



TROUBLESHOOTING GUIDE
FOR
ARMSTRONG SOLENOID OPERATED STEAM HUMIDIFIERS

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
Valve will not operate when valve circuit is energized (direct-acting valve) "1" size only.	Low voltage or no voltage to solenoid coil	Check voltage at coil; voltage should be at least 85% of nameplate rating.
	Burned out coil	See "Coil Failure" below. 1
	Excessive foreign matter jamming core in core tube.	Clean valve.
	Binding core or damaged core tube.	Replace parts.
Valve will not operate when valve circuit is energized (pilot-operated valve) "2" & "3" sizes.	Excessive fluid pressure.	Reduce pressure.
	Same causes and solutions as for direct-acting valve, PLUS Damaged piston ring.	Replace damaged parts.
Valve will not close or shift when valve circuit is de-energized (direct-acting valve) "1" size only.	Plugged or restricted pilot orifice.	Clean valve and pilot orifice.
	Coil not de-energized	Check electrical control circuit.
	Excessive foreign matter jamming core in core tube.	Clean valve.
	Damaged disc or seat causing internal leakage.	Replace with new parts.
	Binding core or damaged core tube	Replace with new parts.
Valve will not close or shift when valve circuit is de-energized (pilot-operated valve) "2" & "3" sizes.	Damaged spring	Replace with new spring. Never elongate or shorten spring.
	Same causes and solutions as for direct-acting valve, plus	
	Plugged bleed orifice.	Clean orifice.
	Damaged pilot seat or pilot disc	Replace with new parts.
	Damaged diaphragm or piston.	Replace with new parts.
Wire drawing	Damaged pilot spring.	Replace with new spring. Never elongate or shorten spring.
	Dirt or foreign matter is lodged on seat.	Replace valve seat.

SOLENOID TEMPERATURE:

Armstrong solenoid operated humidifiers are designed for continuous duty service. When the solenoid is energized for a long period, the enclosure becomes hot and can be touched by hand only an instant. This is a safe operating temperature. Excessive heating will be indicated by smoke and odor of burning coil insulation.

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
Coil failure	Overtoltage	Check voltage at coil; voltage must conform to nameplate rating.
	Damaged core or core tube causing inrush current to be drawn continuously	Check for damaged core and core tube, or damaged spring.
	Excessive foreign matter jamming core in core tube and causing inrush current to be drawn continuously.	Check for scale or foreign matter on the core or inside the core tube. Clean thoroughly and replace any damaged parts.
	Excessive fluid pressure causing inrush current to be drawn continuously	Reduce pressure
	Excessive ambient or fluid temperature	Maximum ambient at 60 psig steam 120°F.
	Missing solenoid parts	Install missing solenoid housing and other metal parts or properly install incorrectly assembled metal parts. The housing and other metal parts form part of the magnetic circuit and are required to provide the impedance needed to limit current draw.

IF A PROBLEM ARISES, THE FOLLOWING IS THE INFORMATION WE NEED TO KNOW

1. What is the solenoid serial number? Humidifier serial number?
2. How long has the valve been in service?
3. Has the valve worked satisfactorily in the application?
4. Did the valve fail to open or close?
5. Is leakage the problem? Internal or external?
6. Did the coil burn out?
7. What is the inlet pressure?
 - a. Ambient and fluid temperatures?
9. What is the cycling rate?
10. What is the actual operating voltage measured at the solenoid? Are there any other components in the system which might affect the operation? (Regulators, Hand Valves, Speed Control Valves, Restricted Piping) Where are they located?
11. How is the valve mounted? Vertical or horizontal?
12. Is noise the problem?
13. How many valves on the same line and size of inlet and outlet piping?

We realize that there are many times when you cannot obtain all this information; but depending upon the type of failure, you can judge what information we must have.