



Armstrong® Troubleshooting Armstrong Steam Traps

The following summary will prove helpful in locating and correcting nearly all steam trap troubles. Many of these are actually system problems rather than trap troubles.

More detailed troubleshooting literature is available for specific products and applications—consult factory.

Whenever a trap fails to operate and the reason is not readily apparent, the discharge from the trap should be observed. If the trap is installed with a test outlet, this will be a simple matter—otherwise, it will be necessary to break the discharge connection.

Cold Trap—No Discharge

If the trap fails to discharge condensate, then:

- A. Pressure may be too high.
 - 1. Wrong pressure originally specified.
 - 2. Pressure raised without installing smaller orifice.
 - 3. PRV out of order.
 - 4. Pressure gauge in boiler reads low.
 - 5. Orifice enlarged by normal wear.
 - 6. High vacuum in return line increases pressure differential beyond which trap may operate.
- B. No condensate or steam coming to trap.
 - 1. Stopped by plugged strainer ahead of trap.
 - 2. Broken valve in line to trap.
 - 3. Pipe line or elbows plugged.
- C. Worn or defective mechanism.
Repair or replace as required.
- D. Trap body filled with dirt.
Install strainer or remove dirt at source.
- E. For IB, bucket vent filled with dirt. Prevent by:
 - 1. Installing strainer.
 - 2. Enlarging vent slightly.
 - 3. Using bucket vent scrubbing wire.
- F. For F&T traps, if air vent is not functioning properly, trap will likely air bind.
- G. For thermostatic traps, the bellows element may rupture from hydraulic shock, causing the trap to fail closed.
- H. For disc traps, trap may be installed backward.

Hot Trap—No Discharge

- A. No condensate coming to trap.
 - 1. Trap installed above leaky by-pass valve.
 - 2. Broken or damaged syphon pipe in syphon drained cylinder.
 - 3. Vacuum in water heater coils may prevent drainage.
Install a vacuum breaker between the heat exchanger and the trap.

Steam Loss

If the trap blows live steam, the trouble may be due to any of the following causes:

- A. Valve may fail to seat.
 - 1. Piece of scale lodged in orifice.
 - 2. Worn parts.
- B. IB trap may lose its prime.
 - 1. If the trap is blowing live steam, close the inlet valve for a few minutes. Then gradually open. If the trap catches its prime, chances are the trap is all right.
 - 2. Prime loss is usually due to sudden or frequent drops in steam pressure. On such jobs, the installation of a check valve is called for—location D or C in Fig. 11-63 (page 11 of brochure 870-EN). If possible, locate trap well below drip point.
- C. For F&T and thermostatic traps, thermostatic elements may fail to close.

Continuous Flow

If an IB or disc trap discharges continuously, or an F&T or thermostatic trap discharges at full capacity, check the following:

- A. Trap too small.
 - 1. A larger trap, or additional traps, should be installed in parallel.
 - 2. High pressure traps may have been used for a low pressure job. Install right size of internal mechanism.
- B. Abnormal water conditions. Boiler may foam or prime, throwing large quantities of water into steam lines.
A separator should be installed or else the feed water conditions should be remedied.

Sluggish Heating

When trap operates satisfactorily, but unit fails to heat properly:

- A. One or more units may be short-circuiting. The remedy is to install a trap on each unit. See page 10 of brochure 856-EN.
- B. Traps may be too small for job even though they may appear to be handling the condensate efficiently. Try next larger size trap.
- C. Trap may have insufficient air-handling capacity, or the air may not be reaching trap. In either case, use auxiliary air vents.

Mysterious Trouble

If trap operates satisfactorily when discharging to atmosphere, but trouble is encountered when connected with return line, check the following:

- A. Back pressure may reduce capacity of trap.
 - 1. Return line too small—trap hot.
 - 2. Other traps may be blowing steam—trap hot.
 - 3. Atmospheric vent in condensate receiver may be plugged—trap hot or cold.
 - 4. Obstruction in return line—trap hot.
 - 5. Excess vacuum in return line—trap cold.

Imaginary Troubles

If it appears that steam escapes every time trap discharges, remember: Hot condensate forms flash steam when released to lower pressure, but it usually condenses quickly in the return line. See Chart 5-4 on page 5.