HALE

03/15/96

MDT II

MANUAL DUAL TANK SELECTOR

INSTALLATION MANUAL

All Hale products are quality components: ruggedly designed, accurately machined, precision inspected, carefully assembled and thoroughly tested. In order to maintain the high quality of your unit, and to keep it in a ready condition, it is important to follow the instructions on care and operation. Proper use and good preventive maintenance will lengthen the life of your unit. ALWAYS INCLUDE THE UNIT SERIAL NUMBER IN CORRESPONDENCE.

HALE PRODUCTS, INC. ● A Unit of IDEX Corporation ● 700 Spring Mill Avenue ● Conshohocken, PA 19428 ● TEL: 610-825-6300 ● FAX: 610-825-6440

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IDEX CORPORATION

HALE PRODUCTS INC. ISO 9001 Certificate A4026

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NOTE TO SYSTEM INSTALLER
IMPORTANT: Please provide two copies of the Hale FoamMaster MDT II manual to the end user of the equipment. For additional manuals, contact Hale Products, Inc. at (610) 825-6300. Ask for Manual P/N 029-0020-40-0.

1 SAFETY

Before attempting to install a Hale FoamMaster MDT II, read all of the following safety precautions and follow carefully.

1. **WARNING:** Do not supply flushing water at pressures higher than the maximum recommended pressure. (500 PSI (34 BAR))
2. **WARNING:** ***Always disconnect the power source*** before attempting to service any part of the system.
3. **WARNING:** ***Release all pressure*** within the system before servicing any of its components.
4. **WARNING:** ***Drain all concentrate and water*** from the system before servicing any of its component parts.
5. **WARNING:** Check all hoses for weak or worn conditions after each use. Ensure that all connections and fittings are tight and secure.
6. **WARNING:** Use only pipe, hose, and fittings from the foam pump outlet to the injector fitting, which are rated at or above the maximum pressure (500 PSI (34 BAR) minimum) rating at which the water pump system operates.
7. **WARNING:** Any electrical system has the potential to cause sparks during service. Take care to eliminate explosive or hazardous environments during service/repair.
8. **CAUTION:** Periodically inspect the pump and the system components.
9. **CAUTION:** Read and understand these installation instructions before proceeding with the equipment installation.
10. **CAUTION:** The foam tank low level sensor must be utilized to protect the foam pump from dry running. Failure to do so will void warranty.
11. **CAUTION:** The Hale FoamMaster MDT II is not recommended for use on top mount pump panels due to gravity feed from foam tanks to foam pump requirements.
12. **CAUTION:** When selecting fittings make sure they are compatible with all foam concentrates that will be used. Some stainless steel fittings are not compatible with some Class B foam concentrates.
13. **CAUTION:** DO NOT connect the drain from the Hale FoamMaster MDT II to the apparatus multi drain system or do not tee onto single drain. Individual drain valves are recommended for foam system drains. If a multiple drain must be used Hale recommends the use of a Hale DV7 multiple drain valve (Hale P/N 529-5420-00-0) or equivalent that isolates each drain port.
14. **CAUTION:** Before running wires from the low tank switches to the Hale FoamMaster system make sure one of the wires from Tank A is identified and properly labeled.
15. **CAUTION:** Unless engaged in Class B foam operations, the Hale FoamMaster MDT II selector handle must be in the **TANK A** position. If the Hale FoamMaster MDT II selector handle is in the **FLUSH** position when the Hale FoamMaster foam pump is started the foam pump will only run for 10 seconds and shut down.
16. **CAUTION:** When shutting down the apparatus leave the Hale FoamMaster MDT II selector handle in the **TANK A** position.

2 EQUIPMENT DESCRIPTION

The Hale FoamMaster MDT II foam selector is a simple and reliable valve that adds the flexibility of the use of different foam concentrates in firefighting applications with the Hale FoamMaster line of automatic rotary gear pump foam proportioners.

The Hale FoamMaster MDT II selector is a panel mounted valve that provides a mechanical means of selecting suction from either of two separate foam concentrate tanks. The major component of the Hale FoamMaster MDT II is a ball type selector valve. The valve has 5 ports and is operated manually. There are two ¾ inch NPT foam concentrate inlets with swing check valves attached and one ¾ inch NPT foam concentrate outlet. The remaining ports are interconnected and a hose from the water pump discharge tap provides flushing capability to the foam strainer and foam pump. The flushing water connection is fitted with a ¼ inch NPT swing check valve to prevent contamination of the water supply with foam concentrate. The tee at the flushing water connection also has provision for connection of a drain hose.

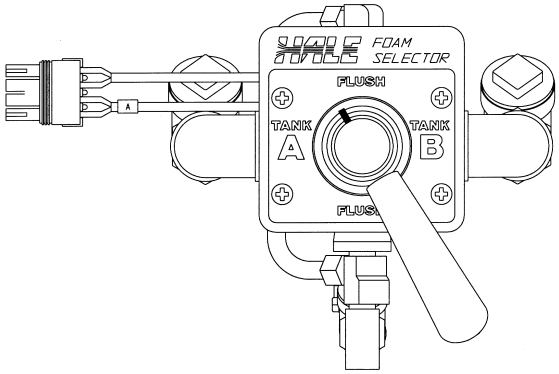
The valve has a flush position located between the TANK A and TANK B positions. By design the valve will pass through the flush position when changing from Tank A to Tank B or from Tank B to Tank A. This helps prevent mixing of different foam types.

Switches and a wiring harness mounted on the Hale FoamMaster MDT II selector provide control of the low tank level switches when properly installed with the A-B interlock switch assembly. Additionally, foam concentrate injection rate is automatically changed by these switches.

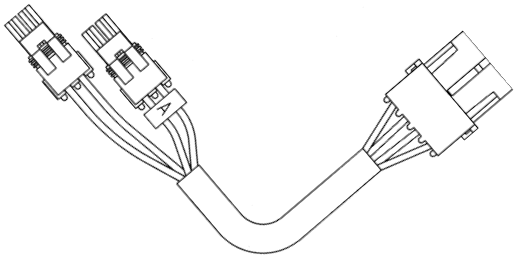
CAUTION: The Hale FoamMaster MDT II is not recommended for use on top mount pump panels due to gravity feed from foam tanks to foam pump requirements.

NOTE: This manual details installation and use of the Hale FoamMaster MDT II selector valve only. Refer to the Hale FoamMaster foam system manual for information on complete foam system installation instructions.

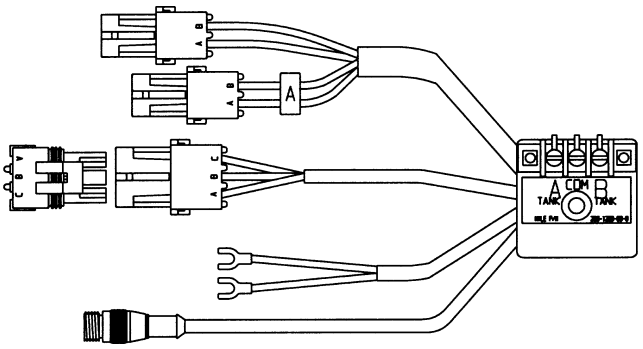
3 WHAT YOU GET



MDT II Selector Assembly with Check Valves and Proximity Switches attached
(Hale P/N 538-1490-01-0)

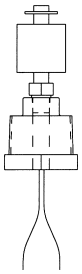


Hale MDT II A-B Tank Harness
(Hale P/N 513-0320-01-0)



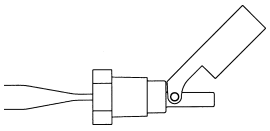
Hale FoamMaster Interlock Assembly Mounted to Foam Pump
(Hale P/N 200-1280-00-0)

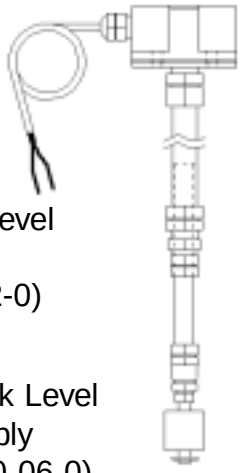
LOW TANK SENSOR OPTIONS



Bottom Mount Low Tank Level Sensor
(Hale P/N 200-2110-04-0)

-OR-



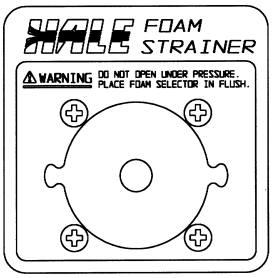


Side Mount Low Tank Level Sensor
(Hale P/N 200-2110-02-0)

-OR-

Top Mount Low Tank Level Sensor Assembly
(Hale P/N 200-2110-06-0)

OPTIONAL ACCESSORIES
(Must be ordered separately)



FS-15 (1-½ Inch) Panel Mounted Strainer
(Hale P/N 510-0150-00-0)
or
FS-25 (2-½ Inch) Panel Mounted Strainer
(Hale P/N 510-0180-00-0)

4 Hale MDT II Selector Installation

INSTALLATION NOTES:
Before installing the Hale FoamMaster MDT II thoroughly read the installation instructions contained in this manual. The following notes provide background information to aid in the installation. Refer to Figures 1 and 2 to identify component parts and connections. Figure 3 shows a typical plumbing arrangement.

1. Threads for the foam concentrate inlet and outlet connections are ¾ inch NPT.

2. Fittings and hoses used with the Hale FoamMaster MDT II must be compatible with all foam concentrates that are to be used in the system. The fittings must be made of brass, 300 series stainless steel or nylon.

CAUTION: When selecting fittings make sure they are compatible with all foam concentrates that will be used. Some stainless steel fittings are not compatible with some Class B foam concentrates.

3. To meet NFPA requirements and to monitor foam concentrate priming, clear hoses must be used from the foam tank to the foam inlet swing check valves on the Hale FoamMaster MDT II. For Class A and low viscosity Class B foam concentrates use minimum ¾ inch inside diameter hose. High viscosity Class B foam concentrates require minimum 1 inch inside diameter hose. The hoses must be capable of withstanding 23 inches (584 mm) Hg vac/50 PSI (3 BAR) working pressure (Kuriyama, Kuri-tec K-7130 series or equal).

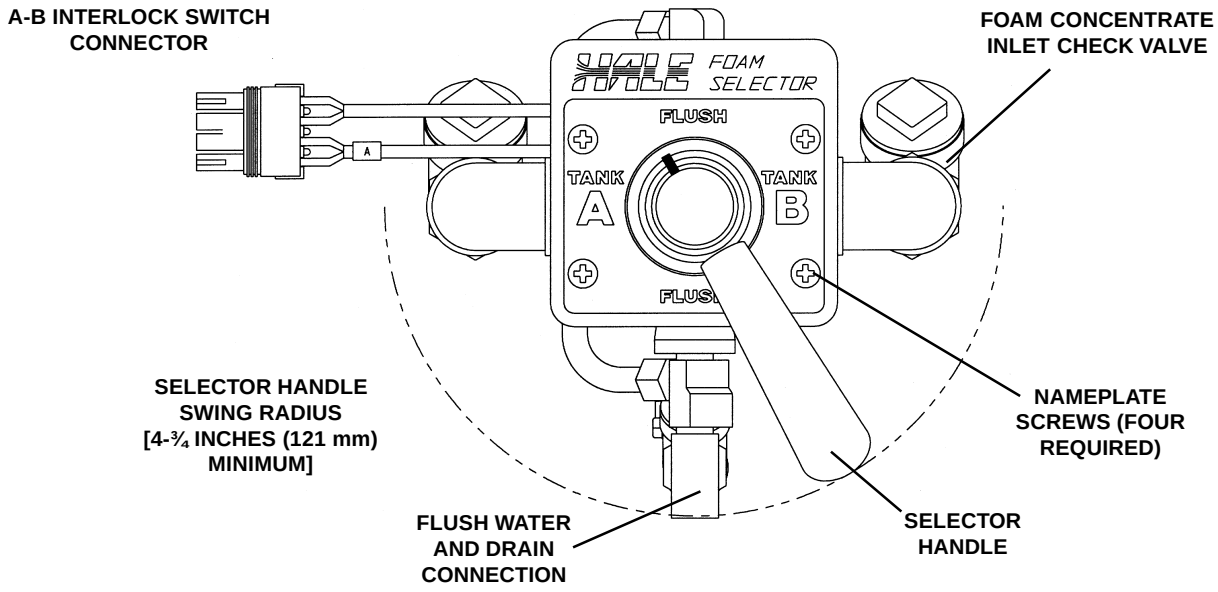


Figure 1. Hale FoamMaster MDT II Selector Valve Assembly (Front View)

4. Hose from the Hale FoamMaster MDT II outlet port must have minimum ¾ inch inside diameter and be capable of withstanding 23 inches (584 mm) Hg vac and the maximum discharge pressure of the fire pump (500 PSI (34 BAR) minimum) due to system flush requirements.

5. Flush water must be provided from the fire pump to the Hale FoamMaster MDT II. Hose for the flush connection should be minimum 3/8 inch outside diameter and capable of withstanding the maximum discharge pressure of the fire pump. The swing check valve at the flushing water connection on the Hale FoamMaster MDT II has ¼ inch NPT threads.

NOTE: A shutoff valve is recommended for this line to enable isolation of the Hale Foammaster MDT II for service.

6. Plan installation and determine location of the Hale FoamMaster MDT II on the operator panel. The following must be kept in mind when locating the Hale FoamMaster MDT II selector valve:

a.) Foam concentrate must gravity feed from the foam tanks to the Hale FoamMaster MDT II.

CAUTION: The Hale FoamMaster MDT II is not recommended for use on top mount pump panels due to gravity feed from foam tanks to foam pump requirements.

b.) Foam concentrate must gravity feed from the Hale FoamMaster MDT II to the Hale FoamMaster rotary gear

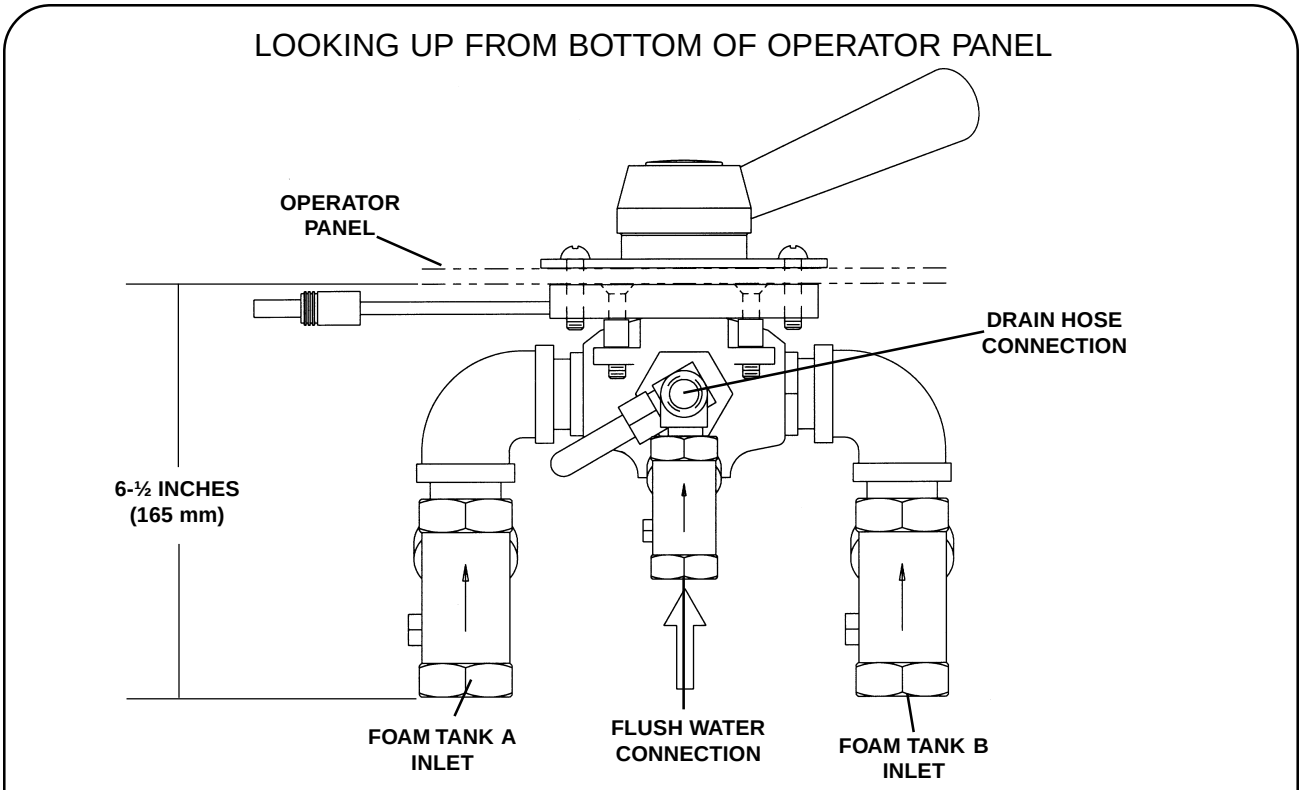


Figure 2. Clearance Required Behind Operator Panel for Hale FoamMaster MDT II

pump or FS Series strainer.

c.) A minimum of 6-½ inches (165 mm) plus allowance for the hoses and fittings behind the operator panel is required for Hale FoamMaster MDT II installation.

d.) The selector handle requires a swing radius of 4-¾ inches (121 mm)

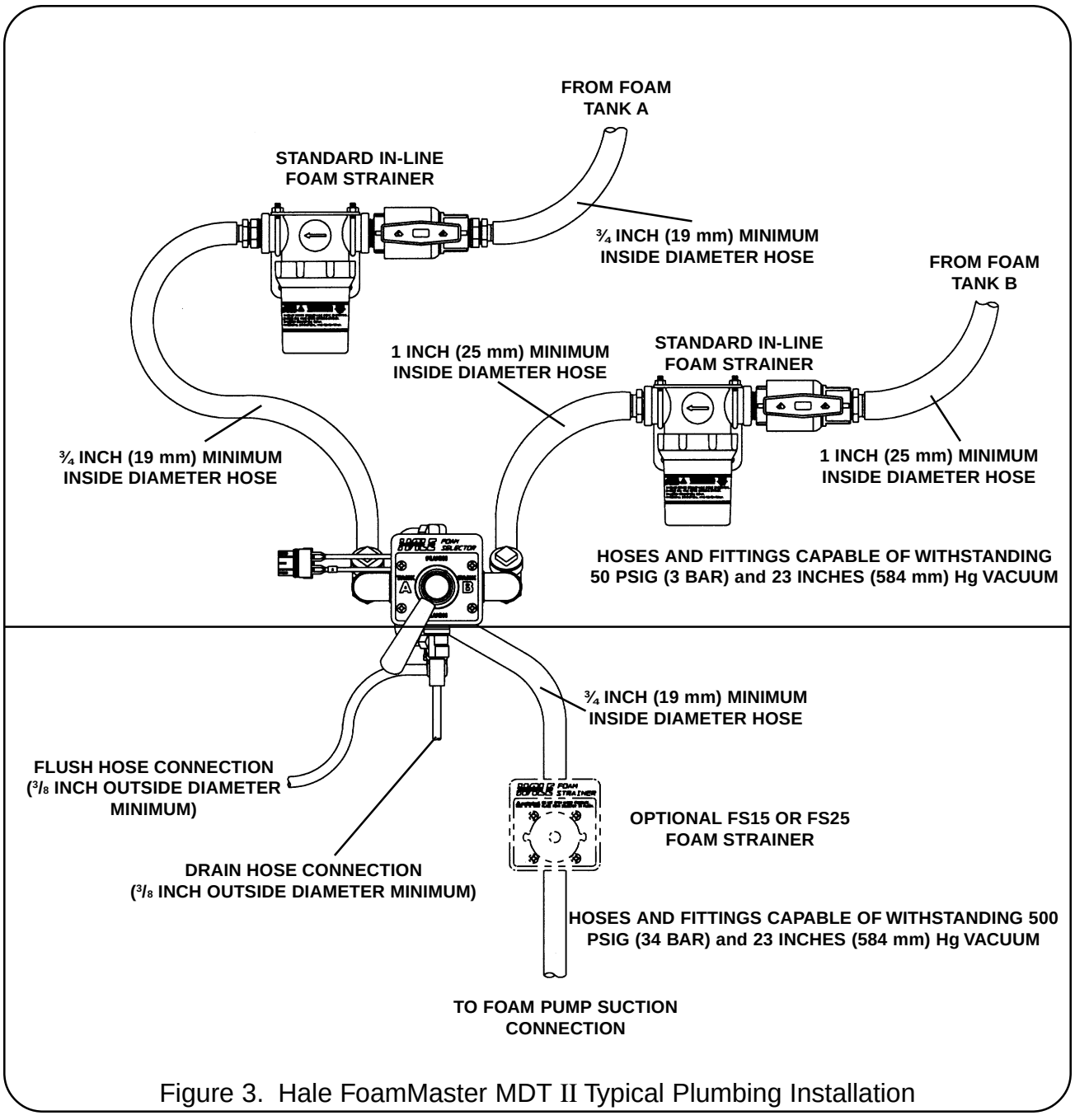


Figure 3. Hale FoamMaster MDT II Typical Plumbing Installation

VALVE INSTALLATION:
The following procedures shall be followed when installing the Hale FoamMaster MDT II selector in the Hale FoamMaster system:

> **NOTE:** The Hale FoamMaster MDT II is shipped assembled. Some disassembly is required to mount the Hale FoamMaster MDT II. Note the position of components as they are removed to allow for reassembly.

1. Unscrew and remove the selector handle from the Hale FoamMaster MDT II selector valve handle mount assembly. (See figure 1)

2. Remove the four ¼-20 UNC x 5/8 inch long screws holding the foam selector nameplate to the selector valve assembly and remove the nameplate.

3. Using the nameplate as a template mark the location of mounting holes on the operator panel. Make sure there is sufficient clearance behind the operator panel where the Hale FoamMaster MDT II is to be mounted (Refer to figure 2). Verify mounting hole location and size using figure 4.

4. Cut one 2-¾ inch (70 mm) diameter hole and drill four 9/32 inch (7 mm) diameter holes as marked on the operator panel.

5. Position the selector valve on the back of the operator panel by placing the selector handle mount assembly through the 2-¾ inch (70 mm) diameter hole. Make sure the flush water connection is orientated towards the bottom of the selector valve as this also serves as a drain.

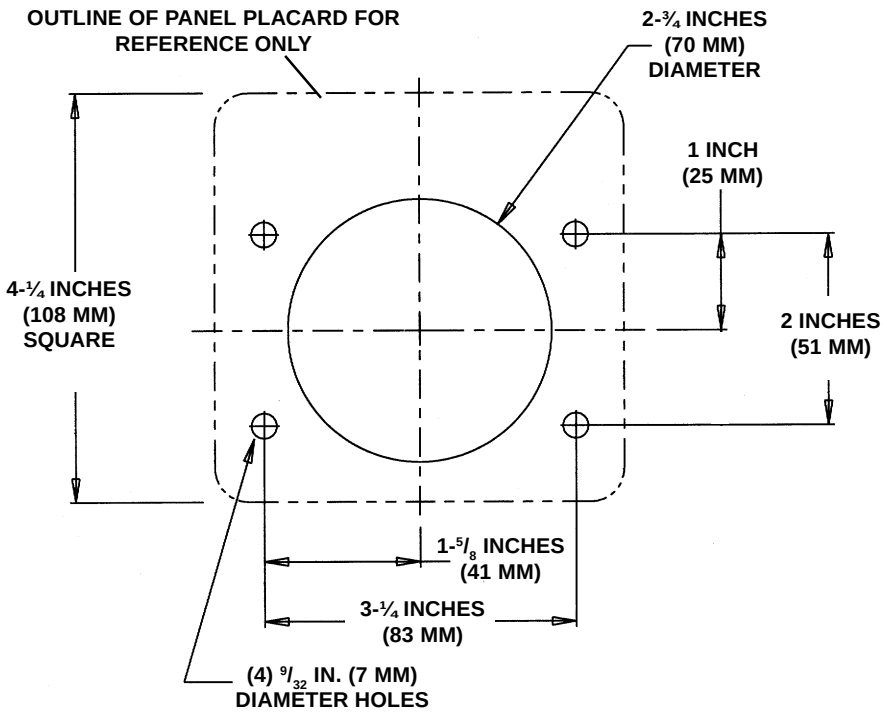


Figure 4. Hale FoamMaster MDT II Selector Valve Mounting Template

6. Position the nameplate on the panel front and align the screw holes with those on the panel and selector valve. Install the four ¼-20 UNC x 5/8 inch long screws that were removed in step 2.

7. Apply Loctite 242 or equal thread locking compound on the setscrew threads and reinstall the selector handle on the selector valve handle mount assembly.

NOTE: Some high viscosity Class B foam concentrates require 1 inch (25 mm) inside diameter hose for proper system operation. Class A, Class B AFFF, and low viscosity Class B AFFF/AR foam concentrates can use ¾ inch (19 mm) inside diameter hose.

8. Install brass, 300 series stainless steel or nylon hose barb fittings for the hose from the foam concentrate tanks to the inlets of the check valves. (See figure 5) The check valve inlets have ¾ inch female NPT threads. Use clear hose with ¾ or 1 inch (19 or 25 mm) minimum inside diameter that is capable of withstanding 23 inches (584 mm) Hg vac/50 PSI (3 BAR) working pressure (Kuriyama, Kuri-Tec K-7130 series or equal).

9. Using 3/8 inch (10 mm) minimum outside diameter tubing capable of withstanding the maximum fire pump discharge pressure (500 PSI (34 BAR) minimum), connect flush water line from one of the pressure taps on the fire pump to the ¼ inch NPT inlet of the flushing water swing check valve.

10. Using 3/8 inch (10 mm) minimum outside diameter tubing capable of withstanding the maximum fire pump discharge pressure (500 PSI (34 BAR)

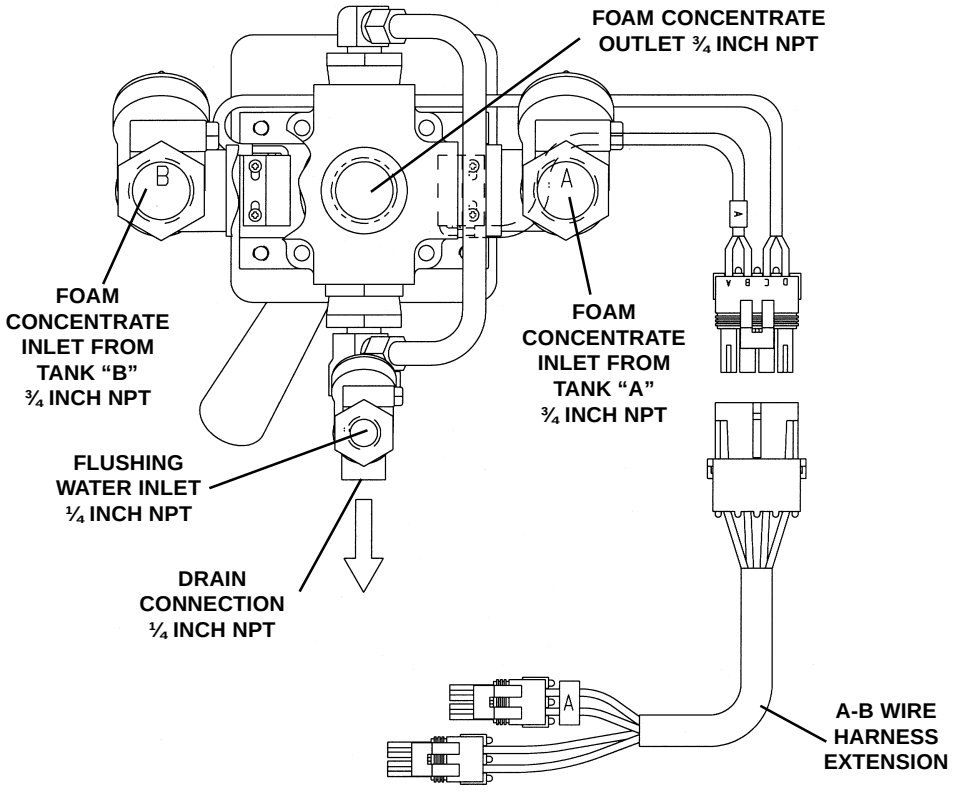


Figure 5. Hale FoamMaster MDT II Selector Valve (Back View)

minimum), connect drain hose from the ¼ inch NPT connection below the flushing water swing check valve to a suitable drain valve.

> **CAUTION:** DO NOT connect the drain from the Hale FoamMaster MDT II to the apparatus multi drain system or do not tee on single drain due to crosstalk. Individual drain valves are recommended for foam system drains. If a multiple drain must be used Hale recommends the use of a Hale DV7 multiple drain valve (Hale P/N 529-5420-00-0) or equivalent that isolates each drain port.

11. Install brass or 300 series stainless steel hose barb fittings for the hose from the foam concentrate outlet on the Hale FoamMaster MDT II. Install ¾ inch (19 mm) minimum inside diameter hose from the Hale FoamMaster MDT II selector to the inlet of the Hale FoamMaster rotary gear pump or FS Series Strainer. The hose and fittings from the foam outlet must be capable of withstanding 23 inches (584 mm) Hg vacuum, maximum fire pump discharge pressure (500 PSI (34 BAR) minimum), and be compatible with the foam concentrates to be used.

FOAM TANK LOW LEVEL SENSOR INSTALLATION:

After the Hale FoamMaster MDT II selector is installed and hoses are connected, the low tank level sensors must be installed and wired to monitor foam concentrate level. Two low tank level sensors are included with the Hale FoamMaster foam proportioner system when the Hale FoamMaster MDT II is ordered. Mount a low tank level sensor in each foam tank as follows. Refer to figure 6 for low tank level sensor mounting options.

1. The standard foam tank low level sensor must be mounted into the bottom of the foam tank. The sensor, as supplied, is threaded into a bushing that has 1 inch NPT male threads. The sensor is designed to be installed from the outside of the foam tank into a 1 inch NPT port. Mount the sensor in the bottom of the foam tank in an upright position. Use suitable sealant to prevent concentrate leakage.

> **NOTE:** There must be sufficient space under the foam tank for the low tank level sensor wires to be routed to the foam pump/motor assembly. Be sure not to remove the float from the shaft on the low tank level sensor assembly. If the float is installed in the reverse position, "***locon***" and "***nocon***" will appear on the control unit and the system will automatically shut down even if there is foam in the tank.

> **CAUTION:** The foam tank low level sensor must be utilized to protect the Hale FoamMaster from dry running. Failure to do so will void warranty.

2. Check low tank level sensor operation with a powered test light. With no foam in the tank, the light should be on. If this is not the case, remove the clip from the end of the sensor. Remove float and reinstall 180° out of position. Reinstall clip.

3. An optional side mount low tank level sensor is available to be used if the bottom of the foam tank is not accessible. The side mount low tank level sensor has ½ inch NPT threads and

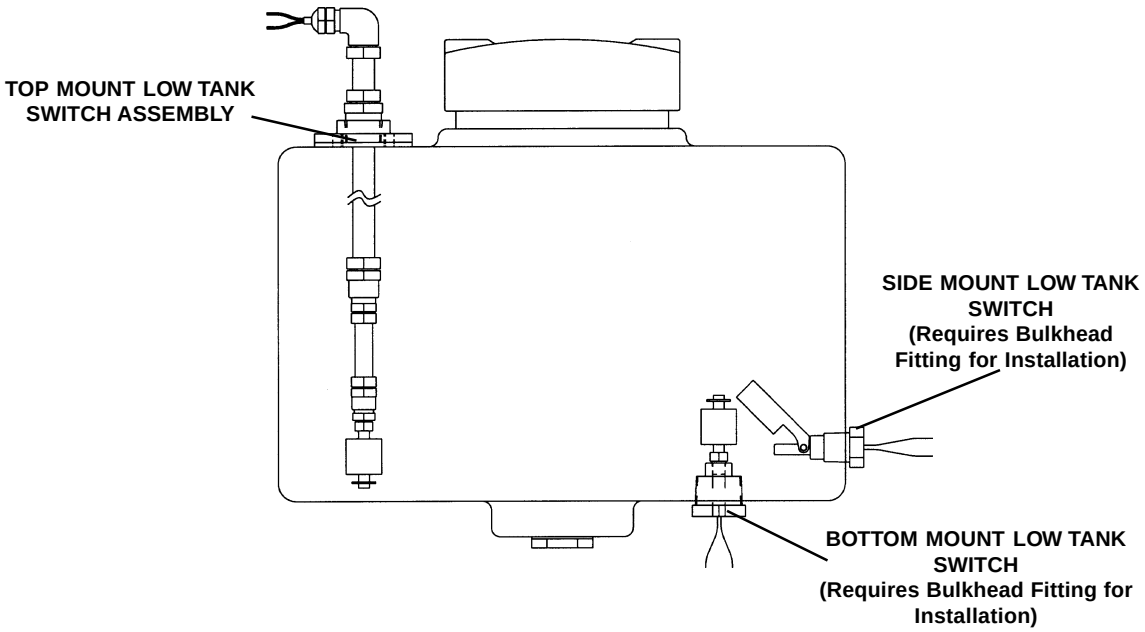


Figure 6. Foam Tank Low Level Sensor Mounting Options

is mounted from the outside of the foam tank with a bulkhead fitting. The center of the switch must be located approximately 1-½ to 2 inches (38 to 51 mm) from the bottom of the foam tank with the float positioned on top of the switch to move up and down.

NOTE: When the side mount low tank level sensor senses a low concentrate condition the system will operate for one minute, or until the feedback sensor no longer receives a signal, unless the foam concentrate level is restored. If the foam concentrate level is not restored the Hale FoamMaster system will shut down. When locating the side mount low tank level sensor on the foam tank sufficient foam concentrate should be present for one minute of operation at rated flow.

After installation, check operation of the side mount low tank level sensor with a powered test light. With no foam in the tank, the light should be on. If light does not illuminate, rotate the side mount low tank level sensor 180° until the test light is on. Once the side mount low tank level sensor operation has been tested seal the threads with a suitable sealant.

4. An optional top mount sensor assembly is available for installations where the bottom and sides of the foam tank are not accessible. The sensor assembly is flange mounted in an access hole at the top of the foam tank. The two section telescoping assembly permits adjustment of low tank level sensor position for various foam tank depths. A flange template is shown in figure 7.

a. Using dimensions in figure 7, drill holes in the top of the foam tank. The center of the sensor should be located at least 1-½ to 2 inches (38 to 51 mm) from the sides of the foam

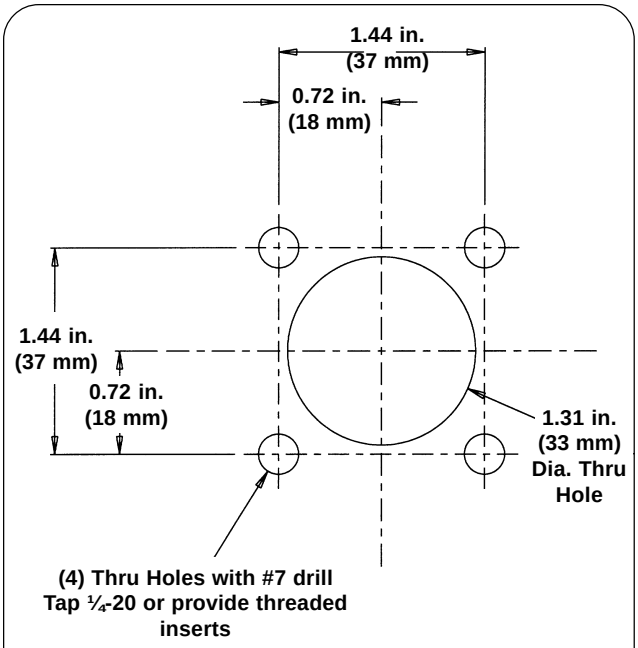


Figure 7. Top Mount Low Tank Switch Mounting Flange Template

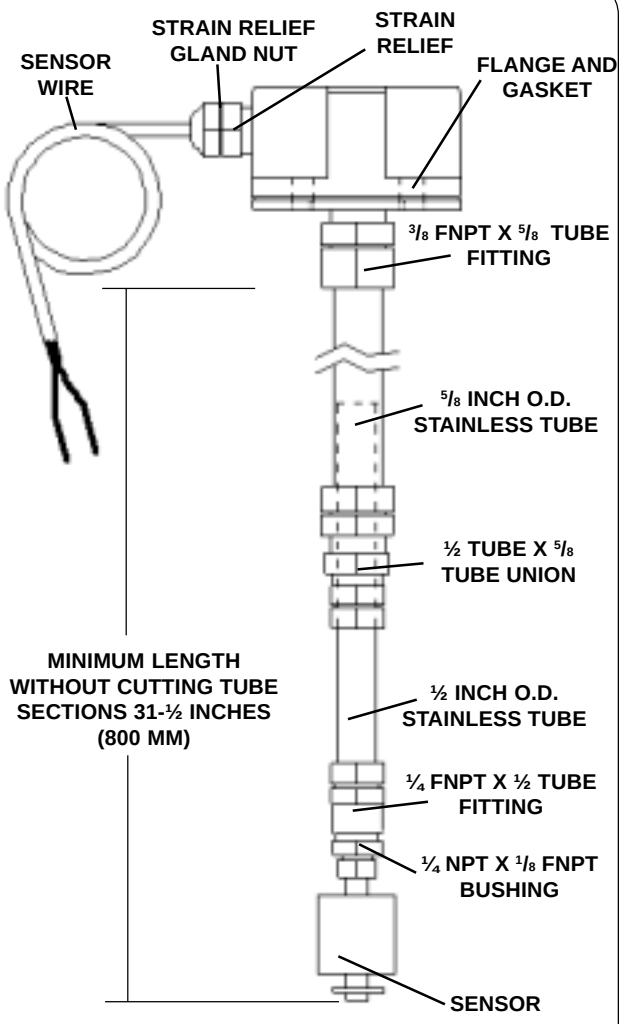


Figure 8. Top Mount Low Tank Switch Assembly Component Identification

tank.

b. Determine the required length of the top mount low tank sensor extension. The center of the sensor float should be 1-½ to 2 inches (38 to 51 mm) above the bottom of the foam tank.

c. Adjust the flange position and telescoping section until the desired length is achieved. Tighten the compression fittings on the flange and union to lock length.

NOTE: If telescoping section will not get small enough it can be disassembled and cut. Take care to deburr the ends of the tubes after they are cut.

Refer to figure 8, disassemble and cut the tube sections as follows:

1) Loosen and remove the 3/8 FNPT x 5/8 tube fitting and strain relief from the top of the sensor assembly. Carefully slide the sensor wire out of the strain relief gland.

2) Loosen and remove the ¼ FNPT x ½ tube fitting and sensor from the bottom of the sensor assembly. DO NOT remove the ½ inch tube from the 5/8 inch tube.

3) Using a tubing cutter remove the required length of tube from the end of each tube. Deburr the cuts

when complete.

4) Carefully thread the sensor wire through the tube assembly and attach the ¼ FNPT x ½ tube fitting with sensor attached to the end of the tube. Tighten the ½ tube compression nut.

5) Carefully thread the sensor wire through the 3/8 FNPT x 5/8 tube fitting and strain relief gland then attach the 3/8 FNPT x 5/8 tube fitting and strain relief to the end of the tube. Tighten the 5/8 tube compression nut.

6) Adjust the flange position and telescoping section until the desired length is achieved. Tighten the compression fittings on the flange and union to lock length.

CAUTION: Use mounting hardware that is compatible with all foam concentrates to be used in the system. Use nuts, washers, lockwashers and capscrews made of brass or 300 series stainless steel.

d. Insert sensor assembly through the 1.31 inch (33 mm) hole and align the screw holes on the flange and gasket with the holes on the tank. Secure the assembly in place using four ¼-20 UNC x 1 inch long cap screws, ¼ inch washers and ¼ inch lockwashers.

e. Close strain relief to the 90^0 position and make sure it snaps shut. Tighten strain relief gland nut.

ELECTRICAL INSTALLATION

Refer to figure 9 for an electrical diagram and proceed with the following steps:

1. If the Hale FoamMaster MDT II is being installed as a retrofit, attach the interlock assembly to the boss on the Hale FoamMaster foam pump body. Use the ¼-20 UNC x 2-¼ inches long screw provided to secure the switch box in place. Remove the shorting plug from the Hale FoamMaster foam pump distribution box and connect the 4-pin male cable connector to this connection point. Connect the wires with the spade terminals to the two terminal block on top of the Hale FoamMaster distribution box.

> **CAUTION:** Before running wires from the low tank switches to the Interlock assembly make sure one of the wires from Tank A is identified and properly labeled.

2. Using minimum 18 AWG Type SXL or GXL (SAE J1128) wire, extend the pigtails on the low tank level sensors to the interlock assembly. Tie one of the wires from the low level switches together as a common lead. Connect this common lead to the center screw of the terminal block on the interlock assembly. Connect the lead from Tank A to the terminal labeled A TANK on the switch box and connect the lead from Tank B to the terminal labeled B TANK.

3. Connect the four wire Packard WeatherPack connector on the Hale FoamMaster MDT II to the cable extension assembly. Route the cable extension to the Hale FoamMaster location. Secure cable extension to apparatus.

4. Connect the two wire Packard WeatherPack connectors on the cable extension to the corresponding connector from the interlock assembly. Make sure the connectors labeled A are connected together.

5. Make sure the three wire Packard WeatherPack connector from the interlock assembly is plugged and properly secured to prevent damage.

To more accurately monitor foam concentrate level, separate foam concentrate tank level gauges, that show the actual level of foam concentrate in the foam tank, can also be installed.

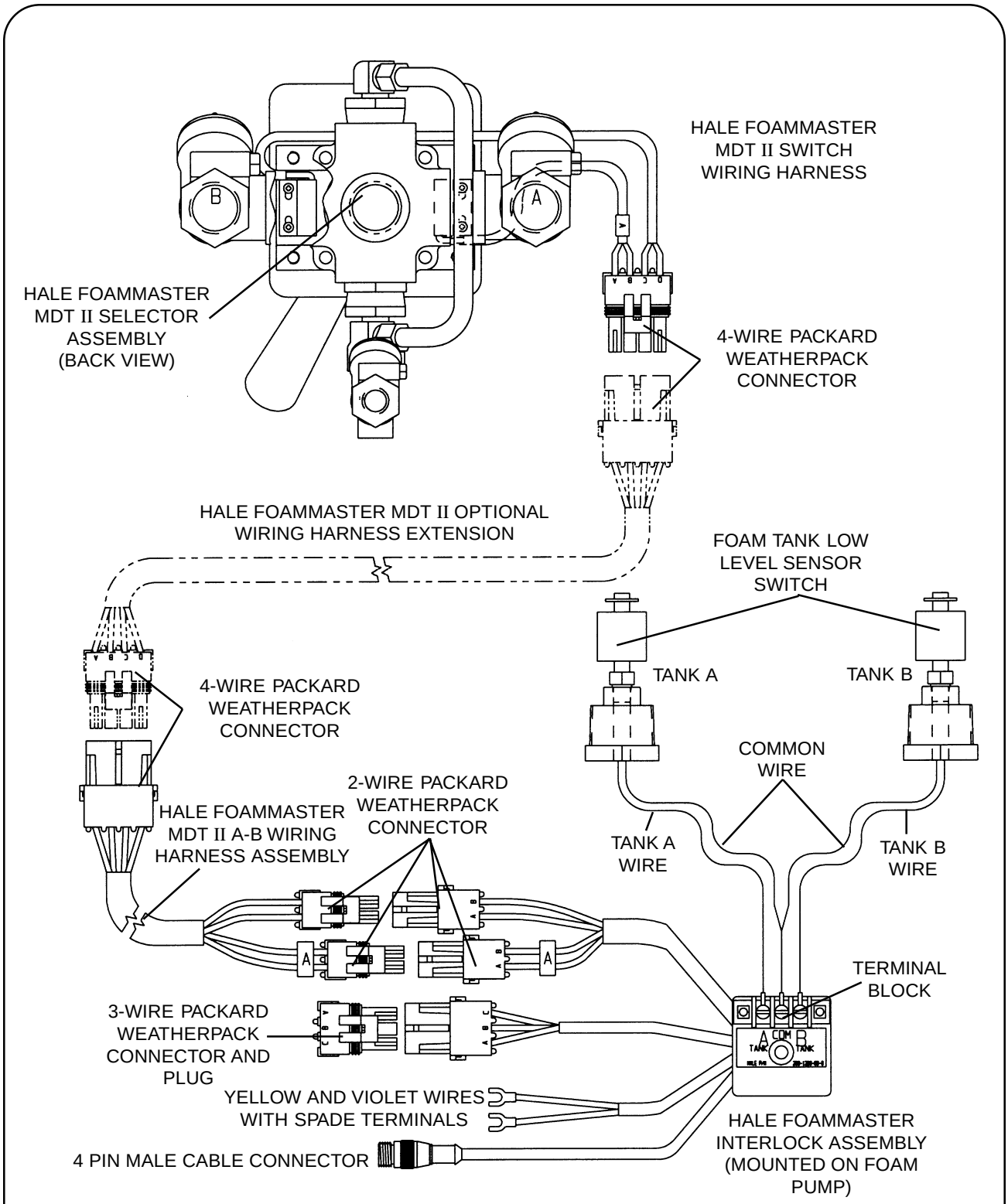


Figure 9. Hale FoamMaster MDT II Selector Valve Wiring Diagram

5 OPERATION

The following procedures are provided for operation of the Hale FoamMaster MDT II Selector.

CHANGING FOAM CONCENTRATE SOURCE

CAUTION: Unless engaged in Class B foam operations, the Hale FoamMaster MDT II selector handle must be in the **TANK A** position. If the Hale FoamMaster MDT II selector handle is in the **FLUSH** position when the Hale FoamMaster foam pump is started the foam pump will only run for 10 seconds and shut down.

1. Make sure the Hale FoamMaster is operating and foam solution is being discharged.

2. Turn Hale FoamMaster MDT II handle until the indicator on the handle points toward the desired tank (See figure 10).

When changing selector handle position, swing the selector handle from the **TANK A** position through the **FLUSH** position to **TANK B** position in one motion without stopping. With the fire pump discharging water and the Hale FoamMaster operating, a small volume of water will be provided to separate the two foam types helping to prevent possible reactions.

3. After completion of Class B foam operations flush the foam pump and return the Hale FoamMaster MDT II to the ready condition using the procedures on the following page.

IMPORTANT: Make sure the Hale FoamMaster MDT II selector handle is in the **TANK A** position when apparatus is placed in ready condition.

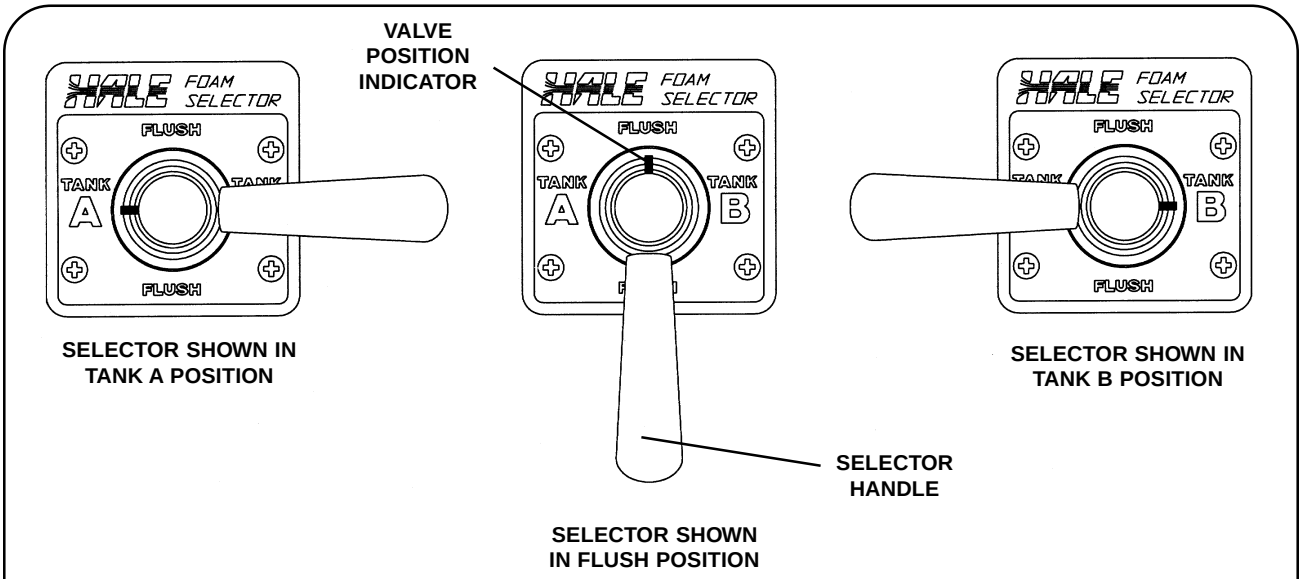


Figure 10. Hale FoamMaster MDT II Selector Valve Operation

FLUSHING STRAINER AND HALE FOAMMASTER

When placing the apparatus into service after an extended "out of service" period, or returning the apparatus to ready condition after foam operations using class B foam, the Hale FoamMaster foam pump must be flushed.

> **NOTE:** Approved class A foam concentrates do not deteriorate rapidly like class B foam concentrates. As long as an approved class A foam concentrate is used and the system will be used within 6-8 weeks no flushing will be required. When class B foam concentrate is used flush system then switch to class A as most responses are usually class A types.

The following procedures shall be used to flush the foam pump:

1. Energize apparatus and establish water flow through a minimum 1-¾ inch foam capable discharge.

2. Energize Hale FoamMaster by depressing the red **ON** button allowing foam solution to discharge.

> **NOTE:** When the Hale FoamMaster MDT II selector is in the **FLUSH** position the Hale FoamMaster foam injection system will only run for 10 seconds.

3. Turn the Hale FoamMaster MDT II handle until the indicator is at the **FLUSH** position.

4. Observe discharge hose and allow Hale FoamMaster and discharge to run for 10 seconds.

5. Turn the Hale FoamMaster MDT II handle until the indicator is at the **TANK A** position.

6. Energize apparatus and establish water flow through a minimum 1-¾ inch foam capable discharge.

7. Energize Hale FoamMaster by depressing the red **ON** button. Allow Hale FoamMaster to run, until foam solution is discharged through the 1-¾ inch foam capable hose line.

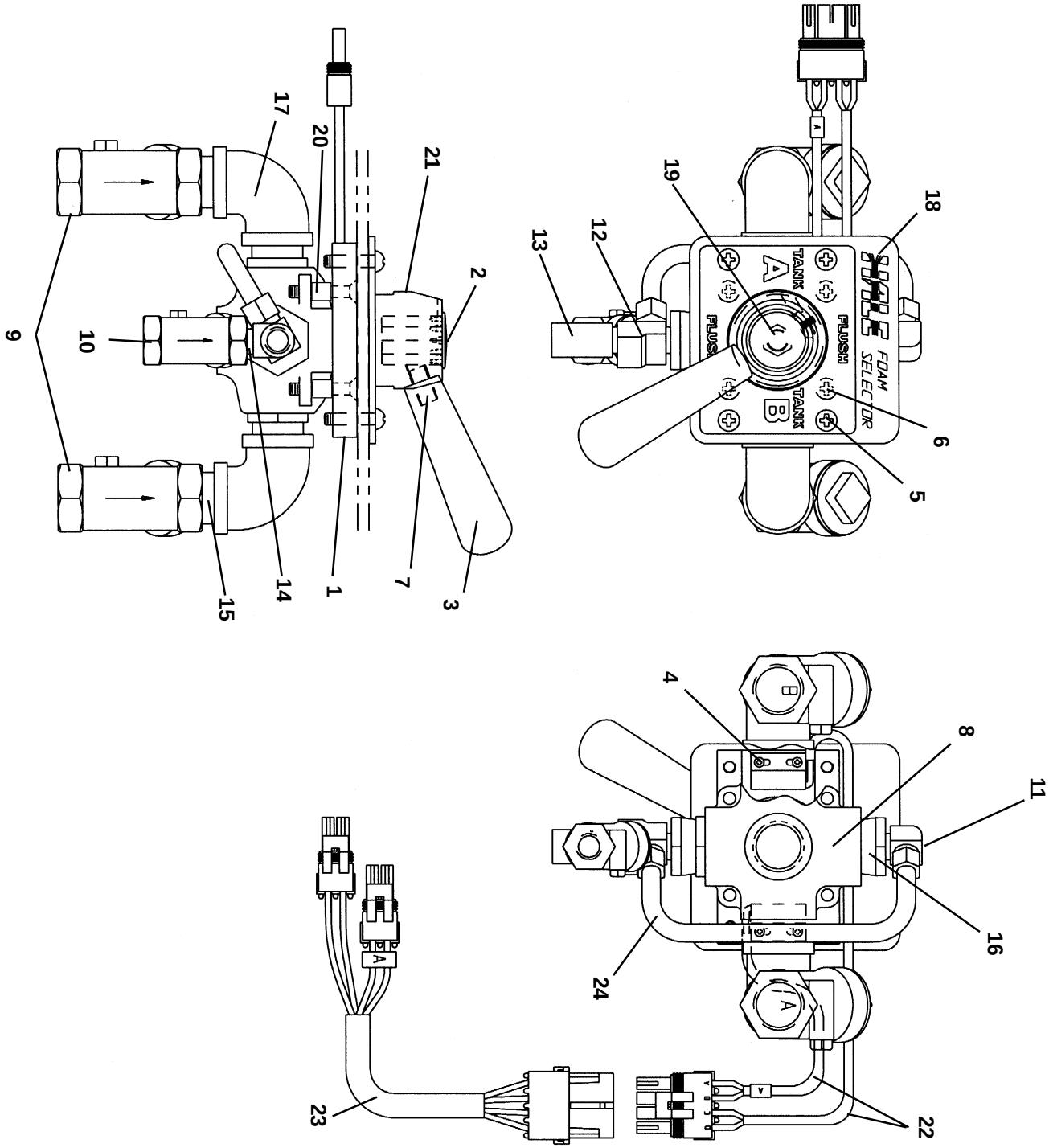
> **CAUTION:** When shutting down the apparatus leave the Hale FoamMaster MDT II selector handle in the **TANK A** position.

8. Shut down Hale FoamMaster allowing foam capable discharge to run to flush out the fire pump discharge manifold. Once clear water flows, close foam capable discharge and shut down apparatus.

9. Perform required maintenance checks on the Hale FoamMaster and apparatus to return the apparatus to ready condition.

> **IMPORTANT:** Make sure the Hale FoamMaster MDT II selector handle is in the **TANK A** position when apparatus is placed in ready condition.

6 PARTS LIST


17
20
21
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18
12
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9
10
TANK
A
FLUSH
HALE
FOAM
SELECTOR
TANK
B
FLUSH
6
5
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1
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16
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22

Item	Part Number	Qty	Name of Part
1	007-3380-00-0	1	MDT II SWITCH MOUNTING ADAPTER
2	008-0720-00-0	1	MDT II HANDLE MOUNT CAP
3	012-1330-00-0	1	TAPERED HANDLE
4	018-0402-78-0	4	SCREW #4-40 UNF X ¼ INCH LONG
5	018-1205-44-0	4	SCREW ¼-20 UNC X 5/8 INCH LONG
6	018-1214-80-0	4	SCREW ¼-20 UNC X 1-1/2 INCHES LONG
7	018-1706-57-0	1	SET SCREW 3/8-24 UNF X ¾ INCH LONG STAINLESS
8	038-1450-00-0	1	SELECTOR VALVE
9	038-1620-00-0	2	BRASS SWING CHECK VALVE ¾ INCH NPT
10	038-1620-01-0	1	BRASS SWING CHECK VALVE ¼ INCH NPT
11	082-0203-02-0	1	BRASS ELBOW ¼ INCH NPT X 3/8 INCH COMPRESSION
12	082-0207-02-0	1	BRASS TEE ¼ INCH NPT X ¼ INCH NPT (FEM) X 3/8 INCH COMPRESSION
13	082-0209-09-0	1	BRASS STREET TEE ¼ INCH NPT
14	082-0210-02-0	1	BRASS CLOSE NIPPLE ¼ INCH NPT
15	082-0501-02-0	4	BRASS CLOSE NIPPLE ¾ INCH NPT
16	082-0513-02-0	2	BRASS BUSHING ¾ INCH NPT X ¼ INCH NPT
17	082-0516-02-0	2	BRASS 90 DEGREE ELBOW ¾ INCH NPT
18	101-1340-24-0	1	FOAM SELECTOR NAMEPLATE
19	110-7560-00-0	1	COUPLING NUT 7/16-20 UNF STAINLESS
20	159-1450-00-0	4	MDT SPACER
21	512-0460-00-0	1	MDT II HANDLE MOUNT ASSEMBLY
	012-1330-02-0	1	MDT II HANDLE MOUNT
	029-0470-00-0	1	MDT II SWITCH ACTUATOR MAGNET
22	513-0320-00-0	1	MDT II SWITCH WIRING HARNESS
23	513-0320-01-0	1	MDT II A-B TANK HARNESS
24	604-0079-03-0	1	3/8 INCH O.D. THERMOPLASTIC TUBING 8-½ INCHES LONG
25	200-2110-04-0	2	BOTTOM MOUNT LOW TANK LEVEL SENSOR ASSEMBLY (NOT SHOWN)
	200-2110-02-0	2	SIDE MOUNT LOW TANK LEVEL SENSOR (NOT SHOWN)
	200-2110-06-0	2	TOP MOUNT LOW TANK LEVEL SENSOR ASSEMBLY (NOT SHOWN)

7 WARRANTY

LIMITED WARRANTY

EXPRESS WARRANTY. Hale Products Inc. ("Hale") hereby warrants to the original buyer that products manufactured by it are free of defects in material and workmanship for one (1) year. The "Warranty Period" commences on the date the original buyer takes delivery of the product from the manufacturer.

LIMITATIONS. HALE'S obligation is expressly conditioned on the Product being.

- Subjected to nominal use and service;
- Properly maintained in accordance with HALE'S Instruction Manual as to recommended services and procedures;
- Not damaged due to abuse, misuse, negligence or accidental causes;
- Not altered, modified, serviced (non-routine) or repaired other than by an Authorized Service Facility;
- Manufactured per design and specifications submitted by the original Buyer.

THE ABOVE EXPRESS LIMITED WARRANTY IS EXCLUSIVE. NO OTHER EXPRESS WARRANTIES ARE MADE. SPECIFICALLY EXCLUDED ARE ANY IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATIONS, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE; QUALITY; COURSE OF DEALING; USAGE OF TRADE; OR PATENT INFRINGEMENT FOR A PRODUCT MANUFACTURED TO ORIGINAL BUYER'S DESIGN AND SPECIFICATIONS.

EXCLUSIVE REMEDIES. If Buyer promptly notifies HALE upon discovery of any such defect (within the Warranty Period), the following terms shall apply:

- Any notice to HALE must be in writing, identifying the Product (or component) claimed defective and circumstances surrounding its failure;
- HALE reserves the right to physically inspect the Product and require Buyer to return same to HALE'S plant or other Authorized Service Facility;
- In such event, Buyer must notify HALE for a Returned Goods Authorization number and Buyer must return the Product F.O.B. within (30) days thereof;
- If determined defective, HALE shall, at its option, repair or replace the Product, or refund the purchase price (less allowance for depreciation),
- Absent proper notice *within* the Warranty Period, HALE shall have no further liability or obligation to Buyer therefore.

THE REMEDIES PROVIDED ARE THE SOLE AND EXCLUSIVE REMEDIES AVAILABLE. IN NO EVENT SHALL HALE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT LIMITATION, LOSS OF LIFE; PERSONAL INJURY; DAMAGE TO REAL OR PERSONAL PROPERTY DUE TO WATER OR FIRE; TRADE OR OTHER COMMERCIAL LOSSES ARISING, DIRECTLY OR INDIRECTLY, OUT OF PRODUCT FAILURE.