter.

TASK 38-32-18-002-001

2. Remove the Rinse Line Filter (Fig. 201)

A. References

- (1) AMM 12-17-01/301, Waste System Servicing
- (2) AMM 25-52-01/401, Cargo Compartment Lining
- (3) AMM 38-32-00/201, Deactivate Vacuum Blowers and Lav Flush System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 612-025

- (1) Do this task: Waste System Servicing (AMM 12-17-01/301).

NOTE: Do not add the chemical precharge after you do the task to drain and flush the waste system.

S 862-050

- (2) Do this task: Deactivate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 012-002

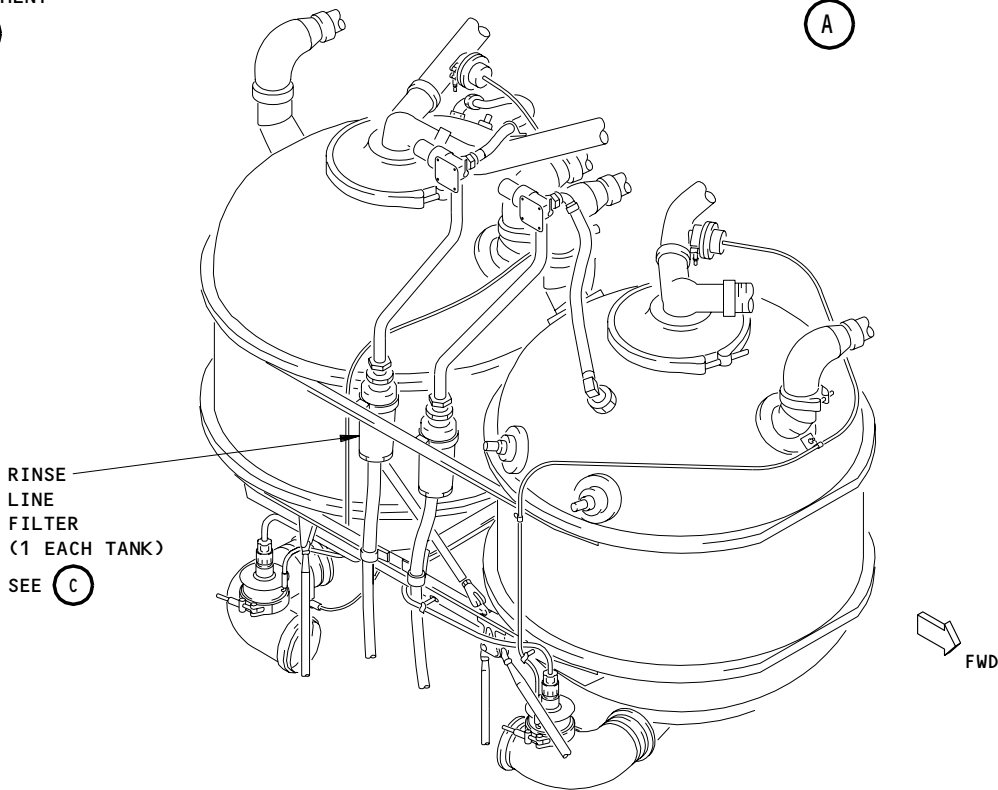
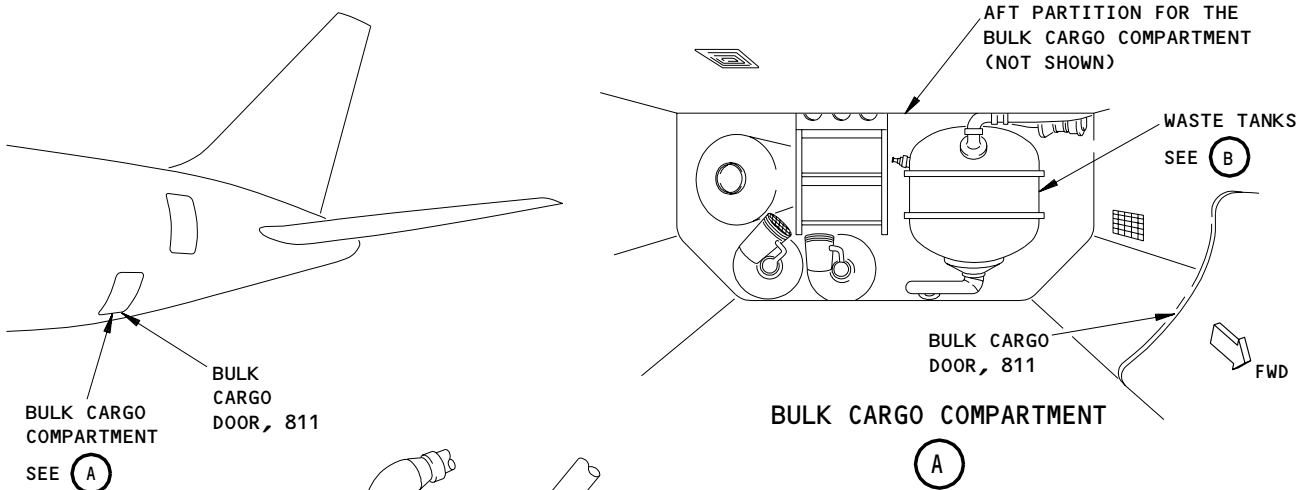
- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 012-003

- (4) Remove the waste system enclosure lining of the bulk cargo compartment (AMM 25-52-01/401).

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AIRPLANES WITH WASTE SYSTEM  
RINSE LINE FILTER

**38-32-18**



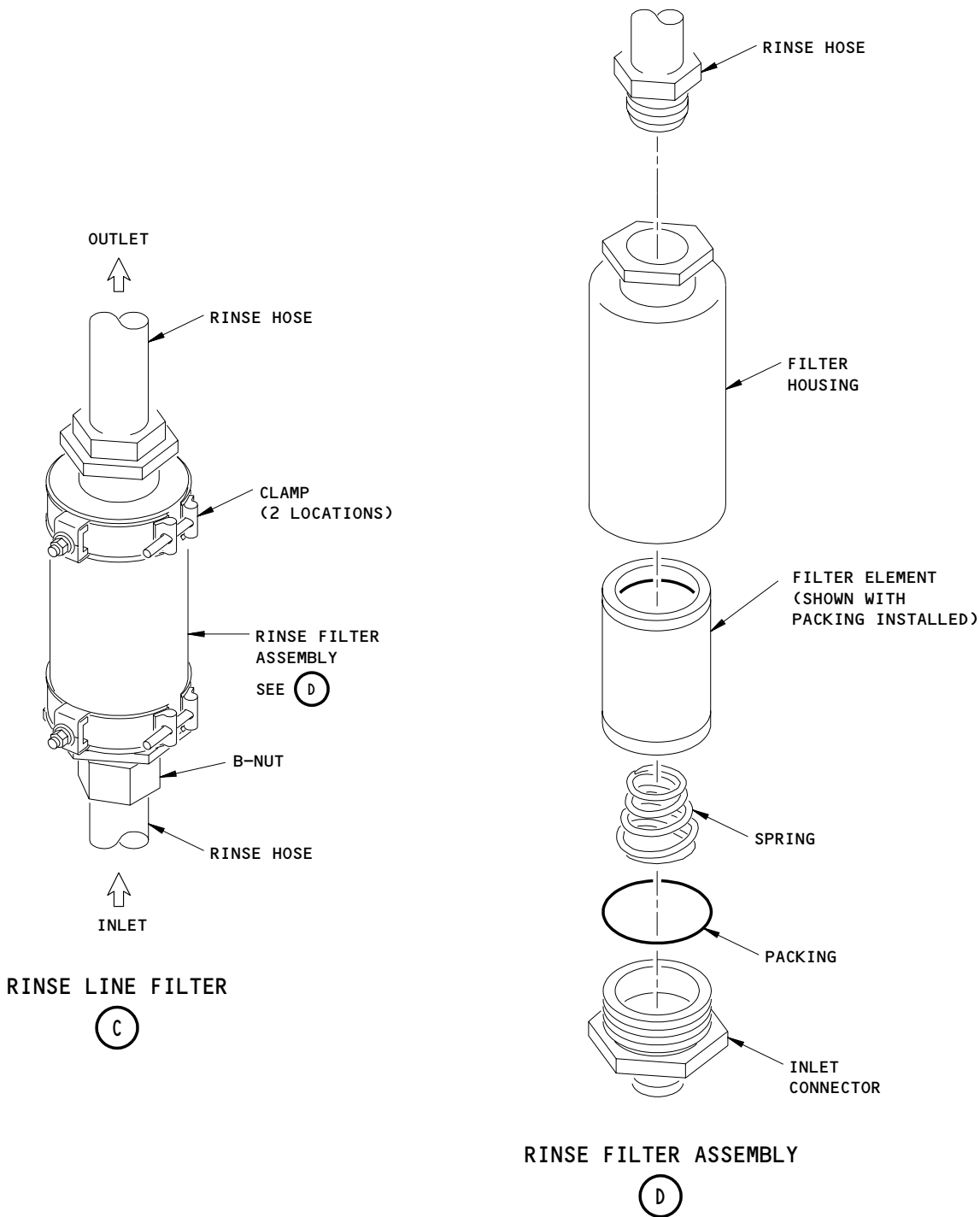
WASTE TANKS (EXAMPLE)

Waste Tank Rinse Line Filter Installation  
Figure 201 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITH WASTE SYSTEM  
RINSE LINE FILTER

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Waste Tank Rinse Line Filter Installation  
Figure 201 (Sheet 2)

EFFECTIVITY  
AIRPLANES WITH WASTE SYSTEM  
RINSE LINE FILTER

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S 022-048

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

(5) Loosen the support clamp(s) of the rinse line filter assembly.

S 022-052

(6) Loosen the upper and lower hose from the rinse line filter assembly.  
(a) Discard the packing.

TASK 38-32-18-132-032

3. Clean the Rinse Line Filter (Fig. 201)

A. General

B. Consumable Materials

- (1) D00504 Grease, Petrolatum - VV-P-236
- (2) B50099 Detergent, concentrated anionic (Alconox)
- (3) B00541 Cleaner, General Purpose

C. Procedure

S 022-033

(1) If necessary, do the procedure to remove the rinse line filter.

S 022-068

- (2) Remove the filter element as follows.
- (a) Remove the inlet connector and the spring from the filter housing.
  - (b) Remove the filter element from the filter housing.
  - (c) Remove the packings from the filter element and the inlet connector.

S 162-037

- (3) Clean the filter element as follows:
- (a) Soak the filter element, in a mild detergent solution. Use the General purpose cleaner or a liquid dishwashing detergent, Mix four fluid ounces (118 CC) detergent per one gallon (4 Liters) warm water.
  - (b) Brush each pleat of the filter element with a soft bristle brush.
  - (c) Reverse flow flush with warm tap water.
  - (d) Blow dry with low pressure air.
  - (e) Make sure the filter element is in servicable condition.

EFFECTIVITY  
AIRPLANES WITH WASTE SYSTEM  
RINSE LINE FILTER

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S 422-069

- (4) Assemble the filter assembly as follows:
- (a) Apply the grease to the packing and the threads of the inlet connector.
  - (b) Install new packings on the filter element and the inlet connector.
  - (c) Put the filter element in its position in the filter housing.
  - (d) Install the spring and the inlet connector in the filter housing.

S 422-042

- (5) Do the procedure to install the rinse line filter.

TASK 38-32-18-402-006

4. Install the Rinse Line Filter (Fig. 201)

A. References

- (1) AMM 12-17-01/301, Waste System Servicing
- (2) AMM 25-52-01/401, Cargo Compartment Lining
- (3) AMM 38-32-00/201, Activate Vaccum Blowers and Lav Flush System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Consumable Materials

- (1) D00504 Grease, Petrolatum - VV-P-236

C. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment (Left)
- (2) Access Panel  
811 Bulk Cargo Door

D. Procedure

S 642-049

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Apply the grease to the new packing, the threads of rinse hose fittings, and the threads of the filter housing.

- S 422-030
- (2) Install the new packing on the upper (outlet) rinse hose fitting.
- S 422-007
- (3) Put the rinse line filter in its position in the support clamp(s) with the inlet port down.
- S 422-055
- (4) Connect the rinse lines to the two ends of the rinse line filter.
- S 422-054
- (5) Tighten the support clamp(s).
- E. Waste Tank Rinse Filter Installation Test
- S 842-057
- (1) Open the cap on the rinse fitting assembly.
- S 842-058
- (2) Connect a rinse water hose from the service waste system servicing equipment to the rinse fitting assembly.
- S 792-059
- (3) Fill the waste tank with 30 gallons to 50 gallons of water.
- S 792-060
- (4) Examine the rinse filter and the connections for leakage.
- F. Put the Airplane Back to its Usual Condition
- S 862-051
- (1) Do this task: Activate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.
- S 412-010
- WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.
- (2) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

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MAINTENANCE MANUAL

- S 412-011  
(3) Close the bulk cargo door, 811 (AMM 52-36-00/001).

EFFECTIVITY  
AIRPLANES WITH WASTE SYSTEM  
RINSE LINE FILTER

**38-32-18**

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PRECHARGE SHUTOFF VALVE REMOVAL/INSTALLATION

1. General

- A. There are two precharge shutoff valves, one for each waste tank. This procedure gives the instructions to remove and install either precharge shutoff valve.
- B. Corrosion Information
  - (1) General
    - (a) Corrosion can occur in the electrical actuator for the precharge control valve on the waste tank.
    - (b) Corrosion can occur on the valve shaft, which can cause leaks.
  - (2) Corrosion Prevention
    - (a) Regularly examine the waste tank precharge control valve actuator and the valve for corrosion.
    - (b) The valve vendor changed the material of the valve shaft, and plans to issue a service bulletin for the older valves.

TASK 38-32-19-004-009

2. Remove the Precharge Shutoff Valve (Fig. 401)

A. References

- (1) AMM 25-52-01/401, Cargo Lining
- (2) AMM 38-32-00/201, Deactivate Vacuum Blowers and Lav Flush System
- (3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zones
  - 163AL Waste System Service access panel
  - 165 Area Aft of Bulk Cargo Compartment (Left)
  - 811 Bulk Cargo Door

C. Procedure

S 864-001

- (1) Do this task: Deactivate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 014-003

- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-004

- (3) Remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

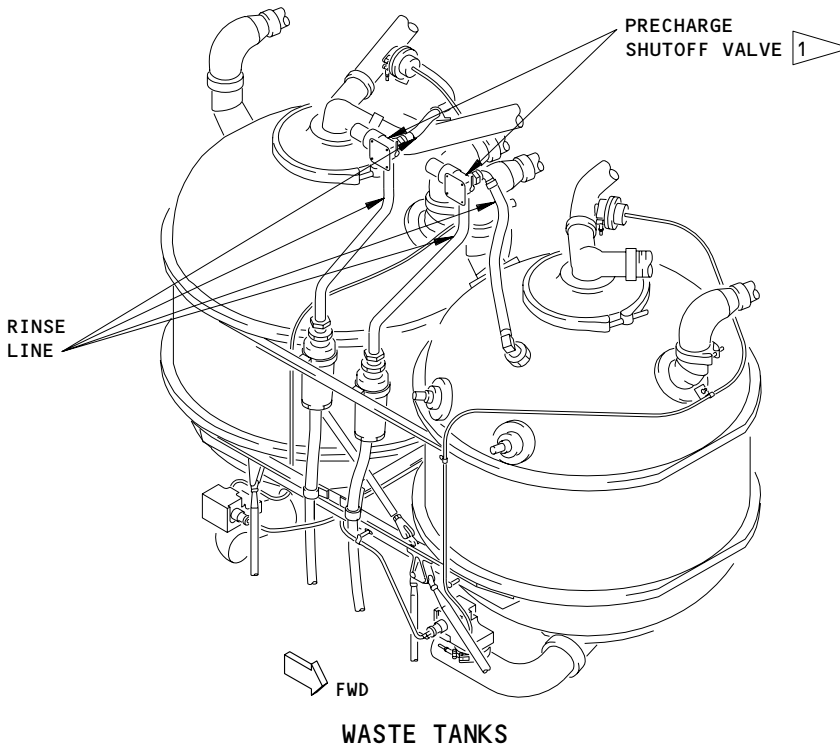
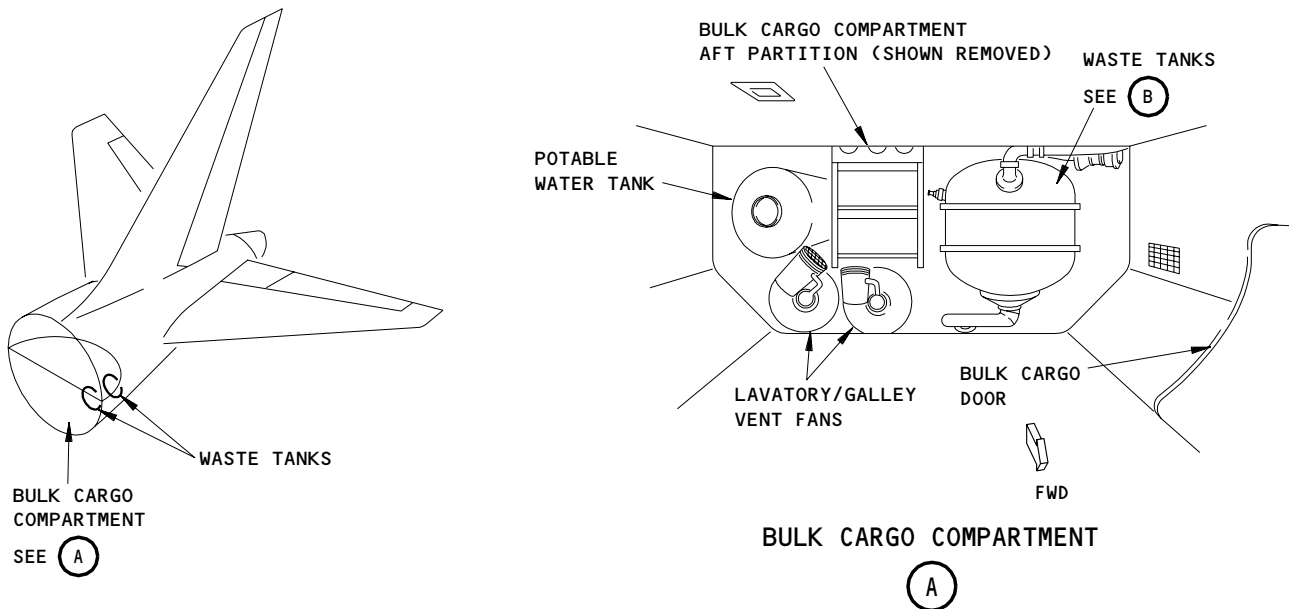
S 024-026

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (4) Disconnect the rinse line from the inlet and outlet of the precharge shutoff valve.

EFFECTIVITY  
AIRPLANES WITH A PRECHARGE SHUT-OFF  
VALVE.

**38-32-19**



1 CORROSION CAN OCCUR IN THE ELECTRICAL ACTUATORS AND ON VALVE SHAFTS

Precharge Shutoff Valve Installation  
Figure 401

EFFECTIVITY  
AIRPLANES WITH A PRECHARGE SHUT-OFF  
VALVE.

# 38-32-19

S 024-006

- (5) Remove the four bolts and washers that attach the precharge shutoff valve to the airplane.

S 024-007

- (6) Remove the precharge shutoff valve.

TASK 38-32-19-404-008

3. Install the Precharge Shutoff Valve (Fig. 401)

A. Consumable Materials

- (1) A00247 Sealant - Cromate Type, BMS 5-95

B. References

- (1) AMM 12-17-01/301, Waste Tank
- (2) AMM 24-22-00/201, Electrical Power - Control
- (3) AMM 25-52-01/401, Cargo Lining
- (4) AMM 38-32-00/201, Activate Vaccum Blowers and Lav Flush System
- (5) AMM 51-31-01/201, Seals and Sealing
- (6) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zones

163AL	Waste System Service access panel
165	Area Aft of Bulk Cargo Compartment (Left)
811	Bulk Cargo Door

D. Procedure

S 164-027

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Clean the sealant off of the precharge shutoff valve and the mating surface.

S 424-011

- (2) Make a surface faying seal (AMM 51-31-01/201) and install the precharge shutoff valve with the bolts and washers.

S 434-012

- (3) Connect the rinse line to the inlet and outlet of the precharge shutoff valve.

S 434-015

- (4) Connect the electrical connector to the precharge shutoff valve.

S 864-014

- (5) Supply electrical power (AMM 24-22-00/201).

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AIRPLANES WITH A PRECHARGE SHUT-OFF  
VALVE.

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S 864-016

- (6) Do this task: Activate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 714-019

- (7) Do the servicing procedure for the waste system (AMM 12-17-01/301), and do these steps:
- (a) Make sure the precharge shutoff valve opens to let you flush the waste tank.
  - (b) Make sure the precharge shutoff valve closes when the waste tank has six gallons of precharge in it.

S 414-020

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (8) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 414-021

- (9) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 864-022

- (10) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY  
AIRPLANES WITH A PRECHARGE SHUT-OFF  
VALVE.

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ALTITUDE PRESSURE SWITCH – REMOVAL/INSTALLATION

1. General

- A. There are two altitude pressure switches, one for each toilet waste system. This procedure gives the instructions to remove and install these switches.

TASK 38-32-51-004-002

2. Remove the Altitude Pressure Switch (Fig. 401)

A. References

- (1) AMM 52-48-00/001, Equipment Compartment Exterior Doors

B. Access

- (1) Location Zone  
312 Area Aft of Pressure Bulkhead to BS 1725 (Right)
- (2) Access Panel  
311BL Access Door for the Forward Stabilizer Compartment

C. Procedure

S 864-001

- (1) Open these circuit breakers, and attach DO-NOT-CLOSE tags:
- (a) On the overhead panel, P11:
- 1) 11R8, LAVS SYS 1 FLUSH  
(LAVATORY FLUSH CONT <Lav #>)
- 2) 11R35, LAVS SYS 2 FLUSH  
(LAVATORY FLUSH CONT <Lav #>)
- (b) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
On the APU external power panel, P34:
- 1) 34N10, LAV SYS 1 FLUSH
- 2) 34N11, LAV SYS 2 FLUSH

S 014-005

- (2) Open the access door for the forward stabilizer compartment, 311BL (AMM 52-48-00/001).

S 034-006

- (3) Disconnect the electrical connector from the altitude pressure switch.

S 024-007

- (4) Remove the bolts that attach the switch to the airplane.

S 024-008

- (5) Remove the switch.

TASK 38-32-51-404-009

3. Install the Altitude Pressure Switch (Fig. 401)

A. References

- (1) AMM 24-22-00/201, Manual Control

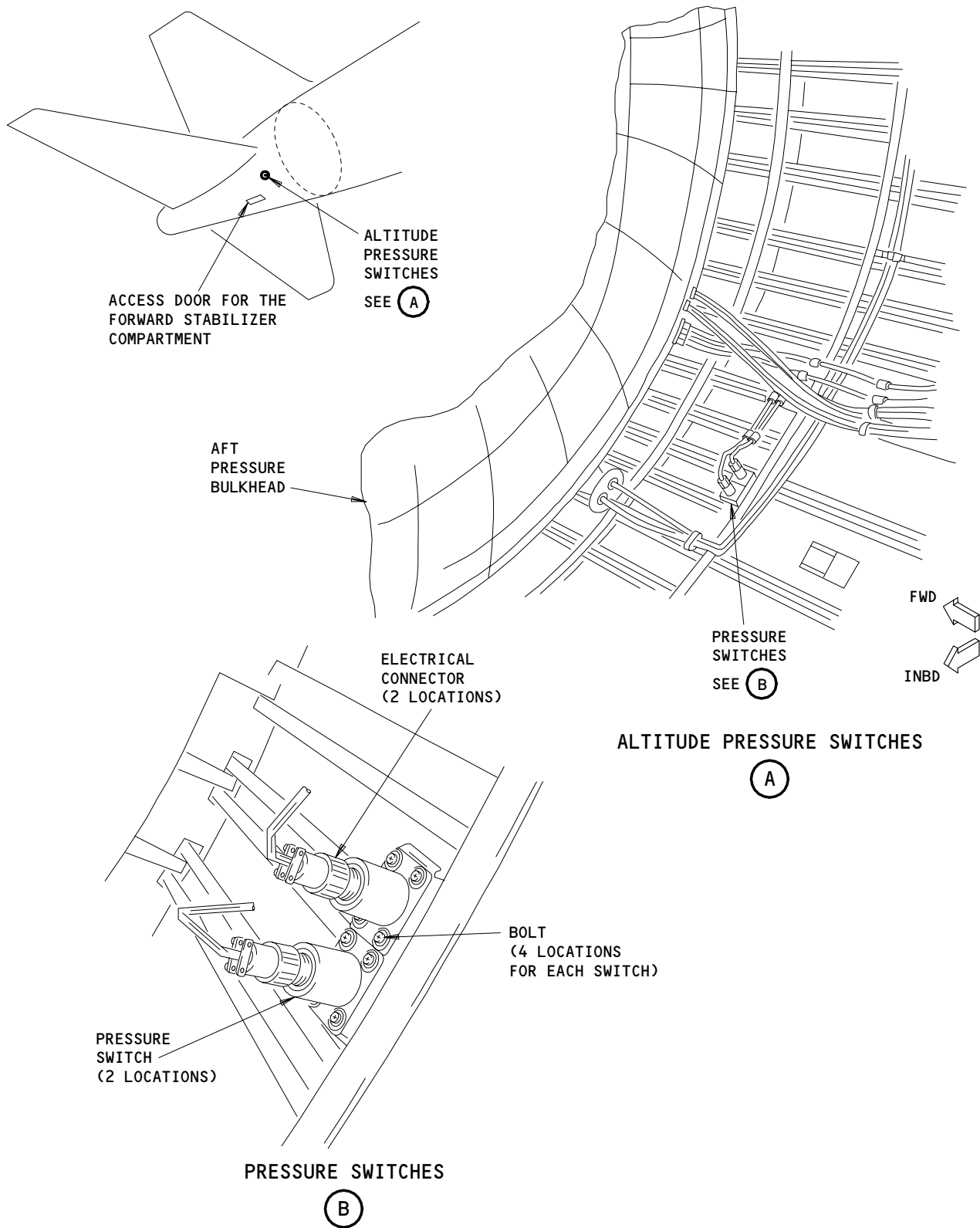
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Altitude Pressure Switch Installation  
Figure 401

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- (2) AMM 52-48-00/001, Equipment Compartment Exterior Doors
- B. Access
  - (1) Location Zone
    - 312 Area Aft of Pressure Bulkhead to BS 1725 (Right)
  - (2) Access Panel
    - 311BL Access Door for the Forward Stabilizer Compartment
- C. Procedure
  - S 424-010
    - (1) Put the switch in its position.
  - S 424-011
    - (2) Install the bolts that attach the switch to the airplane.
  - S 434-012
    - (3) Connect the electrical connector to the switch.
  - S 864-013
    - (4) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
      - (a) On the overhead panel, P11:
        - 1) 11R8, LAVS SYS 1 FLUSH  
(LAVATORY FLUSH CONT <Lav #>)
        - 2) 11R35, LAVS SYS 2 FLUSH  
(LAVATORY FLUSH CONT <Lav #>)
      - (b) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
On the APU external power panel, P34:
        - 1) 34N10, LAV SYS 1 FLUSH
        - 2) 34N11, LAV SYS 2 FLUSH
  - S 864-016
    - (5) Supply electrical power (AMM 24-22-00/201).
  - S 714-017
    - (6) Flush a minimum of four toilets and make sure they flush correctly.
  - S 864-018
    - (7) Remove electrical power if it is not necessary (AMM 24-22-00/201).
  - S 414-019
    - (8) Close the access door for the forward stabilizer compartment, 311BL,  
(AMM 52-48-00/001).

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WASTE TANK QUANTITY INDICATION SYSTEM – DESCRIPTION AND OPERATION

1. General (Fig 1)

- A. Each waste tank has two or three level sensors to monitor the volume of fluid in each waste tank. The sensors supply a signal to the logic control module which controls functioning and waste level indication of the waste system.
- (1) Each tank has two point level sensors (PLS) which give a signal if the waste tank is full.
- (a) The two point level sensors are near the top of the waste tank. The point level sensors give a signal if the waste tank is full.
- (b) Each waste tank has one (or two) rinse nozzles near the point level sensors. The rinse nozzles clean the surface of the point level sensors during servicing, and at the same time washes down the inside wall of the tank.
- (2) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
There is one continuous level sensor (CLS) mounted between the drain line and the air outlet line on each waste tank.
- (a) The continuous level sensor gives data to the waste quantity gauge(s).
- (b) The CLS monitors the waste fluid level in the waste tank.
- B. AIRPLANES WITH THE SENSOR FOUL LIGHTS;  
The waste tank service panel has two sensor foul lights, one for the FWD waste tank and one for the AFT waste tank. The sensor foul lights come ON if one of the level sensors have more than 1/8 inch (3 mm) waste on the sensor surface.
- C. The waste tanks are mounted aft of the bulk cargo compartment aft bulkhead.

2. Point Level Sensors (PLS) (Fig 2)

- A. The point level sensors are used to indicate a FULL waste tank. These sensors get 28-volt dc power from the overhead circuit breaker panel, P11. There are two point level sensors near the top of each waste tank. When the tanks are filled to the level of the sensors or when waste, 3/8 inch (10 mm) or more, covers the sensors, an electrical signal is sent to the logic control module (LCM). This signal stops the action of the toilets that drain to that given waste tank.
- B. AIRPLANES WITH SENSOR FOULED LIGHTS ON WASTE PANEL;  
If the waste material on the point level sensor is 1/8 - 3/8 inch (3 - 10 mm), a sensor fouled signal is sent to the Logic Control Module (LCM). This 2 Hz signal will continue until you remove the waste material from the sensor surface, until the waste material layer is more than 3/8 inch (10 mm), or until the waste material covers the level sensor completely. If the waste material layer is thicker than about 3/8 inch (10 mm) the sensor sends a tank FULL signal to the LCM.

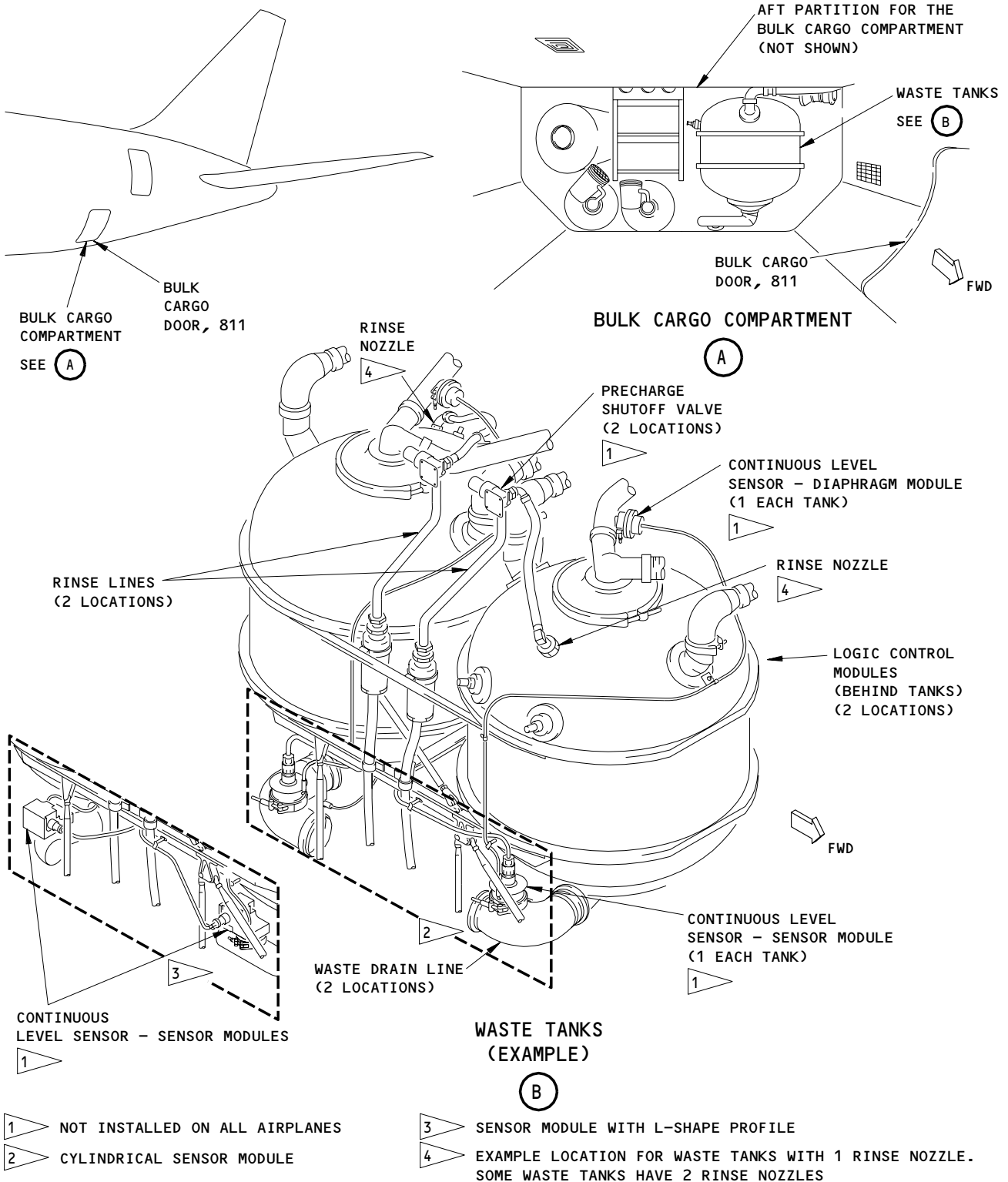
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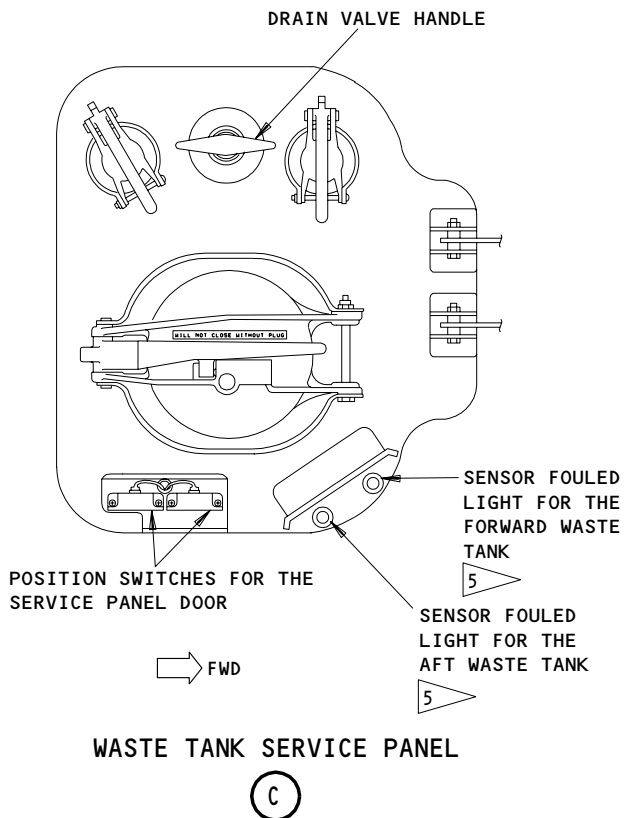
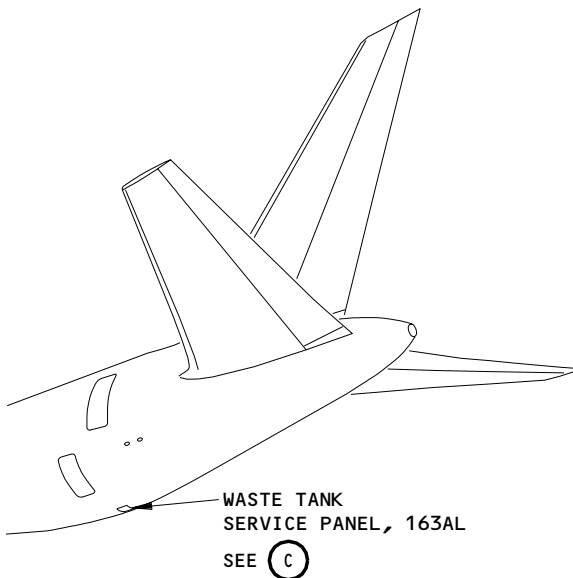


Waste Tank Quantity Indication System  
Figure 1 (Sheet 1)

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5 AIRPLANES WITH SENSOR FOILED LIGHTS AT THE SERVICE PANEL

Waste Tank Quantity Indication System  
Figure 1 (Sheet 2)

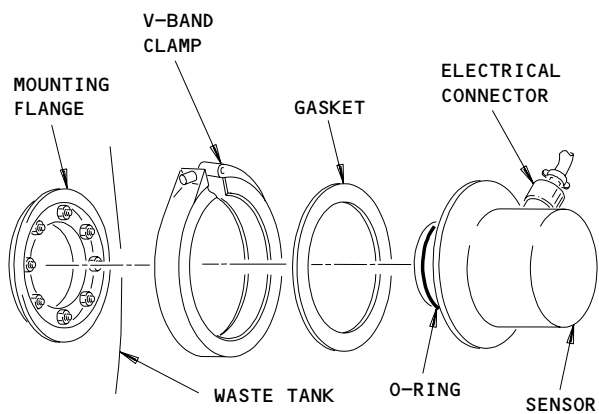
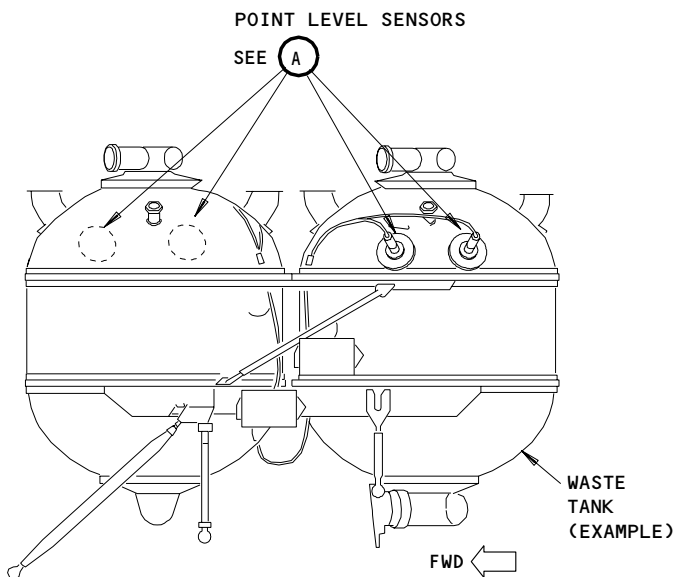
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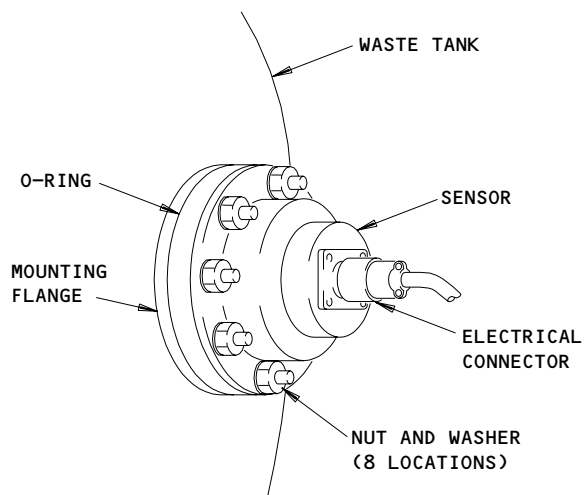
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POINT LEVEL SENSOR (EXAMPLE)



POINT LEVEL SENSOR (EXAMPLE)



- 1 RECOMMENDED CONFIGURATION
- 2 ALTERNATIVE CONFIGURATION

Waste Tank Point Level Sensor  
Figure 2

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3. AIRPLANES WITH CONTINUOUS LEVEL SENSORS;

Continuous Level Sensor (CLS) (Figure 3)

A. There is a continuous level sensor for each waste tank. The continuous level sensor is one part that is divided into two modules connected by a capillary tube. You can not disconnect the two modules from the capillary tube. The diaphragm module is attached to the air outlet line at the top exit of the waste tank. The sensor module is attached to the drain line tube at the bottom exit of the waste tank. A pressure differential is measured between the diaphragm module at the top and the sensor module at the bottom. This signal is passed to the logic control module where the volume of fluid in the waste tank is calculated. This information is then transmitted to the waste quantity gauge on the aft attendant panel. The continuous level sensor also controls the precharge shutoff valve (if equipped).

4. Logic Control Modules (LCM) (Figure 4)

A. AIRPLANES WITH THE ROSEMOUNT LCM;

Refer to the data that follows:

- (1) The LCM has five indicator lights and one 3-position switch. One light shows if the tank is full. One light shows if the LCM receives 28-volt dc power. The remaining three lights will come on if the point level sensor or continuous level sensor connected to the light gives the signal that the tank is full.
- (2) There are two LCM configurations. One configuration has a guard for the test switch and the other configuration does not. The configuration with the guard for the test switch reduces the possibility of activation of the test switch. The two configurations are interchangeable.

B. AIRPLANES WITH THE DREXELBROOK LCM;

Refer to the data that follows:

- (1) The four indicator lights on the logic control module are the power on light, the tank full light, and the full tank/fouled sensor light for each of the two level sensors. The power on light comes on to show that 28 volt dc power is supplied to the logic control module. The tank full light comes on when either level sensor sends a tank full signal to the logic control module. The full tank/fouled sensor light flashes when the related sensor sends a sensor foul signal to the logic control module. This light also comes on when the related sensor sends a tank full signal.

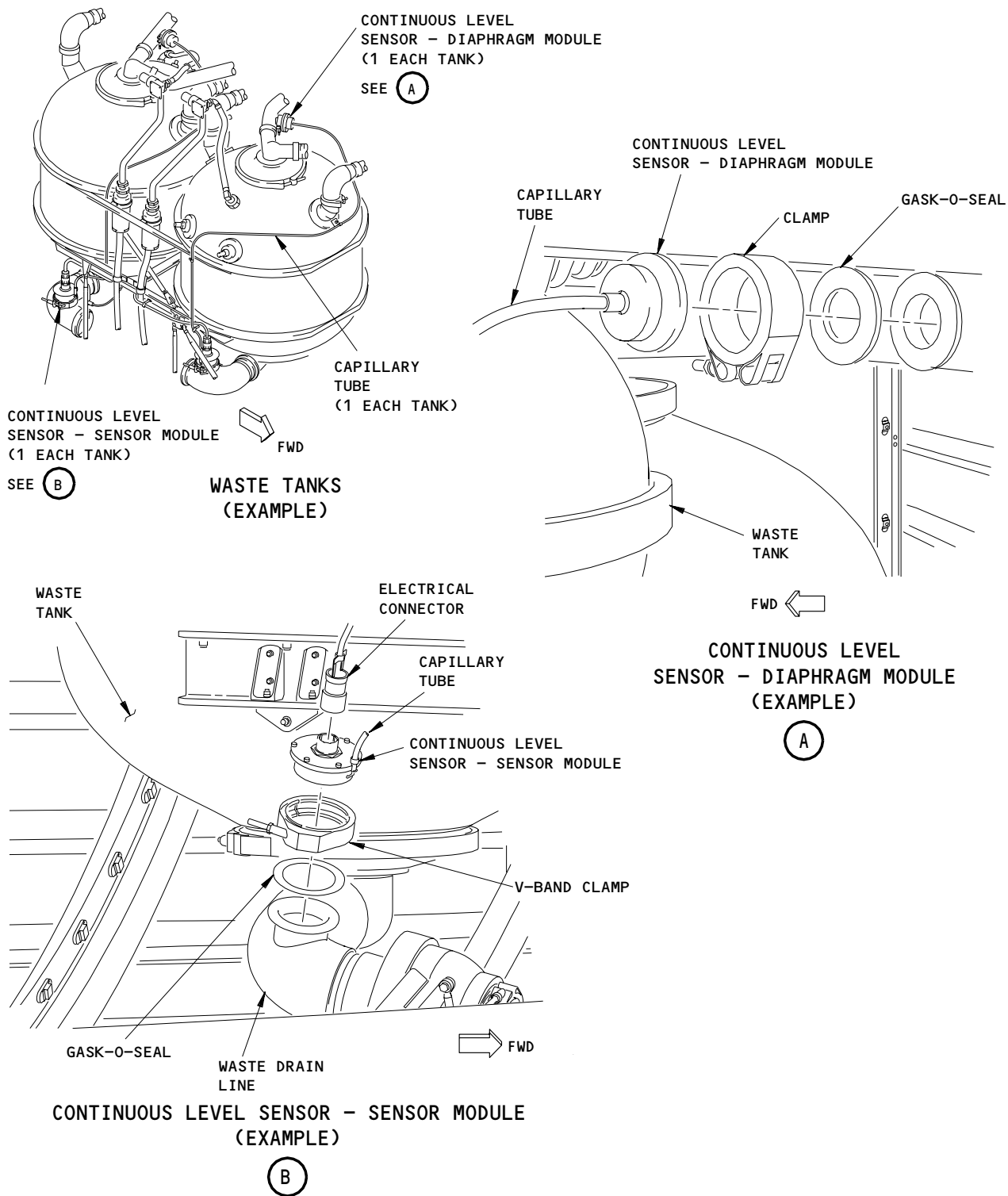
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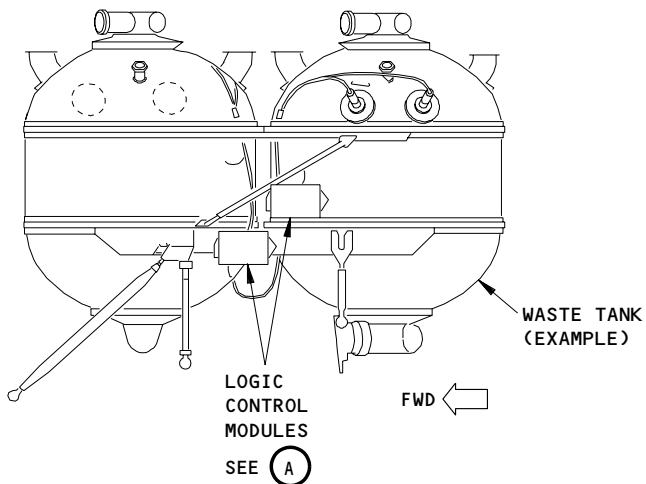
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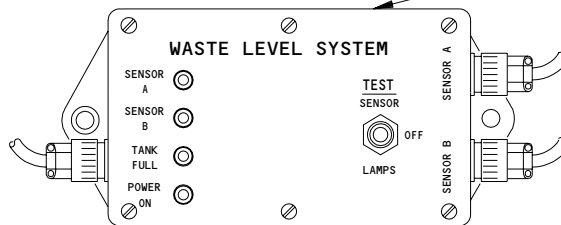
Waste Tank Continuous Level Sensor  
Figure 3

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AIRPLANES WITH CONTINUOUS LEVEL SENSORS

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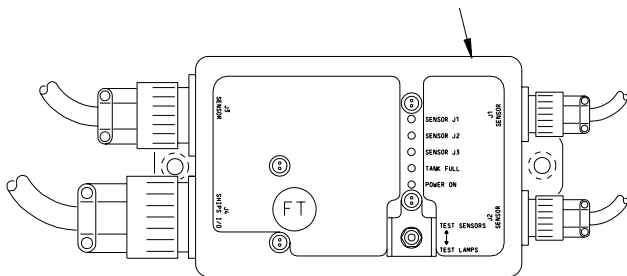
FORWARD LOGIC CONTROL MODULE, M964  
AND AFT LOGIC CONTROL MODULE, M965



LOGIC CONTROL MODULE (LCM)

(A) 1

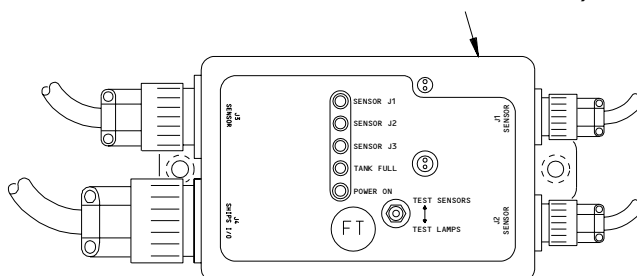
FORWARD LOGIC CONTROL MODULE, M964  
AND AFT LOGIC CONTROL MODULE, M965



LOGIC CONTROL MODULE

(A) 2

FORWARD LOGIC CONTROL MODULE, M964  
AND AFT LOGIC CONTROL MODULE, M965



LOGIC CONTROL MODULE

(A) 3

1 DREXELBROOK LCM

2 ROSEMOUNT LCM WITH A GUARD FOR THE  
TEST SWITCH

3 ROSEMOUNT LCM WITHOUT A GUARD FOR THE  
TEST SWITCH

Waste Tank Logic Control Module  
Figure 4

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- (2) The three-position switch on the logic control module has an OFF position, a SENSOR TEST position, and a LAMP TEST position. The SENSOR TEST position shows that both sensors and the logic control module operate. The LAMP TEST position shows that all four indicator lights on the logic control module operate.
- C. The logic modules are adjacent to the waste tanks. Each logic module controls the part of the waste system that is connected to the same waste tank that it is adjacent to. The logic modules get 28-volt dc power from the overhead panel, P11, and from the APU external power panel, P34. The LCM gets inputs from the two-point level sensor and the continuous level sensor on its waste tank. The LCM gives output to operate the following:
- (1) AIRPLANES WITH CONTINUOUS LEVEL SENSORS;  
The precharge control valve (if equipped).
- (a) The LCM closes the precharge control valve when the continuous level sensor measures the precharge limit of fluid in the waste tank.
- (2) The toilets.
- (a) AIRPLANES WITH DREXELBROOK "MANUAL AND" LOGIC LCM;  
The LCM stops the operation of the toilets if one point level sensor gives a tank full signal. Switches on the attendant panel, labeled SENSOR OFF FWD (AFT) TANK, permit manual switching of the logic used to shut off the toilets in the event of a full tank condition from "OR" logic to "AND" logic. With "AND" logic, the LCM stops the operation of the toilets only if both point level sensors give a tank full signal.
- (b) AIRPLANES WITH DREXELBROOK "AND" LOGIC OR ROSEMOUNT LCM;  
The LCM stops the operation of the toilets if the two point level sensors give a tank full signal. If only one point level sensor gives a tank full signal the toilets will operate.
- (3) The lights and the waste quantity indicator on the aft attendant panel (if installed).
- (a) The LCM turns on the LAV INOP FWD (AFT) TANK light when it stops the operation of the toilets (see above).
- (b) The LCM turns on the SENSOR FOUL FWD (AFT) TANK light (one is on the aft attendant panel and one is on the toilet service panel) when a point level sensor gives a sensor fouled signal. The LCM also sends a signal to EICAS when this occurs.
- (c) The waste quantity indicator (if installed) shows the amount of waste in the waste tank. It gets its input from the continuous level sensor through the LCM.

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- (d) The switches, labeled SENSOR OFF FWD (AFT) TANK (if equipped), permit manual switching of the logic used to shut off the toilets in the event of a full tank condition from "OR" logic to "AND" logic.

In "OR" logic, the lavatories connected to a tank are shut down when either point level sensor detects a full condition. Heavy fouling of one sensor can cause a false full tank signal and cause the waste system to shut down.

Activating the switch on the aft attendant panel reconfigures the system's logic to "AND", so that both sensors must detect a full condition before the toilets are shut off. If the system shuts down in flight, and only one sensor has detected a full tank, activating the switch will restart the toilets for the remainder of the flight, or until the other sensor detects a full tank.

This switch is only operable in flight. The manual "AND" mode cannot be activated on the ground. If activated in flight, the logic will automatically revert back to "OR" logic when the airplane lands. The switch would then remain inoperative until the tank is serviced.

- D. The logic control module sends a signal to EICAS to display the FWD (AFT) WASTE SENSOR maintenance message if a point sensor gives a sensor fouled signal (see above). The logic control module also sends this signal to EICAS if a failure occurs when the logic module does its BITE test. The LCM does the BITE test each time you remove and then supply power.

5. Operation

A. Functional Description of the Logic Control Module

- (1) The two toilet waste disposal systems operate independently from each other. Waste from System 2 lavatories is stored in the forward waste tank. Waste from System 1 lavatories is stored in the aft tank. See the Fault Code diagrams to show each lavatory that drains to the forward waste tank and to the aft waste tank.
- (2) AIRPLANES WITH DREXELBROOK "MANUAL AND" LCM;  
Refer to the data that follows:
  - (a) If a layer of waste material on the sensor surface becomes thicker than about 1/8 inch, the sensor sends a sensor fouled signal to the LCM. This causes the related SENSOR A or SENSOR B light on the LCM to flash. The LCM causes the SENSOR FOUL FWD (AFT) TANK light on the aft attendant panel to come ON. A FWD (AFT) WASTE SNSR maintenance message will show on the EICAS. The sensor fouled signal continues until the waste material is washed from the sensor surface or until the layer becomes thicker than about 3/8 inch. When the waste material is thicker than 3/8 inch on one sensor or when the tank is filled to the level of the sensor, the signal TANK FULL is sent to the LCM. This will stop the toilet operation in the lavatories that drain to the full waste tank.

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- (b) In the LAMP TEST position, the switch causes the SENSOR A, SENSOR B, TANK FULL, and POWER ON lights to come ON to show that the lights operate.
  - (3) AIRPLANES WITH DREXELBROOK "AND" LOGIC LCM;  
Refer to the data that follows:
    - (a) When the toilet waste in the waste tank covers the surface of both point level sensors or when a layer of waste material on the sensor surfaces becomes thicker than about 3/8 inch, the sensor sends a TANK FULL signal to the LCM. A TANK FULL signal from the both point level sensors causes the LCM to stop electric power from the related toilets. This stops toilet operation in all lavatories which are connected to the full waste tank. The LCM causes the LAV INOP FWD (AFT) TANK light on the aft attendants panel to come ON. The TANK FULL, SENSOR A, and SENSOR B lights on the LCM also come ON.
    - (b) In the LAMP TEST position, the switch causes the SENSOR A, SENSOR B, TANK FULL, and POWER ON lights to come ON to show that the lights operate.
  - (4) AIRPLANES WITH ROSEMOUNT LCM;  
Refer to the data that follows:
    - (a) When the toilet waste in the waste tank covers the surface of a point level sensor or when a layer of waste material on the sensor surface becomes thicker than about 3/8 inch, the sensor sends a TANK FULL signal to the LCM. A TANK FULL signal from both point level sensors causes the LCM to stop electric power to the related toilets. This stops toilet operation in all lavatories which are connected to the full waste tank. The LCM causes the LAV INOP FWD (AFT) TANK light on the aft attendant panel to come ON. The TANK FULL, SENSOR J1, SENSOR J2, and SENSOR J3 (Continuous Level Sensor) lights on the LCM also come ON.
    - (b) In the LAMP TEST position, the switch causes the SENSOR J1, SENSOR J2, SENSOR J3, TANK FULL, and POWER ON lights to come ON to show that the lights operate.
    - (c) The LAV INOP FWD (AFT) TANK switch/light on the aft attendant panel does the same test of the system as the SENSOR TEST position of the TEST switch on the logic module.
    - (d) The LCM for each waste tank has a test circuit for the point level sensors and the LCM indicator lights.
- B. Toilet Operation Control
- (1) Pressing a toilet flush switch starts the waste disposal system. Operation is automatic and controlled by time switches.

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LIGHTS ON AFT ATTENDANT PANEL		
LIGHT NAME	EFF	DESCRIPTION
LAV INOP FWD (AFT) TANK	ALL	<p>The light is usually off. The light comes on if the logic module finds the waste tank is full. To correct the problem, do the servicing procedure for the waste tanks (AMM 12-17-01/301). If the problem continues, clean the point level sensors. (AMM 38-33-01/701). Push the light to make the logic module do its built-in test.</p> <p><u>NOTE:</u> AIRPLANES WITH CONTINUOUS LEVEL SENSORS, Push and hold the light for a minimum of 6 seconds to run the test. This is the first step you need to do if you found the FWD (AFT) WASTE SENSR indication on EICAS.</p>

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LIGHTS ON AFT ATTENDANT PANEL		
LIGHT NAME	EFF	DESCRIPTION
SNSR FOUL FWD (AFT) TANK	ALL	The light is usually off. The light comes on the logic module if a point level sensor is dirty. To correct the problem, do the servicing procedure for the waste tanks (AMM 12-17-01/301). If the problem continues, clean the point level sensors. (AMM 38-33-01/701).

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WASTE TANK QUANTITY INDICATION SYSTEM – ADJUSTMENT/TEST

1. General

- A. This procedure includes these tasks:
- (1) A LAVS INOP BITE Test of the waste tank quantity indication system from the attendant panel.
  - (2) A Level Sensor BITE Test of the waste tank quantity indication system from the LCM (logic control module).
  - (3) AIRPLANES WITH CONTINUOUS LEVEL SENSOR (ROSEMOUNT SYSTEM); An Auto Zero Adjustment.
    - (a) Use the Auto Zero procedure to calibrate the continuous level sensor (CLS). The CLS sends an electrical signal to the logic control module which sends a signal to the Waste Quantity Indicator. The CLS continuously measures the amount of waste in the waste tank. When you move or replace the LCM, CLS or the waste tank, use the Auto Zero procedure to calibrate the CLS to the LCM.
- B. The Drexelbrook Logic Control Module (LCM) simulates a full tank condition during the BITE test. The BITE test will cause the SNSR FOUL light and the LAV INOP light to come on.
- C. The Rosemount Logic Control Module (LCM) simulates a full tank condition during the BITE test. The BITE test will cause the SNSR FOUL light and the LAV INOP light to come on. The waste quantity gage will receive a full signal during the test.
- D. AIRPLANES WITH DREXELBROOK "AND" LOGIC;  
Each tank has two point level sensors (PLS) which send signals to the Logic Control Module (LCM). The LCM uses "AND" logic to determine when to shutdown the system. With "AND" logic, both PLSs must be covered or fouled to cause a shutdown. This "AND" logic helps prevent false or premature shutdowns.
- E. AIRPLANES WITH DREXELBROOK "MANUAL AND" LOGIC LCM;  
Each tank has two point level sensors (PLS) which send signals to the LCM. The LCM stops the operation of the toilets if one point level sensor gives a tank full signal. The SENSOR OFF FWD (AFT) TANK switches on the attendants panel permit manual switching of the logic from "OR" logic to "AND" logic. With "AND" logic, the LCM stops the operation of the toilets only if both point level sensors give a tank full signal.
- F. To visually determine which LCM type an airplane has, use Fig. 501. The following configurations will be on the attendant panel:
- (1) The Drexelbrook system ("AND" logic) has the LAV INOP switch-lights and SNSR FOUL switch-lights. Some Drexelbrook systems ("MANUAL AND" logic) also have SNSR OFF switch-lights.
  - (2) The Rosemount system ("AND" logic) has the LAV INOP switch-lights, the SNSR FOUL switch-lights and the waste quantity gauge (with its LVL IND switches).

TASK 38-33-00-745-207

2. LAVS INOP BITE Test (Fig. 501)

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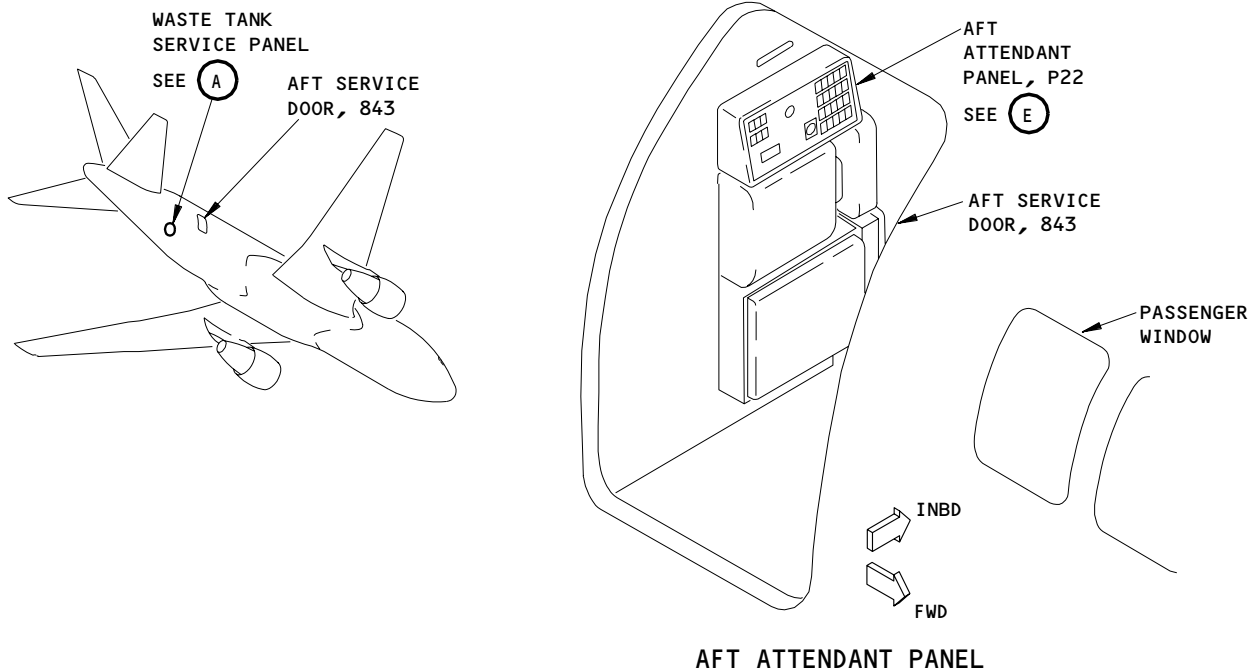
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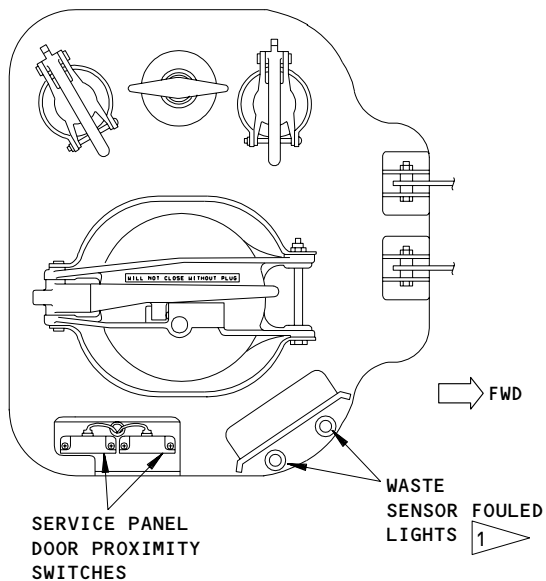
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# BOEING

## 767 MAINTENANCE MANUAL



AFT ATTENDANT PANEL



WASTE TANK SERVICE PANEL

1 NOT INSTALLED ON ALL AIRPLANES

(A)

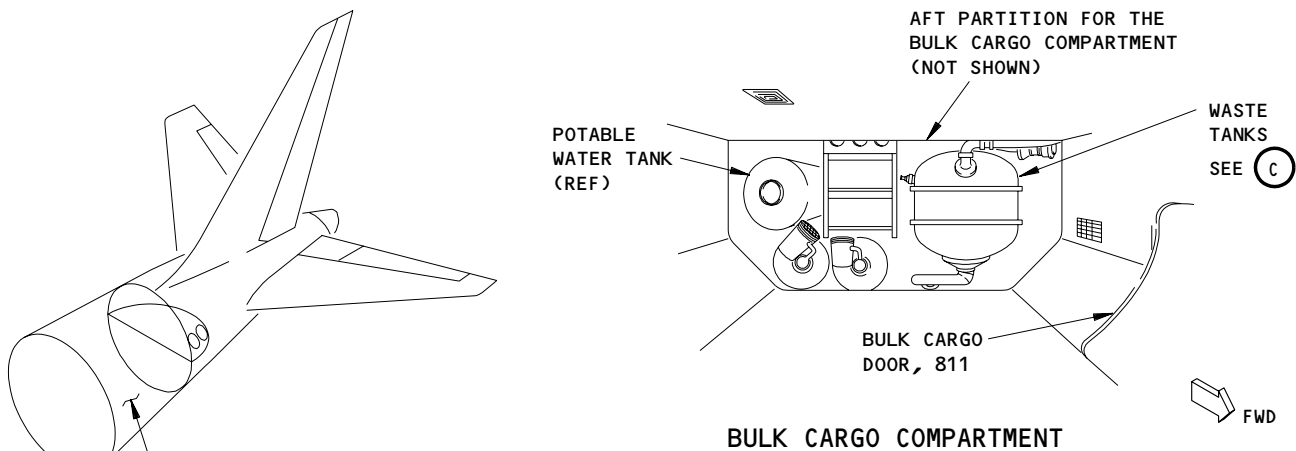
Waste Tank Quantity Indication System Test  
Figure 501 (Sheet 1)

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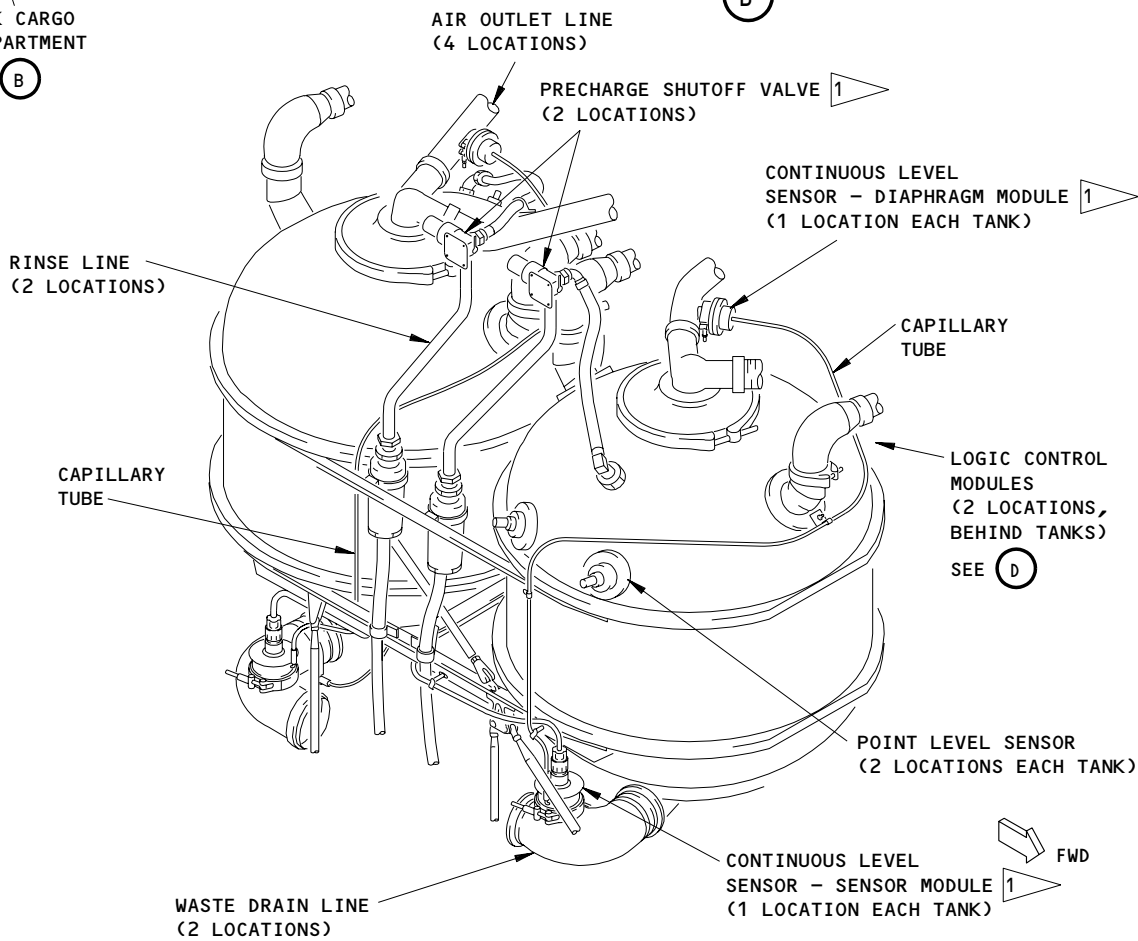
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BULK CARGO COMPARTMENT  
SEE (B)



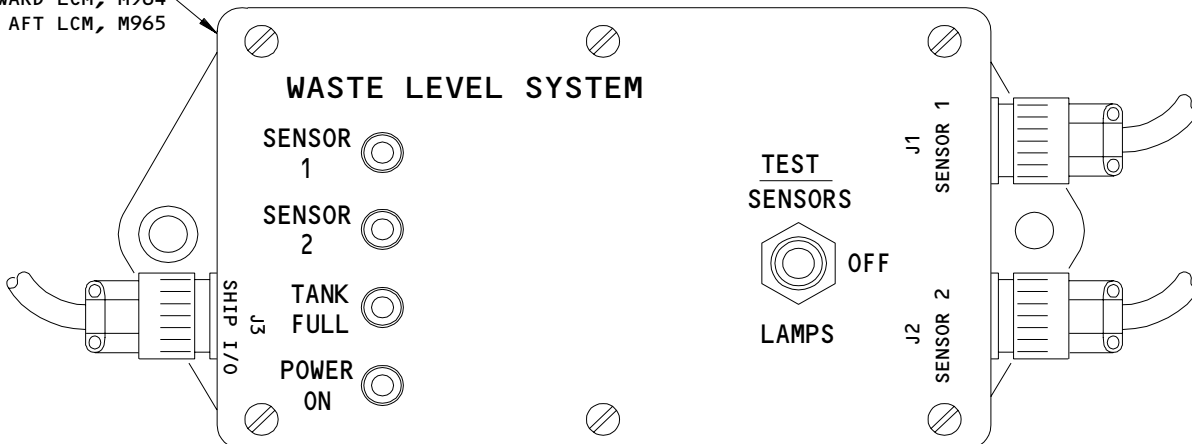
1 NOT INSTALLED ON ALL AIRPLANES

Waste Tank Quantity Indication System Test  
Figure 501 (Sheet 2)

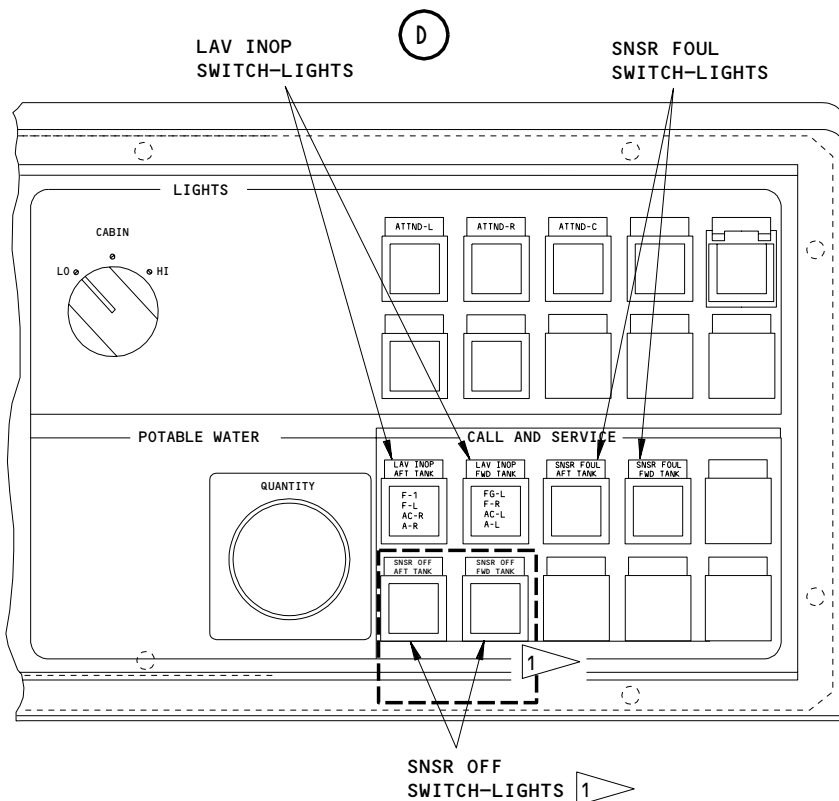
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FORWARD LCM, M964  
AND AFT LCM, M965



LOGIC CONTROL MODULE  
(DREXELBROOK)



ATTENDANT PANEL, P22, USED WITH DREXELBROOK LCM  
(TYPICAL)

1 SENSOR OFF SWITCHES USED ONLY ON AIRPLANES  
WITH DREXELBROOK LCM USING "MANUAL AND" LOGIC.

Waste Tank Quantity Indication System Test  
Figure 501 (Sheet 3)

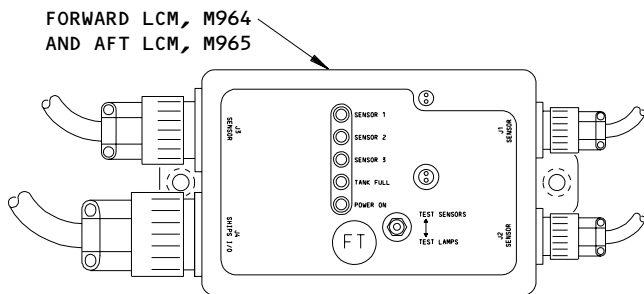
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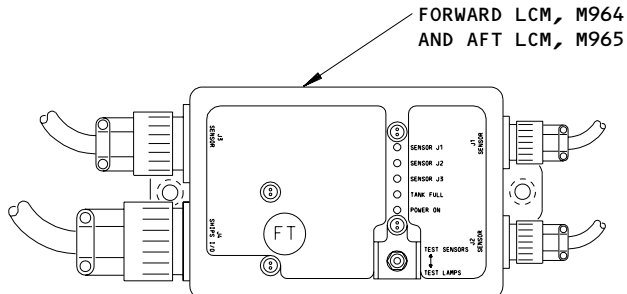
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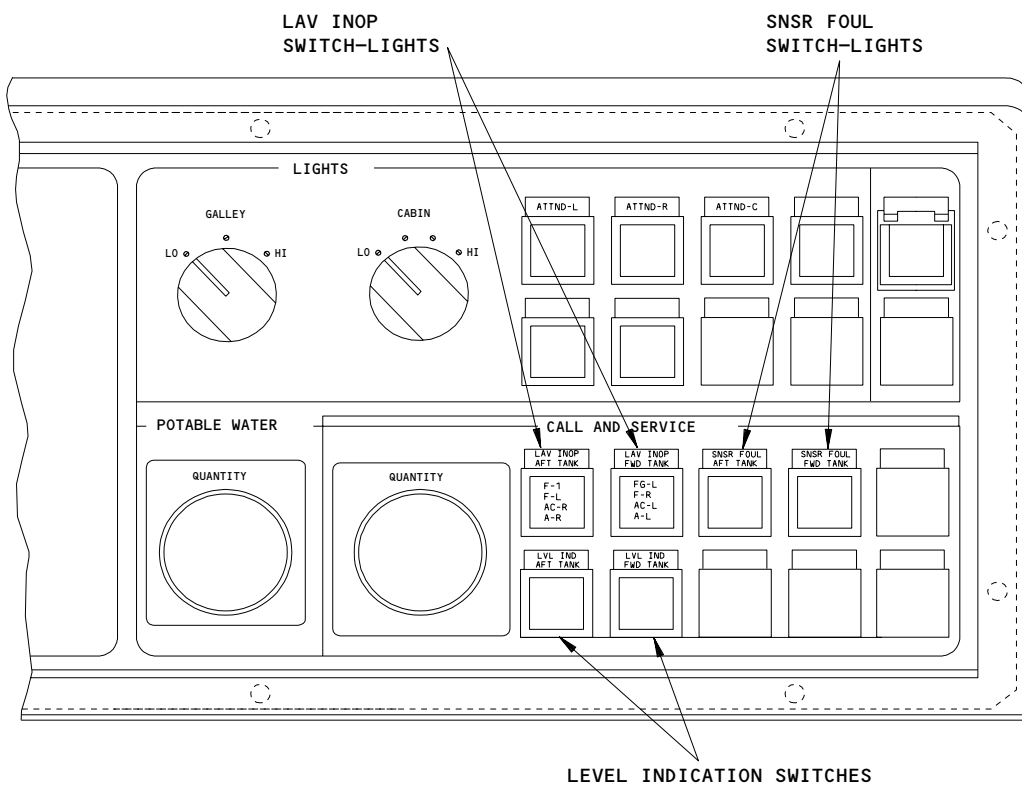
**LOGIC CONTROL MODULE  
(ROSEMOUNT)**

F 3



**LOGIC CONTROL MODULE  
(ROSEMOUNT)**

F 4



**ATTENDANT PANEL, P22, USED WITH ROSEMOUNT LCM  
(TYPICAL)**

G

- 3 LCM WITHOUT A GUARD ON TEST SWITCH
- 4 LCM WITH A GUARD ON TEST SWITCH

**Waste Tank Quantity Indication System Test  
Figure 501 (Sheet 4)**

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A. General

- (1) This task is for a test of the waste indication system from the attendant panel.

B. References

- (1) AMM 24-22-00/201, Control (Supply Electric Power)

C. Access

- (1) Location Zones  
252 Passenger Cabin - Section 46 (Right)

D. Prepare for the test

S 865-208

- (1) Supply electrical power (AMM 24-22-00/201).

S 015-217

- (2) Get access to the aft attendant panel, P22, in the passenger compartment.

S 865-228

- (3) Determine which LCM system you have by visual inspection and comparison with Fig. 501.

E. AIRPLANES WITH DREXELBROOK LCM;  
LAVS INOP BITE Test

S 715-219

- (1) From the attendant panel, do the check that follows:
  - (a) PUSH and HOLD the LAV INOP FWD TANK (AFT TANK) switch-light for 30 seconds.
    - 1) Within 30 seconds, make sure that the LAV INOP FWD TANK (AFT TANK) light comes ON.

NOTE: The SNSR FOUL light and CMC are unaffected by the BITE test of the Drexelbrook LCM.

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- (b) RELEASE the LAV INOP FWD TANK (AFT TANK) switch-light.
  - 1) Make sure the LAV INOP FWD TANK (AFT TANK) light goes OFF.
- (c) If the LAVS INOP BITE Test did not give the correct results, do the full Level Sensor BITE test of the waste quantity indication system at the LCM (logic control module).

F. AIRPLANES WITH ROSEMOUNT LCM;  
LAVS INOP BITE Test

S 715-220

- (1) From the attendant panel, do the check that follows:
  - (a) PUSH and HOLD the LVL IND FWD TANK (AFT TANK) switch.
  - (b) PUSH and RELEASE the LAV INOP FWD TANK (AFT TANK) switch-light.
    - 1) Make sure the SNSR FOUL FWD TANK (AFT TANK) light and LAV INOP FWD TANK (AFT TANK) light come ON for 3 seconds, then go OFF.

NOTE: After approximately 3 seconds, the lights will go OFF, or show fault conditions, if the tank is not full. The full BITE test is approximately 3 seconds.

- 2) Make sure the waste tank quantity reads FULL for 3 seconds and returns to previous level.
    - (c) RELEASE the LVL IND FWD TANK (AFT TANK) switch.
    - (d) If the LAVS INOP BITE Test did not give the correct results, do the full Level Sensor BITE test of the waste quantity indication system at the LCM (logic control module), the attendant panel, and the waste service panel.

G. Put the Airplane Back to Its Usual Condition

S 415-218

- (1) Close the access to the passenger compartment.

TASK 38-33-00-725-238

3. The Level Sensor BITE Test of the Waste Quantity Indication System (Fig. 501)

A. General

- (1) This procedure gives the instructions to do the full Level Sensor BITE test of the the Waste Quantity Indication system at the LCM (logic control module), at the attendant panel, and at the waste tank service panel (if equipped with WASTE SENSOR FOULED switch-lights).

B. References

- (1) AMM 24-22-00/201, Control (Supply Electric Power)
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 29-11-00/201, Main (Left, Right and Center) Hydraulic Systems
- (4) AMM 32-00-20/201, Landing Gear Downlocks
- (5) AMM 52-36-00/001, Bulk Cargo Door

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- (6) AMM 52-49-00/001 Exterior Service Doors - Description and Operation
- C. Access
- (1) Location Zones
- 165 Area Aft of Bulk Cargo Compartment (Left)
  - 252 Passenger Cabin - Section 46 (Right)
- (2) Access Panel
- 163AL Waste Tank Service Panel
- D. Prepare for the Test
- S 865-239
- (1) Supply electrical power (AMM 24-22-00/201).

- S 015-244
- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 015-306

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (3) To get access to the waste tanks, remove the aft bulkhead lining of the bulk cargo compartment (AMM 25-52-01/401).

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S 015-246

- (4) Get access to the aft attendant panel, P22, in the passenger cabin.

S 865-247

- (5) Determine which LCM system you have by visual inspection and comparison with Fig. 501.

E. AIRPLANES WITH THE DREXELBROOK LCM USING "AND" OR "MANUAL AND" LOGIC;  
Level Sensor BITE Test

**NOTE:** The Drexelbrook LCM on some airplanes is configured for "AND" LOGIC, and is configured for "MANUAL AND" LOGIC on other airplanes. If the aft attendant panel has an active SNSR OFF FWD TANK (AFT TANK) switch, the LCM has "MANUAL AND" LOGIC. If the aft attendant panel does not have an active SNSR OFF FWD TANK (AFT TANK) switch, the LCM has "AND" LOGIC.

S 725-249

- (1) From the Logic Control Module (LCM), do these steps:

**NOTE:** There is one LCM for each waste tank. Do the test separately for the forward and the aft waste tank.

- (a) Make sure the test switch on the LCM is in the OFF position.  
1) Look at the indicator lights on the LCM and make sure the SENSOR 1, the SENSOR 2, and the TANK FULL indicator lights are OFF with the waste tank empty.

**NOTE:** Make sure the POWER indicator light is ON.

- (b) Hold the test switch for the LCM in the TEST LAMPS position.  
1) Make sure the SENSOR 1, the SENSOR 2, and the TANK FULL indicator lights come on and the POWER indicator light stays on.
- (c) Hold the test switch in the TEST SENSOR position.  
1) Make sure the SENSOR 1, the SENSOR 2, and the TANK FULL indicator lights come ON within 30 seconds.

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- (d) Put the test switch in the OFF position.
  - 1) Make sure the SENSOR 1, the SENSOR 2, and the TANK FULL indicator lights go off and the POWER indicator light stays on.

S 725-250

- (2) AIRPLANES WITH SENSOR FOULED LIGHTS AT THE WASTE SERVICE PANEL;  
From the waste service panel, 163AL, do these steps:
  - (a) Open the door for the waste tank service panel, 163AL, (AMM 52-49-00/001).
  - (b) Push the WASTE SENSOR(S) FOULED switch-light for the FWD TANK (AFT TANK) that is on the waste tank service panel.
    - 1) Make sure the SENSOR FOULED light for the FWD TANK (AFT TANK) comes ON.

S 725-251

- (3) From the aft attendant panel, P22, do these tasks:
  - (a) Push the SNSR FOUL switch-light for the FWD TANK (AFT TANK) that is on the attendant panel.
    - 1) Make sure the SNSR FOUL light for the FWD TANK (AFT TANK) comes ON.
  - (b) Push and hold the LAV INOP switch-light for the FWD TANK (AFT TANK) on the aft attendant panel, P22, and do these steps:

NOTE: The aft attendant panel has a LAV INOP switch-light for each waste tank.

- 1) Make sure the LAV INOP light for the FWD TANK (AFT TANK) comes ON in less than 30 seconds.
- 2) Find the lavatories that are shown on the LAV INOP switch-light that is pushed. Operate the flush switch in each of these lavatories, one at a time.
  - a) Make sure the toilet in each lavatory does not flush and the vacuum blower does not operate.
- 3) Find the lavatories that are shown on the LAV INOP switch-light that is not pushed. Operate the flush switch in each of these lavatories, one at a time.
  - a) Make sure the toilet in each lavatory does flush and the vacuum blower does operate.

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F. AIRPLANES WITH THE DREXELBROOK LCM USING "MANUAL AND" LOGIC;  
"MANUAL AND" Logic Test#

**NOTE:** If the aft attendant panel has an active SNSR OFF FWD TANK (AFT TANK) switch, the LCM has "MANUAL AND" LOGIC. For "MANUAL AND" Logic LCMs, perform the following procedure to verify correct operation of the "MANUAL AND" Logic.

S 715-279

- (1) Do these steps to test the waste tank shutdown process.

**NOTE:** The continuous or auto "AND" logic for the waste tank process is the preferred configuration for the Drexelbrook LCM. If the attendant panel has an active SNSR OFF FWD TANK (AFT TANK) switch, the LCM is a "MANUAL AND" logic type. This LCM type is the alternate configuration.

In this procedure it can be 30 seconds before SNSR OFF lights come on due to a built-in time delay. Make sure you press and hold the SNSR OFF switch for 30 seconds.

S 215-280

**WARNING:** MAKE SURE THE DOWNLOCKS ARE INSTALLED ON THE NOSE AND MAIN LANDING GEAR BEFORE YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR. IF THE CONTROL LEVER IS MOVED WITHOUT THE DOWNLOCKS INSTALLED, THE LANDING GEAR CAN RETRACT AND CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (2) Make sure the downlocks are installed on the nose and main landing gear (AMM 32-00-20/201).

S 865-281

- (3) Remove the power from the left, center, and right hydraulic systems (AMM 29-11-00/201).

S 865-282

- (4) Open this circuit breaker on the overhead panel, P11, and attach DO-NOT-CLOSE tag:  
(a) 11U26, TAIL SKID CONT

S 865-283

- (5) Make sure this circuit breaker on the overhead panel, P11, is closed:  
(a) 11N31, LIGHTING WING LANDING DIM CONT

S 035-284

- (6) Disconnect the electrical connector for SENSOR 1 from the forward logic module, M964.

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- S 725-285
- (7) Look at the forward logic module and do these steps:
- (a) Make sure the SENSOR 1 indicator light comes on.
  - (b) Make sure the TANK FULL indicator light comes on.
- S 725-286
- (8) Look at the aft attendant panel, P22, and do these steps:
- (a) Make sure the LAV INOP FWD TANK switch-light comes on.
- S 865-287
- (9) Move the LANDING GEAR LEVER on the pilot's center instrument panel, P2, to the DOWN position.
- S 725-288
- (10) Look at the forward logic control module and do these steps:
- (a) Make sure the SENSOR 1 indicator light is on.
  - (b) Make sure the TANK FULL indicator light is on.
- S 725-289
- (11) Look at the aft attendant panel (P22) and do these steps:
- (a) Make sure the LAV INOP FWD TANK switch-light is on.
  - (b) Make sure the SENSOR OFF FWD TANK switch-light is out.
- S 865-290
- (12) Move the LANDING GEAR LEVER on the P2 panel to the UP position.
- S 725-291
- (13) Press and release the SENSOR OFF FWD TANK switch-light on the P22 panel.
- S 725-292
- (14) Look at the P22 panel and do these steps:
- (a) Make sure the SENSOR OFF FWD TANK switch-light comes on.
  - (b) Make sure the LAV INOP FWD TANK switch-light goes out.
- S 725-293
- (15) Look at the forward logic control module and do these steps:
- (a) Make sure the SENSOR 1 indicator light is on.
  - (b) Make sure the TANK FULL indicator light goes out.

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S 725-294

- (16) Do the test of the SENSOR OFF switch again but use the AFT components in place of the FWD components. See the table that follows:

FWD Component	AFT Component
FWD LOGIC MODULE (M964)	AFT LOGIC MODULE (M965)
LAV INOP FWD TANK switch-light	LAV INOP AFT TANK switch-light
SENSOR OFF FWD TANK switch-light	SENSOR OFF AFT TANK switch-light

S 435-295

- (17) Connect the electrical connector for SENSOR 1 to the forward logic module.

S 865-296

- (18) Move the LANDING GEAR LEVER on the P2 panel to the DOWN position.

S 865-297

- (19) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:  
(a) 11U26, TAIL SKID CONT

S 865-298

- (20) Supply hydraulic power if it was removed at the start of the procedure (AMM 29-11-00/201).

G. AIRPLANES WITH THE ROSEMOUNT (LCM);  
Level Sensor BITE Test

**NOTE:** There is one LCM for each waste tank. Do the test separately for the forward and the aft waste tank.

S 725-252

- (1) From the waste service panel, 163AL, do these steps:  
(a) Open the door for the waste tank service panel, 163AL, (AMM 52-49-00/001).  
(b) Push the WASTE SENSOR(S) FOULED switch-light, for the FWD TANK (AFT TANK) that is on the waste service panel.  
1) Make sure the appropriate WASTE SENSOR FOULED light comes ON.

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S 725-253

- (2) From the logic control modules (LCM) at the waste tanks, do these steps:
- Make sure the POWER indicator light on the LCM for the forward (aft) waste tank is ON.
  - Put the switch on the LCM in the TEST SENSORS position and hold it there for a minimum of 6 seconds and release. Make sure the lights shown below come ON while you hold the switch:

NOTE: The lights will flash every three seconds while you hold the switch. The lights will go out in 3 seconds or less after you release the switch. If the lights continue to flash after you release the switch, there is an error in the level sensor system.

- On the LCM, the SENSOR J1, the SENSOR J2, the SENSOR J3, and the TANK FULL indicator lights.

NOTE: The TANK FULL light must not flash after it goes out.

- On the attendant panel, the LAV INOP and the SNSR FOUL lights for the FWD TANK (AFT TANK).
- On the waste service panel, the WASTE SENSOR FOULED light for the FWD TANK (AFT TANK).

S 725-254

- (3) From the aft attendant panel, P22, do these steps:
- Push the SNSR FOUL FWD TANK (AFT TANK) switch-light that is on the attendant panel.
    - Make sure the appropriate SNSR FOUL light comes ON.
  - Push the LAV INOP FWD TANK (AFT TANK) switch-light on the attendant panel and hold it in for a minimum of 6 seconds and release. Make sure the lights shown below come ON while you hold the switch in:

NOTE: The lights will flash every three seconds while you hold the switch in. The lights will go out in 3 seconds or less after you release the switch. If the lights continue to flash after you release the switch, there is an error in the level sensor system.

- On the attendant panel, the LAV INOP FWD TANK (AFT TANK) light and the SNSR FOUL FWD TANK (AFT TANK) light.
- On the LCM, the SENSOR J1, the SENSOR J2, the SENSOR J3, and the TANK FULL indicator lights.
- On the waste service panel, the WASTE SENSOR FOULED FWD TANK (AFT TANK) light.

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H. Put the Airplane Back to its Usual Condition.

S 415-302

- (1) Install the aft bulkhead lining in the bulk cargo compartment (AMM 25-52-01/401).

S 415-303

- (2) Close the bulk cargo door, 811.

S 865-304

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 38-33-00-825-012

4. AIRPLANES WITH CONTINUOUS LEVEL SENSOR FOR THE WASTE TANK;

Auto Zero Adjustment (Fig 501)

A. General

- (1) The AUTO ZERO adjustment is only necessary after the replacement of the LCM, CLS, or the waste tank. Use the LAVS INOP BITE Test or the full Level Sensor BITE Test to make sure the system is operational.

B. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 24-22-00/201, Control (Supply Electric Power)
- (3) AMM 52-36-00/001, Bulk Cargo Door

C. Access

(1) Location Zones

- |     |   |
|-----|---|
| 165 | Area Aft of Bulk Cargo Compartment (Left) |
| 811 | Bulk Cargo Door                           |

D. Prepare for the test

S 865-014

- (1) Supply electrical power (AMM 24-22-00/201).

S 685-015

**CAUTION:** MAKE SURE YOU DRAIN THE WASTE TANKS FULLY. IF YOU DO NOT DRAIN THE WASTE TANKS FULLY, THE QUANTITY INDICATOR FOR THE WASTE TANK WILL BE IN ERROR.

- (2) Drain the waste tanks (AMM 12-17-01/301).

**NOTE:** Do not add the chemical prechare after you do the task to drain and then flush the waste tanks.

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S 865-332

- (3) Make sure these circuit breakers on the overhead panel, P11, are closed.
- (a) 11R8, FLUSH CONT LAV SYS 1 (or LAVS SYS 1 FLUSH) (or LAVATORY FLUSH CONT (Lav Nos.)) (or LAVS SYS 1 FLUSH CONT (Lav Nos.))
  - (b) 11R35, FLUSH CONT LAV SYS 2 (or LAVS SYS 2 FLUSH) (or LAVATORY FLUSH CONT (Lav Nos.)) (or LAVS SYS 2 FLUSH CONT (Lav Nos.))

S 865-331

- (4) AIRPLANES WITH ROSEMOUNT LOGIC CONTROL MODULES, SAS 156, 157, 166, 167, 277, 278, 280;  
Make sure these circuit breakers on the the APU external power panel, P34, are closed:
- (a) 34N10, LAV FLUSH CONT SYS 1
  - (b) 34N11, LAV FLUSH CONT SYS 2

S 015-017

- (5) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 015-307

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (6) Remove the aft bulkhead lining (standard capacity tanks) or the left sidewall lining (increased capacity tanks) of the bulk cargo compartment to get access to the waste tanks (AMM 25-52-01/401).

E. Auto Zero Adjustment

S 715-019

- (1) At the Logic Control Module (LCM) with the Continuous Level Sensor (CLS) do the following:
- (a) Make sure the POWER ON light is ON.
  - (b) Make sure the LCM test switch is in the center position.
  - (c) Make sure the Sensor J3 connector is wired to the level sensor on the drain tube of the waste tank.
  - (d) Make sure the SENSOR J1 and SENSOR J2 lights are OFF.

**NOTE:** The SENSOR J3 and TANK FULL lights may blink until autozero is accomplished.

- (e) Make sure that the J1 and J2 cables are properly labeled.

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S 765-229

- (2) Disconnect the SENSOR J1 and SENSOR J2 electrical connectors at the LCM.
- (a) Make sure the SENSOR J1, the SENSOR J2, and the TANK FULL lights come ON.

NOTE: A built-in time delay will require waiting up to 30 seconds for the lights to come ON.

S 735-232

- (3) Move and hold the LCM test switch to the TEST LAMPS position.
- (a) Make sure the SENSOR J1, the SENSOR J2, the SENSOR J3, and the TANK FULL lights come ON for approximately 10 seconds, momentarily extinguish, then come back ON.

S 735-231

- (4) Put the LCM switch back to the center position.
- (a) Make sure the POWER ON, SENSOR J1, SENSOR J2 and TANK FULL lights remain ON and that the SENSOR J3 light is OFF.
- 1) If the SENSOR J1 and/or the SENSOR J2 light blinks, replace the LCM (AMM 38-33-03/201).
  - 2) If the SENSOR J3 light blinks, do a check of the continuity of the J3 cable.
  - 3) If the J3 cable has continuity, do these steps:
    - a) Replace the LCM (AMM 38-33-03/201).
    - b) Repeat the AUTO ZERO adjustment procedure, (AMM 38-33-00/501).
    - c) If the auto zero procedure fails after the LCM is replaced, the CLS is faulty and must be replaced, (AMM 38-33-02/401).
  - 4) If the J3 cable does not have continuity, repair or replace the J3 cable.

S 765-233

- (5) Reconnect the SENSOR J1 electrical connector.
- (a) Make sure the SENSOR J1 and the TANK FULL lights go OFF after approximately 20 seconds.

S 765-234

- (6) Reconnect the SENSOR J2 electrical connector.
- (a) Make sure the SENSOR J2 light goes OFF after approximately 20 seconds.

S 735-235

- (7) Move and hold the LCM test switch to the TEST LAMPS position.
- (a) Make sure the SENSOR J1, SENSOR J2, SENSOR J3 and TANK FULL lights are ON.

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S 735-236

- (8) Put the LCM test switch back to the center position.  
(a) Make sure the SENSOR J1, SENSOR J2, SWNSOR J3 and TANK FULL lights go OFF.

S 715-020

- (9) If the SENSOR J1 or the SENSOR J2 lights flash, do these steps to make sure the point level sensor(s) operate correctly:  
(a) Flush the point level sensor but do not add chemical precharge (see AMM 12-17-01/301 'Service Toilet Waste Tank').  
(b) Clean or replace the point level sensor (see AMM 38-33-01/701 or AMM 38-33-01/401 'Waste Tank Point Level Sensor')

S 715-021

- (10) If the TANK FULL light flashes, do these steps to make sure the LCM operates correctly:  
(a) Do the Level Sensor BITE test procedure.

S 025-022

- (11) If the LCM does not complete the AUTO ZERO adjustment, replace the LCM (AMM 38-33-03/201).

F. Put the Airplane Back to Its Usual Condition

S 415-023

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (1) Install the aft bulkhead lining or the left sidewall lining of the bulk cargo compartment (AMM 25-52-01/401).

S 415-024

- (2) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 865-025

- (3) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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WASTE TANK POINT LEVEL SENSORS – REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A waste tank point level sensor removal.
- (2) A waste tank point level sensor installation.

TASK 38-33-01-004-142

2. Remove the Point Level Sensor (Fig. 401)

A. References

- (1) AMM 12-17-01/301, Waste Tank
- (2) AMM 38-32-00/201, Standard Practices for Work with the Toilet Waste
- (3) AMM 38-32-00/201, Deactivate Blower and Lav Flush System
- (4) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 684-143

- (1) Do this task: Waste Tank Servicing (AMM 12-17-01/301).

NOTE: Do not add the chemical precharge after you do the task to drain and flush the waste tank.

S 864-283

- (2) Do this task: Deactivate the Vacuum Blower and Lav Flush System, AMM 38-32-00/201.

S 014-148

- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 014-151

- (4) Remove the aft bulkhead lining (standard capacity tanks) or the left sidewall lining (increased capacity tanks) of the bulk cargo compartment to get access to the waste tanks (AMM 25-52-01/401).

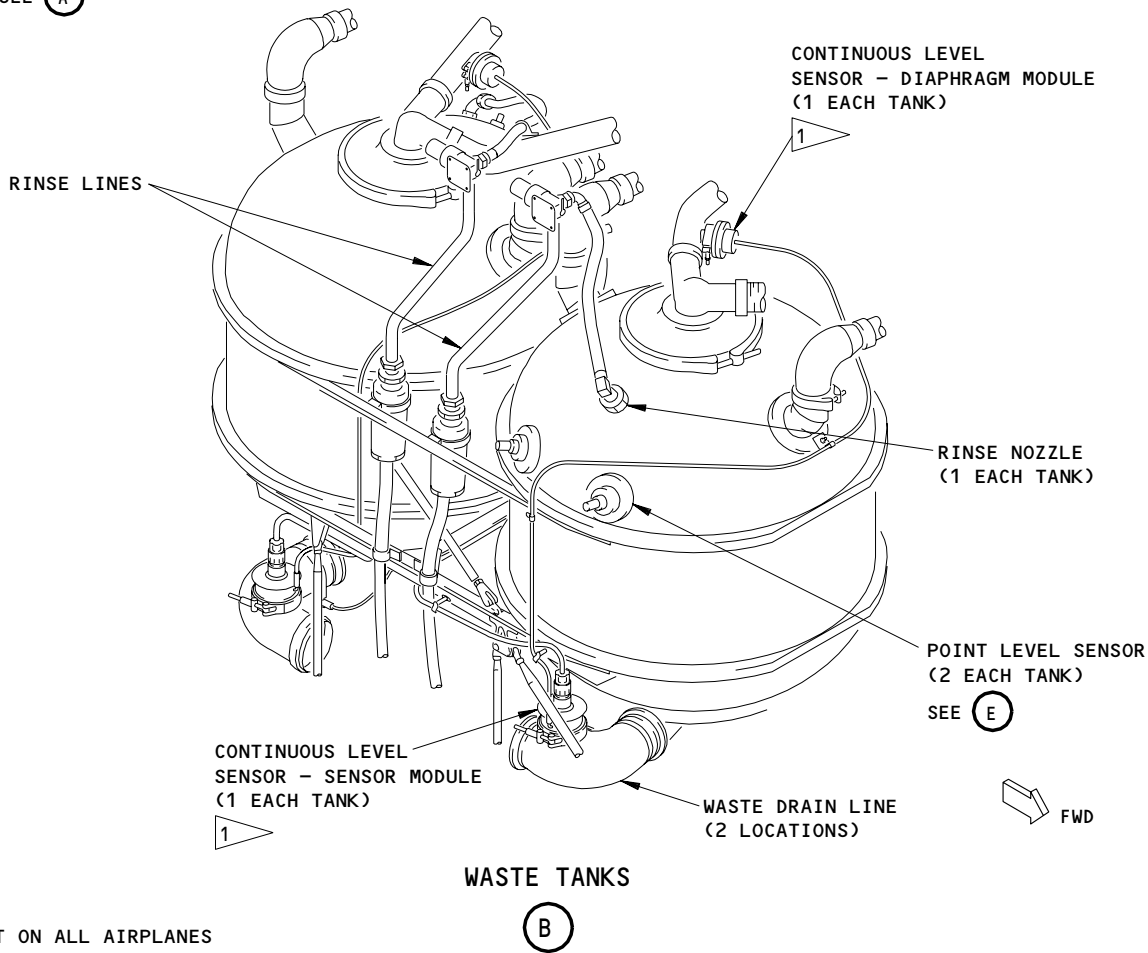
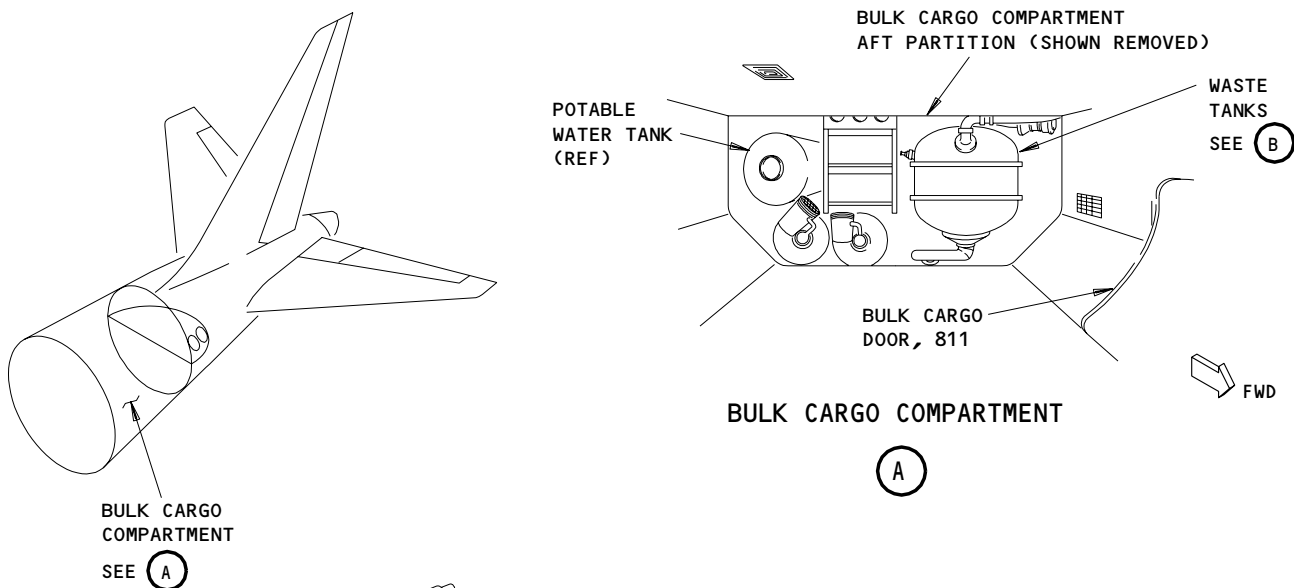
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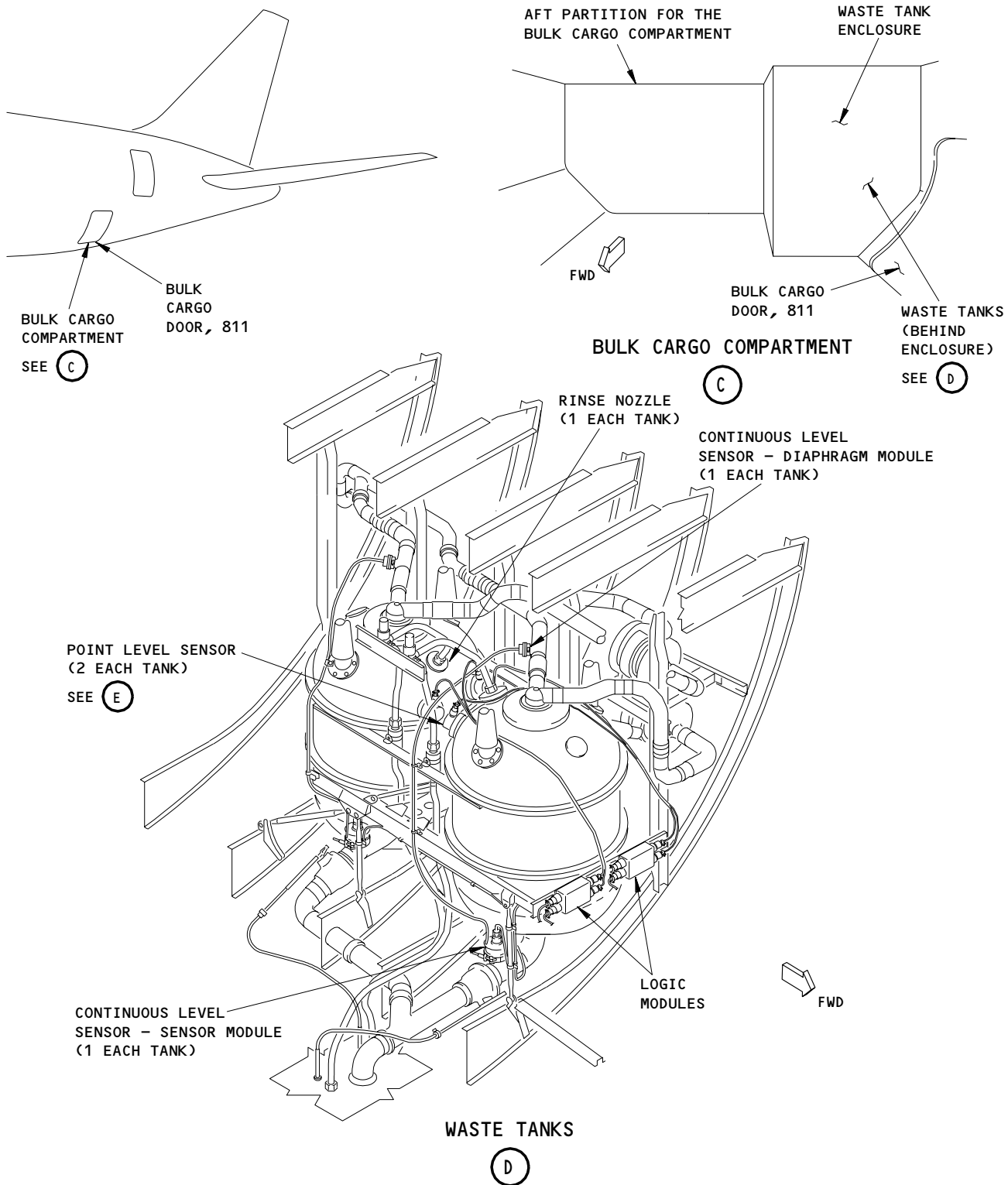


Waste Tank Point Level Sensor  
Figure 401 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITH STANDARD CAPACITY TANKS

# 38-33-01

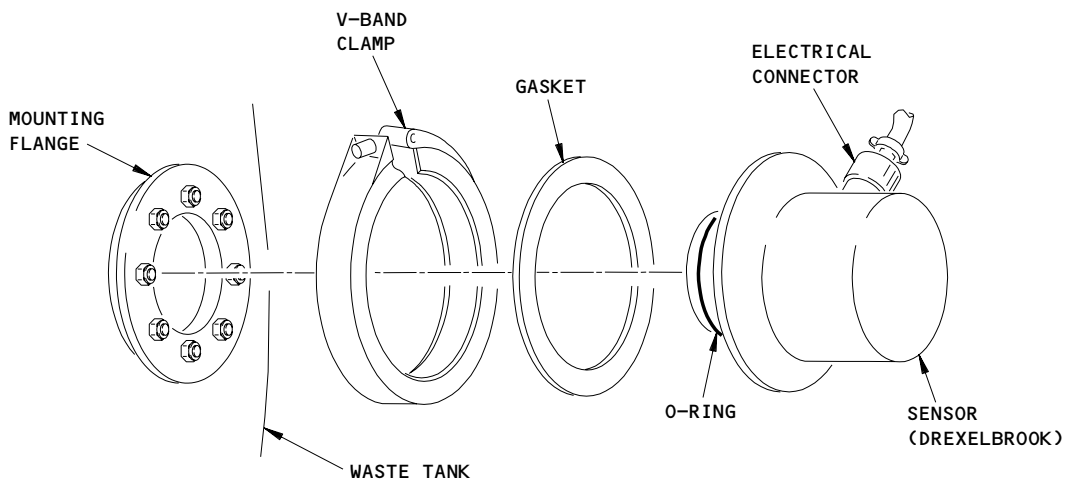
**BOEING**  
767  
MAINTENANCE MANUAL



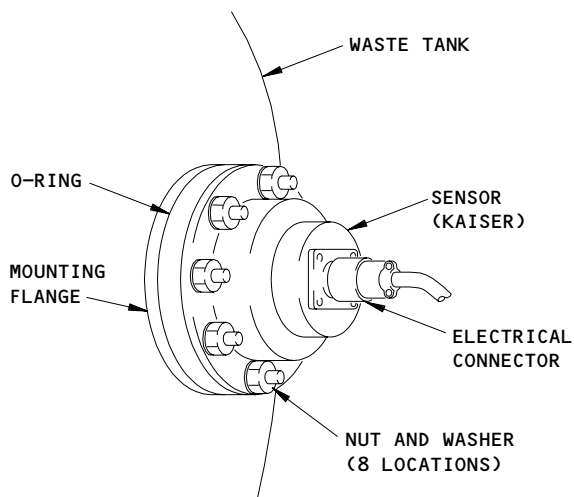
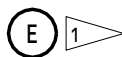
Waste Tank Point Level Sensor  
Figure 401 (Sheet 2)

EFFECTIVITY  
AIRPLANES WITH INCREASED CAPACITY TANKS

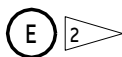
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POINT LEVEL SENSOR  
(EXAMPLE)



POINT LEVEL SENSOR  
(EXAMPLE)



- 1 AIRPLANES WITH POINT LEVEL SENSOR ATTACHED WITH CLAMP
- 2 AIRPLANES WITH POINT LEVEL SENSOR ATTACHED WITH NUTS

Waste Tank Point Level Sensor  
Figure 401 (Sheet 3)

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S 674-286

- (5) Do this task: Standard Procedures for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 024-288

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (6) Disconnect the electrical connector from the point level sensor.

S 024-153

- (7) AIRPLANES WITH THE POINT LEVEL SENSORS ATTACHED WITH NUTS;  
Do these steps:
- (a) Remove the nuts and washers that attach the point level sensor to the waste tank.
  - (b) Remove the point level sensor and the O-ring.

S 024-155

- (8) AIRPLANES WITH THE POINT LEVEL SENSORS ATTACHED WITH A CLAMP;  
Do these steps:
- (a) Remove the V-band clamp from the point level sensor.
  - (b) Remove the point level sensor assembly and the gask-O-seal from the mounting flange of the waste tank.
    - 1) Discard the gask-O-seal.
  - (c) Remove the O-ring from the point level sensor.
    - 1) Discard the O-ring.

S 144-156

- (9) Remove all the waste material from the hole in the waste tank for the point level sensor.

TASK 38-33-01-404-167

3. Install the Point Level Sensor (Fig. 401)

A. Consumable Materials

- (1) D00203 Lubricant, Super-O-Lube
- (2) D00128 Lubricant, Silicone Grease, MIL-G-46886, (alternate).

B. References

- (1) AMM 12-17-01/301, Waste Tank Servicing
- (2) AMM 24-22-00/201, Electrical Power - Control

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- (3) AMM 38-32-00/201, Activate Blower and Lav Flush System
- (4) AMM 38-32-00/201, Standard Procedures for Work with the Toilet Waste
- (5) AMM 38-32-17/201, Rinse Nozzle
- (6) AMM 38-33-00/501, LCM BITE Test
- (7) AMM 52-36-00/001, Bulk Cargo Door

C. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment
- (2) Access Panel  
811 Bulk Cargo Door

D. Procedure

S 674-287

- (1) Do this task: Standard Procedures for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 724-289

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (2) Make sure the rinse nozzle flushes the point level sensor correctly (AMM 38-32-17/201).

S 144-169

- (3) Clean the waste tank level sensor (AMM 38-33-01/701).

S 144-170

- (4) Clean the mounting flange.

S 644-171

- (5) Apply lubricant to a new O-ring.

S 434-173

- (6) Install the O-ring on the point level sensor.

S 424-175

- (7) AIRPLANES WITH THE POINT LEVEL SENSORS ATTACHED WITH NUTS;  
Do these steps:
  - (a) Put the point level sensor on the mounting flange.
  - (b) Install the nuts and washers. Tighten the nuts to 10-12 pound-inches (1.13-1.36 newton meter).

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S 424-177

- (8) AIRPLANES WITH THE POINT LEVEL SENSORS ATTACHED WITH A CLAMP;

Do these steps:

- (a) Put the lubricant on the gasket.
- (b) Put the new gask-0-seal on the mounting flange.
- (c) Hold the point level sensor on the mounting flange with the electrical connector pointed in the up direction.
- (d) Install the V-band clamp around the point level sensor and the mounting flange. Tighten the V-band clamp to 40-50 pound-inches (4.5-5.6 N-m).

S 434-178

- (9) Connect the electrical connector to the point level sensor.

S 864-284

- (10) Do this task: Activate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).

S 864-182

- (11) Supply electrical power (AMM 24-22-00/201).

S 724-184

- (12) AIRPLANES WITHOUT CONTINUOUS LEVEL SENSORS;

Do these steps to make sure the level sensors operate correctly:

- (a) Make sure the POWER ON light on the logic module for the level sensors is on.
- (b) Move the switch on the logic module to the DET TEST position.
- (c) Make sure the sensors, and TANK FULL lights on the logic module come on.

NOTE: You must hold the switch in the TEST position for 18-30 seconds for the lights to come on.

S 724-185

- (13) AIRPLANES WITH CONTINUOUS LEVEL SENSORS FOR THE WASTE TANKS;

Do these steps to make sure the level sensors operate correctly:

- (a) Make sure the POWER ON light on the logic module is on.
- (b) Move the switch on the logic module to the TEST SENSOR position.

S 724-187

- (14) Make sure the sensors, and the TANK FULL lights come on.

NOTE: Refer to AMM 38-33-00/501 for the LCM BITE test if it is necessary.

EFFECTIVITY

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S 414-188

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

(15) Install the aft bulkhead lining or the left sidewall lining of the bulk cargo compartment (AMM 25-52-01/401).

S 414-189

(16) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 864-190

(17) Remove electrical power if it is not necessary (AMM 24-22-00/201).

EFFECTIVITY

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**38-33-01**

04

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WASTE TANK POINT LEVEL SENSORS - CLEANING/PAINTING

1. General

A. This procedure has this task:

- (1) A cleaning of the point level sensor for the waste tank.

TASK 38-33-01-147-096

2. Clean the Point Level Sensor

A. Equipment

- (1) Brush, soft bristle - Commercially Available

B. References

- (1) AMM 38-33-01/401, Waste Tank Point Level Sensors

C. Access

- (1) Location Zones  
165 Area Aft of Bulk Cargo Compartment

D. Procedure

S 037-097

- (1) Remove the point level sensor (PLS), AMM 38-33-01/401.

S 147-099

- (2) Use a rag to remove the loose dirt from the face of the point level sensor.

S 147-100

- (3) Clean the face of the point level sensor with a soft bristle brush and soap and water.

S 147-103

- (4) Dry the point level sensor.

S 427-104

- (5) Install the point level sensor, AMM 38-33-01/401.

EFFECTIVITY

ALL

**38-33-01**

02

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WASTE TANK CONTINUOUS LEVEL SENSOR – REMOVAL/INSTALLATION

1. General

- A. Each waste tank has a continuous level sensor. The removal and installation of each continuous level sensor is equivalent.
- B. This procedure has these tasks:
  - (1) A removal of the continuous level sensor for the waste tank.
  - (2) An installation of the continuous level sensor for the waste tank.
- C. The continuous level sensor is one part that is divided into two modules connected by a capillary tube. You can not disconnect the two modules from the capillary tube.
  - (1) The diaphragm module is attached to the air outlet line at the top exit of the waste tank.
  - (2) The sensor module is attached to the drain line tube at the bottom exit of the waste tank.

TASK 38-33-02-004-051

2. Continuous Level Sensor Removal (Fig 401)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Standard Practices for Work with Toilet Waste
- (4) AMM 38-32-00/201, Deactivate Blower and Lav Flush System
- (5) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 614-053

- (1) Do the task to service the waste tank(s) (AMM 12-17-01/301).

NOTE: Do not add the chemical precharge after you do the task to drain and flush the waste tanks.

S 864-054

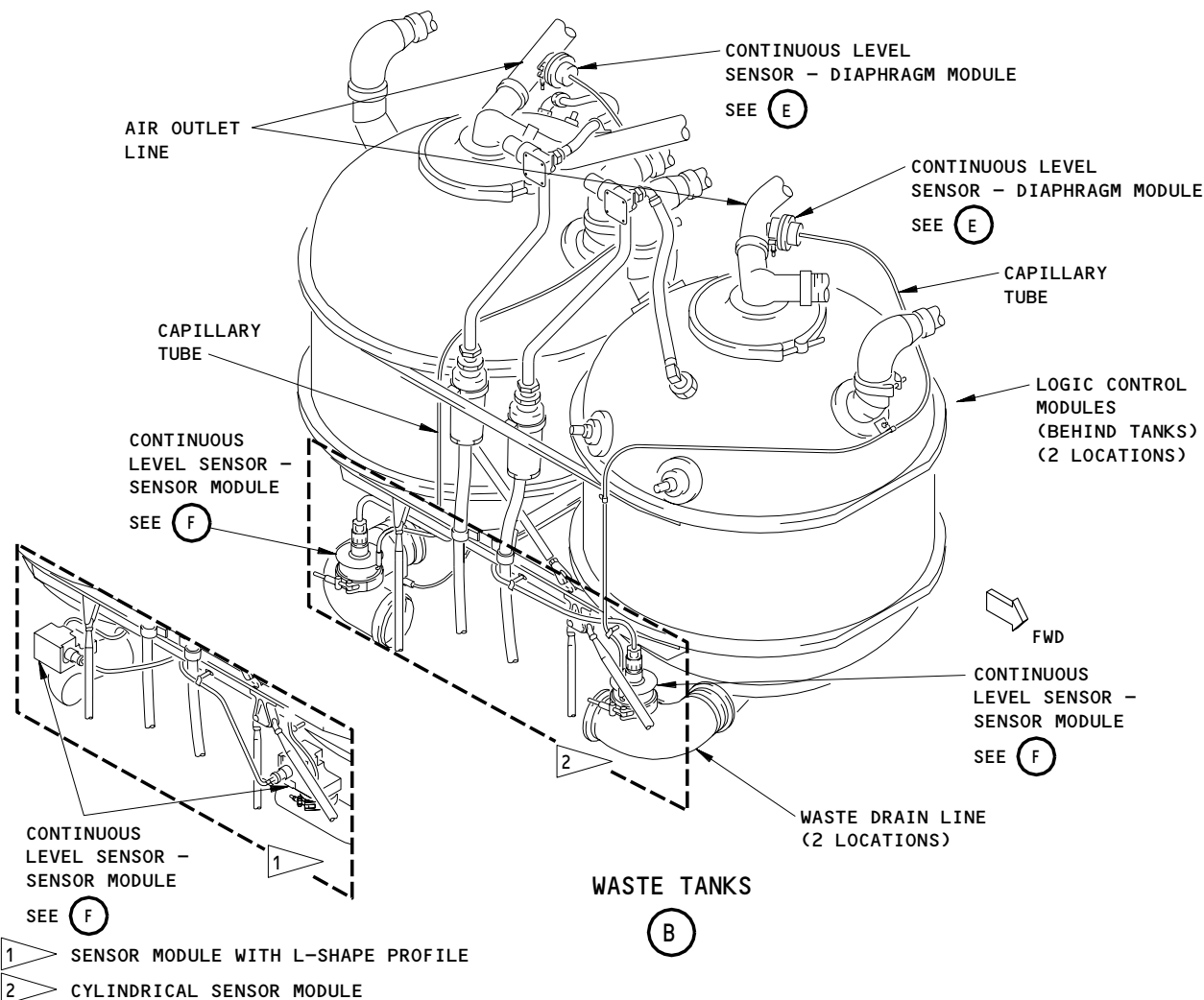
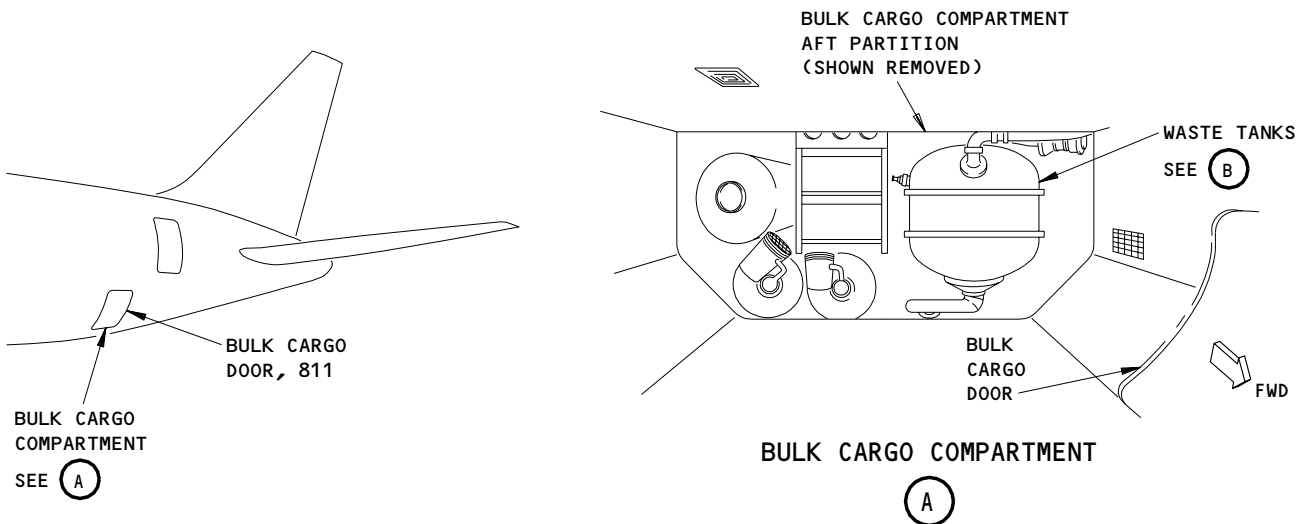
- (2) Do this task: Deactivate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).

S 014-056

- (3) Open the bulk cargo door, 811 (AMM 52-36-00/001).

EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSOR

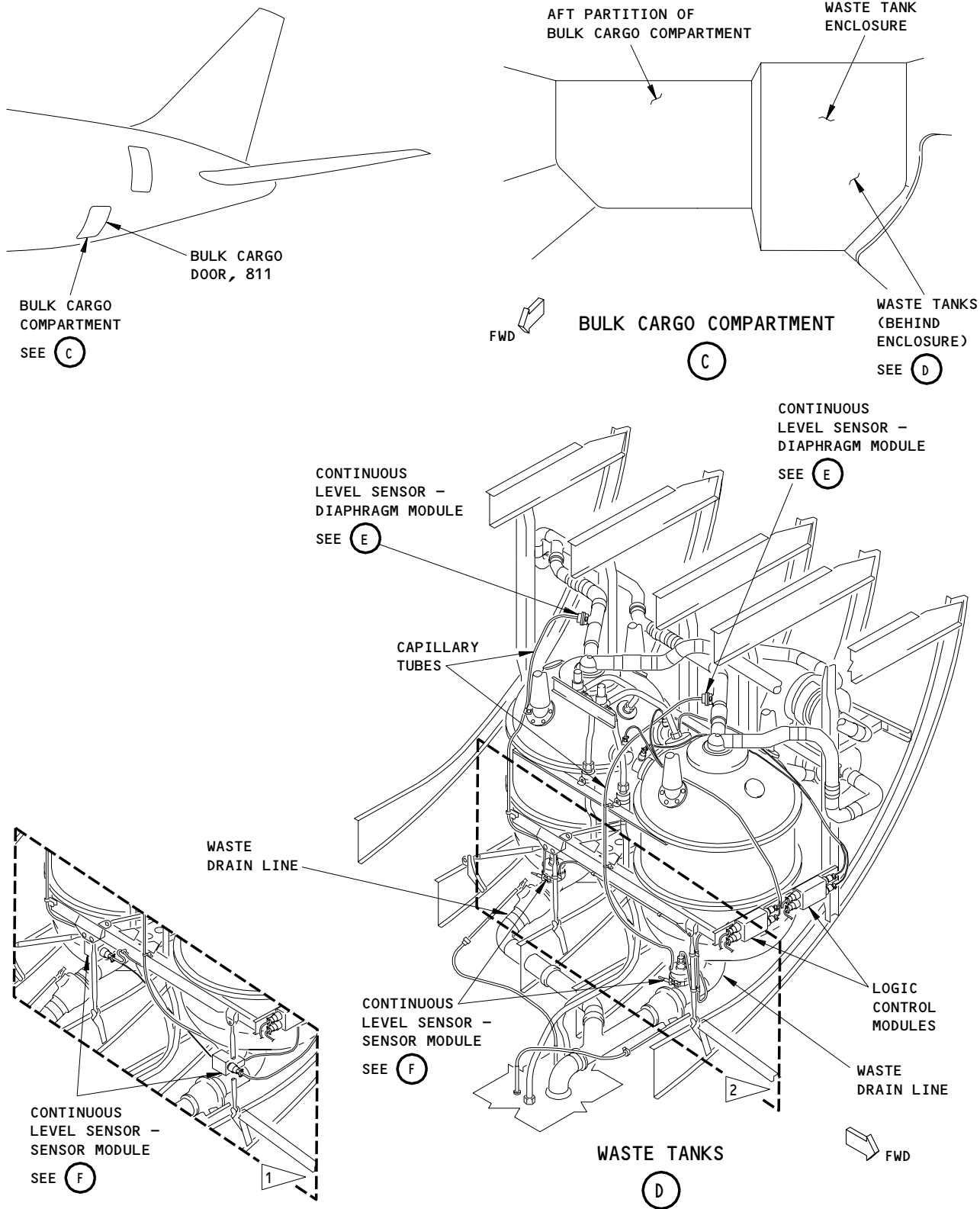
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Waste Tank Continuous Level Sensor  
Figure 401 (Sheet 1)

EFFECTIVITY  
AIRPLANES WITH STANDARD CAPACITY TANKS

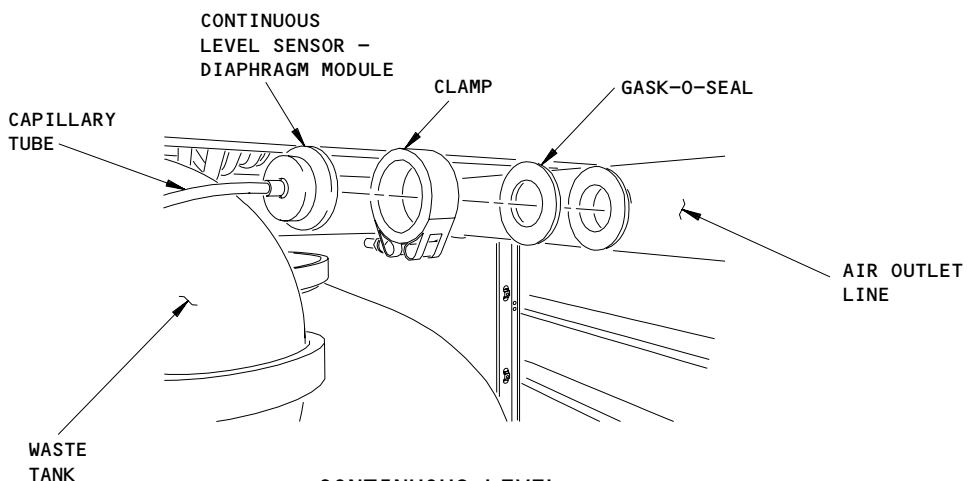
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Waste Tanks Continuous Level Sensor  
Figure 401 (Sheet 2)

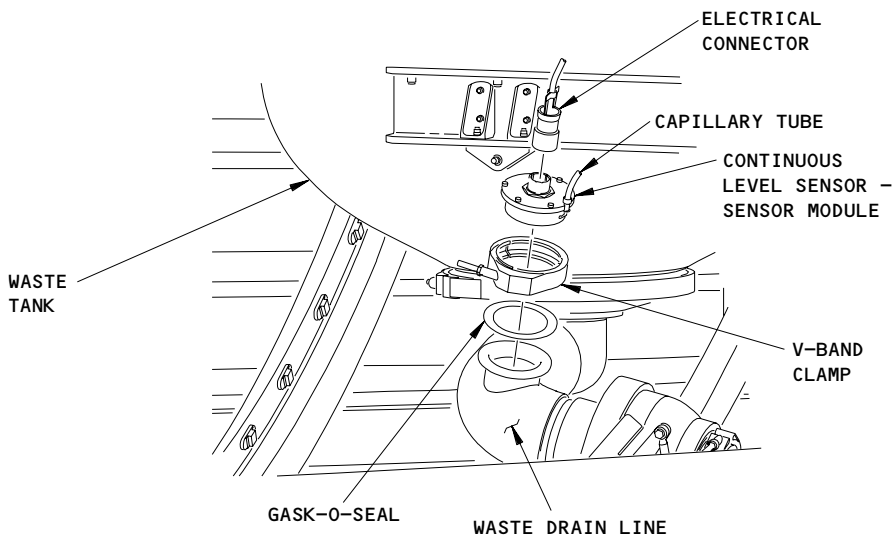
EFFECTIVITY  
AIRPLANES WITH INCREASED CAPACITY TANKS

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CONTINUOUS LEVEL  
SENSOR - DIAPHRAGM MODULE  
(EXAMPLE)

(E)



CONTINUOUS LEVEL  
SENSOR - SENSOR MODULE  
(EXAMPLE)

(F)

Waste Tank Continuous Level Sensor  
Figure 401 (Sheet 3)

EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSOR

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S 014-059

- (4) Remove the aft bulkhead lining (standard capacity tanks) or the left sidewall lining (increased capacity tanks) of the bulk cargo compartment to get access to the waste tanks (AMM 25-52-01/401).

S 674-146

- (5) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 024-153

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (6) Remove the electrical connector from the sensor module of the continuous level sensor.

S 024-064

**CAUTION:** DO NOT BEND THE CAPILLARY TUBE OF THE CONTINUOUS LEVEL SENSOR TO LESS THAN A 3 INCH (7.5 CM) RADIUS. SHARP BENDS CAN CAUSE DAMAGE TO THE CAPILLARY TUBE.

- (7) Remove the clamps that hold the capillary tube to the waste tank.

S 024-062

- (8) Remove the v-band clamp that holds the diaphragm module to the air outlet line.

S 024-063

- (9) Remove the v-band clamp that holds the sensor module to the waste drain line.

S 024-148

- (10) Remove the sensor module and the gask-0-seal from the waste drain line.

**NOTE:** You can not disconnect the sensor module from the capillary tube.

- (a) Discard the gask-0-seal.



S 024-143

- (11) Remove the diaphragm module and the gask-0-seal from the air outlet line.

**NOTE:** You can not disconnect the diaphragm module from the capillary tube.

- (a) Discard the gask-0-seal.

S 164-144

- (12) Clean all the waste material from the holes in the waste lines.

S 674-149

- (13) If you are not going to immediately reinstall the continuous level sensor, to prevent contamination of surrounding area, cap the openings in the air outlet line and the waste drain line.

TASK 38-33-02-404-066

3. Continuous Level Sensor Installation (Fig 401)

A. References

- (1) AMM 12-17-01/301, Waste Tanks
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Standard Practices for Work with the Toilet Waste
- (4) AMM 38-32-00/201, Activate Blower and Lav Flush System
- (5) AMM 38-33-00/501, Auto-Zero Adjustment
- (6) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 674-151

- (1) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 674-155

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (2) If previously installed, remove protective caps from air outlet line and waste drain line.

S 144-067

- (3) Clean the mating surfaces of the continuous level sensor.

S 434-068

- (4) Put a new seal on the interface of the waste drain line and the sensor module.

S 434-069

- (5) Put a new seal on the interface of the air outlet line and the diaphragm module.

S 424-070

**CAUTION:** DO NOT BEND THE CAPILLARY TUBE OF THE CONTINUOUS LEVEL SENSOR TO LESS THAN A 3 INCH (7.5 CM) RADIUS. SHARP BENDS CAN CAUSE DAMAGE TO THE CAPILLARY TUBE.

- (6) Put the continuous level sensor in its position. Make sure you put the capillary tube in its correct position.

S 424-071

- (7) Install the v-band clamp to attach the sensor module to the drain tube.

(a) Tighten the v-band clamp for the sensor module on the waste drain line to 45 pound-inches (5.2 N-m).

S 424-072

- (8) Install the v-band clamp to attach the diaphragm module to the air outlet line.

(a) Tighten the v-band clamp for the diaphragm module on the air outlet line to 40 pound-inches (4.5 N-m).

S 434-073

- (9) Install the clamps to attach the capillary tube to the waste tank.

S 424-145

- (10) Connect the electrical connector to the continuous level sensor.

EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSOR

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- S 614-074  
(11) Add precharge to the waste tank(s) (AMM 12-17-01/301).
- S 794-076  
(12) Make sure the sensor module does not have a leak.
- S 864-077  
(13) Do this task: Activate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).
- S 864-079  
(14) Supply electrical power (AMM 24-22-00/201).
- S 714-080  
(15) Make sure the POWER ON light on the Logic module is on.
- S 724-082  
(16) Do the AUTO ZERO procedure (AMM 38-33-00/501).
- S 414-083

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (17) Install the aft bulkhead lining or the left sidewall lining of the bulk cargo compartment (AMM 25-52-01/401).
- S 414-084  
(18) Close the bulk cargo door, 811 (AMM 52-36-00/001).
- S 864-085  
(19) Remove electrical power if it is not necessary (AMM 24-22-00/201).

WASTE TANK CONTINUOUS LEVEL SENSOR – CLEANING/PAINTING

1. General

A. This procedure gives the instructions to clean the continuous level sensor.

NOTE: Clean the face of the continuous level sensor regularly to remove all the pieces of the waste material.

TASK 38-33-02-107-106

2. Continuous Level Sensor Cleaning

A. General

- (1) This procedure gives the steps to remove, clean, soak, dry and install the continuous level sensor.
- (2) The continuous level sensor on the waste tank is referred to as the CLS in this procedure.
- (3) The continuous level sensor is one part that is divided into two modules connected by a capillary tube. You can not disconnect the two modules from the capillary tube.
  - (a) The diaphragm module is attached to the air outlet line at the top exit of the waste tank.
  - (b) The sensor module is attached to the drain line tube at the bottom exit of the waste tank.

B. References

- (1) AMM 38-32-00/201, Standard Practices for Work with the Toilet Waste
- (2) AMM 38-33-02/401, Waste Tank Continuous Level Sensor

C. Equipment

- (1) Bucket – Plastic
- (2) G00215 Brush – Soft-Bristle (commercially available)

D. Consumable Materials

- (1) G00000 Detergent – Disinfectant (non-chlorine based) – Commercially Available
- (2) G00000 Water – Hot (approximately 180 degrees F (82 degrees C))
- (3) G00000 Rag – General Purpose

E. Access

- (1) Location Zones
  - 165 Area Aft of Bulk Cargo Compartment
  - 811 Bulk Cargo Door

EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSOR

**38-33-02**

F. Procedure

S 847-144

**CAUTION:** DO NOT BEND THE CAPILLARY TUBE OF THE CONTINUOUS LEVEL SENSOR TO LESS THAN A 3 INCH (7.5 CM) RADIUS. SHARP BENDS CAN CAUSE DAMAGE TO THE CAPILLARY TUBE.

- (1) Obey this CAUTION during all of this task.

S 677-142

- (2) Do this task: Standard Practices for Work with the Toilet Waste and Equipment (AMM 38-32-00/201).

S 027-107

- (3) Do this task: Waste Tank Continuous Level Sensor (CLS) Removal (AMM 38-33-02/401).

S 147-108

- (4) Add hot water to the bucket. The water level must be approximately one inch (2.5 cm) above the bottom of the bucket.

S 117-109

- (5) Add the disinfectant detergent to the bucket in the amount that is recommended by the manufacturer.

S 117-110

**CAUTION:** USE CARE TO KEEP THE WATER WITH DETERGENT FROM THE CLS PARTS THAT ARE ABOVE THE STAINLESS STEEL FLANGE. THE WATER CAN CAUSE DAMAGE TO THESE PARTS.

- (6) Put the CLS sensor module in the bucket with the face of the sensor down.

**NOTE:** The face of the sensor is the surface that is installed in the waste drain line below the waste tank.

S 117-111

- (7) Move the CLS sensor module back and forth with a gentle motion to remove any air that is trapped.

S 117-112

- (8) Soak the face of the CLS sensor module for 10 to 15 minutes.

S 147-113

**CAUTION:** APPLY ONLY A LIGHT PRESSURE WHEN YOU USE THE BRUSH ON THE FACE OF THE CLS. THE THIN SURFACE CAN BE DAMAGED AND MADE INOPERABLE IF YOU APPLY GREATER PRESSURES. DO NOT USE ANY OTHER TOOL TO CLEAN THE FACE OF THE CLS.

- (9) Use the soft bristle brush to remove the unwanted particles that have collected on the face of the CLS sensor module.

S 117-114

- (10) Flush the face of the CLS sensor module with clean hot water.

S 147-115

- (11) Dry the CLS sensor module with a clean rag.

S 117-143

- (12) If necessary, repeat the above cleaning steps for the diaphragm module.

S 427-116

- (13) Do this task: Waste Tank Continuous Level Sensor (CLS) Installation (AMM 38-33-02/401).

EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSOR

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WASTE TANK LOGIC CONTROL MODULE – MAINTENANCE PRACTICES

1. General

- A. There is one logic control module (LCM) for each waste tank.
- B. This procedure has these tasks:
  - (1) A removal of the logic control module for the waste tank.
  - (2) An installation of the logic control module for the waste tank.
- C. The Logic Control Module is referred to as the LCM in this procedure.

TASK 38-33-03-022-017

2. Logic Control Module (LCM) – Removal (Fig 201)

A. References

- (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (2) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System
- (3) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment
- (2) Access Panel  
811 Bulk Cargo Door

C. Procedure

S 862-147

- (1) Do this task: Deactivate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).

S 012-149

- (2) Open the bulk cargo door, 811 (AMM 52-36-00/001).

S 012-150

- (3) Remove the aft bulkhead lining (standard capacity tanks) or the left sidewall lining (increased capacity tanks) of the bulk cargo compartment to get access to the waste tanks (AMM 25-52-01/401).

S 932-152

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (4) Prior to disconnecting the wires, tag the LCM connectors for reinstallation.

**NOTE:** This is to make sure you reinstall the electrical connectors in the correct location on the LCM.

EFFECTIVITY

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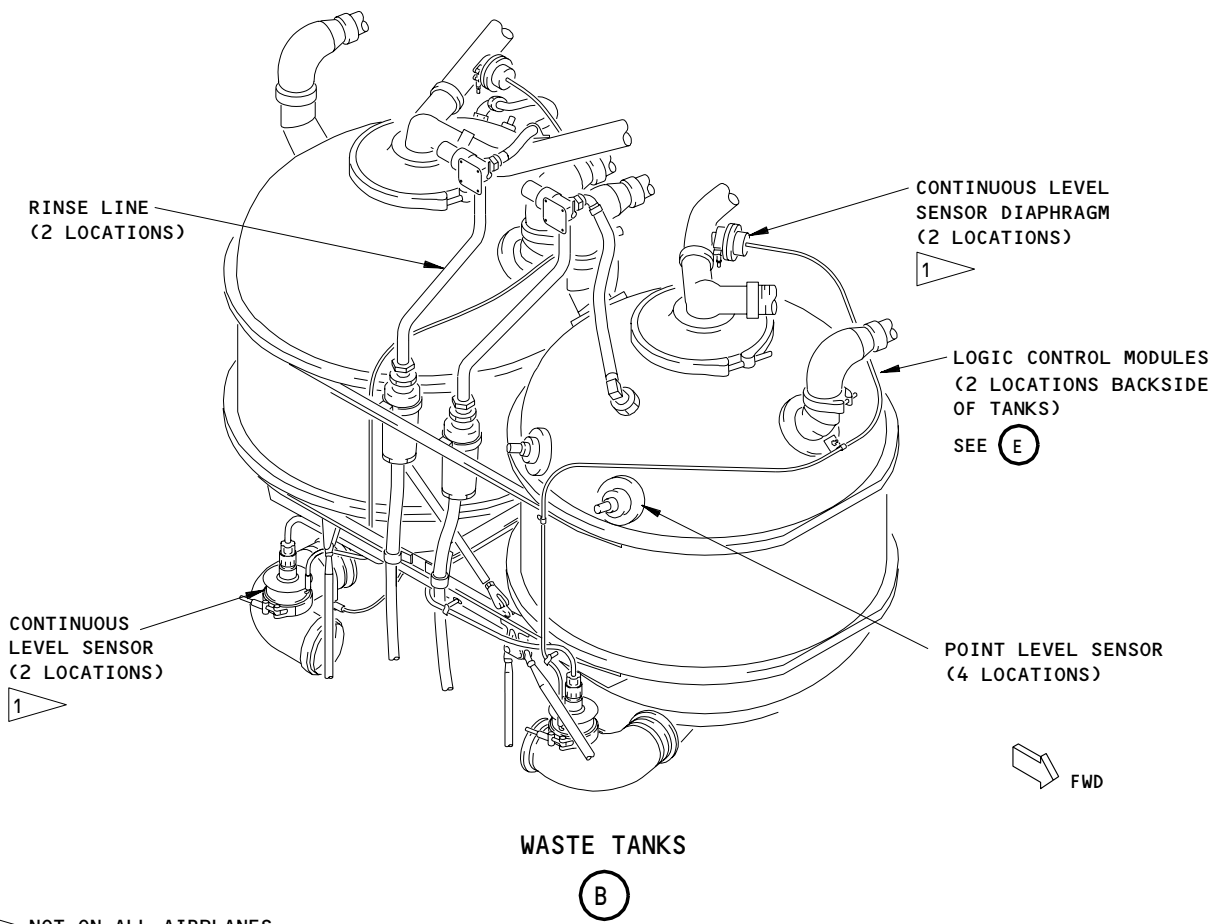
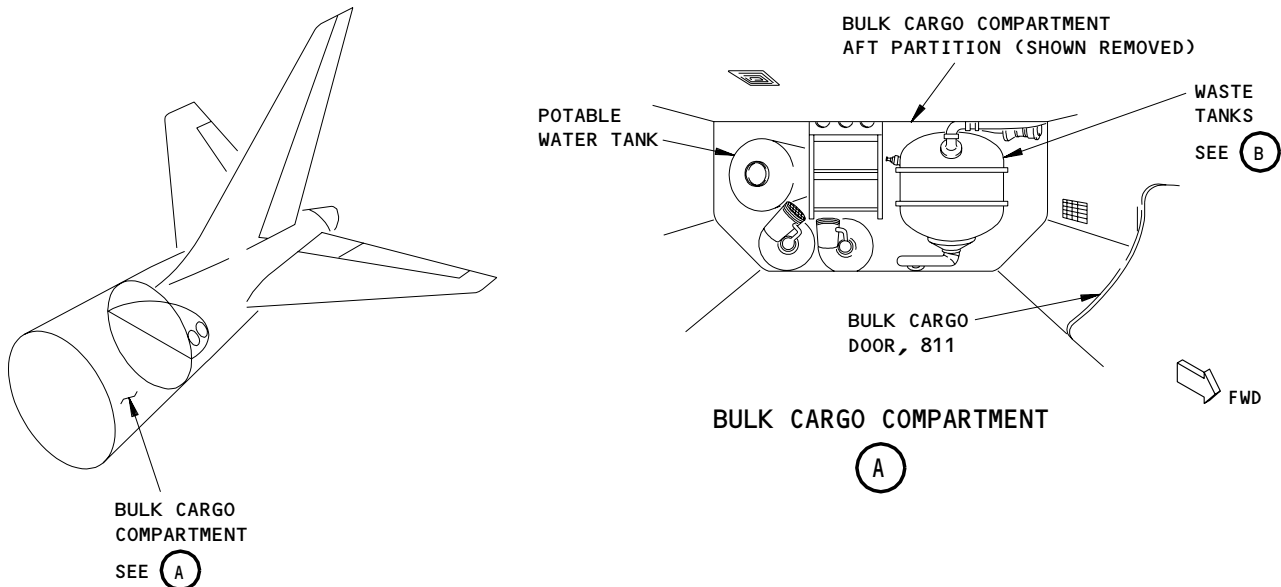
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# BOEING

## 767 MAINTENANCE MANUAL

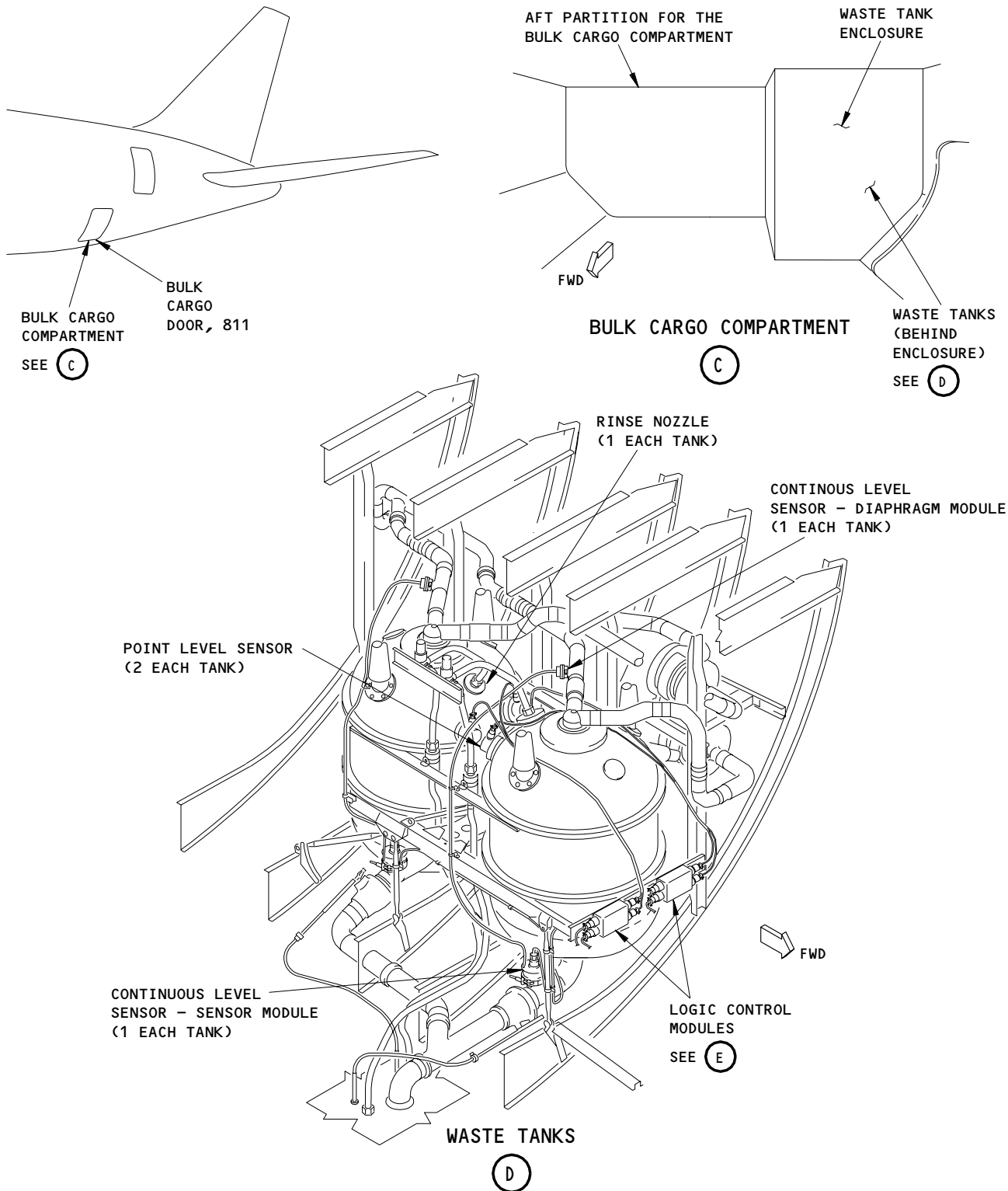


**Waste Tank Logic Control Module  
Figure 201 (Sheet 1)**

EFFECTIVITY  
AIRPLANES WITH STANDARD CAPACITY TANKS

# 38-33-03



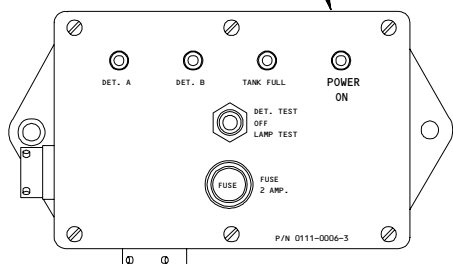


Waste Tank Logic Control Module  
Figure 201 (Sheet 2)

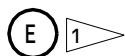
EFFECTIVITY  
AIRPLANES WITH INCREASED CAPACITY TANKS

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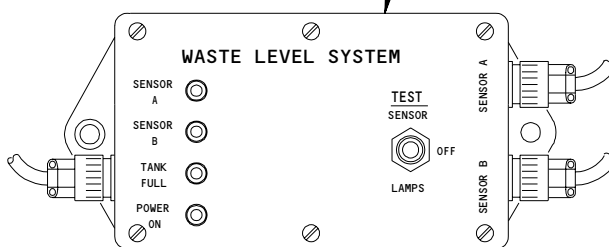
FORWARD LOGIC MODULE, M964  
AND AFT LOGIC MODULE, M965



FORWARD/AFT LOGIC CONTROL MODULE (LCM)



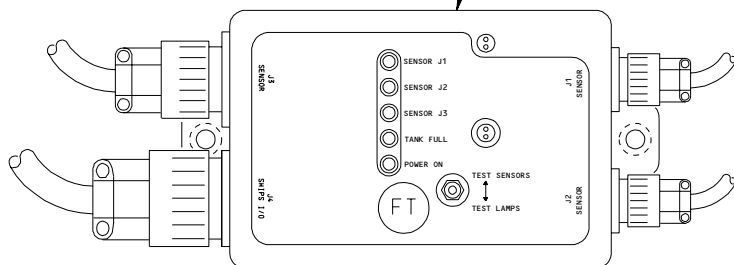
FORWARD LOGIC MODULE, M964  
AND AFT LOGIC MODULE, M965



FORWARD/AFT LOGIC CONTROL MODULE (LCM)



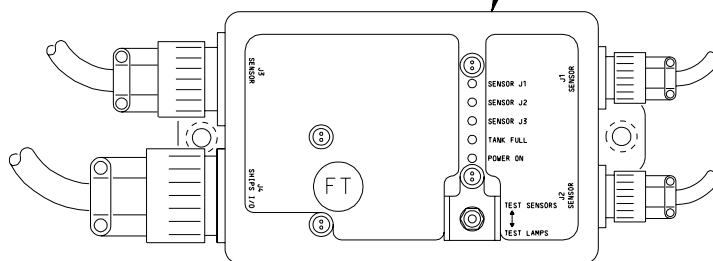
FORWARD LOGIC MODULE, M964 AND  
AFT LOGIC MODULE, M965



LOGIC CONTROL MODULE



FORWARD LOGIC MODULE, M964 AND  
AFT LOGIC MODULE, M965



LOGIC CONTROL MODULE



- 1 KAISER LCM
- 2 DREXELBROOK LCM
- 3 ROSEMOUNT LCM WITHOUT A GUARD FOR THE TEST SWITCH

- 4 ROSEMOUNT LCM WITH A GUARD FOR THE TEST SWITCH

Waste Tank Logic Control Module  
Figure 201 (Sheet 3)

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K33243

S 032-021

- (5) Disconnect the electrical connectors from the LCM.

S 032-022

- (6) AIRPLANES WITH THE EXTERNAL GROUND WIRE;  
Disconnect the ground wire from the LCM.

S 012-024

**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS ON THE LCM. YOU CAN CAUSE DAMAGE TO THE COMPONENTS IN THE LCM IF YOU TOUCH THE CONNECTOR PINS.

- (7) Remove the LCM.

S 532-025

- (8) Put caps that are antistatic on the connectors to the LCM.

TASK 38-33-03-422-086

3. Logic Control Module (LCM) - Installation

A. References

- (1) AMM 24-22-00/201, Supply Electrical Power
- (2) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (3) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System
- (4) AMM 38-33-00/501, Auto Zero - Adjustment
- (5) AMM 38-33-00/501, LCM BITE Test
- (6) AMM 52-36-00/001, Bulk Cargo Door

B. Access

- (1) Location Zone  
165 Area Aft of Bulk Cargo Compartment
- (2) Access Panel  
811 Bulk Cargo Door

C. Logic Control Module (LCM) Installation

EFFECTIVITY

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S 422-153

**CAUTION:** USE TOOLS CAREFULLY BECAUSE THE WASTE TANKS ARE A HONEYCOMB WITH A GRAPHITE COMPOSITE SKIN, WHICH IS EASILY DAMAGED. IF YOU HIT THE TANK WITH LOW ENERGY, THIS CAN CAUSE DAMAGE THAT YOU CANNOT SEE BEFORE A TANK FAILS. DO NOT HIT THE WASTE TANK, BECAUSE DAMAGE CAN OCCUR.

- (1) Put the LCM unit assembly in its position.

S 422-144

- (2) Install the bolts and washers to connect the jumper assembly and install the LCM unit assembly.

S 542-087

- (3) Remove the caps that are antistatic from the connectors.

S 432-088

- (4) Connect the electrical connectors to the LCM unit assembly.

**NOTE:** Make sure you install the electrical connectors in the correct location on the LCM.

S 862-148

- (5) Do this task: Activate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).

S 742-092

- (6) Do the LCM BITE test (AMM 38-33-00/501).

S 742-146

- (7) AIRPLANES WITH CONTINUOUS LEVEL SENSOR (CLS);  
Do the Auto-Zero adjustment (AMM 38-33-00/501).

S 412-093

**WARNING:** OBEY THE INSTRUCTIONS IN THE PROCEDURE TO INSTALL THE CARGO LINING. THE INCORRECT INSTALLATION OF THE CARGO LINING CAN LET THE FIRE EXTINGUISHING AGENT OR SMOKE OUT OF THE CARGO COMPARTMENT DURING A FIRE.

- (8) Install the aft bulkhead lining or the left sidewall lining of the bulk cargo compartment (AMM 25-52-01/401).

S 422-094

- (9) Close the bulk cargo door, 811 (AMM 52-36-00/001).

S 022-095

- (10) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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ATTENDANT PANEL WASTE QUANTITY INDICATOR – REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
  - (1) A removal of the waste quantity indicator on the attendant panel.
  - (2) An installation of the waste quantity indicator on the attendant panel.
- B. Airplanes with the continuous level sensor on the vacuum waste system will have a waste quantity indicator at the attendant panel.

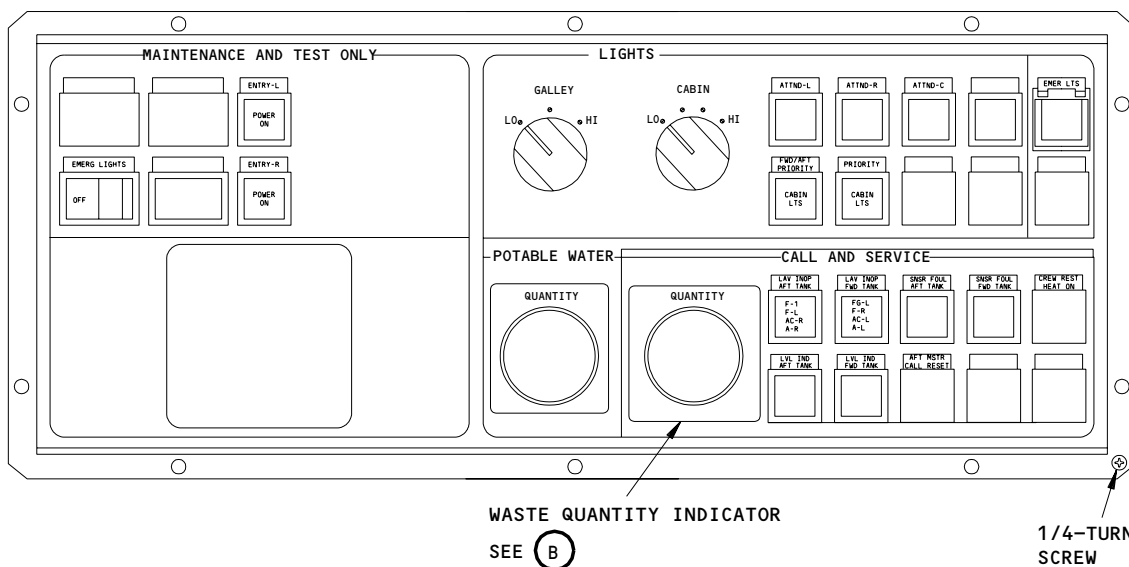
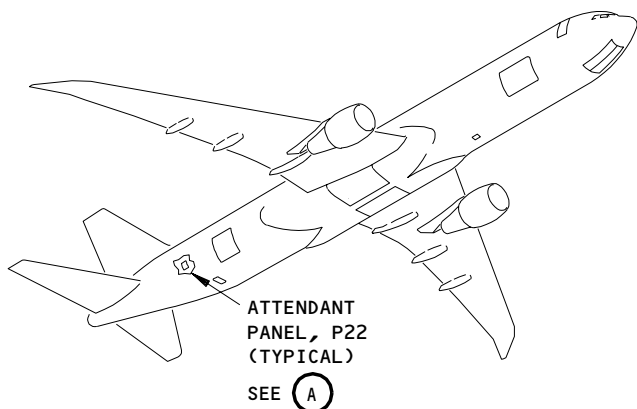
TASK 38-33-04-004-001

2. Attendant Panel Waste Quantity Indicator Removal (Fig 401)

- A. References
  - (1) AMM 38-32-00/201, Deactivate Vacuum Blower and Lav Flush System
  - (2) AMM 52-36-00/001 Bulk Cargo Door
- B. Access
  - (1) Location Zone  
200 Upper Half of Fuselage
- C. Prepare for Removal
  - S 864-024
    - (1) Do this task: Deactivate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).
  - S 014-003
    - (2) Get access to the attendant panel.
- D. Waste Quantity Indicator Removal
  - S 024-004
    - (1) To remove the waste quantity indicator from the attendant panel, do these steps:
      - (a) Loosen the 1/4 turn screws (2 locations) at the bottom corners of the aft attendant panel.
      - (b) Move the attendant panel up.
      - (c) Remove the nuts and washers from the rear of the waste quantity indicator.
      - (d) Remove the wiring screws and disconnect the electrical wires from the waste quantity indicator.
      - (e) Remove the waste quantity indicator from the attendant panel.

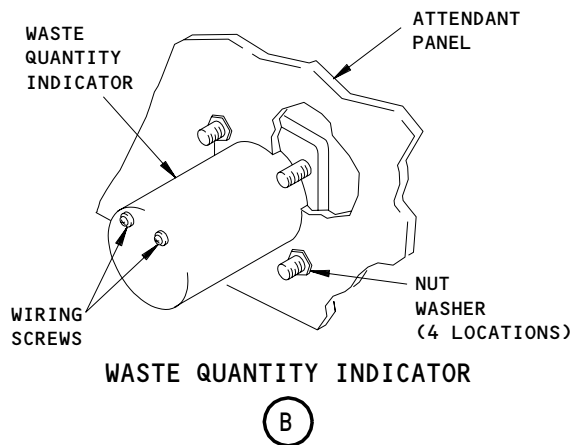
EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSOR

**38-33-04**



ATTENDANT PANEL, P22 (TYPICAL)

(A)



Waste Quantity Indicator Installation  
Figure 401

EFFECTIVITY  
AIRPLANES WITH CONTINUOUS LEVEL SENSOR

38-33-04

TASK 38-33-04-404-008

3. Attendant Panel Waste Quantity Indicator Installation (Fig 401)

A. References

- (1) AMM 12-17-01/301, Waste Tank Servicing
- (2) AMM 24-22-00/201, Supply Electrical Power
- (3) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
- (4) AMM 38-32-00/201, Activate Vacuum Blower and Lav Flush System
- (5) AMM 38-33-00/501, LAV INOP Bite Test
- (6) AMM 52-36-00/001 Bulk Cargo Door

B. Access

- (1) Location Zone
  - 165 Area Aft of Bulk Cargo Compartment
  - 200 Upper Half of Fuselage
  - 811 Bulk Cargo Door

C. Waste Quantity Indicator Installation

S 424-009

- (1) Put the waste quantity indicator into its position.

S 424-010

- (2) Install the washers and nuts.

S 424-011

- (3) Connect the electrical wires to the waste quantity indicator with the wiring screws.

S 424-027

- (4) Close the attendant panel and tighten the 1/4 turn screws.

S 864-026

- (5) Supply electrical power (AMM 24-22-00/201).

D. Waste Quantity Indicator Installation Test

S 864-025

- (1) Do this task: Activate the Vacuum Blower and Lav Flush System (AMM 38-32-00/201).

S 614-014

- (2) Do this task: Waste Tank Servicing (AMM 12-17-01/301).

**NOTE:** Do not disconnect the rinse hose until the testing is completed.

- S 714-015  
(3) Make sure the waste tank indicator shows just above "E" (Empty) on the indicator.

- S 044-028  
(4) AIRPLANES WITH PRECHARGE SHUTOFF VALVE;  
To allow filling of the waste tanks, do the following task:  
Deactivate the precharge shutoff valve(s), (AMM 38-32-00/201).

- S 614-016  
(5) Add additional fluid to the waste tank until the LAV INOP light on the attendant panel illuminates.

NOTE: Do not overfill the waste tank.

- S 714-017  
(6) Make sure the waste quantity indicator shows "F" (Full).

- S 444-030  
(7) AIRPLANES WITH PRECHARGE SHUTOFF VALVE;  
Reactivate the precharge shutoff valve(s), (AMM 38-32-00/201).

- S 744-022  
(8) Do the LAVS INOP BITE Test (AMM 38-33-00/501).  
E. Put the Airplane Back to its Usual Condition

- S 614-023  
(1) Do this task: Waste Tank Servicing (AMM 12-17-01/301).