CHAPTER

38

WATER/WASTE

MD-80
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 38
WATER/WASTE

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

38-EFFECTIVE PAGES

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

38-EFFECTIVE PAGES

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

38-EFFECTIVE PAGES

MD-80
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 38
WATER/WASTE

38-CONTENTS

CHAPTER 38
WATER/WASTE

38-CONTENTS

CHAPTER 38
WATER/WASTE

38-CONTENTS

GENERAL - DESCRIPTION AND OPERATION

1. General

WJE 405-411, 880, 881, 883, 884

A. The aircraft is equipped with a pressurized potable water supply system and a waste disposal for the forward galley No. 1, aft galley No. 4, and the forward and aft lavatories. (Figure 1, Figure 2)

WJE 401-404, 412, 414-427, 429, 861-866, 868, 869, 871-874, 891-893

B. The aircraft is equipped with a pressurized potable water supply system and a waste disposal system for the forward galley No. 2, aft galley No. 4, and the forward and aft lavatories. (Figure 1,Figure 2)

WJE 875-879

C. The aircraft is equipped with a pressurized potable water supply system and a waste disposal system for the forward galley No. 1, galley No. 4A, aft galley No. No. 5, No. 6, and the forward and aft lavatories. (Figure 1, Figure 2)

WJE 886, 887

D. The aircraft is equipped with a pressurized potable water supply system and a waste disposal system for the forward galley No. 1 and the forward and aft lavatories. (Figure 1,Figure 2)

WJE ALL

2. Potable

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

A. The 47-gallon tank for the potable water system is located in the fuselage right tunnel just forward of the mid cargo compartment door (on some aircraft just aft of the forward cargo compartment door). The tank provides water under pressure for the lavatory washbasins, and the galley units. The service panel for the water supply system is located below the floorline on the left side of the fuselage, directly opposite the water storage tank. The service panel is removable from outside the aircraft to allow access to, and replacement of, components. A thermostatically controlled heating element is installed in the service panel to maintain the temperature above freezing around the service outlets. The water service nipple is heated by a thermostatically controlled boot on inboard side of nipple. All rigid water lines in the system are made of stainless steel; however, the forward and aft supply lines and line connectors are made of flexible Teflon-lined or braided Tygon hoses.

WJE 875-879

B. The 47-gallon tank for the potable water system is located in the fuselage right tunnel just forward of the mid cargo compartment door (on some aircraft just aft of the forward cargo compartment door). The tank provides water under pressure for the lavatory washbasins, and the galley units. On aircraft with a seal type heated water service panel, the service panel for the water supply system is located below the floorline on the left side of the fuselage, directly opposite the water storage tank. On aircraft with a modified water service panel, the service panel is removable from outside the aircraft to allow access to, and replacement of, components. A thermostatically controlled heating element is installed in the service panel to maintain the temperature above freezing around the service outlets. The water service nipple is heated by a thermostatically controlled boot on inboard side of nipple. All rigid water lines in the system are made of stainless steel; however, the forward and aft supply lines and line connectors are made of flexible Teflon-lined or braided Tygon hoses.

WJE ALL

C. Water Level Indicating System - A water level indicating system is provided to indicate water level in the supply tank during servicing. The system consists of five tank probes (four used), five indicating lights at the service panel, a control switch and circuit breaker, and the necessary circuitry wiring. (WATER LEVEL INDICATING SYSTEM - TROUBLE SHOOTING, PAGEBLOCK 38-12-00/101)

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 PRE MD80-25A381 AND PRE MD80-38-056

D. Water Line Heaters - Water line heaters are provided to prevent water lines from freezing when the aircraft is on the ground. The heaters consist of in-line heater elements, heated hoses for supply lines below the compartment floor, and ribbon-type heater elements wrapped around lavatory water inlet lines above the compartment floor.

WJE 410, 875-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056

E. Water Line Heaters - Water line heaters are provided to prevent water lines from freezing when the aircraft is on the ground. The heaters consist of in-line heater elements, heated hoses for supply lines below the compartment floor, and heated water inlet lines above the compartment floor.

WJE ALL

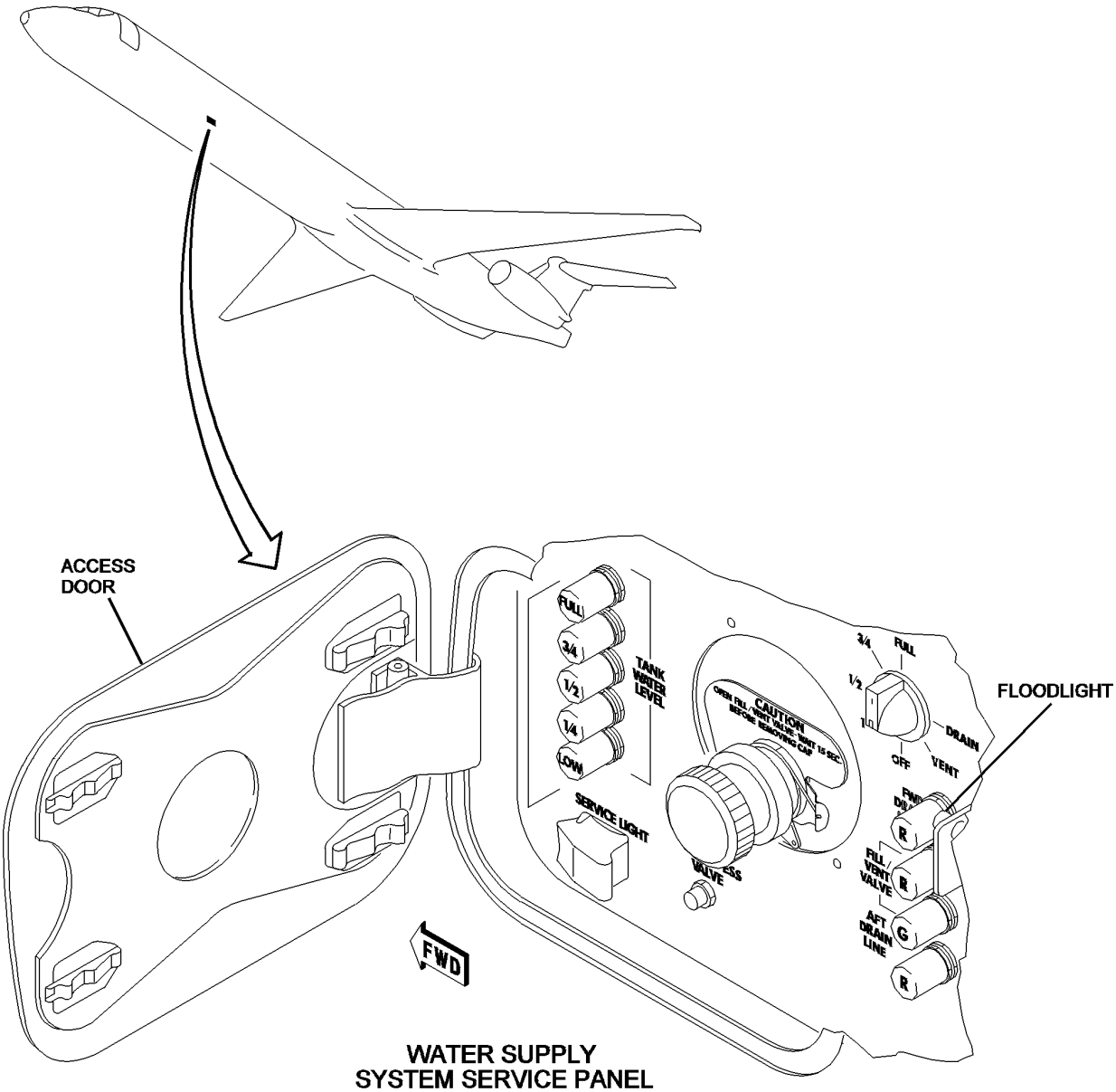
F. Water Heating - A two-quart tank with an electrical heater is installed in each lavatory to provide hot water for the washbasin. The galley units are provided with facilities to heat potable water for hot beverages.

3. Waste Disposal

A. Waste water from the forward galley unit is drained through the forward drain mast, located approximately below the galley on the fuselage exterior. Waste water from the aft galley unit is drained through the aft drain mast, located approximately below the left aft lavatory on the fuselage exterior. All toilet wastes and waste water from the lavatory sinks are drained or flushed into a fiberglass tank, under each toilet bowl. The wastes remain in the tank until the system is drained or flushed during ground service operations. Chemical additives dye, deodorize, and disinfect all waste material. During the flushing cycle, the filter separates the liquid from solid waste material allowing filtered waste water to be pumped to the toilet bowl. The flushing cycle is controlled by the timer through a pushbutton switch. Waste water service panels are located below the floorline, on the left side of the fuselage, in line with the forward and aft lavatories.

4. Air Supply

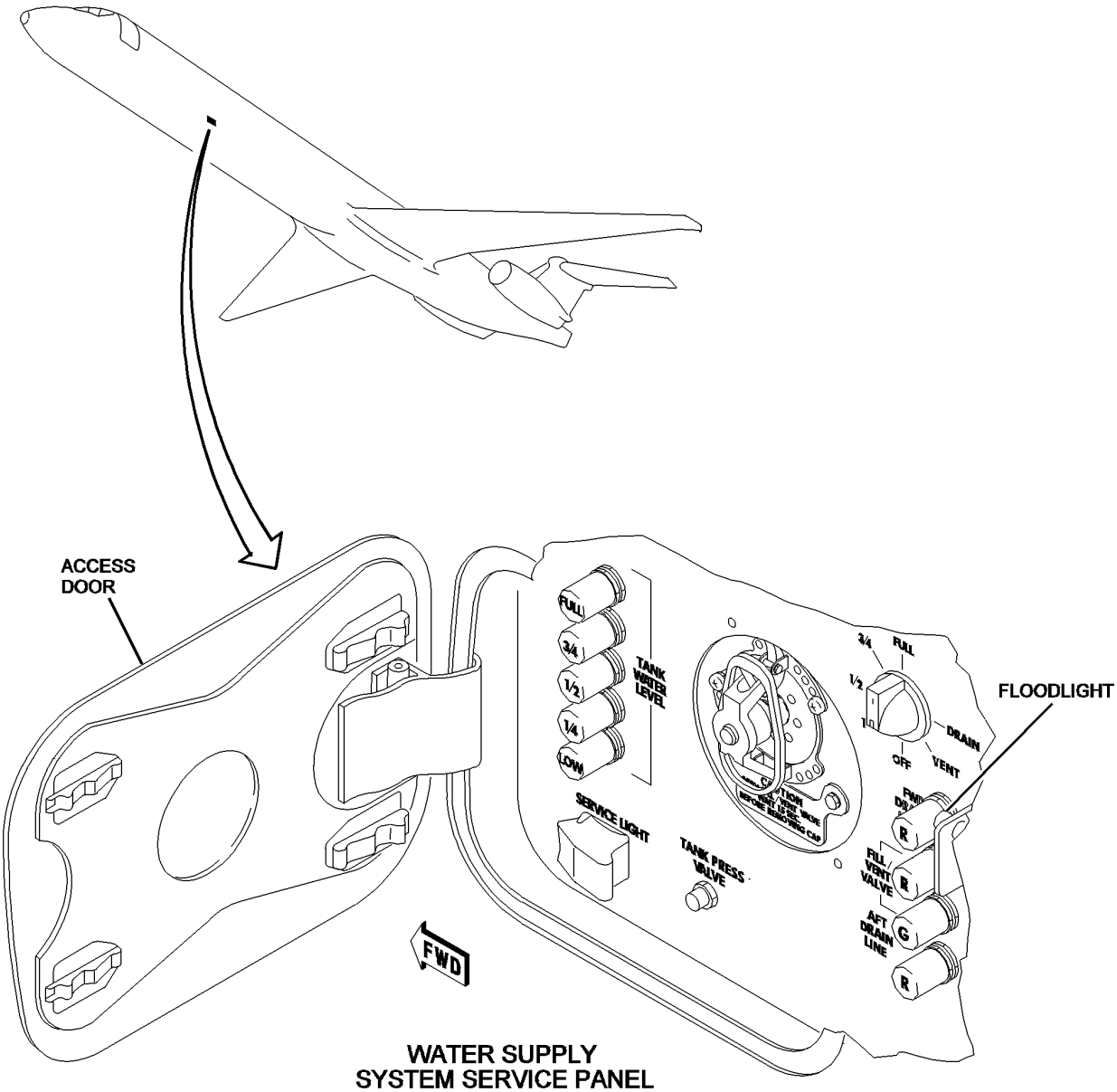
A. Regulated air to pressurize the potable water supply system tank is provided from the aircraft air conditioning system during flight, and from the tank pressure valve on the potable water service panel during ground servicing (with no air-conditioning available). (AIR SUPPLY - DESCRIPTION AND OPERATION, PAGEBLOCK 38-40-00/001 Config 1 or AIR SUPPLY - DESCRIPTION AND OPERATION, PAGEBLOCK 38-40-00/001 Config 4)



WATER SUPPLY
SYSTEM SERVICE PANEL

BBB2-38-74B
S0006551148V2

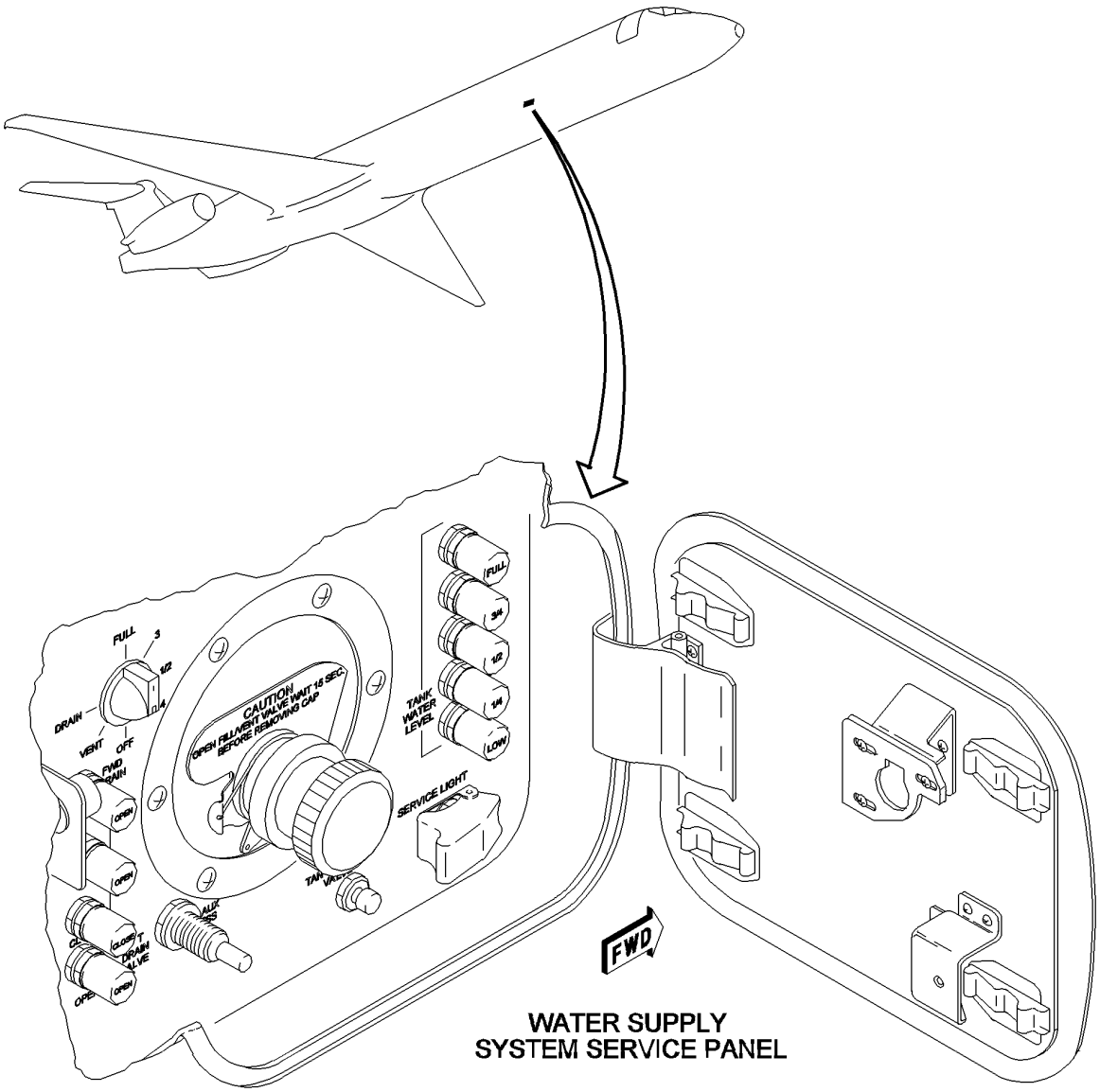
Potable Water Service Panels
Figure 1/38-00-00-990-806 (Sheet 1 of 4)



WATER SUPPLY
SYSTEM SERVICE PANEL

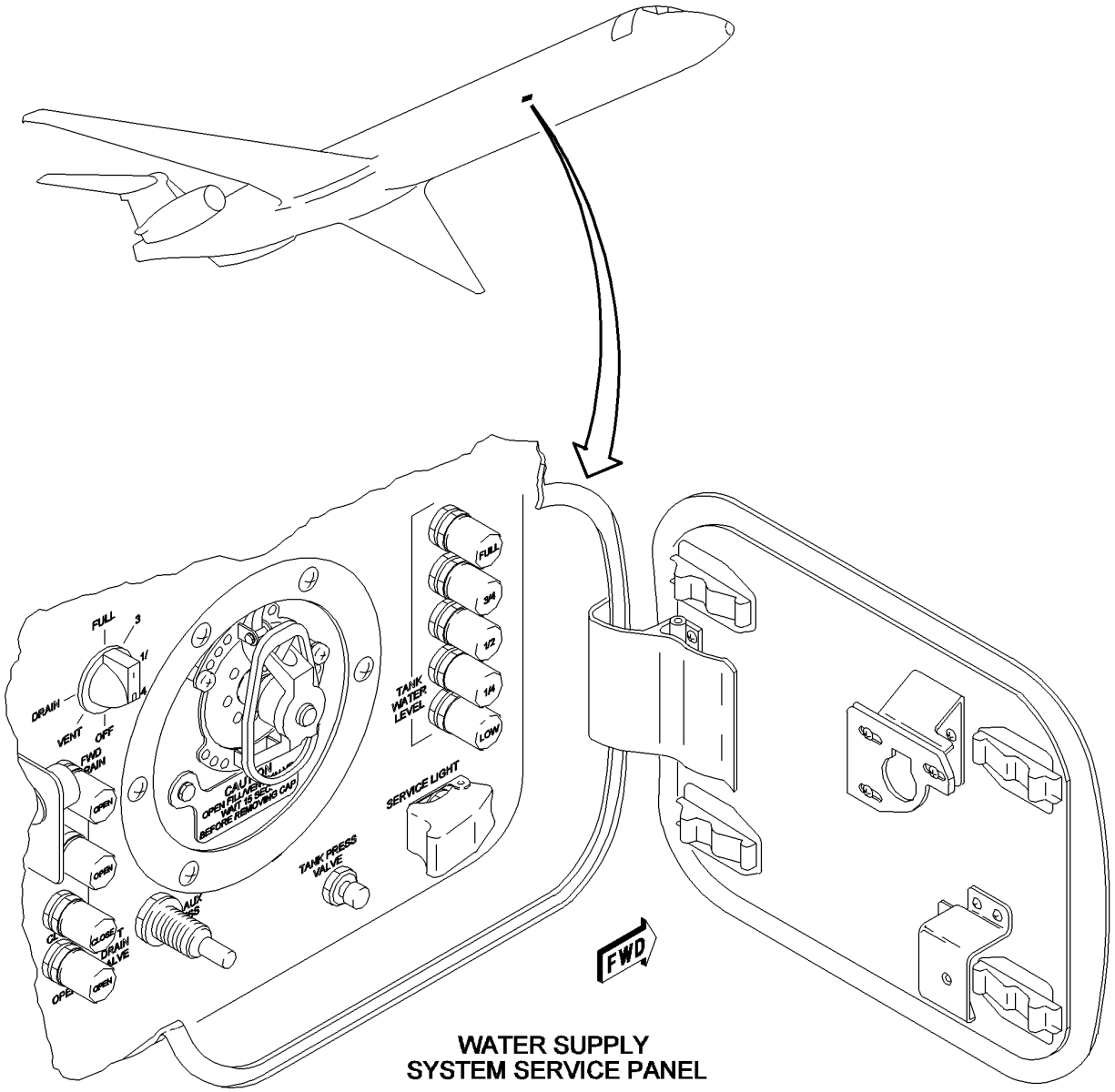
BBB2-38-217
S0000417553V1

Potable Water Service Panels
Figure 1/38-00-00-990-806 (Sheet 2 of 4)

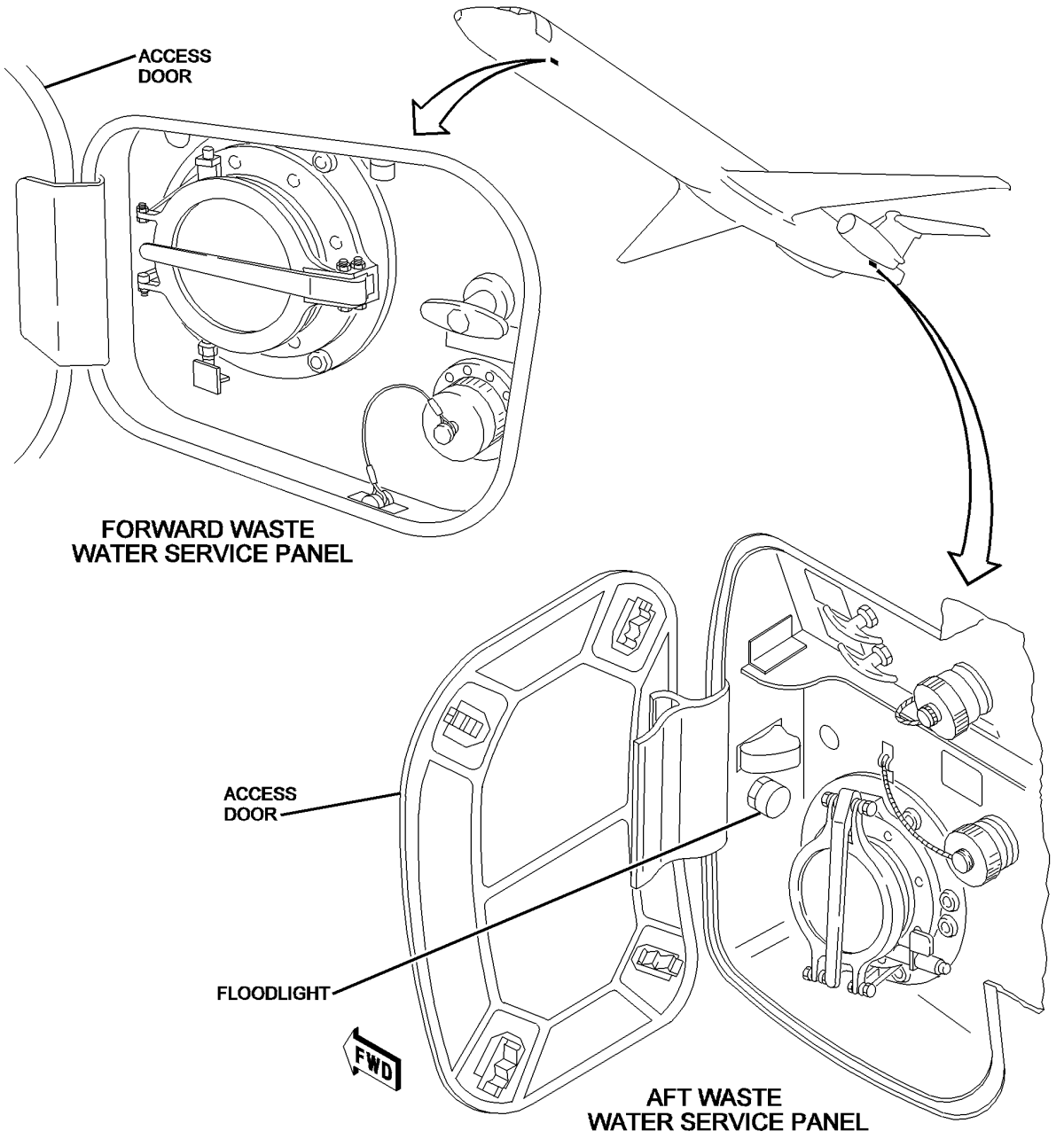


BBB2-38-90C
S0006551149V2

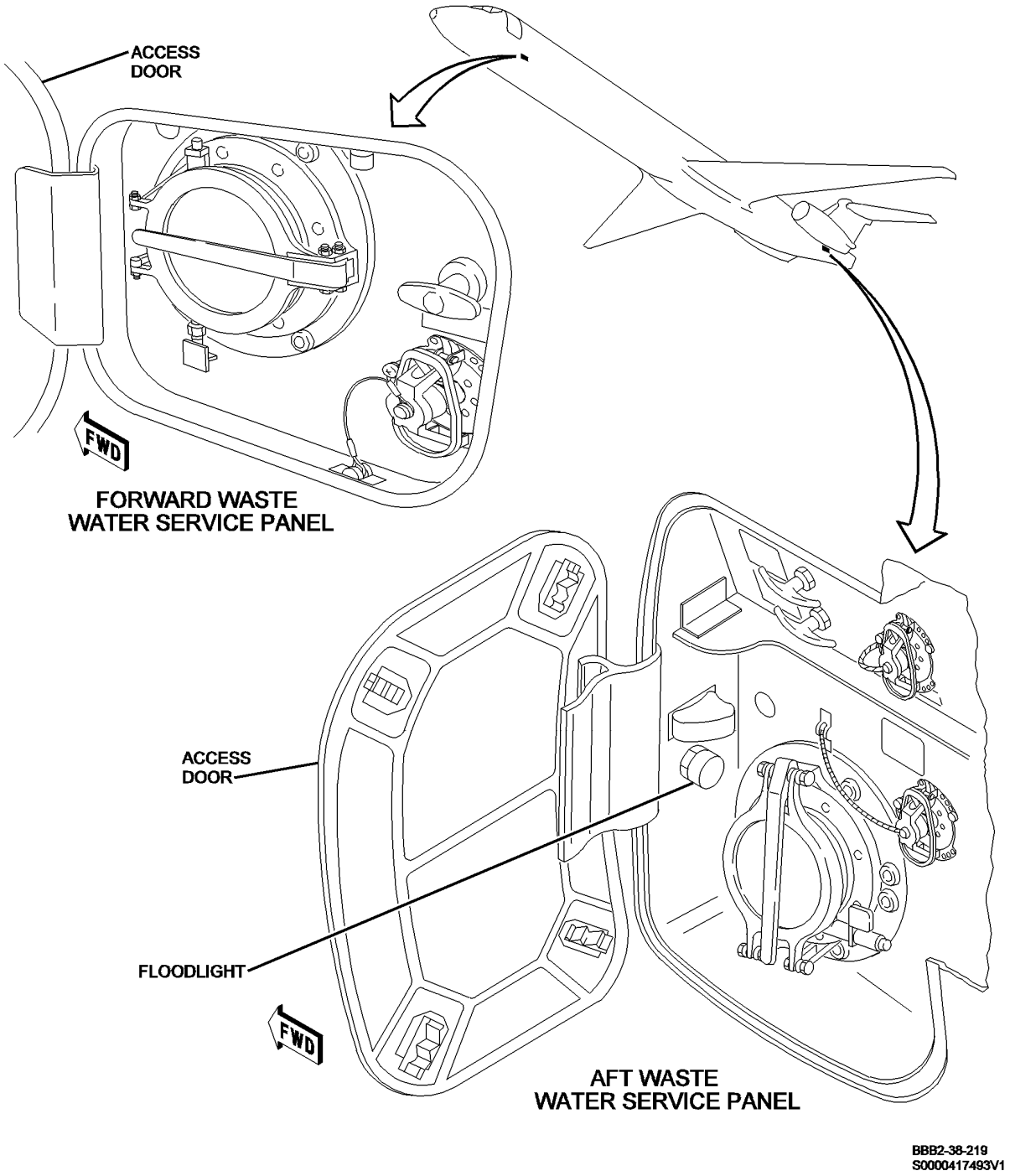
Potable Water Service Panels
Figure 1/38-00-00-990-806 (Sheet 3 of 4)



Potable Water Service Panels
Figure 1/38-00-00-990-806 (Sheet 4 of 4)



Forward and Aft Waste Water Service Panels
Figure 2/38-00-00-990-823 (Sheet 1 of 2)



Forward and Aft Waste Water Service Panels
Figure 2/38-00-00-990-823 (Sheet 2 of 2)

1. General Maintenance Features

A. General

(1) The potable water system for the aircraft consists of a water tank, tubing, and fixtures to provide water to the lavatory and galley sinks. To perform any maintenance on the potable water system, the system needs to be depressurized and drained. Any one unit of the system can be removed, repaired and replaced individually without removing other parts of the system.

(2) The waste water system for the aircraft provides disposal of both potable water waste and human waste. Maintenance performed on the potable water waste system (including the lavatory and galley sinks) consists of the removal, replacement, and decontamination of the toilet, the waste retaining tank, valves, and lines that lead to the waste water service panel.

B. Maintenance - Potable Water

WJE 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-879, 891

(1) On aircraft with a seal type heated water service panel, potable water is pumped into the main water tank through the service panel located on the left side of the aircraft. The water is then pressurized and filtered for use in the lavatories and galleys.

(2) On aircraft with a modified water service panel, potable water is pumped into the main water tank through the service panel located on the left side of the aircraft. The service panel is removable from outside the aircraft to allow access to, and replacement of, components. The water is then pressurized and filtered for use in the lavatories and galleys.

WJE 405-411, 880, 881, 883, 884, 886, 887

(3) Potable water is pumped into the main water tank through the water service panel located on the left side of the aircraft. The service panel is removable from outside the aircraft to allow access to, and replacement of, components. The water is then pressurized and filtered for use in the lavatories and galleys.

WJE 401-404, 412, 414, 873, 874, 892, 893

(4) Potable water is pumped into the main water tank through the water service panel located on the left side of the aircraft. The water is then pressurized and filtered for use in the lavatories and galleys.

(5) The water tank is located in the mid cargo compartment right tunnel area forward of the cargo compartment door (on some aircraft just aft of the forward cargo compartment door). The main water line runs on the right side of the aircraft forward and aft as needed to the galleys and lavatories. Removal and replacement is needed only in the case of leakage, breakage, or contamination.

WJE ALL

(6) Disassembly of any part of the potable water system should be done only to the level needed to repair or replace the defective component.

(7) The potable water lines are heated to prevent freezing while the aircraft is sitting idle on the ground. Before disassembling any water line, its heater (a flexible, resistance-type wire) must be removed from inside the line.

(8) Any time the inside of the potable water system is exposed to the exterior environment for repair, it must be sterilized before being returned to service. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

C. Maintenance - Waste

(1) The waste water from the sinks in the galleys is routed through a drain mast and discharged overboard.

WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893

(2) The waste from the toilets and waste water from the lavatory sinks is retained in the tanks where it is chemically neutralized. The neutralized waste is discharged through the waste water service panel to the outside of the aircraft by maintenance personnel.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

(3) The waste from the toilets is retained in the tanks where it is chemically neutralized. The neutralized waste is discharged through the waste water service panel to the outside of the aircraft by maintenance personnel.

WJE ALL

(4) Before the human waste system is opened for maintenance it must first be drained and decontaminated.

(5) Access to the drain valve, pump, and tank in the waste system is provided by removal of the shroud that covers the toilet tank in the lavatory.

D. Component Interchangeability

(1) Normally, water/waste system components are designed to be "line" replaceable. Aircraft with the same configuration have interchangeable spares. Likewise, water/waste components used in more than one place on an aircraft, such as faucets, fittings, gaskets and tubing, are interchangeable.

2. Safety and Operating Precautions

A. Circuit Breakers

(1) All circuit breakers opened during maintenance should be tagged and safetied to prevent inadvertent operation of the affected system.

B. Waste System

WARNING: ALWAYS PUT ON RUBBER GLOVES BEFORE YOU DO MAINTENANCE ON THE TOILET SYSTEM, OR TOUCH PARTS THAT TOUCHED WASTE MATERIAL. FULLY CLEAN YOUR HANDS WITH SOAP AND WATER AFTER MAINTENANCE IS COMPLETED. THE TOILET WASTE CAN CAUSE ILLNESS AND INJURIES TO PERSONNEL.

(1) Before performing any maintenance function on the waste water system aboard the aircraft, the system must be decontaminated. Maintenance personnel are required to wear gloves whenever they work on interior parts of the waste water system.

C. Potable Water System

(1) Before performing any maintenance that requires the opening of any part of the potable water system, the entire system must be sterilized before it is returned to service.

D. Open Lines and Ducts

(1) All water and waste lines opened for maintenance purposes must be capped to prevent damage to the system, and to prevent contaminants from entering or leaving the system.

WARNING: ALL CHEMICALS MUST BE DILUTED EXACTLY ACCORDING TO INSTRUCTIONS TO PREVENT TOXICITY AND TO ENSURE PROPER STERILIZATION AND CLEANING ACTION.

E. Use of Cleaning and Sterilizing Agents

(1) All cleaning and sterilizing agents must be used exactly as directed.

(2) No cleaning solvents are to be used in or around the potable water system of the aircraft.

F. Spilled Liquids

(1) Any spilled liquids must be cleaned up immediately to prevent damage and contamination to aircraft components, accessories, and compartments.

3. General Maintenance Practices

A. Water System Pressurization/Depressurization

(1) The water system is pressurized when the PRESELECT switch is in OFF position with electrical and pneumatic power applied to the aircraft. The system is depressurized when the PRESELECT switch is in VENT position. (WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2)

B. External Water System Pressurization

(1) The water system can be pressurized externally by connecting a pneumatic line (and regulated pressure source) to the tank pressure valve on the service panel. (AIR SUPPLY - DESCRIPTION AND OPERATION, PAGEBLOCK 38-40-00/001 Config 1 or AIR SUPPLY - DESCRIPTION AND OPERATION, PAGEBLOCK 38-40-00/001 Config 4)

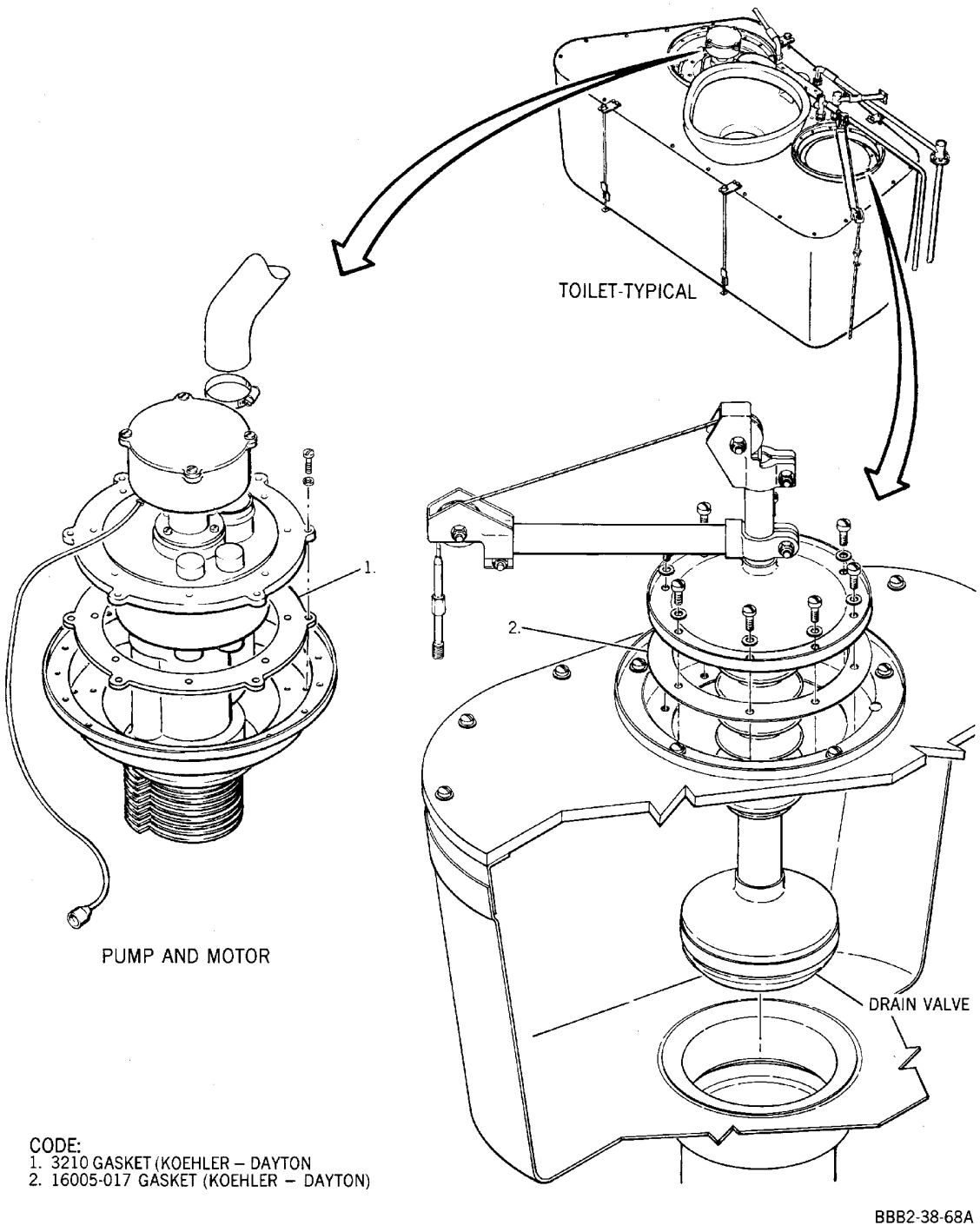
C. External Electrical Power

(1) For procedures used to connect external electrical power to the aircraft. (EXTERNAL POWER - DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001)

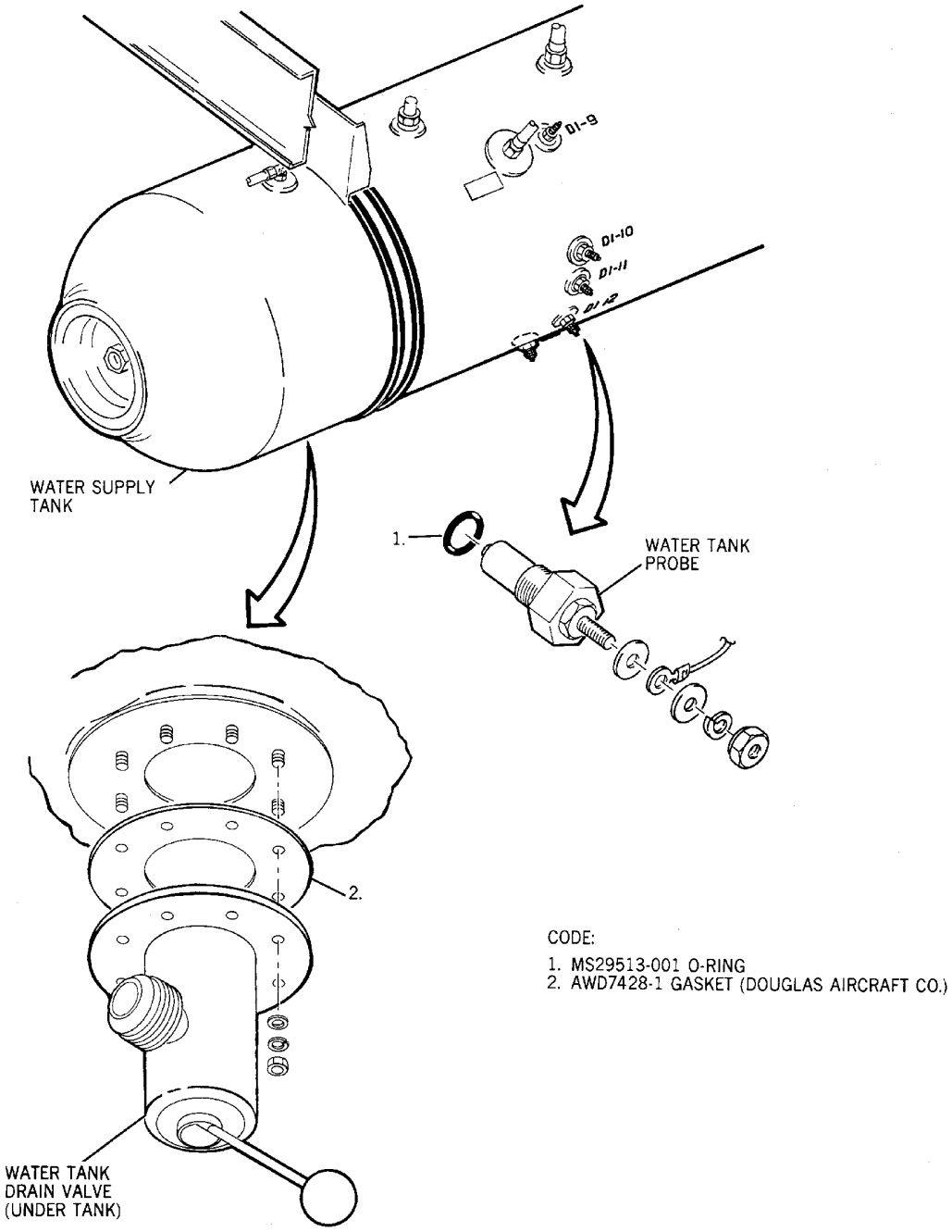
D. Seals, O-Rings, and Gaskets

(1) Seals, O-rings, and gaskets are identified. All used O-rings should be identified and noted before being discarded. (Figure 201) (Figure 202) (Figure 203)

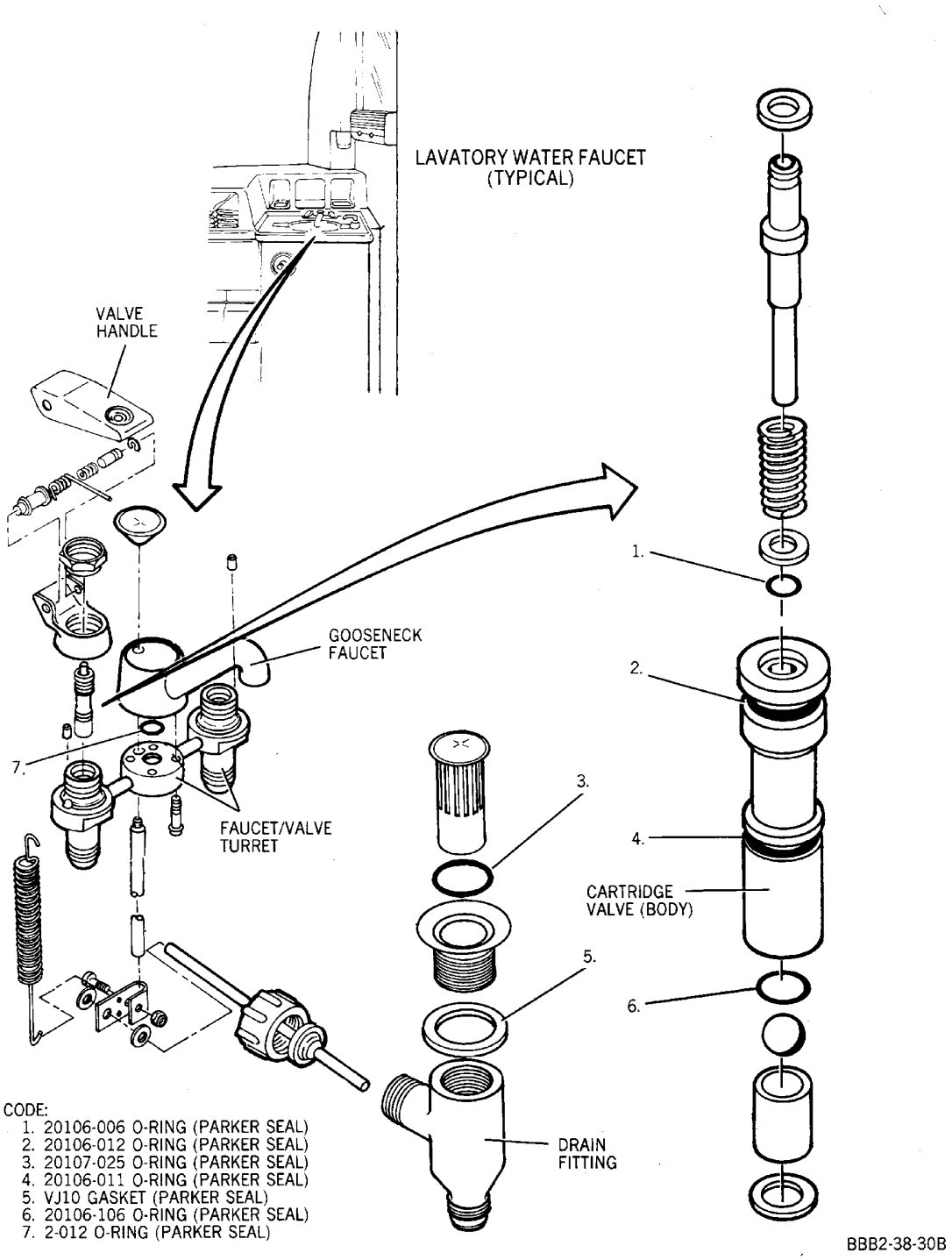
NOTE: Faucet and drain installations are interchangeable between vendors. However, certain individual parts are not interchangeable. Make certain that parts from each vendor are used only with that vendor's installation.



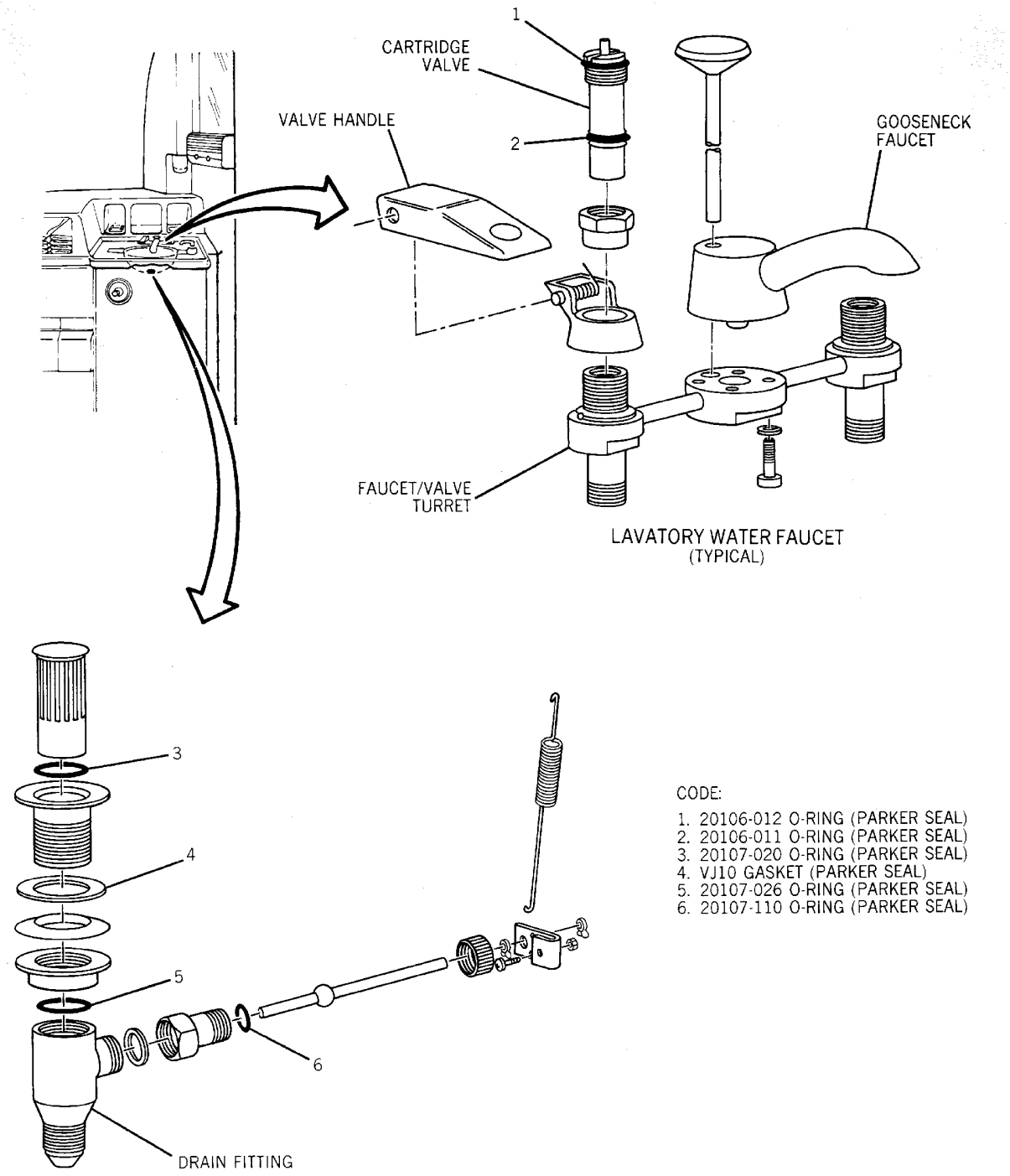
Seals, O-Rings, and Gaskets
Figure 201/38-00-00-990-809 (Sheet 1 of 2)



Seals, O-Rings, and Gaskets
Figure 201/38-00-00-990-809 (Sheet 2 of 2)



Seals, O-Rings, and Gaskets (Sabre)
Figure 202/38-00-00-990-810



Seals, O-Rings, and Gaskets (Adams Rite)
Figure 203/38-00-00-990-811

POTABLE - DESCRIPTION AND OPERATION

1. General

A. The pressurized potable water system supplies water to the galley units and lavatory compartments . The water system includes the equipment necessary to store, deliver, filter, and heat the water supplied to the various outlets. Water for the system is stored in a tank that is pressurized, during normal operations, by air from the air-conditioning system at a pressure of 23(±2) psi (158(±14) kPa). The system can also be pressurized from an external source of air pressure through the tank pressure valve located on the service panel during servicing operations. When the aircraft is on the ground, water line freezing (during loading/unloading operations) is prevented by a water line heater system which is activated by thermostats located near each cargo door when the ambient temperature drops to 40°F (4.4°C).(Water Supply System/Figure 1 or Water Supply Tank/Figure 2 or Water Service Panel/Figure 3)

2. Potable

A. Description

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893

(1) Water System Components - The pressurized potable water system components consist of a water supply tank, an electric fill/vent valve, electrically actuated system drain valves, a manually operated tank drain valve, air filter, pressure relief valve, air check valve, water line heaters, and water service panel. Lavatory water heaters, lavatory water shutoff valves, and lavatory faucets are also components of the water system.

(2) Water System Components - The pressurized potable water system components consist of a water supply tank, an electric fill/vent valve, electrically actuated system drain valves, an electrically operated tank drain valve, air filter, pressure relief valve, air check valve, water line heaters, and water service panel. Lavatory water heaters, lavatory water shutoff valves, and lavatory faucets are also components of the water system.

WJE 886, 887

(3) Water System Components - The pressurized potable water system components consist of a water supply tank, an electric fill/vent valve, fill line valve, electrically actuated system drain valves, a manually operated tank drain valve, air filter, pressure relief valve, air check valve, water line heaters, and water service panel. Lavatory water heaters, lavatory water shutoff valves, and lavatory faucets are also components of the water system.

WJE ALL

(4) Water Supply Tank - The water supply tank located in the right tunnel area forward of the lower mid cargo door is secured in position with two strap clamps. Capacity of the tank is 47 US gallons (39.13 Imperial gallons or 177.89 liters). A removable screw-type end closure located at each end of the tank provides access to the tank interior for cleaning purposes. The tank has fittings attached to the top for system filling, venting, pressurization, and a pressure relief valve. Fittings for water level indicating probes are attached at the top and side of the tank. An outlet on the tank side is connected to the forward and aft system supply lines. An outlet on the tank bottom is connected to the water tank drain valve, and the tank vent and drain lines.

(5) Fill/Vent Valve - The electrically actuated fill/vent valve controls filling of the potable water supply tank. The valve is located just inboard and above the forward side of the water tank. The valve is a two-position four-port valve, with a spring-loaded plug-type core to ensure positive seating and to prevent leakage. The valve is operated by the FILL/VENT VALVE switch on the water service panel.

(6) Fill Line Valve - The electrically actuated fill line valve, together with the fill/vent valve, controls the filling of the potable water supply tank. The valve is mounted on a bracket above and inboard of the water tank. The valve is a two-position, two-port valve, with a spring-loaded plug-type core to ensure positive seating and to prevent leakage. The valve is operated by logic circuitry connected to the water level probes.

(7) Water System Drain Valves - Two electrically actuated drain valves are provided for draining the water system when the aircraft is parked overnight or for an extended period in freezing weather. One of the drain valves is located in the forward water system line just below the cabin floor in the right forward side of the forward cargo compartment. The other drain valve is located in the aft water system line just below the cabin floor in the right aft side of the aft cargo compartment. Each valve is a two-position, two-port valve, with a spring-loaded plug-type core to ensure positive seating and to prevent leakage. The valves are operated by a switch on the potable water service panel.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(8) Water Tank Drain Valve - The manually operated drain valve controls draining of the potable water supply tank. The valve is a two-position, two-port valve, with a spring-loaded, plug-type core to ensure positive seating and to prevent leakage. The valve, located on the bottom forward side of the water tank, is accessible in the right tunnel just forward of the mid cargo compartment door.

WJE 412, 414

(9) Water Tank Drain Valve - The manually operated (or electrically operated on some aircraft) drain valve controls draining of the potable water supply tank. The valve is a two-position, two-port valve, with a spring-loaded, plug-type core to ensure positive seating and to prevent leakage. The valve, located on the bottom forward side of the water tank, is accessible in the right tunnel just forward of the mid cargo compartment door.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(10) Water Line Heaters - Water line heaters are provided to prevent the potable water lines from freezing when the aircraft is on the ground. The water supply system incorporates in-line heaters for the fore-and-aft supply lines, integrally heated hoses for side-to-side lines, and external ribbon heaters for water inlet lines at the lavatories. All of the heaters operate on 115-VAC, 60 Hz facility power connected to the aircraft external power panel. A heater thermostat, located adjacent to each cargo compartment door activates the heater system when the ambient temperature drops to 40°F (4.4°C). When the temperature exceeds 50°F (10°C), a thermostat deactivates the heaters. The heaters are also deactivated when the aircraft is airborne.

WJE 412, 414

(11) Water Service Panel - The seal type heated service panel for the pressurized potable water system is located on the left side of the aircraft (below the floorline) midway between the forward passenger door and the wing leading edge . The panel contains a power and floodlight control switch, fill valve nipple, tank pressure valve, floodlight, fill/vent valve switch, water drain switch, fill valve position lights, water level indicator lights, and system drain position indicator lights. A 50-watt, 120-volt, 400-cycle, ac heating element is installed in the panel. The element is controlled thermostatically to maintain the temperature above freezing in the area around the service outlets when the panel access door is closed. Warm air, from the heating element around the servicing outlets, is maintained in the area by a molded fiberglass cup with a silicone rubber seal installed on the access door. (Water Supply System/Figure 1 or Water Supply Tank/Figure 2 or Water Service Panel/Figure 3)

NOTE: On aircraft 401-402, the water service panel is as follows:

WJE 886, 887

(12) Water Service Panel - The preselect service panel for the pressurized water system is located on the left side of the aircraft (below the floorline) midway between the forward passenger door and the wing leading edge . This installation allows the quantity of water to be pre-selected by a water quantity mode selector located on the top right section of the panel. When water quantity reaches the pre-selected level, an automatic valve shuts off the water supply from the fill hose. The service panel is removable from outside the aircraft to allow access to and replacement of components. The panel contains a water quantity mode selector, power and floodlight control switch, fill valve nipple, tank pressure valve, floodlight, fill/vent valve switch, water drain switch, fill valve position lights, water level indicator lights, and system drain indicator lights. The fill valve nipple is controlled thermostatically to maintain temperature above freezing when the aircraft is on the ground. (Water Supply System/Figure 1 or Water Supply Tank/Figure 2 or Water Service Panel/Figure 3)

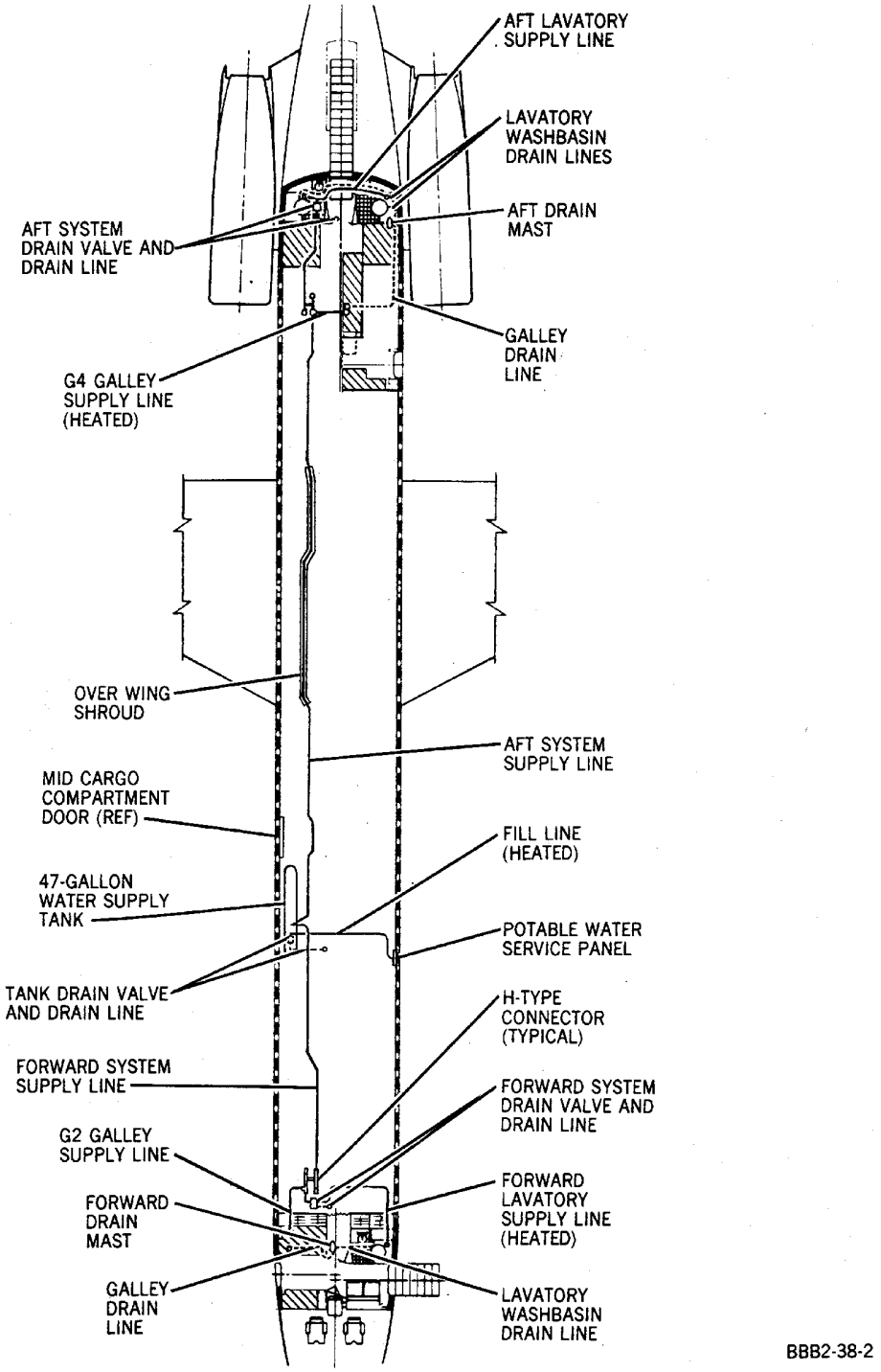
WJE ALL

(13) Pneumatic System - A pneumatic system is installed to provide air pressure to the potable water system when the aircraft is on the ground, and aircraft electrical power is available. The pneumatic system consists of an air compressor, pressure regulator and pressure lines. The air compressor is mounted on a bracket located in the right tunnel area of the forward cargo compartment aft of the center cargo door. The pressure regulator is located inboard of the potable water supply tank, located in the forward cargo compartment tunnel area just aft of the forward cargo door.

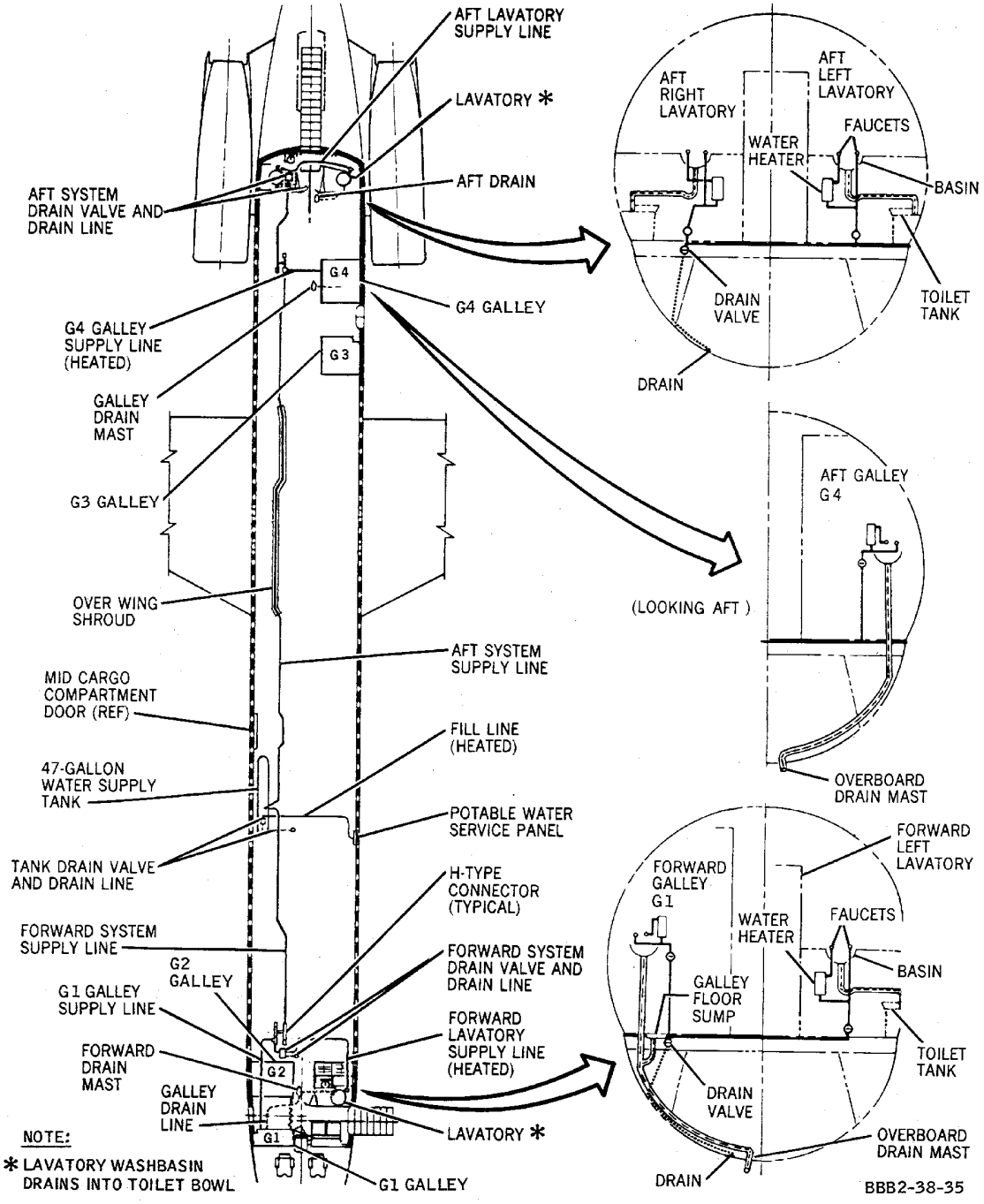
(14) Lavatory Water Heaters - A water heater is located in each lavatory, below and to the side of the washbasin. The heater consists of a 2-quart tank with pipe fittings at top and bottom. The heating element is detachable and is bolted to the tank top. Included in each heater circuit is an adjustable thermostat, and a thermal safety switch with a manual reset button. The adjustable type thermostat switch is used to regulate water temperature in each lavatory at 110(±10)°F (43.5(±5.6)°C). The thermostat adjusting nut is turned counterclockwise to increase water temperature, or clockwise to decrease water temperature. The thermal safety switch, with a manual reset button, opens when water temperature reaches 140(±10)°F (60(±5.6)°C), should the thermostat switch fail. The manual reset button, located under water tank removable top cover, is used to reset the thermal safety switch.

(15) Lavatory Water Shutoff Valve - A manually operated shutoff valve is installed in the potable water supply line in the lavatory washstand area. The valve can be set to any position between full open to full closed, regulating the water pressure at lavatory faucets. Access to valve is through the lavatory washstand waste container door.

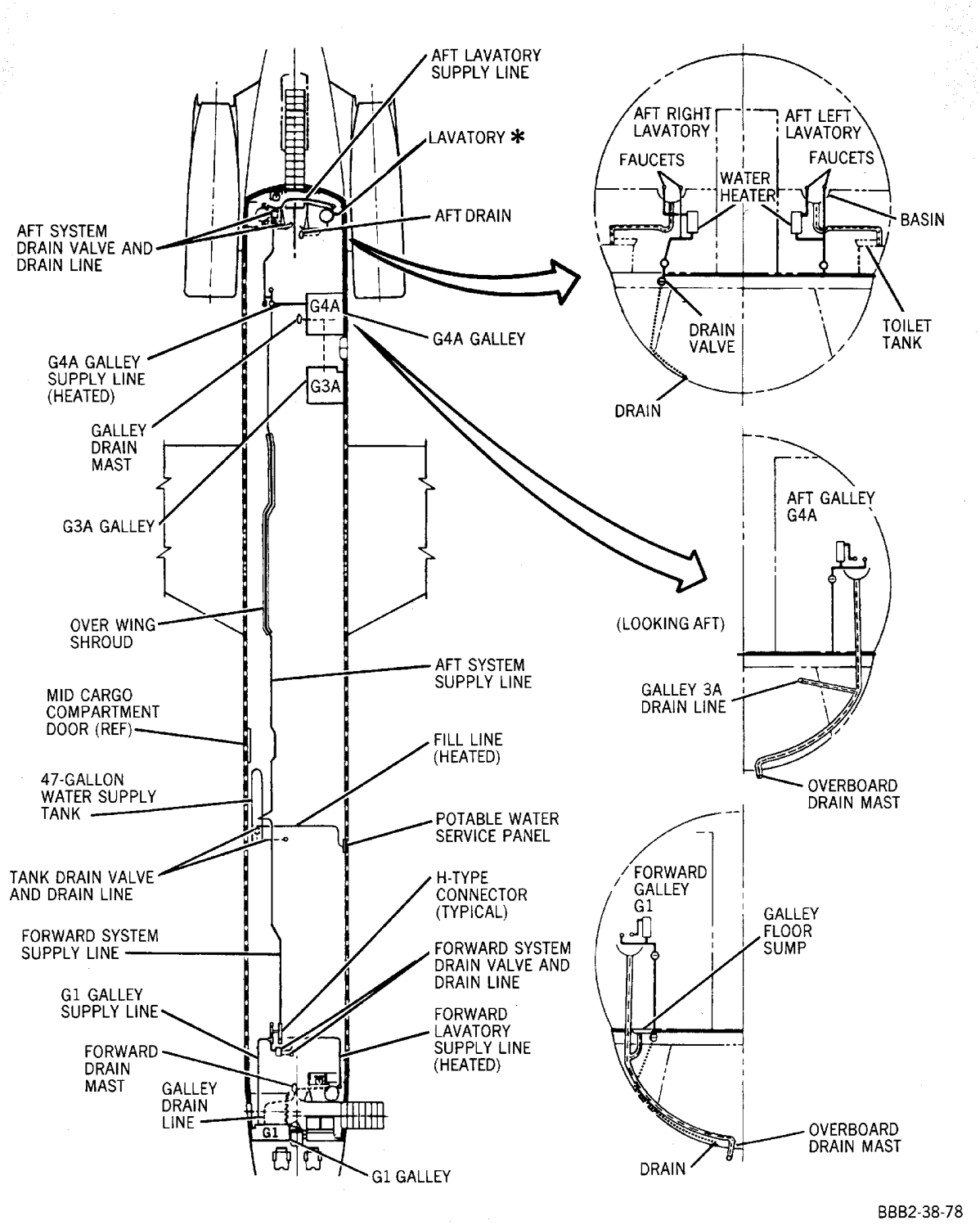
(16) Lavatory Faucets - A combination faucet is installed on each lavatory washbasin. The faucet contains two separate self-closing valves, one for hot and one for cold water. The self-closing valve assembly is removed from the faucet to replace the locknut gasket, packing ring, and seat ring if faucet leaks.



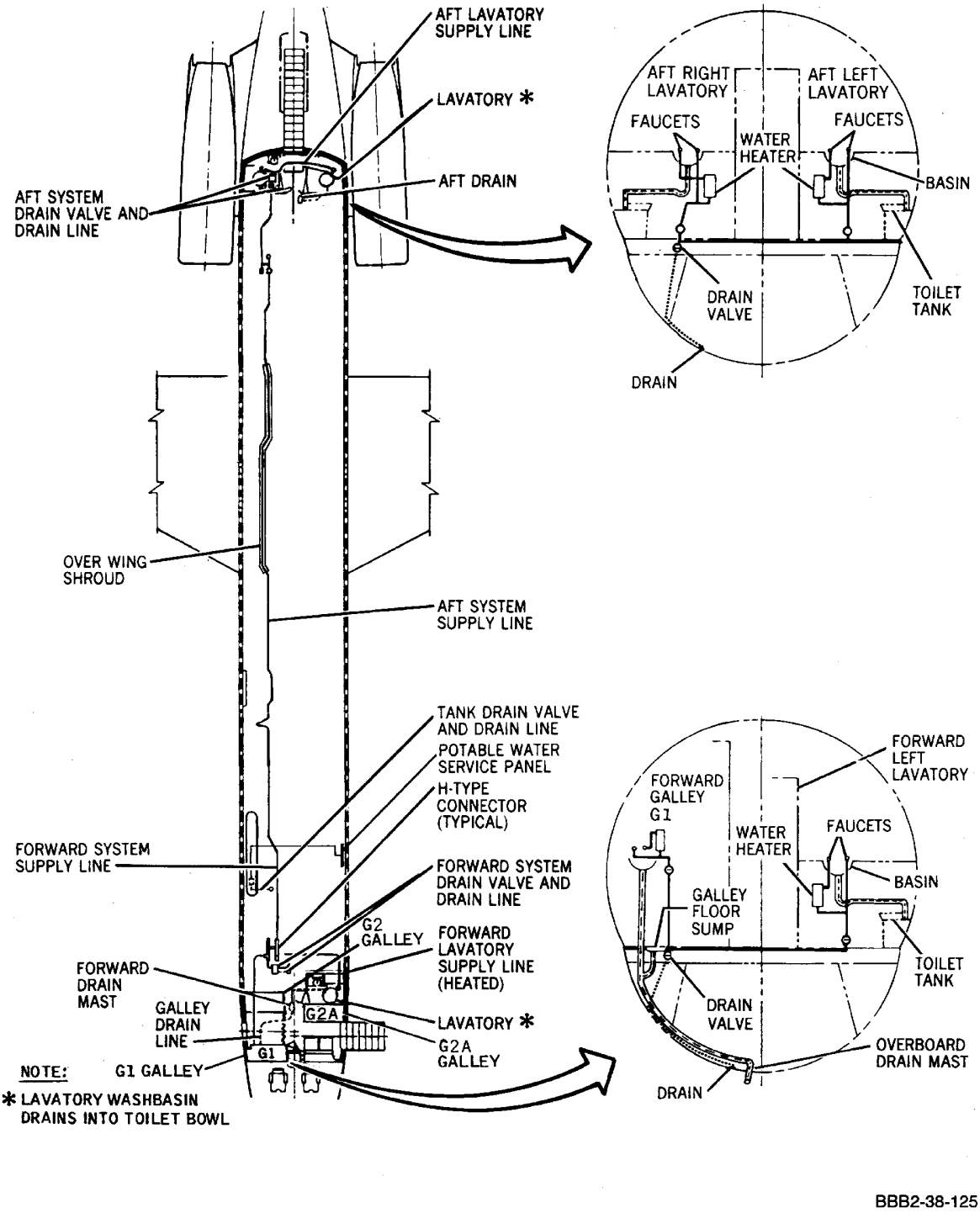
Water Supply System
Figure 1/38-10-00-990-807 (Sheet 1 of 5)



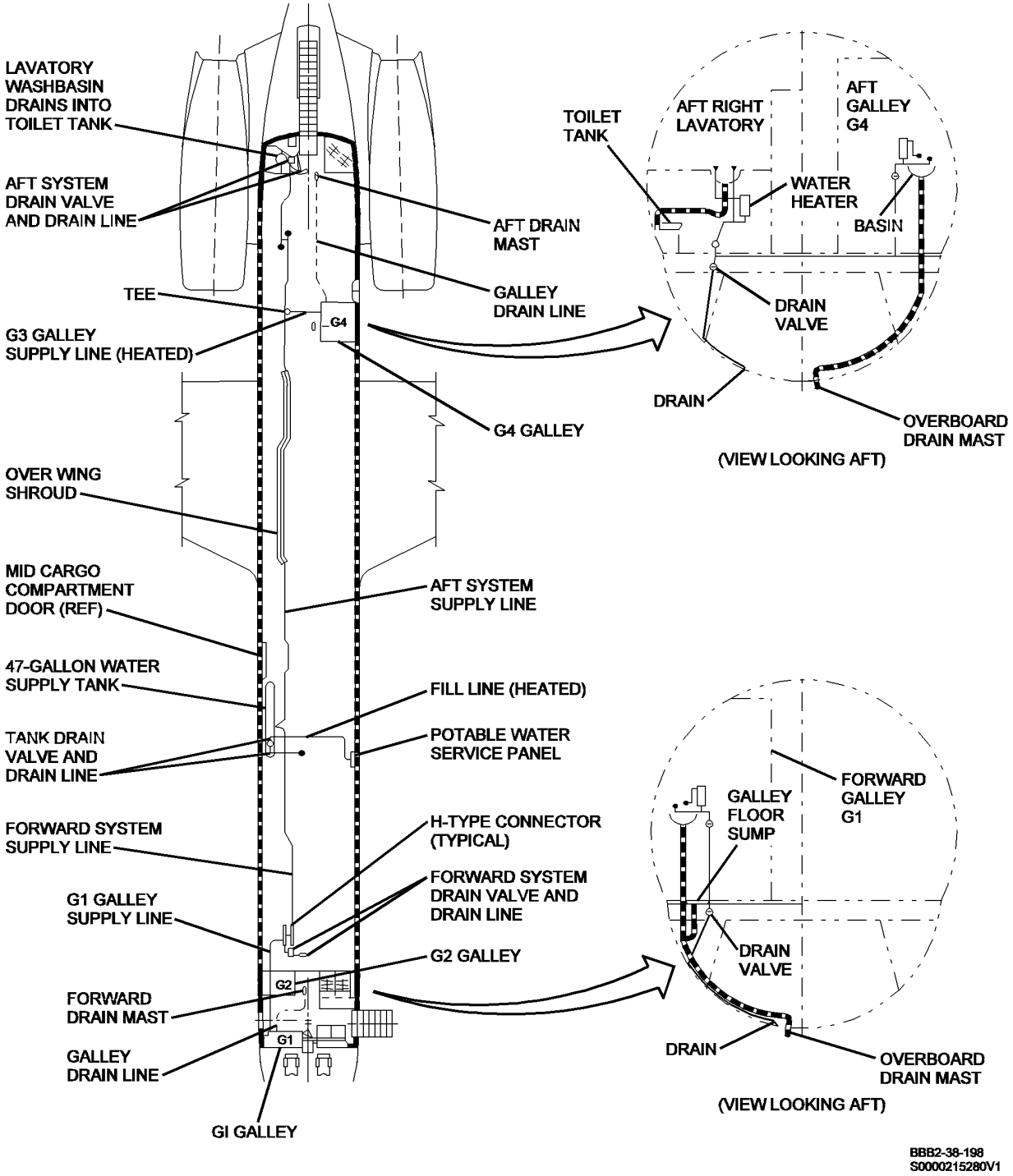
Water Supply System
Figure 1/38-10-00-990-807 (Sheet 2 of 5)



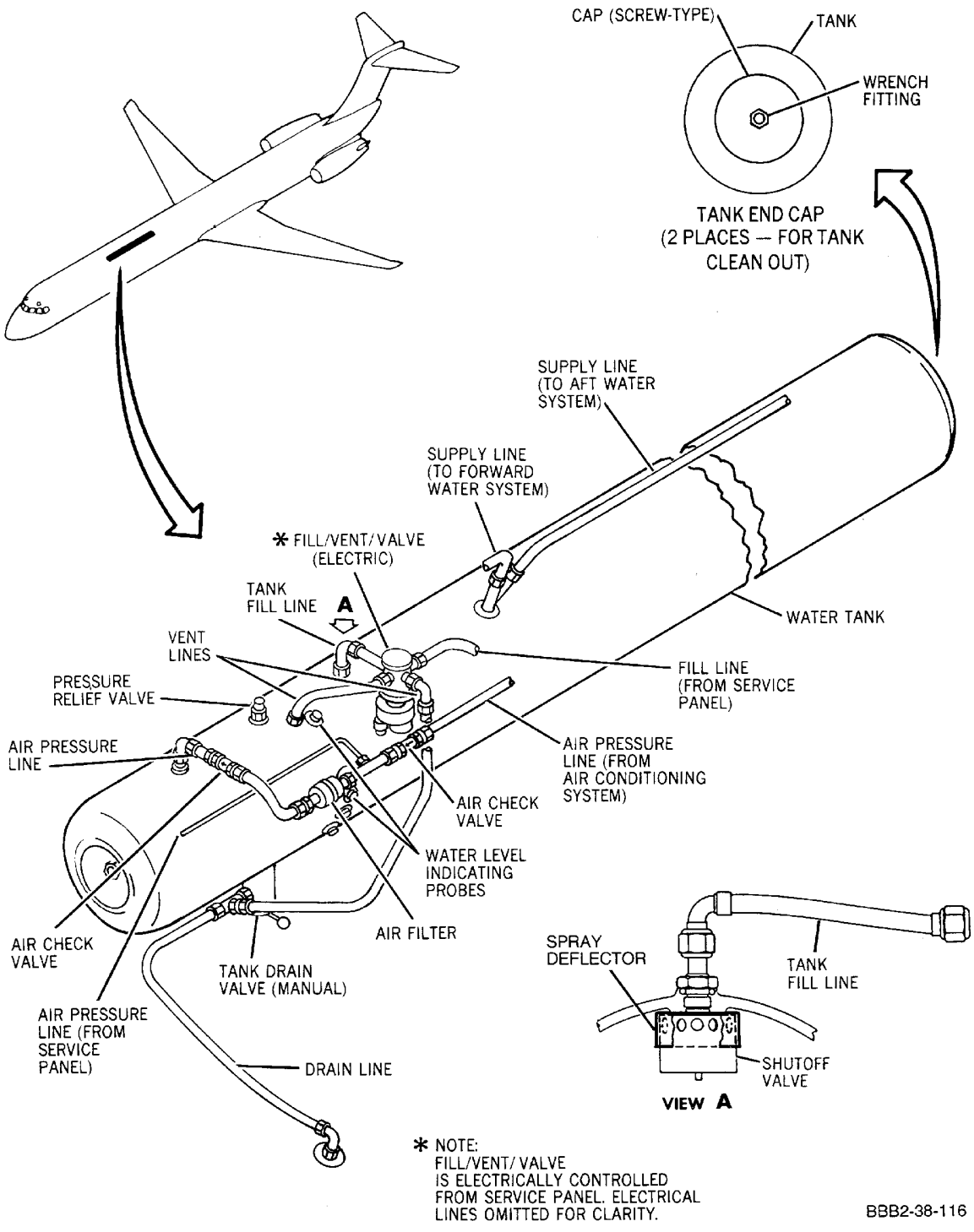
Water Supply System
Figure 1/38-10-00-990-807 (Sheet 3 of 5)



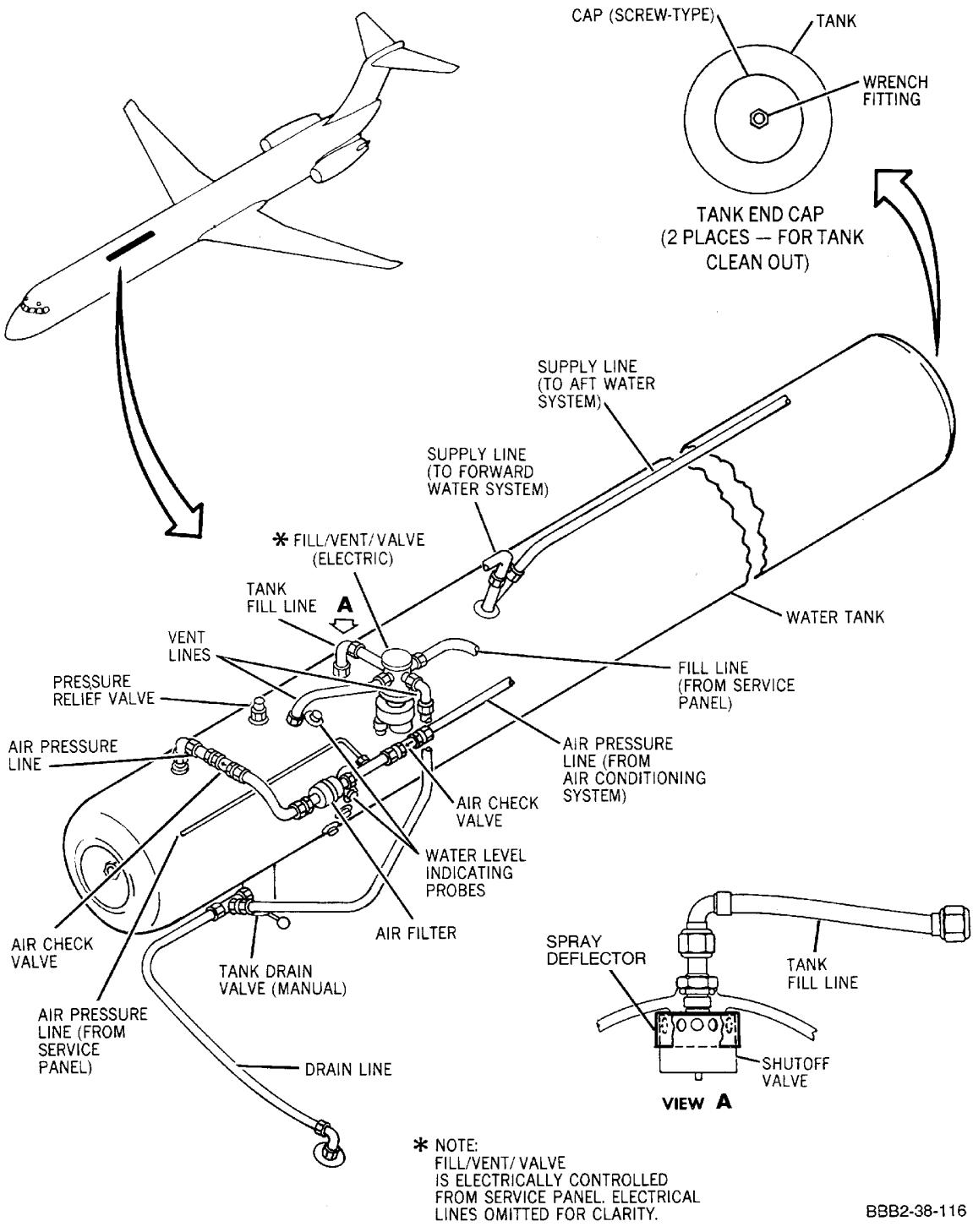
Water Supply System
Figure 1/38-10-00-990-807 (Sheet 4 of 5)



Water Supply System
Figure 1/38-10-00-990-807 (Sheet 5 of 5)

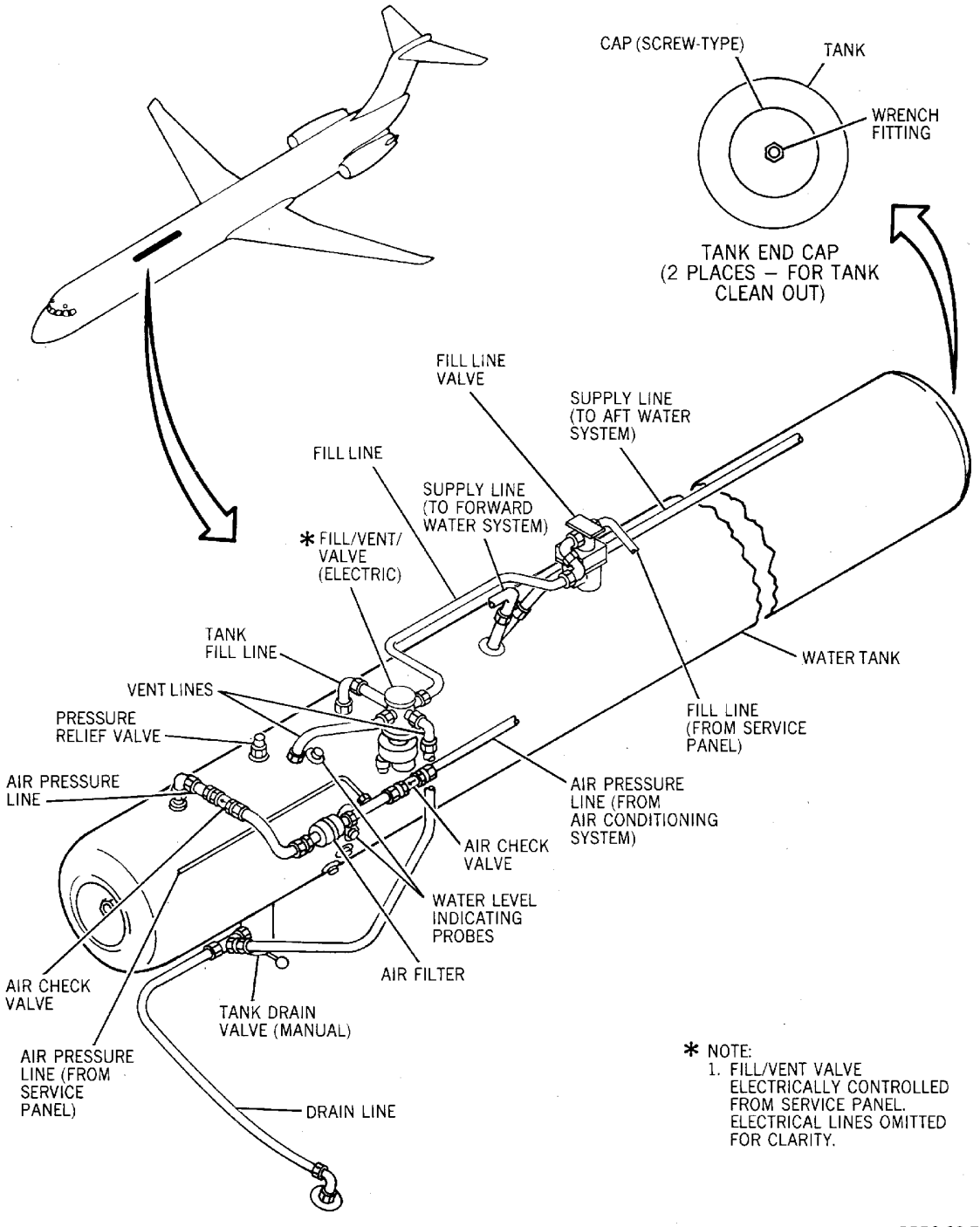


Water Supply Tank
Figure 2/38-10-00-990-808 (Sheet 1 of 3)

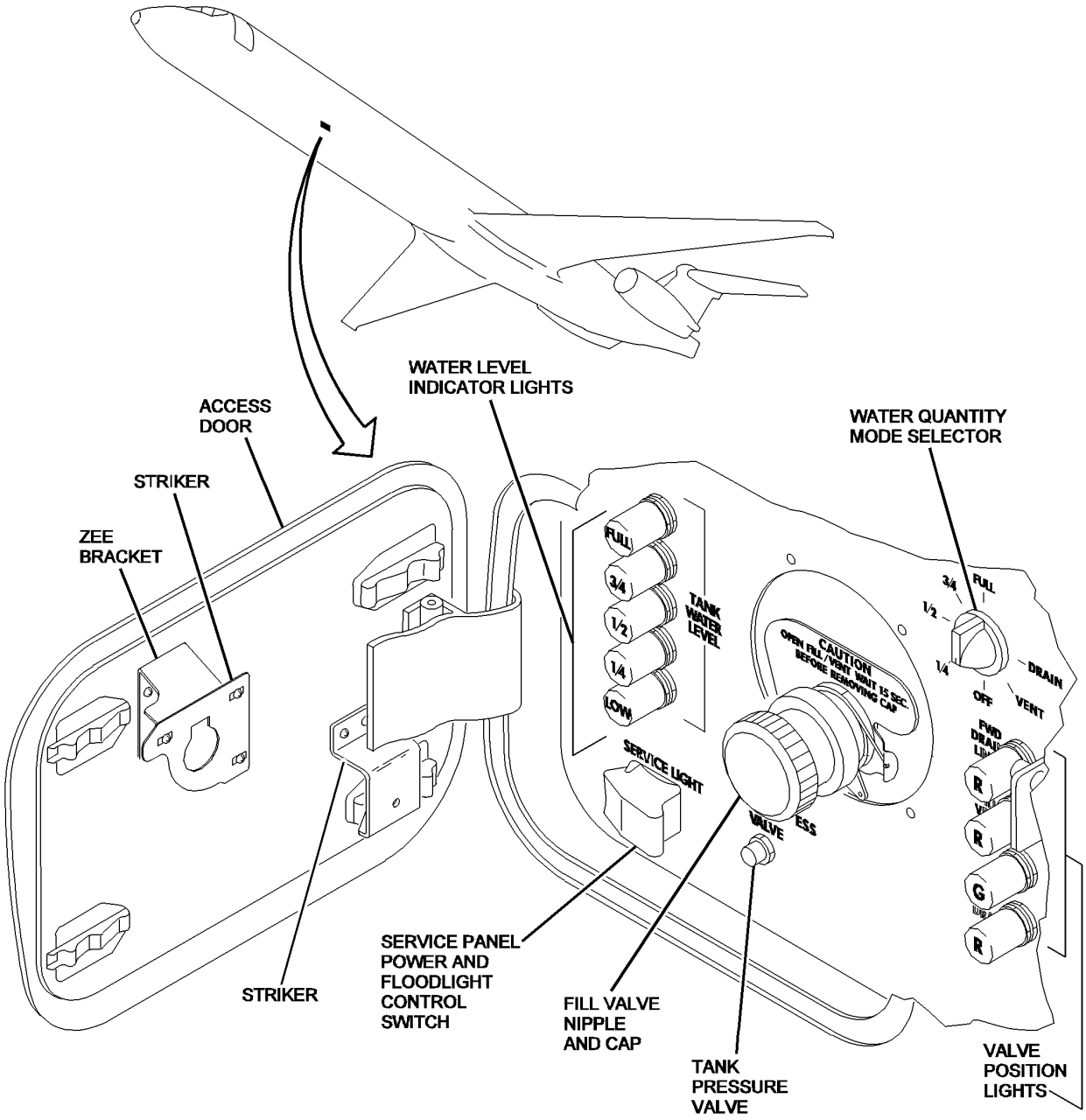


Water Supply Tank
Figure 2/38-10-00-990-808 (Sheet 2 of 3)

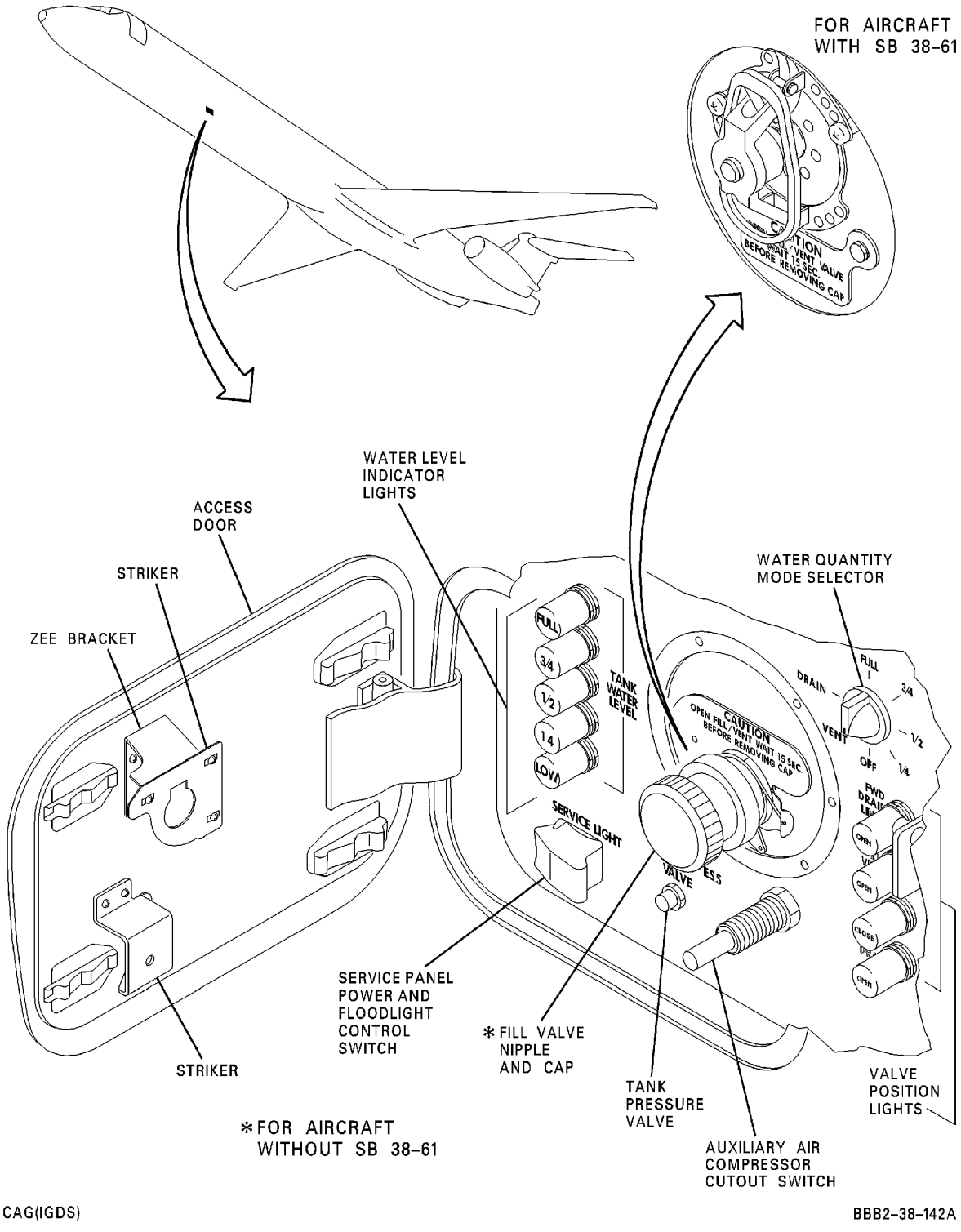
EFFECTIVITY
WJE 405-411, 875-881, 883, 884; With SB 38-39



Water Supply Tank
Figure 2/38-10-00-990-808 (Sheet 3 of 3)



Water Service Panel
Figure 3/38-10-00-990-809 (Sheet 1 of 2)



Water Service Panel
Figure 3/38-10-00-990-809 (Sheet 2 of 2)

EFFECTIVITY
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

1. WATER SUPPLY SYSTEM - TROUBLE SHOOTING

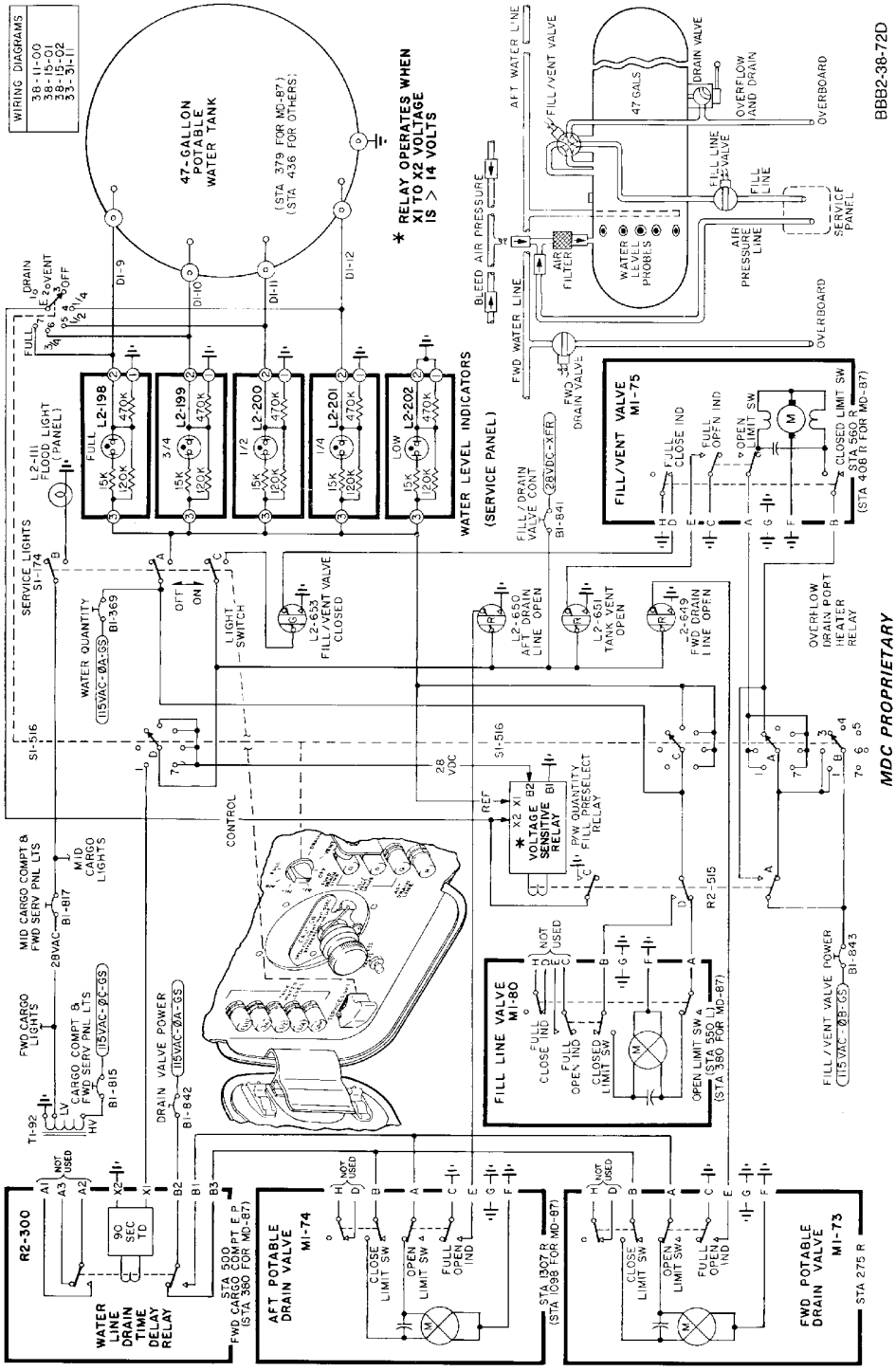
NOTE:
CHECK AND REPLACE COMPONENTS IN THE ORDER SHOWN (i.e. STEPS 1, 2, ETC.).

POSSIBLE CAUSE, CHECK AND REPLACE AS REQUIRED.

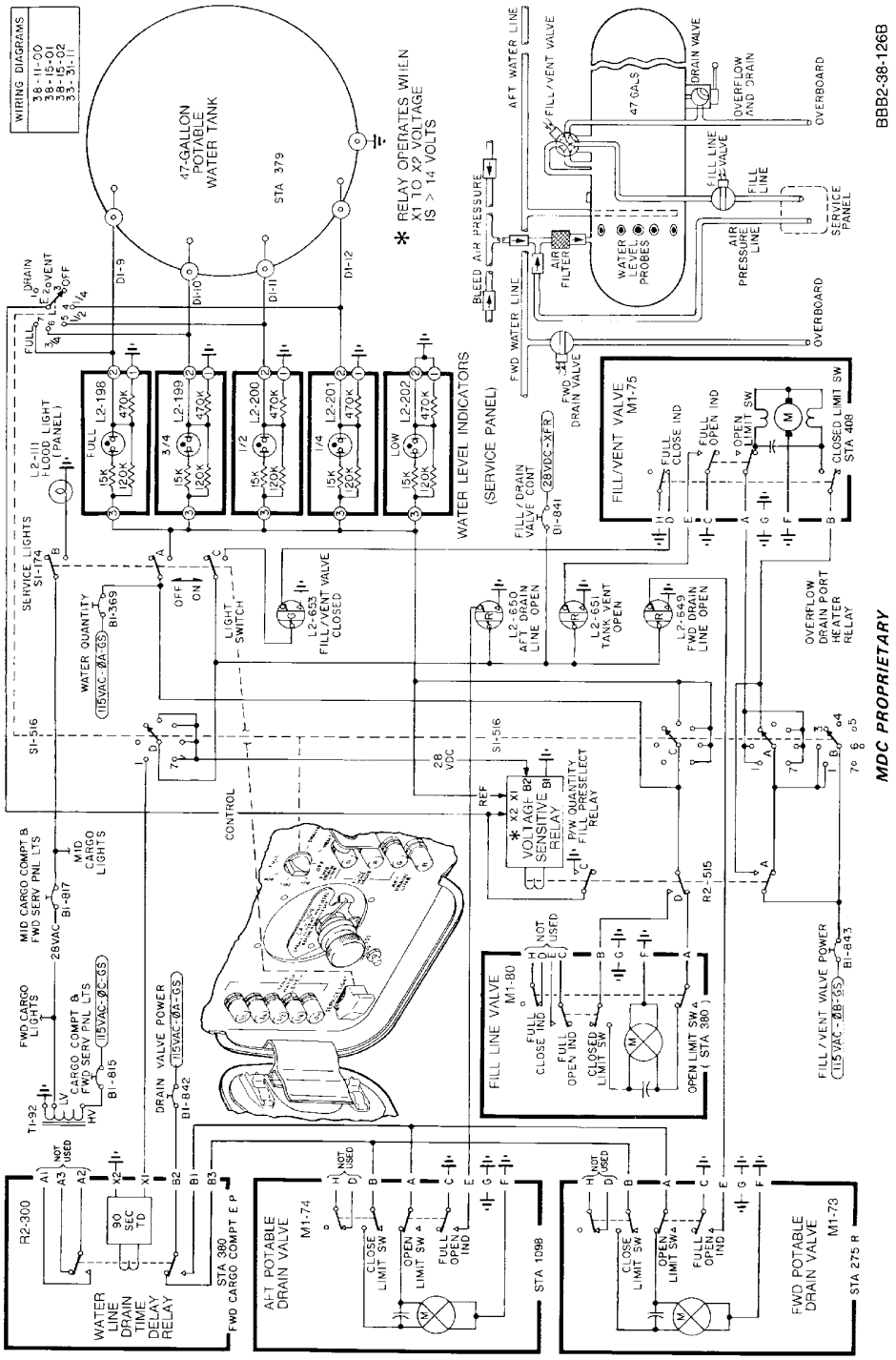
TROUBLE/SYMPTOM	OBVIOUS FAULTS; OPEN CIRCUIT BREAKERS, INCORRECT POSITIONING OF SWITCHES OR VALVES, NO WATER IN TANK, WATER TANK NOT PRESSURIZED, & LOOSE OR FAULTY WIRING.	CLOGGED FILL LINE	CLOGGED VENT LINE	RESTRICTION IN SUPPLY LINE	MANUAL SAFTY RESET SWITCH OPEN	HEATER THERMOSTAT IMPROPERLY ADJUSTED	DEFECTIVE HEATING ELEMENT	CHECK VALVE IN AIR PRESSURE LINE DEFECTIVE	AIR VALVE AT SERVICE PANEL DEFECTIVE	DEFECTIVE THERMOSTAT	FAILED FILL/VENT VALVE	FAILED FILL VALVE	CLOGGED AIR FILTER	FAILED SYSTEM DRAIN VALVE	CLOGGED DRAIN LINE	SUPPLY LINE LEAK
WATER SUPPLY TANK WILL NOT FILL.	1	4	5							2	3					
WATER DOES NOT FLOW PROPERLY FROM FAUCETS	1			2								3				
LAVATORY WATER DOES NOT HEAT	1				2		3									
LAVATORY WATER TOO HOT						1	2									
FILL AND OVERFLOW VALVE INOPERATIVE	1									2	3					
SYSTEM DRAIN VALVES INOPERATIVE	1												2			
WATER TANK DRAIN VALVE INOPERATIVE	1													2		
WATER TANK WILL NOT HOLD PRESSURE FROM GROUND SERVICE AIR PRESSURE LINE	1						3	4							2	
WATER LINE HEATERS DO NOT HEAT.	1								2							

BBB2-38-113

Water Supply System -- Trouble Shooting
Figure 101/38-11-00-990-801



Water Supply System -- Trouble Shooting Schematic
Figure 102/38-11-00-990-802 (Sheet 1 of 2)



Water Supply System -- Trouble Shooting Schematic
Figure 102/38-11-00-990-802 (Sheet 2 of 2)

WATER SUPPLY SYSTEM - SERVICING

1. General

A. The water supply system is serviced from an external service panel located on the left side of the aircraft between the forward passenger door and wing.

B. The water system should be cleaned and sterilized after any major repair to the system, when finding contamination in the water, and regularly at a set interval of time.

C. The descaling procedure removes hard deposits from the water system.

(1) Glyco-San is an aggressive cleaner and disinfectant, for use when mineral scale is present. Boeing does not recommend general or frequent use as a disinfectant.

(2) Initial soak is recommended when descale cleaning has not been performed in over 360 days.

(3) Periodic soak is recommended when descale cleaning is performed every 180 to 360 days.

(4) It may take several flush steps to completely remove the cleaner from the system.

D. When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

CAUTION: WHEN DRAINING SYSTEM DURING COLD WEATHER SERVICING (FREEZING TEMPERATURES), MAKE CERTAIN THAT GALLEY COFFEEMAKERS ARE ALSO DRAINED. FAILURE TO DO SO CAN CAUSE DAMAGE TO COFFEEMAKER WATER TANK.

E. The water system can be pressure or gravity drained. Pressure draining is recommended when possible.

NOTE: Water system should be pressure drained when aircraft is parked without heat on overnight or extended stops in freezing temperatures.

F. For filling potable water system when aircraft is to be prepared for dispatch. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 301

Name and Number	Manufacturer
Sodium hypochlorite (5 percent solution) DPM 2608	Chlorine bleach commercially available
Aerowash A (Detergent) DPM 2670	Novamax Technologies, Inc. Atlanta, GA
Adapters, hose (fill, drain, & pressure line)	
Acid, acetic, glacial DPM 925	Braun Chemical Co.
Chlorine Dioxide (Purogene- Disinfectant) DPM 6062	Bio-Cide Chemical Co.
Low-pressure test gage (0-75) psi	
Pressure cylinder (nitrogen gas or compressed air)	
Containers, water drain	

Table 301 (Continued)

Name and Number	Manufacturer
Cleaner, Potable Water System Cleaner, AMS 1550B	Glyco-San

3. Servicing

A. Pressure drain water system as follows:

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

Open these circuit breakers and install safety tags:

FREEZE PROTECTION CBP

Row	Col	Number	Name
		B1-855	WATER SYSTEM FREEZE PROTECTION AFT
		B1-854	WATER SYSTEM FREEZE PROTECTION FWD

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-849	FWD WATER SYS FREEZE PROTECT

(2) Check that shutoff valve, located in lavatory washbasin cabinet, is positioned between 1/4 and full open.

(3) Check that external source of electrical power is provided for aircraft.

(4) Place service light switch in ON position.

NOTE: The service light switch must be in the ON position to energize the water quantity indicating system.

(5) Position containers under system line drains and drain masts. Connect ground drain hose to water tank drain/ overflow port and direct opposite end of drain hose into drain container. (DISTRIBUTION, SUBJECT 36-10-00, Figure 1)

(6) Manually place water tank drain valve in open position; drain valve is accessible on tank bottom in right tunnel aft of forward cargo compartment door.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(7) Open this circuit breaker and install safety tag:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER

(8) Rotate water quantity pre-select switch to DRAIN position.

NOTE: There is a 90 second delay before the forward and aft drain valves will open.

(9) Remove cap from TANK PRESS VALVE on service panel, connect external pressure hose to valve, and pressurize water system to 40(±2) psi (276(±14) kPa) using clean, oil free air.

NOTE: Maintain air pressure in system until system lines are drained. Do not exceed 40(±2) psi (276(±14) kPa).

(10) Open lavatory faucets and allow air pressure to bleed off through faucets; then, close faucets.

CAUTION: WHEN DRAINING SYSTEM DURING COLD WEATHER SERVICING (FREEZING TEMPERATURES), MAKE CERTAIN THAT GALLEY COFFEEMAKERS ARE ALSO DRAINED. FAILURE TO DO SO CAN CAUSE DAMAGE TO COFFEEMAKER WATER TANK.

(11) Allow water system and tank drain valves to remain in open position until system lines are completely drained.

(12) Depressurize and disconnect external pressure hose from TANK PRESS VALVE on service panel, and install cap.

(13) Remove drain hose and containers.

(14) Remove the safety tag and close this circuit breaker:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER

(15) Rotate water quantity pre-select switch to OFF position and close water tank manual drain valve.

(16) Clean and dry service panel thoroughly.

(17) Place service light switch in OFF position and lower switch guard.

(18) For aircraft without Service Bulletin 38-061, install cap on fill valve nipple.

(19) For aircraft with Service Bulletin 38-061, close and latch lever lock cap on potable water service panel fill valve nipple.

(20) Close and secure panel access door.

NOTE: Service light switch guard must be in guard position before access door can be closed.

CAUTION: LAVATORY WATER HEATER CIRCUIT BREAKERS ON LOWER EPC CIRCUIT BREAKER PANEL SHOULD BE OPEN PRIOR TO DRAINING WATER SYSTEM. ELECTRICAL POWER SHOULD BE REMOVED FROM LAVATORY WATER HEATERS ANY TIME HEATER TANKS ARE NOT FILLED WITH WATER.

(21) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-849	FWD WATER SYS FREEZE PROTECT
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(22) When aircraft is to be prepared for dispatch, fill potable water system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

B. Gravity drain water system as follows:

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Make certain that shutoff valve handle in each lavatory is positioned between 1/4 and full open.

(3) Check that external source of electrical power is provided for aircraft.

(4) Place service light switch in ON position.

NOTE: The service light switch must be in the ON position to energize the water quantity indicating system.

(5) Position containers under system line drains and drain masts. Connect ground drain hose to water tank drain and direct opposite end of drain hose into drain container. (POTABLE, SUBJECT 38-10-00, Figure 1)

(6) Rotate water quantity pre-select switch to DRAIN position.

NOTE: There is a 90 second delay before the forward and aft drain valves will open.

(7) Place water tank drain valve in open position; drain valve is accessible on tank bottom in forward cargo compartment right tunnel immediately aft of forward cargo compartment door.

CAUTION: WHEN DRAINING SYSTEM DURING COLD WEATHER SERVICING (FREEZING TEMPERATURES), MAKE CERTAIN THAT GALLEY COFFEEMAKERS ARE ALSO DRAINED. FAILURE TO DO SO CAN CAUSE DAMAGE TO COFFEEMAKER WATER TANK.

(8) Allow water system and tank drain valves to remain in open position until system lines are completely drained; then, rotate water quantity pre-select switch to OFF position and close water tank manual drain valve.

(9) Remove drain hose and containers.

(10) Clean and dry service panel thoroughly.

(11) Place service light switch in OFF position and lower switch guard.

(12) For aircraft without Service Bulletin 38-061, install cap on fill valve nipple.

(13) For aircraft with Service Bulletin 38-061, close and latch lever lock cap on potable water service panel fill valve nipple.

(14) Close and secure panel access door.

NOTE: Service light switch guard must be in guard position before access door can be closed.

CAUTION: LAVATORY WATER HEATER CIRCUIT BREAKERS ON LOWER EPC CIRCUIT BREAKER PANEL SHOULD BE OPEN PRIOR TO DRAINING WATER SYSTEM. ELECTRICAL POWER SHOULD BE REMOVED FROM LAVATORY WATER HEATERS ANY TIME HEATER TANKS ARE NOT FILLED WITH WATER.

(15) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(16) When aircraft is to be prepared for dispatch, fill potable water system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

C. Flushing Water System

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Check that shutoff valve, located in lavatory washbasin cabinet, is positioned between 1/4 open and full open.

(3) Check that external source of electrical power is provided for aircraft.

(4) Place service light switch in ON position.

NOTE: The service light switch must be in the ON position to energize the water quantity indicating system.

(5) Connect ground drain hose to water tank drain/overflow port, position containers under system line drains and drain masts, and direct opposite end of drain hose into drain container. (POTABLE, SUBJECT 38-10-00, Figure 1)

(6) Rotate water quantity pre-select switch to DRAIN position.

NOTE: There is a 90 second delay before the forward and aft drain valves will open.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(7) Open this circuit breaker and install safety tag:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-842	DRAIN VALVE POWER

NOTE: Opening circuit breaker is required to prevent drain valve from closing when pre-select switch is rotated.

(8) Rotate pre-select switch to FULL position.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(9) Open this circuit breaker and install safety tag:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-369	WATER QUANTITY

NOTE: Opening circuit breaker is required to keep fill line valve open when tank is full.

(10) Connect potable water supply hose to fill valve nipple.

(11) Fill system at no more than 10 psi (69 kPa) pressure.

(12) When system is in a near full condition, open lavatory faucets, all positions of galley coffeemaker selector valve (if installed), and tank drain valve (by opening valve on tank bottom); then, allow water to flow through each valve and outlet until clean and clear. Close faucets and valves.

(13) Disconnect and remove water supply hose from fill valve nipple on service panel.

(14) For aircraft without Service Bulletin 38-061, install cap on fill valve nipple.

(15) For aircraft with Service Bulletin 38-061, close and latch lever lock cap on potable water service panel fill valve nipple.

(16) Allow system to drain completely; then, close tank drain valve.

(17) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-842	DRAIN VALVE POWER
		B1-369	WATER QUANTITY

(18) Rotate pre-select switch to OFF position.

(19) Remove drain hose and containers.

CAUTION: LAVATORY WATER HEATER CIRCUIT BREAKERS ON LOWER EPC CIRCUIT BREAKER PANEL SHOULD BE OPEN PRIOR TO DRAINING WATER SYSTEM. ELECTRICAL POWER SHOULD BE REMOVED FROM LAVATORY WATER HEATERS ANY TIME HEATER TANKS ARE NOT FILLED WITH WATER.

(20) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(21) When aircraft is to be prepared for dispatch, fill potable water system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, page 301)

D. Cleaning Water System with Aerowash A Detergent

(1) Make certain that successful leak test has been performed before filling system with Aerowash A detergent cleaning solution. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 501)

(2) If applicable, remove all galley water filter elements; replace filter covers.

NOTE: When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

WARNING: LIQUID DETERGENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LIQUID DETERGENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LIQUID DETERGENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

WARNING: ALL CHEMICALS MUST BE DILUTED EXACTLY ACCORDING TO INSTRUCTIONS TO PREVENT TOXICITY AND TO ENSURE PROPER STERILIZATION AND CLEANING ACTION.

(3) Prepare 3 to 6-ounce-per-gallon (170.1 grams-per-liter) cleaning solution of Aerowash A detergent in potable water.

NOTE: Detergent may be added to water as it is being pumped into aircraft system.

(4) Prepare water supply system for cleaning as follows:

(a) Check that external source of electrical power is provided for aircraft.

(b) Place service light switch in ON position.

NOTE: The service light switch must be in the ON position to energize the water quantity indicating system.

(c) Connect ground drain hose to water tank drain, position containers under system line drains and drain masts, and direct opposite end of drain hose into drain containers. (POTABLE, SUBJECT 38-10-00, Figure 1)

(5) Fill system at no more than 10 psi (69 kPa) pressure with prepared cleaning solution, as follows:

(a) Connect cleaning solution supply hose and adapter to fill valve nipple on service panel.

(b) Rotate water quantity pre-select switch to FULL position.

(c) When system is in a near full condition, open lavatory faucets, all positions of galley coffeemaker selector valve (if installed), system drain lines (by rotating water quantity pre-select switch to DRAIN position), and tank drain valve (by opening valve on tank bottom); then, allow a small amount of cleaning solution to flow through each valve and outlet. Close faucets and valves.

NOTE: When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

NOTE: There is a 90 second delay before the forward and aft drain valves will open.

(d) When tank is full rotate pre-select switch to OFF position.

(6) Shutdown cleaning solution supply source and allow solution to stand in system for one-half hour.

(7) Disconnect and remove cleaning solution supply hose and adapter from fill valve nipple on service panel.

(8) After one-half hour, water tank and all distribution lines must be drained and thoroughly flushed with potable water. (Paragraph 3.)

(9) When aircraft is to be prepared for dispatch, fill potable water system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

E. Sterilizing Water System With Sodium Hypochlorite Solution

(1) Drain potable water system completely before sterilizing solution is pumped into system. (Paragraph 3.)

(2) If applicable, remove all galley water filter elements; replace filter covers.

NOTE: When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

WARNING: SODIUM HYPOCHLORITE (BLEACH) IS AN AGENT THAT IS POISONOUS, CORROSIVE, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SODIUM HYPOCHLORITE (BLEACH) IS USED.

- DO NOT USE IN AREA WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SODIUM HYPOCHLORITE (BLEACH) IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATH THE GAS.
- DO NOT LET SODIUM HYPOCHLORITE (BLEACH) HAVE CONTACT WITH ACIDS AND AMMONIA.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THESE HAZARDOUS AGENTS.

WARNING: ALL CHEMICALS MUST BE DILUTED EXACTLY ACCORDING TO INSTRUCTIONS TO PREVENT TOXICITY AND TO ENSURE PROPER STERILIZATION AND CLEANING ACTION.

(3) Prepare chlorinated water solution made by mixing 15 fluid ounces (425.3 grams) of 5 percent sodium hypochlorite solution and 100 US gallons (83.3 Imperial gallons) (378.5 liters) of potable water.

NOTE: If the sodium hypochlorite solution is added as water is being pumped into the water system, make certain the final solution is 15 fluid ounces (425.3 grams) of 5 percent sodium hypochlorite solution per 100 US gallons (83.3 Imperial gallons)(378.5 liters) of potable water.

(4) Place service light switch in ON position.

NOTE: The service light switch must be in the ON position to energize the water quantity indicating system.

(5) Connect ground drain hose to water tank drain, position con-tainers under system line drains and drain masts, and direct opposite end of drain hose into drain containers. (POTABLE, SUBJECT 38-10-00, Figure 1)

(6) Fill water system at no more than 10 psi (69 kPa) pressure with above prepared solution, as follows:

(a) Connect sodium hypochlorite sterilizing solution supply hose and adapter to fill valve nipple on service panel.

(b) Rotate water quantity pre-select switch to FULL position.

(c) When system is in near full condition, open lavatory faucets, all positions of galley coffeemaker selector valve (if installed), system drain lines (by rotating water quantity pre-select switch to DRAIN position), and tank drain valve (by opening valve on tank bottom); then, allow small amount of solution to flow through each valve and outlet. Close faucets and valves.

NOTE: When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

NOTE: There is a 90 second delay before the forward and aft drain valves will open.

(d) Close sodium hypochlorite sterilizing solution supply source and allow chlorinated water solution to stand in system for minimum of 3 3/4 hours and maximum of 4 1/4 hours.

(e) Disconnect sodium hypochlorite sterilizing solution supply hose and adapter to fill valve nipple on service panel.

(7) Drain tank and system lines by opening tank drain valve and placing service panel pre-select switch to DRAIN position.

NOTE: There is a 90 second delay before the forward and aft drain valves will open.

(8) After tank and system lines are completely drained, flush system with potable water until no chlorine odor is detect-able. (Paragraph 3.)

(9) Remove drain hose and containers.

(10) Install new filter elements in galley water filters.

(11) When aircraft is to be prepared for dispatch, fill potable water system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

F. Sterilizing Water System With Chlorine Dioxide Solution

(1) Drain potable water system completely before chlorine dioxide sterilizing solution is pumped into system. (Paragraph 3.)

(2) If applicable, remove all galley water filter elements; replace filter covers.

NOTE: When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

WARNING: CHLORINE DIOXIDE DISINFECTANT IS AN AGENT THAT IS POISONOUS, AN OXIDIZER, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN CHLORINE DIOXIDE DISINFECTANT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET CHLORINE DIOXIDE DISINFECTANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATH THE GAS.
- DO NOT LET CHLORINE DIOXIDE DISINFECTANT HAVE CONTACT WITH ACIDS.

WARNING: WHITE VINEGAR IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN WHITE VINEGAR IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET WHITE VINEGAR IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WARNING: GLACIAL ACETIC ACID IS AN AGENT THAT IS FLAMMABLE AND CORROSIVE. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN GLACIAL ACETIC ACID IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET GLACIAL ACETIC ACID IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THESE HAZARDOUS AGENTS.

(WARNING PRECEDES)

WARNING: ALL CHEMICALS MUST BE DILUTED EXACTLY ACCORDING TO INSTRUCTIONS TO PREVENT TOXICITY AND TO ENSURE PROPER STERILIZATION AND CLEANING ACTION.

(3) Prepare sterilizing solution. For each 100 US gallons (83.3 Imperial gallons) (378.5 liters) of sterilizing solution required, prepare mixture of two gallons (1.66 Imperial gallons) (7.57 liters) potable water, 10 fluid ounces (283.5 grams) chlorine dioxide concentrate and 6 fluid ounces (170.1 grams) of vinegar or 5% solution of acetic acid. (One volume acid plus 19 volumes water) in clean container. Allow mixture to stand five minutes before adding additional 98 gallons (81.60 Imperial gallons) (370.96 liters) of potable water. Prepared mixture may be added to systems tanks while water is being pumped in.

NOTE: If the chlorine dioxide solution is added as water is being pumped into the water system, make certain the final solution is 10 fluid ounces (283.5 grams) chlorine dioxide concentrate and 6 fluid ounces (170.1 grams) of vinegar or 5% solution of acetic acid per 100 US gallons (83.3 Imperial gallons) (378.5 liters) of potable water.

(4) Place service light switch in ON position.

NOTE: The service light switch must be in the ON position to energize the water quantity indicating system.

(5) Fill water system at no more than 10 psi (69 kPa) pressure with above prepared solution, as follows:

(a) Connect sterilizing solution supply hose and adapter to fill valve nipple on service panel.

(b) Rotate water quantity pre-select switch to FULL position.

(c) When system is in a near full condition, open lavatory faucets, all positions of galley coffeemaker selector valve (if installed), system drain lines (by rotating water quantity pre-select switch to DRAIN position), and tank drain valve (by opening valve on tank bottom); then, allow a small amount of solution to flow through each valve and outlet. Close faucets and valves.

NOTE: When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

NOTE: There is a 90 second delay before the forward and aft drain valves will open.

(d) Close sterilizing solution supply source valve and allow chlorinated water solution to stand in system for minimum of one hour and maximum of two hours.

(6) Drain tank and system lines by opening tank drain valve and placing pre-select switch on service panel in DRAIN position.

NOTE: With chlorine dioxide sterilization it is not necessary to flush the system before filling with potable water.

(a) After tank and system lines are completely drained, close tank drain by placing pre-select switch on service panel in OFF position.

(7) Disconnect sterilizing solution supply hose and adapter to fill valve nipple on service panel.

(8) Install new filter elements in galley water filters.

(9) When aircraft is to be prepared for dispatch, fill potable water system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

(10) For aircraft without Service Bulletin 38-061, install cap on fill valve nipple.

(11) For aircraft with Service Bulletin 38-061, close and latch lever lock cap on potable water service panel fill valve nipple.

(12) Close service panel door.

NOTE: Service panel light switch guard must be in closed position to close door.

G. Descaling the Water System

NOTE: The intent of this task is to provide a descale cleaning solution to the potable water system. Glyco-San is an aggressive cleaner and disinfectant, for use when mineral scale is present. Boeing does not recommend general or frequent use as a disinfectant.

NOTE: Initial soak is recommended when descale cleaning has not been performed in over 360 days.

NOTE: Periodic soak is recommended when descale cleaning is performed every 180 to 360 days.

NOTE: It may take several flush steps to completely remove the cleaner from the system.

(1) Drain potable water system. (Paragraph 3.)

(2) If applicable, remove all galley water filter elements; replace filter covers.

NOTE: When cleaning and/or sterilizing water system, solution should not be allowed to circulate through coffeemaker (if installed).

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1811, GLYCO-SAN (AMS 1550B)

HAZMAT 1000, REFER TO MSDS

(3) Mix 90 gal (341 l) of Glyco-San cleaning solution with 270 gal (1022 l) of water for each tank..

(4) Place service panel power and floodlight control switch in ON position.

NOTE: The service panel power and floodlight control switch must be in the ON position to energize the water quantity indicating system.

(5) Fill water system at no more than 10 psi (69 kPa) pressure with cleaning solution, as follows:

(a) Connect cleaning solution supply hose and adapter to fill valve nipple on service panel.

(b) Place service panel FILL/VENT VALVE switch in OPEN position.

(c) Check that service panel WATER LINE DRAIN switch is in CLOSE position.

(d) When system is in near full condition, open lavatory faucets and all positions of galley coffeemaker selector valve (if installed); then, allow small amount of solution to flow through each valve and outlet. Close faucets and valves.

NOTE: The cleaning solution has a yellow foam appearance.

(e) Flush each toilet at least twice with a 15 second delay between flushes or until cleaning solution appears.

(f) Close cleaning solution supply source valve.

(g) Disconnect descaling solution supply hose and adapter from fill valve nipple on service panel.

(h) For initial soak, allow solution to stand in system for minimum of six hours.

NOTE: Initial soak is recommended when descale cleaning has not been performed in over 360 days.

(i) For periodic soak, let the cleaning solution soak for a minimum of 4 hours.

NOTE: Periodic soak is recommended when descale cleaning is performed every 180 to 360 days.

(6) After the soak is complete, do the steps that follow:

(a) Open all the faucets and coffee maker valves until the system empties.

(b) Drain the potable water system.

(c) Close all the faucets and coffee maker valves.

(7) Fill the water system.

(8) Pressurize the water system.

(9) Flush the water system as follows:

(a) When system is in near full condition, open lavatory faucets and all positions of galley coffeemaker selector valve (if installed); then, allow water to flow until solution is no longer visible. Close faucets and valves.

(b) Flush each toilet at least twice with a 15 second delay between flushes or until solution is no longer visible.

(c) Drain the potable water system.

(d) Fill the water system.

(e) Pressurize the water system.

(10) Flush the water system again as follows:

(a) When system is in near full condition, open lavatory faucets and all positions of galley coffeemaker selector valve (if installed); then, allow water to flow until solution is no longer visible. Close faucets and valves.

(b) Flush each toilet at least twice with a 15 second delay between flushes or until solution is no longer visible.

(c) Drain the potable water system.

(d) Fill the water system.

(e) Pressurize the water system.

(11) Check the potable water system as follows:

(a) Open one of the galley or lavatory faucets. Half fill a glass container.

(b) Make sure that the water is clear.

1) If the water is clear, continue the procedure.

2) If the water is not clear, do the tasks to drain, fill and flush the system with clean water.

(c) With the cap on the container, shake the container.

(d) Examine the water for foam or bubbles.

1) If no foam or bubbles the system is flushed.

2) If foam or bubbles are visible, do the tasks to drain, fill and flush the system with clean water.

(12) Drain tank and system lines by opening tank drain valve and placing WATER LINE DRAIN switch on service panel in OPEN position.

(a) Allow system to drain completely; then, close tank drain valve and place WATER LINE DRAIN switch on service panel in CLOSE position.

(13) If applicable, install new filter elements in galley water filters.

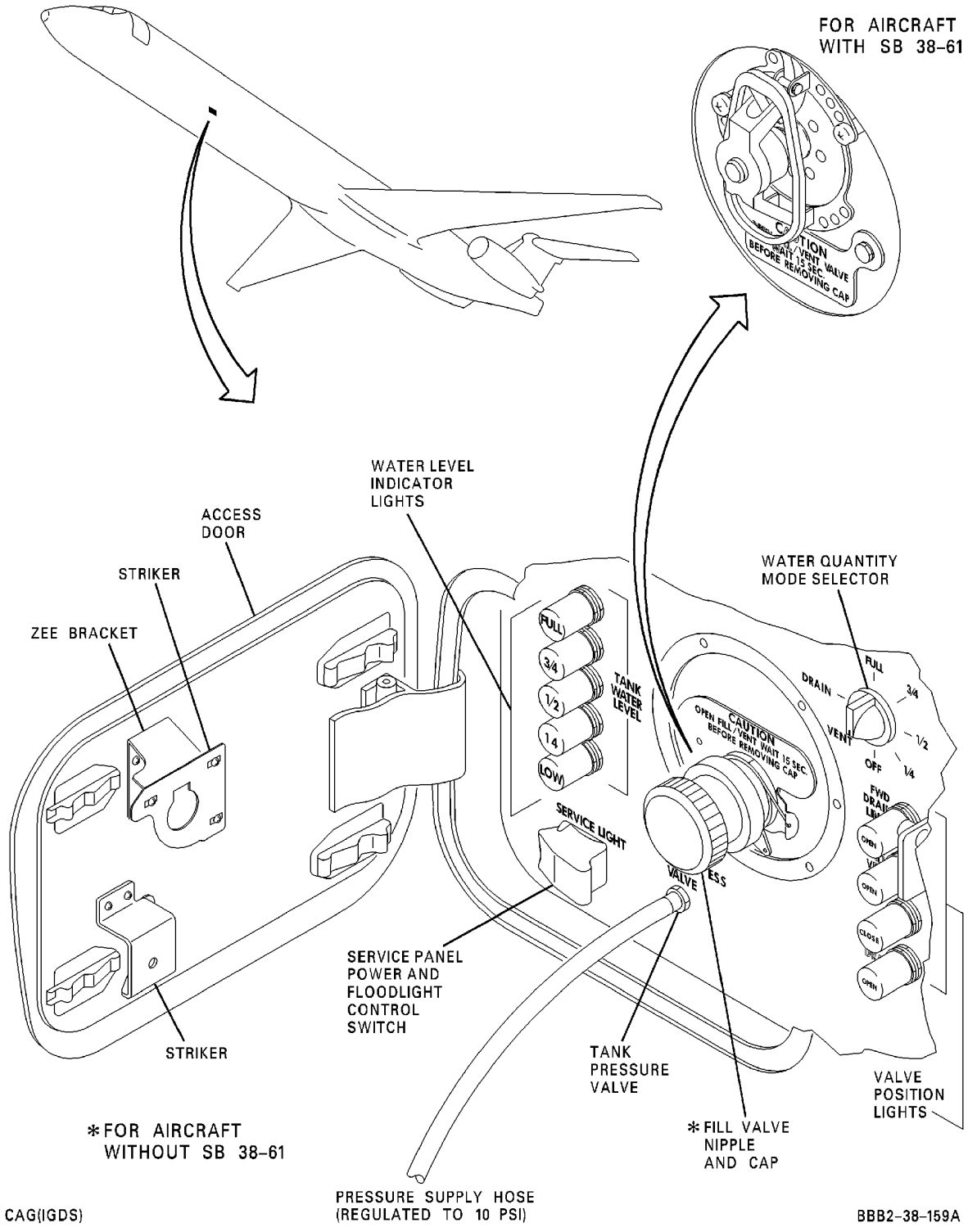
(14) When aircraft is to be prepared for dispatch, fill potable water system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

(15) For aircraft without Service Bulletin 38-061, install cap on fill valve nipple.

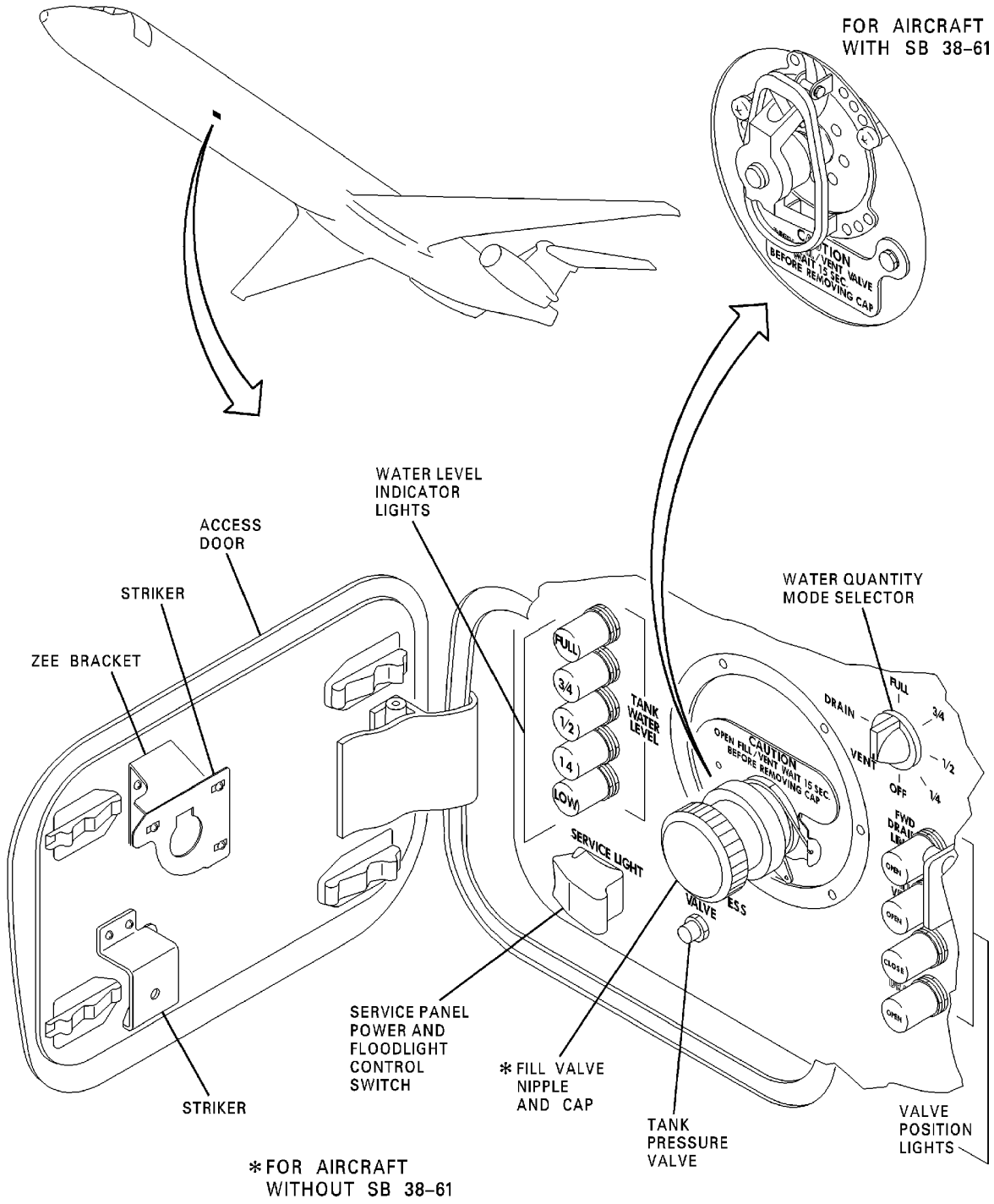
(16) For aircraft with Service Bulletin 38-061, close and latch lever lock cap on potable water service panel fill valve nipple.

(17) Close service panel door.

NOTE: Service panel light switch guard must be in closed position to close door.



Pressure Drain System -- Servicing
Figure 301/38-11-00-990-807



CAG(IGDS)

BBB2-38-161A

Water Fill System -- Servicing
Figure 302/38-11-00-990-808

WATER SUPPLY SYSTEM - ADJUSTMENT/TEST

1. General

A. The adjustment/test information provided in this section contains procedures for conducting pressure and functional tests on the potable water system. Pressure tests can be per-formed on either a full or empty system. However, the pressure test for an empty system should be accomplished whenever a system component is removed or replaced, except for filters.

B. Access for checking the potable water tank and the manually operated tank drain valve is through the sidewall panel located on the right side of the forward cargo compartment immediately aft of the forward cargo compartment door. The lavatory shutoff valves are located in the cabinet below the washbasins in all lavatories.

C. The electrically controlled drain valves, for draining the system foward and aft lines, are accessible through access doors on the right sidewalls of the forward and aft cargo compartments; one located in the forward end of the forward compartment and the other located in the aft end of the aft compartment.

D. The potable water system service panel, located externally between the forward passenger door and wing on the right side of the aircraft, is equipped with a water tank fill nipple, water quantity pre-select switch, fill/vent valve and position indicator lights, water line drain valve and drain valve position indicator lights, water level indicating system, tank pressure valve for pressurizing the water system from an external air pressure source, and door cutout switch for cutting power to the air compressor when the door is open.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 501

Name and Number	Manufacturer
Low-pressure test gage (0-75) psi	
Adapter, hose (fill, drain & pressure lines)	
Test regulator (adjustable type)	
Pressure cylinder (nitrogen gas or compressed air)	
Bubble fluid, 905A DPM 6045	Courtaulds Aerospace Inc.
Plug, AN 806-J12	

3. Adjustment/Test

NOTE: Installations or assemblies of any part of the potable water system should be tested as soon as unit is assembled or installed, particularly if the unit will be inaccessible or hidden by subsequent installations.

A. System Pressure Test (System Empty)

(1) Prepare system for test as follows:

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Open these circuit breakers and install safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(b) Rotate water quantity pre-select switch to VENT position at service panel to relieve system pressure.

(c) Drain tank and system lines. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 301)

(2) Place service panel pre-select switch to OFF position.

(3) Make certain that all lavatory and galley water faucets are closed.

(4) Check that shutoff valves, located in lavatory washbasin cabinets, are positioned between 1/4 open and full open.

CAUTION: PRESSURE MUST NOT BE TAKEN DIRECTLY FROM HIGH-PRESSURE SOURCE. A SUITABLE PRESSURE REDUCING REGULATOR AND SHUTOFF VALVE MUST BE INSTALLED IN PRESSURE SUPPLY LINE.

(5) Install adapter and apply filtered air supply at fill valve nipple on potable water service panel. Pressure source may be either nitrogen gas or oil-free compressed air. Make certain that connection at water tank fill nipple is air tight.

NOTE: Low pressure test gage is connected to supply hose through a "T" installed near the service panel.

(6) Install plug at water tank drain port.

(7) Rotate pre-select switch to 1/4 position.

WARNING: DO NOT LET THE AIR PRESSURE IN THE WATER SYSTEM BECOME MORE THAN 40 PSI (276 KPA). THIS WILL HELP PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(8) Pressurize system at fill nipple on water service panel to 40(+0 to -5) psi (276(+0 to -34.5) kPa) and close test shutoff valve. Allow 5 minutes for temperature equalization, tap test pressure gage and adjust system pressure to 40(+0 to -5) psi (276(+0 to -34.5) kPa), and close test shutoff valve.

(9) Shut off pressure to supply line at test shutoff valve.

WARNING: LEAK TEST BUBBLE FLUID IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LEAK TEST BUBBLE FLUID IS USED.

- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LEAK TEST BUBBLE FLUID IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

(WARNING PRECEDES)

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(10) Make certain no pressure drop occurs for 30 minutes.

CAUTION: USE CARE TO PREVENT BUBBLE FLUID FROM CONTACTING OTHER SURFACES. REMOVE BUBBLE FLUID BY WIPING WITH A CLEAN CLOTH DAMPENED WITH WATER.

(11) If pressure drop is noted in system, locate leak by applying bubble fluid to joints and connections with small brush.

(12) Rework leaking connections as necessary; perform pressure test until leakage stops.

(13) Open test shutoff valve and rotate pre-select switch to DRAIN position to release system pressure, and disconnect adapter and air supply from fill nipple at service panel.

(14) Remove plug from water tank drain port.

(15) Fill potable water system as required. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

B. System Pressure Test (System Full)

(1) Rotate pre-select switch to FULL position at service panel to relieve system pressure.

(2) For aircraft without Service Bulletin 38-061, remove cap from fill valve nipple on potable water tank service panel.

(3) For aircraft with Service Bulletin 38-061, unlatch and open lever lock cap from fill valve nipple on potable water tank service panel.

(4) Connect external potable water supply hose to fill valve nipple.

(5) Fill water tank until FULL indicator light comes on; fill line valve should close.

(6) Disconnect and remove external fill hose.

(7) Rotate pre-select switch to OFF position.

(8) Install adapter at fill nipple on potable water service panel.

(9) Install plug at water tank drain port.

(10) Rotate pre-select switch to VENT position.

(11) Pressure source may be either nitrogen gas or oil free compressed air.

(12) Pressurize water tank to 40 (-0 to +5) psi (276 (-0 to 34.5) kPa); then, close test shutoff valve. Air pressure of 40 (-0 to +5) psi (276 (-0 to 34.5) kPa) must be maintained in system until leak check has been completed.

(13) Check pressure after 30 minutes. If pressure drop occurs within 30 minutes, check all water line connections and valves for leakage and repair as necessary.

(14) Repeat steps (Paragraph 3.B.(10) through Paragraph 3.B.(13)) until required pressure remains for 30 minutes.

(15) Reduce air pressure to zero psi on test gage.

(16) Rotate pre-select switch to OFF position.

(17) Remove adapter and air supply from fill nipple on water service panel.

(18) Remove plug from water tank drain port.

C. System Functional Test

(1) Prepare system for test as follows:

(a) Rotate pre-select switch to VENT position at service panel to relieve system pressure.

(b) Make certain that water tank is completely drained.

(c) For aircraft without Service Bulletin 38-061, remove cap from fill valve nipple on potable water tank service panel.

(d) For aircraft with Service Bulletin 38-061, unlatch and open lever lock cap from fill valve nipple on potable water tank service panel.

(e) Connect external potable water supply hose to fill valve nipple at service panel.

(f) Remove the safety tag and close this circuit breaker:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-369	WATER QUANTITY

(g) Place SERVICE LIGHT switch in ON position. LOW water level indicating light should come on.

NOTE: SERVICE LIGHT switch must be in on position to energize water level indicating system.

(2) Rotate water quantity pre-select switch to DRAIN position. Check that FILL/VENT VALVE OPEN light comes on and CLOSE light goes off. Approximately 90 seconds later FWD DRAIN LINE and AFT DRAIN LINE OPEN lights come on.

(3) Rotate pre-select switch to VENT position. Check that FWD DRAIN LINE and AFT DRAIN LINE OPEN lights go off and FILL/VENT VALVE OPEN light remains on.

(4) Rotate pre-select switch to 1/4 position. Check FILL/VENT VALVE OPEN and TANK WATER LEVEL LOW lights remain on.

NOTE: No other indicator light should be on.

(5) Fill tank at 10 psi (69 kPa) water pressure indicated at service panel. Time required to fill tank to 1/4 is less than 2 1/2 minutes maximum.

(6) If time required to fill tank to 1/4 is over 2 1/2 minutes, check aircraft fill lines and overflow valve for obstructions; repair and repeat filling operations.

(7) When water tank is 1/4 full, TANK WATER LEVEL 1/4 light should come on and FILL/VENT VALVE OPEN light should go off and CLOSE light should come on.

(8) Rotate pre-select switch to 1/2 position. When water tank is 1/2 full, TANK WATER LEVEL 1/2 light should come on and FILL/VENT VALVE OPEN light should go off and CLOSE light should come on.

(9) Rotate pre-select switch to 3/4 position. When water tank is 3/4 full, TANK WATER LEVEL 3/4 light should come on and FILL/VENT VALVE OPEN light should go off and CLOSE light should come on.

(10) Rotate pre-select switch to FULL position. When water tank is full, TANK WATER LEVEL FULL light should come on and FILL/VENT VALVE OPEN light should go off and CLOSE light should come on.

NOTE: TANK WATER LEVEL lights remain on when water tank is full.

(11) Shut off source of water supply.

(12) Disconnect and remove external fill hose.

(13) Rotate pre-select switch to OFF position.

(14) For aircraft without Service Bulletin 38-061, install cap on fill valve nipple.

(15) For aircraft with Service Bulletin 38-061, close and latch lever lock cap on potable water service panel fill valve nipple.

(16) Make certain that all lavatory and galley faucets are closed.

(17) Remove cap from TANK PRESS VALVE at service panel, connect external air pressure hose, and pressurize system to 23(±2) psi (158.7(±13.8) kPa). Pressure is measured at service panel and maintained until directed otherwise.

(18) Open each galley faucet until water flows. If water fails to flow, check supply line and galley water lines for obstructions, and repair as necessary. Close galley faucets.

(19) Place shutoff valve handle in all lavatories to 1/2 open position.

(20) Hold lavatory washbasin drain plug in open position. Open faucet at washbasin and allow enough water to flow to ensure that water drains from washbasin with drain plug in open position. If water does not drain, check drain line and clear obstruction before proceeding with test.

(21) Open all faucets in lavatories until water flows. If water fails to flow, inspect supply line for obstructions. Make certain water tank pressure is at 23(±2) psi (167.7(±13.8) kPa).

(22) Hold cold water faucet full open and adjust shutoff valve below washbasin to give satisfactory water flow with no excessive splash. Mark position of shutoff valve handle.

(23) Hold cold water faucet full open and adjust shutoff valve to give satisfactory water flow into washbasin with no excessive splash. Mark position of shutoff valve handle.

(24) Place shutoff valve handle at mid-point between marks established in steps (Paragraph 3.C.(22) and Paragraph 3.C.(23)).

(25) Remove the safety tags and close these circuit breakers:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(26) Test cycling of the lavatory water heater as follows:

(a) Run approximately 2 quarts (1.9 liters) of water through the heater.

(b) Wait 5 minutes and run water again.

(c) Take temperature reading of water at faucet. Temperature should be approximately 115°F (46.1°C), but should not exceed 135°F (57°C).

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(27) Open these circuit breakers and install safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT

(Continued)

LOWER EPC, AC BUS

Row	Col	Number	Name
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(28) Test cycling of the lavatory water heater as follows:

(a) Run approximately 2 quarts (1.9 liters) of water through the heater.

(b) Wait 5 minutes and run water again.

(c) Take temperature reading of water at faucet. Temperature should be approximately 115°F (46.1°C), but should not exceed 135°F (57°C).

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(29) Open these circuit breakers and install safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(30) Observe that the FULL water level indicator light is on before performing draining operations. If light is not on, depressurize tank and fill (top off) with potable water.

(31) Drain water system. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 301)

NOTE: During draining operations observe water tank level indicating lights. As tank drains, the FULL, 3/4, 1/2, and 1/4 lights should go off in respective order. When the system is drained, the LOW level light should remain on.

(32) Disconnect air pressure supply hose and install cap on TANK PRESS VALVE.

(33) Place SERVICE LIGHT switch in OFF position.

NOTE: At completion of test, system may be left in a drained or filled condition as required.

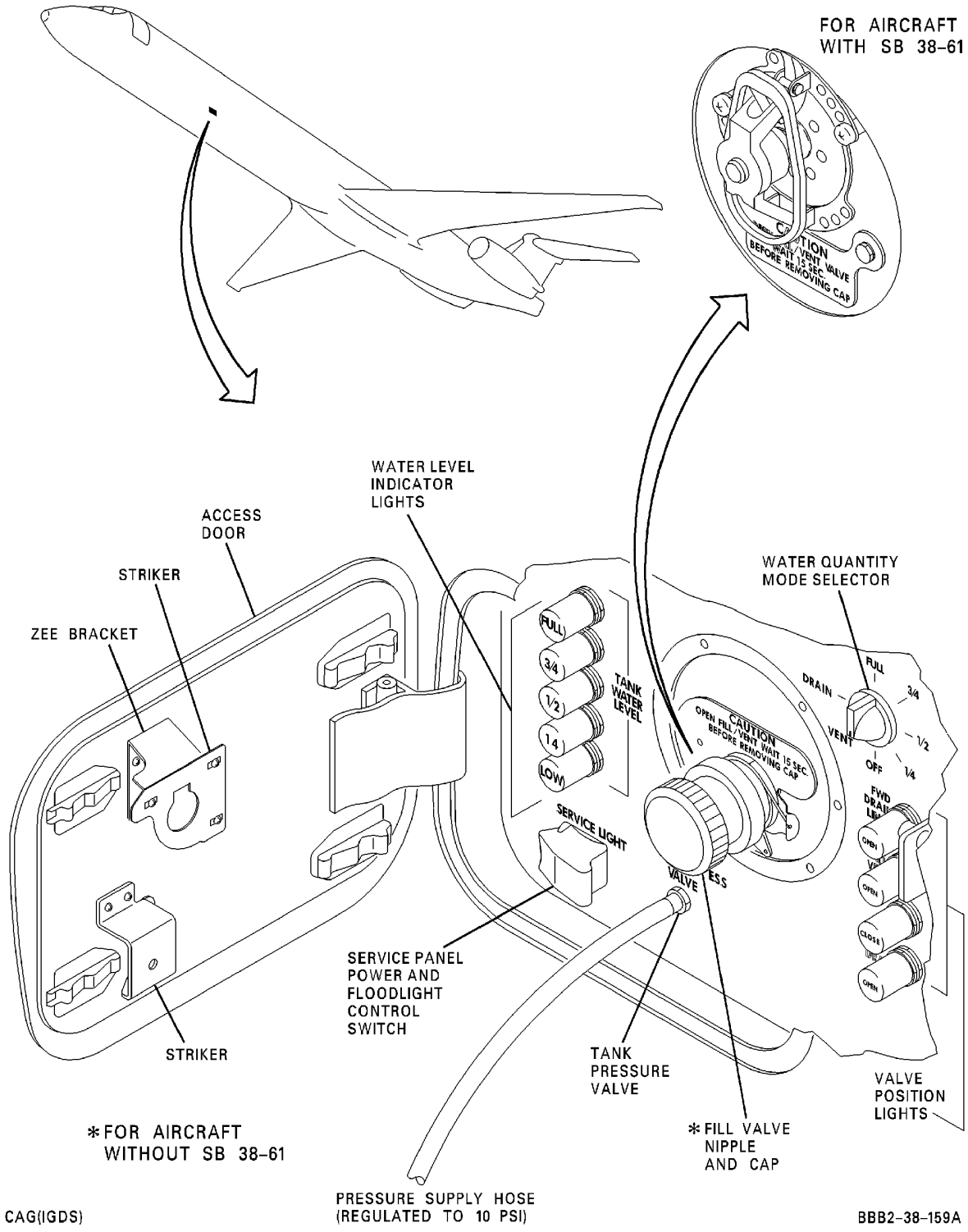
(34) Close service panel access door.

CAUTION: LAVATORY WATER HEATER CIRCUIT BREAKERS ON LOWER EPC CIRCUIT BREAKER PANEL SHOULD BE OPEN PRIOR TO DRAINING WATER SYSTEM. ELECTRICAL POWER SHOULD BE REMOVED FROM LAVATORY WATER HEATERS ANY TIME HEATER TANKS ARE NOT FILLED WITH WATER.

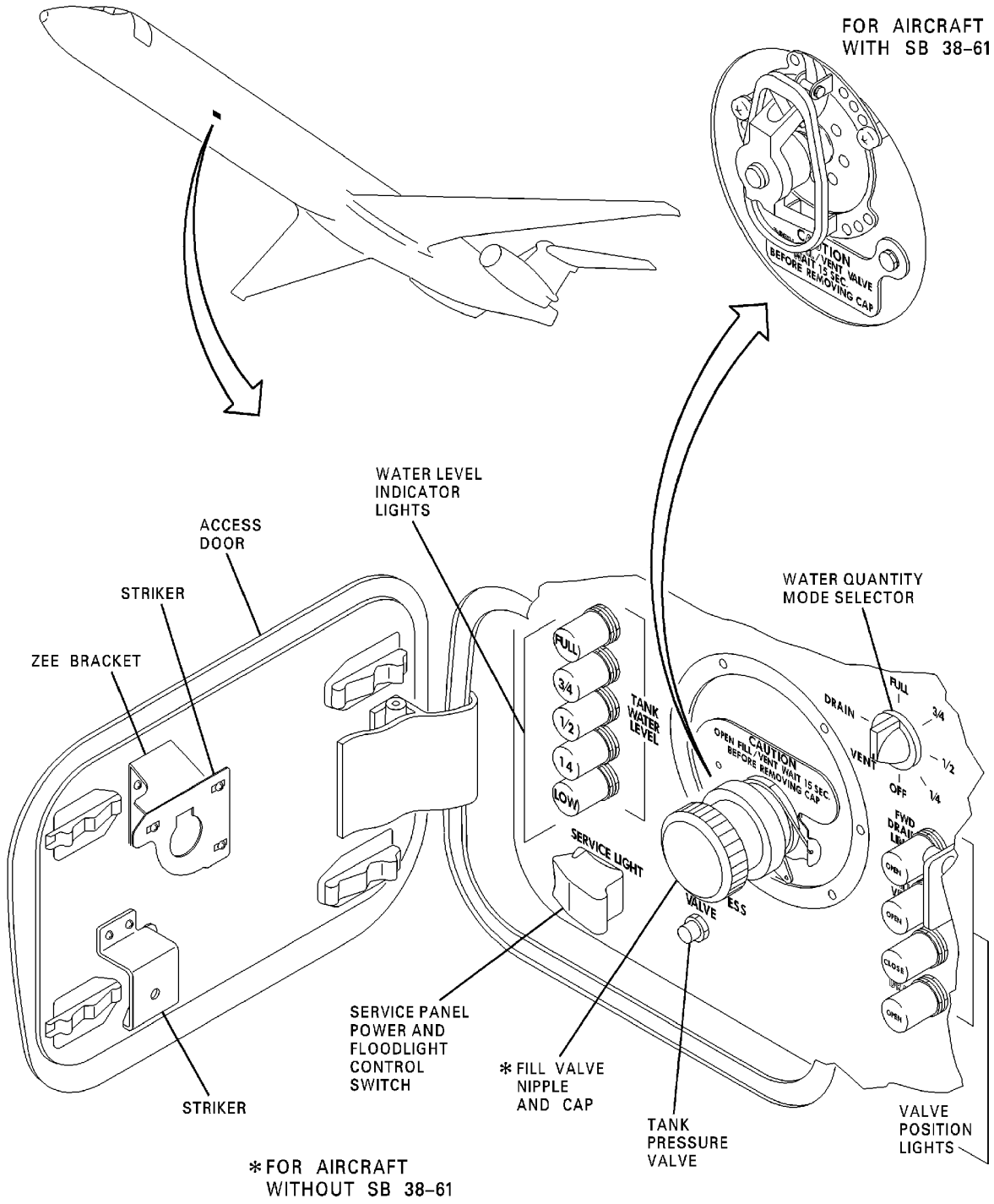
(35) Remove the safety tags and close these circuit breakers:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER



Pressure Drain System -- Adjustment/Test
Figure 501/38-11-00-990-806



CAG(IGDS)

BBB2-38-161A

Pressure Drain System -- Adjustment/Test
Figure 502/38-11-00-990-813

WATER SUPPLY TANK - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the water supply tank, located in the aircraft right tunnel area, just aft of the forward cargo compartment door. The tank is accessible through a sidewall panel attached to the tunnel struts.

B. Removal of the right-hand struts in the cargo compartment is necessary for tank removal. The struts are attached to floor beams and fuselage frames with bolts.

C. Tank support clamps, water, and air line connections should not be tightened until all valves and lines have been positioned and adjusted to relieve any preload on lines and connections.

D. During removal procedures, cap all water, air and static lines and hoses and cap or plug all ports and fittings on tank and other components upon disconnect. Remove caps and plugs during installation.

E. Cap and stow all electrical connectors and protect and stow all loose wires upon disconnect. Remove caps and protection during installation.

F. Identify and retain removed components and hardware for later installation. Replace unserviceable items.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

Table 201

Name and Number	Manufacturer
Wrench, torque, 0-100 inch-pounds (11.2 N·m) range	
Containers, water drain	

3. Removal/Installation Water Tank

A. Remove Tank (Figure 201)

(1) Drain water tank and system lines as follows:

(a) Relieve tank air pressure by placing PRESELECT switch, located on potable water service panel, in VENT position.

(b) Place water drain containers under fwd and aft system drain outlets.

(c) Connect ground drain hose to water tank drain/vent port and direct opposite end of hose into drain container.

(d) Place line shutoff valve in each lavatory in FULL OPEN position.

(e) Drain water system by placing PRESELECT switch, located on water service panel, in DRAIN position. Make certain that FILL/VENT light comes on.

NOTE: Approximately 90 seconds after PRESELECT switch is placed in DRAIN position, forward and aft drain valves will open and will allow any water remaining in system to drain overboard.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(f) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT
		B1-369	WATER QUANTITY

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(g) Place handle of manually operated water tank drain valve, located on lower forward end of tank, to open (vertical) position.

(h) Allow water tank and water system lines to completely drain.

(i) Check that tank and system are completely drained as indicated by no water flow from tank drain port hose or from fore and aft system drain outlets.

(j) Remove ground drain hose from drain/vent port.

(2) Remove sidewall panels on right side of middle cargo compartment forward of door.

(3) Disconnect ground service air line aft of air filter. (Figure 201)

CAUTION: CAP OR PLUG ALL LINES, PORTS AND FITTINGS.

(4) Disconnect and remove air filter lines, aft of air filter, that are routed through struts.

(5) Disconnect and remove two static lines that are routed through strut in floor beam area above forward end of tank.

(6) Disconnect and remove four static lines installed between static port and disconnect bracket above aft end of tank at floor beam level.

(7) Disconnect electrical connector, remove from wiring clamps and stow electrical connector on struts at terminal strips.

(8) Disconnect electrical wires at water level sensing probes on tank.

(9) Remove four struts inboard of tank. (Figure 201)

(10) Remove water level sensing probes and retain for installation on replacement tank. (WATER LEVEL INDICATING PROBES, SUBJECT 38-12-01, Page 201). Cap or plug open ports.

(11) Disconnect bonding wire at tank mounting strap.

(12) Disconnect tank fill and vent lines.

(13) Disconnect air pressure line at tank.

(14) Disconnect water supply lines at tee connecting forward and aft water supply lines.

(15) Disconnect lines at tank drain valves.

(16) Disconnect electrical connector from drain valve.

(17) Remove tank drain valve. (TOILET DRAIN VALVES, SUBJECT 38-30-02, Page 201)

(18) Remove tank drain valve.

(19) Remove tank pressure relief valve, water fill/vent fitting, vent fitting, and air inlet fitting. Retain for installation on replacement tank. Cap or plug ports.

NOTE: The eng plug of tank must be removed to get to fill fitting inside tank. Tank must be removed from aircraft before you remove end plug.

(20) Disconnect tank support clamp turnbuckles at each end of tank.

CAUTION: CARE MUST BE TAKEN TO PREVENT DAMAGE TO TANK DURING REMOVAL FROM TUNNEL AREA AND AIRCRAFT. CARE MUST ALSO BE TAKEN DURING REMOVAL TO AVOID DAMAGING ELECTRICAL WIRING AND CONTACTS FOR GROUND SERVICE JACK AND CARGO SERVICE LIGHT SWITCH. THESE COMPONENTS ARE LOCATED ON AFT FACE OF BARRIER ON FORWARD CARGO DOOR FRAME.

(21) Remove tank from tunnel area.

NOTE: Tank is removed by swinging front end inboard and moving forward in cargo bay, then swinging aft end through door.

NOTE: Tank must be moved forward approximately four inches (101.6 mm) before aft end of tank can be swung inboard to clear door area structure.

B. Install Tank (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT
		B1-369	WATER QUANTITY

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

CAUTION: CARE MUST BE TAKEN TO PREVENT DAMAGE TO TANK DURING INSTALLATION.

(2) Position tank at an angle with front end of tank in tunnel area.

(3) Move tank forward carefully until aft end of tank clears door structure.

NOTE: Tank is installed by inserting front end through door and moving it forward into tunnel area. Slide tank aft into position and swing front end outboard.

(4) Move tank into position and install mounting clamps. Do not tighten clamp turnbuckles at this time.

(5) Install tank pressure relief valve, water fill/vent fitting, vent fitting, and air inlet fitting. Use new O-rings when installing fittings.

NOTE: The fill fitting must be installed before installation of tank. The end plug of tank is removed and re-installed before installation of tank.

NOTE: Remove all caps and plugs during installation of lines, fittings and components.

(6) Install tank drain valve.

(7) Connect electrical connector to drain valve.

(8) Connect drain lines to drain valve.

NOTE: Do not tighten any water or air lines until all lines are connected and adjusted and tank is secured in place.

(9) Connect fill and overflow lines to tank.

(10) Connect water supply lines at tee connection.

(11) Connect air pressure lines to tank.

(12) Install four struts inboard of tank.

(13) Adjust all lines to tank to prevent any preload to lines.

(14) Tighten two tank support clamp turnbuckles on ends of tank to torque of 45-50 inch-pounds (5.04-5.6 N·m).

(15) Tighten all water and air lines to tank.

(16) Connect bonding wire to tank mounting bracket.

(17) Install water level sensing probes using new O-rings. (GENERAL - DESCRIPTION AND OPERATION, SUBJECT 38-00-00, Figure 201; and WATER LEVEL INDICATING PROBES, SUBJECT 38-12-01, Page 201)

(18) Tighten probes to torque of 22 inch-pounds (2.46 N·m).

(19) Connect electrical wires to probe.

(20) Route and clip wiring on struts, connect electrical connector.

(21) Install four static lines between static port and disconnect bracket.

(22) Install two static lines through top hole in strut at floor beam level. (PITOT STATIC, SUBJECT 34-11-00 for test of pitot-static system.)

(23) Install air filter lines through strut to aft end of filter.

(24) Connect ground service air line to air filter line aft of air filter.

(25) Clean and sterilize water tank and system. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 301)

(26) Test water tank and system. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 501)

(27) When aircraft is to be prepared for dispatch, fill potable water tank and system. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

(28) Remove tools and materials from work area.

(29) Install sidewall panels.

(30) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT

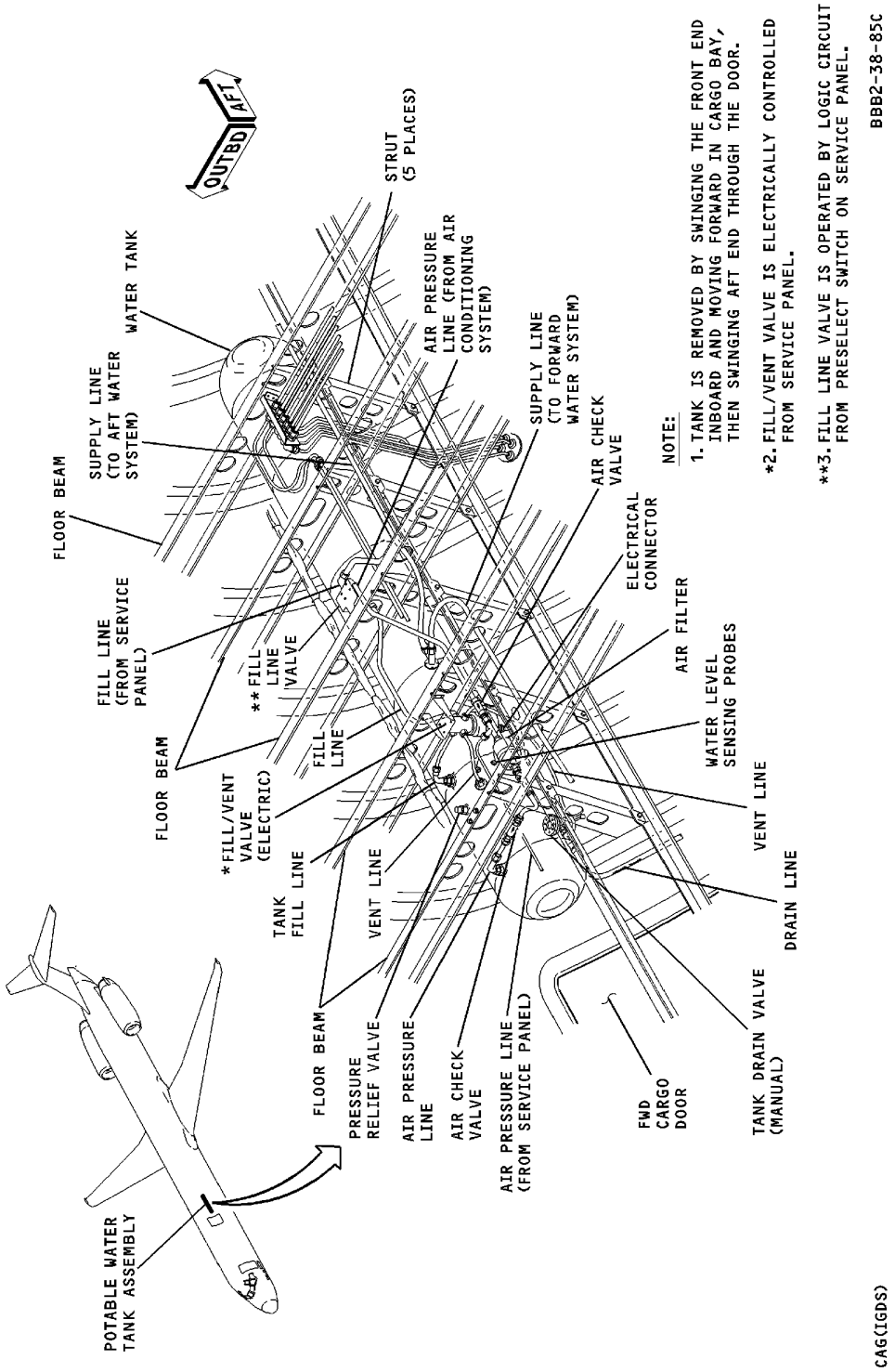
(Continued)

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-849	FWD WATER SYS FREEZE PROTECT
		B1-369	WATER QUANTITY

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER



Water Supply Tank -- Removal/Installation
Figure 201/38-11-01-990-803

WATER SUPPLY TANK - INSPECTION/CHECK

1. General

A. This procedure contains MSG-3 task card data.

TASK 38-11-01-211-801

2. Detailed Inspection of the Potable Water Tank

NOTE: This procedure is a scheduled maintenance task.

A. Equipment and Materials

NOTE: Equivalent replacements are permitted for the items that follow:

Equipment and Materials

Name and Number	Manufacturer
Regulated Air Source, 0 - 75 psi (0 - 517 kPa)	
Adapters	
Leak Detector Fluid (Bubble Fluid)	

B. References

Reference	Title
12-14-01 P/B 301	POTABLE WATER SUPPLY SYSTEM - SERVICING

C. Prepare to Inspect the Potable Water Tank

SUBTASK 38-11-01-010-001

(1) Open the access panel.

SUBTASK 38-11-01-613-001

(2) Make sure the potable water system tank has been serviced to full. (POTABLE WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 12-14-01/301)

SUBTASK 38-11-01-863-001

(3) Pressurize and stabilize the potable water system to 40 ±5 psi (276 ±35 kPa).

(a) Connect regulated air source to the tank pressure valve on the servicing panel using clean oil free dry air source.

(b) Open the regulated air supply valve slowly until the water system is pressurized to 40 ±5 psi (276 ±35 kPa).

(c) Close the shutoff valve on the regulated air source.

(d) Allow the system to stabilize for 5 minutes and adjust pressure as necessary.

D. Detailed Inspection of the Potable Water Tank

SUBTASK 38-11-01-211-001

(1) Do a detailed inspection of the potable water tank and plumbing for evidence of leakage.

(a) Wait for 15 minutes and check the pressure drop.

CAUTION: USE CARE TO PREVENT BUBBLE FLUID FROM CONTACTING OTHER SURFACES. REMOVE BUBBLE FLUID BY WIPING WITH A CLEAN CLOTH DAMPENED WITH WATER.

(b) If pressure drop is noted, locate leak by applying leak detector fluid to air lines and connectors.

(c) Tighten connectors as necessary until all leaks have been located and corrected.

E. Job Close-up

SUBTASK 38-11-01-080-001

(1) Close shutoff valve and disconnect pressure cylinder supply hose from tank pressure valve on service panel. Remove test equipment.

SUBTASK 38-11-01-864-001

(2) Relieve air pressure from water system as required by placing FILL/VENT switch in OPEN position or, on aircraft with preselect water system, PRESELECT switch in VENT position at service panel.

SUBTASK 38-11-01-613-002

(3) Service as required. (POTABLE WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 12-14-01/301)

SUBTASK 38-11-01-410-001

(4) Close access panel.

——— END OF TASK ———

WATER SYSTEM DRAIN VALVES - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the two electrically controlled water system drain valves. Both valves are located in the lower cargo compartment right tunnel area; one forward of the forward cargo door, and one aft of the aft cargo door. Each valve is bracket mounted to a sidewall strut located in each cargo compartment.

2. Removal/Installation Water System Drain Valve

A. Remove Drain Valve (Figure 201)

(1) Drain water supply system. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

(2) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Open these circuit breakers and install safety tags:

EXTERNAL POWER PANEL

Row	Col	Number	Name
		B1-283	EXTERNAL POWER CART
		B1-249	EXTERNAL POWER IND
		B1-287	EXTERNAL POWER PHASE A
		B1-286	EXTERNAL POWER PHASE B
		B1-285	EXTERNAL POWER PHASE C
		B1-284	EXTERNAL POWER RELAYS

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
X	38	B1-250	EXTERNAL POWER RELAYS

(4) Open these access panels:

Number	Name/Location
5128C	Flap to Servo Mechanical Turnbuckle Valve, Avionics Forward Cooling Fan, Pressure Switch Water Drain Valve
5717C	Potable Water Drain Valve, RH Throttle Bellcrank

(5) Disconnect electrical connector from drain valve.

(6) Disconnect system supply line from top of drain valve. Cap open end of line.

(7) Disconnect system drain line from bottom of drain valve.

(8) Disconnect and remove drain valve from strut or support bracket.

B. Install Drain Valve (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

EXTERNAL POWER PANEL

Row	Col	Number	Name
		B1-283	EXTERNAL POWER CART
		B1-249	EXTERNAL POWER IND
		B1-287	EXTERNAL POWER PHASE A
		B1-286	EXTERNAL POWER PHASE B
		B1-285	EXTERNAL POWER PHASE C
		B1-284	EXTERNAL POWER RELAYS

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
X	38	B1-250	EXTERNAL POWER RELAYS

(2) Make sure that these access panels are open:

Number	Name/Location
5128C	Flap to Servo Mechanical Turnbuckle Valve, Avionics Forward Cooling Fan, Pressure Switch Water Drain Valve
5717C	Potable Water Drain Valve, RH Throttle Bellcrank

(3) Make certain that valve ports are clean and have no restrictions.

(4) Align and install drain valve on support bracket, but do not tighten attach screws.

(5) Connect system drain line to bottom of drain valve.

(6) Connect system supply line to top of valve.

(7) Adjust lines and valve; then, tighten valve attach screws and line connections.

(8) Check electrical connector for damage or unwanted material. (GENERAL INSTALLATIONS HARDWARE - MAINTENANCE PRACTICES, SWPM 20-20-03)

(9) Connect electrical connector to drain valve.

(10) Perform system pressure test. (WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2)

NOTE: At the completion of the test the water system can be kept drained or filled if necessary.

(11) Remove the safety tags and close these circuit breakers:

EXTERNAL POWER PANEL

Row	Col	Number	Name
		B1-283	EXTERNAL POWER CART
		B1-249	EXTERNAL POWER IND
		B1-287	EXTERNAL POWER PHASE A
		B1-286	EXTERNAL POWER PHASE B
		B1-285	EXTERNAL POWER PHASE C
		B1-284	EXTERNAL POWER RELAYS

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

LOWER EPC, AC BUS

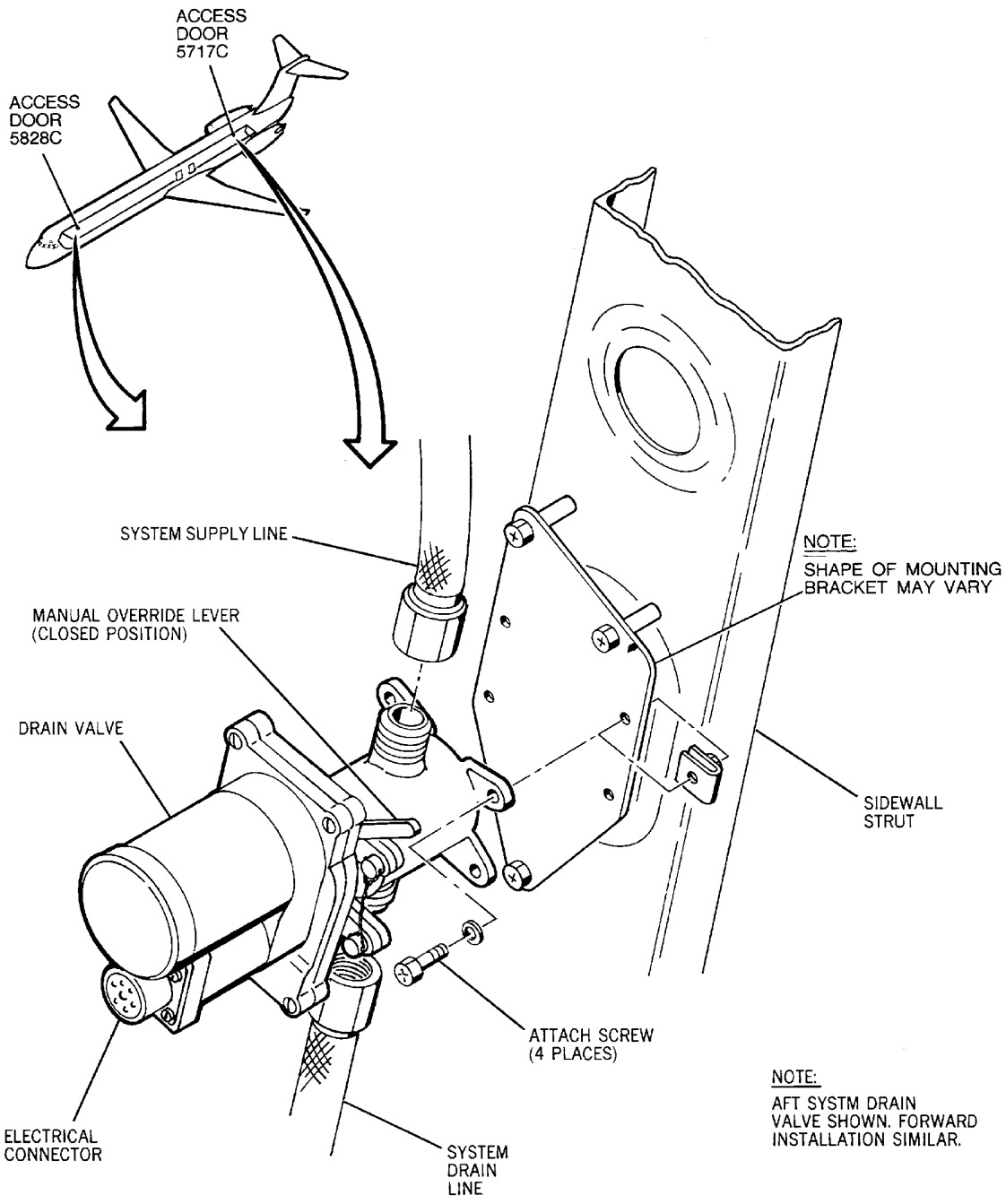
Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
X	38	B1-250	EXTERNAL POWER RELAYS

(12) Close these access panels:

Number	Name/Location
5128C	Flap to Servo Mechanical Turnbuckle Valve, Avionics Forward Cooling Fan, Pressure Switch Water Drain Valve
5717C	Potable Water Drain Valve, RH Throttle Bellcrank



Water System Drain Valve -- Removal/Installation
Figure 201/38-11-02-990-803

WATER TANK DRAIN VALVE - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the manually controlled drain valve located on the bottom forward side the water tank in the right tunnel, just forward of the mid cargo compartment door (on some aircraft just aft of the forward cargo compartment door). The drain valve is accessible through a removable sidewall panel.

B. The maintenance practices in this section provide removal/ installation instructions for the manually controlled drain valve located on the bottom forward side the water tank in the right tunnel, just aft of the forward cargo compartment door. The drain valve is accessible through a removable sidewall panel.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

Table 201

Name and Number	Manufacturer
Torque wrench (0 to 50 inch pounds range)	

3. Removal/Installation Water Tank Drain Valve

A. Remove Drain Valve (Figure 201)

(1) Drain water supply system. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2) ,

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Open these circuit breakers and install safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(3) Disconnect drain and overflow line from drain valve.

(4) Disconnect and remove drain valve from water tank.

(5) Remove gasket from water tank. Discard gasket and provide protective cover for opening in water tank.

B. Install Drain Valve (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Make certain that valve ports are clean and have no restrictions.

(3) Align and install drain valve with gasket on water supply tank studs. Torque the stud nuts to 25 in-lb (3 N·m) to 30 in-lb (3 N·m).

(4) Connect drain and overflow line to drain valve.

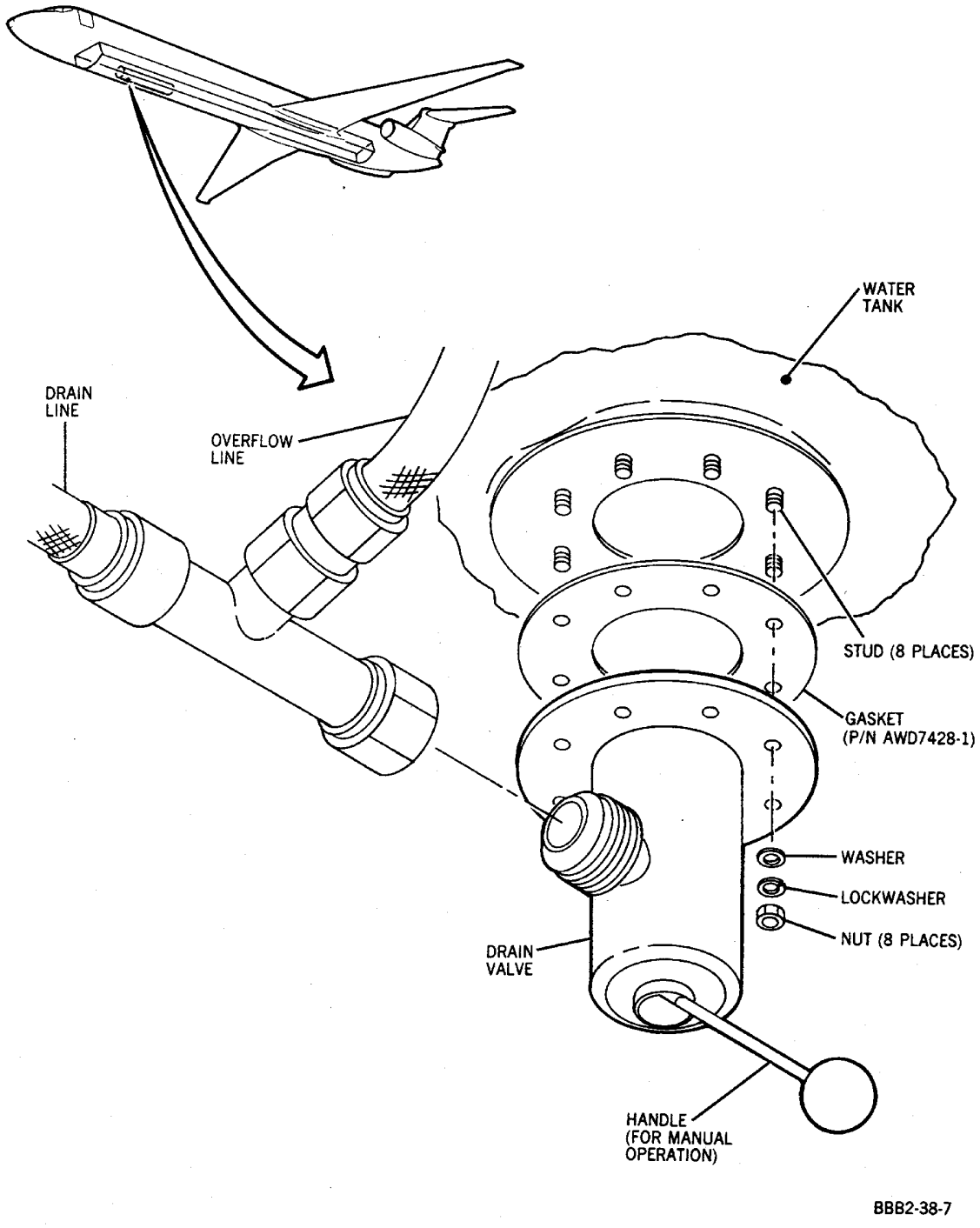
(5) Perform system pressure test. (WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2),

NOTE: At the completion of the test the water system can be kept drained or filled if necessary.

(6) Remove the safety tags and close these circuit breakers:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER



Water Tank Drain Valve -- Removal/Installation
Figure 201/38-11-03-990-801

WATER FILL/VENT VALVE - MAINTENANCE PRACTICES

1. General

WJE 405-412, 414-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891

A. The maintenance practices in this section provide removal/ installation instructions for the potable water system fill/ vent valve located in the right tunnel, just forward of the mid cargo compartment door (on some aircraft just aft of the forward cargo compartment door). The bracket-mounted valve is adjacent to the forward left side of the water supply tank, and is accessible through a removable sidewall panel.

WJE 401-404, 412, 414, 873-879, 886, 887, 892, 893

B. The maintenance practices in this section provide removal/ installation instructions for the potable water system fill/ vent valve located in the right tunnel, just aft of the forward cargo compartment door. The bracket-mounted valve is adjacent to the forward left side of the water supply tank, and is accessible through a removable sidewall panel.

WJE ALL

2. Removal/Installation Fill/Vent Valve

A. Remove Valve. (Figure 201)

(1) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-842	DRAIN VALVE POWER
		B1-843	FILL/ VENT VALVE POWER
		B1-369	WATER QUANTITY

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
Z	33	B1-841	FILL DRAIN VALVE CONTROL

(3) Open these access panels:

Number	Name/Location
5111D	Fwd Waste Water Service Panel
5112D	Potable Water Service Tank Pressure Valve, Water Line Drain and Forward and Aft Tank Vents, Fill/Vent Valve

(4) Put the preselect switch to DRAIN position at service panel to relieve system pressure.

(5) Disconnect electrical connector from fill/vent valve.

(a) Install an unthreaded circular connector plastic caps, G60066 to the electrical connector

(6) Remove water fill and vent lines from valve.

(a) Install Cap, G60503 on all lines and fittings when disconnected to prevent contamination of the water system.

(7) Remove valve from mounting bracket.

B. Install Valve. (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-842	DRAIN VALVE POWER
		B1-843	FILL/ VENT VALVE POWER
		B1-369	WATER QUANTITY

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
Z	33	B1-841	FILL DRAIN VALVE CONTROL

(2) Make sure that these access panels are open:

Number	Name/Location
5111D	Fwd Waste Water Service Panel
5112D	Potable Water Service Tank Pressure Valve, Water Line Drain and Forward and Aft Tank Vents, Fill/Vent Valve

(3) Check that fill/vent valve, fill lines, and vent lines are free of contamination.

(4) Align and install valve on mounting bracket. Do not tighten attach bolts at this time.

NOTE: Each attach bolt shall be fitted with a lock washer and a flat washer.

(5) Align water fill and vent lines with valve ports, and connect lines. Do not tighten line connections at this time.

(6) Adjust lines and valve to prevent any preload. Tighten valve bracket attach bolts and line connections.

(7) Check the electrical connector for damage and unwanted material. (GENERAL INSTALLATIONS HARDWARE - MAINTENANCE PRACTICES, SWPM 20-20-03)

(8) Connect electrical connector to fill/vent valve. Check that electrical leads to water level indicating probes are properly attached.

(9) Perform system pressure test. (WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2),

NOTE: At the completion of the test the water system can be kept drained or filled if necessary.

(10) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

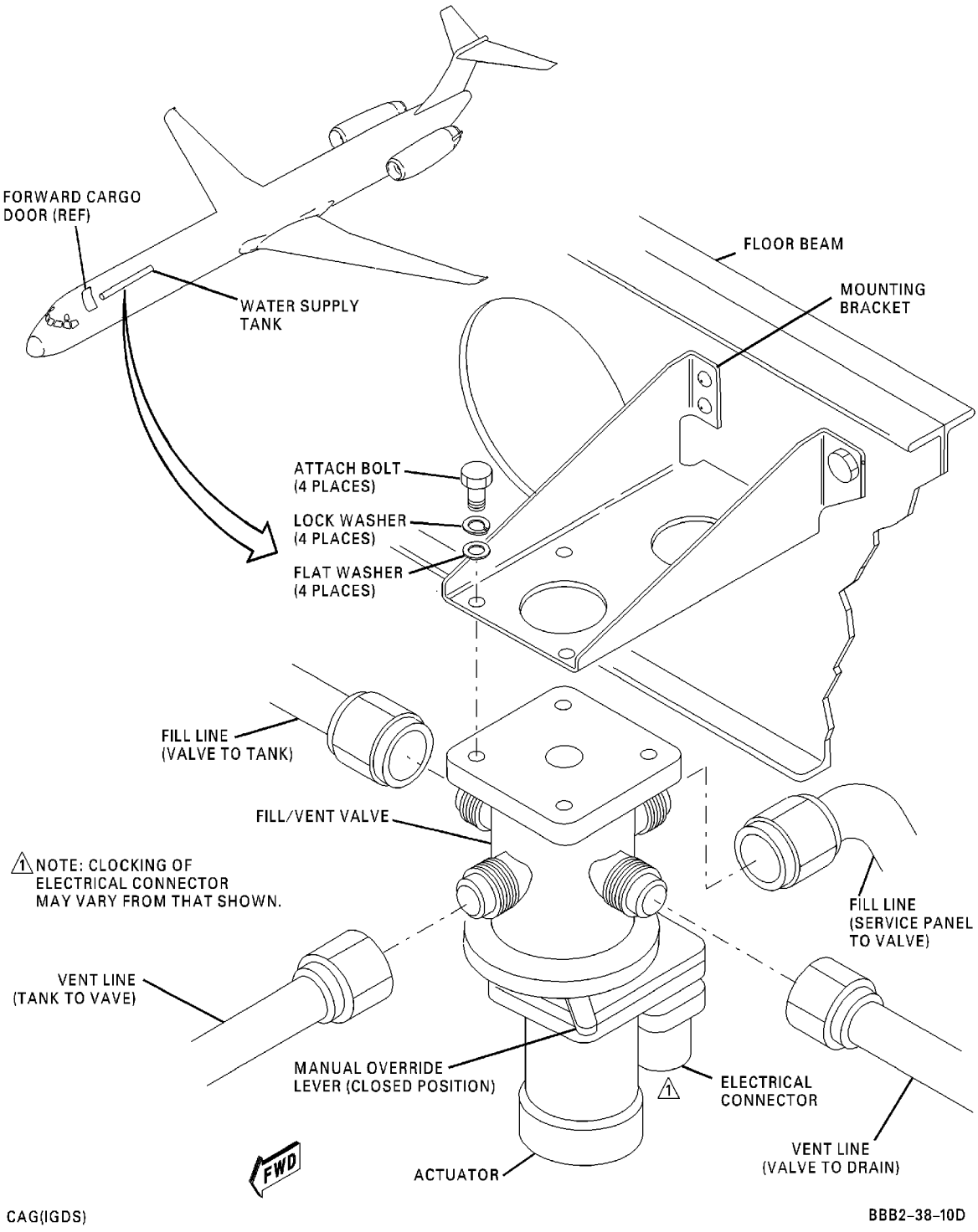
Row	Col	Number	Name
		B1-842	DRAIN VALVE POWER
		B1-843	FILL/ VENT VALVE POWER
		B1-369	WATER QUANTITY

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
Z	33	B1-841	FILL DRAIN VALVE CONTROL

(11) Close these access panels:

Number	Name/Location
5111D	Fwd Waste Water Service Panel
5112D	Potable Water Service Tank Pressure Valve, Water Line Drain and Forward and Aft Tank Vents, Fill/Vent Valve



Water Fill/Vent Valve -- Removal/Installation
Figure 201/38-11-04-990-801

LAVATORY WATER HEATERS - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the water heaters installed in the lavatories. Each water heater is mounted below the lavatory washbasin, and is accessible through the waste container access door in the washstand cabinet. Removal and installation procedures for the water heater in each lavatory is identical.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

Table 201 Equipment and Materials

Name and Number	Manufacturer
Plastic Cap DPM 1931–2 (G60066)	
Polyethylene threaded cap DPM 5607 (G60503)	
Corrosion resistance safety wire (NASM20995C20) DPM 5865 (G60845)	
Thermometer (normal range)	

3. Removal/Installation Lavatory Water Heaters

A. Remove Water Heater (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Remove waste container from washbasin cabinet in lavatory.

(3) Place water shutoff valve handle in CLOSE position for lavatory being serviced. Mark position of handle so handle can be returned to required position after installation of heater.

NOTE: Shutoff valve is located in the washstand cabinet below washbasin.

(4) Disconnect the electrical connector from the heater.

(a) Install a unthreaded circular connector plastic caps, G60066 on the electrical connector.

(5) Disconnect bonding wire (ground cable) from heater.

(6) Place suitable container (2 gal (8 l) under the water inlet.

(7) Disconnect inlet line and allow water to drain from heater.

(a) Install a Cap, G60503 on the inlet line.

(8) Disconnect outlet line.

(a) Install a Cap, G60503 on the outlet line.

(9) Support heater, disconnect the two mounting clamps and remove heater.

B. Install Water Heater (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Position heater, engage mounting clamps but do not tighten clamps at this time.

(3) Remove caps and connect water inlet and outlet lines.

(4) Align heater and lines to prevent preload of lines on heater; then, tighten heater mounting clamps and line connections.

(5) Connect bonding wire (ground cable) to heater.

(6) Check the electrical connector for damage and unwanted material. (GENERAL INSTALLATIONS HARDWARE - MAINTENANCE PRACTICES, SWPM 20-20-03)

(7) Connect the electrical connector to the receptacle at on the tank assembly.

(8) Place shutoff valve handle in position marked as noted in (Paragraph 3.A.(3)).

(9) Check for water leaks at connectors.

(10) Open hot water faucet and check for hot water.

(11) If necessary, do an adjustment/test of the heater assembly. (Paragraph 4. or Paragraph 5.)

(12) Remove the safety tags and close these circuit breakers:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(13) Install waste container in washroom cabinet.

4. Adjustment/Test Lavatory Water Heaters P/N 8921460G3 Pre Service Bulletin 8921460–38-1

A. Adjust Heater Element Thermostat

(1) Remove the heater from the aircraft. Paragraph 3.A.

(2) Remove and discard the safety wire to the nut on the inlet fitting.

(3) Remove the nut and washer from the inlet fitting and remove the lower cover.

(4) If necessary, turn the thermostat adjusting screw CCW (Counterclockwise) to increase water temperature, or CW (Clockwise) to decrease water temperature.

(5) Install the bottom cover with the nut and two washers.

CAUTION: DO NOT OVERTIGHTEN THE NUT. THIS CAN CAUSE THE BOTTOM COVER TO CRACK OR WARP.

(a) Tighten the nut until the cover assembly is pulled solidly against the tank assembly. Make sure that the cover is tightly sealed in the header recess flange.

(b) Safety the nut with corrosion-resistant steel safety wire, G60845.

(6) Install the heater in the aircraft. (Paragraph 3.B.)

(7) Open the hot water faucet and make sure that there is hot water.

(8) Let approximately 2 qt (2 l) of water flow through the heater.

(9) Wait 5 minutes; then get a temperature reading of the water at the faucet. The temperature should be approximately 115°F (46°C)

CAUTION: DO NOT DO THE ADJUSTMENT/TEST TO MANY TIMES IN A ROW BECAUSE THIS CAN CAUSE DAMAGE TO THE HEATER.

(10) Repeat steps Paragraph 4.A.(1) thru Paragraph 4.A.(9)

5. Adjustment/Test Lavatory Water Heaters P/N 8921460G3 Post Service Bulletin 8921460–38-1 and 8921460G5

A. Adjust Heater Element Thermostat

(1) Make sure that these circuit breakers are closed:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Make sure that the amber power-on indicator light on the heater is on.

(3) Put the temperature selector switch to the HIGH or LOW positions to get the necessary water temperature.

NOTE: The temperature selector switch is located on the bottom of the heater.

NOTE: The temperature selector switch is a three position toggle switch.

(4) Let approximately 2 qt (2 l) of water flow through the heater.

(5) Wait 5 minutes; then get a temperature reading of the water at the faucet. The temperature should be approximately 115°F (46°C)

B. Reset Hot Water Heater

NOTE: If the heater has overheated the amber power-on indicator light will be off and the red overheat indicator light will be on.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Remove wing nut , washer and the cover on top of hot water heater.

(3) Depress "manual reset button" on overheat switch.

NOTE: A manual reset of the heater cannot be done until the water temperature is less than 120°F (49°C).

(4) Make sure the red “overheat indicator light is not on.

(5) Reinstall top cover and secure with wing nut and washer.

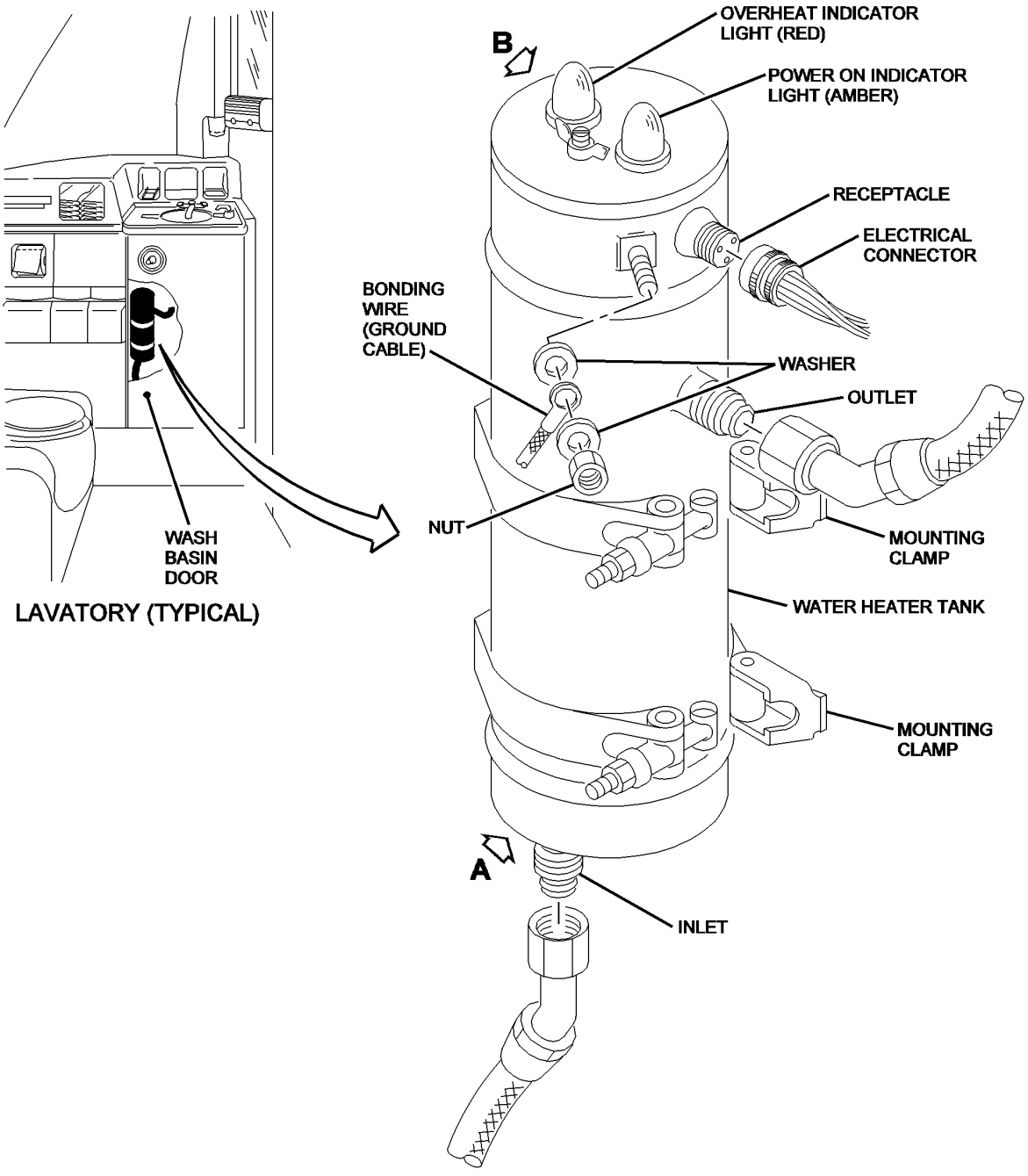
(6) Remove the safety tags and close these circuit breakers:

LOWER EPC, AC BUS

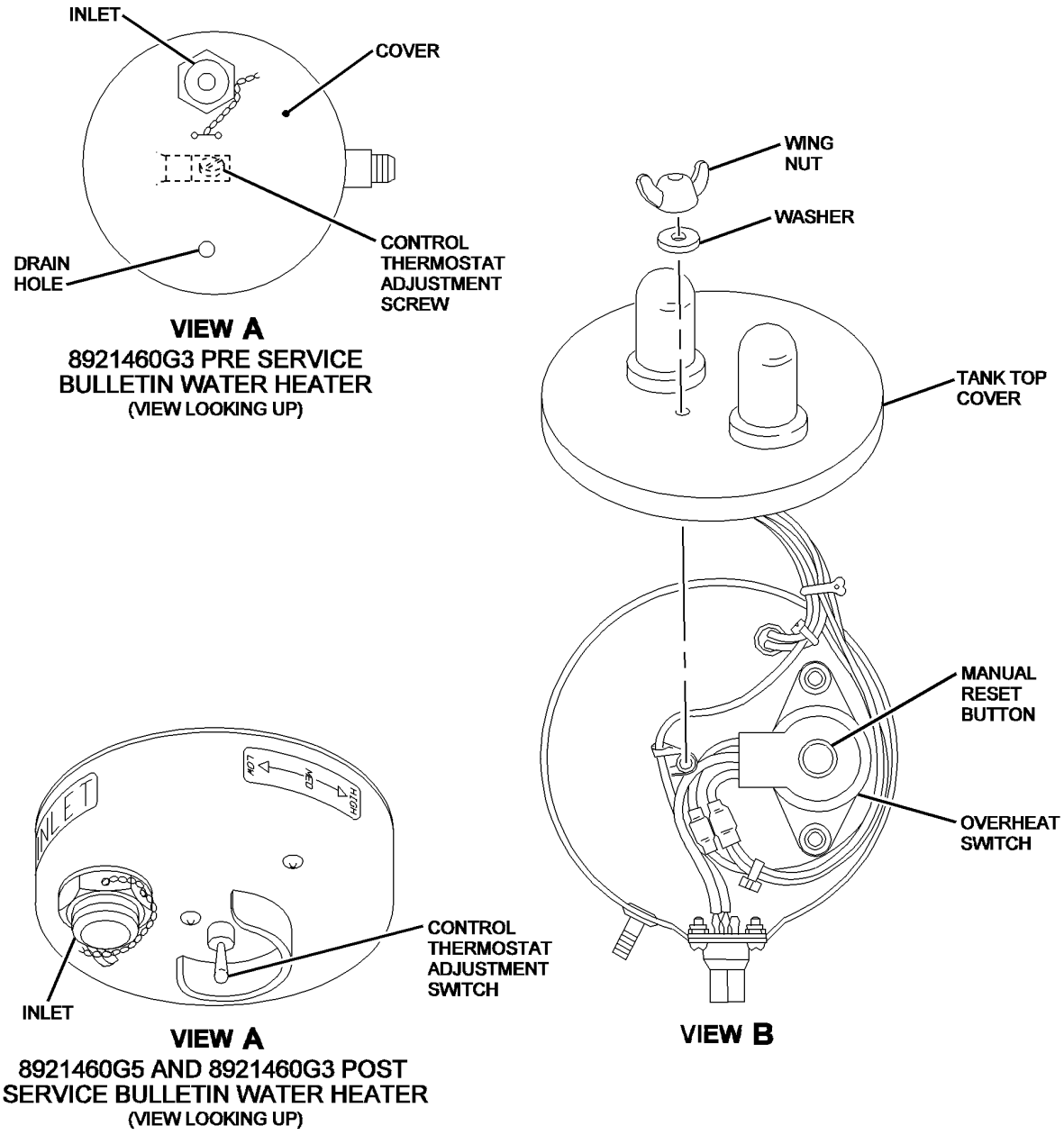
Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(7) Check that power-on indicator (amber) light on top of water heater is on.

(8) Open hot water faucet after approximately 5 minutes; wait and check for hot water.



Lavatory Water Heater - Removal/Installation (Typical)
Figure 201/38-11-05-990-802



BBB2-38-136A
S0006551372V2

Lavatory Water Heater Temperature Control Switches and Reset Button
Figure 202/38-11-05-990-803

LAVATORY WATER FAUCETS - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the dual valve water faucets installed in the lavatories. Instructions for complete removal of the faucets, valve cartridges, faucet/valve turrets, and sink drain components are included in the subsequent procedures. However, disassembly should be limited only to the extent necessary to replace worn or damaged parts or to correct valve leakage problems. The faucet valves can be removed without removing the faucet from the lavatory washbasin.

B. All disassembled water faucets and components must be cleaned and sterilized prior to installation.

C. The water system must be turned off at the faucet shutoff valve, located under the sink counter, before performing maintenance on the water faucet.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Torque wrench (0-50 inch-pounds (5.65 N·m) range)	
Alcohol, isopropyl, TT-1-735 DPM 530	Commercially available
Sodium hypochlorite (5 percent solution) DPM 2608	Commercially available
Brush, stiff bristle (nonmetallic)	

3. Removal/Installation Lavatory Water Faucets

A. Place PRESELECT switch in VENT position at service panel to relieve system pressure.

B. Place water shutoff valve in CLOSE position for lavatory being serviced. (LAVATORY WATER SHUTOFF VALVE, SUBJECT 38-11-07)

C. Remove Faucet Assembly (Figure 201)

NOTE: Faucet/valve components include the valve handle, valve cartridge, gooseneck faucet, faucet/valve turret, and sink drain.

(1) Remove valve handle from turret hinge as follows: (Figure 201)

(a) Compress valve handle pivot and shoulder pins; then, remove valve handle from pins.

(b) Carefully the hinge pin assembly from the hinge and inlet.

(c) Retain handle components for installation.

(2) Remove valve cartridge from the hinge and inlet as follows:

(a) Carefully unscrew valve cartridge from the hinge and inlet.

(3) Remove spout assembly from the sleeve adapter assembly as follows:

(a) Remove drain actuator from upper drain rod aft of spout assembly.

(b) Remove four screws and washers from sleeve adapter assembly under spout assembly.

(c) Lift spout assembly and O-ring from sleeve adapter assembly . Discard O-ring.

(4) Remove sleeve adapter assembly from washbasin as follows:

(a) Disconnect water lines from the hinge and inlets.

(b) Disconnect drain tension spring from sleeve adapter assembly.

(c) Remove the nuts from the hinge and inlets.

NOTE: The nuts are located below the washbasin.

(d) Remove the hinge and inlets from the sleeve adapter assembly.

(e) Remove sleeve adapter assembly from below washbasin.

D. Washbasin Sink Drain Removal

(1) Remove sink drain from washbasin as follows: (Figure 202)

(a) Remove drain plug from the drain ring.

(b) Disconnect the return spring from the lower drain rod.

(c) Disconnect lower drain rod from upper drain rod linkage.

(d) Turn lower drain rod packing nut CCW then, remove nut and lower drain rod.

(e) Remove drain line from drain fitting.

(f) Remove drain fitting from the drain ring.

1) Remove and discard the gasket.

(g) Check faucet/valve components for bent or dented areas, for crossed or stripped threads, and for worn areas on valve seals. Replace worn or damaged components.(Table 202)

Table 202 Wear Requirments

Nomenclature	Inspection Method	Check	Requirments
Threaded Parts	Visual	Stripped, crossed, or broken threads.	Only minor repairable damage allowed
Spring (1)	Visual	Bends, cracks or breaks	No damage allowed
	Dimensional	Free length 4.5 in. (114.3 mm)	Free length must be as specified.
Spacer (2)	Visual	Nicks, cracks, or deformation, worn finish.	Only minor repairable damage allowed
Sleeve (14)	Visual	Nicks, cracks, or deformation, worn finish.	Only minor repairable damage allowed
Actuator Assy (3)	Visual	Bends or cracks in rod worn finish, cracks or breaks in brazed joints, worn finish.	Only minor repairable damage allowed
Spout Assy (4)	Visual	Nicks scratches or gouges, cracks or breaks in brazed joints, worn finish.	Only minor repairable damage allowed
Handle Assys (8), (9)	Visual	Nicks scratches or gouges, cracks worn finish, Chipped or flaking paint, deformation of handle pivot holes.	Only minor repairable damage allowed
Hinge Pins (11)	Visual	Nicks, scratches, cracks, or breaks, worn finish.	Only minor repairable damage allowed

Table 202 Wear Requirments (Continued)

Nomenclature	Inspection Method	Check	Requirments
Spring (12)	Visual	Bends, cracks, breaks or distortion.	No damage allowed
Torsion Spring (13)	Visual	Bends, cracks, breaks or distortion.	No damage allowed

E. Install Faucet Assembly(Figure 201)

NOTE: Faucet/valve/drain components are supplied by two vendors. Make certain that parts from each vendor are used with that vendor's installation.

(1) Clean and sterilize faucet/valve components as follows:

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1030, ISOPROPYL ALCOHOL (DPM 530)

HAZMAT 1000, REFER TO MSDS

(a) Wash all components and replacement parts in isopropyl alcohol solvent, B60095. Use brush, STD-133 to dislodge foreign material accumulations from parts.

(b) Flush and rinse parts thoroughly in potable water.

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1348, SODIUM HYPOCHLORITE (BLEACH)

HAZMAT 1000, REFER TO MSDS

(c) Prepare chlorinated water solution by mixing 1 fl-oz (30 ml) sodium, 5% bleach solution hypochlorite, B60053 with 6.7 gal (25.4 l) of potable water.

(d) Place faucet/valve components in chlorine solution for at least 5 minutes to sterilize component parts.

(e) Flush/rinse parts in potable water until there is no chlorine smell.

(f) Dry parts with sterilized, lint-free cloth.

(g) Keep the faucet/valve components in a sterilized condition during installation.

(2) Install faucet/valve components as follows:

(a) Install a new O-ring on the spout assembly.

(b) Put the sleeve/adaptor assembly under the washbasin opening.

(c) Put the spout assembly into to the washbasin and sleeve/adaptor assembly and install the four screws and washers.

1) Torque the screws to 60 in-lb (7 N·m).

(d) Install two O-rings on each hinge and inlet.

(e) Install the two hinge and inlets into the sleeve/adaptor assembly.

(f) Install the two cartridge assemblies into the hinge and inlets and tighten securely.

(g) Install the nut on the hinge and inlets.

1) Torque the nuts to 60 in-lb (7 N·m).

(h) Install two hinge pins on each spring.

1) Make sure the springs are fully seated in the hinge pins.

(i) Install a torsion spring on the sleeve for each hinge and inlet.

(j) Compress the hinge pin assembly and insert into the hinge and inlet.

(k) Install the handles on the hinge and inlet by engaging the hinge pin assembly.

F. Washbasin Sink Drain Installation

(1) If the washbasin sink drain was removed, install as follows: (Figure 202

(a) Install a new gasket between the drain fitting and the drain ring.

(b) Connect the drain fitting to the drain ring.

1) Tighten hand tight until it aligns with the lower drain rod.

(c) Insert the lower drain rod into drain fitting.

1) Connect the drain rod nut to the drain fitting.

(d) Put a new O-ring on the drain plug.

(e) Connect the tension spring to the lower drain rod.

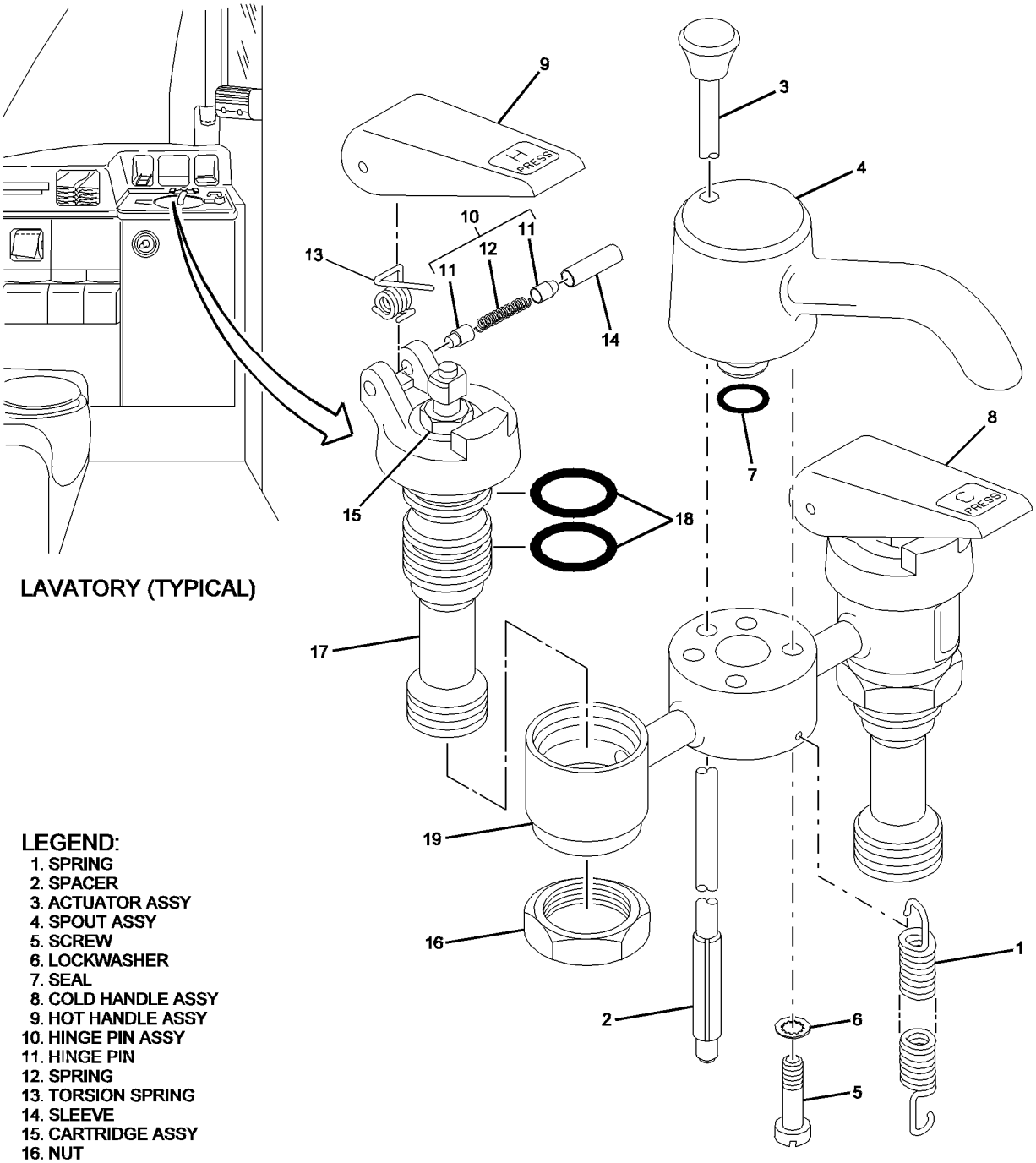
1) Operated the sink to make sure it does not bind.

(f) Fill the sink with water and check for leaks

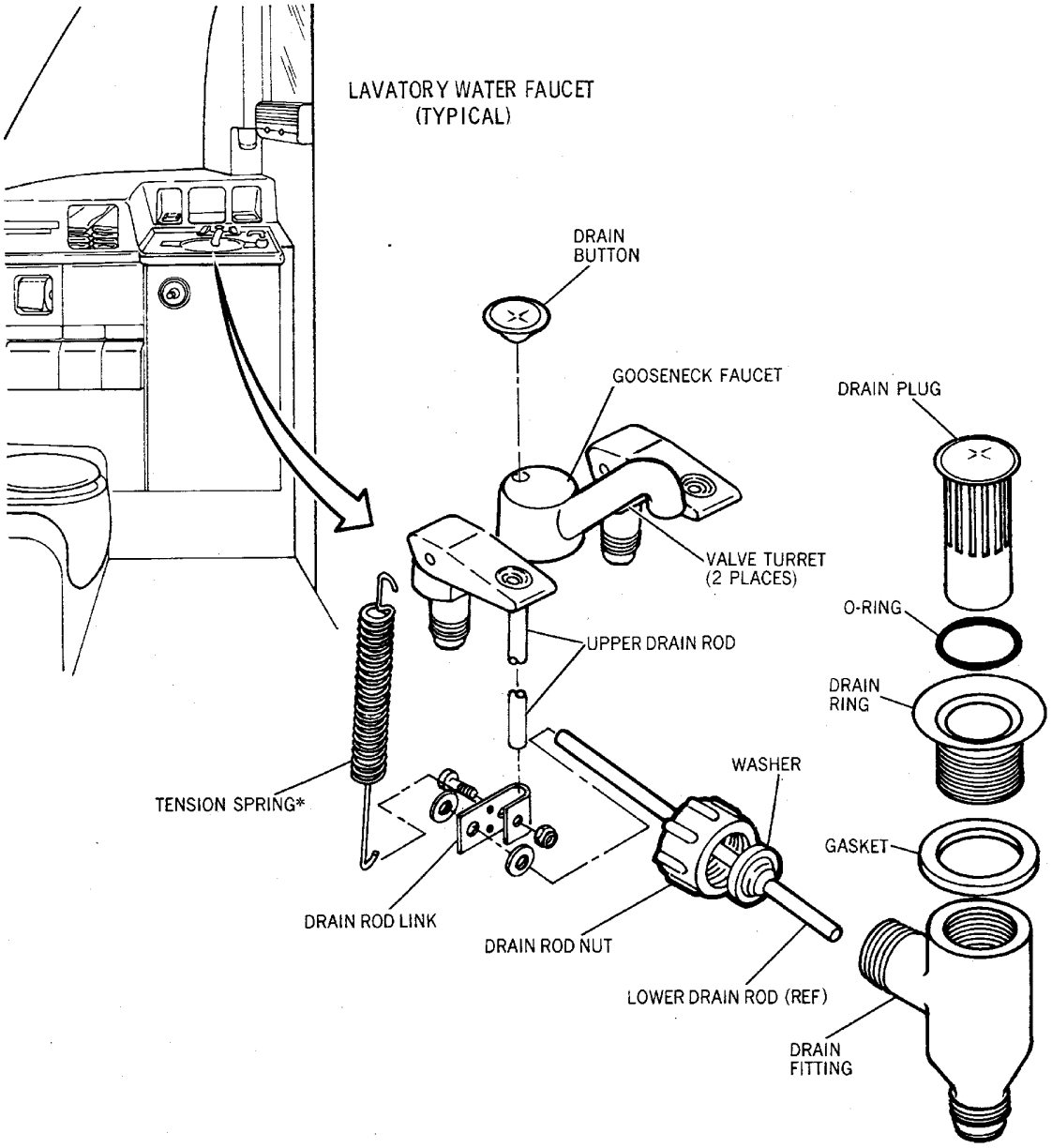
G. Place PRESELECT switch to OFF position to pressurize water system. (POTABLE WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 12-14-01/301)

H. Place the applicable water shutoff valve in OPEN position.

(1) Check faucet, valves, sink, and line connections for leakage.



Faucet Self-Closing Valve -- Removal/Installation
Figure 201/38-11-06-990-801



Sink Drain -- Removal/Installation
Figure 202/38-11-06-990-802

LAVATORY WATER SHUTOFF VALVE - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the water shutoff valves located in the forward and aft lavatories. A shutoff valve is mounted in the water supply line just below and to the side of the washbasin in each lavatory. Removal and installation procedures for each valve are identical except as noted. Access to each valve is through the waste container door in the applicable lavatory.

B. The shutoff valves are identical, only positioning of the nameplate in relation to the valve plug port and lavatory partition is different. In addition, the forward lavatory shutoff valve is provided with a bracket-type mount for the valve and nameplate. (Figure 201 and Figure 202)

2. Removal/Installation Water Shutoff Valve

A. Remove Shutoff Valve.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Put the PRESELECT switch to DRAIN position at service panel to relieve system pressure.

(3) Hold lavatory faucet(s) open to check that system lines are drained.

(4) Place service panel PRESELECT switch to OFF position.

(5) Remove washstand waste container from lavatory.

(6) In aft lavatories, disconnect water lines at shutoff valve and cap lines.

(7) In forward lavatory, disconnect water lines at shutoff valve, remove valve and mount from partition, and cap lines.

(8) In aft lavatories, remove valve handle, nameplate, and valve from partition. Retain handle and nameplate for installation.

NOTE: Handle and nameplate are to be installed in same position as removed from valve.

(9) In forward lavatory, remove valve handle, nameplate, and mount from valve. Retain handle and nameplate for installation.

NOTE: Handle, nameplate, and mount are to be installed in same position as removed from valve.

(10) Remove cap from valve port. Retain cap for installation.

B. Install Shutoff Valve

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Prepare valve for installation as follows:

(a) Check that valve ports are clean and free from any contamination.

(b) Install cap on valve port not used.

(c) In aft lavatories, position valve nameplate as required.

(d) In forward lavatory, install valve and nameplate on valve mount.

(3) In aft lavatories, position and install valve; then, connect water lines.

(4) In forward lavatory, position and install valve with mount on partition; then, connect water lines.

(5) Make certain that lavatory faucet(s) are closed.

(6) Place shutoff valve handle in normal operating position.

(7) Fill water supply tank. (POTABLE WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 12-14-01/301)

(8) Pressurize system and check for leaks. (WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2)

(9) Install washstand waste container.

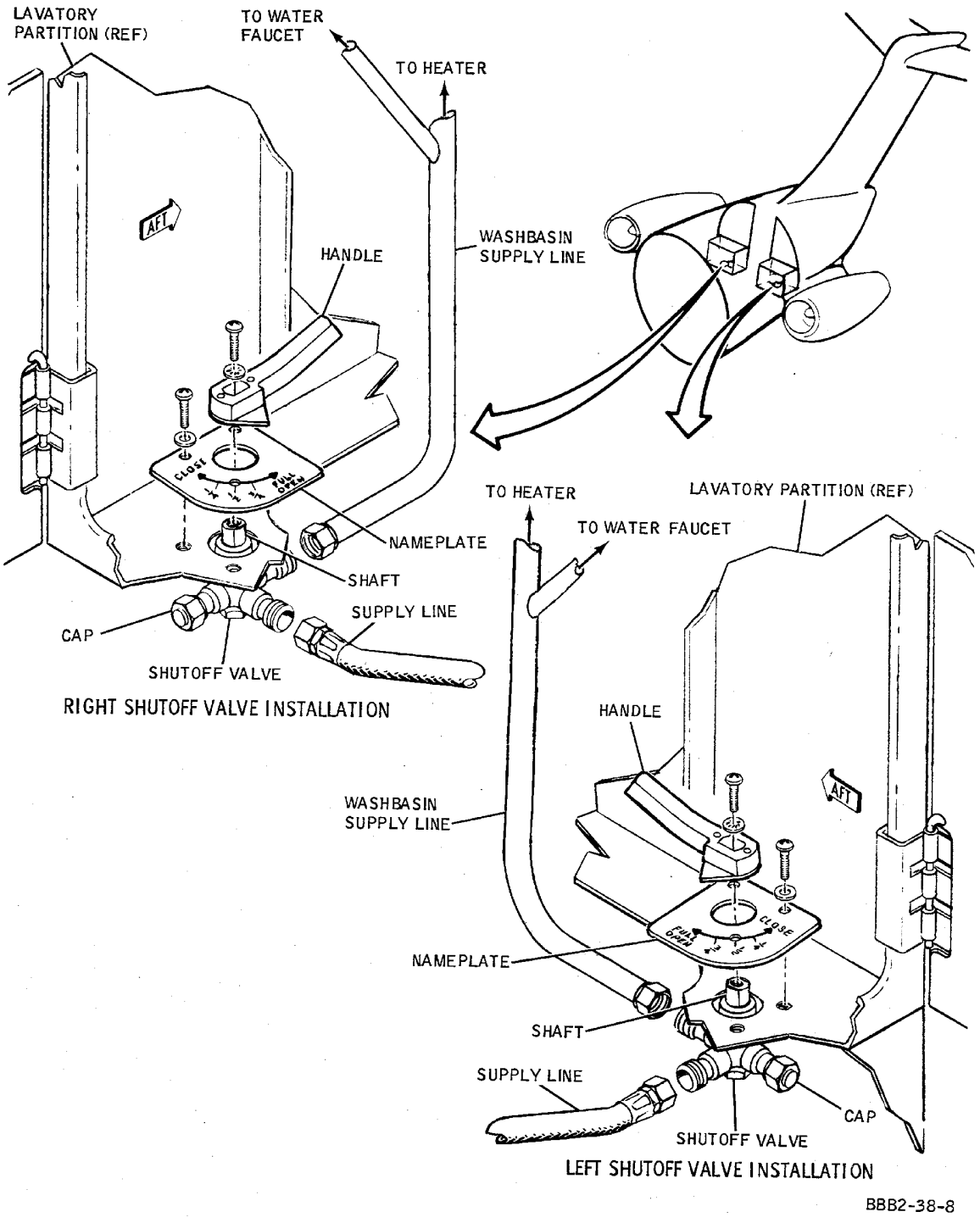
(10) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

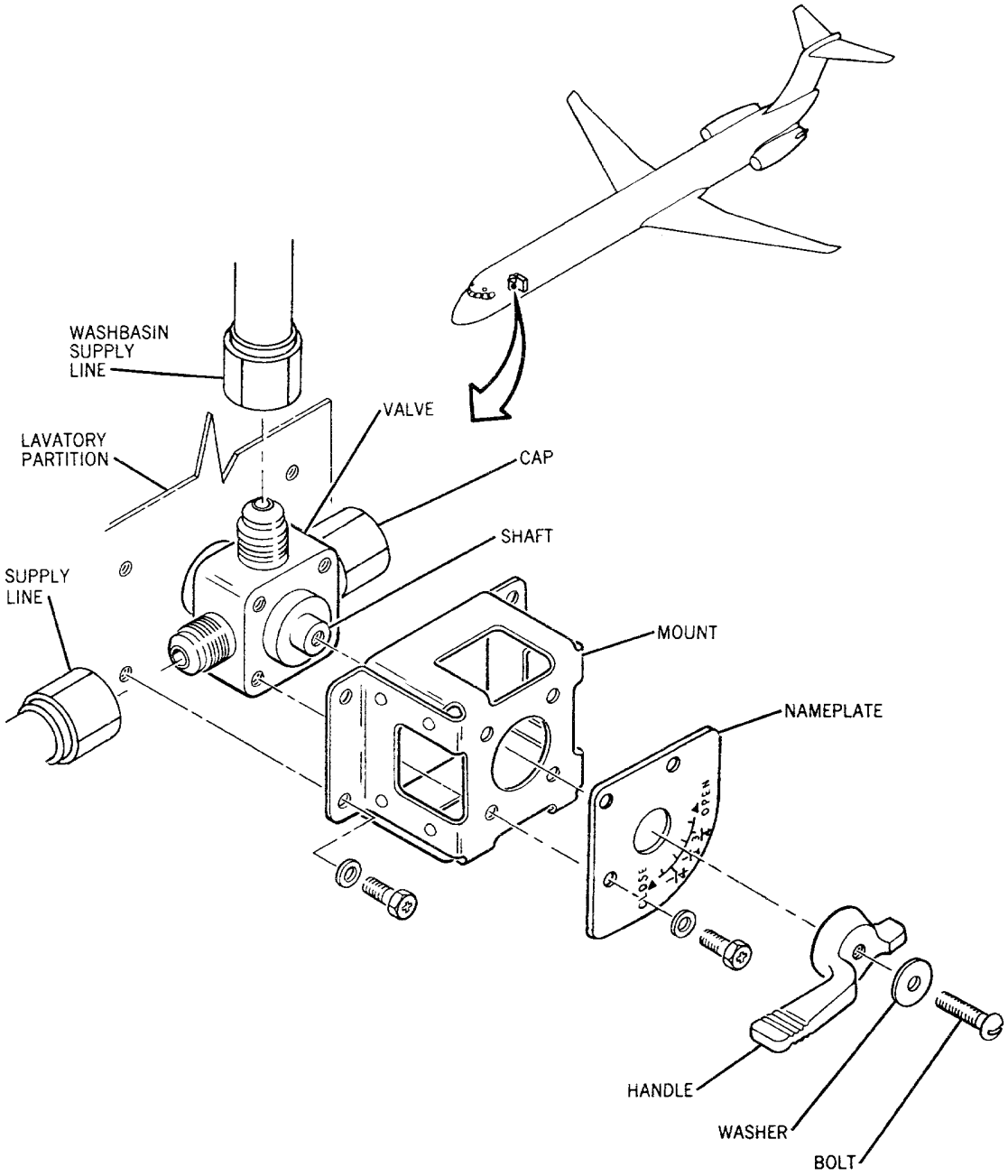
Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER



Aft Lavatory Water Shutoff Valve -- Removal/Installation
Figure 201/38-11-07-990-801



Forward Lavatory Water Shutoff Valve -- Removal/Installation
Figure 202/38-11-07-990-802

WATER LINE HEATERS - MAINTENANCE PRACTICES

1. General

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

A. The maintenance practices in this section provide removal/ installation procedures for the water line electrical heaters consisting of in-line heaters, ribbon heaters, and heated hoses. The heaters are not normally removed except for repair due to supply line damage.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

B. Three in-line heaters are installed in the water supply lines below the passenger compartment floor; one between the forward H-type supply line/heater connector and water tank, one between the aft H-type connector and water tank, and one between the aft H-type connector and aft left lavatory. The forward H-type connector is accessible through the right ceiling panel in the forward cargo compartment, approximately 8 ft (2 m) forward of the cargo door. The aft H-type connector is accessible through the right ceiling panel in the aft cargo compartment, just aft of the cargo door. (Figure 201 and Figure 202)

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 PRE MD80-25A381 AND PRE MD80-38-056

C. A ribbon-type heater is installed on each lavatory water inlet line between the floor inlet fitting and washbasin. The ribbon heater is accessible through the waste container access door in the lavatory washbasin cabinet.

WJE 410, 877-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056

D. A heated hose is installed on each lavatory water inlet line between the floor inlet fitting and washbasin. The heated hose is accessible through the waste container access door in the lavatory washbasin cabinet.

WJE 405-411, 880, 881, 883, 884

E. Seven heated hoses are installed in the water supply lines below the passenger compartment floor and are accessible through ceiling and sidewall panels in the cargo compartments. A heated hose is provided for the fill line between the service panel and water tank, the supply line between the aft H-type connector and G4 galley unit, the line between the aft supply line and aft water system drain valve, the line between the forward supply line and the forward water system drain valve tee, one heated hose for the supply line from the forward H-type connector to the G1 galley unit and one heated hose from the forward system drain valve tee to the forward lavatory. (DISTRIBUTION, SUBJECT 36-10-00, Figure 1)

WJE 401-404, 415-427, 429, 861-866, 868, 869, 871-874, 877-879, 886, 887, 891-893

F. Seven heated hoses are installed in the water supply lines below the passenger compartment floor and are accessible through ceiling and sidewall panels in the cargo compartments. A heated hose is provided for the fill line between the service panel and water tank, the supply line between the aft H-type connector and G4 galley unit, the line between the aft supply line and aft water system drain valve, the line between the forward supply line and the forward water system drain valve tee, one heated hose for the supply line from the forward H-type connector to the G2 galley unit and one heated hose from the forward system drain valve tee to the forward lavatory. (POTABLE, SUBJECT 38-10-00, Page 1)

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Petrolatum, VV-P-236 DPM 675	
Clamp-on ammeter (capable of reading 0-10 amperes)	Commercially available
Dry ice or equivalent cooling agent DPM 5476	Local
Twine (P/N 47-CO-27)	Commercially available

3. Removal/Installation Water Line Heaters

A. Remove In-line Heater (Figure 201 and Figure 202)

(1) Place PRESELECT switch in VENT position on the service panel to relieve system pressure.

(2) Place service panel PRESELECT switch to DRAIN position and allow system lines to drain. Check that containers are positioned at drain ports.

(3) Place service panel PRESELECT switch to OFF position after system has fully drained.

(4) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(5) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(6) Remove in-line heater from supply line between forward H-type connector and water tank as follows:

(a) Disconnect aft end of forward supply line from water tank standpipe for access to heater element tip. Cap standpipe.

(b) Connect aircraft 1/16 in. (2 mm) control cable or strong cord 25 ft (8 m) minimum length to exposed heater element tip with twine (P/N 47-CO-27).

NOTE: If heater has an intermediate break. Use the alternate procedure.(Paragraph 3.B.(5))

(c) Remove right ceiling panel in forward cargo compartment for access to H-type connector. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(d) Disconnect electrical connector from forward in-line heater.

(e) Disconnect in-line heater from H-type connector and pull on heater to remove element from supply line.

NOTE: Aircraft 1/16 in. (2 mm) control cable or strong cord is pulled through length of supply line to facilitate subsequent installation of heater element.

(f) Disconnect heater element from control cable but do not remove cable from water line.

(g) Discard heater element.

(7) Remove in-line heater from supply line between aft H-type connector and water tank as follows:

(a) Disconnect forward end of aft supply line from water tank standpipe for access to heater element tip. Cap standpipe.

(b) Connect aircraft 1/16 in. (2 mm) control cable or strong cord 54 ft (16 m) minimum length to exposed heater element tip with twine (P/N 47-CO-27).

(c) Remove right ceiling panel in aft cargo compartment for access to H-type connector. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(d) Disconnect applicable electrical connector from aft in-line heater.

(e) Disconnect in-line heater from H-type connector and pull on heater to remove element from supply line.

NOTE: Aircraft 1/16 in. (2 mm) control cable or strong cord is pulled through length of supply line to facilitate subsequent installation of heater element.

(f) Disconnect heater element from control cable but do not remove cable from water line.

(g) Discard heater element.

(8) Remove in-line heater from supply line between aft H-type connector and water inlet line in floor of left aft lavatory as follows:

(a) Disconnect water inlet line in left aft lavatory for access to heater element tip. Cap lavatory line.

(b) Connect aircraft 1/16 in. (2 mm) control cable or strong cord (16 ft (5 m)minimum length) to exposed heater element tip with twine (P/N 47-CO-27).

(c) Remove right ceiling panel in aft cargo compartment for access to H-type connector. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(d) Disconnect applicable electrical connector from aft in-line heater.

(e) Disconnect in-line heater from H-type connector and pull on heater to remove element from supply line.

NOTE: Aircraft 1/16 in. (2 mm) control cable or strong cord is pulled through length of supply line to facilitate subsequent installation of heater element.

(f) Disconnect heater element from control cable but do not remove cable from water line.

(g) Discard heater element.

B. Install In-line Heater (Figure 201 and Figure 202)

NOTE: Aircraft 1/16 in. (2 mm) control cable or strong cord of specified length was pulled into supply line during removal of in-line heater element. In procedure that follows, control cable is used as a pull wire for installation of new heater element. Heater wire should be lubricated with water soluble, non-toxic lubricant to facilitate installation.

NOTE: If heater has an intermediate break. Use the alternate procedure.(Paragraph 3.B.(5))

NOTE: If in-line heater is broken. Use the alternate procedure. (Paragraph 3.B.(5)).

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Install in-line heater in supply line between forward H-type connector and water tank as follows:

(a) Connect aircraft 1/16 in. (2 mm) control cable or strong cord to heater element tip with twine (P/N 47-CO-27).

WARNING: WHITE PETROLATUM IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN WHITE PETROLATUM IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT BREATHE THE MIST.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(b) Lubricate heater element wire with Petrolatum VV-P-236 (DPM 675) prior to installation.

(c) Pull element through supply line with a pull of 7.0 lbs (31.1 N) or less until heater is against forward H-type connector. Do not exceed 7.0 lbs (31.1 N) on pulled element. Be careful not to damage Teflon jacket of heater. (Paragraph 3.B.(5) for alternate procedure)

(d) Disconnect cable and twine from heater element tip at line break.

(e) Connect forward supply line to water tank standpipe.

(f) Connect in-line heater to forward H-type connector. Do not twist nylon connector body and heater when tightening pipe flare nut.

(g) Connect electrical connector to heater.

(3) Install in-line heater in supply line between aft H-type connector and water tank as follows:

(a) Connect aircraft 1/16 in. (2 mm) control cable or strong cord to heater element with twine (P/N 47-CO-27).

WARNING: WHITE PETROLATUM IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN WHITE PETROLATUM IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT BREATHE THE MIST.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(b) Lubricate heater element wire with Petrolatum, VV-P-236 (DPM 675) prior to installation.

(c) Pull element through supply line with a pull of 7.0 lbs (31.1 N) or less until heater is against aft H-type connector. Do not exceed 7.0 lbs (31.1 N) on pulled element. Be careful not to damage Teflon jacket of heater. (Paragraph 3.B.(5) for alternate procedure)

(d) Disconnect cable and twine from heater element tip at line break.

(e) Connect aft supply line to water tank standpipe.

(f) Connect in-line heater to forward H-type connector. Do not twist nylon connector body and heater when tightening pipe flare nut.

(g) Connect applicable electrical connector to heater.

(4) Install in-line heater in supply line between aft H-type connector and water inlet line in floor of left aft lavatory as follows:

(a) Connect aircraft 1/16 in. (2 mm) control cable or strong cord to heater element tip with twine (P/N 47-CO-27).

WARNING: WHITE PETROLATUM IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN WHITE PETROLATUM IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT BREATHE THE MIST.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(b) Lubricate heater element wire with Petrolatum, VV-P-236 (DPM 675) prior to installation.

(c) Pull element through supply line with a pull of 7.0 lbs (31.1 N) or less until heater is against aft H-type connector. Do not exceed 7.0 lbs (31.1 N) on pulled element. Be careful not to damage Teflon jacket of heater. (Paragraph 3.B.(5) for alternate procedure)

(d) Disconnect cable and twine from heater element tip at line break (in left aft lavatory).

(e) Connect water inlet line in left aft lavatory.

(f) Connect in-line heater to aft H-type connector. Do not twist nylon connector body and heater when tightening pipe flare nut.

(g) Connect applicable electrical connector to heater.

(5) Alternate procedure for installation of water line heater.

(a) Insert small weight and 1 to 2 feet (305 mm to 610 mm) of strong cord into water supply line.

(b) Using air nozzle, direct air stream into open end of supply line to blow small weight and cord through water line.

(c) Lightweight strong cord may be used to pull new heater into water line.

(6) Fill water supply tank as required. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

(7) Pressurize water system and check for leaks. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 501)

(8) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT

(Continued)

LOWER EPC, AC BUS

Row	Col	Number	Name
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(9) Connect external electrical power to aircraft water system heater receptacle and check in-line heater operation as follows:

NOTE: Make certain that external power source of 115 VAC, 15 amps, is available for operational check of in-line heaters.

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1693, DRY ICE (DPM 5476)

HAZMAT 1000, REFER TO MSDS

(a) Fill water service panel area with dry ice (DPM 5476) or equivalent cooling agent to actuate thermal switch.

NOTE: Nose oleo switch must be actuated to flight mode for this check.

(b) Place clamp-on ammeter around either unnumbered wire on heating element at terminal strip. (WATER LINES, SUBJECT 30-70-00, Figure 102)

(c) Ammeter should reflect some current.

NOTE: For heaters with a minimum current requirement of 0.50 amps or less, if there is no indication on the ammeter, the heater is acceptable if it is warmer to the touch than the surrounding structure.

(d) Remove external power from aircraft.

(10) Install ceiling panel(s) in cargo compartment(s) as required. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 PRE MD80-25A381 AND PRE MD80-38-056

C. Remove Ribbon Heater

NOTE: The procedure that follows is typical for all lavatory water inlet ribbon heaters. (Paragraph 1.C.)

(1) Disconnect and remove external power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 PRE MD80-25A381 AND PRE MD80-38-056 (Continued)

(3) Remove waste container from lavatory washbasin cabinet for access to ribbon heater.

(4) Disconnect electrical connector from ribbon heater.

(5) Remove ribbon heater from around water inlet line.

D. Install Ribbon Heater

NOTE: The procedure that follows is typical for all lavatory water inlet ribbon heaters. (Paragraph 1.C.)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

(2) Carefully install ribbon around water inlet line in lavatory so that electrical receptacle is at floor level.

(3) Install heater ribbon maintaining maximum contact with pipe, and pitch of 1.00(±0.50) inch (25.4(±12.7) mm). Tape ribbon heater to pipes. Secure ribbon heater with wraps of insulation tape.

(4) Connect electrical connector to ribbon heater.

(5) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

(6) Connect external electrical power to aircraft and physically check ribbon heater operation; then, remove external electrical power from aircraft.

NOTE: Make certain that external power source of 115 VAC, 15 amps, is available for operational check of ribbon heaters.

(7) Install waste container in lavatory washbasin cabinet.

WJE 410, 877-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056

E. Remove Heated Hose

WJE 410; WJE 405-409, 411, 880, 881, 883, 884 POST MD80-25A381 OR POST MD80-38-056

NOTE: Procedure that follows is typical for all heated hoses in the water supply lines. (Paragraph 1.E.)

WJE 877-879; WJE 401-404, 415-427, 429, 861-866, 868, 869, 871-874, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056

NOTE: Procedure that follows is typical for all heated hoses in the water supply lines. (Paragraph 1.F.)

WJE 410, 877-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056

(1) Place PRESELECT switch in VENT position at service panel to relieve system pressure.

(2) Put the PRESELECT switch to DRAIN position and allow system lines to drain. Check that containers are positioned at drain ports.

(3) Put the PRESELECT switch to OFF position after system has fully drained.

(4) Place service panel PRESELECT switch in OFF position.

(5) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

(7) Remove ceiling and/or sidewall panels from applicable cargo compartment for access to heated hose.

(8) Disconnect electrical connector from heated hose.

NOTE: Position of electrical receptacle should be noted for subsequent installation.

(9) Disconnect and remove heated hose from supply line. Cap open ends of supply line.

F. Install Heated Hose

WJE 410; WJE 405-409, 411, 880, 881, 883, 884 POST MD80-25A381 OR POST MD80-38-056

NOTE: Procedure that follows is typical for all heated hoses in the water supply lines. (Paragraph 1.E.)

WJE 877-879; WJE 401-404, 415-427, 429, 861-866, 868, 869, 871-874, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056

NOTE: Procedure that follows is typical for all heated hoses in the water supply lines. (Paragraph 1.F.)

WJE 410, 877-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

(2) Position and install heated hose in supply line.

NOTE: Make certain electrical receptacle is positioned as noted during removal procedure.

(3) Connect electrical connector to heated hose.

WJE 410, 877-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-25A381 OR POST MD80-38-056 (Continued)

(4) Fill water supply tank as required. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

(5) Pressurize water system and check for leaks. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 501)

(6) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

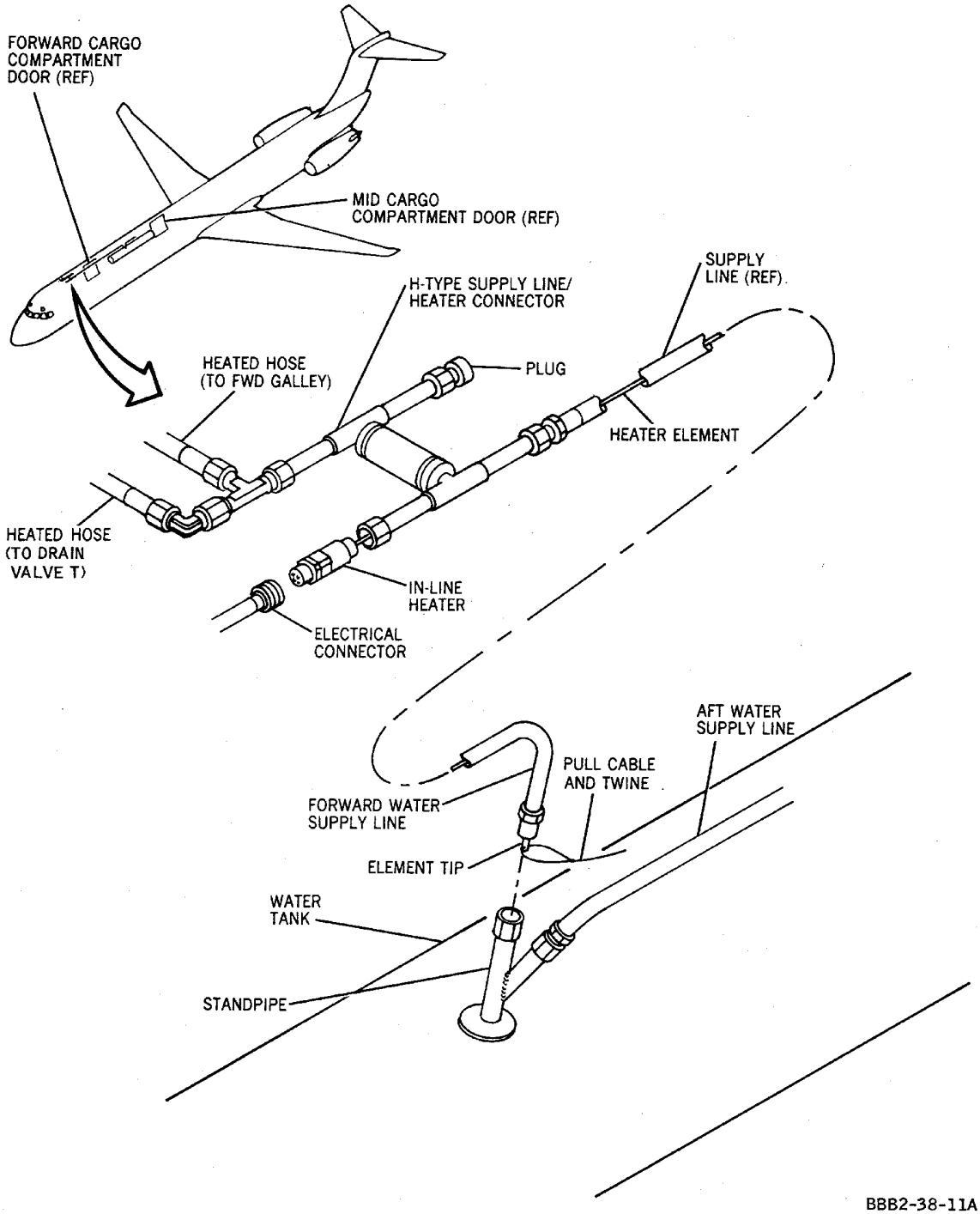
Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

(7) Connect external electrical power to aircraft water system heater receptacle and physically check heated hose operation; then, remove external electrical power from aircraft.

NOTE: Make certain that external power source of 115 VAC, 15 amps, is available for operational check of heated hose.

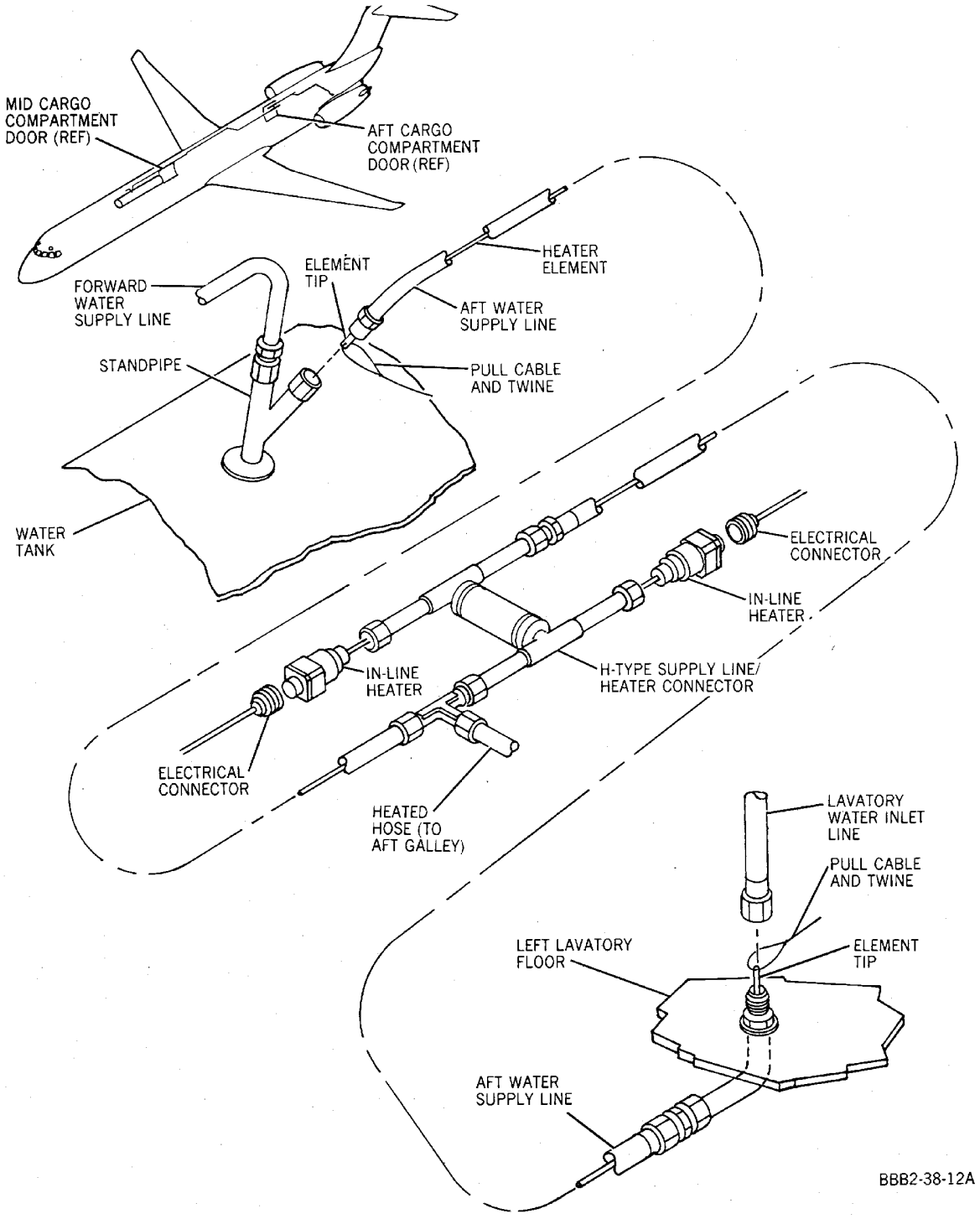
(8) Install ceiling and/or sidewall panels in applicable cargo compartment as required. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

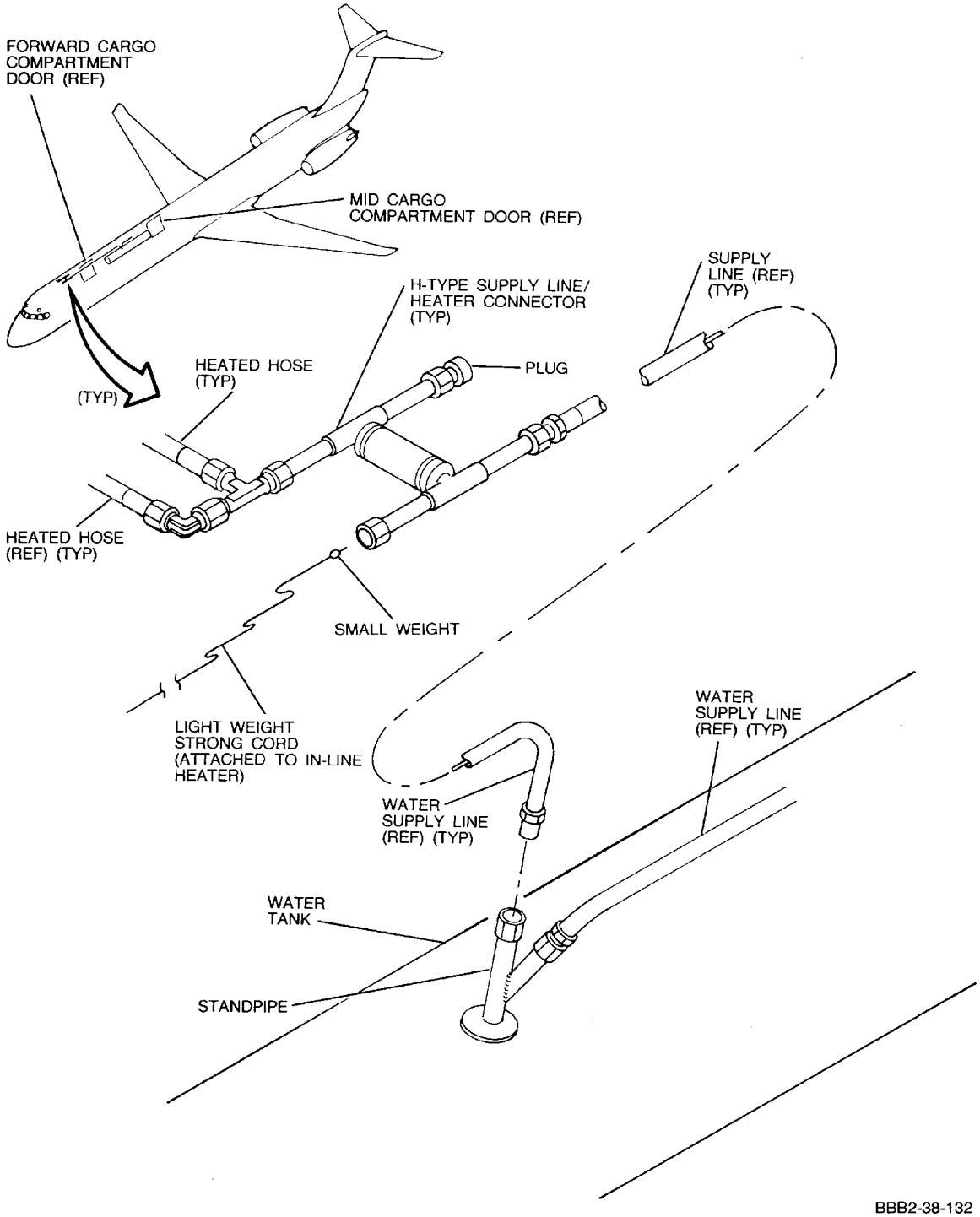


Forward In-Line Heater -- Removal/Installation
Figure 201/38-11-08-990-819

EFFECTIVITY
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893



Aft In-Line Heaters -- Removal/Installation
Figure 202/38-11-08-990-820



In-Line Heaters -- Alternate Installation
Figure 203/38-11-08-990-821

EFFECTIVITY
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

WATER LINE HEATERS - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation procedures for the water line electrical heaters consisting of in-line heaters, ribbon heaters, and heated hoses. The heaters are not normally removed except for repair due to supply line damage.

B. Three in-line heaters are installed in the water supply lines below the passenger compartment floor; one between the forward H-type supply line/heater connector and water tank, one between the aft H-type connector and water tank, and one between the aft H-type connector and aft left lavatory. The forward H-type connector is accessible through the right ceiling panel in the forward cargo compartment, approximately 8 feet (2.4 meters) forward of the cargo door. The aft H-type connector is accessible through the right ceiling panel in the aft cargo compartment, just aft of the cargo door. (Figure 201 and Figure 202)

C. A heated hose is installed on each lavatory water inlet line between the floor inlet fitting and washbasin. The heated hose is accessible through the waste container access door in the lavatory washbasin cabinet.

D. Six heated hoses are installed in the water supply lines below the passenger compartment floor and are accessible through ceiling and sidewall panels in the cargo compartments. A heated hose is provided for the fill line between the service panel and water tank, the line between the tee and G3 galley unit, the line between the aft supply line and aft water system drain valve, the line between the forward supply line H-type connector and the forward water system drain valve tee, and the supply line from the forward H-type connector to the G1 galley unit. (POTABLE, SUBJECT 38-10-00, Figure 1)

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Petrolatum, VV-P-236	
Clamp-on ammeter, (capable of reading 0-10 amperes)	Commercially available
Dry ice or equivalent cooling agent DPM 5476	Local
Twine (P/N 47-CO-27)	

3. Removal/Installation Water Line Heaters

A. Remove In-line Heater (Figure 201 and Figure 202)

(1) Put the PRESELECT switch to VENT position at service panel to relieve system pressure.

(2) Put the service panel PRESELECT switch to DRAIN position and allow system lines to drain. Check that containers are positioned at drain ports.

(3) Put the service panel PRESELECT switch to OFF position after system has fully drained.

(4) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(5) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(6) Remove in-line heater from supply line between forward H-type connector and water tank as follows:

(a) Disconnect aft end of forward supply line from water tank standpipe for access to heater element tip. Cap standpipe.

(b) Connect aircraft 1/16-inch (1.6mm) control cable or strong cord (25-foot (7.6 meters) minimum length) to exposed heater element tip with twine (P/N 47-CO-27).

NOTE: If heater has an intermediate break. Use the alternate procedure. (Paragraph 3.B.(5))

(c) Remove right ceiling panel in forward cargo compartment for access to H-type connector. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(d) Disconnect electrical connector from forward in-line heater.

(e) Disconnect in-line heater from H-type connector and pull on heater to remove element from supply line.

NOTE: Aircraft 1/16-inch (1.6 mm) control cable or strong cord is pulled through length of supply line to facilitate subsequent installation of heater element.

(f) Disconnect heater element from control cable but do not remove cable from water line.

(g) Discard heater element.

(7) Remove in-line heater from supply line between aft H-type connector and water tank as follows:

(a) Disconnect forward end of aft supply line from water tank standpipe for access to heater element tip. Cap standpipe.

(b) Connect aircraft 1/16-inch (1.6mm) control cable or strong cord (54-foot (16.4 meters) minimum length) to exposed heater element tip with twine (P/N 47-CO-27).

(c) Remove right ceiling panel in aft cargo compartment for access to H-type connector. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(d) Disconnect applicable electrical connector from aft in-line heater.

(e) Disconnect in-line heater from H-type connector and pull on heater to remove element from supply line.

NOTE: Aircraft 1/16-inch (1.6mm) control cable or strong cord is pulled through length of supply line to facilitate subsequent installation of heater element.

(f) Disconnect heater element from control cable but do not remove cable from water line.

(g) Discard heater element.

(8) Remove in-line heater from supply line between aft H-type connector and water inlet line in floor of left aft lavatory as follows:

(a) Disconnect water inlet line in left aft lavatory for access to heater element tip. Cap lavatory line.

(b) Connect aircraft 1/16-inch (1.6mm) control cable or strong cord (16-foot (4.8 meters) minimum length) to exposed heater element tip with twine (P/N 47-CO-27).

(c) Remove right ceiling panel in aft cargo compartment for access to H-type connector. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(d) Disconnect applicable electrical connector from aft in-line heater.

(e) Disconnect in-line heater from H-type connector and pull on heater to remove element from supply line.

NOTE: Aircraft 1/16-inch (1.6mm) control cable or strong cord is pulled through length of supply line to facilitate sub-sequent installation of heater element.

(f) Disconnect heater element from control cable but do not remove cable from water line.

(g) Discard heater element.

B. Install In-line Heater (Figure 201 and Figure 202)

NOTE: Aircraft 1/16-inch (1.6mm) control cable or strong cord of specified length was pulled into supply line during removal of in-line heater element. In procedure that follows, control cable is used as a pull wire for installation of new heater element. Heater wire should be lubricated with water soluble, non-toxic lubricant to facilitate installation.

NOTE: If heater has an intermediate break. Use the alternate procedure. (Paragraph 3.B.(5))

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(2) Install in-line heater in supply line between forward H-type connector and water tank as follows:

(a) Connect aircraft 1/16-inch (1.6 mm) control cable or strong cord to heater element tip with twine (P/N 47-CO-27). Then pull element through supply line with a pull of 7.0 lbs (31.1 N) or less until heater is against forward H-type connector. Do not exceed 7.0 lbs (31.1 N) on pulled element. Be careful not to damage Teflon jacket of heater. For alternate procedure refer to Paragraph 3.B.(5).

(b) Disconnect cable and twine from heater element tip at line break.

(c) Connect forward supply line to water tank standpipe.

(d) Connect in-line heater to forward H-type connector. Do not twist nylon connector body and heater when tightening pipe flare nut.

(e) Connect electrical connector to heater.

(3) Install in-line heater in supply line between aft H-type connector and water tank as follows:

(a) Connect aircraft 1/16-inch (1.6 mm) control cable or strong cord to heater element tip with twine (P/N 47-CO-27). Then pull element through supply line with a pull of 7.0 lbs (31.1 N) or less until heater is against aft H-type connector. Do not exceed 7.0 lbs (31.1 N) on pulled element. Be careful not to damage Teflon jacket of heater. For alternate procedure refer to Paragraph 3.B.(5).

(b) Disconnect cable and twine from heater element tip at line break.

(c) Connect aft supply line to water tank standpipe.

(d) Connect in-line heater to aft H-type connector. Do not twist nylon connector body and heater when tightening pipe flare nut.

(e) Connect applicable electrical connector to heater.

(4) Install in-line heater in supply line between aft H-type connector and water inlet line in floor of left aft lavatory as follows:

(a) Connect aircraft 1/16-inch (1.6 mm) control cable or strong cord to heater element tip with twine (P/N 47-CO-27). Then pull element through supply line with a pull of 7.0 lbs (31.1 N) or less until heater is against aft H-type connector. Do not exceed 7.0 lbs (31.1 N) on pulled element. Be careful not to damage Teflon jacket of heater. For alternate procedure refer to Paragraph 3.B.(5).

(b) Disconnect cable and twine from heater element tip at line break (in left aft lavatory).

(c) Connect water inlet line in left aft lavatory.

(d) Connect in-line heater to aft H-type connector. Do not twist nylon connector body and heater when tightening pipe flare nut.

(e) Connect applicable electrical connector to heater.

(5) Alternate Procedure for Installation of Water Line Heater.

(a) Insert small weight and 1 to 2 feet (305 mm to 610 mm) of strong cord into water supply line.

(b) Using air nozzle, direct air stream into open end of supply line to blow small weight and cord through water line.

(c) Lightweight strong cord may be used to pull new heater into water line.

(6) Fill water supply tank as required. (POTABLE WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 12-14-01/301)

(7) Pressurize water system and check for leaks. (WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2)

(8) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(9) Connect external electrical power to aircraft water system heater receptacle and check in-line heater operation as follows:

NOTE: Make certain that external power source of 115 VAC, 15 amps, is available for operational check of in-line heaters.

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1693, DRY ICE (DPM 5476)

HAZMAT 1000, REFER TO MSDS

(a) Fill water service panel area with dry ice (DPM 5476) or equivalent cooling agent to actuate thermal switch.

1) Make sure the Nose Landing Gear (NLG) oleo switch is actuated to the flight mode for this check

(b) Place clamp-on ammeter around either unnumbered wire on heating element at terminal strip. (WATER LINES - TROUBLE SHOOTING, PAGEBLOCK 30-70-00/101)

1) The ammeter must show some current.

NOTE: For heaters with a minimum current requirement of 0.50 amps or less, if there is no indication on the ammeter, the heater is acceptable if it is warmer to the touch than the surrounding structure.

(c) Remove external power from aircraft.

(10) Install ceiling panel(s) in cargo compartment(s) as required. LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201

C. Remove Heated Hose

NOTE: Procedure that follows is typical for all heated hoses in the water supply lines. (Paragraph 1.D.)

(1) Put the PRESELECT switch to VENT position at service panel to relieve system pressure.

(2) Place service panel PRESELECT switch to DRAIN position and allow system lines to drain. Check that containers are positioned at drain ports.

(3) Place service panel PRESELECT switch to OFF position after system has fully drained.

(4) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(5) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

(6) Remove ceiling and/or sidewall panels from applicable cargo compartment for access to heated hose. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(7) Disconnect electrical connector from heated hose.

NOTE: Position of electrical receptacle should be noted for subsequent installation.

(8) Disconnect and remove heated hose from supply line. Cap open ends of supply line.

D. Install Heated Hose

NOTE: Procedure that follows is typical for all heated hoses in the water supply lines. (Paragraph 1.D.)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

(2) Position and install heated hose in supply line.

NOTE: Make certain electrical receptacle is positioned as noted during removal procedure.

(3) Connect electrical connector to heated hose.

(4) Fill water supply tank as required. (POTABLE WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 12-14-01/301)

(5) Pressurize water system and check for leaks. ((WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2)

(6) Remove the safety tags and close these circuit breakers:

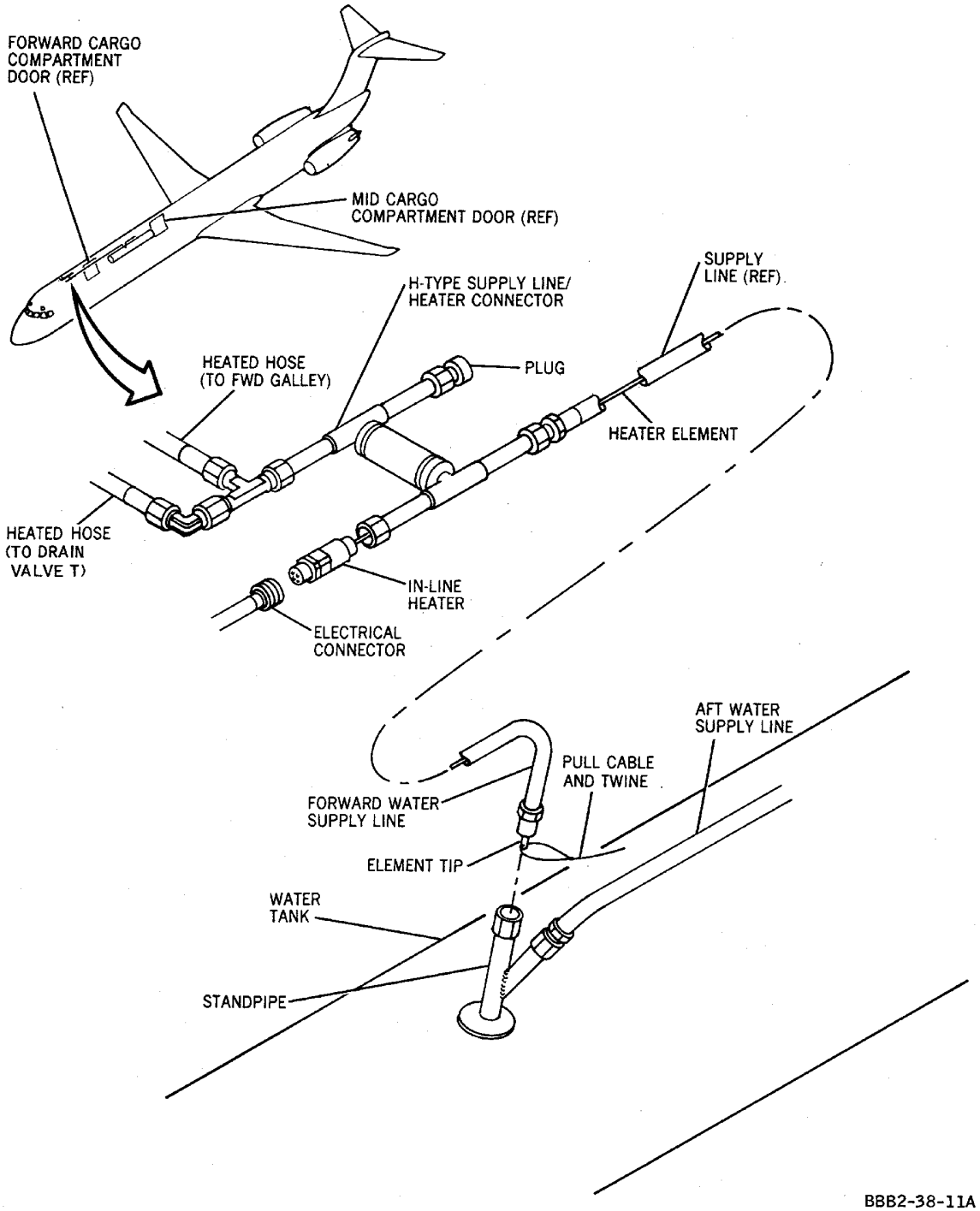
LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

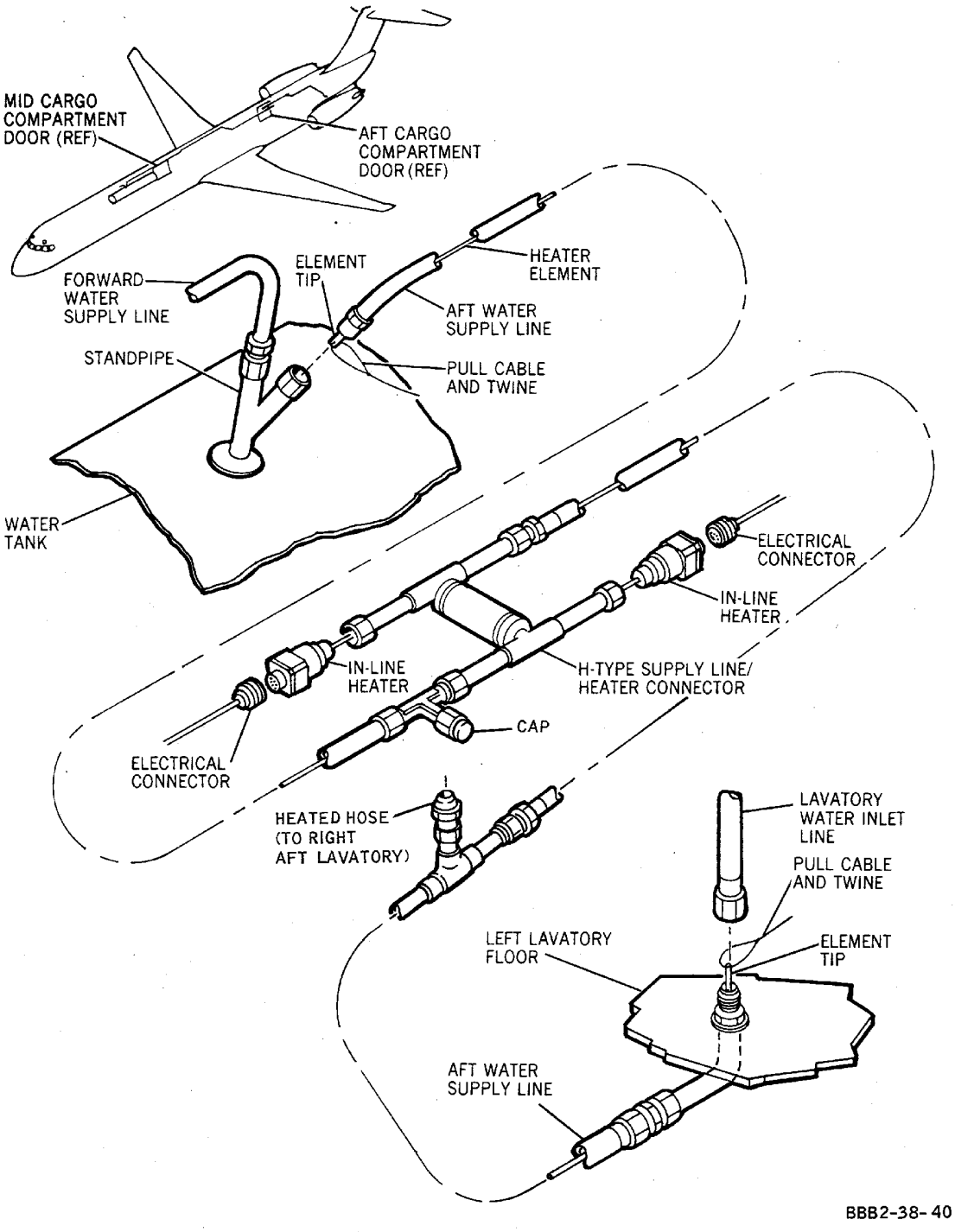
(7) Connect external electrical power to aircraft water system heater receptacle and physically check heated hose operation; then, remove external electrical power from aircraft.

NOTE: Make certain that external power source of 115 VAC, 15 amps, is available for operational check of heated hose.

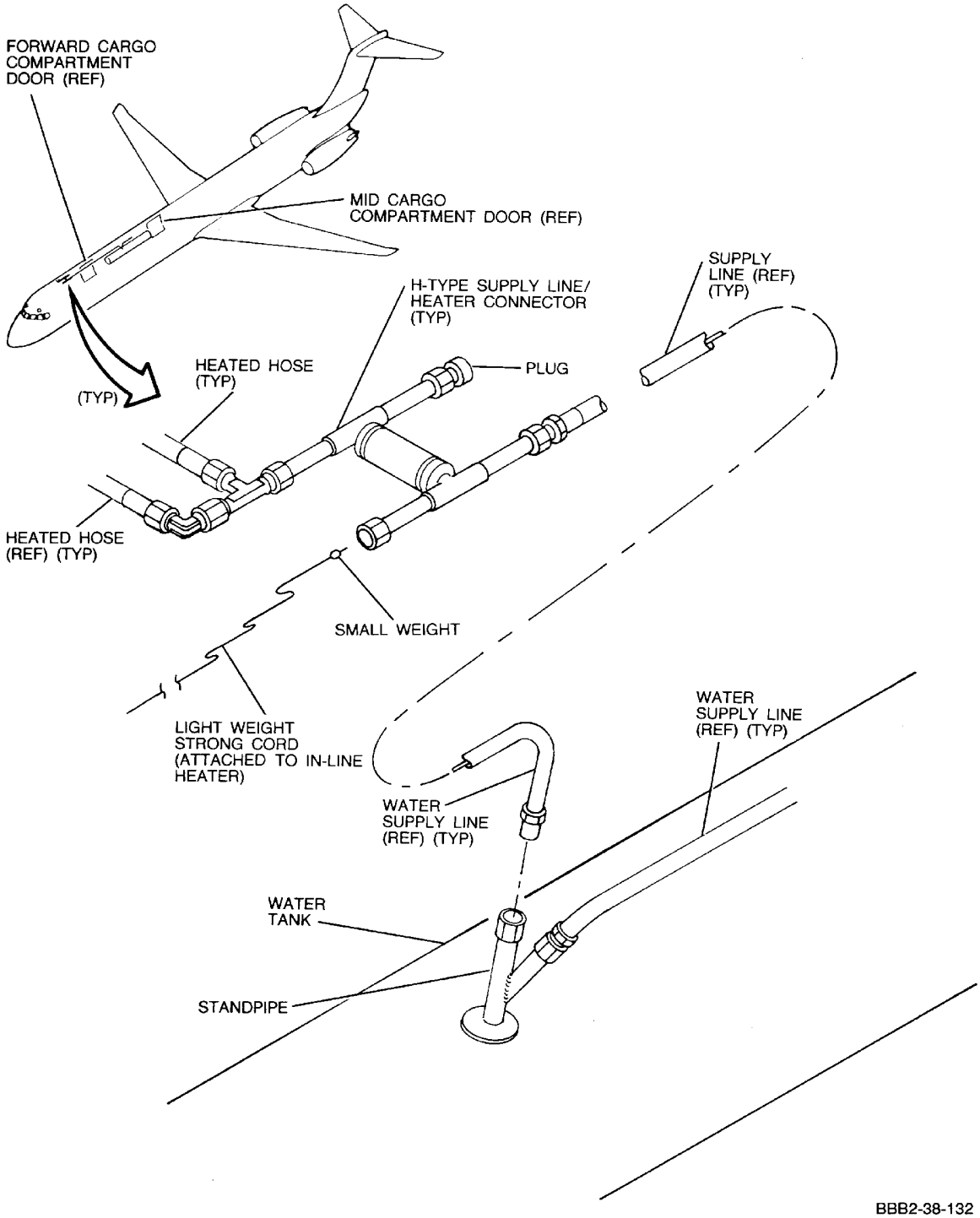
(8) Install ceiling and/or sidewall panels in applicable cargo compartment as required. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)



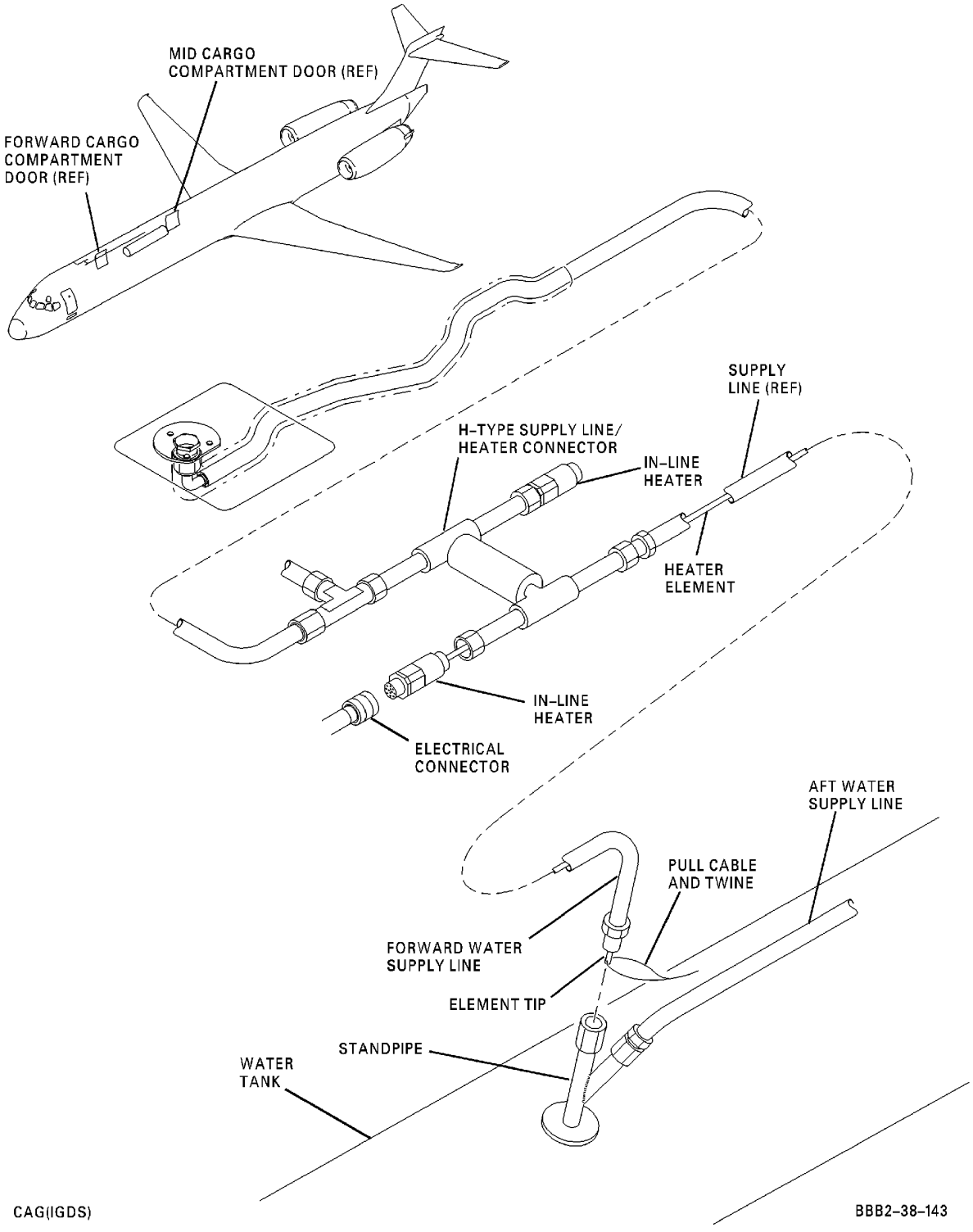
Forward In-Line Heater -- Removal/Installation
Figure 201/38-11-08-990-811



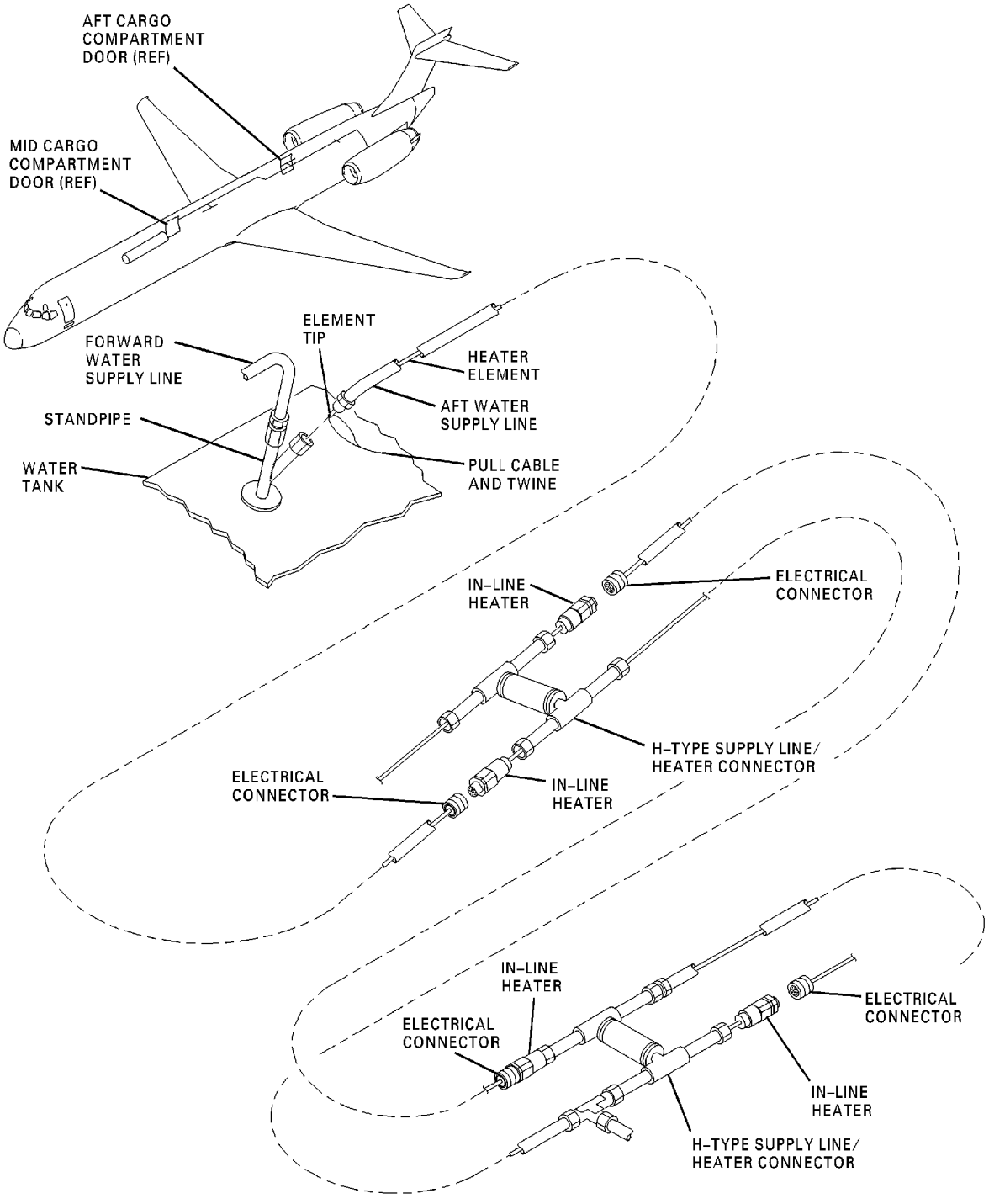
Aft In-Line Heaters -- Removal/Installation
Figure 202/38-11-08-990-812



In-Line Heaters -- Alternate Installation
Figure 203/38-11-08-990-813



Forward and Galley In-Line Heaters -- Removal/Installation
Figure 204/38-11-08-990-814



Center In-Line Heaters -- Removal/Installation
Figure 205/38-11-08-990-815

WATER SYSTEM FILL LINE VALVE - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/installation instructions for the potable water system fill line valve located in the right tunnel, just forward of the mid cargo compartment door (on some aircraft just aft of the forward cargo compartment door). The bracket-mounted valve is adjacent to the center left side of the water supply tank, and is accessible through a removable sidewall panel.

B. All lines, fittings, and electrical connectors should be capped when disconnected to prevent contamination of the water system and damage to electrical connectors.

2. Removal/Installation-Fill Line Valve

A. Remove Valve (Figure 201)

(1) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER
		B1-369	WATER QUANTITY

(3) Place PRESELECT switch to DRAIN position at service panel to relieve system pressure.

(4) Disconnect electrical connector from fill line valve. Cap electrical connector.

(5) Remove fill lines from valve. Cap water lines.

(6) Remove valve from mounting bracket.

B. Install Valve (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER
		B1-369	WATER QUANTITY

(2) Check that fill line valve, fill lines and fittings are free of contamination.

(3) Align and install valve on mounting bracket. Do not tighten attach bolts at this time.

NOTE: Each attach bolt shall be fitted with a lock washer and a flat washer.

(4) Align water fill lines with valve ports, and connect lines. Do not tighten line connections at this time.

(5) Adjust lines and valve to prevent any preload. Tighten valve bracket attach bolts and line connections.

(6) Connect electrical connector to fill line valve. Check that electrical leads to water level indicating probes are properly attached.

(7) Perform system pressure test.

(WATER SUPPLY SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 38-11-00/501 Config 2)

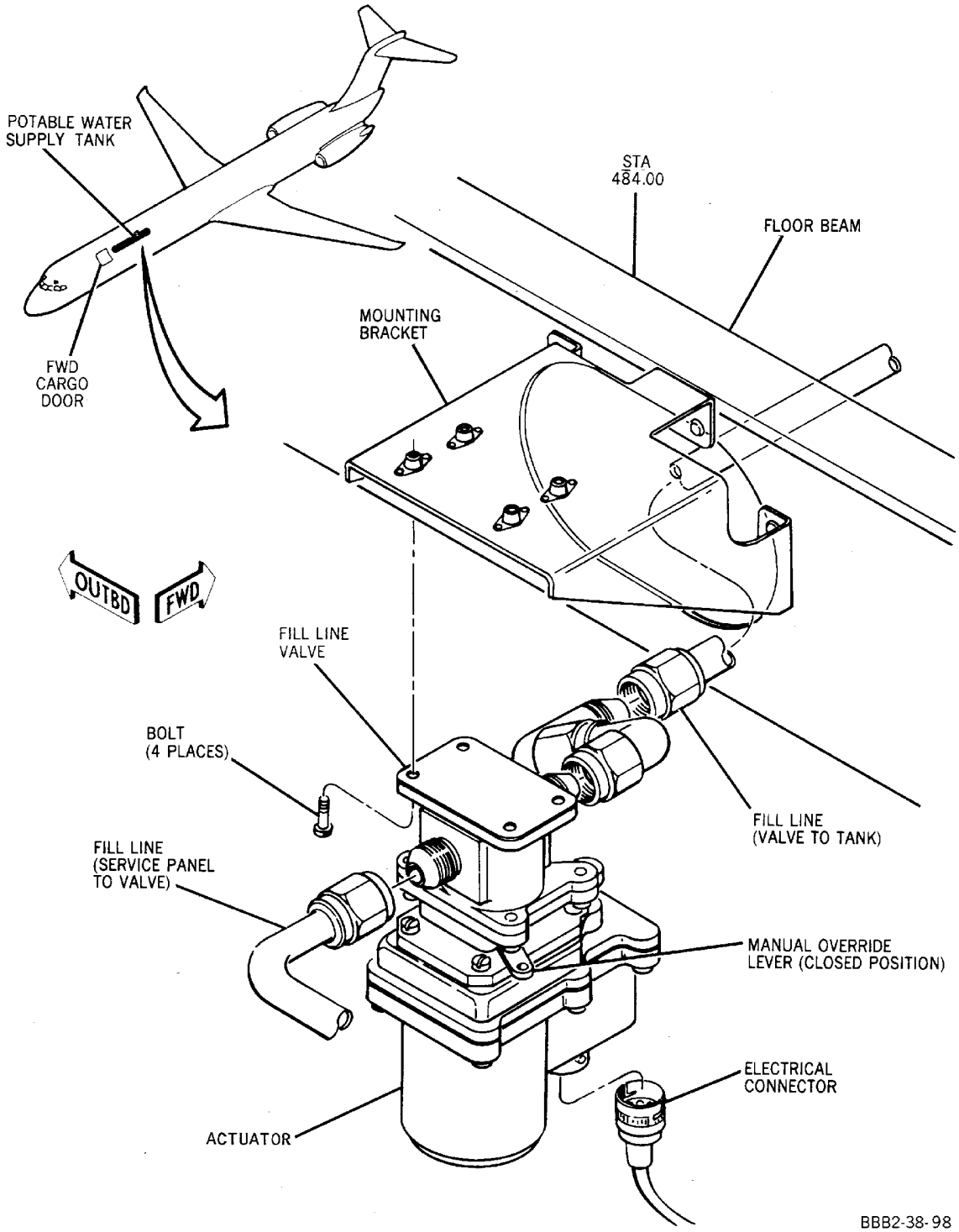
(8) Close service panel access door.

(9) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER
		B1-369	WATER QUANTITY

(10) Install access panel in cargo compartment sidewall.



Fill Line Valve -- Removal/Installation
Figure 201/38-11-09-990-801

POTABLE WATER PRESELECT SWITCH - REMOVAL/INSTALLATION

1. General

A. This section has the Removal/Installation procedures for the Potable Water Mode Preselect Switch.

B. The Potable Water Preselect Switch is located on the water service panel on the left aft side of the fuselage.

C. Perform continuity check during installation of electrical wiring.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible hat some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. before you use the materials make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 401

Name and Number	Manufacturer
Sealing compound integral fuel tank PR 1422 B1/2 DMS 2082	Courtauld Aerospace Inc. Sealants, Adhesives and Coating Division, Glendale, CA

3. Potable Water Preselect Switch Removal/Installation

A. Remove Potable Water Mode Preselect Switch

WARNING: TO AVOID INJURY TO MAINTENANCE PERSONNEL OR DAMAGE TO EQUIPMENT, MAKE CERTAIN ADEQUATE PRECAUTIONS ARE TAKEN WHILE PERFORMING ANY WORK IF ELECTRICAL POWER IS SUPPLIED TO THE AIRCRAFT. PRIOR TO REMOVAL OR INSTALLATION OF PASSENGER SEATS, OPEN, SAFETY AND TAG ALL CIRCUIT BREAKERS FOR SEAT POWER PORTS, IFE, TELEPHONE, TASK LIGHTS AND AUDIO ENTERTAINMENT.

WARNING: ELECTRICALLY GROUND THE AIRCRAFT. MAKE SURE YOU PROPERLY CONNECT STATIC GROUND CABLES. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
Z	33	B1-841	FILL DRAIN VALVE CONTROL

(2) Open these access panels:

Number	Name/Location
5112D	Potable Water Service Tank Pressure Valve, Water Line Drain and Forward and Aft Tank Vents, Fill/Vent Valve
5135C	Potable Water Service Panel

(INTERNAL ACCESS DOORS, SUBJECT 06-31-00)

(3) Remove and retain knob (1).

(4) Remove Preselect switch (2); retain hardware for installation.

(5) Disconnect electrical wiring from the Preselect switch; tag wires for installation.

B. Install Potable Water Preselect Switch

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER

LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
Z	33	B1-841	FILL DRAIN VALVE CONTROL

(2) Make sure that this access panel is open:

Number	Name/Location
5112D	Potable Water Service Tank Pressure Valve, Water Line Drain and Forward and Aft Tank Vents, Fill/Vent Valve

(3) Connect electrical wiring to the Preselect switch. (WDM 38-15-01 , Page 515)

(4) Install Preselect switch (2) using hardware retained in (Paragraph 3.A.(4)).

WARNING: INTEGRAL FUEL TANKS SEALING COMPOUND (POLYSULFIDE SEALANT B1/2 AND B2) IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN INTEGRAL FUEL TANKS SEALING COMPOUND IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET INTEGRAL FUEL TANKS SEALING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

(WARNING PRECEDES)

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THESE HAZARDOUS AGENTS.

(5) Seal index hole using polysulfide sealant, A60122 . (Figure 401)

(6) Install knob (1).

(7) Close these access panels:

Number	Name/Location
5112D	Potable Water Service Tank Pressure Valve, Water Line Drain and Forward and Aft Tank Vents, Fill/Vent Valve
5135C	Potable Water Service Panel

(8) Remove the safety tags and close these circuit breakers:

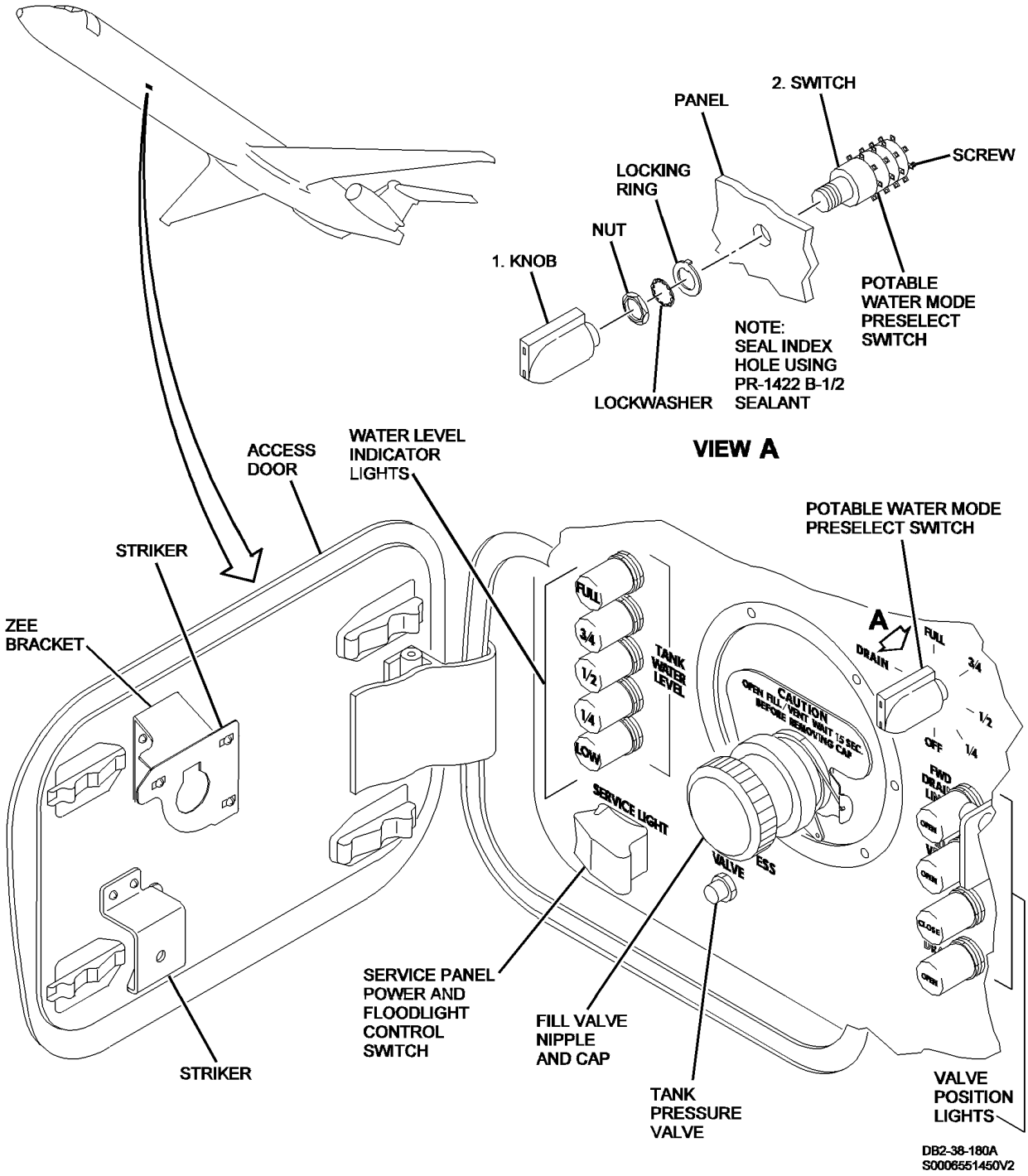
LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-843	FILL/ VENT VALVE POWER

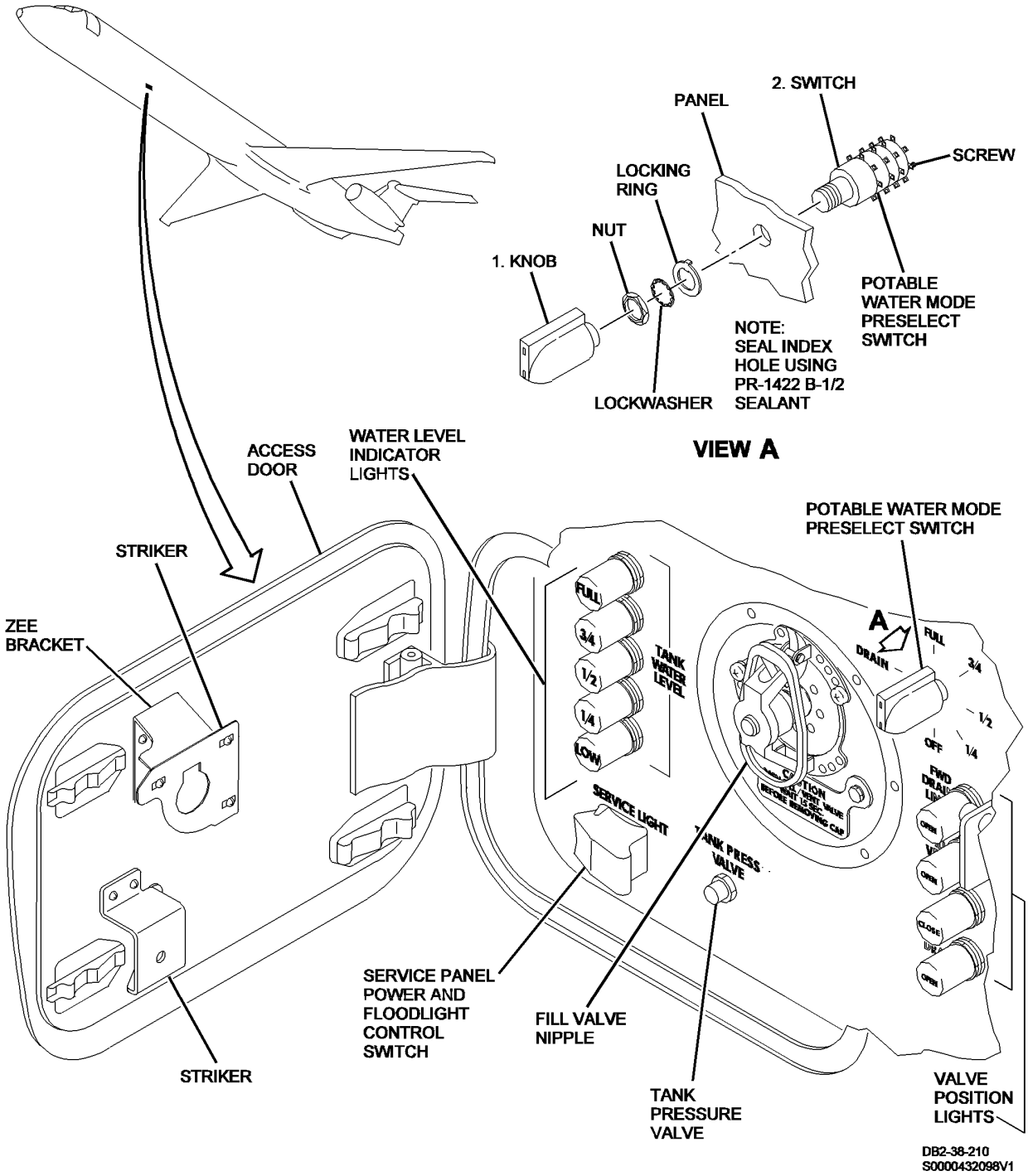
LOWER EPC, DC TRANSFER BUS

Row	Col	Number	Name
Z	33	B1-841	FILL DRAIN VALVE CONTROL

(9) Perform Water Supply System - Adjustment/Test. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 501)



Potable Water Mode Preselect Switch - Removal/Installation
Figure 401/38-11-10-990-801 (Sheet 1 of 2)



Potable Water Mode Preselect Switch - Removal/Installation
Figure 401/38-11-10-990-801 (Sheet 2 of 2)

POTABLE WATER FILTER - MAINTENANCE PRACTICES

1. General

A. This procedure contains MSG-3 task card data.

TASK 38-11-11-901-801

2. Discard of the Potable Water Filter Element

NOTE: This procedure is a scheduled maintenance task.

A. Equipment and Materials

Equipment and Materials

Name and Number	Manufacturer
Filter Element, Galley Water	Not Specified

B. References

Reference	Title
38-00-00 P/B 201	GENERAL - MAINTENANCE PRACTICES

C. Prepare to Discard the Potable Water Filter Element

SUBTASK 38-11-11-864-001

(1) Depressurize the potable water system. (GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 38-00-00/201)

D. Discard the Potable Water Filter Element

SUBTASK 38-11-11-020-001

(1) Remove the water filter assembly from the applicable galley.

SUBTASK 38-11-11-901-001

(2) Discard the water filter element.

SUBTASK 38-11-11-420-001

(3) Install a new water filter element.

SUBTASK 38-11-11-430-001

(4) Install the water filter assembly.

SUBTASK 38-11-11-863-001

(5) Pressurize the potable water system. (GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 38-00-00/201)

SUBTASK 38-11-11-790-001

(6) Check the water flow.

(7) Check the water filter assembly for leaks.

——— END OF TASK ———

WATER LEVEL INDICATING SYSTEM - DESCRIPTION AND OPERATION

1. General

A. A water level indicating system is provided to indicate water level in the potable water supply tank during servicing operations. The system consists of five water tank probes (four used), indicating lights at the service panel, a power and floodlight control switch, circuit breaker, and the necessary circuit wiring.

2. Water Level Indicating System

A. Description

(1) Water Tank Probes - Four electrical probes are mounted in the water tank and are positioned to complete an indicating circuit when water level reaches 1/4, 1/2, 3/4, and FULL. A resistor network in each light assembly sets up a voltage potential across the neon indicating light that is less than ionization voltage. When water bridges the tank probe, the voltage across the neon indicating light increases causing the light to come on.

(2) Indicating Lights - Five indicating lights are mounted in the potable water service panel. The lights indicate the LOW, 1/4, 1/2, 3/4, and FULL levels of water in the tank. The low level indicating circuit does not include a corresponding tank probe and the light is on at all times when the system is energized. This light is to prevent maintenance personnel from assuming that the tank is empty when the water lines could still contain water, which could freeze in a cold climate. Personnel should operate the system line drain switch at the service panel and check for water flow from the system drain lines, to make certain that all water has been drained from the system. With the service panel power and floodlight control switch in the ON position and the water quantity circuit breaker closed, 115-VAC ground power is applied to the circuit through a 5-ampere circuit breaker.

(3) Filling Operations - During filling operations, the indicating lights come on progressively as the water level reaches the individual tank probes. When draining the tank, the lights go off progressively as water level recedes below the individual tank probe.

(4) Control Switch - The service panel power and floodlight control switch must be in the ON position to energize the indicating system. The switch is equipped with a guard that prevents closing of the service panel door when the switch is in the ON position.

WATER LEVEL INDICATING SYSTEM - TROUBLE SHOOTING

1. Water Supply System - Trouble Shooting

NOTE:
CHECK AND REPLACE COMPONENTS IN THE ORDER SHOWN (I.E. STEPS 1, 2, ETC.).

POSSIBLE CAUSE. CHECK AND REPLACE AS REQUIRED.

TROUBLE/SYMPTOM	OBVIOUS FAULTS: OPEN CIRCUIT BREAKERS, INCORRECT POSITIONING OF SWITCHES, BURNED OUT LIGHT BULBS, & LOOSE CONNECTORS.	DEFECT IN LIGHT ASSEMBLY CIRCUITRY	DEFECTIVE OR CONTAMINATED PROBE	OPEN OR FAULTY WIRING					
INDICATING LIGHT DOES NOT COME ON.	1	2	3	4					
INDICATING LIGHT STAYS ON (LOW LIGHT EXCEPTED).	1	3	2						

BBB2-38-13A

Water Supply System - Trouble Shooting
Figure 101/38-12-00-990-801

WATER LEVEL INDICATING PROBES - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the water level indicating probes, installed in the potable water supply tank. The probes are located in the forward inboard end of the supply tank. (Figure 201)

B. It is necessary to depressurize and drain the water supply tank before the probes can be removed. The probes are accessible through the sidewall panel in the mid cargo compartment, just forward of the cargo door.

C. The tank ports must be closed, with a suitable plug, when the probes are removed to prevent the tank interior from being contaminated.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Petrolatum, VV-P-236 DPM 675	
Torque wrench (0 to 50 inch pounds (5.65 N·m) range)	

3. Removal/Installation Water Level Indicating Probes

A. Remove Probe.

(1) Drain water supply system. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 301)

(2) Disconnect and remove external electrical power from aircraft.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT
		B1-369	WATER QUANTITY

LOWER EPC, AC BUS

Row	Col	Number	Name
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(4) Disconnect electrical connection at probe terminal. (Figure 201)

CAUTION: PROBE HOUSING, WHICH INCLUDES MOUNTING NUT, IS MADE OF MOLDED PLASTIC AND IS THREADED INTO TANK PROBE FITTING. USE CARE IN REMOVING PROBE TO PREVENT DAMAGE TO PLASTIC HOUSING.

(5) Remove probe from supply tank.

(6) Remove O-ring from probe.

(7) Cap or plug supply tank open port.

B. Install Probe.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT
		B1-369	WATER QUANTITY

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

WARNING: WHITE PETROLATUM IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN WHITE PETROLATUM IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT BREATHE THE MIST.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(2) Lightly lubricate new O-ring with (VV-P-236) Petrolatum and install on probe.

CAUTION: PROBE HOUSING, WHICH INCLUDES MOUNTING NUT, IS MADE OF MOLDED PLASTIC AND IS THREADED INTO TANK PROBE FITTING. USE CARE IN REMOVING PROBE TO PREVENT DAMAGE TO PLASTIC HOUSING.

(3) Install probe in supply tank. Tighten probe to maximum torque of 22 inch-pounds (2.46 N·m).

(4) Pressurize system supply tank and check for leaks. (WATER SUPPLY SYSTEM, SUBJECT 38-11-00, Page 501)

(5) Connect electrical connection to probe terminal.

(6) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT
		B1-369	WATER QUANTITY

LOWER EPC, AC BUS

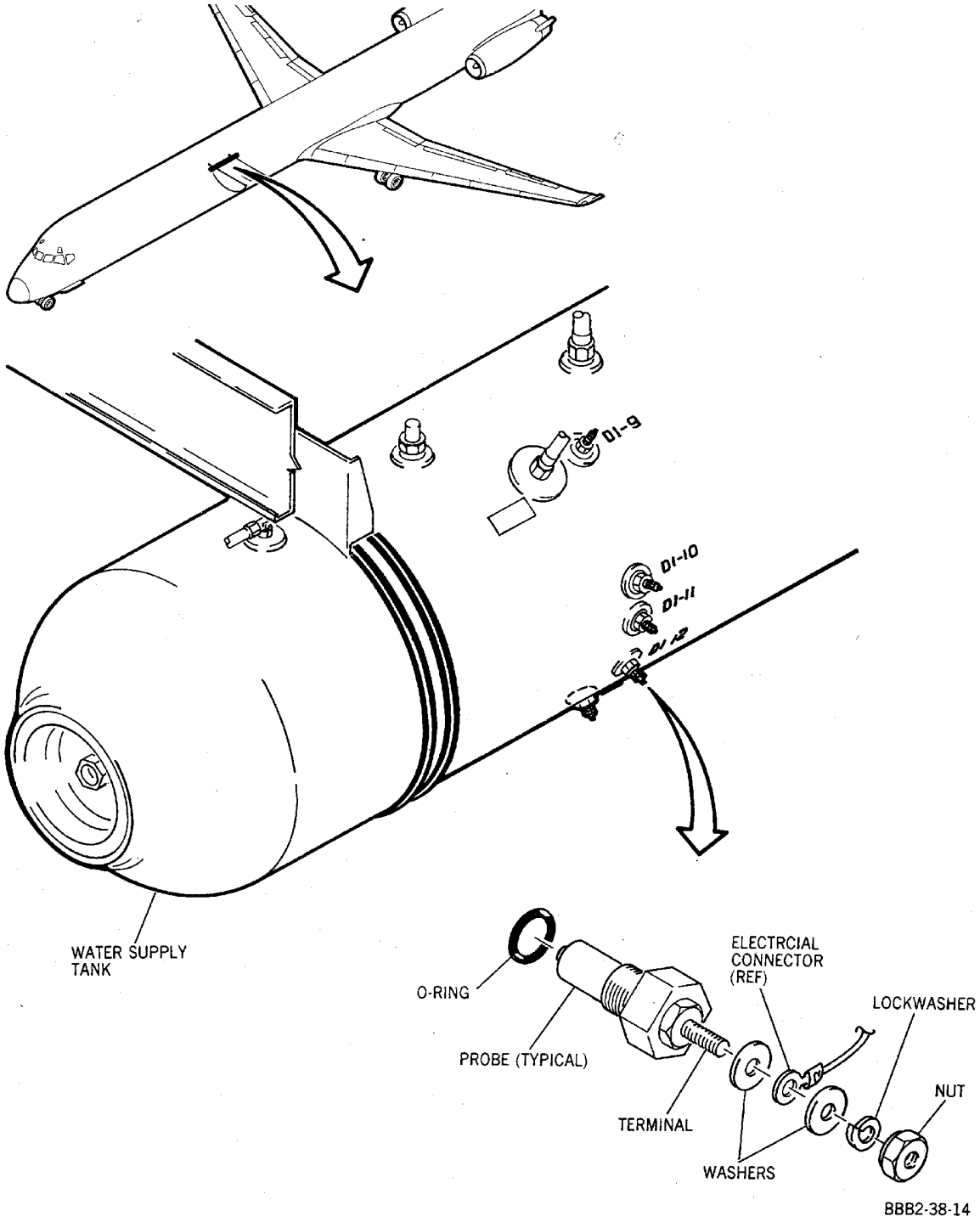
Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

(7) Fill water supply tank. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

NOTE: While tank is filling, monitor water level indicating lights on service panel to determine that lights come on progressively as water level rises.

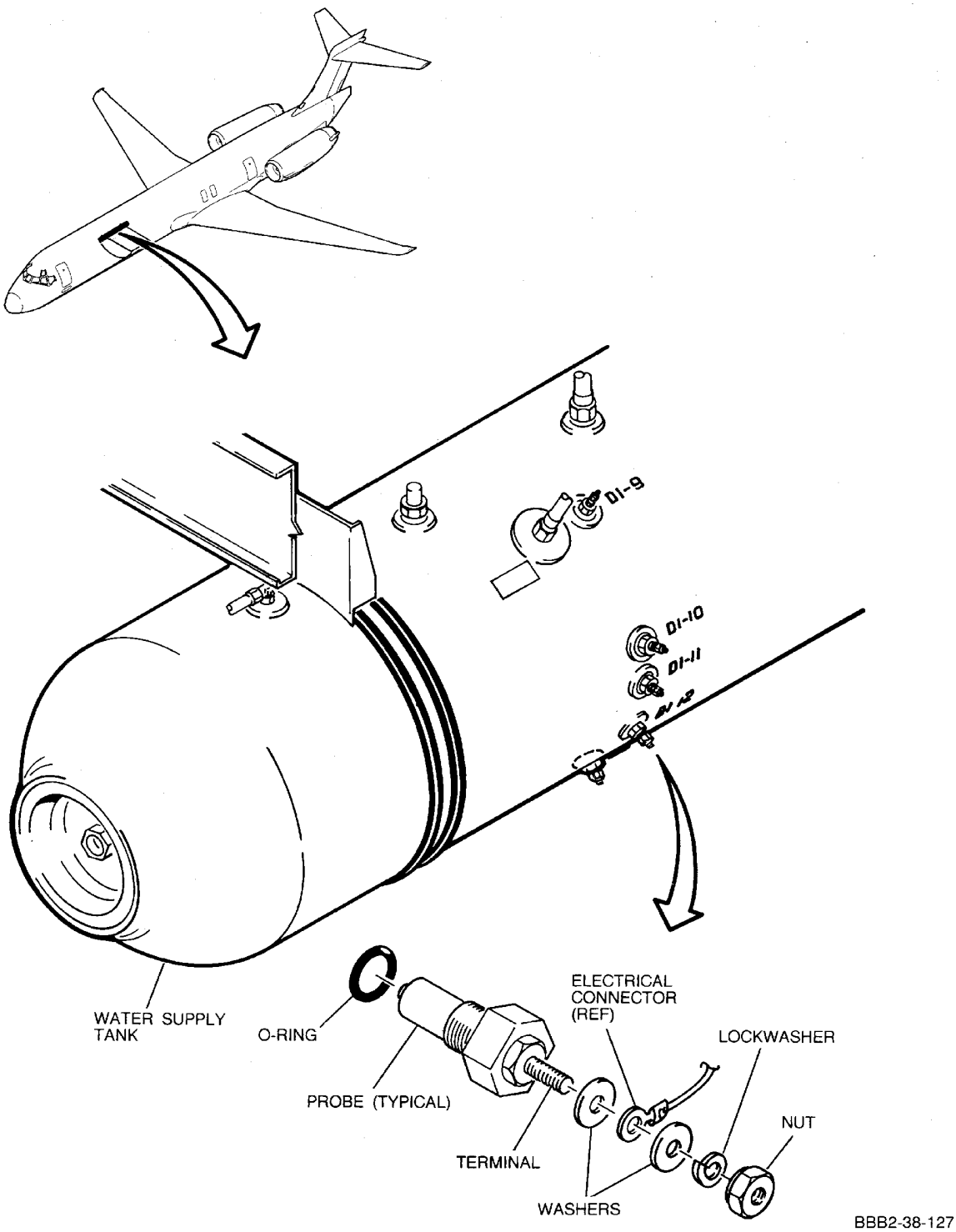
(8) Place SERVICE LIGHT switch in off position. Close guard.

(9) Close service panel door.



Water Level Indicating Probe -- Removal/Installation
Figure 201/38-12-01-990-801 (Sheet 1 of 2)

EFFECTIVITY
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893



Water Level Indicating Probe -- Removal/Installation
Figure 201/38-12-01-990-801 (Sheet 2 of 2)

WASTE DISPOSAL - DESCRIPTION AND OPERATION

1. General

A. The waste disposal system provides a means of maintaining each lavatory toilet in a clean and sanitary condition. The aft toilet waste tanks are connected to a common drain with an outlet at the aft service panel. The forward toilet waste tank drain has an outlet at the forward service panel. Both service panels are mounted externally on the left side of the aircraft. (Figure 1)

B. The toilets are self-contained, electrically-operated, recirculating flush-type toilets that use a chemical-water solution for holding accumulated waste material. Each toilet waste tank must be drained and disinfected before removal of any internal component from the tank.

2. Waste Disposal

A. Description

(1) Toilet Waste Tank - The toilet waste tank is constructed of fiberglass material or, on some aircraft, molded high impact polyethylene plastic. The tank bottom is contoured so that the lowest point is at the drain valve outlet. The cover is constructed of honeycomb stainless steel and is attached to the top of the tank. Mounted on the tank cover are the bowl, drain valve, and motor-pump filter. A stainless steel spray ring is mounted to the underside of the tank to direct washdown spray against the walls and bottom of the tank during servicing operations.

(2) Toilet Bowl - The bowl is constructed of stainless steel and is highly polished to ensure proper cleaning action during the flushing cycle. A spray ring is welded under the bowl rim to deliver filtered flush water in a powerful swirl pattern. A hinged lower bowl section (knockout spout) prevents splash and sight of tank contents. If mechanical or power failure occurs, the hinged section can be forced to swing back clear of the bowl exit allowing the toilet to be used as a static (nonflush) type toilet until the unit is again in operation. This hinged section also allows access to the tank interior without removing the tank cover.

(3) Toilet Drain Valve - A drain valve is located in each lavatory toilet. The valve is mounted on the tank cover and is a spring-loaded, normally closed valve seated in the tank bottom drain opening. The valve is actuated by a control cable extending from the valve to the waste water service panel. Pulling on the control cable handle opens the valve, allowing accumulated waste to drain from the tank through a 4 inch opening. The control cable handle turns to lock valve in open position. Releasing the cable permits the valve to reseat with a snap action to provide a tight and positive seal of the tank outlet. The spherical rubber valve seats into a matching spherical metal valve seat located in the tank bottom. The drain valve spring is completely shrouded in a one piece flexible rubber boot, to prevent fouling of the valve spring closing mechanism.Figure 2, , Figure 3

(4) Toilet Motor-Pump and Filter - A toilet motor-pump and filter assembly is located in each lavatory toilet tank. The assembly consists of a 115-volt, 400 Hz (Hertz), Alternating Current (AC) motor, an impeller type pump and a stainless steel wire mesh cylindrical basket to trap waste before it enters the pump. Rinse water from the fill/flush line is directed through a spinner assembly installed in the motor pump to clean the basket and toilet tank. An electrical motor drives the pump by direct coupling. The pump is a low pressure, high volume unit that delivers flush water to the bowl spray ring during each flush cycle.

(5) Fill/Flush Line Check Valves - Rinse water from the service panel is directed through a mushroom type check valve mounted on the top of the toilet tank. The water is then directed through a second mushroom check valve or rubber flapper type anti-syphon device mounted on the motor-pump. The rinse water enters the tank through a spinner inside the motor-pump and rinses the interior of the tank.

(6) Toilet Flush Button - When the toilet flush button is depressed, the pump motor is energized through the timer, and the timer cycle starts. The pump draws liquid from the sewage in the waste tank through the rotating filter to the toilet bowl. The liquid enters the bowl under pressure from the bowl flushing ring to form a swirling pattern throughout the flushing cycle. After approximately 10 seconds, the timer deenergizes the pump motor, and water in the system drains back through the bowl and back through the pump and filter assembly.

(7) Flushing Timer - A toilet flushing timer is provided for each toilet. The timer is installed on the aisle partition inside the lavatory washstand. The timer is a repeat-cycle type, actuated by momentary closing of the flush switch contacts. The timer supplies current to the flush motor and controls the time and sequence of flush cycle. Each actuation of the flush switch energizes the timer for one 10 second flush cycle.

(8) Waste Water Service Panels - The two waste water service panels are located on the left side of the fuselage . The service panels contain waste tank flush and fill fittings, a drain outlet for draining sewage from the toilet waste tanks, a manual control for the waste tank drain valve, a vent outlet for the lavatory, and a floodlight and control switch.(Figure 3)

WJE 405-412, 414, 880, 881, 883, 884

(9) Service Panel Drain Plug - The service panel drain outlets contain expanding type plugs which are inserted in the drain line and locked in place with a ground service tool. The hinged drain cap has an interlock which requires installation of the drain plug before the cap can be closed and latched. The service panel access door cannot be closed unless the hinged cap is latched.Figure 3

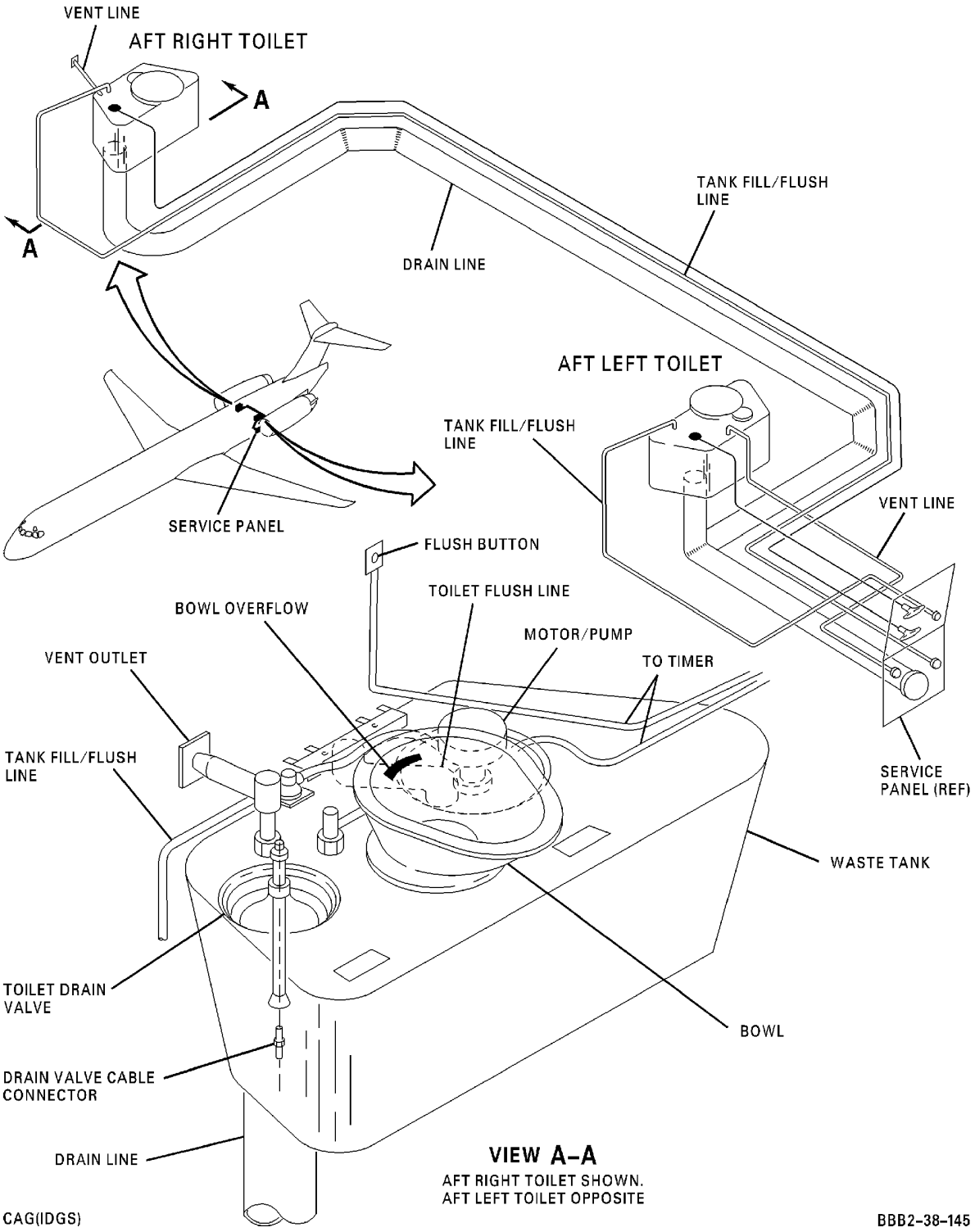
WJE 401-412, 414, 416, 420, 422, 424-427, 429, 868, 873-881, 883, 884, 886, 887, 891-893

(10) Service Panel Drain Valve - On later aircraft, the service panel drain outlet contains a poppet-type valve which serves to seal the drain line and eliminates the need for a separate plug . The valve is opened by a handle on the valve after the servicing hose is attached. The valve is held open by a lock handle mounted on the valve. After servicing, the valve is closed and the servicing hose is removed. The hinged drain valve cap must be closed and latched before the service panel door can be closed. (Figure 3)

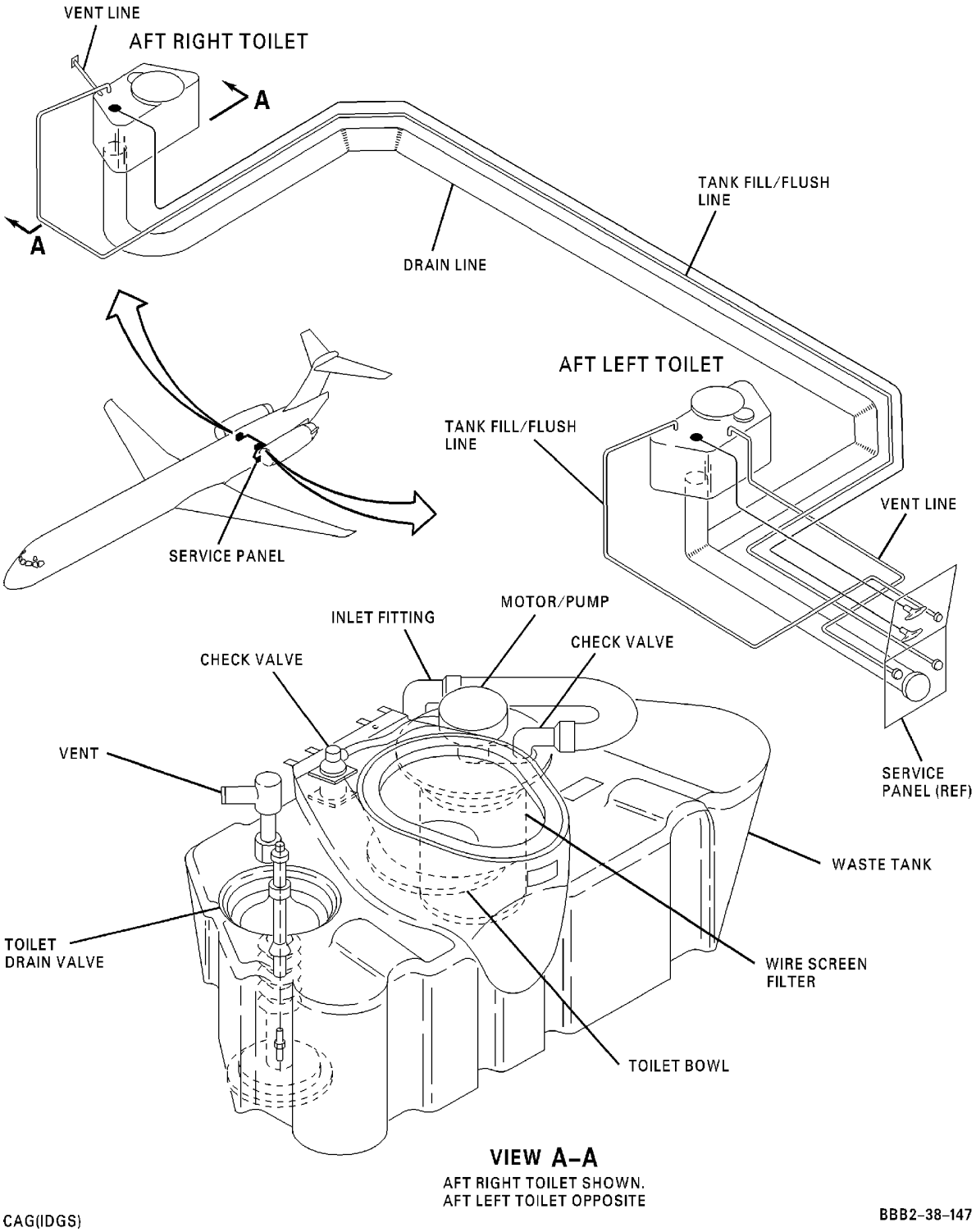
WJE 415, 418, 421, 423, 861-866, 869, 871, 872

(11) Service Panel Drain Valve - The service panel drain outlet contains a poppet-type valve which seals the drain line and eliminates the need for a separate plug. The valve is opened by a lever on the valve after the servicing hose is attached. After servicing, the valve must be closed manually. The service panel access door cannot be closed unless the hinged drain valve cap is closed and latched.(Figure 3)

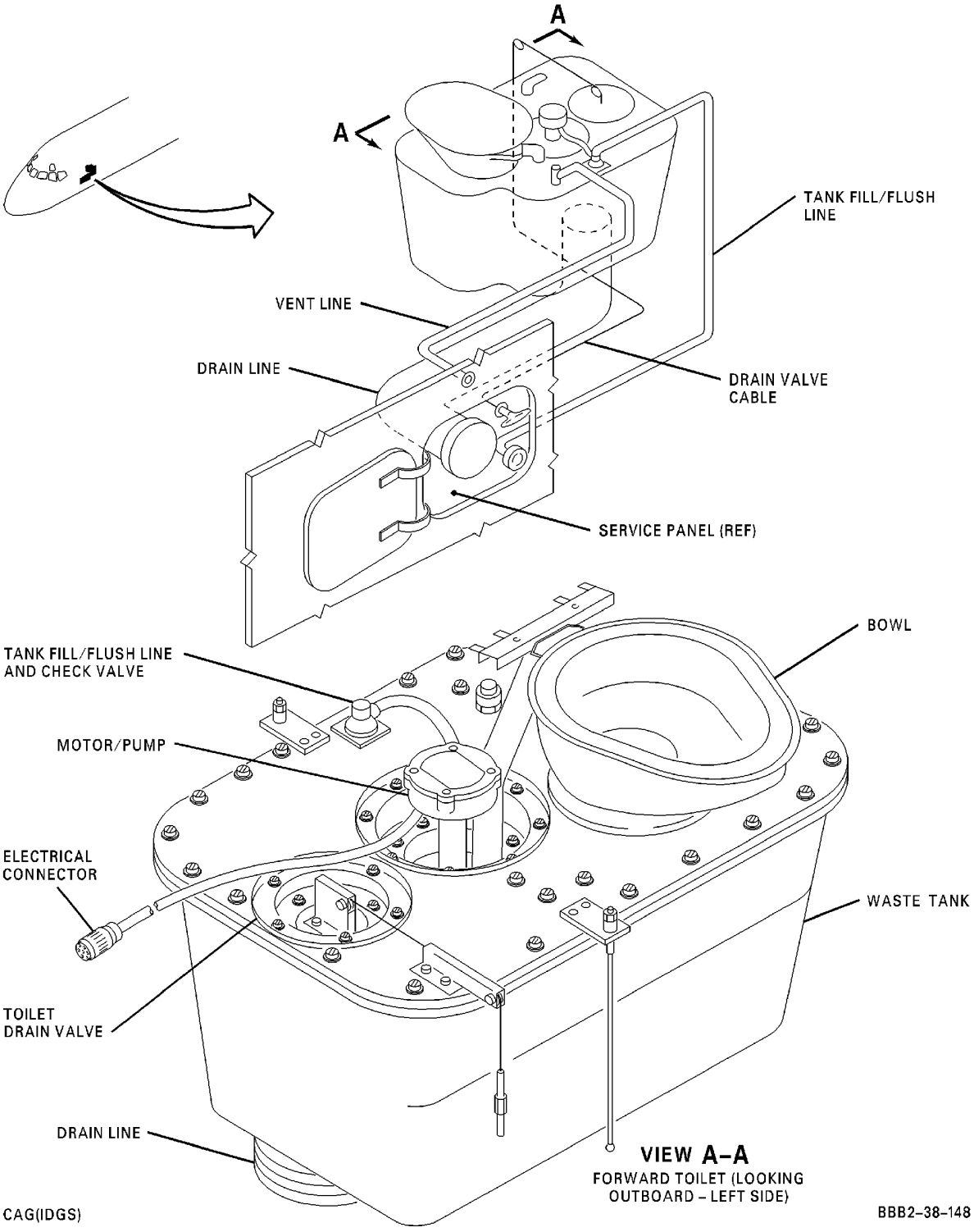
WJE ALL



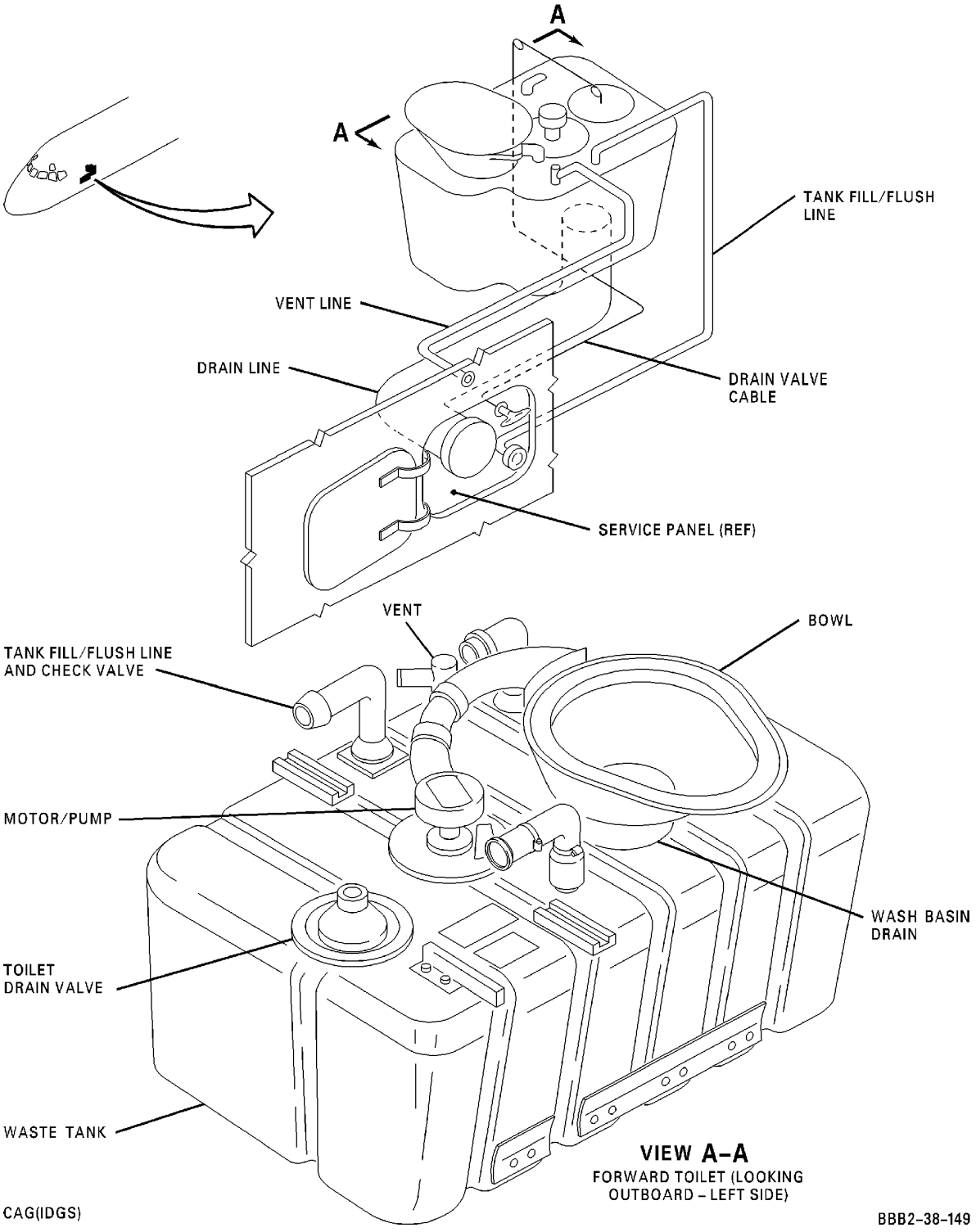
Waste Disposal System
Figure 1/38-30-00-990-821 (Sheet 1 of 5)



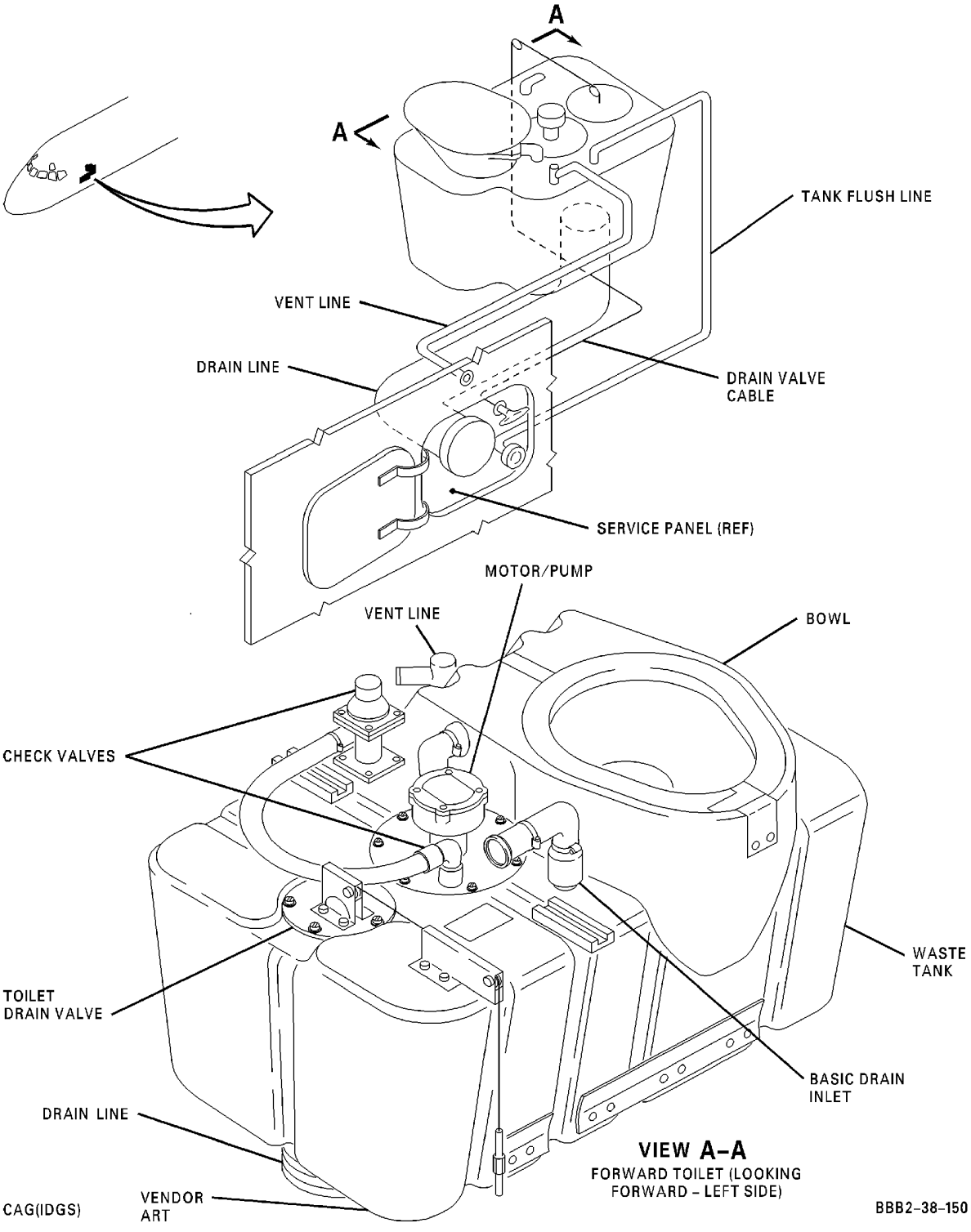
Waste Disposal System
Figure 1/38-30-00-990-821 (Sheet 2 of 5)



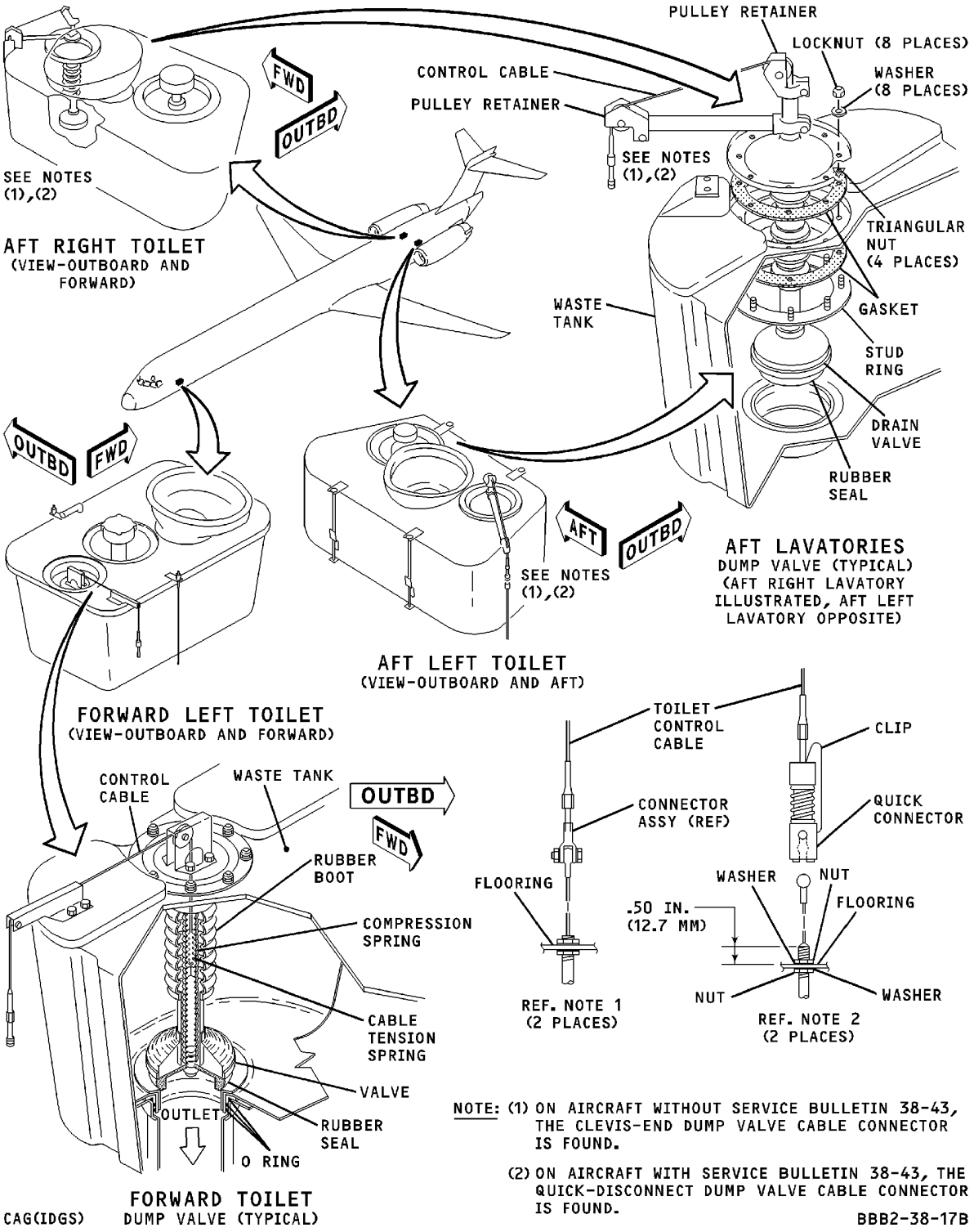
Waste Disposal System
Figure 1/38-30-00-990-821 (Sheet 3 of 5)



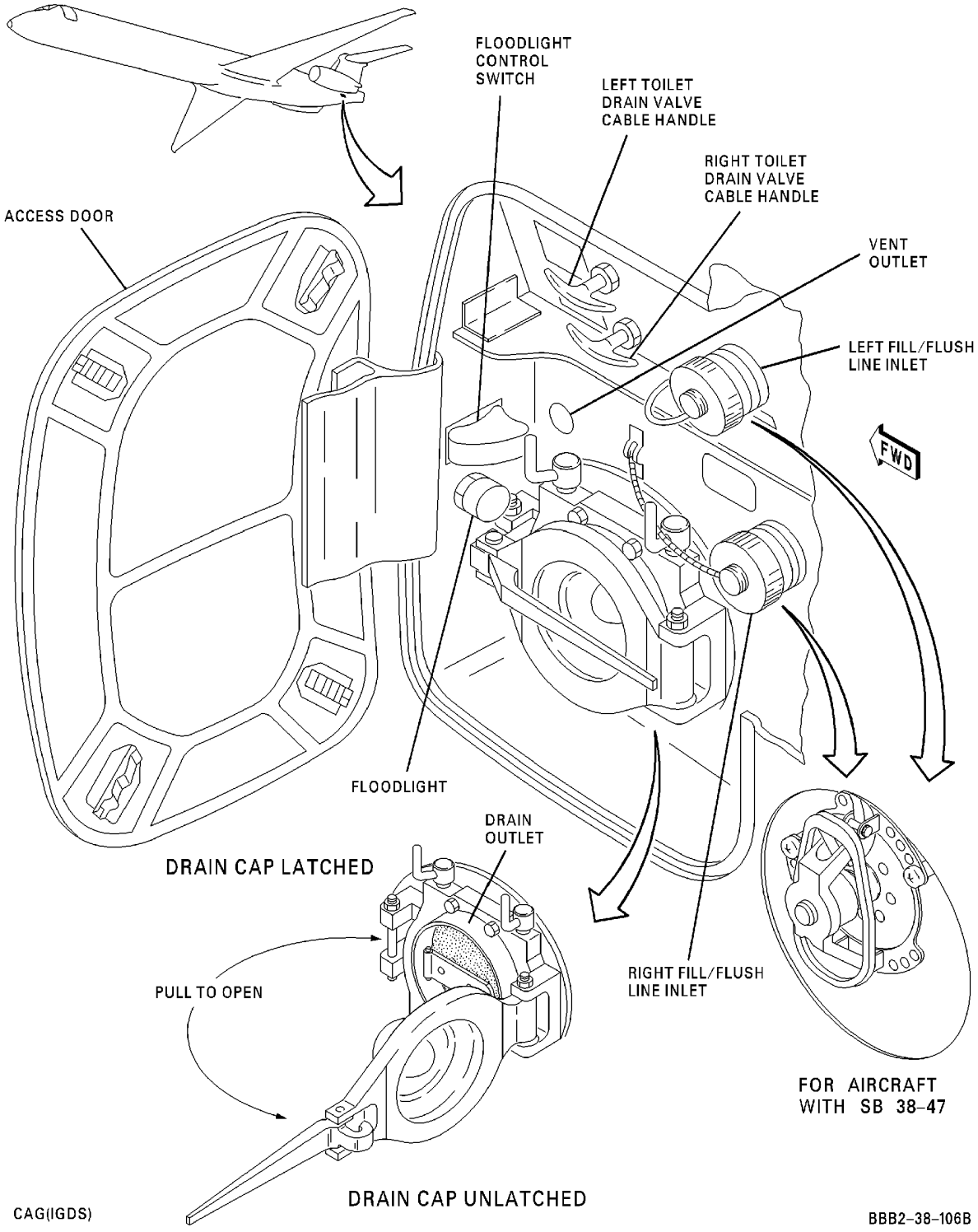
Waste Disposal System
Figure 1/38-30-00-990-821 (Sheet 4 of 5)



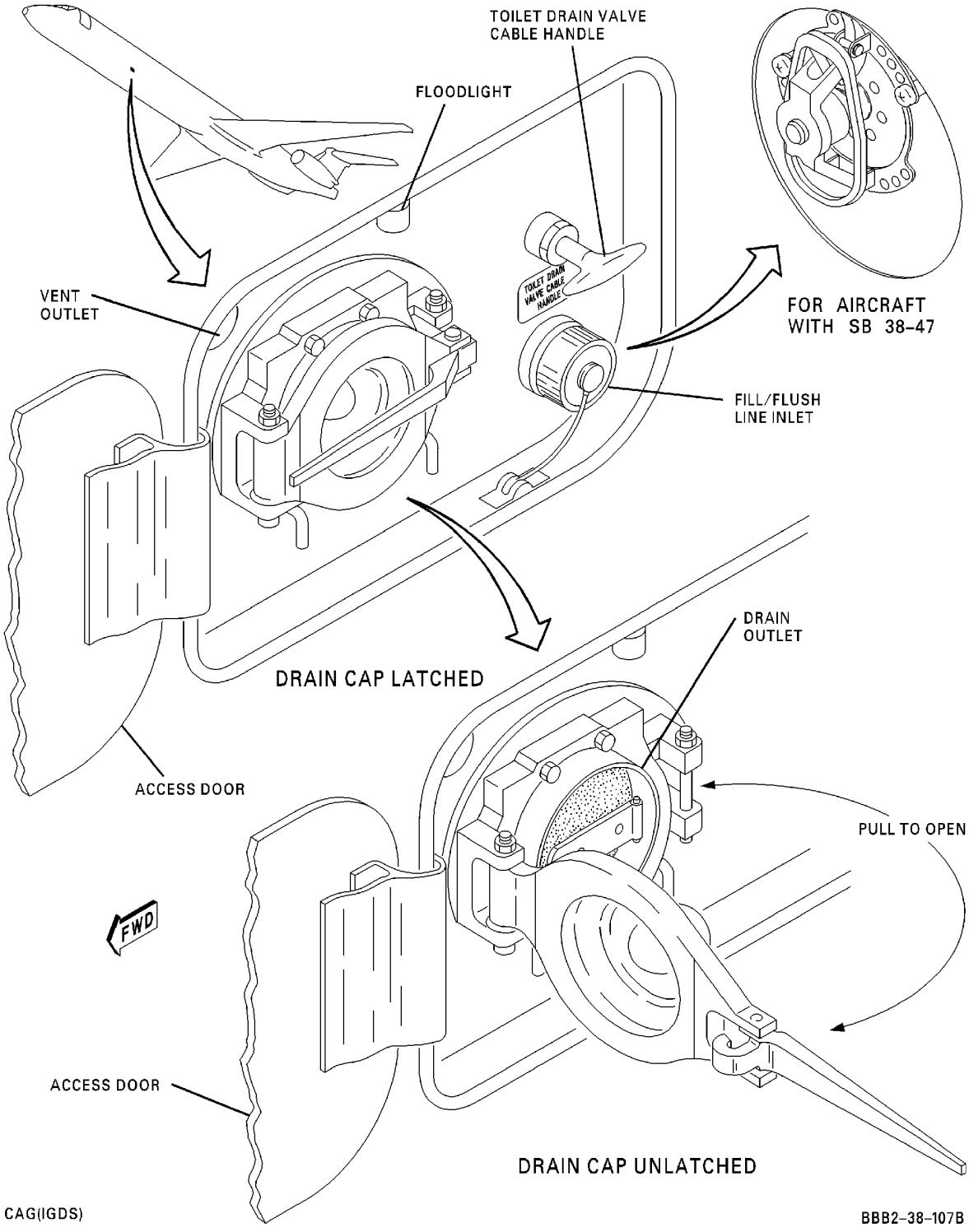
Waste Disposal System
Figure 1/38-30-00-990-821 (Sheet 5 of 5)



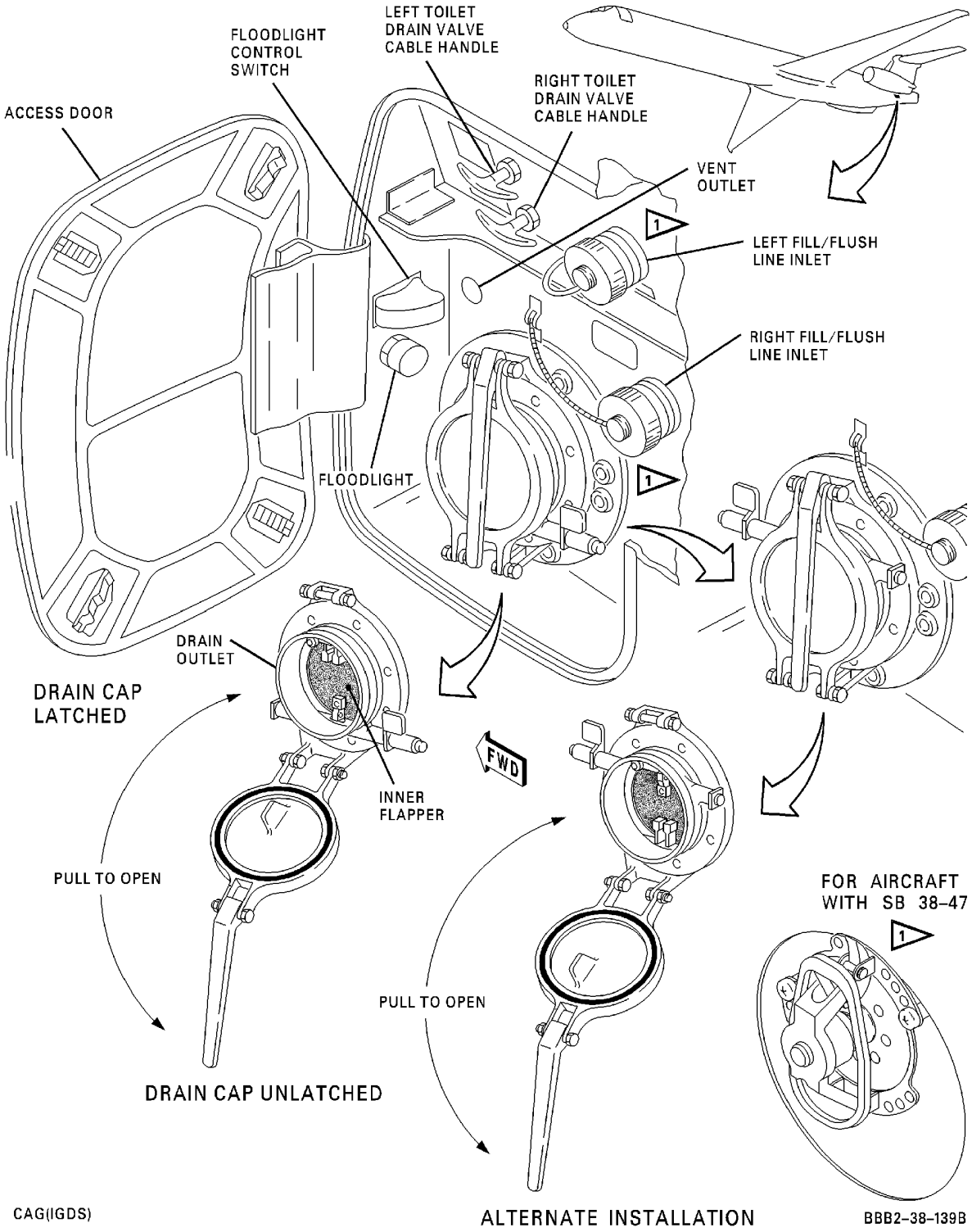
Toilet Drain Valves
Figure 2/38-30-00-990-822



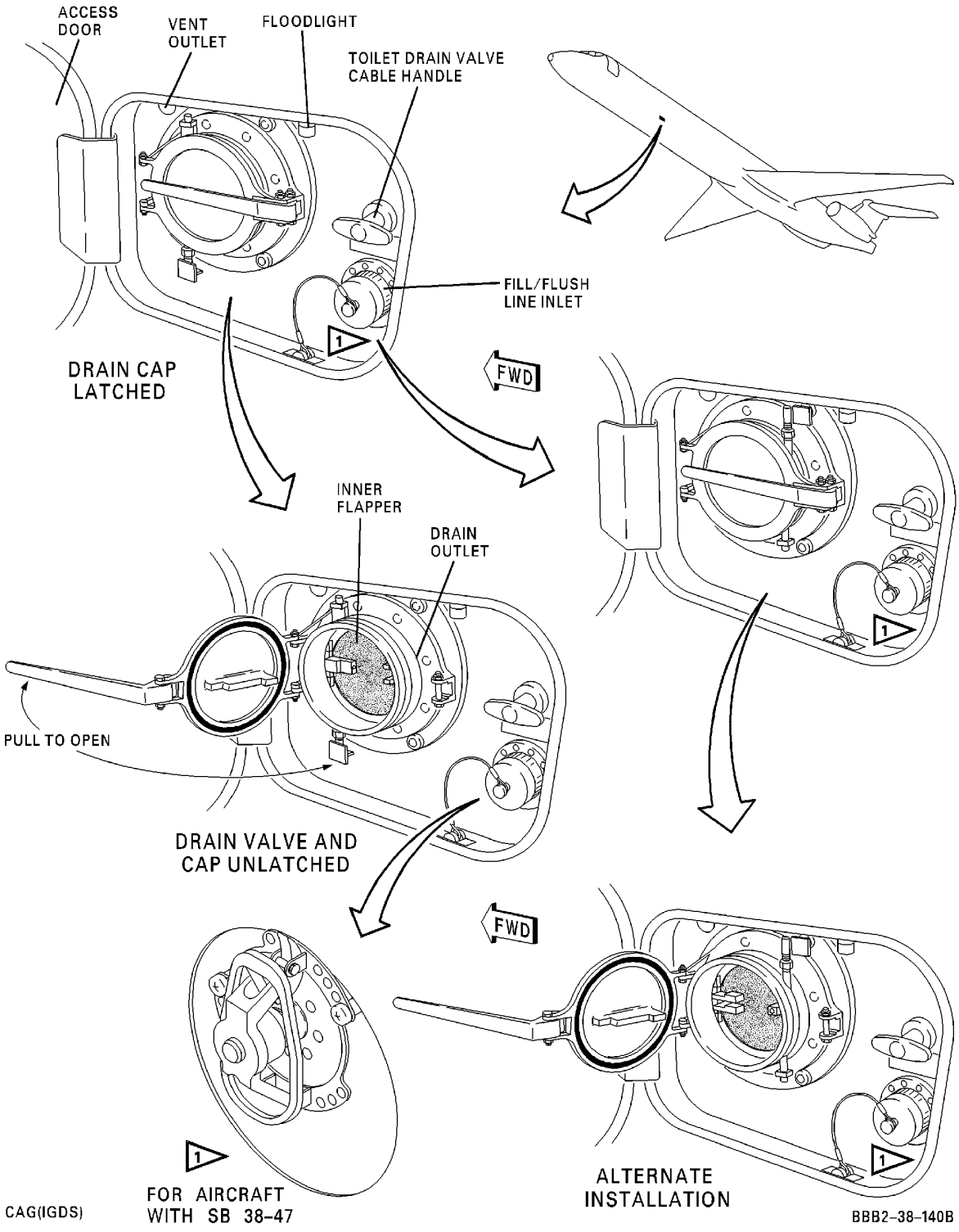
Waste Water Service Panel
Figure 3/38-30-00-990-824 (Sheet 1 of 5)



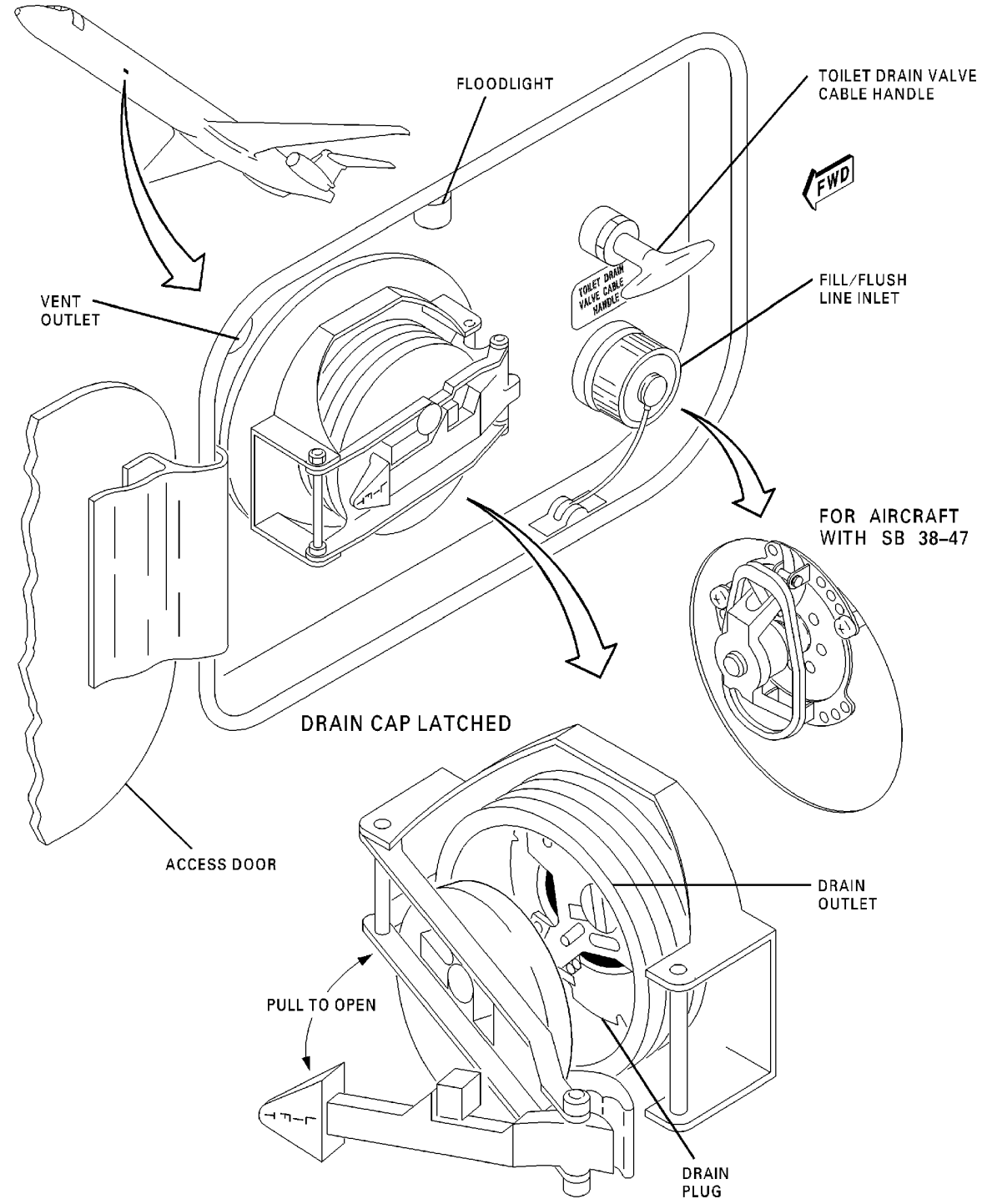
Waste Water Service Panel
Figure 3/38-30-00-990-824 (Sheet 2 of 5)



Waste Water Service Panel
Figure 3/38-30-00-990-824 (Sheet 3 of 5)



Waste Water Service Panel
Figure 3/38-30-00-990-824 (Sheet 4 of 5)



Waste Water Service Panel
Figure 3/38-30-00-990-824 (Sheet 5 of 5)

WASTE DISPOSAL - TROUBLE SHOOTING

1. WASTE DISPOSAL - TROUBLE SHOOTING

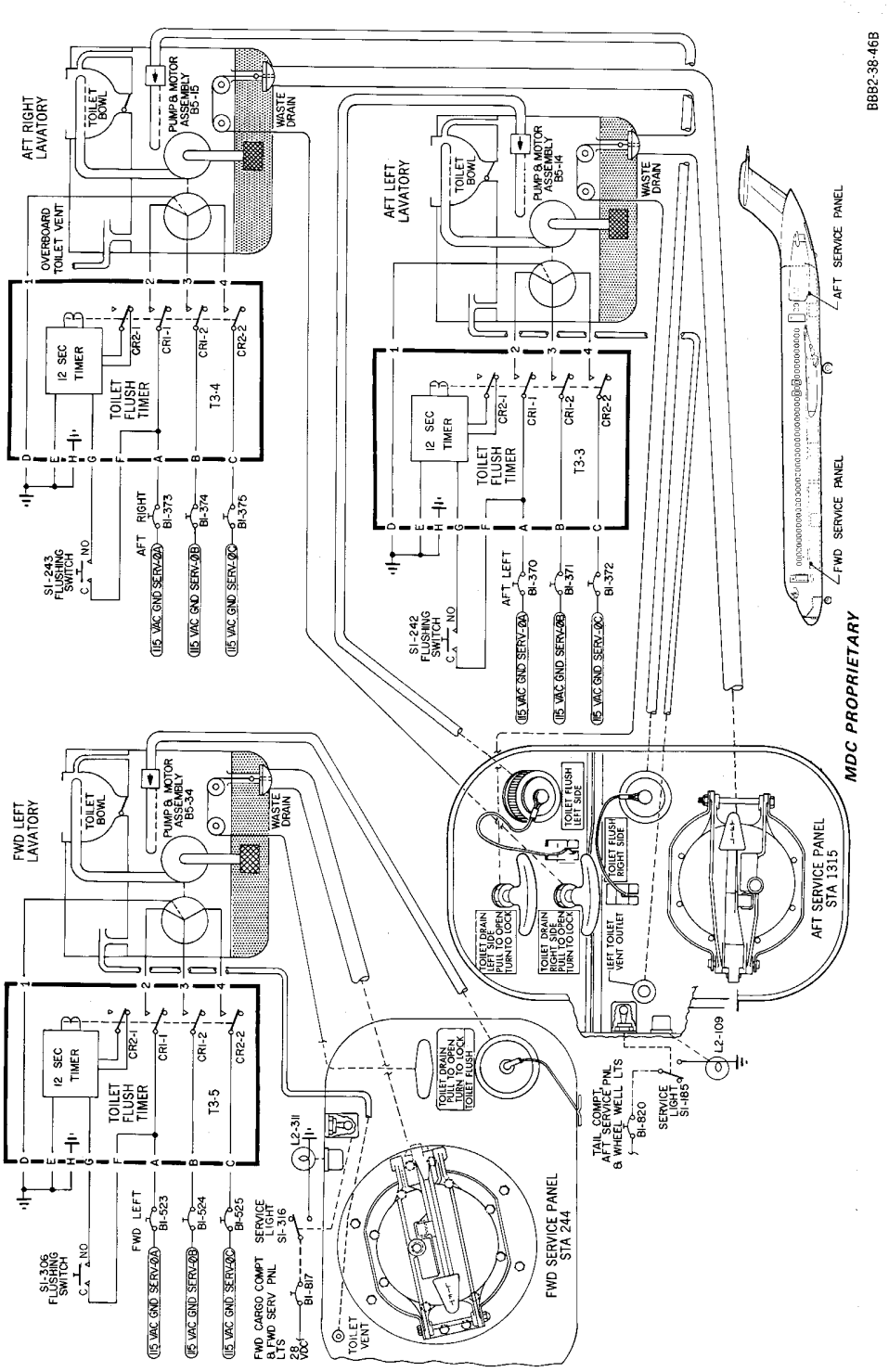
NOTE:
CHECK AND REPLACE COMPONENTS IN THE ORDER SHOWN (I.E. STEPS 1, 2, ETC).

POSSIBLE CAUSE. CHECK AND REPLACE AS REQUIRED.

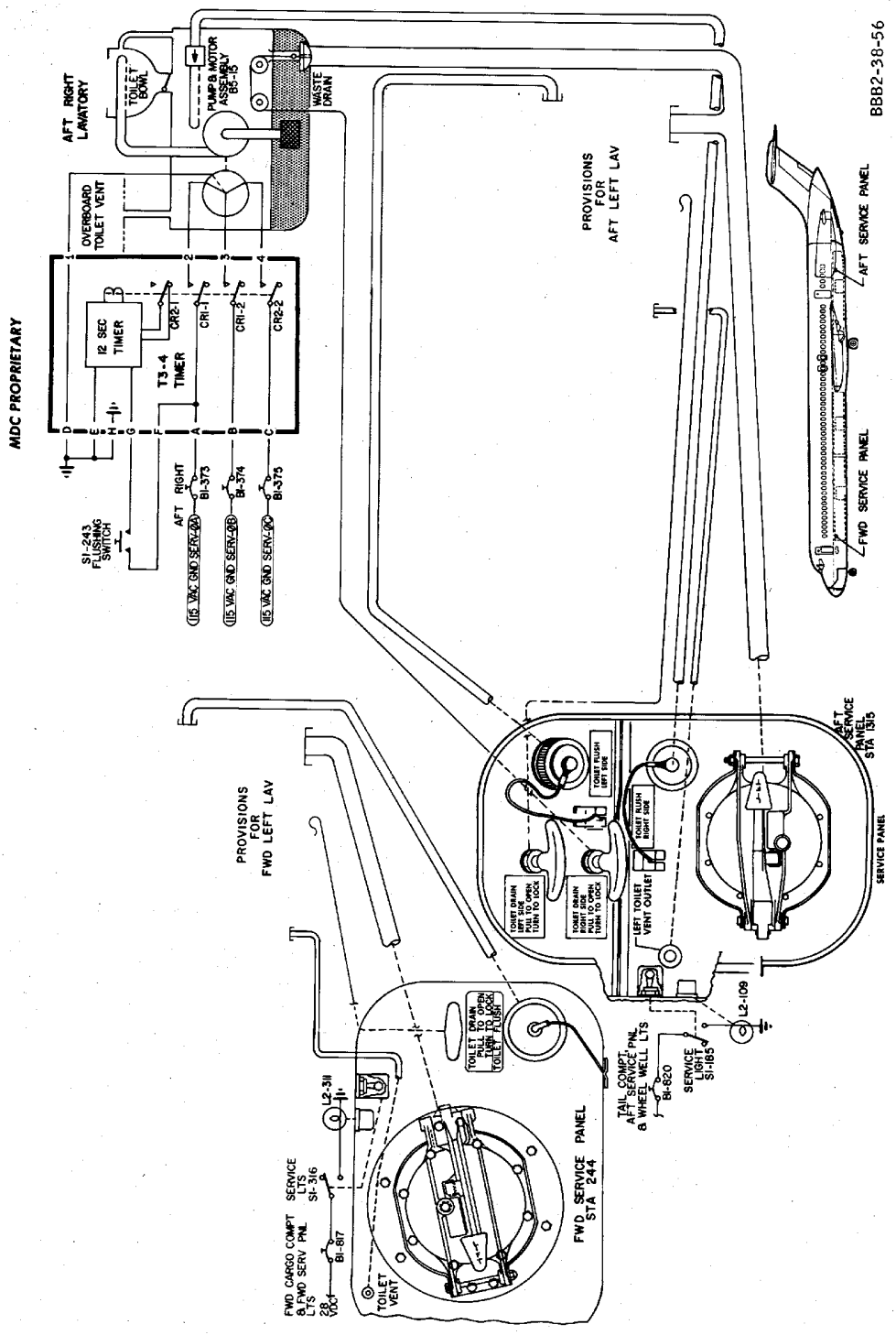
TROUBLE/SYMPTOM	OBVIOUS FAULTS SUCH AS OPEN CIRCUIT BREAKERS, LOOSE CONNECTORS AND FAULTY WIRING.	FLUSH SWITCH DEFECTIVE	TIMER DEFECTIVE	FLUSH MOTOR DEFECTIVE	LOW WATER LEVEL	FILTER CLOGGED	DEBRIS UNDER VALVE OR DAMAGED VALVE	INSUFFICIENT WATER/CHEMICAL	WATER CHEMICAL BREAKDOWN	DRAIN TRAP CLOGGED OR FAULTY PLUG	CONTROL CABLE RIGGED TOO TIGHT
TOILET WILL NOT FLUSH	1	2	3	4	5						
CONTINOUS FLUSHING	1	2	3								
INSUFFICIENT FLUSH WATER					2	1					
DRAIN VALVE LEAKAGE							1				2
OFFENSIVE ODOR								1	2		
WATER WILL NOT DRAIN FROM WASHBASIN										1	

BBB2-38-20A

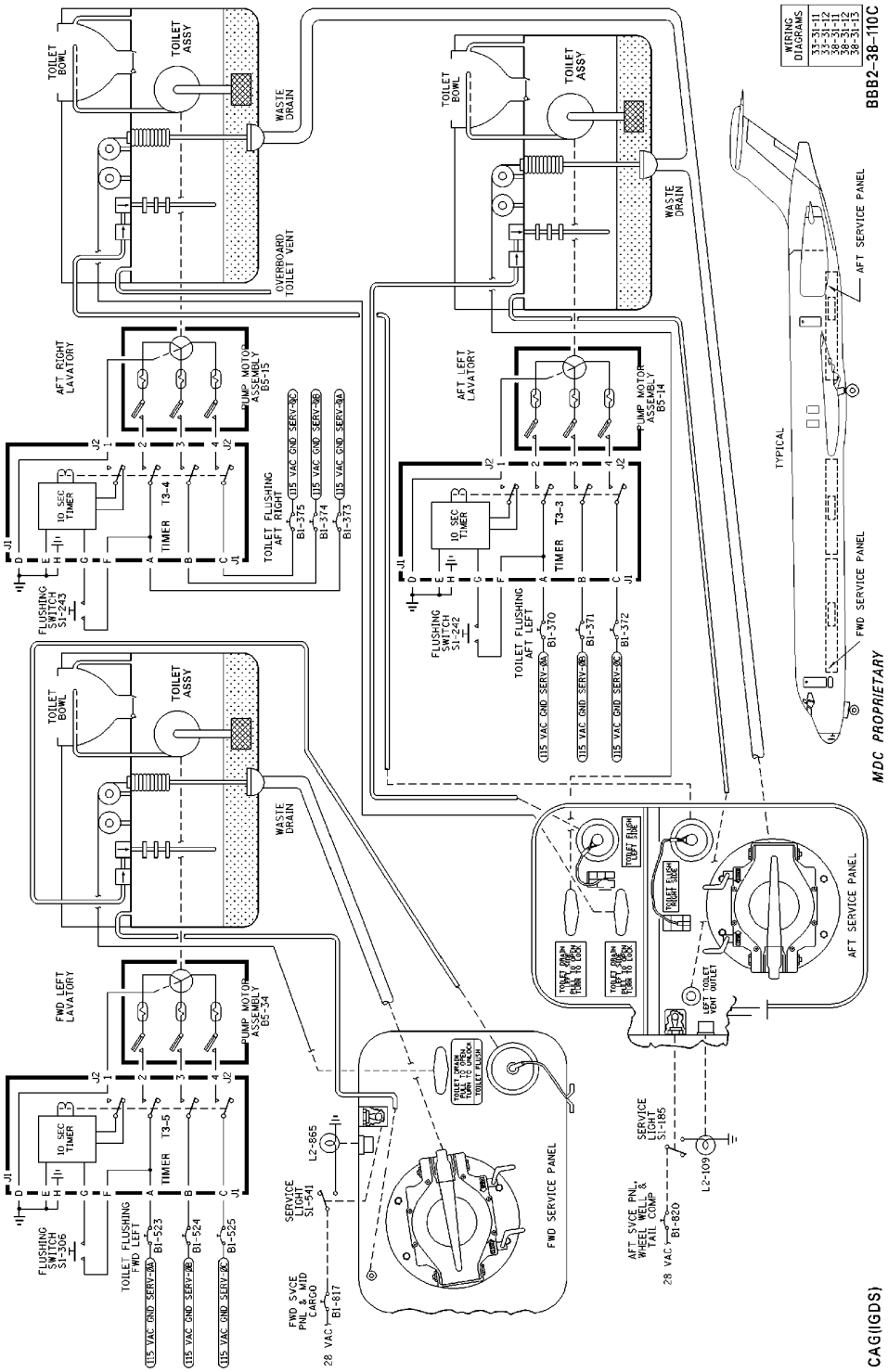
Waste Disposal -- Trouble Shooting
Figure 101/38-30-00-990-801



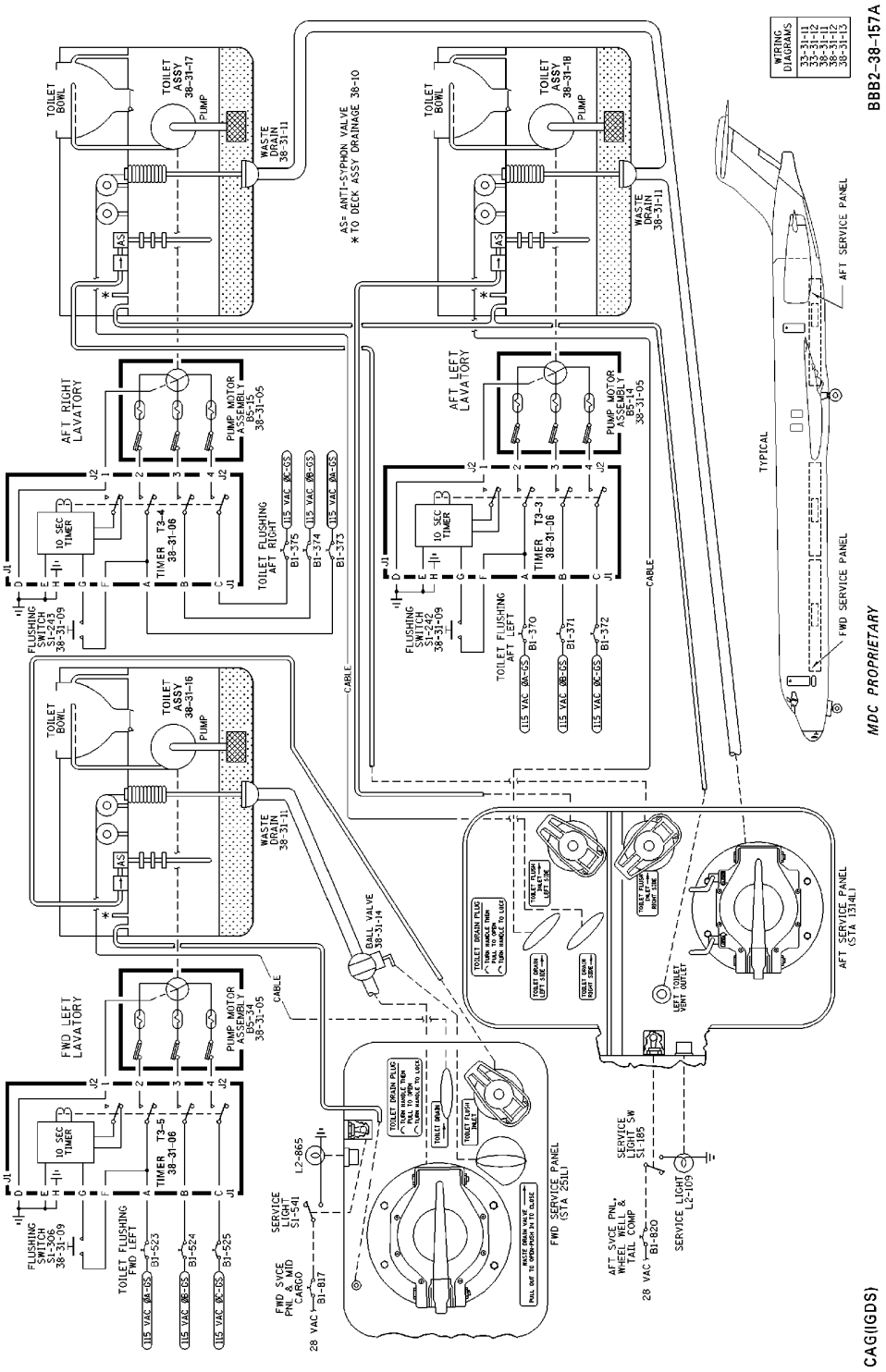
Waste Disposal -- Trouble Shooting Schematic
Figure 102/38-30-00-990-802 (Sheet 1 of 4)



Waste Disposal -- Trouble Shooting Schematic
Figure 102/38-30-00-990-802 (Sheet 2 of 4)



Waste Disposal -- Trouble Shooting Schematic
Figure 102/38-30-00-990-802 (Sheet 3 of 4)



Waste Disposal -- Trouble Shooting Schematic
Figure 102/38-30-00-990-802 (Sheet 4 of 4)

WASTE DISPOSAL - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide adjustment/ test instructions which include system leak and toilet functional tests for the waste disposal system. The procedures for leak tests of the waste tank fill and drain lines, toilet drain valve, and the flushing cycle test for each toilet pump are identical.

B. The toilet waste tanks are drained at the service panels located on the left side of the fuselage. To fill, drain, and flush toilet waste tanks. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, Page 301)

2. Adjustment/Test

NOTE: The waste tank in each aft lavatory should be tested separately to ensure that the applicable drain valve is seated properly.

A. System Leak Test

(1) Prepare system for test as follows:

(a) Pull applicable drain valve handle at service panel; then release, and allow handle to snap into closed (stowed) position to ensure a positive watertight seal at waste tank drain valve.

(b) Fill applicable waste tank with approximately 5 US gallons (3.36 Imperial gallons)(18.9 liters) of water. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

(2) Check flush line for leakage during filling operations.

(3) Unlock and open drain outlet at service panel to check for water. If there is water at outlet, drain valve is not seated properly; adjustment of clevis fitting on drain control cable is necessary.

(4) Remove toilet shroud. (WASTE DISPOSAL, SECTION 38-30)

(5) Loosen clevis fitting or quick disconnect to ensure valve is seated; then, readjust clevis to ensure a slight tension in control cable.

NOTE: Drain valve contains two springs. A strong spring (approximately 35 pounds (16 kg) to open valve) holds the drain valve closed. A weak spring (0 pounds (0 kg) extended) allows slack to be taken out of control cable without engaging the strong spring. Cable should be adjusted so that weak spring is just beginning to compress.

(6) Empty tank by opening and closing drain valve several times. Wait after each closing to see if valve is seated properly.

(7) Check drain line between toilet tank and service panel. There must be no leakage; adjust as required.

(8) Install toilet shroud. (WASTE DISPOSAL, SECTION 38-30)

B. Toilet Functional Test

(1) Charge waste tank with a minimum of 3.0 US gallons (2.5 Imperial gallons)(11.35 liters) of water. (POTABLE WATER SUPPLY SYSTEM, SUBJECT 12-14-01, Page 301)

(2) Make sure that these circuit breakers are closed:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C

(Continued)

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(3) Push toilet flush switch in lavatory.

(4) Check for vigorous flushing action in toilet bowl. Inside of bowl must be completely wetted.

(5) Flushing cycle must last for approximately 10 seconds.

(6) Test toilet to make certain that flush system is wired correctly and that flush pump is operating normally on three-phase power. Perform the following:

(a) Push toilet flush switch. Flushing must commence when flush switch is in depressed position. If flushing commences when switch is released, switch is not wired correctly.

NOTE: Wiring should be checked, corrected and retested.

(b) Open TOILET FLUSHING φA circuit breaker, then push toilet flush switch; flush pump should not operate.

(c) Close TOILET FLUSHING φA circuit breaker; flush pump should not start.

(d) Place clamp of ammeter around neutral lead of pump. Actuate flush pump. Make certain that current does not exceed 0.5 amp. A reading in excess of 0.5 amp. indicates an open phase (circuit breakers, wiring, timer, or pump).

LAVATORY WASTE SYSTEM - INSPECTION/CHECK

1. General

A. This procedure has the inspection/check instructions for the lavatory waste system. The procedure includes: testing troubleshooting/repair and placarding lavatories when there is a reported leak, or evidence of a leak, in the lavatory waste system.

B. The following procedures are mandatory and must be complied with when any lavatory leakage has been reported. A leak check must be performed after any action has been taken to correct reported lavatory leakage, and after any component of the waste system has been replaced or adjusted. Leak check must be accomplished in accordance with leak check procedures listed below.

C. The following procedures are applicable to all lavatories and lavatory service panel configurations except for those steps noted as applicable only to forward lavatory service panels on aircraft with Service Bulletin (SB) 38-45 (Installation of Ball Valve in lavatory toilet tank drain duct).

2. Lavatory Leak Check

WARNING: DO NOT TOUCH THE WASTE TANK OR ITS COMPONENTS WITHOUT HAND PROTECTION OR PROTECTIVE GLOVES. CONTAMINATION IN THE WASTE TANK CAN CAUSE ILLNESS IN PERSONS.

WARNING: HUMAN WASTE IS A SANITATION HEALTH HAZARD. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS.

- DO NOT GET HUMAN WASTE IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.
- HUMAN WASTE CAN CAUSE ILLNESS AND INTESTINAL DISEASES.
- HUMAN WASTE CAN CAUSE CONTAMINATION OF WATER SUPPLIES.
- REFER TO THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR APPROVED DISPOSAL PROCEDURES.

WARNING: WASTE WATER LEAKAGE CAN CAUSE BLUE ICE BUILDUP ON AIRCRAFT. CHUNKS OF BLUE ICE THAT BREAK OFF IN FLIGHT CAN CAUSE SEVERE DAMAGE TO AIRCRAFT, AIRCRAFT ENGINES, AND GROUND PROPERTY.

A. Perform leak check of lavatories and service panels. (Aircraft Not Pressurized)

NOTE: At forward lavatory service panel only, some aircraft have Service Bulletin 38-45 (Ball Valve in waste drain line) incorporated.

CAUTION: MAKE CERTAIN THAT WATER DOES NOT OVERFLOW INTO LAVATORY.

(1) At forward lavatory service panel, remove cap from each toilet "Fill and Flush" nipple and open waste drain line cap. Drain and flush forward lavatory. Fill toilet tank with approximately 8 gallons (30.28 L.) of water or mixed solution. (WATER/WASTE SYSTEMS GENERAL - SERVICING, PAGEBLOCK 12-14-03/301)

(2) Open waste drain line cap. Remove plug, open inner flapper or ball valve (with SB 38-45), as applicable, depending upon lavatory location and configuration.

(3) Check for water in drain duct. If water is present, toilet drain valve may not be seating properly. Adjust drain valve cable, as required, to obtain water tight seal. (WASTE DISPOSAL - MAINTENANCE PRACTICES, PAGEBLOCK 38-30-00/201 Config 1)

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

(4) On aircraft with SB 38-45, push "T" handle marked "Waste Drain Valve" until ball valve is fully closed. Allow water to fill waste drain line to up-stream side of ball valve by pulling "Toilet Drain" "T" handle out.

(a) Hold water solution in drain duct for 30 minutes. Open waste drain line cap and check for leaks from waste drain ducts and duct connections down-stream from ball valve. Any water noted may be an indication that ball valve is not seating properly. Adjust ball valve linkage, as required, to obtain better seating of ball valve. (BALL VALVE - MAINTENANCE PRACTICES, PAGEBLOCK 38-30-07/201 Config 1)

WJE ALL

(5) Check waste drain line cap for leakage by closing cap and pulling "Waste Drain Valve" "T" handle to open. Hold water solution in duct for 30 minutes and check for water leakage around cap seal. If any leakage is noted, it may be indicative of damaged cap, cap seal and/or drain duct flange.

(6) Close toilet tank drain valve by unlocking "T" handle and allowing it to snap shut, then rotate clockwise to lock.

(7) Fill each toilet tank, as required for purposes of test, with water/solution until level reaches approximately 4 inches (101.6 mm) from bowl top flange or covers bottom of toilet bowl. When filling is complete, allow all residual water to drain from fill/flush line. Allow water to stand in tank for at least 30 minutes. (WATER/WASTE SYSTEMS GENERAL - SERVICING, PAGEBLOCK 12-14-03/301)

(8) Check for water leakage from tank, tank top, bowl, gaskets and components mounted on tank top. Water leakage at one inch fill/flush line is indicative of possible fill line check valve failure.

(9) Remove all evidence of old leaks from aircraft.

(10) Repair all leaks noted during test or the respective lavatory must be placarded/disabled from use before further flight.

(11) Drain and service each lavatory (as required) prior to flight. (WATER/WASTE SYSTEMS GENERAL - SERVICING, PAGEBLOCK 12-14-03/301)

B. Perform differential pressure leak check of lavatories and service panels. (Aircraft Pressurized)

NOTE: At forward lavatory service panel only, some aircraft have SB 38-45 (Ball Valve in waste drain line) incorporated.

NOTE: Before conducting aircraft pressurization leak test, make certain that all toilet tank and service panel drain valves are closed and, on aircraft with SB 38-45 at forward lavatory service panel, the ball valve is completely closed.

(1) Service affected toilet tanks. (Paragraph 2.A.(7))

(2) Pressurize aircraft to a differential of 3.5 to 4.5 psig (24.2 to 31.05 kPa) (APU/or engines or external ground pressure supply) may be used to pressurize aircraft. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)

(3) Wait a minimum of 5 minutes and check each lavatory service panel for the following:

(a) A steady stream of air flowing from vent line orifice. If no air is coming through vent line or if water is coming out, check for restriction in vent manifold located behind toilet shroud.

(b) Check for water leaks from ventilation orifice in each lavatory service panel. A steady stream of air, consistent with aircraft cabin pressure differential should be flowing from vent line orifice. A water leak in any amount, is indicative of an obstruction in vent line anti-siphon manifold assembly located behind toilet shroud and sidewall panel above toilet tank in each lavatory. (Paragraph 2.B.(2)) (Figure 601) (Ref. SB 38-41)

(c) No water or air coming out fill/flush line nipple. If water or air is coming out fill/flush line, check for faulty check valve and/or anti-siphon valve in fill/flush line.

(d) Open waste drain duct cap.

(e) Put inner flapper open lever to OPEN position.

(f) Check forward service panel as follows:

1) Pull waste drain valve (ball valve) ”T” handle to open ball valve.

2) Check for water in drain duct. If water is present, toilet drain valve is not seating properly.

3) Push in waste drain valve (ball valve) ”T” handle to close ball valve. Allow water to fill waste drain line up stream of ball valve by pulling toilet drain ”T” handle. Check that handles and shafts operate smoothly and without excessive force required.

4) Hold water in drain duct for 5 minutes, minimum, check for water leaks around ball valve. If any leakage is noted in duct, ball valve may not be properly seated.

5) Put inner flapper open lever to CLOSE position.

6) Fill waste drain line by pulling out waste drain valve (ball valve) ”T” handle to open ball valve. The handle should operate smoothly and not require excessive force.

7) Hold water in drain duct for 5 minutes, minimum, check for leaks from service panel drain valve nipple inner flapper.

8) Close waste drain cap.

(g) Check aft service panel as follows:

1) Check for water in drain duct. If water is present, toilet drain valve is not seating properly.

2) Put inner flapper open lever to CLOSE position.

3) Fill waste drain line by pulling out waste drain valve (ball valve) ”T” handle to open ball valve. The handle should operate smoothly and not require excessive force.

4) Hold water in drain duct for 5 minutes, minimum, check for leaks from service panel drain valve nipple inner flapper.

5) Close waste drain cap.

(4) Depressurize aircraft.

(5) Remove all evidence of old leaks from aircraft.

(6) Repair all leaks noted during test or the respective lavatory must be placarded/disabled from use before further flight.

(7) Drain and service each lavatory (as required) prior to flight. (WATER/WASTE SYSTEMS GENERAL - SERVICING, PAGEBLOCK 12-14-03/301)

C. Lavatory Placarding Instructions

(1) Drain lavatory, lock lavatory door, and place INOPERATIVE placard on outside of lavatory door. Place INOPERATIVE placard on inside of lavatory service panel door. Make certain that fill line nipple cap (without SB 38-47) and cable are attached to aircraft. With cap installed on nipple, route cable counterclockwise around cap until taut. Install hose clamp on fill nipple cap to retain cable. Install 2 3/4 inch (70.0 mm) red dust cover over clamp and cap. (Figure 601)

(a) For aircraft without SB 38-47, if fill line cap is missing, a No. 19 clamp may be installed on fill line nipple to prevent attachment of servicing hose.

(b) For aircraft with SB 38-47, secure latch lever to base plate with either safety wire or plastic TY-Wrap.

(c) Both aft lavatories must be placarded if:

1) Unable to isolate leaking lavatory.

2) Lower drain valve leaks.

3) Unable to leak check lavatories. (Paragraph 2.A.(1))

(d) Individual aft lavatories (L/H or R/H) may be placarded as inoperative providing that:

1) Leak check procedure is used to check that: (Paragraph 2.A.)

a) Lower drain valve does not leak.

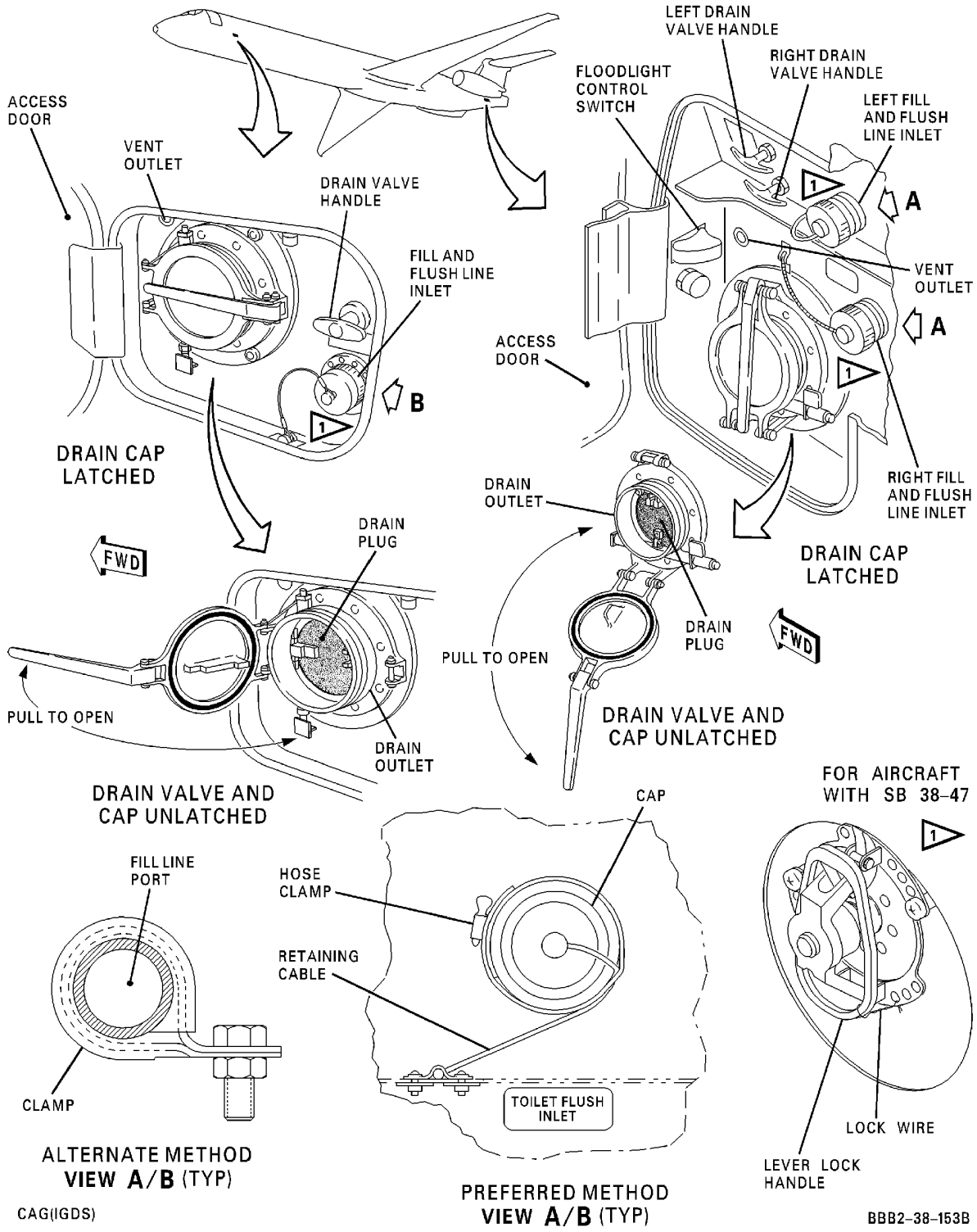
b) Operative lavatory and dump valve do not leak.

(e) Forward left lavatory (if installed) must be placarded if:

1) Leak check procedure is used to check that: (Paragraph 2.A.)

a) Lower drain valve does not leak.

b) Lavatory and dump valve do not leak.



Clamp - Lavatory Fill Line Nipple
Figure 601/38-30-00-990-806

TOILET WASTE TANKS - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/installation instructions for the toilet waste tanks, one installed in each lavatory. Removal and installation procedures for all waste tanks are identical except as noted. (Figure 201)

B. The toilet waste tanks should not be removed for maintenance of the functional components installed on the tank. Tank replacement is necessary only if the polyethylene surface of the tank has been damaged.

C. Electrical bonding wire must be removed, and/or installed on flush, drain, and vent lines when hose connections are removed and/or installed.

D. A leak test must be performed following waste tank installation.

E. If replaced, the drain valve control cable must be lubricated prior to installation in cable housing.

WARNING: WASTER TANK COMPONENTS ARE EXPOSED TO CONTAMINANTS THAT COULD RESULT IN PERSONNEL BECOMING ILL.

F. Rubber gloves must be worn servicing or placing hands inside the waste tank or when handling contaminated components.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Petrolatum, VV-P-236 DPM 675	
Wrench, torque 0 in-lb (0 N·m)-50 in-lb (6 N·m) range	
Gloves, rubber	

3. Removal/Installation Toilet Waste Tanks

A. Remove Tank

(1) Drain and flush waste tank being removed. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, page 301)

(2) Disinfect waste tank before removal of tank. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, Page 301)

(3) Place water shutoff valve handle to closed position as indicated on valve nameplate.

NOTE: Shutoff valve is located in washstand area, below and to side of washbasin. Position of valve handle should be noted and marked on valve nameplate so that handle can be returned to marked position after installation of tank.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(5) Remove toilet shroud.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893

(a) On aircraft without modular lavatories, toilet shroud is removed by loosening camloc fasteners.

WJE ALL

(b) On aircraft with modular lavatories, remove shroud by removing screws (4 places), two on each side of toilet seat; then lift shroud approximately 1 in. (25 mm) and rotate from toilet tank. Rotate shroud clockwise on left lavatory and counterclockwise on right lavatory when removing shroud.

(6) If required, remove trim strips securing floor pan to forward partition, inboard partition, and washstand of applicable lavatory. Retain for installation.

(7) If required, remove applicable lavatory entrance door threshold. Retain for installation.

(8) If required, remove floor covering and pan. Retain for installation.

(9) Disconnect motor pump electrical connection at timer, cut wire bundle ties and remove motor pump leads from wire clamps.

(10) Remove bonding wire from motor pump ground stud, and at top of tank structure.

(11) Remove wire bundle support clips from tank cover. Retain for installation.

(12) Disconnect ground flushing line hose at tank fitting.

(13) Disconnect overboard vent line hose at tank fitting.

WJE 401-412, 414, 873, 874, 880, 881, 883, 884, 886, 887, 892, 893

(14) Disconnect washbasin drain line hose at tank fitting.

WJE ALL

(15) Disconnect drain valve control cable clevis fitting or quick disconnect at forward end of tank.

(16) Loosen tank hold down cable knurled nuts, and remove cables from tank hold down clips.

(17) Remove inboard cable tiedowns from floor. Retain for installation.

(18) Lift tank straight up until clear of drain fitting at forward end of tank and guide pin at aft end of tank.

NOTE: Wire bundle must be positioned to clear tank when removing tank.

B. Install Tank

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

WARNING: WHITE PETROLATUM IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN WHITE PETROLATUM IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT BREATHE THE MIST.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(2) Lubricate waste tank drain fitting O-rings with VV-P-236 petrolatum, and install on waste tank drain fitting.

(3) Make certain that outboard tank cable hold downs are installed.

(4) Position tank by carefully aligning drain fitting at bottom of tank with outlet fitting on floor.

(5) Allow tank drain fitting to enter outlet fitting on floor. Move forward end of tank to align with guide pin. Gently move tank in position.

(6) Install tank inboard cable hold downs.

CAUTION: TO PREVENT DAMAGE TO KNURLED SURFACE, DO NOT USE PLIERS, WRENCH, OR OTHER TOOL TO TIGHTEN NUTS.

(7) Position tank hold down cables in tank clips and tighten knurled nuts fingertight.

(8) Connect drain valve control cable to clevis fitting or quick disconnect and tighten clamp to torque of 25-32 inch-pounds (2.80 to 3.62 N·m).

NOTE: If replaced, drain valve control cable must be lubricated prior to installation of cable housing.

CAUTION: TO PREVENT LEAKAGE, MAKE CERTAIN THAT DRAIN VALVE REMAINS FIRMLY SEATED IN TANK OUTLET FOLLOWING CABLE ADJUSTMENT.

(9) Adjust threaded clevis fitting or quick disconnect so cable will have a slight tension on cable tension spring inside drain valve.

NOTE: Drain valve contains two springs. A strong spring (approximately 35 lb (16 kg) to open valve) holds the drain valve closed. A weak spring (0 lb (0 kg) extended) allows slack to be taken out of control cable without engaging the strong spring. Cable should be adjusted so that weak spring is just beginning to compress.

WJE 401-412, 414, 873, 874, 880, 881, 883, 884, 886, 887, 892, 893

(10) Connect washbasin drain line hose at tank fitting.

WJE ALL

(11) Connect overboard vent line hose at tank fitting.

(12) Connect ground flushing line hose at tank fitting.

(13) Route wire bundle and attach support clips to waste tank cover.

(14) Connect motor pump lead electrical connections to timer, and secure leads to wire clamps with string ties.

(15) Connect tank bonding wires; one on motor ground stud, and one on tank cover.

(16) Place water shutoff valve handle to open position.

(17) Fill waste tank with approximately 5.0 gal (18.9 l) US gallons (4.16 Imperial gallons) of fresh water.

(18) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(19) Push toilet flush button in applicable lavatory. There must be a vigorous flushing action in bowl and inside of bowl must be completely wetted.

(20) Check for leaks at all plumbing connections and repair as necessary.

(21) Open service panel access door. Remove drain outlet cap and observe drain outlet for leakage. If water is present, adjust drain valve control cable.

(22) If required, install floor pan and covering.

(23) If required, install pan trim strips on washstand and partitions.

(24) If required, install lavatory entrance door threshold.

WARNING: MAKE CERTAIN THAT ANY WIRING CLAMPS AND/OR STA-STRAPS THAT ARE DISCONNECTED DURING REMOVAL/INSTALLATION ARE RECONNECTED PRIOR TO INSTALLATION OF TOILET SHROUD.

(25) Install toilet shroud.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893

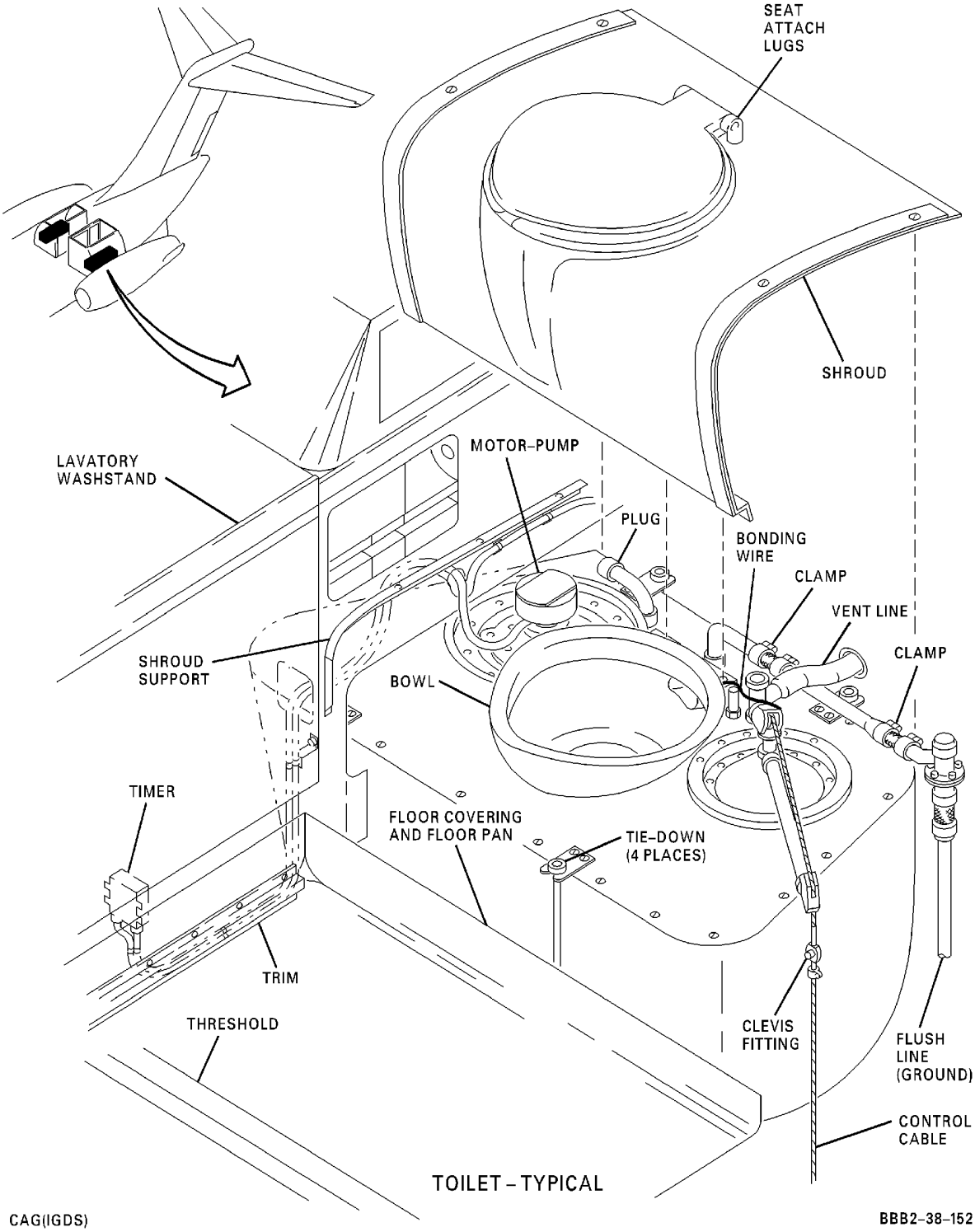
(a) On aircraft without modular lavatories, attach shroud with camloc fasteners.

WJE ALL

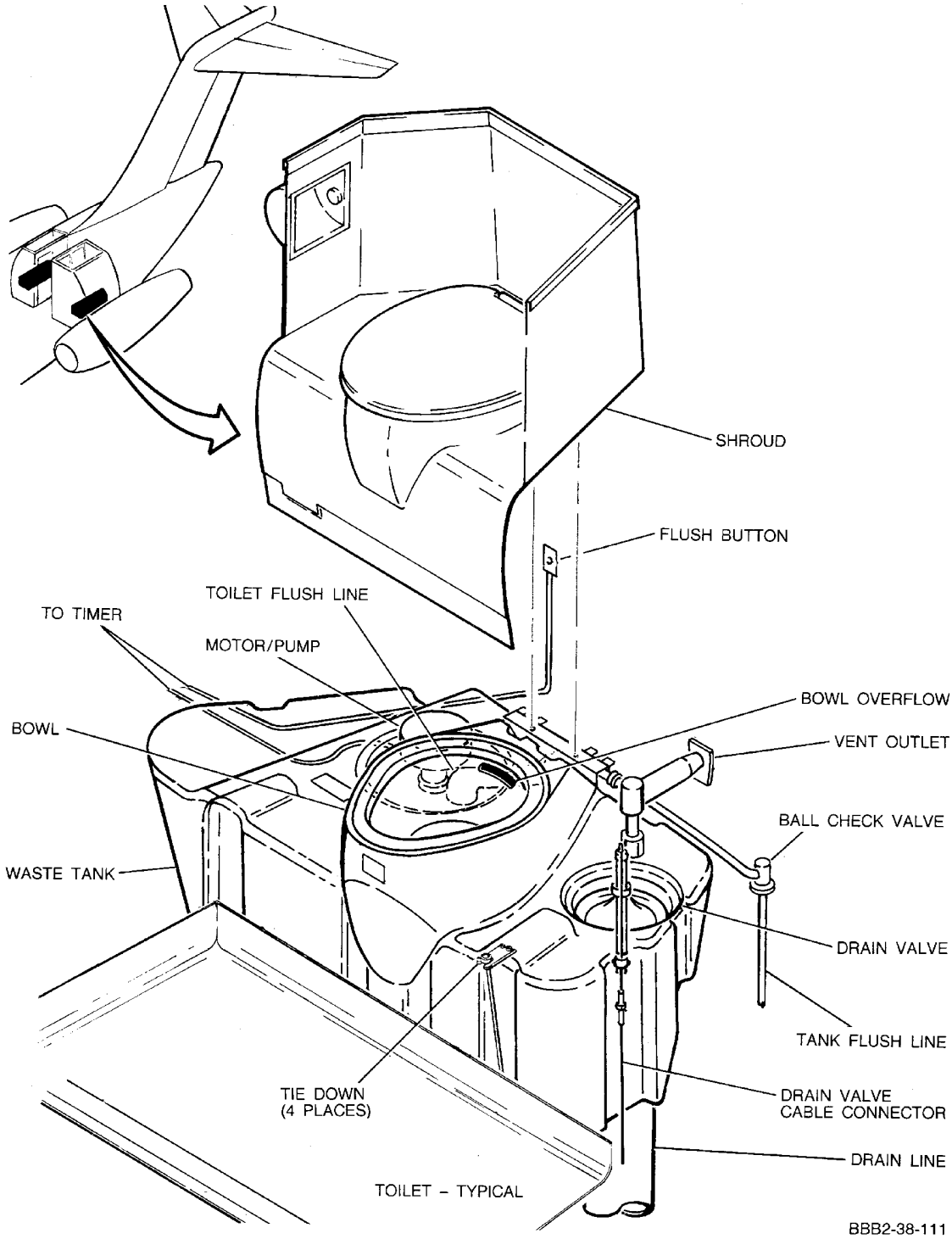
(b) On aircraft with modular lavatories, install shroud by lowering shroud onto retainers on each side of toilet seat. Lower and rotate shroud counterclockwise for left lavatory and clockwise for right lavatory during installation. Secure shroud to lavatory with screws (4 places).

(26) Drain lavatory waste tank and charge tank with normal fill solution. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, Page 301)

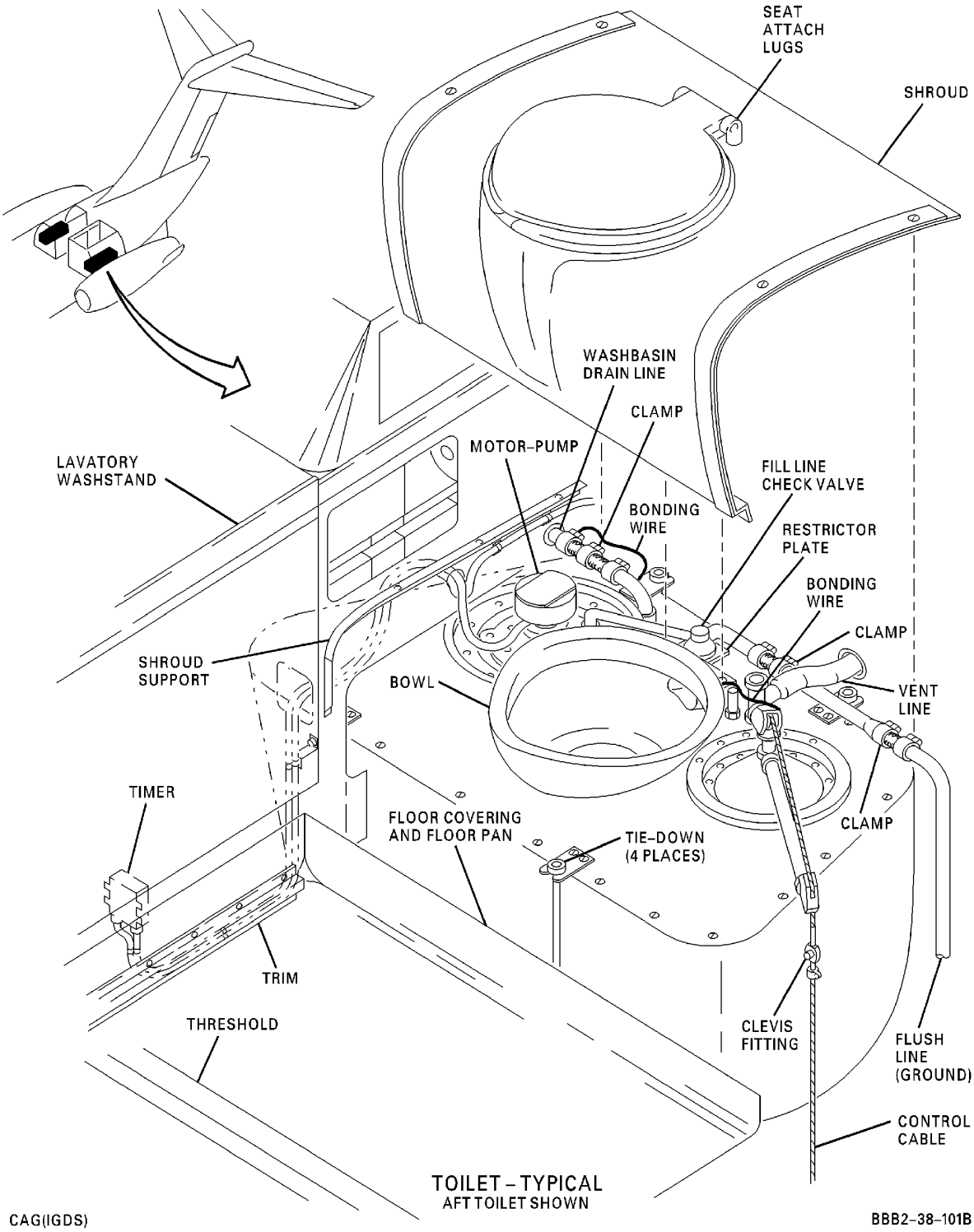
(27) Close service panel access door.



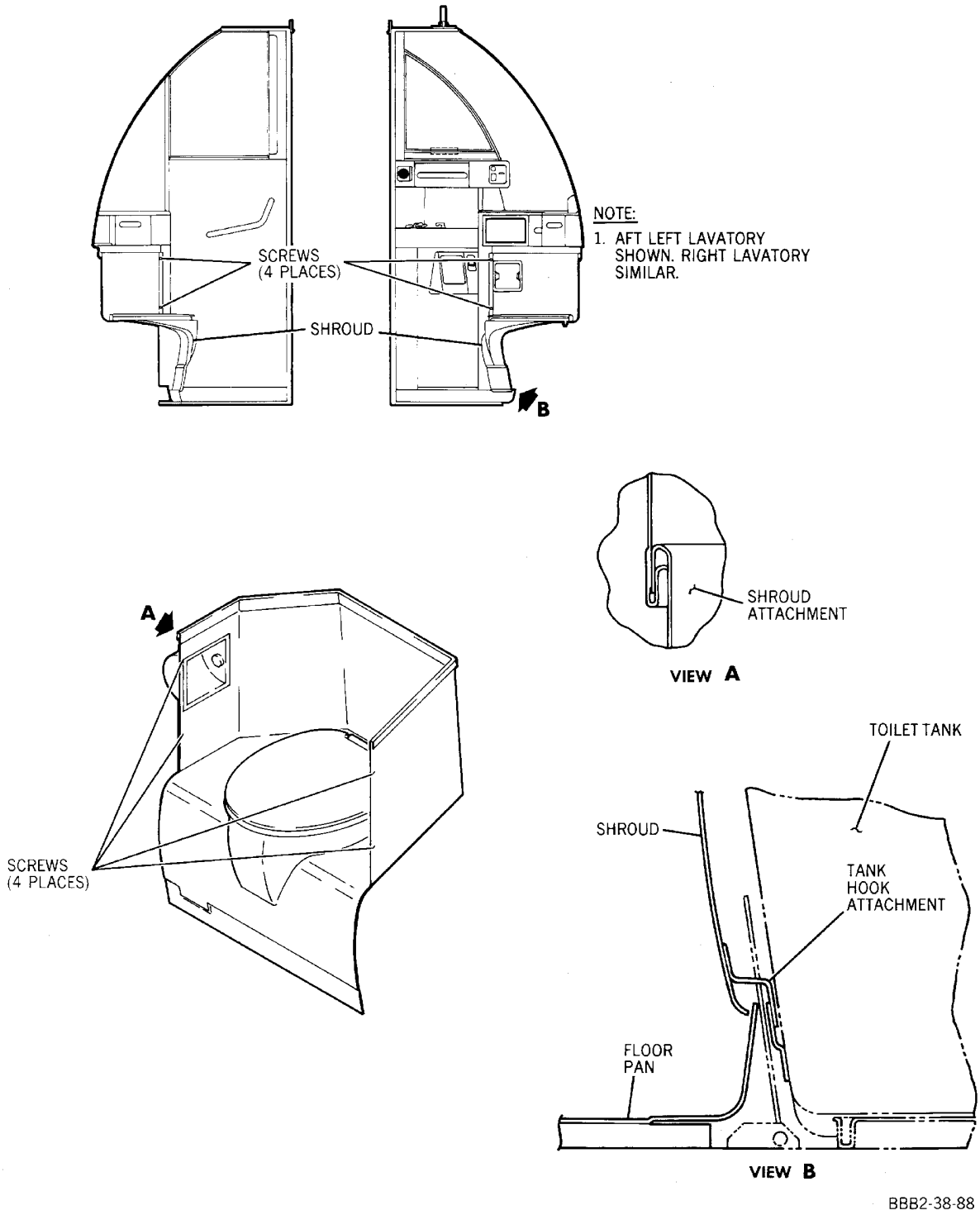
Toilet Waste Tanks -- Removal/Installation
Figure 201/38-30-01-990-809 (Sheet 1 of 3)



Toilet Waste Tanks -- Removal/Installation
Figure 201/38-30-01-990-809 (Sheet 2 of 3)



Toilet Waste Tanks -- Removal/Installation
Figure 201/38-30-01-990-809 (Sheet 3 of 3)



Shroud -- Removal/Installation Modular Lavatories
Figure 202/38-30-01-990-810

TOILET DRAIN VALVES - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the toilet drain valves and control cables, one each installed in each toilet waste tank. Removal and installation procedures for all drain valves are identical. (Figure 201)

B. The drain valve is removed from the tank as an assembly. Access to the drain valve and control cable is by removal of the toilet shroud.

C. A leak test must be performed following drain valve installation. (WASTE DISPOSAL, SUBJECT 38-30-00, Page 601)

D. A leak test must be performed following drain valve installation.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NAme and Number	Manufacturer
Lockwire, NASM20995N32, DPM 684	Not Specified
Lockwire, NASM20995C32, DPM 5865	Not Specified

3. Removal/Installation Toilet Drain Valves

A. Remove Drain Valve

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Drain and flush applicable waste tank. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, Page 201)

(3) Disinfect waste tank before removal of valve. (WASTE DISPOSAL, SUBJECT 38-30-00, Page 201)

(4) Remove toilet shroud. (WASTE DISPOSAL, SECTION 38-30)

(a) On aircraft without modular lavatories, toilet shroud is removed by loosening camloc fasteners.

(b) On aircraft with modular lavatories, remove shroud by removing screws (4 places), two on each side of toilet seat; then lift shroud approximately one inch (25.4 mm) and rotate from toilet tank. Rotate shroud clockwise on left lavatory and counterclockwise on right lavatory when removing shroud.

(5) Disconnect drain valve control cable clevis fitting or quick disconnect fitting from end of turnbuckle. (Figure 201)

(6) Remove mounting nuts and washers.

(7) Remove drain valve and gasket from tank. Discard gasket.

B. Install Drain Valve

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Place new gasket over stud ring.

(3) Position drain valve on waste tank mount and install nuts and washers.

(4) Connect drain valve control cable clevis fitting or quick disconnect to end of turnbuckle.

CAUTION: TO PREVENT LEAKAGE, MAKE CERTAIN THAT DRAIN VALVE REMAINS FIRMLY SEATED IN TANK OUTLET FOLLOWING CABLE ADJUSTMENT.

(5) Adjust threaded clevis or quick disconnect fitting, if necessary, to ensure a slight tension in control cable. Safety control cable with lockwire. (LOCKWIRE SAFETYING - MAINTENANCE PRACTICES, PAGEBLOCK 20-10-18/201)

(6) Pull drain valve control cable handle on waste water service panel. Release handle allowing valve to snap shut by spring pressure.

(7) Charge waste tank with normal fill solution. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, Page 301)

(8) Check for water at service panel drain outlet to determine that drain valve is seated properly.

(9) Install toilet shroud.

NOTE: Toilet shroud is secured in place with camloc fasteners.

(10) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B

(Continued)

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

4. Lavatory Leak Pressure Test

A. Pressure Leak Test

NOTE: The purpose of this procedure is to provide for lavatory leak pressure test after replacement of toilet drain valve.

NOTE: For more comprehensive toilet system differential pressure leak tests. (WASTE DISPOSAL, SUBJECT 38-30-00, Page 601)

(1) Pressure Leak Test Procedure

(a) Toilet Drain Valve

1) With drain valve closed, fill toilet waste tank with approximately 10 gallons of water.

2) Open waste drain cap, then remove inner plug or open inner flapper. Check for leaks from toilet drain valve. No leakage is allowed.

3) Pressurize aircraft to 3.5 to 4.0 psig (24.2 to 27.6 kPa). (APU or engines may be used to pressurize aircraft.) Check for leakage from toilet drain valve. No leakage is allowed.

(b) Waste Drain Line Cap

1) Install inner plug or close inner flapper on waste drain line. Outer cap should remain open to check integrity of inner seal.

2) Unlock, pull, and lock drain T handle in open position.

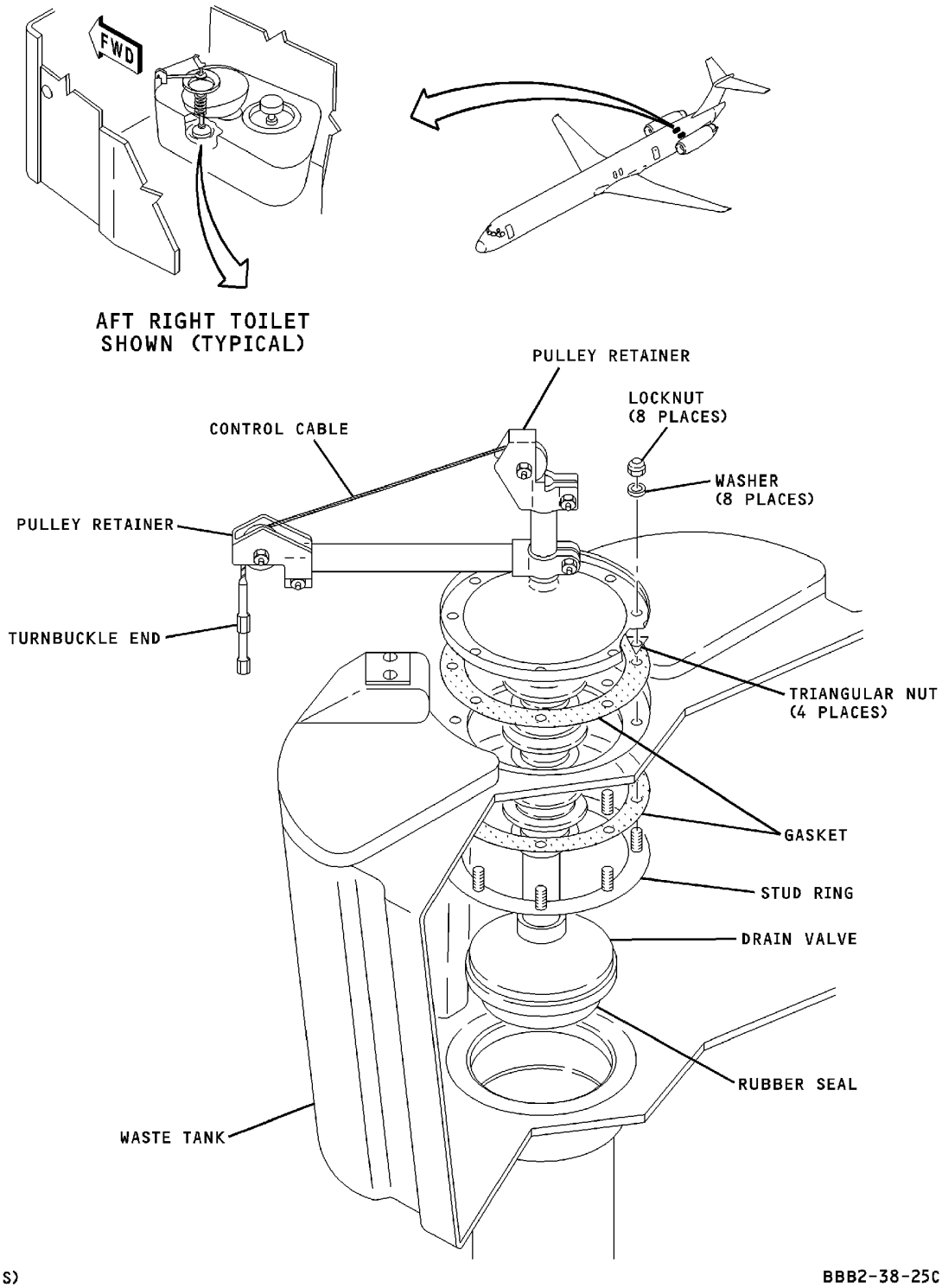
NOTE: Cable should pull smoothly and not require excessive force.

3) Pressurize aircraft to 3.5 to 4.0 psig (24.2 to 27.6 kPa). Check for leakage from waste drain cap. No leakage is allowed.

(c) Return lavatory to service.

1) Drain water from toilet waste tank and drain line.

2) Service toilet waste tank as required. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, Page 301)



Typical Toilet Drain Valve -- Removal/Installation
Figure 201/38-30-02-990-804

TOILET MOTOR-PUMP AND FILTER - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation instructions for the motor-pump and filter from the toilet waste tank.

B. The motor-pump and filter are removed as a unit from the waste tank.

C. Removal of the toilet shroud is required for access to the motor-pump and filter.

2. Removal/Installation Toilet Motor-Pump and Filter

A. Remove Motor-Pump and Filter

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Drain and flush toilet waste tank. (WASTE DISPOSAL SYSTEM, SUBJECT 12-14-02, Page 301)

(3) Disinfect waste tank before removal of pump and filter. (WASTE DISPOSAL, SUBJECT 38-30-00, Page 201)

(4) Remove toilet shroud.

(a) On aircraft without modular lavatories, toilet shroud is removed by loosening camloc fasteners.

(b) On aircraft with modular lavatories, remove shroud by removing screws (4 places), two on each side of toilet seat; then lift shroud approximately one inch (25.4 mm) and rotate from toilet tank. Rotate shroud clockwise on left lavatory and counterclockwise on right lavatory when removing shroud.

(5) Disconnect motor-pump lead electrical connector at timer.

NOTE: Timer is located inside lavatory washstand on aisle partition.

(6) Remove ground wire from motor-pump.

NOTE: If toilet motor-pump is under lavatory washstand, it will be necessary to remove toilet waste tank from its installed position, (WASTE DISPOSAL, SECTION 38-30, Page 201) to allow room for removal of motor-pump from waste tank.

(7) Separate wire run connecting motor-pump and timer from wire bundle.

(8) With SB 24-76 incorporated, remove wire run from clamps.

(9) Loosen clamp and disconnect toilet flush line from pump.

(10) Remove motor-pump mounting nuts and washers.

(11) Remove motor-pump, filter, and wire run from tank.

B. Install Motor-Pump and Filter

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Position motor-pump and filter in pump well.

(3) Install mounting nuts and washers.

(4) Connect flush line to motor-pump and tighten clamp.

(5) Connect ground wire to motor-pump.

(6) Connect electrical connector to timer.

(7) Secure wire run to wire bundle.

(8) With SB 24-76 incorporated, install wire run in clamps.

(9) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

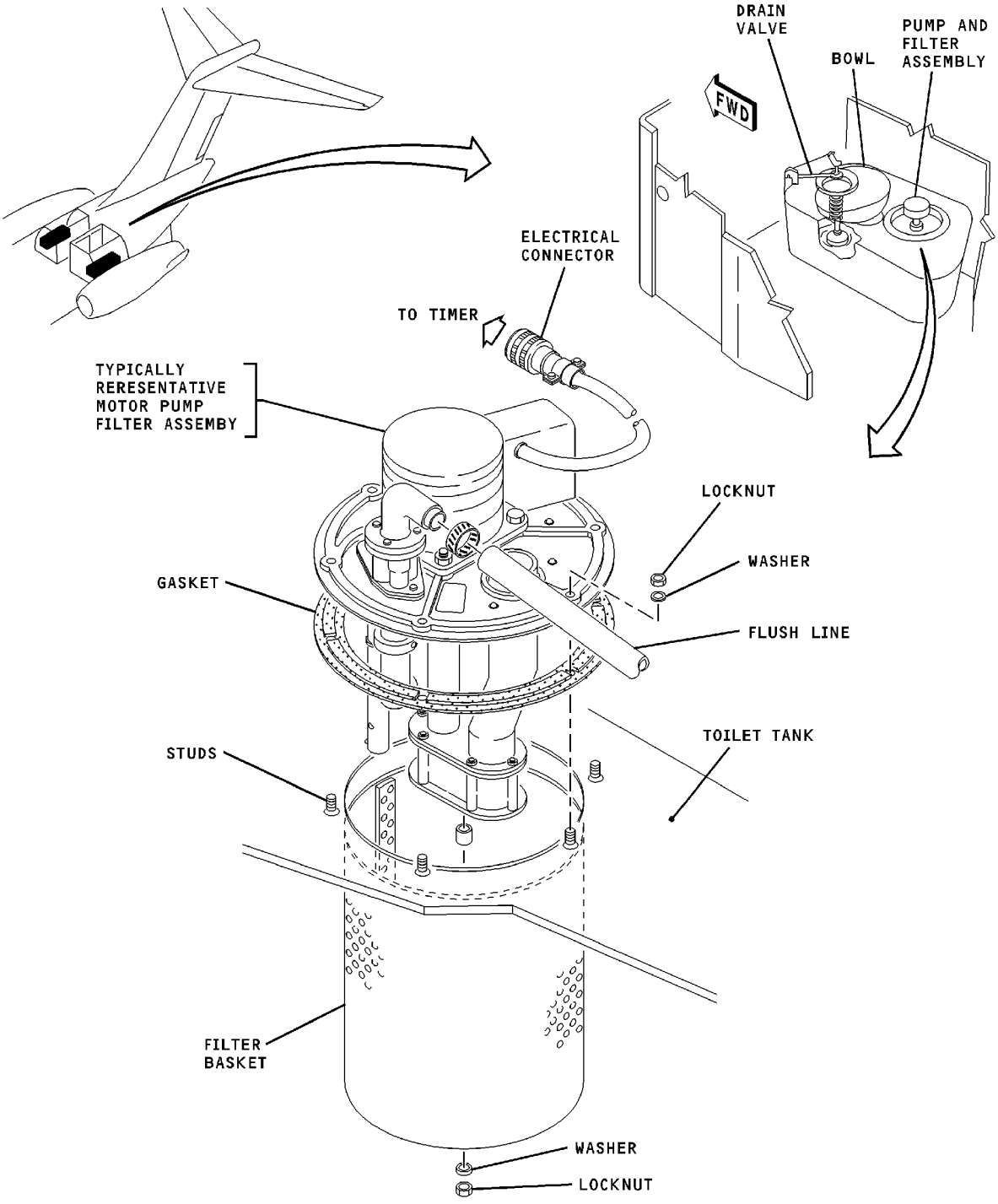
(10) Check operation of motor-pump and filter by flushing toilet.

WARNING: MAKE CERTAIN THAT ANY WIRING CLAMPS AND/OR STA-STRAPS THAT ARE DISCONNECTED DURING REMOVAL/INSTALLATION ARE RECONNECTED PRIOR TO INSTALLATION OF TOILET SHROUD.

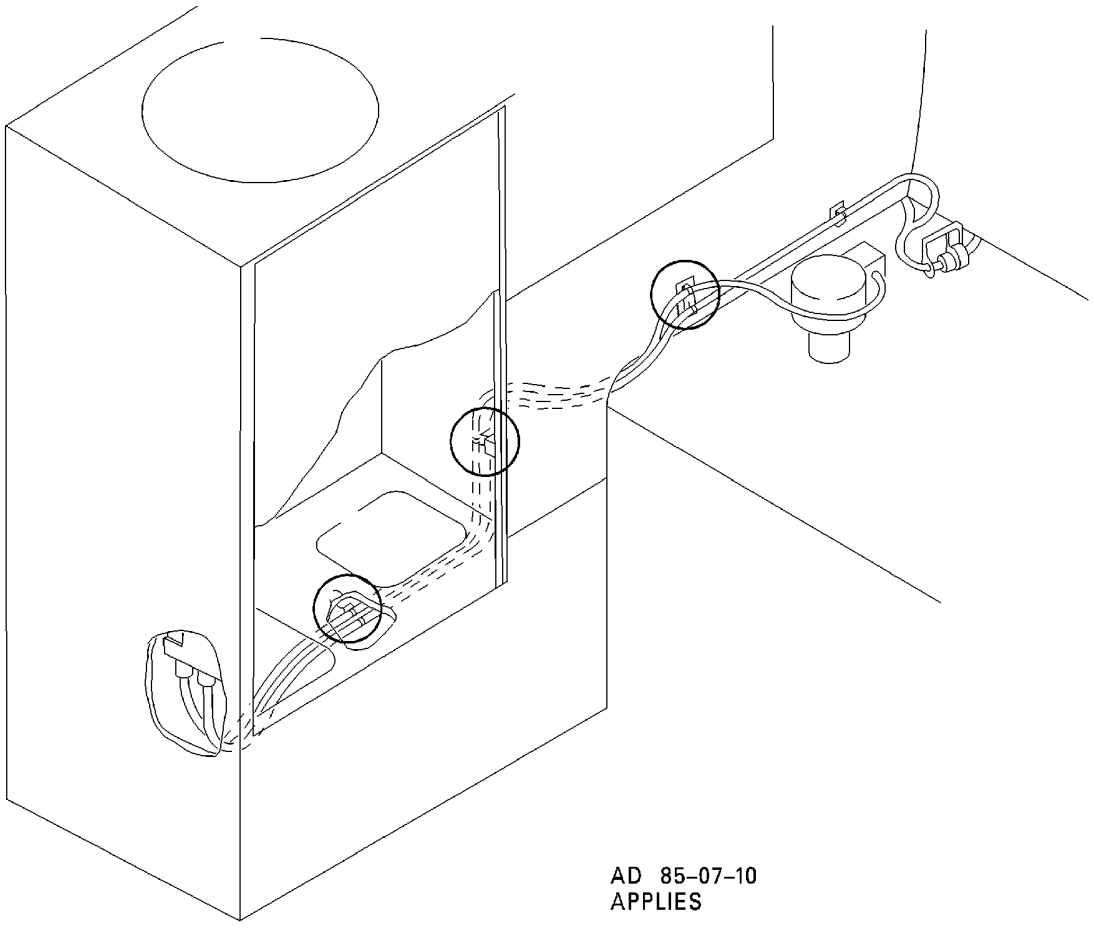
(11) Install toilet shroud.

(a) On aircraft without modular lavatories, attach shroud with camloc fasteners.

(b) On aircraft with modular lavatories, install shroud by lowering shroud onto retainers on each side of toilet seat. Lower and rotate shroud counterclockwise for left lavatory and clockwise for right lavatory during installation. Secure shroud to lavatory with screws (4 places).



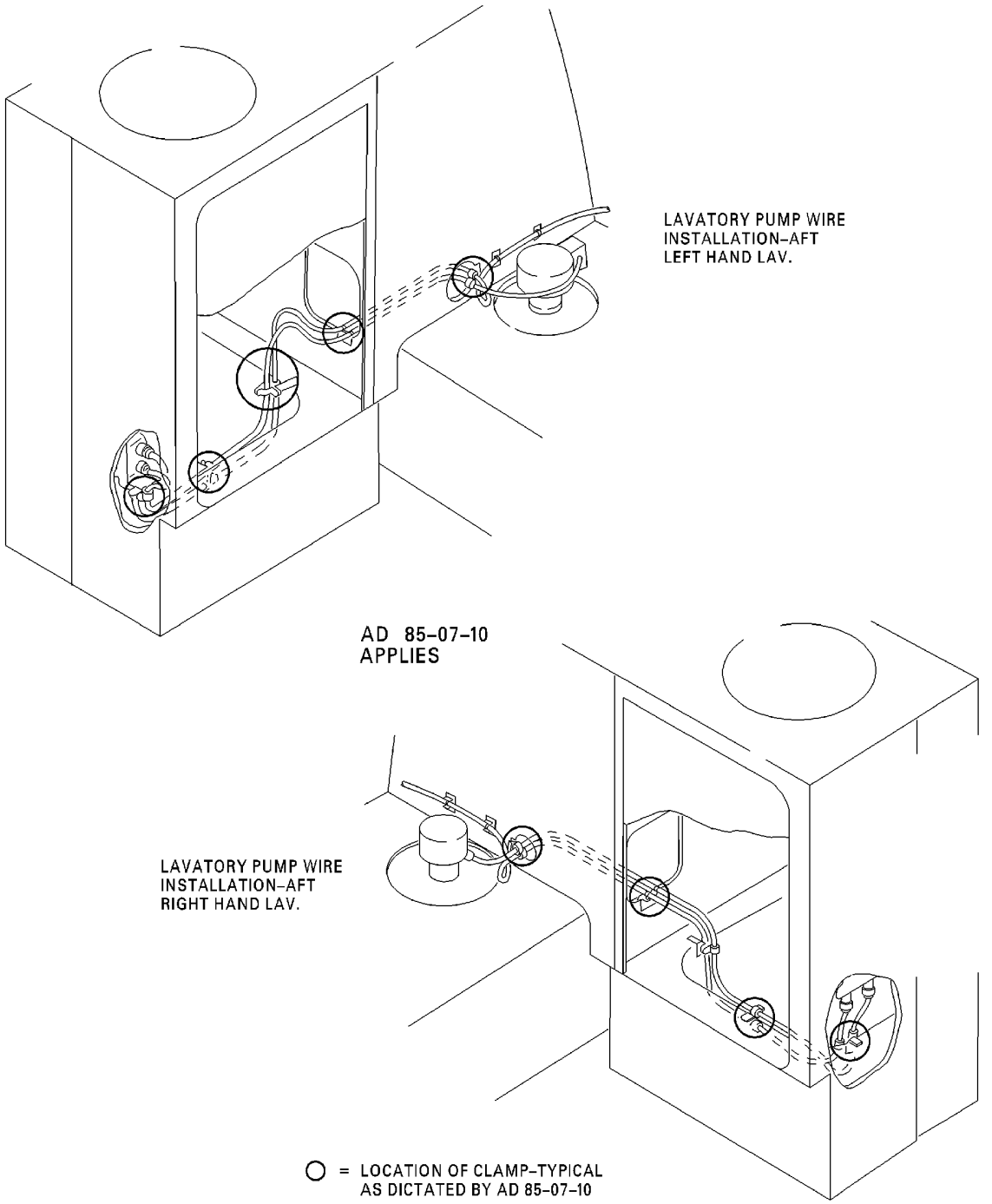
Typical Toilet Pump and Filter -- Removal/Installation
Figure 201/38-30-03-990-806



CAG(IGDS)

BBB2-38-171

Forward Lavatory Pump Wire Installation (Applicable To Aircraft With S/B 24-76 Incorporated)
Figure 202/38-30-03-990-807



Aft Lavatory Pump Wire Installation (Applicable To Aircraft With S/B 24-76 Incorporated)
Figure 203/38-30-03-990-808

WASTE WATER SERVICE PANEL NIPPLES - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/installation instructions for the waste service panel drain outlet nipple and the waste tank fill/flush nipple.

B. The waste service panel nipples are mounted on materials designed to separate (break away), providing a fail-safe means to avoid structural damage, in the event connected service hoses are inadvertently jerked or pulled away by the service unit.

C. Access to the internal components of the aft waste service panel is through a sidewall panel in the left aft cargo compartment. Access to the internal components of the forward waste service panel is through a sidewall panel in the left forward cargo compartment. (For removal/installation of cargo compartment panels. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

D. Two men are required when installing fasteners for the waste tank fill/flush nipple.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Sealant, pressure compound, PR-1422B-2 DMS QPL 2082	Products Research and Chemical Corp.

3. Removal/Installation Waste Drain Outlet Nipple

A. Remove Drain Outlet Nipple

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Drain and flush applicable waste tank(s). (WASTE DISPOSAL SYSTEM - SERVICING, PAGEBLOCK 12-14-02/301)

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(3) Disinfect waste tank and drain outlet. (WASTE DISPOSAL - MAINTENANCE PRACTICES, PAGEBLOCK 38-30-00/201 Config 1)

(4) Remove applicable sidewall panel in cargo compartment for access to internal side of service panel. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(5) From internal side of service panel, loosen 4-inch drain line clamp securing line connector to waste drain outlet nipple. Loosen drain line connector. (Figure 201)

(6) From external side of service panel, remove bolts from drain outlet cap and nipple on panel.

(7) Remove cap and nipple, including fiberglass plate, from service panel pan.

WJE ALL

(8) Clean sealant from pan. (SEALANTS - MAINTENANCE PRACTICES, PAGEBLOCK 20-20-03/201)

B. Install Drain Outlet Nipple

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

WARNING: INTEGRAL FUEL TANKS SEALING COMPOUND (POLYSULFIDE SEALANT B1/2 AND B2) IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN INTEGRAL FUEL TANKS SEALING COMPOUND IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET INTEGRAL FUEL TANKS SEALING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(WARNING PRECEDES)

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(2) Apply (PR-1422B-2) sealant to faying surface between new plate and panel pan. (SEALANTS - MAINTENANCE PRACTICES, PAGEBLOCK 20-20-03/201)

(3) Align bolt holes and install plate, including outlet nipple and cap. Install bolts and washers wet with (PR-1422B-2) sealant. (Figure 201)

(4) From internal side of service panel, adjust line connector as required and tighten connector clamps.

(5) Apply (PR-1422B-2) sealant on all nutplates as required.

(6) Install drain plug or, on later aircraft, close drain valve; then, close and secure drain outlet cap.

(7) Charge waste tank with approximately 5 US gallons (4.2 Imperial gallons, 18.9 liters) of water. (WASTE DISPOSAL SYSTEM - SERVICING, PAGEBLOCK 12-14-02/301)

(8) Pull waste tank drain handle on service panel to allow drain line to fill with water.

(9) Check drain line connectors for leakage.

(10) Connect service unit drain hose; then, drain and charge waste tank. (WASTE DISPOSAL SYSTEM - SERVICING, PAGEBLOCK 12-14-02/301)

(11) Pressure check secondary drain valve for leakage. (LAVATORY WASTE SYSTEM - INSPECTION/CHECK, PAGEBLOCK 38-30-00/601 Config 1)

(12) Clean and dry service panel thoroughly. Remove tools and materials from work area.

WJE ALL

(13) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(14) Install sidewall panel in cargo compartment. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

WJE ALL

C. Remove Fill/Flush Nipple

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(2) Remove applicable sidewall panel in cargo compartment for access to internal side of service panel. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

(3) From internal side of service panel, remove fill/flush line bonding clamp and jumper. (Figure 201)

(4) Remove fill/flush line connector hose clamps and connector hose.

(5) From external side of service panel, drill out rivets securing fill/flush nipple to panel.

(6) Remove fill/flush line connector hose clamps and connector hose.

(7) Remove rivets, washers, and spacers as required.

(8) Remove fiberglass plate from service panel pan.

(9) Clean sealant from service panel pan. (SEALANTS - MAINTENANCE PRACTICES, PAGEBLOCK 20-20-03/201)

WJE ALL

D. Install Fill/Flush Nipple

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B

(Continued)

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

WARNING: INTEGRAL FUEL TANKS SEALING COMPOUND (POLYSULFIDE SEALANT B1/2 AND B2) IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN INTEGRAL FUEL TANKS SEALING COMPOUND IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET INTEGRAL FUEL TANKS SEALING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(2) Install new plate. Apply (PR-1422B-2) sealant to faying surface between plate and panel pan. (Figure 201) (SEALANTS - MAINTENANCE PRACTICES, PAGEBLOCK 20-20-03/201)

(3) Apply (PR-1422B-2) sealant to faying surface between plate and fill/flush nipple flange.

(4) Insert fill/flush nipple through plate and pan. Position nipple to align with fill/flush line and rivet holes.

(5) From internal side of service panel, install rivets, washers, and spacers, wet with (PR-1422B-2) sealant.

(6) Install connector hose and clamps. Tighten clamps.

(7) Apply (PR-1422B-2) sealant on all rivet heads and washers as required.

(8) Install bonding jumper across hose connection.

(9) Connect service unit hose to fill/flush nipple.

(10) Apply water pressure not to exceed 125 psi (862 kPa), to waste tank fill/flush line.

WJE ALL

(11) Check fill/flush line for leakage.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(12) Relieve water pressure at service unit. Service waste tank if required. (WASTE DISPOSAL SYSTEM - SERVICING, PAGEBLOCK 12-14-02/301)

(13) Clean and dry service panel thoroughly. Remove tools and materials from work area.

WJE ALL

(14) Remove the safety tags and close these circuit breakers:

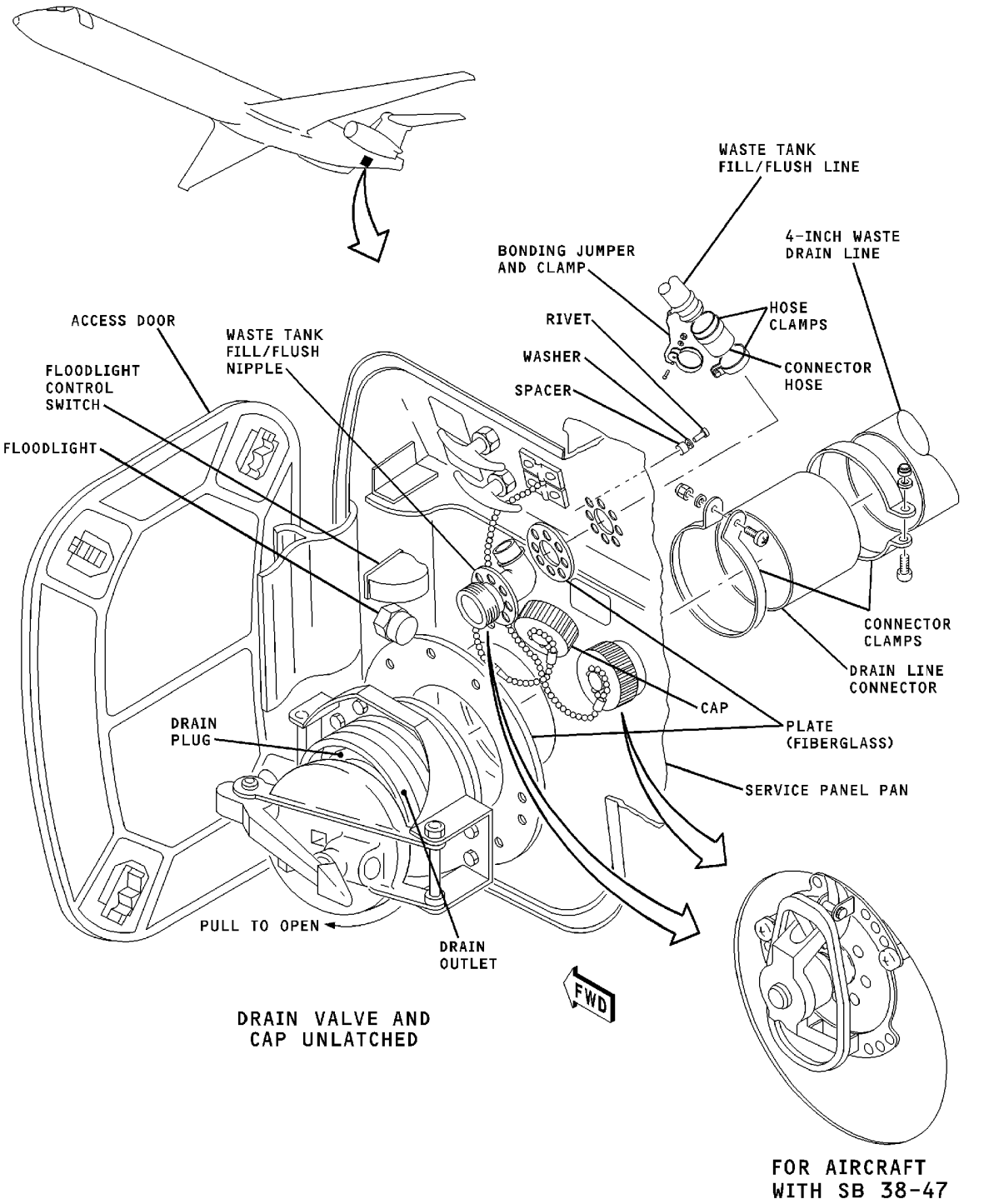
LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

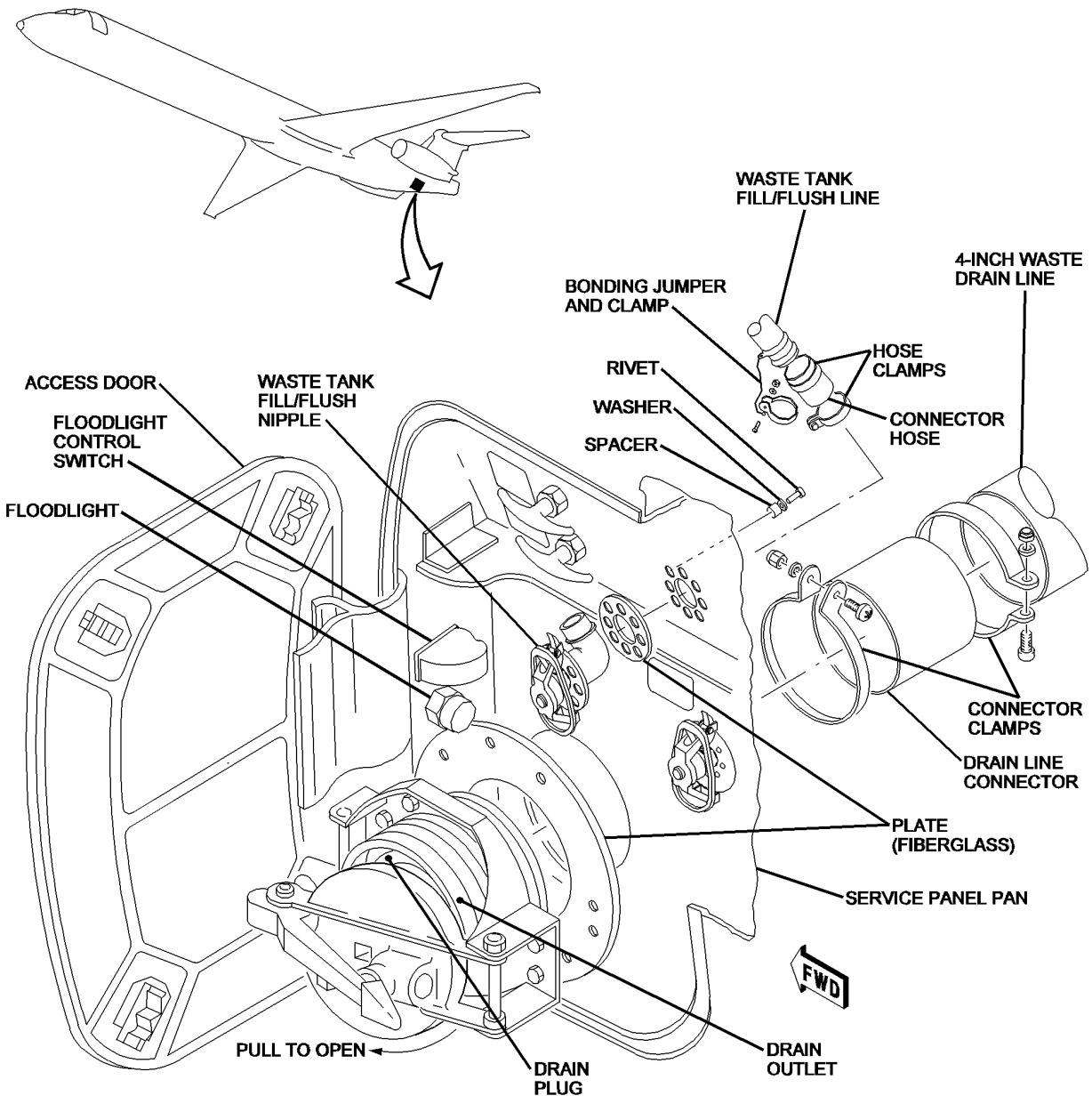
WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(15) Install sidewall panel in cargo compartment. (LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201)

WJE ALL



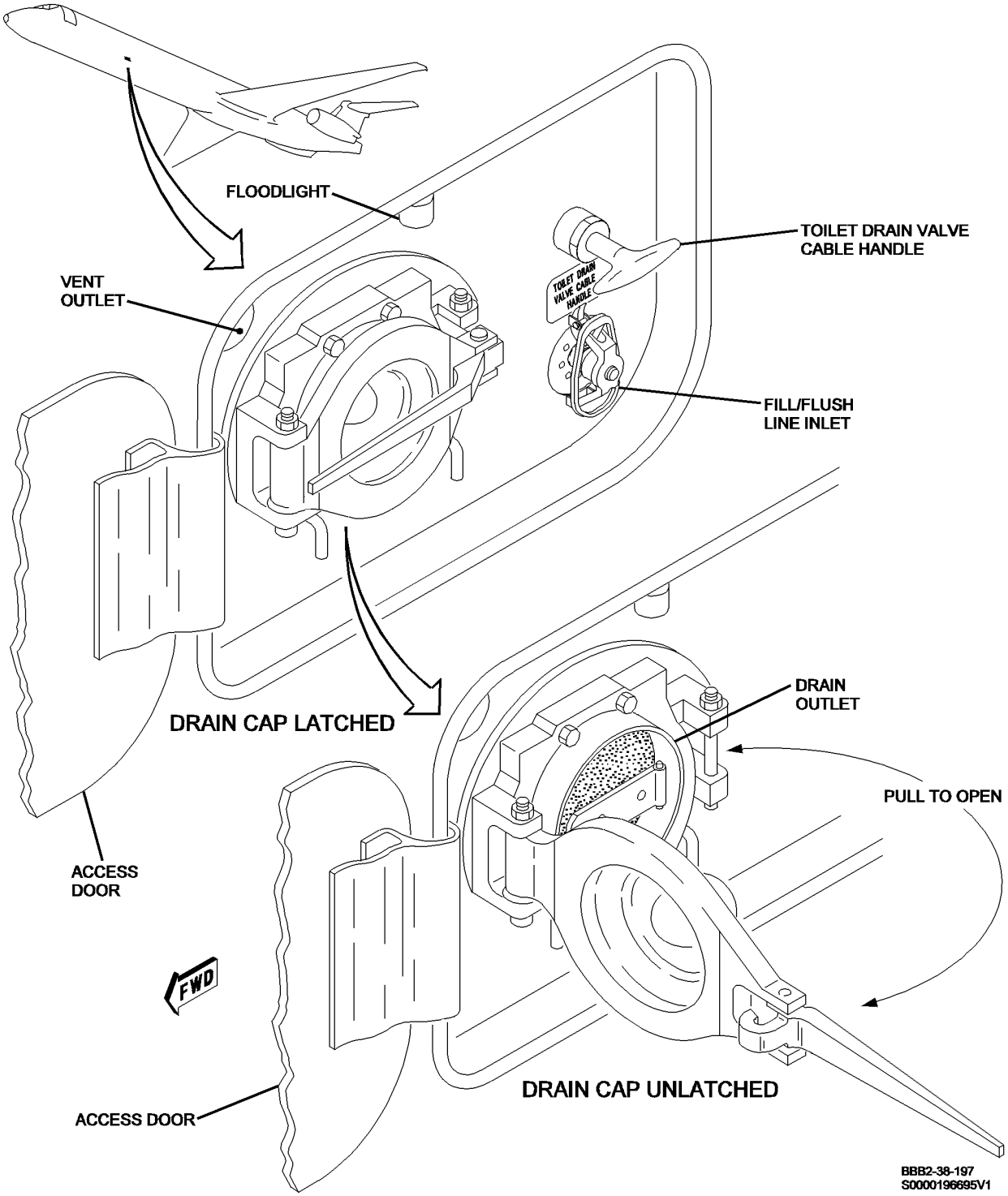
Waste Water Service Panel Nipples - Removal/Installation
Figure 201/38-30-04-990-813 (Sheet 1 of 4)



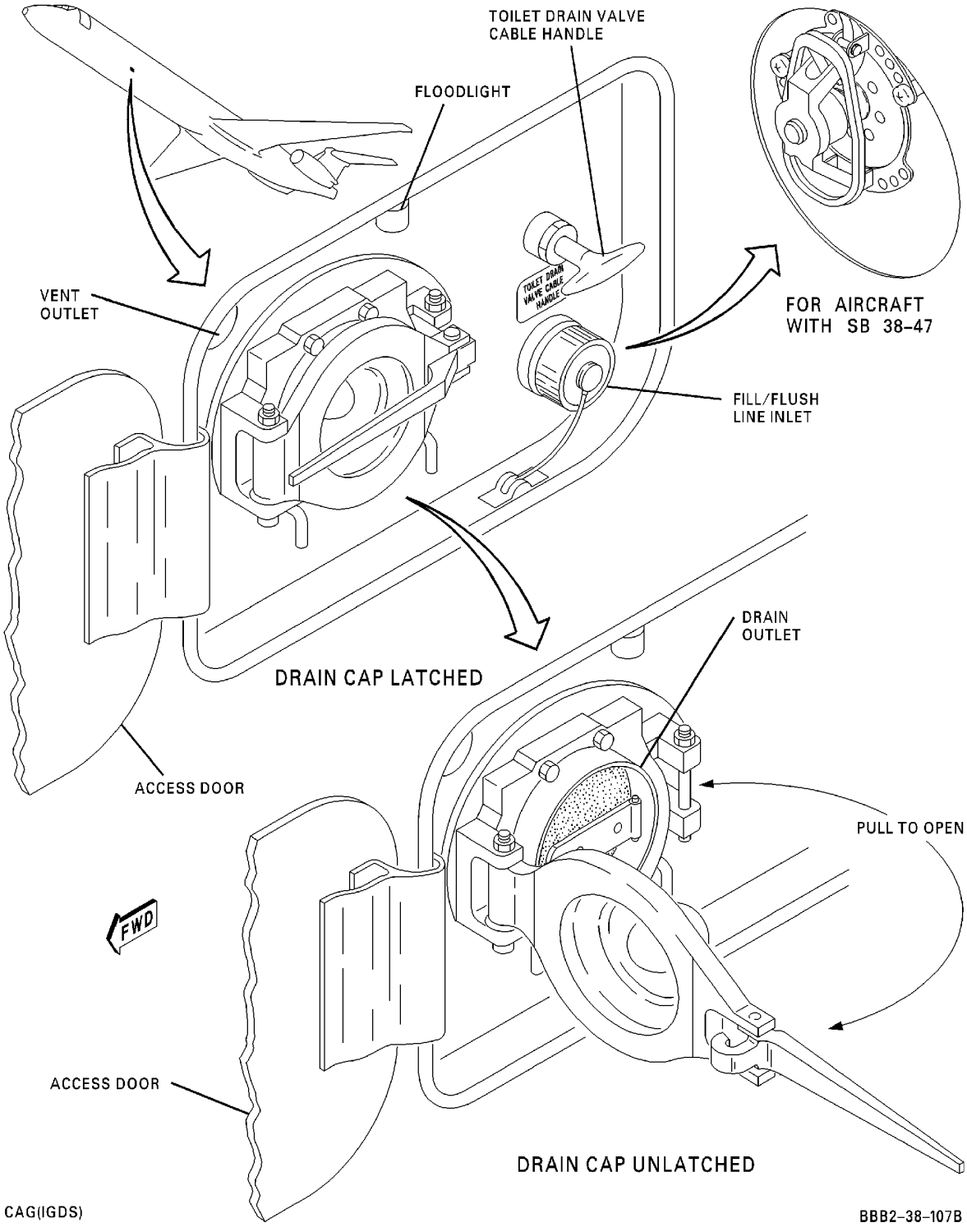
DRAIN VALVE AND
CAP UNLATCHED

BBB2-38-196
S0000196694V1

Waste Water Service Panel Nipples - Removal/Installation
Figure 201/38-30-04-990-813 (Sheet 2 of 4)



Waste Water Service Panel Nipples - Removal/Installation
Figure 201/38-30-04-990-813 (Sheet 3 of 4)



Waste Water Service Panel Nipples - Removal/Installation
Figure 201/38-30-04-990-813 (Sheet 4 of 4)

TOILET DRAIN VALVE CONTROL CABLES - MAINTENANCE PRACTICES

1. General

A. The toilet drain valve control cables are located inside the aircraft beneath the passenger cabin floor and run from each lavatory to the waste water service panel on the outside of the aircraft. Access to the cables is through access panels in the cargo compartments.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Grease, No. 33 DPM 348	Dow Corning

3. Removal/Installation Lavatory Dump Valve Control Cables

A. Remove Control Cable

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Open these access panels:

Number	Name/Location
5703C	Lower Side Aft Pressure Bulkhead, Waste Water Drain Connections, Pressure Bulkhead Differential Flapper Valves and Structural Inspection for Pressure Bulkhead B
5718C	Recirculation Fan, RH Pneumatic Crossfeed Valve
5732C	Control Cables, Fuselage Structure
5735C	Fuselage Structure

(3) Remove toilet shroud:

(a) On aircraft without modular lavatories, toilet shroud is removed by loosening camloc fasteners.

(b) On aircraft with modular lavatories, remove the screws (4 places), two on each side of toilet seat; then lift the shroud approximately 1 in. (25.4 mm) and rotate from toilet tank. Rotate shroud CW (Clockwise) for the left lavatory and CCW (Counterclockwise) for the right lavatory when removing shroud.

(4) Disconnect drain valve cable clevis fitting from end of turnbuckle.

(5) Loosen connector and unscrew rod end from cable end.

(6) Loosen nut on control cable at waste water service panel.

(7) Disconnect control cable clamp from lower end of cable casing.

(8) Remove cable from waste water service panel.

B. Install Control Cable

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Make sure that these access panels are open:

Number	Name/Location
5703C	Lower Side Aft Pressure Bulkhead, Waste Water Drain Connections, Pressure Bulkhead Differential Flapper Valves and Structural Inspection for Pressure Bulkhead B
5718C	Recirculation Fan, RH Pneumatic Crossfeed Valve
5732C	Control Cables, Fuselage Structure
5735C	Fuselage Structure

(3) Adjust clevis fitting on control cable end until fitting is at midpoint of adjustment.

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1341, LUBRICANT/GREASE/SILICONE (DPM 348/6219)

HAZMAT 1000, REFER TO MSDS

(4) Apply coat of silicone lubricant, D60040 to length of flexible cable and slider.

(5) Push flexible cable through casing at waste water service panel until handle bottoms.

(6) Connect control handle clamp to lower end of cable casing.

(7) Tighten nut on control cable at waste water service panel.

(8) Thread rod end on cable end until cable is visible through inspection hole in the connector.

(a) Torque connector to 25 in-lb (3 N·m) to 32 in-lb (4 N·m).

(9) Connect clevis fitting and rod end and check that cable handle is bottomed in closed position.

NOTE: When installed properly, the cable will have a slight tension on cable tension spring inside drain valve. Minor adjustments can be made by use of the threaded portion of clevis fitting.

(10) On a new installation, trim flexible cables as follows:

(a) Determine proper length of cable.

CAUTION: CABLE END SHOULD BE GROUND IN SAME DIRECTION AS CABLE WRAP TO OBTAIN SMOOTH SURFACE. REMOVE SHARP EDGES AND BURRS.

(b) Cut and grind cable end to same conical shape as replaced cable.

(c) Install new cable as described in steps Paragraph 3.B.(3) through Paragraph 3.B.(9).

(11) Install toilet shroud:

(a) On aircraft without modular lavatories, toilet shroud is installed by tightening the camloc fasteners.

(b) On aircraft with modular lavatories, when installing the rotate shroud CCW for the left lavatory and CW for the right lavatory then install the shroud with the screws (4 places), two on each side of toilet seat.

(12) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(13) Close these access panels:

Number	Name/Location
5703C	Lower Side Aft Pressure Bulkhead, Waste Water Drain Connections, Pressure Bulkhead Differential Flapper Valves and Structural Inspection for Pressure Bulkhead B
5718C	Recirculation Fan, RH Pneumatic Crossfeed Valve
5732C	Control Cables, Fuselage Structure
5735C	Fuselage Structure

TOILET DRAIN VALVE CONTROL CABLES - MAINTENANCE PRACTICES

1. General

A. The toilet drain valve control cables are located inside the aircraft beneath the passenger cabin floor and run from each lavatory to the waste water service panel on the outside of the aircraft. Access to the cables is through access panels in the cargo compartments.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Clip, safety, MS21256-2	Commercially available

3. Removal/Installation Lavatory Dump Valve Control Cables

A. Remove Control Cable

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Open these access panels:

Number	Name/Location
5703C	Lower Side Aft Pressure Bulkhead, Waste Water Drain Connections, Pressure Bulkhead Differential Flapper Valves and Structural Inspection for Pressure Bulkhead B
5718C	Recirculation Fan, RH Pneumatic Crossfeed Valve
5732C	Control Cables, Fuselage Structure
5735C	Fuselage Structure

LOWER CARGO COMPARTMENT PANELS, SUBJECT 25-52-01

(3) Remove toilet shroud:

(a) On aircraft without modular lavatories, toilet shroud is removed by loosening camloc fasteners. (Figure 202)

(b) On aircraft with modular lavatories, remove the screws (4 places), two on each side of toilet seat; then lift the shroud approximately 1 in. (25.4 mm) and rotate from toilet tank. Rotate shroud CW for the left lavatory and CCW for the right lavatory when removing shroud. (Figure 203)

(4) Remove and discard the safety clip and disconnect drain valve cable quick disconnect fitting from end of cable. (Figure 201)

(5) Remove nut and washer from control cable where cable passes through flooring in lavatory compartment. From underside of lavatory, remove nut and washer from end of control cable. Retain nuts and washers for installation of control cable. (Figure 201).

CAUTION: DO NOT USE ABRASIVES, WIRE BRUSHES, UNAPPROVED SCRAPERS, CHIPCHASERS, PICKS, SCREWDRIVERS, BLADES, OR OTHER SUCH DEVICES TO REMOVE CURED SEALANT. THIS WILL HELP PREVENT DAMAGE TO THE COMPONENT SURFACES AND FINISHES.

(a) Remove all the old sealant. (SRM 51-20-00)

(6) Remove all clamps from control cable. Retain clamps for installation of control cable.

(7) Remove nut and washer from threads of cable housing at waste water service panel. Retain nut and washer for installation of control cable.

CAUTION: DO NOT USE ABRASIVES, WIRE BRUSHES, UNAPPROVED SCRAPERS, CHIPCHASERS, PICKS, SCREWDRIVERS, BLADES, OR OTHER SUCH DEVICES TO REMOVE CURED SEALANT. THIS WILL HELP PREVENT DAMAGE TO THE COMPONENT SURFACES AND FINISHES.

(a) Remove all old sealant from inside of panel.

(8) Carefully remove control cable from aircraft at waste water panel.

B. Install Control Cable (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Make sure that these access panels are open:

Number	Name/Location
5703C	Lower Side Aft Pressure Bulkhead, Waste Water Drain Connections, Pressure Bulkhead Differential Flapper Valves and Structural Inspection for Pressure Bulkhead B
5718C	Recirculation Fan, RH Pneumatic Crossfeed Valve
5732C	Control Cables, Fuselage Structure
5735C	Fuselage Structure

LOWER CARGO COMPARTMENT PANELS, SUBJECT 25-52-01

(3) Partially insert new control cable into waste water service panel.

(4) From inside of aircraft, install nut and washer onto cable. Carefully draw cable through service panel. Install and tighten nut and washer to threads of cable housing at service panel.

CAUTION: USE EXTREME CARE WHEN WORKING WITH ENGINE PUSH-PULL CABLES. DO NOT BEND CABLE IN RADIUS SMALLER THAN 7-INCHES (177.8MM) MINIMUM OR DAMAGE TO CABLE WILL RESULT.

(5) Route cable to lavatory. Install clamps on cable. (Figure 201)

(6) Install nut and washer on end of cable. Insert cable through opening in floor of lavatory compartment.

(7) In the lavatory compartment, install nut and washer on end of cable. Adjust cable end so that top of threaded part of cable end is 0.50 in. (12.70 mm) above floor of lavatory. (View B)

(8) Install quick disconnect fitting to terminal end on drain valve control cable. Do not install safety clip at this point.

(9) Connect control cable to quick disconnect fitting. Adjust quick disconnect fitting on drain valve cable to have slight tension on cable tension spring inside drain valve. Install safety clip on quick disconnect fitting.

(10) Adjust the drain valve cable tension as follows:

(a) Adjust the weak spring so that is just beginning to compress by pulling on the pulling on the turnbuckle feeling the weak spring compress then the strong spring and the opening of the valve.

NOTE: The drain valve has two springs. A strong one (approximately 35 lbs to open valve) holds valve open. A weak spring (approximately 0 lbs to extend to 5 lbs to fully compressed at a 0.5 in. (12.7 mm) stroke) This allows slack to be removed without engaging the strong spring.

(11) Cycle control cable several times to make certain that drain valve operates properly.

(12) Apply sealant to the nut, washer, and the floor of the lavatory compartment, and in the aircraft to the nut and washer where cable goes into the lavatory compartment. (SRM 51-20-00)

(13) Apply sealant to nut, washer, and service panel. (SRM 51-20-00)

(14) Install toilet shroud:

(a) On aircraft without modular lavatories, toilet shroud is installed by tightening the camloc fasteners. (Figure 202)

(b) On aircraft with modular lavatories, when installing the rotate shroud CCW for the left lavatory and CW for the right lavatory then install the shroud with the screws (4 places), two on each side of toilet seat.(Figure 203)

(15) Close these access panels:

Number	Name/Location
5703C	Lower Side Aft Pressure Bulkhead, Waste Water Drain Connections, Pressure Bulkhead Differential Flapper Valves and Structural Inspection for Pressure Bulkhead B
5718C	Recirculation Fan, RH Pneumatic Crossfeed Valve
5732C	Control Cables, Fuselage Structure
5735C	Fuselage Structure

LOWER CARGO COMPARTMENT PANELS, SUBJECT 25-52-01

(16) Remove the safety tags and close these circuit breakers:

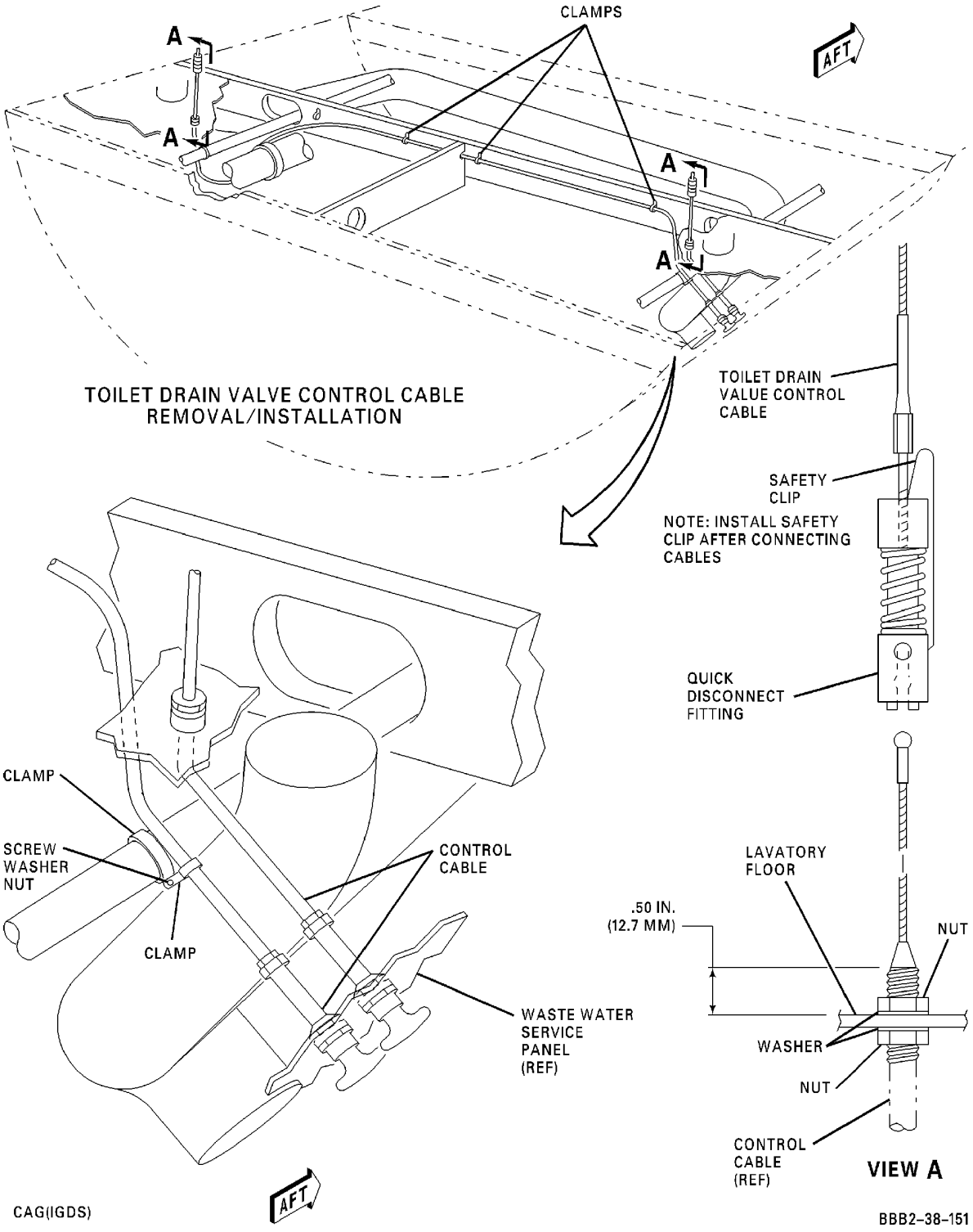
LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-370	AFT LEFT TOILET FLUSHING PHASE A
		B1-371	AFT LEFT TOILET FLUSHING PHASE B
		B1-372	AFT LEFT TOILET FLUSHING PHASE C
		B1-373	AFT RIGHT TOILET FLUSHING PHASE A
		B1-374	AFT RIGHT TOILET FLUSHING PHASE B
		B1-375	AFT RIGHT TOILET FLUSHING PHASE C
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

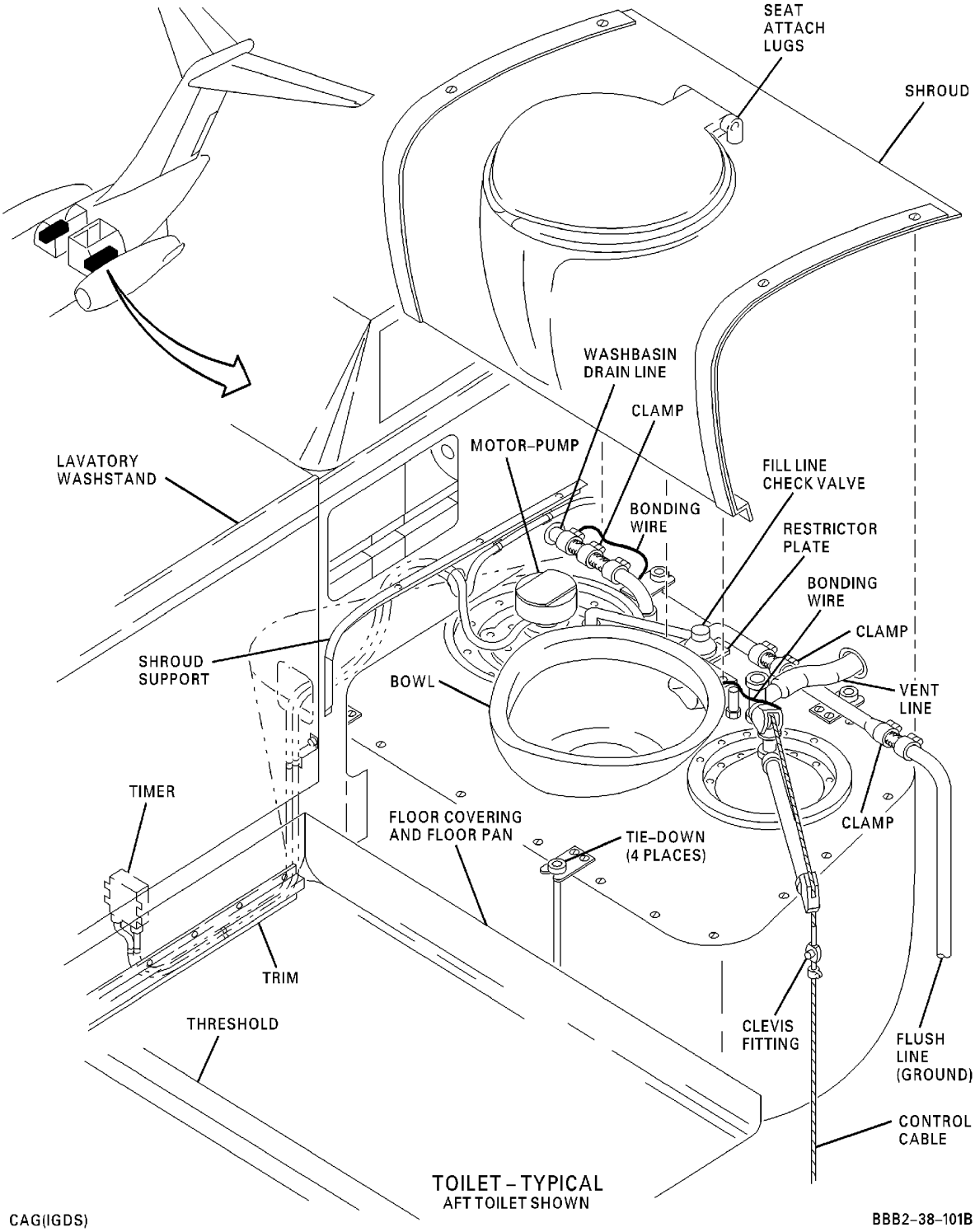
(17) Install toilet shroud:

(a) On aircraft without modular lavatories, toilet shroud is installed by tightening the camloc fasteners. (Figure 202)

(b) On aircraft with modular lavatories, when installing the rotate shroud CCW for the left lavatory and CW for the right lavatory then install the shroud with the screws (4 places), two on each side of toilet seat.(Figure 203)

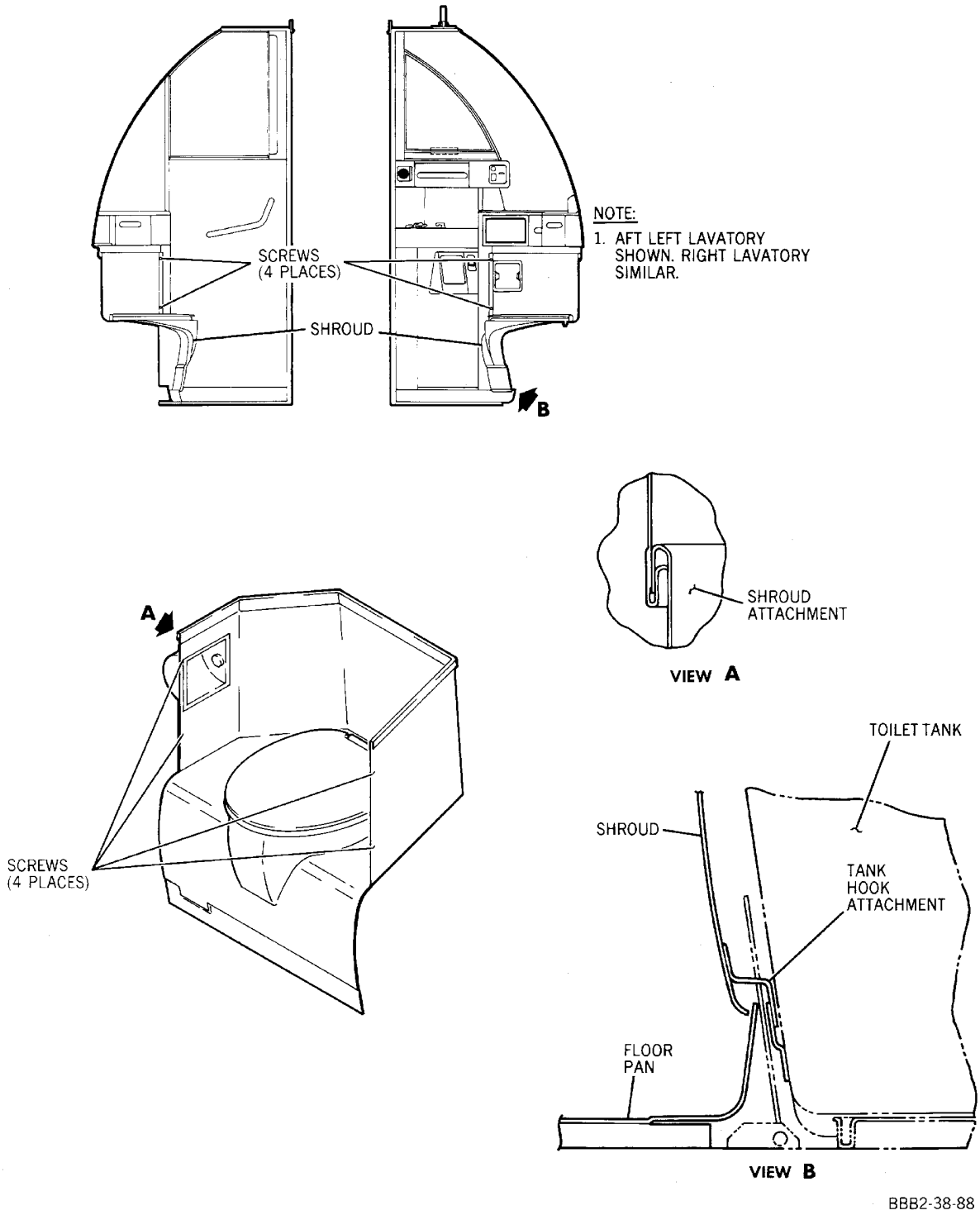


Toilet Drain Valve Control Cable -- Removal/Installation
Figure 201/38-30-06-990-801



Shroud (without modular lavatories) -- Removal Installation
Figure 202/38-30-06-990-805

EFFECTIVITY
WJE 410, 875-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST DC9-38-043



Shroud (Modular Lavatories) -- Removal/Installation
Figure 203/38-30-06-990-806

BALL VALVE - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation and adjustment instructions for the ball valve in the waste service drain.

B. Access to the ball valve is through a sidewall panel in the left forward cargo compartment.

2. Removal/Installation Ball Valve

WARNING: MAKE SURE YOU OBEY ALL APPROVED SAFETY PRECAUTIONS WHEN YOU REMOVE THE WASTE TANK AND ITS COMPONENTS. CONTAMINATIONS AND WASTE ARE DANGEROUS TO PERSONS AND CAN CAUSE ILLNESS.

WARNING: ALWAYS PUT ON RUBBER GLOVES BEFORE YOU DO MAINTENANCE ON THE TOILET SYSTEM, OR TOUCH PARTS THAT TOUCHED WASTE MATERIAL. FULLY CLEAN YOUR HANDS WITH SOAP AND WATER AFTER MAINTENANCE IS COMPLETED. THE TOILET WASTE CAN CAUSE ILLNESS AND INJURIES TO PERSONNEL.

WARNING: WASTE TANK COMPONENTS ARE EXPOSED TO CONTAMINANTS THAT COULD RESULT IN PERSONNEL BECOMING ILL.

A. Remove Ball Valve (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Drain and flush forward waste tank. (WASTE DISPOSAL SYSTEM - SERVICING, PAGEBLOCK 12-14-02/301)

(3) Disinfect waste tank and drain outlet. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

(4) Open this access panel:

Number	Name/Location
5147C	Radio Rack Blower Vent Valve, Air Conditioning Duct Connectors, Wire Bundles and Interphone Jack Connectors, Check Valve, Venturi Valve, Electrical Disconnect

LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201

(5) Remove the ball valve as follows:(Figure 201)

(a) Disconnect pull handle linkage from at the ball valve. (Figure 202 (view B).

(b) Loosen clamp securing drain line segment attached to ball valve.

1) Remove drain line segment.

(c) Remove V-Band coupling attaching ball valve to drain panel elbow.

(d) Remove two bolts, two washers, two shoulder washers, two nuts that attach the ball valve to structure.

1) Remove the ball valve.

(e) Remove and discard gasket.

B. Install Ball Valve

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(2) Make sure that this access panel is open:

Number	Name/Location
5147C	Radio Rack Blower Vent Valve, Air Conditioning Duct Connectors, Wire Bundles and Interphone Jack Connectors, Check Valve, Venturi Valve, Electrical Disconnect

LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201

(3) Install the ball valve as follows: (Figure 201)

WARNING: MAKE SURE YOU OBEY ALL APPROVED SAFETY PRECAUTIONS WHEN YOU REMOVE THE WASTE TANK AND ITS COMPONENTS. CONTAMINATIONS AND WASTE ARE DANGEROUS TO PERSONS AND CAN CAUSE ILLNESS.

WARNING: ALWAYS PUT ON RUBBER GLOVES BEFORE YOU DO MAINTENANCE ON THE TOILET SYSTEM, OR TOUCH PARTS THAT TOUCHED WASTE MATERIAL. FULLY CLEAN YOUR HANDS WITH SOAP AND WATER AFTER MAINTENANCE IS COMPLETED. THE TOILET WASTE CAN CAUSE ILLNESS AND INJURIES TO PERSONNEL.

WARNING: WASTE TANK COMPONENTS ARE EXPOSED TO CONTAMINANTS THAT COULD RESULT IN PERSONNEL BECOMING ILL.

(a) Position ball valve on structure and attach with bolts. Make certain that shoulder washers are between nut and grommet.

NOTE: Do not tighten the attaching hardware at this time.

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1404, LUBRICANT/GREASE/PNEUMATIC (DPM 333)

(WARNING PRECEDES)

HAZMAT 1000, REFER TO MSDS

(b) Apply a layer of pneumatic lubricant grease, D60039 on new gasket.

(c) Install gasket between valve and drain panel elbow.

(d) Align ball valve with drain panel elbow, and install V-band coupling.

NOTE: Do not tighten the V-band coupling at this time.

(e) Position waste drain line segment and attach with clamp.

NOTE: Do not tighten the clamp at this time.

(f) Tighten all clamps and attaching hardware.

(g) Connect the pull handle linkage to ball valve. (Figure 202 (view B).

(h) Adjust linkage. (Paragraph 3.)

NOTE: The circuit breakers opened in this procedure will be closed at the end of the adjustment/test.

(4) Perform leak check of ball valve assembly. (TOILET DRAIN VALVES - MAINTENANCE PRACTICES, PAGEBLOCK 38-30-02/201 Config 1 paragraph 3.)

3. Adjustment/Test Ball Valve

A. Adjustment Test Ball Valve

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

WARNING: MAKE SURE YOU OBEY ALL APPROVED SAFETY PRECAUTIONS WHEN YOU REMOVE THE WASTE TANK AND ITS COMPONENTS. CONTAMINATIONS AND WASTE ARE DANGEROUS TO PERSONS AND CAN CAUSE ILLNESS.

WARNING: ALWAYS PUT ON RUBBER GLOVES BEFORE YOU DO MAINTENANCE ON THE TOILET SYSTEM, OR TOUCH PARTS THAT TOUCHED WASTE MATERIAL. FULLY CLEAN YOUR HANDS WITH SOAP AND WATER AFTER MAINTENANCE IS COMPLETED. THE TOILET WASTE CAN CAUSE ILLNESS AND INJURIES TO PERSONNEL.

WARNING: WASTE TANK COMPONENTS ARE EXPOSED TO CONTAMINANTS THAT COULD RESULT IN PERSONNEL BECOMING ILL.

(2) Drain and flush forward waste tank. (WASTE DISPOSAL SYSTEM - SERVICING, PAGEBLOCK 12-14-02/301)

(3) Disinfect waste tank and drain outlet. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

(4) Open this access panel:

Number	Name/Location
5147C	Radio Rack Blower Vent Valve, Air Conditioning Duct Connectors, Wire Bundles and Interphone Jack Connectors, Check Valve, Venturi Valve, Electrical Disconnect

LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201

(5) Do the adjustment of the pull handle linkage as follows: (Figure 202)

(a) Use a push/pull scale, STD-11884 and make sure that no more the 30 lb (14 kg) of force is needed to pull the handle.

(b) Adjust pull handle linkage so lever of ball valve is against closed stop when handle is pushed in fully, and against open stop when handle is pulled out fully.

(c) Open and close ball valve while observing operation of valve operating bellcrank through full cycle. Make certain that sufficient clearance exists between bellcrank/linkage and fuselage strake pneumatic duct to avoid any interference.

(6) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

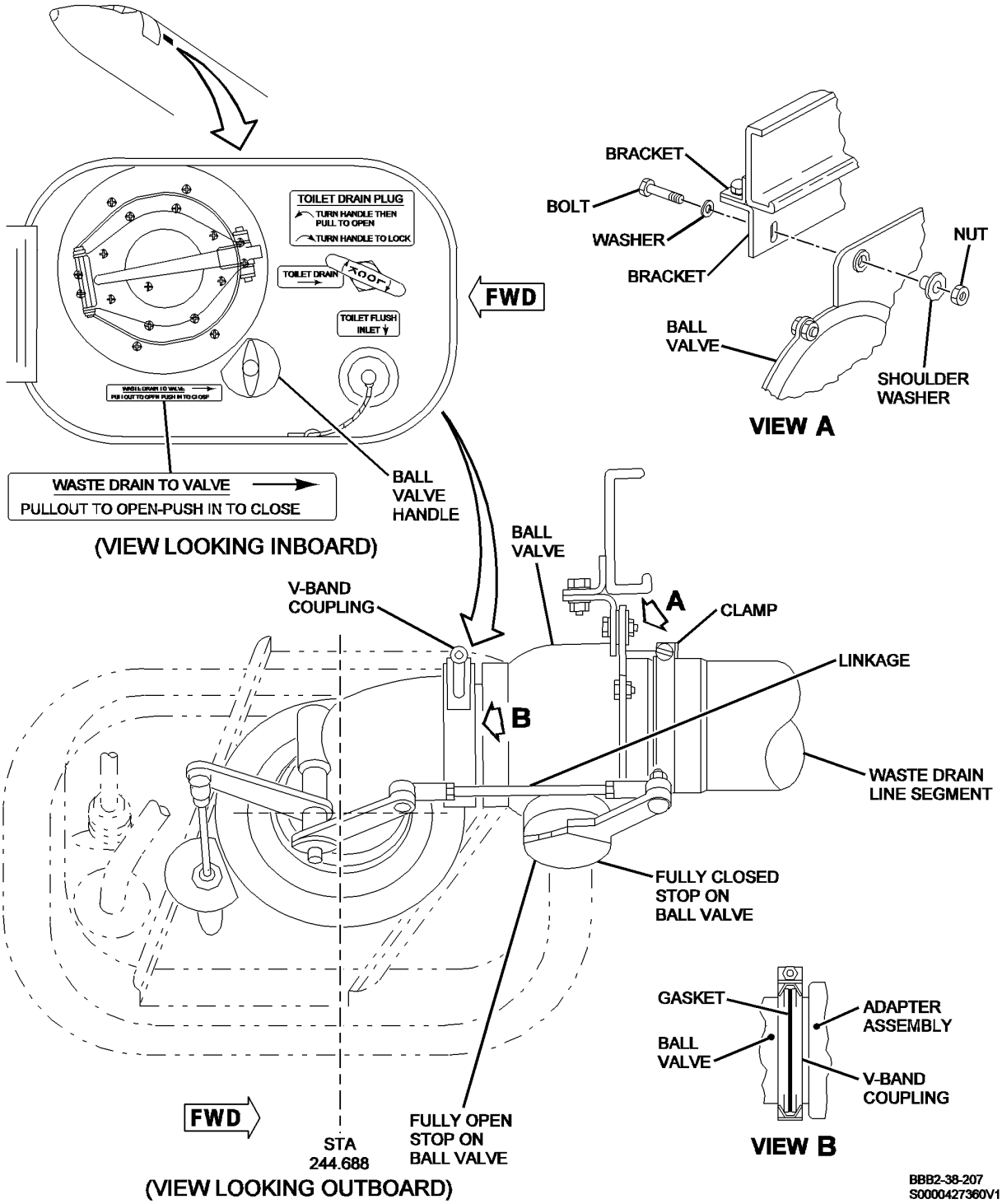
Row	Col	Number	Name
		B1-523	TOILET FLUSHING FWD LEFT PHASE A
		B1-524	TOILET FLUSHING FWD LEFT PHASE B
		B1-525	TOILET FLUSHING FWD LEFT PHASE C

(7) Charge waste tank with approximately 5 gal (19 l) of water. (WASTE DISPOSAL SYSTEM - SERVICING, PAGEBLOCK 12-14-02/301)

(8) Close this access panel:

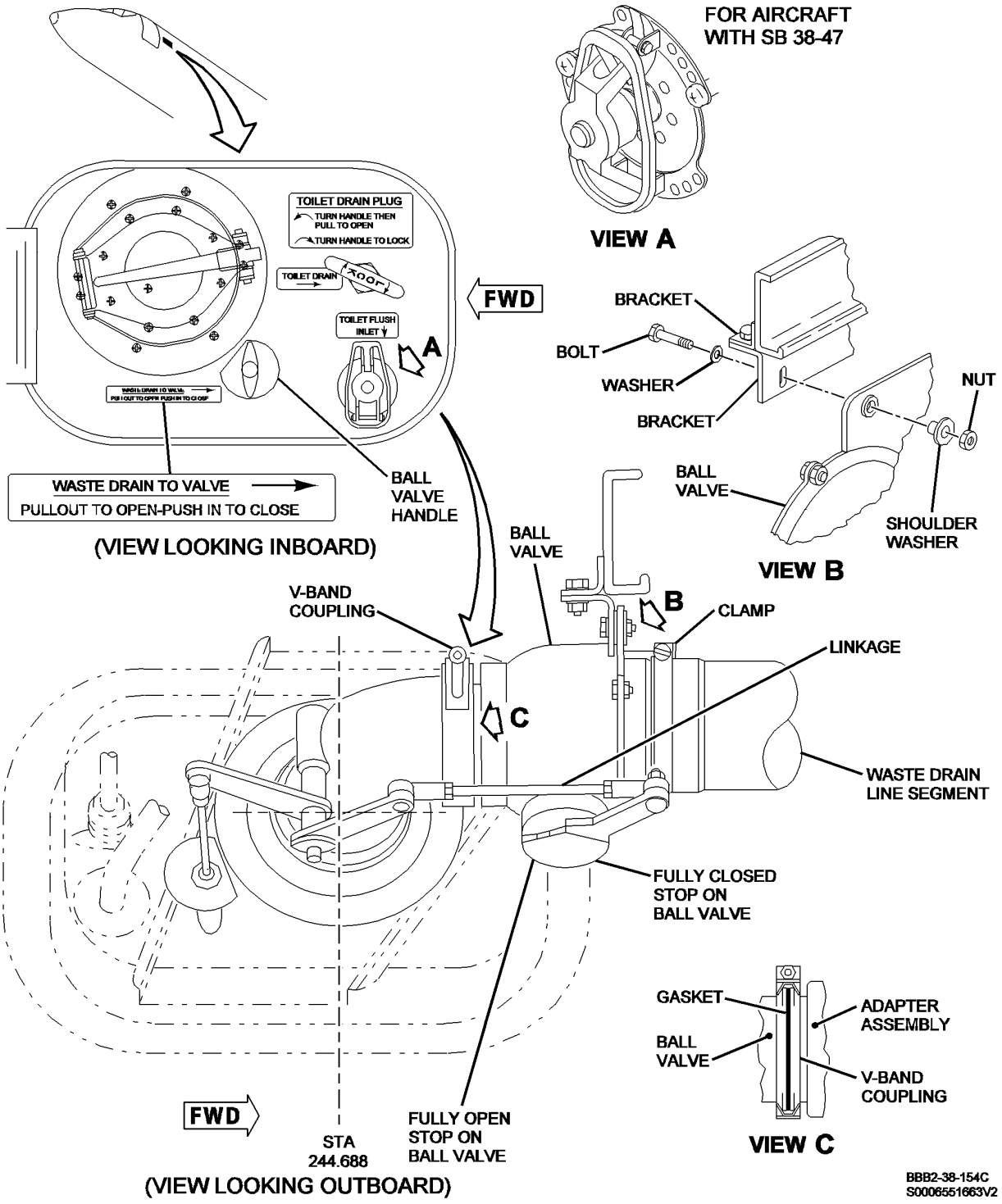
Number	Name/Location
5147C	Radio Rack Blower Vent Valve, Air Conditioning Duct Connectors, Wire Bundles and Interphone Jack Connectors, Check Valve, Venturi Valve, Electrical Disconnect

LOWER CARGO COMPARTMENT PANELS - MAINTENANCE PRACTICES, PAGEBLOCK 25-52-01/201



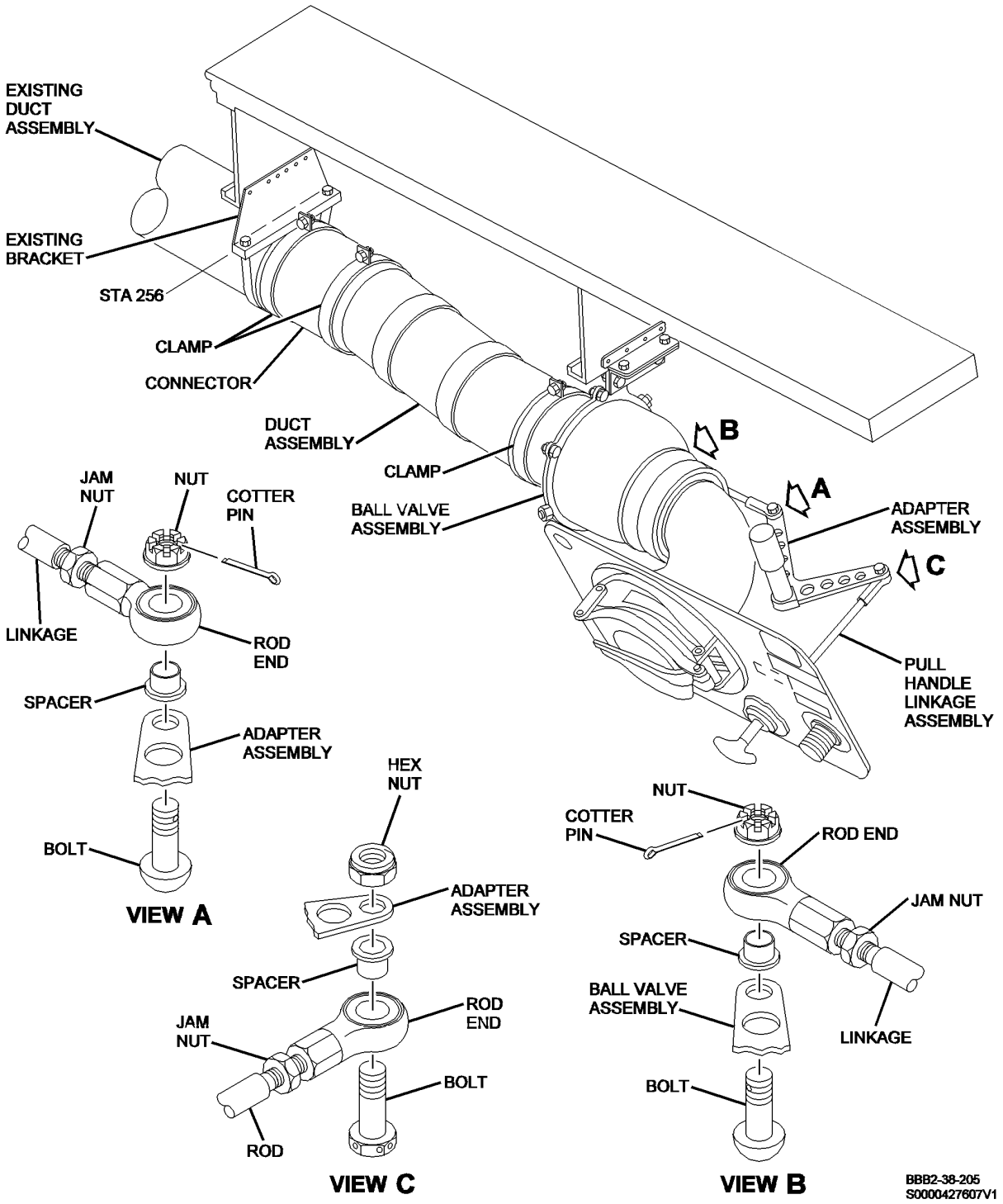
Ball Valve - Removal/Installation
Figure 201/38-30-07-990-804 (Sheet 1 of 2)

EFFECTIVITY
WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893
PRE DC9-38-047



Ball Valve - Removal/Installation
Figure 201/38-30-07-990-804 (Sheet 2 of 2)

EFFECTIVITY
WJE 410, 875-879; WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST DC9-38-047



Ball Valve Adjustment/Test
Figure 202/38-30-07-990-809

AIR SUPPLY - DESCRIPTION AND OPERATION

1. General

A. Air to pressurize the potable water supply tank is obtained during flight from the air conditioning system at a pressure of 23 ±2 psi (159 ±14 kPa), regulated by the air conditioning pressure regulator valve. For ground servicing with no air conditioning available, the tank is pressurized through the tank pressure, located on the potable water service panel.

B. The air supply components consist of an air filter, air check valves, tank pressure relief valve, and pressure lines to deliver air to the potable water supply tank.

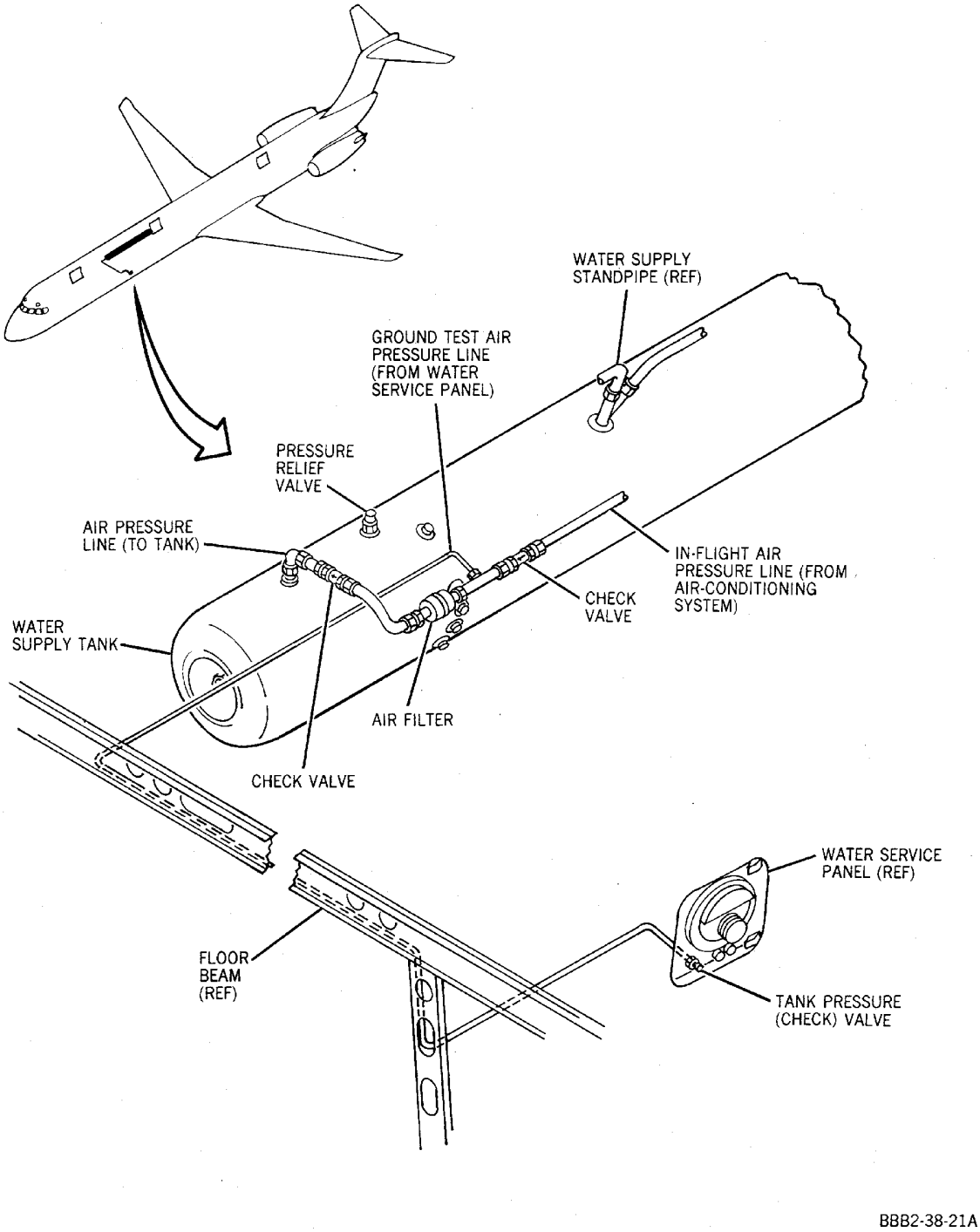
2. Air Supply

A. Description

(1) Air Filter - The air filter is mounted on a strut in the tunnel area adjacent to the tank water fill fitting, and connected into the air supply line of the water supply tank. The filter is a disposable type made of noncorrosive material.

(2) Air Check Valves - Three check valves are located in the water system air supply line; one positioned upstream of the ground service air line connection, one positioned between the air filter and tank air line connection, and one at the tank pressure valve on the service panel. The function of the valves enable the water supply tank to be pressurized from the ground service panel and prevents moisture from entering the air filter. Access to the valves is through the cargo compartment sidewall panel, just forward of the lower mid cargo compartment door.

(3) Pressure Relief Valve - The water system is protected from over pressurization by a relief valve, located on top of the water supply tank. The relief valve is designed to relieve system pressure in excess of 50 ±5 psi (345 ±35 kPa).



Water System Air Supply Components
Figure 1/38-40-00-990-801

AIR SUPPLY - DESCRIPTION AND OPERATION

1. General

WJE 417, 419, 421, 423, 865, 869, 871, 872

A. Air to pressurize the potable water supply tank is obtained during flight from the air conditioning system at a pressure of 23 ±2 psi (159 ±14 kPa), regulated by the air conditioning pressure regulator valve. When the aircraft is on the ground, and electrical power is available, air pressure is supplied from a pneumatic system located aft of the center cargo door in the right tunnel area. For ground servicing (with no air conditioning or electrical power available), air pressure is obtained from the tank pressure valve on the potable water service panel.

WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 891

B. Air to pressurize the potable water supply tank is obtained during flight from the air conditioning system at a pressure of 23 ±2 psi (159 ±14 kPa), regulated by the air conditioning pressure regulator valve. For ground servicing (with no air conditioning or electrical power available), air pressure is obtained from the tank pressure valve on the potable water service panel.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

C. The air supply components consist of a pneumatic system air compressor, pressure regulator, pressure switch, air filter, air check valves, tank pressure relief valve, and pressure lines to deliver air to the potable water supply tank.

2. Air Supply

A. Description

WJE 417, 419, 421, 423, 865, 869, 871, 872

(1) Pneumatic System Compressor.-The pneumatic system compressor is mounted on a bracket located in the right tunnel area of the forward cargo compartment aft of the center cargo door.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

(2) Access to the compressor is through access panel 5115C.

WJE 417, 419, 421, 423, 865, 869, 871, 872

(3) Air Pressure Regulator - The air pressure regulator is a stainless steel poppet-type regulator adjusted to maintain a 30.0 ±5.0 psi (207 ±35 kPa) air pressure to the potable water system. The pressure regulator is located in the pneumatic line tee fitting just aft of the air filter, inboard of the potable water tank.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

(4) Air Filter - The air filter is mounted on a strut in the tunnel area adjacent to the tank water fill fitting, and connected into the air supply line of the water supply tank. The filter is a disposable type made of noncorrosive material.

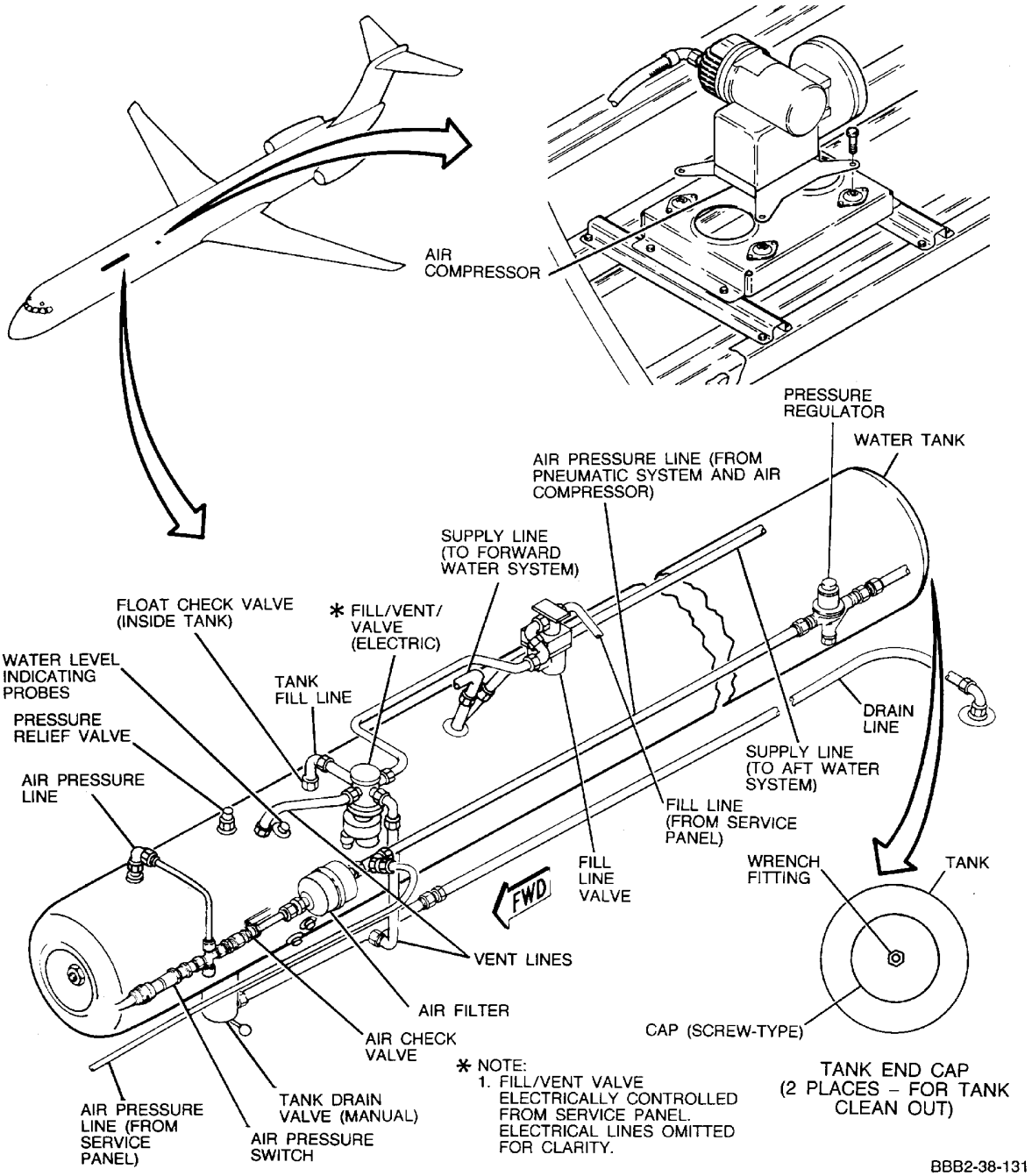
(5) Air Check Valves - Three check valves are located in the water system air supply line; one positioned upstream of the ground service air line connection, one positioned between the air filter and tank air line connection, and one at the tank pressure valve on the service panel. The function of the valves enable the water supply tank to be pressurized from the ground service panel and prevents moisture from entering the air filter. Access to the valves is through the cargo compartment sidewall panel, just forward of the lower mid cargo compartment door.

(6) Pressure Relief Valve - The water system is protected from over pressurization by a relief valve, located on top of the water supply tank. The relief valve is designed to relieve system pressure in excess of 50 ±5 psi (345 ±35 kPa).

WJE 417, 419, 421, 423, 865, 869, 871, 872

(7) Air Pressure Switch - The air pressure switch is mounted on a cross fitting clamped to a bracket attached to a strut inboard of the forward end of the potable water supply tank. When pneumatic system pressure is 24 psi (165 kPa) or less, the air pressure switch allows the pneumatic system compressor to operate. When pneumatic system pressure is 33.5 psi (231.0 kPa) or higher, the air pressure switch prevents operation of the compressor.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891



Water System Air Supply Components
Figure 1/38-40-00-990-804

AIR FILTER - MAINTENANCE PRACTICES

1. General

A. The maintenance practices in this section provide removal/ installation and leak check instructions for the air filter, mounted in the tunnel area, adjacent to the potable water supply tank.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

Table 201

Name and Number	Manufacturer
Low-pressure test gage (0-75) psi (0-517 kPa)	
Test regulator (adjustable type)	
Pressure cylinder (nitrogen gas or compressed air)	
Bubble fluid, 905A DPM 6045	Courtaulds Aerospace Inc.

3. Removal/Installation Air Filter

A. Remove Filter

(1) Relieve potable water supply tank air pressure by placing PRESELECT switch in VENT position at service panel.

(2) Disconnect air lines from filter. Cap lines.

B. Install Filter

CAUTION: FILTER MUST BE INSTALLED WITH OUTLET PORT FACING FORWARD.

(1) Position filter in air line.

(2) Connect air lines to filter inlet and outlet ports. Hold end fitting with wrench and tighten filter attach nuts to torque of 20 in-lb (2 N·m) – 25 in-lb (3 N·m).

(3) Pressure test filter and air line connections for leaks as follows:

CAUTION: PRESSURE MUST NOT BE TAKEN DIRECTLY FROM HIGH-PRESSURE SOURCE. A SUITABLE PRESSURE REDUCING REGULATOR AND SHUTOFF VALVE MUST BE INSTALLED IN PRESSURE SUPPLY LINE.

(a) Connect pressure cylinder supply hose to tank pressure valve on service panel. Ensure regulated cylinder pressure is adequate for test.

(b) Carefully open supply hose shutoff valve until water system is pressurized to 40 ±5 psi (276 ±35 kPa) as noted on test gage; then, close shutoff valve.

(c) Allow 5 minutes for temperature equalization, tap test gage, and adjust system pressure by opening shutoff valve as necessary; then, close shutoff valve.

(d) After 15 minutes, check pressure drop in water system.

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

(WARNING PRECEDES)

Hazardous Material Warnings

HAZMAT 1182, BUBBLE FLUID/LEAK TEST (DPM 6045)

HAZMAT 1000, REFER TO MSDS

CAUTION: USE CARE TO PREVENT BUBBLE FLUID FROM CONTACTING OTHER SURFACES. REMOVE BUBBLE FLUID BY WIPING WITH A CLEAN CLOTH DAMPENED WITH WATER.

(e) If pressure drop is noted on test gage, locate leak by applying bubble fluid, B60047 to air filter and line joints with small brush.

(f) Tighten connections as necessary.

(g) Repeat steps Paragraph 3.B.(3)(b) through Paragraph 3.B.(3)(f) until leakage stops.

(4) Close shutoff valve and disconnect pressure cylinder supply hose from tank pressure valve on service panel. Remove test equipment.

(5) Relieve air pressure from water system as required by placing PRESELECT switch in VENT position at service panel.

AIR FILTER - REMOVAL/INSTALLATION

1. General

A. This procedure contains MSG-3 task card data.

TASK 38-40-01-901-801

2. Discard the Potable Water System Air Filter

NOTE: This procedure is a scheduled maintenance task.

A. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

Table 401

Name and Number	Manufacturer
Low-pressure test gage (0-75) psi (0-517 kPa)	
Test regulator (adjustable type)	
Pressure cylinder (nitrogen gas or compressed air)	
Bubble fluid, 905A DPM 6045	Courtaulds Aerospace Inc.

B. Prepare to Discard Potable Water System Air Filter

WJE 401-412, 414, 875-881, 883, 884

SUBTASK 38-40-01-864-001

(1) Relieve potable water supply tank air pressure by placing FILL/VENT VALVE switch in OPEN position at service panel.

WJE 417, 419, 421, 423, 865, 869, 871-874, 886, 887, 892, 893

SUBTASK 38-40-01-864-003

(2) Relieve potable water supply tank air pressure by placing PRESELECT switch in VENT position at service panel.

WJE 401-412, 414, 417, 419, 421, 423, 865, 869, 871-881, 883, 884, 886, 887, 892, 893

C. Discard the Potable Water System Air Filter

SUBTASK 38-40-01-030-001

(1) Disconnect air lines from filter. Cap lines.

SUBTASK 38-40-01-901-001

(2) Discard the air filter.

SUBTASK 38-40-01-420-001

CAUTION: FILTER MUST BE INSTALLED WITH OUTLET PORT FACING FORWARD.

(3) Install a serviceable air filter.

(a) Position filter in air line.

(b) Connect air lines to filter inlet and outlet ports. Hold end fitting with wrench and tighten filter attach nuts to torque of 20-25 inch-pounds (2.2-2.8 N·m).

SUBTASK 38-40-01-780-001

(4) Pressure test filter and air line connections for leaks as follows:

CAUTION: PRESSURE MUST NOT BE TAKEN DIRECTLY FROM HIGH-PRESSURE SOURCE. A SUITABLE PRESSURE REDUCING REGULATOR AND SHUTOFF VALVE MUST BE INSTALLED IN PRESSURE SUPPLY LINE.

(a) Connect pressure cylinder supply hose to tank pressure valve on service panel. Ensure regulated cylinder pressure is adequate for test.

(b) Carefully open supply hose shutoff valve until water system is pressurized to 40(±5) psi (276(±34) kPa) as noted on test gage; then, close shutoff valve.

(c) Allow 5 minutes for temperature equalization, tap test gage, and adjust system pressure by opening shutoff valve as necessary; then, close shutoff valve.

(d) After 15 minutes, check pressure drop in water system.

CAUTION: USE CARE TO PREVENT BUBBLE FLUID FROM CONTACTING OTHER SURFACES. REMOVE BUBBLE FLUID BY WIPING WITH A CLEAN CLOTH DAMPENED WITH WATER.

(e) If pressure drop is noted on test gage, locate leak by applying bubble fluid to air filter and line joints with small brush.

(f) Tighten connections as necessary.

(g) Repeat steps (b) through (f) until leakage stops.

(h) Close shutoff valve and disconnect pressure cylinder supply hose from tank pressure valve on service panel. Remove test equipment.

D. Job Close-up

SUBTASK 38-40-01-864-004

(1) Relieve air pressure from water system as required by placing FILL/VENT VALVE switch in OPEN position or, on aircraft with preselect water system, PRESELECT switch in VENT position at service panel.

——— END OF TASK ———

PNEUMATIC SYSTEM COMPRESSOR - MAINTENANCE PRACTICES

1. General

A. The pneumatic system compressor is mounted on a bracket located in the right tunnel area of the forward cargo compartment, aft of the center cargo door.

2. Removal/Installation - Pneumatic System Compressor

A. Remove Pneumatic System Compressor

(1) Depressurize water system. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(3) Open this access panel:

Number	Name/Location
5142F	Potable Water Pneumatic Pump

(4) Disconnect and cap electrical connector from compressor motor.

(a) Put an electrical connector dust cap, STD-154 on the electrical plug.

(5) Disconnect and cap air line from compressor.

(6) Remove the four screws, eight washers, two special washers, and four washers.

(a) Record the location of all the washers for installation.

(7) Remove compressor from mounting bracket.

B. Install Pneumatic System Compressor

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(2) Make sure that this access panel is open:

Number	Name/Location
5142F	Potable Water Pneumatic Pump

(3) Place compressor on mounting bracket, and tighten mounting bolts.

(a) Make sure that all the washers are in the correct location as they were removed.

(4) Remove caps and connect air line to compressor.

(5) Check the electrical connector and receptacle for damage and unwanted material. (GENERAL INSTALLATIONS HARDWARE - MAINTENANCE PRACTICES, SWPM 20-20-03)

(6) Remove caps and connect electrical connector to compressor motor.

(7) Close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(8) Pressurize water system. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

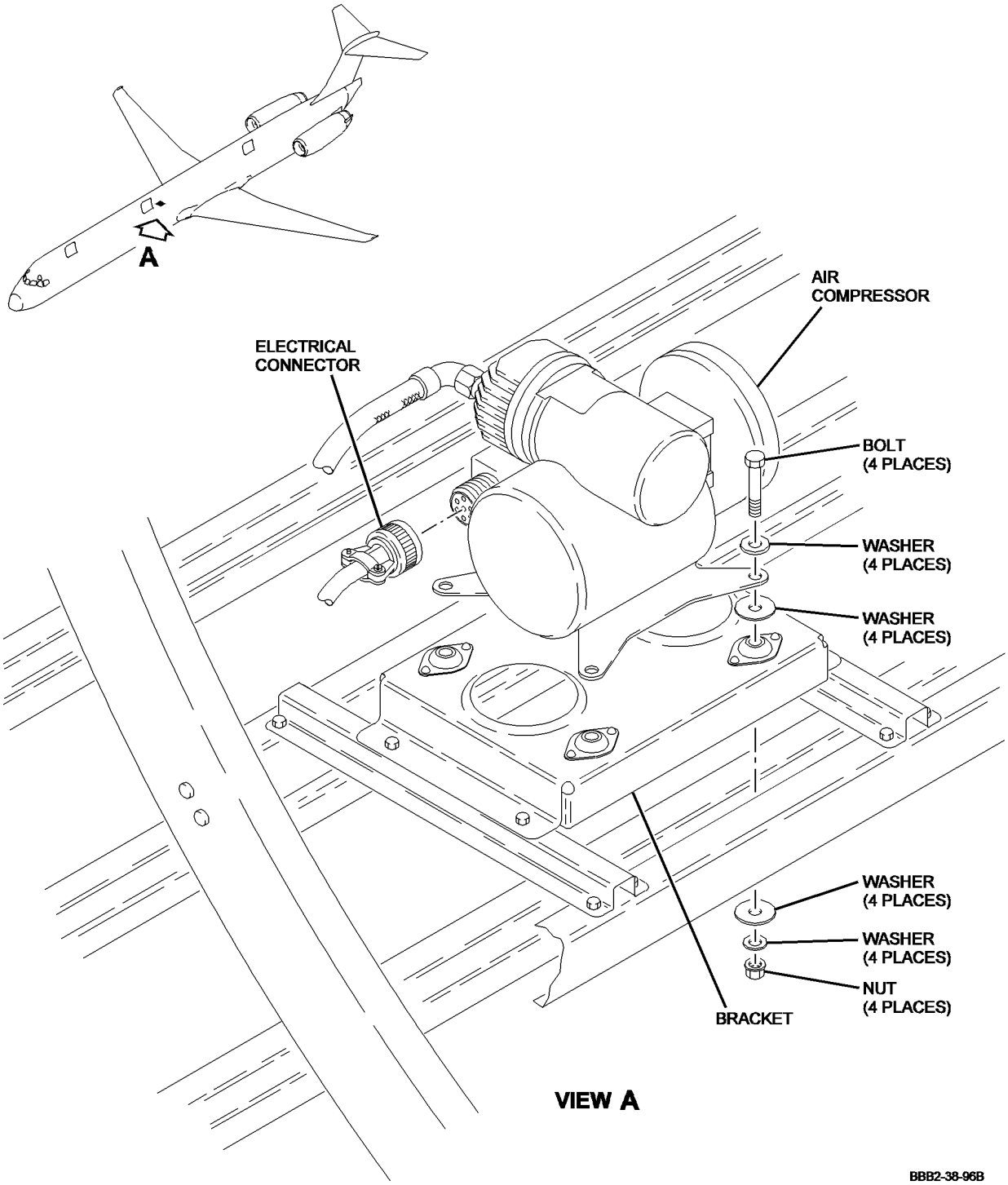
HAZMAT 1182, BUBBLE FLUID/LEAK TEST (DPM 6045)

HAZMAT 1000, REFER TO MSDS

(9) Perform leak test by using a bubble fluid, B60047 at all connections.

(10) Close this access panel:

Number	Name/Location
5142F	Potable Water Pneumatic Pump



Air Compressor -- Removal/Installation
Figure 201/38-40-02-990-801

PRESSURE REGULATOR - MAINTENANCE PRACTICES

1. General

A. Pressure Regulator Location

(1) The pressure regulator is located inboard of the potable water supply tank in the pneumatic line near the aft end of the potable water tank.

2. Removal/Installation - Pressure Regulator

A. Remove Pressure Regulator

(1) Depressurize water system. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(3) Open this access panel:

Number	Name/Location
5115C	Drain Valve, Valve-Set, System Fill, Air Filter, Probe, Water Tank

(4) Remove regulator from pneumatic line and cap lines.

B. Install Pressure Regulator

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(2) Make sure that this access panel is open:

Number	Name/Location
5115C	Drain Valve, Valve-Set, System Fill, Air Filter, Probe, Water Tank

(3) Remove cap and install regulator to pneumatic line.

(4) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(5) Pressurize water systems. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

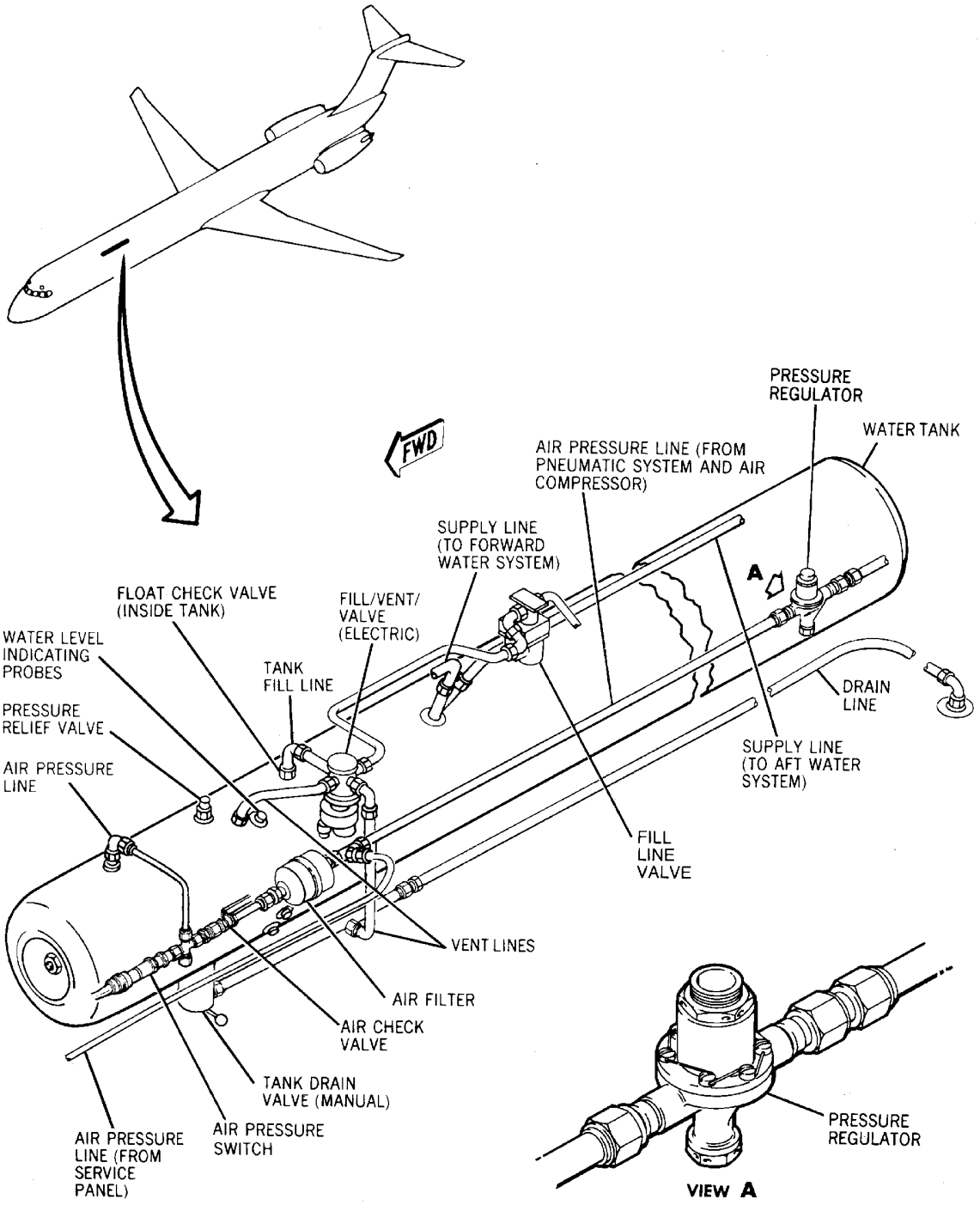
HAZMAT 1182, BUBBLE FLUID/LEAK TEST (DPM 6045)

HAZMAT 1000, REFER TO MSDS

(6) Perform leak test by using bubble fluid, B60047 at all connections.

(7) Close this access panel:

Number	Name/Location
5115C	Drain Valve, Valve-Set, System Fill, Air Filter, Probe, Water Tank



Pressure Regulator - Removal/Installation
Figure 201/38-40-03-990-801

AIR PRESSURE SWITCH - MAINTENANCE PRACTICES

1. General

A. The air pressure switch is mounted on a cross fitting clamped to a bracket attached to a strut inboard of the forward end of the potable water supply tank.

2. Removal/Installation - Pressure Switch

A. Remove Pressure Switch

(1) Depressurize water system. (WATER SUPPLY SYSTEM - SERVICING, PAGEBLOCK 38-11-00/301 Config 2)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(3) Open this access panel:

Number	Name/Location
5117C	Drain Valve, Valve Set, System Fill, Air Filter, Quantity Probe, Water Tank

(4) Disconnect electrical connector from the switch and install electrical connector dust cap, STD-154.

(5) Remove switch from coupling.

B. Install Pressure Switch

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(2) Make sure that this access panel is open:

Number	Name/Location
5117C	Drain Valve, Valve Set, System Fill, Air Filter, Quantity Probe, Water Tank

(3) Connect switch to coupling.

(4) Remove electrical connector dust cap, STD-154 from pressure switch.

(5) Check plug and switch for damage and unwanted material. (GENERAL INSTALLATIONS HARDWARE - MAINTENANCE PRACTICES, SWPM 20-20-03)

(6) Connect electrical connector to bottom of switch.

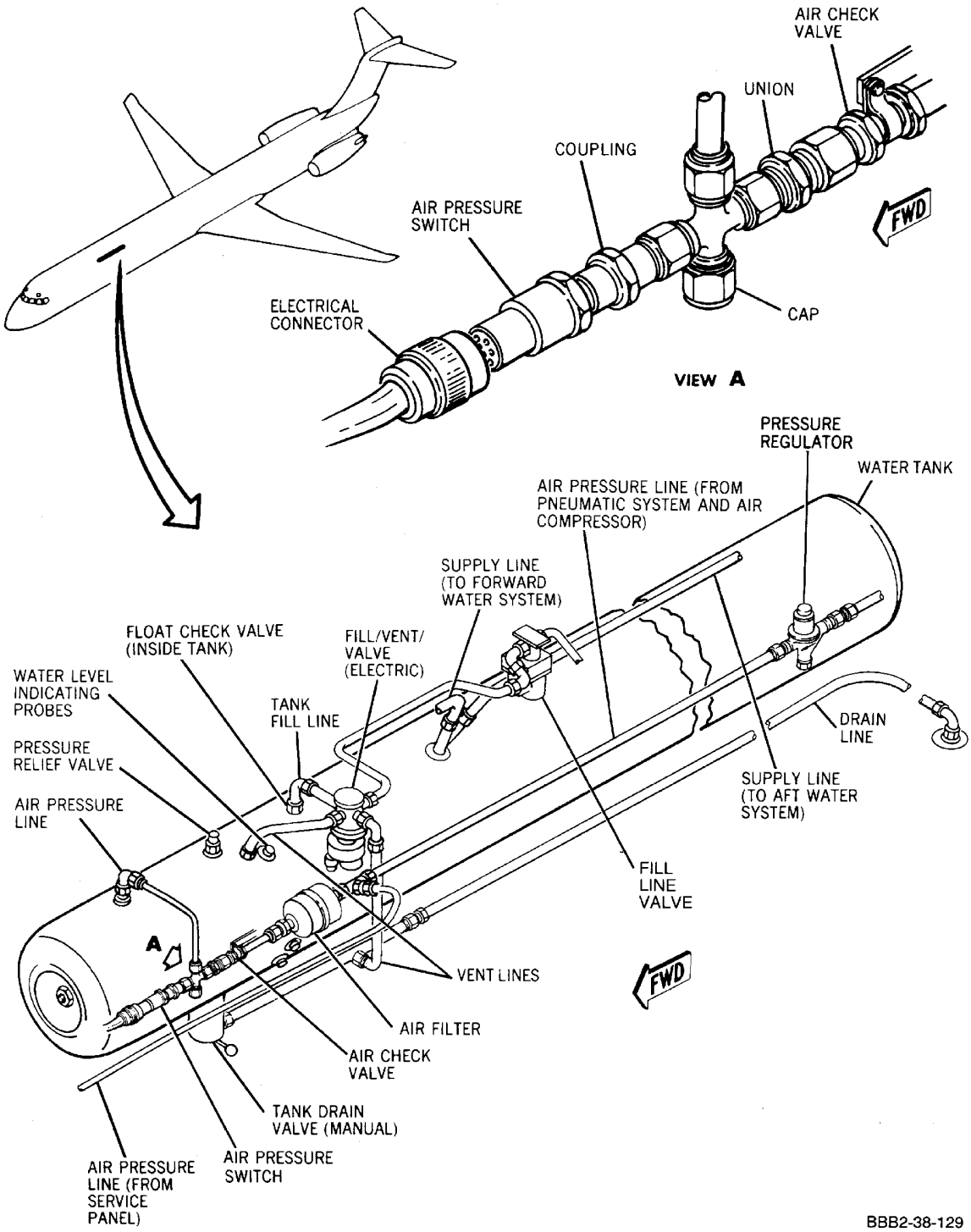
(7) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-1004	WATER PRESSURIZATION PUMP POWER "A" PHASE
		B1-1005	WATER PRESSURIZATION PUMP POWER "B" PHASE
		B!-1006	WATER PRESSURIZATION PUMP POWER "C" PHASE

(8) Close this access panel:

Number	Name/Location
5117C	Drain Valve, Valve Set, System Fill, Air Filter, Quantity Probe, Water Tank



Air Pressure Switch -- Removal/Installation
Figure 201/38-40-04-990-801

PRESSURE RELIEF VALVE - MAINTENANCE PRACTICES

1. General

A. This procedure gives removal, and installation for potable water tank pressure relief valve.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Petrolatum VV-P-236 (DPM 675)	
O-ring (MS28778-6)	

3. Removal/Installation Potable Water Tank Pressure Relief Valve

A. Remove Relief Valve

(1) Make certain that water tank is depressurized. (WATER SUPPLY TANK, SUBJECT 38-11-01, Page 202)

(2) Remove relief valve from tank.

(3) Remove and discard O-ring.

B. Install Relief Valve

WARNING: WHITE PETROLATUM IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN WHITE PETROLATUM IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT BREATHE THE MIST.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

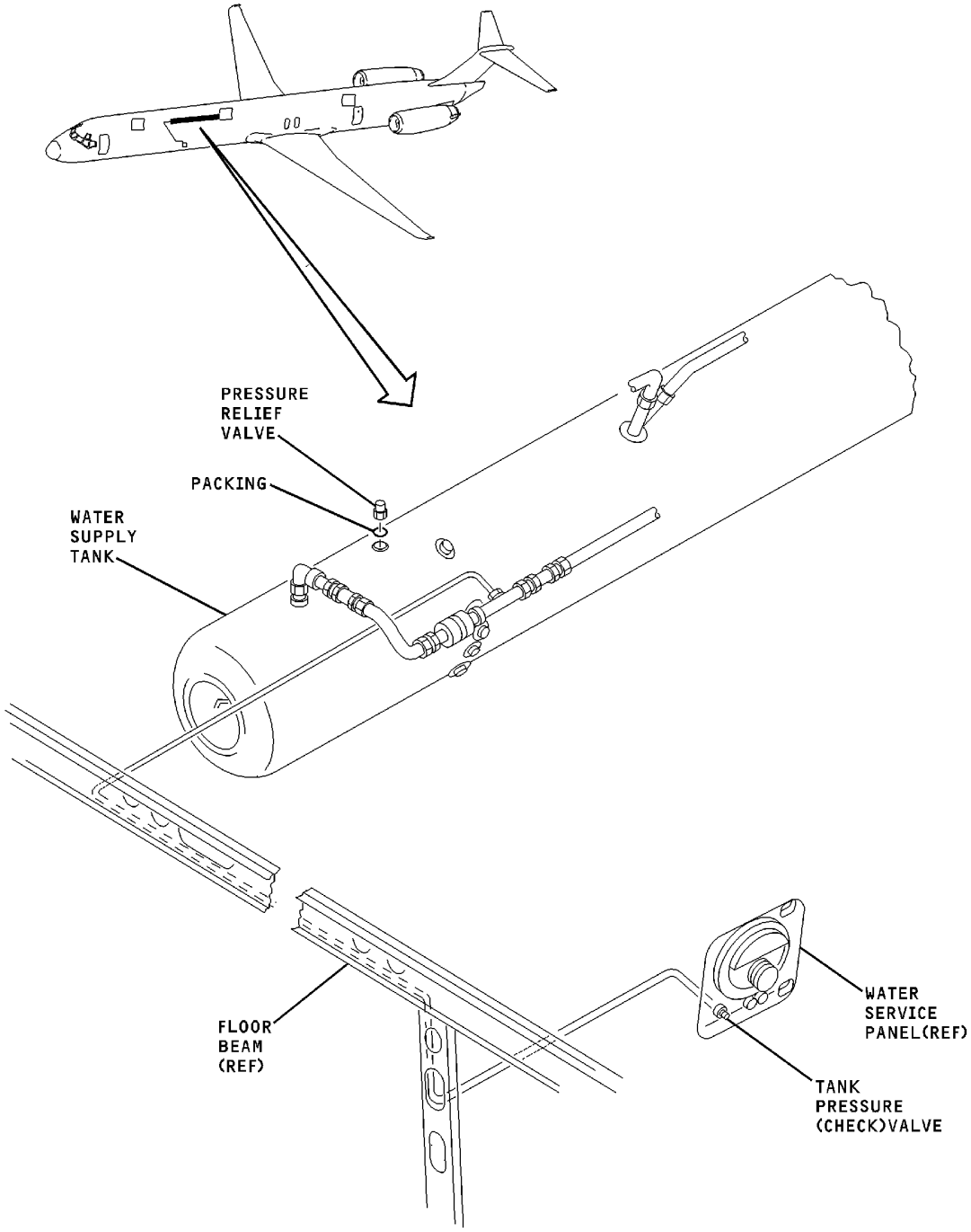
- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(1) Using VV-P-236 petrolatum, lightly coat O-ring.

(2) Install O-ring on relief valve.

(3) Install relief valve on tank.



Pressure Relief Valve - Removal/Installation
Figure 201/38-40-05-990-801

PRESSURE RELIEF VALVE - ADJUSTMENT/TEST

1. General

A. This procedure contains MSG-3 task card data.

TASK 38-40-05-720-801

2. Functional Check of the Potable Water Tank Relief Valve Cracking Pressure

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
38-40-05 P/B 201 Config 1	PRESSURE RELIEF VALVE - MAINTENANCE PRACTICES

B. Prepare for a Functional Check of the Potable Water Tank Pressure Relief Valve Cracking Pressure

SUBTASK 38-40-05-865-001

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

SUBTASK 38-40-05-864-001

(2) Depressurize the water tank.

(a) Open water servicing access panel.

(b) Place SELECT switch to VENT position.

C. Functional Check of the Potable Water Tank Pressure Relief Valve Cracking Pressure

SUBTASK 38-40-05-020-001

(1) Remove pressure relief valve from the potable water tank. (PRESSURE RELIEF VALVE - MAINTENANCE PRACTICES, PAGEBLOCK 38-40-05/201 Config 1)

SUBTASK 38-40-05-720-001

(2) Send relief valve to shop for functional check.

SUBTASK 38-40-05-420-001

(3) Install serviceable pressure relief valve on potable water tank. (PRESSURE RELIEF VALVE - MAINTENANCE PRACTICES, PAGEBLOCK 38-40-05/201 Config 1)

D. Job Close-up

SUBTASK 38-40-05-865-002

(1) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
		B1-850	AFT WATER SYS FREEZE PROTECT
		B1-849	FWD WATER SYS FREEZE PROTECT

LOWER EPC, AC BUS

Row	Col	Number	Name
X	28	B1-389	LEFT LAVATORY WATER HEATER AFT
X	29	B1-527	LEFT LAVATORY WATER HEATER FWD
Z	28	B1-390	RIGHT AFT LAVATORY WATER HEATER

SUBTASK 38-40-05-410-001

(2) Place SELECT switch to CLOSED position and close the water servicing access panel.

——— END OF TASK ———