995LD-DSS Liquid Drainer Installation and Operation Manual





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General Safety Information

This bulletin should be used by experienced personnel as a guide to the installation of the Armstrong 995-LD DSS Liquid Drainer. Selection or installation of equipment should always be accompanied by competent technical assistance. You are encouraged to contact Armstrong International, Inc. or its local sales representative for additional information.

Product Information

A drain trap is an automatic mechanical device that opens to discharge liquid and closes to prevent air or gas loss.

The 995-LD DSS is a free floating lever drain trap. The principle of operation is as follows:

Entering liquid drops to the bottom of the body. As liquid level rises, the ball is floated upward, thereby causing the valve to open sufficiently that outlet flow balances inlet flow. Subsequent change of incoming flow lowers water level further opening or throttling the valve. Thus discharge is proportionally modulated to drain liquid completely and continuously.



The rating of this product is:

- 290 Psig [20 bar] g at 100F [38 C]
- 259 Psig [17.9 bar] g at 199F [93 C]

The last number of the model corresponds to the connection size:

9954LD-DSS: Connection 1" 9956LD-DSS: Connection 1 1/2" 9958LD-DSS: Connection 2"

Product Installation

Pipe Fitting. Before hooking up drainers, clean the pipes carefully. To clear the pipes of dirt, pipe cuttings and other foreign objects, blow-down the drainer connected to the system at full pressure.

Strainers are necessary if there is a chance that scale and sediment can be carried to the drainer. They should be installed on the inlet of the Liquid drainer.

Blow-Down Valve, "C" as shown in Figures 1 and 2 may also prove useful.

Shut-off Valves and Unions should be installed so the drainer can be examined and/or serviced without shutting down the unit being drained by the drainer.

Drainers must be located below the drain point.

Back venting is usually required.

Pressure vessels should be vented back to any convenient point above the liquid level.

Separators and drip points should be vented to the downstream side of the unit.

Typical installations of liquid drainers are shown in Figures 1 and 3.



Installation of ball float drainer for medium or heavy loads. Strainer blow-down valve "B" and drainer blowdown valve "C" are optional. Discharge line valve "D" not required if drainer discharges water to ground.



Installation of drainer for separator applications where back venting is necessary. Notice that the drainer is vented to the downstream side of the separator.

Maintenance Requirements

Testing Schedule:

A regular schedule should be set-up for drainer testing and preventative maintenance. Drainer size and operating pressure determine how frequently drainers should be checked. Drainers on normal industrial applications should be checked as follows:

- High pressure drainers 250 lbs. and up. Check anywhere from daily to weekly.
- Medium pressure drainers 60 to 250 lbs. Test weekly to monthly.
- Low pressure drainers 1 to 60 lbs. Test monthly to annually.

Large 1-1/4" to 2" drainer on high capacity applications can be tested more frequently to good advantage. Drainers on gas and other critical applications should be checked at the same time valves and other line equipment are inspected. Your own experience will determine the required testing schedule.

Replacement of Leverage System for Armstrong Float Type Drainers or Vents



After you have installed the Pressure Change Assembly in the cap in accordance with our standard procedure, these additional steps are required:

- 1) Hold the valve in the valve seat with the two fulcrum points resting on the face of the valve seat.
- 2) Using an adjustable wrench, turn the stop lock nut down on its post until there is approximately 1/64" clearance
- between the nut and the extension of the valve lever which is under the nut.

A mechanism less float, or pressure change assembly (PCA) consists of:



Make sure that your parts are stamped with the orifice size required for your operating pressure. The orifice size (1/8" for example) is stamped on the valve seat, valve lever, and guide pin assembly. Parts with different orifice stampings should never be used together.

Valve and Valve Seats

Armstrong valves and seats have been carefully lapped together and are furnished for installation as matched sets. Do not use a new seat with an old valve (or vise-versa). Pipe dope or lubricant is not required on valve seat threads. The joint is made, not by the threads, but by metal to metal contact at the ground end of the valve seat, as shown in Figure 1. Make sure seating area in cap is clean before screwing valve seat into position.



Valve Lever

The valve lever hooks over the guide pins. In a few sizes of traps, this part must be attached before the guide pin assembly is fastened into position.

Lever Fulcrums

Fulcrums of levers are sheared at the Factory to obtain maximum opening pressure as well as maximum valve travel which ensures full capacity. Never tamper with height or position of fulcrums. Any change will adversely affect opening pressure, capacity, or both.

Guide Pin Assembly - Location and Alignment

Pins always point away from adjoining gasket surface. To check the alignment of guide pins, hold the lever and valve against the valve seat with the valve contacting its seat and the two fulcrum points resting on the face of the seat. When the lever is held in this position, the guide pins should be central in the guide pin holes as in Figure 4. When correctly aligned, lever can be moved sideways the same distance to the right (Figure 5) as to the left (Figure 6).

Should the guide pins be out of line for any reason, they should be straightened so that they will be central in the guide pin holes as shown in Figure 4. For example, the guide pins in Figures 7 and 8 have been bent and should be tapped with a hammer to force them in the direction of the arrows. If the pins are too far apart or too close together, a similar procedure should be followed.



Troubleshooting

A. Drainer Does Not Discharge

- 1. Insufficient liquid coming to drainer to permit discharge. Continue operation.
- 2. Drainer filled with dirt or sludge. Remove drainer cap and mechanism, clean thoroughly. Install strainer on inlet side of drainer.
- 3. Differential pressure across drainer too high. Check inlet and outlet pressure. If the difference exceeds the maximum pressure stamped on the drainer, the drainer will remain closed. Reduce differential pressure if possible, or install properly sized mechanism in drainer.
- 4. Worn valve seat. As the seat becomes worn, the seating area enlarges, lowering the drainer's maximum operating pressure. Replace with new mechanism.
- 5. Inlet or outlet valves closed. Open valves.
- 6. Strainer clogged. Clean strainer screen.
- 7. Float defective or collapsed. Replace float.

B. Drainer Discharges Continuously

- 1. If drainer discharges full stream of liquid continuously and vessel fills full of liquid:
 - a. Drainer too small for job. Replace with correct size.
 - b. Abnormal amounts of liquid coming to drainer. Remedy cause or replace with drainer that has a larger capacity and will handle peak loads.

C. Drainer Blow Through

- 1. Dirt or scale on valve or seat. Remove cap, clean drainer as well as valve and seat.
- 2. Worn valve or seat that is wire-drawn. Remove cap, replace mechanism.

Repair Parts

Internal Mechanism for 1/8 orifice:

Part Number: D30658

Description: MECHANISM REPRS 33 AV/LD 1/8 SS ALL T316 NACE W/FLT

Limited Warranty and Remedy

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