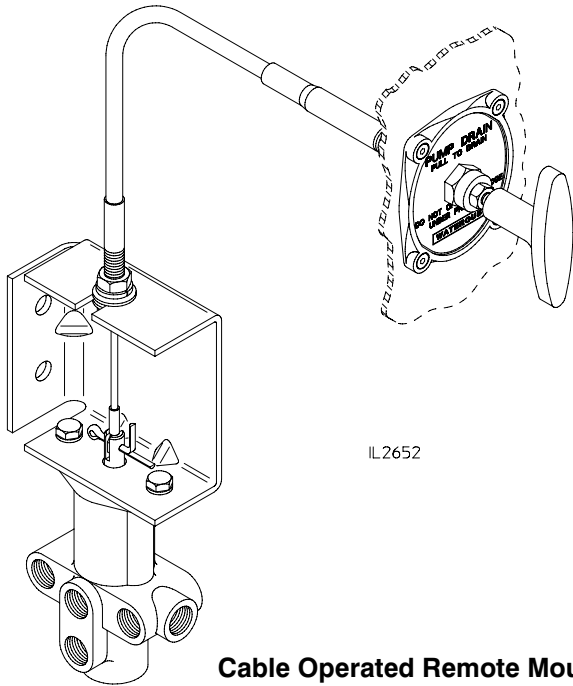


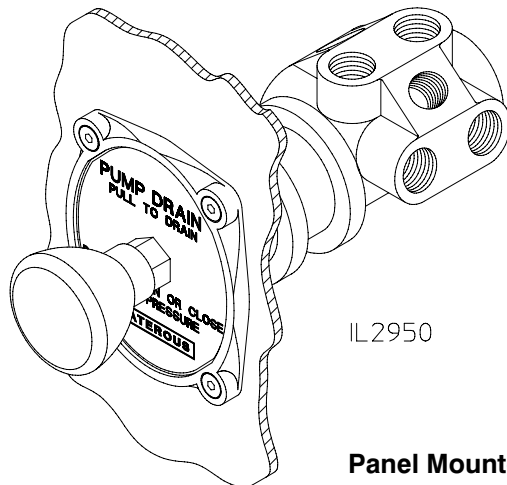
Drain Valves

Installation Instructions

Form No.	Section	Issue Date	Rev. Date
F-1031	3008	03/31/95	08/16/10



Cable Operated Remote Mounted Valve



Panel Mounted Valve

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Read through the installation instructions carefully before installing your Waterous Drain Valve.



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Description

The Waterous drain valve provides a convenient means of draining a fire pump and related equipment after each operation. Its design permits simultaneous draining of at least eight lines. It consists essentially of a stainless steel sliding plunger in a bronze body.

Two valves are offered. The panel mounted valve is horizontally mounted on the pump operator's panel.

The remote mounted valve is vertically mounted on the pump transmission, or at a remote location, and is operated by a flexible cable from the pump control panel. This valve is designed so that discharge pressure will act on the plunger to keep the valve closed when the valve has been manually closed. The correct installation procedure and the correct drain connections must be made for the valve to function properly.

Panel Mounted Valve

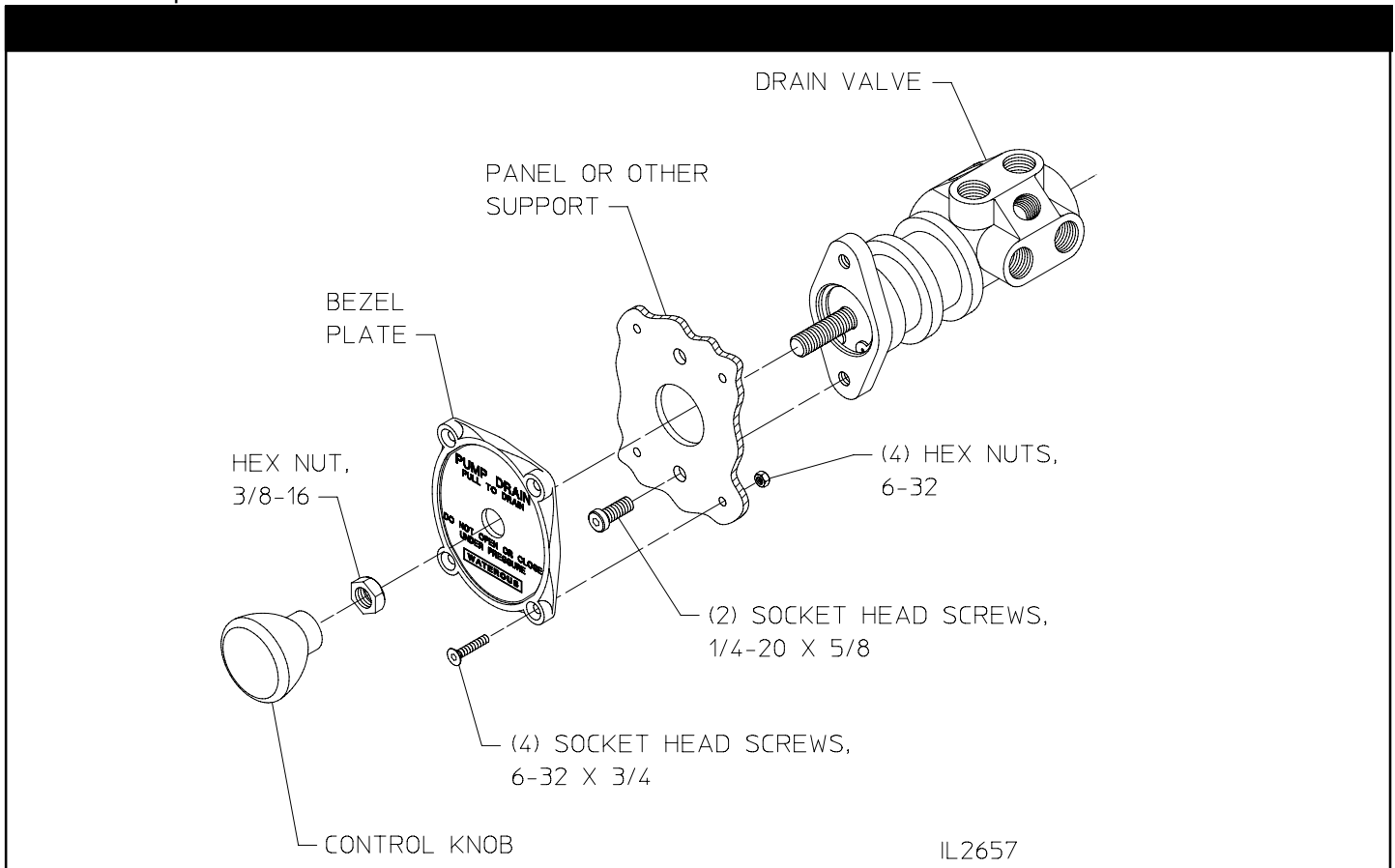
Installation

1. Select a valve mounting location on the fire pump control panel or other convenient locations which will be lower than all the points to be drained. Make sure the mounting location is rigid.
2. Drill holes in panel to mount valve and bezel plate (see Page 3 for panel hole layout).
3. Using (2) socket head screws, 1/4-20 x 5/8, attach drain valve to the panel. Make sure the valve inlet ports are pointing up.
4. Using (4) socket head screws, 6-32 x 3/4 and 6-32 hex nuts, attach bezel plate to the panel.
5. Install hex nut, 3/8-16 and control knob.
6. Use 3/8 inch tubing and fittings to connect the pump and accessory drain openings to drain valve. (The drain valve ports are 1/4 inch NPT.) Make sure all drain lines slope downward to the drain valve, and are free of low points.

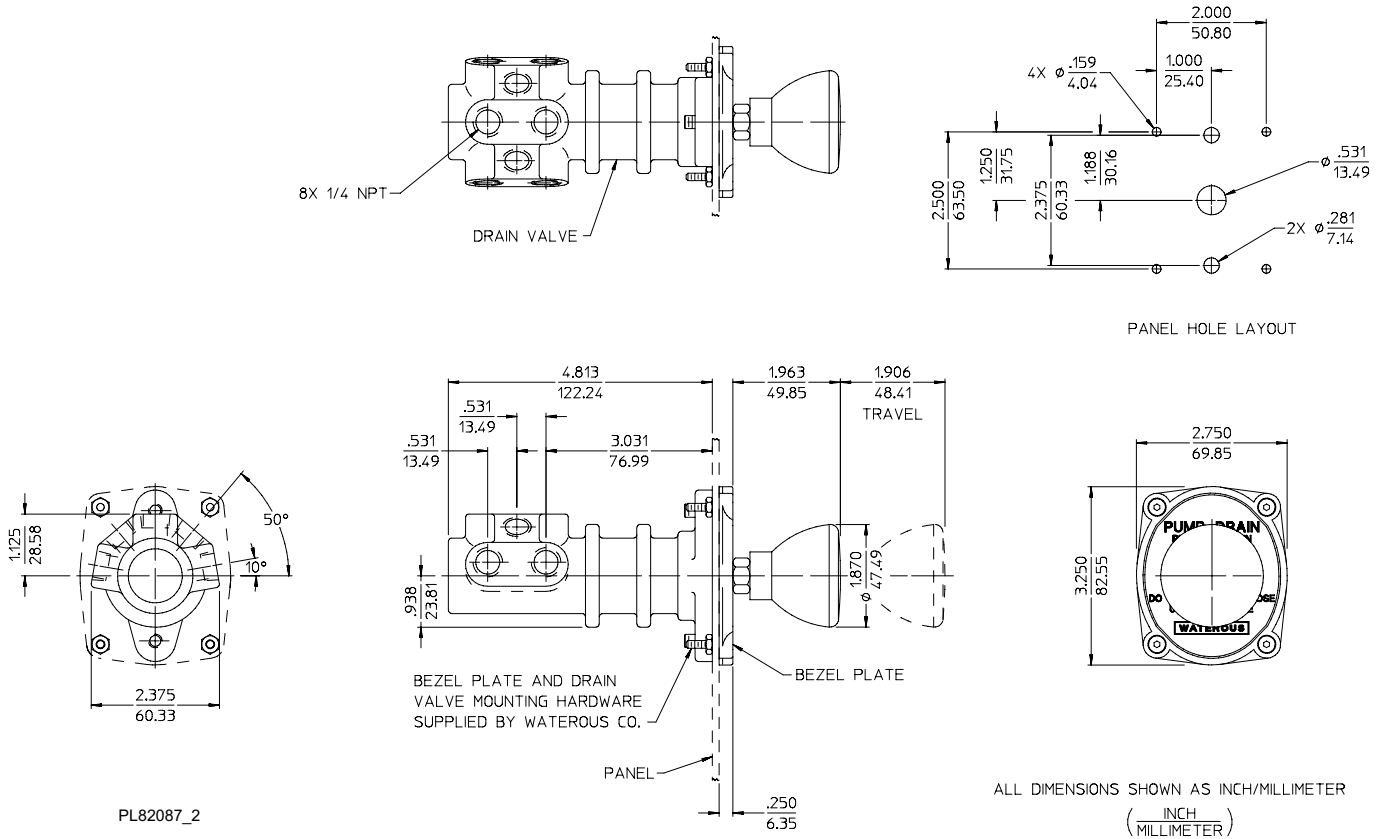
Drain lines may be connected to (8) 1/4 NPT ports in any manner. There are no specific intake, discharge or isolated ports. See Page 3.

Note: Do not connect the following drains to this drain valve. A separate drain valve must be used for each:

- Discharge relief valve cap
 - Discharge pilot valve (on apparatus panel)
 - Extra pressure stage (model CMH or CSH pumps)
 - Intake relief valve cap
 - Foam manifold
 - Passageways which carry foam
7. Install pipe plugs in unused ports of drain valve.

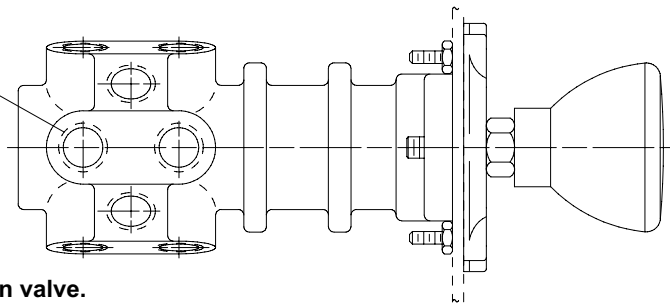


Panel Mounted Valve - Dimensions



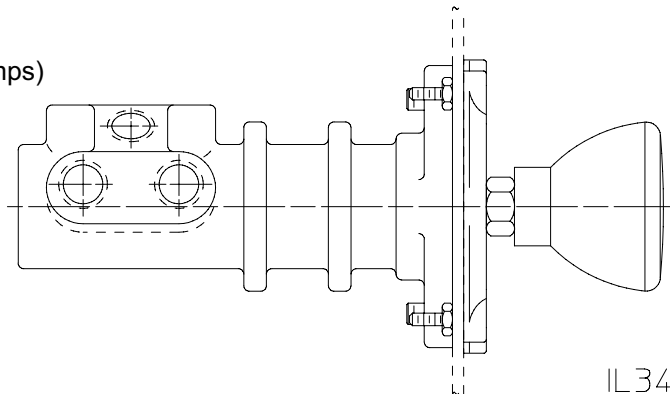
Panel Mounted Valve - Drain Ports

Drain lines may be connected to (8) 1/4 NPT ports in any manner. There are no specific intake, discharge or isolated ports.



Note: Do not connect the following drains to the drain valve. A separate drain valve must be used for each:

- Intake relief valve cap
- Discharge relief valve cap
- Discharge pilot valve (on apparatus panel)
- Extra pressure stage (model CMH or CSH pumps)
- Foam manifold
- Passageways which carry foam



IL3462

Installation

1. On a midship mounted pump with a C10, TC10, C20, TC20 or W series pump transmission, the drain valve can be mounted to the mounting pad on the front of the transmission. If the pump has a different type of transmission, select a valve mounting location which will be lower than all the points to be drained. Make sure the mounting location is rigid. At the mounting location, drill two 13/32 inch holes, one above the other, 1-1/2 inch apart.
2. Attach the drain valve mounting bracket with 3/8 inch bolts, washers and nuts.
3. Select a mounting location for the bezel plate which will permit the control cable to curve gradually down to the drain valve without sharp bends. Drill holes to install bezel plate to panel (see Figure 5). Position the bezel plate, align screw holes and install screws, washers and nuts.
4. Insert the control cable through the center hole in the bezel plate and install lock nuts provided with the control cable to hold it in place.
5. Route the control cable down through the drain valve mounting bracket, and install but do not tighten lock nuts. Insert the cable eyelet in slot of valve stem and attach with cotter pin.
6. Adjust the end of control cable vertically in the mounting bracket to permit full travel of the valve stem, and tighten control cable lock nuts. The control cable should be adjusted so that in the fully closed position, the control handle will be approximately 1/16th of an inch away from the cable housing at the panel.

NOTE: Make sure that plunger bottoms in body with the valve closed. If the valve is not adjusted to seat the plunger completely, the valve will not function properly.

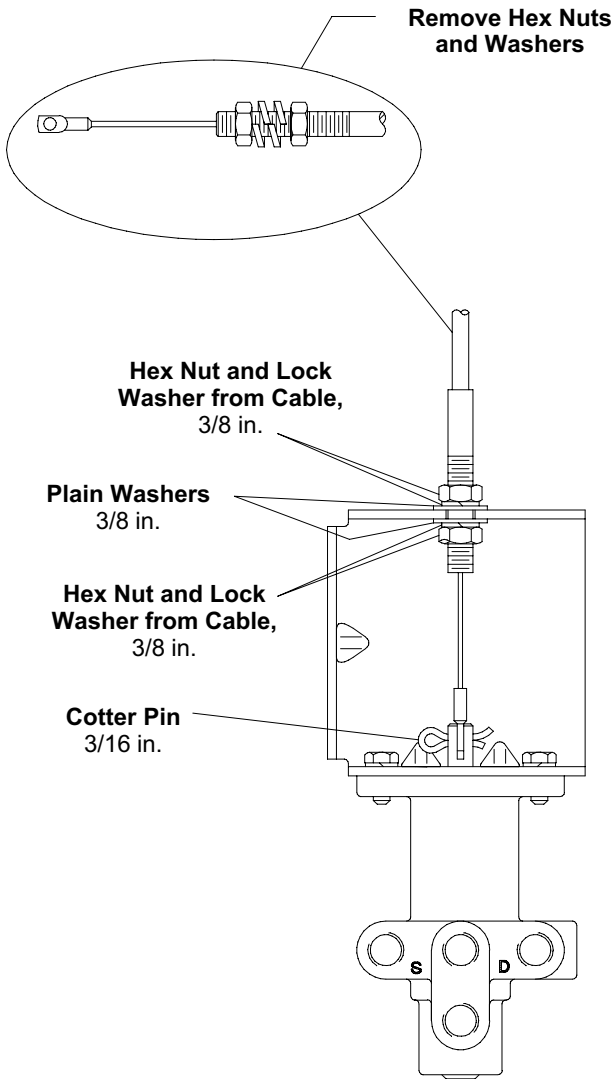
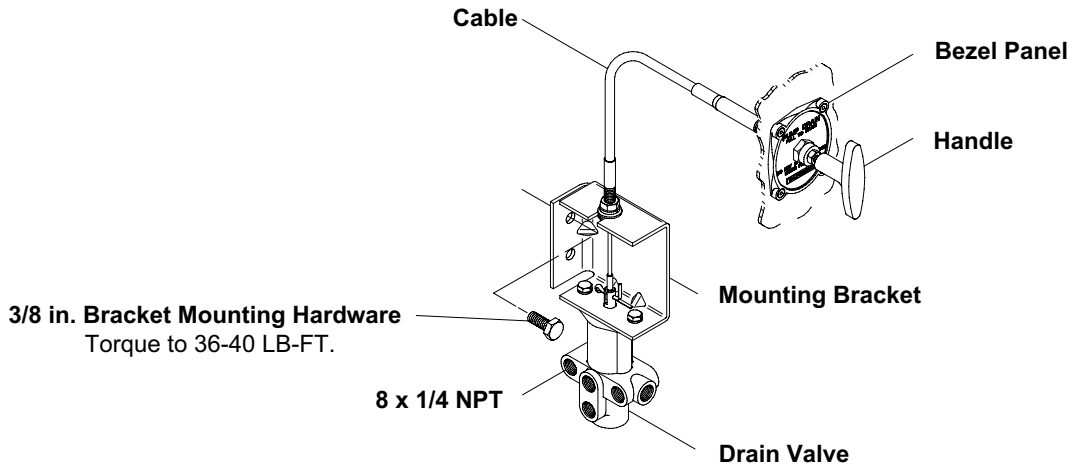
7. Use 3/8 inch tubing and fittings to connect the pump and accessory drain openings to drain valve. (The drain valve ports are 1/4 inch NPT.)

For models CM and CS series pumps, be sure to connect all drain lines as shown on the drain location diagrams shown on page 8. For other pump models be sure to connect all drain lines as shown on page 7. If drain lines are not connected properly, the drain valve and other accessories may not function properly. Also, make sure all drain lines slope downward to the drain valve, and are free of low points.

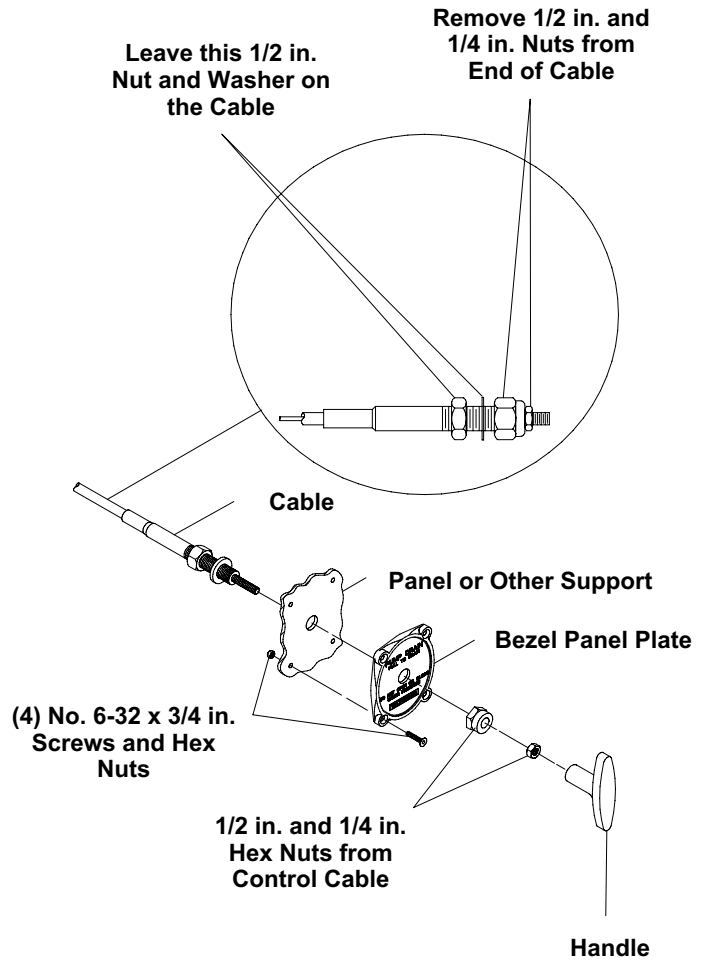
NOTE: Do not connect the following drains to the drain valve. A separate drain should be used for each:

- Discharge Relief Valve Cap
 - Discharge Pilot Valve (on apparatus panel)
 - Extra Pressure Stage (CMH and CSH pumps)
 - Intake Relief Valve Cap
 - Foam Manifold
 - Passageways which carry foam
8. Install pipe plugs in unused ports of drain valve.

Cable Operated Valve - Components



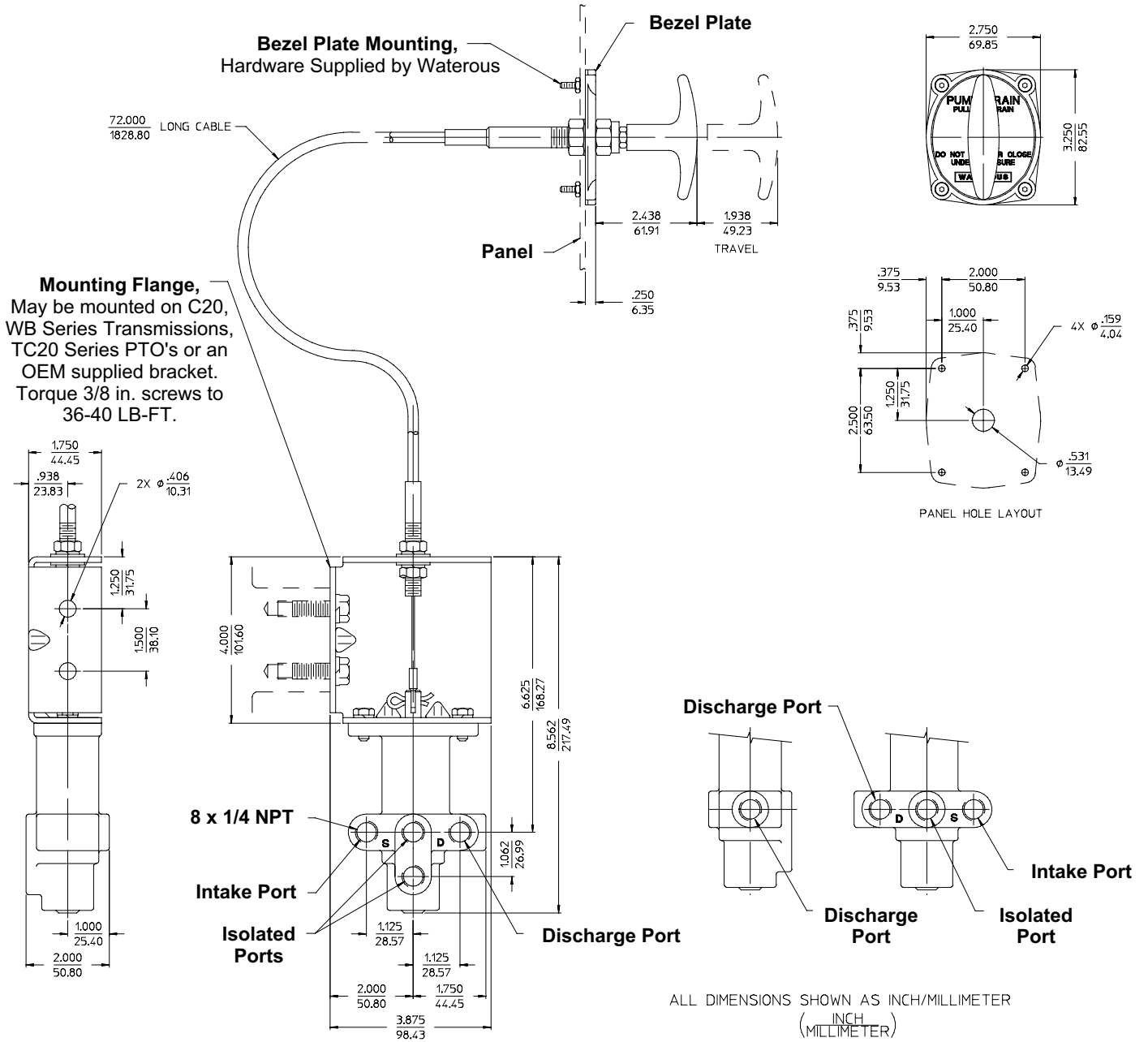
Cable Connection to Valve



Cable Connection to Panel

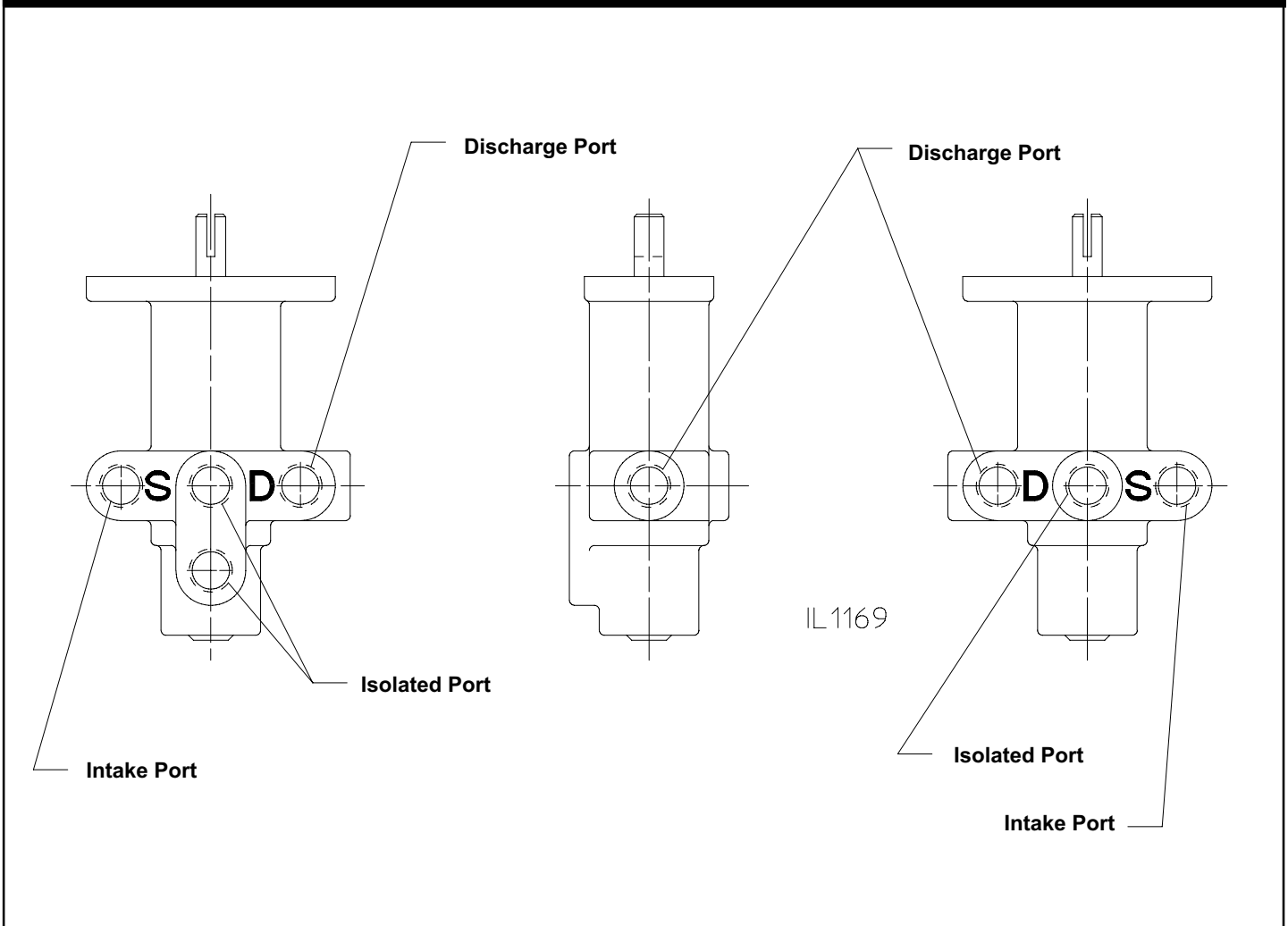
IL3170

Cable Operated Valve - Dimensions



IL3171

Drain Valve Ports



Explanation of Drain Valve Ports

Discharge Ports (3)

All pump and accessory passages which are normally under full discharge pressure.

Intake Ports (2)

All pump and accessory passages which are connected to pump intake.

Isolated Ports (3)

Pump passages such as first stage discharge and second stage intake are connected here. These ports are not connected to pump intake and are not under full discharge pressure.

Note: The following drain valves are not to be connected to the drain valve. Separate drains must be used for these.

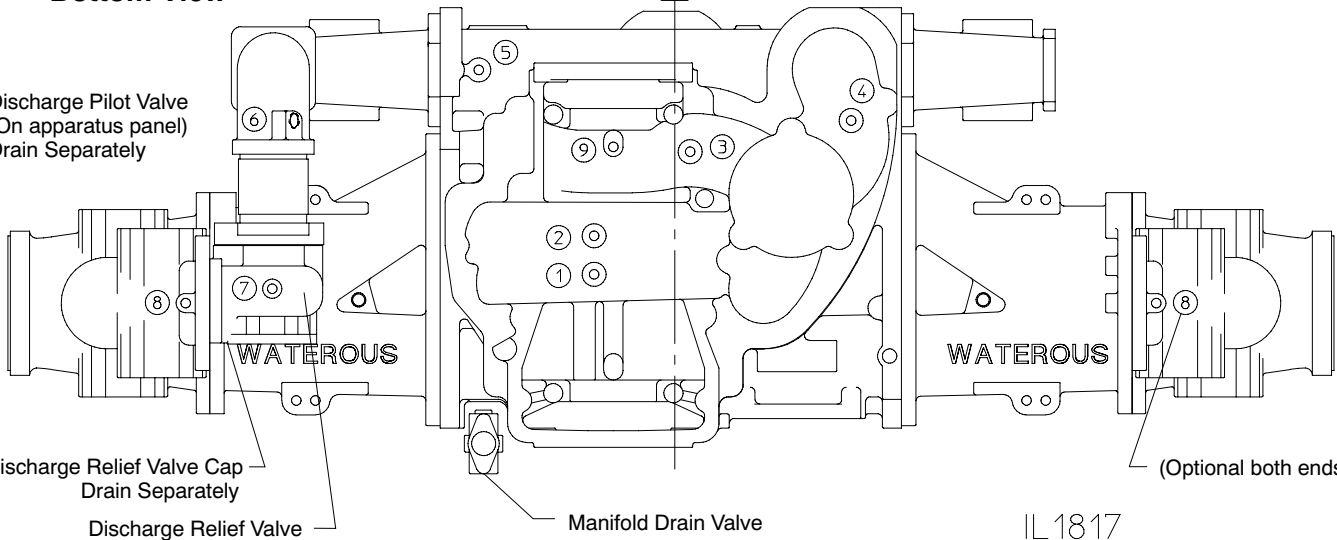
- Intake relief valve cap
- Discharge relief valve cap
- Discharge pilot valve (on apparatus panel)
- Extra pressure stage (model CMH or CSH pumps)
- Foam manifold
- Passageways which carry foam

Drain Locations, CM Series Pumps

Bottom View

Forward
▲

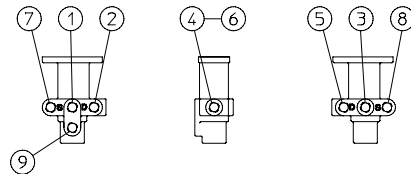
Discharge Pilot Valve
(On apparatus panel)
Drain Separately



IL 1817

- ① 1st Stage Volute
- ② 2nd Stage Volute
- ③ 2nd Stage Intake
- ④ Transfer Valve
- ⑤ Main Discharge Barrel
- ⑥ Relief Valve Elbow or Adapter
- ⑦ Relief Valve Body
- ⑧ Intake Fittings (Depends on type of Intake fitting)
- ⑨ Seal Cooling Line

NOTE: If the pump has a foam manifold, its drains should be plumbed into a separate drain valve. Do not plumb into drain valve used for the pump.



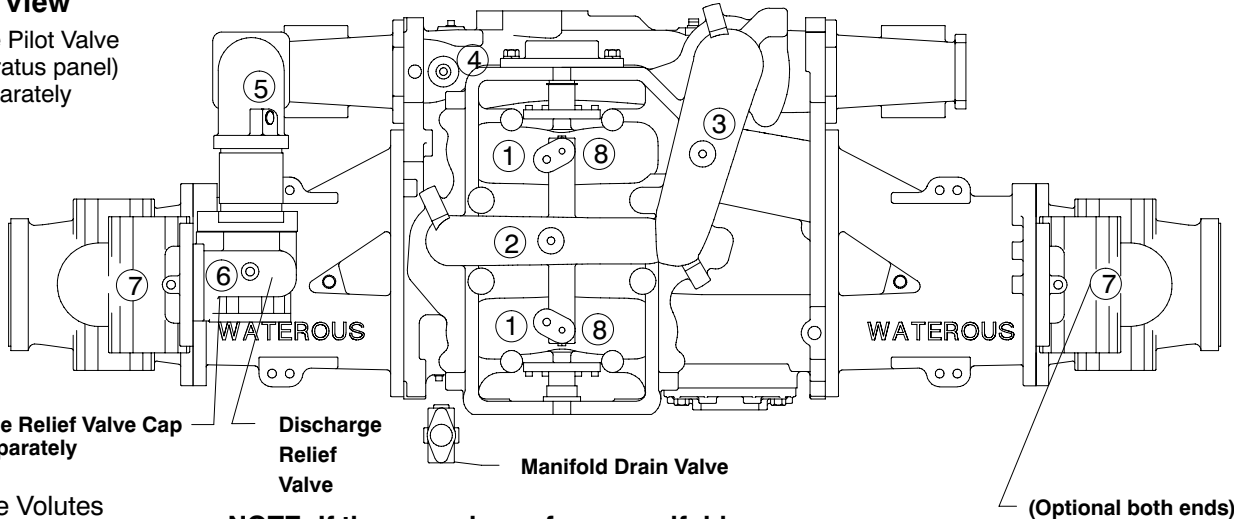
Manifold Drain Valve Details

Drain Locations, CS Series Pumps

Bottom View

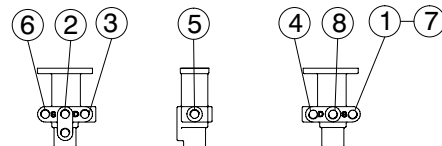
Forward

Discharge Pilot Valve
(On apparatus panel)
Drain Separately



- ① Intake Volutes
- ② Discharge Volute
- ③ Crossover Passage
- ④ Main Discharge Barrel
- ⑤ Relief Valve Elbow or Adapter
- ⑥ Relief Valve Body
- ⑦ Intake Fittings (Depends on type of Intake fitting)
- ⑧ Mechanical Seal/Packing Chambers

NOTE: If the pump has a foam manifold, its drains should be plumbed into a separate drain valve. Do not plumb into drain valve used for the pump.



Manifold Drain Valve Details

IL 2477