

Installation Instructions

Armstrong Posi-Pressure Coil Controller (PPC)

Introduction

The purpose of the Armstrong Posi-Pressure Coil Controller (PPC) is to provide a minimum pressure differential between the inside of the steam coil(s), and the condensate return system, in order to prevent coil flooding. The PPC accomplishes this by acting as a vacuum breaker at an elevated pressure. Generally one PPC is required per temperature control valve.

Flooding can occur because of high condensate return pressures and/or vacuum formation during temperature control valve modulation. By eliminating this flooding, the coil is protected from freezing, corrosion and water hammer, thus prolonging its life.

These instructions cover the installation of the Level I Controller Kit. Refer to the installation sketch (back page) to identify controller placement.

The main components of this system in addition to a normal modulation system are:

Qty.	Component
1	Armstrong Posi-Pressure Coil Controller Kit
2	High Quality Check Valves
3	Steam Pressure Gauges (coil inlet gauge optional)

- The Posi-Pressure Coil Controller (1) is to be installed slightly above the level of the steam inlet line to the coil (no more than six (6) inches).
- The instrument or clean plant air line is connected to the airflow meter (2) and then to the inlet side of the Posi-Pressure Coil Controller (PPC).
- The outlet line from the PPC is connected to the supplied durable check valve (3), placed between the PPC and the inlet to the steam coil. Please use only this check valve at this location to provide maximum protection to the PPC. The check valve arrow must point to the steam line.
- A minimum of 6 feet of 3/8" copper tubing (4) connects the condensate pressure sensing tap (11) and the Posi-Pressure Coil Controller (PPC). It should be coiled if the distance between the sensing point and the PPC is less than 6 feet. The condensate pressure sensing line is connected to the PPC bonnet.
- A check valve (5) must be installed downstream of the temperature control valve, but before the point of air injection. This check valve may be a swing type.
- Pressure gauges are to be placed at the following locations: a pressure gauge (6) upstream of the

coil and downstream of the control valve (optional). A pressure gauge (7) downstream of the steam coil and upstream of the steam trap and its' isolation valve. It must be placed as close to the level of the steam trap as possible. A pressure gauge (8) is downstream of the trap and at the same level as the trap outlet. The condensate pressure sensing line (11) will be connected to the condensate return line as shown.

- Steam trap isolation valves: The steam valve (9) must be as close to the level of the trap as possible and downstream of the pressure gauge (7). A trap condensate isolation valve (10) may be installed.

The Steam Trap to Be Used on This System Must Be An Inverted Bucket Type. Additionally, it MUST have a large bucket vent. If a new trap is installed, it can be ordered with the large vent. If an existing trap is used, the vent must be drilled to the appropriate size.

A second trap called a SAFETY' DRAIN is shown on the sketch. If a safety drain is used, a vacuum breaker must be installed downstream of the coil. Only the upstream VACUUM BREAKER is required if the safety drain is not used. The safety drain is a float trap with NO thermostatic element. The safety drain and vacuum breaker guards against a shutdown of the air supply. They will only operate when the air supply is interrupted.

Further Useful Information

- The airflow meter gives a readout on air usage. Although very little air is used (between 5 and 90 SCFH) by the controller when it is operating, a large airflow indicates a blowing trap that should be repaired.
- No thermostatic elements that operate via a depressed temperature can be used in this system.
- During the summer months it is common practice to shut off the steam to the coil(s). If this is the practice at your facility, a tag should be attached to the steam shutoff valve advising:
 - The air supply to the Posi-Pressure Coil Controller should be off while the steam valve is closed and on when this valve is open.
 - When the steam valve is closed make sure that the coil drain valve is open.
- Caution: If the Posi-Pressure Coil Controller is to be outdoors, it must be heat traced to prevent freezing.

Calibration and Operation

The PPC should be calibrated with the instrument air on, steam shut off, condensate pressure at atmospheric, upstream steam trap isolation valve (9) barely cracked and the downstream isolation valve (10) wide open. If necessary, the condensate pressure sensing line (4) may be temporarily disconnected to achieve atmospheric pressure at the controller.

With the above conditions being met, it will be possible to set the controller at the desired differential to ensure continuous evacuation of condensate. This differential should be set at between 2 and 5 PSID plus 1/2 PSI for each foot of elevation between the sensing point and the controller. If the sensing line (4) has been disconnected from the controller, the gauge (7) upstream of the trap may be set at the required differential. The steam trap must be sized to allow for complete drainage, with this differential.

Calibration is accomplished by removing the adjusting nut cover from the controller and turning the adjusting nut **CLOCKWISE** until the desired differential is read

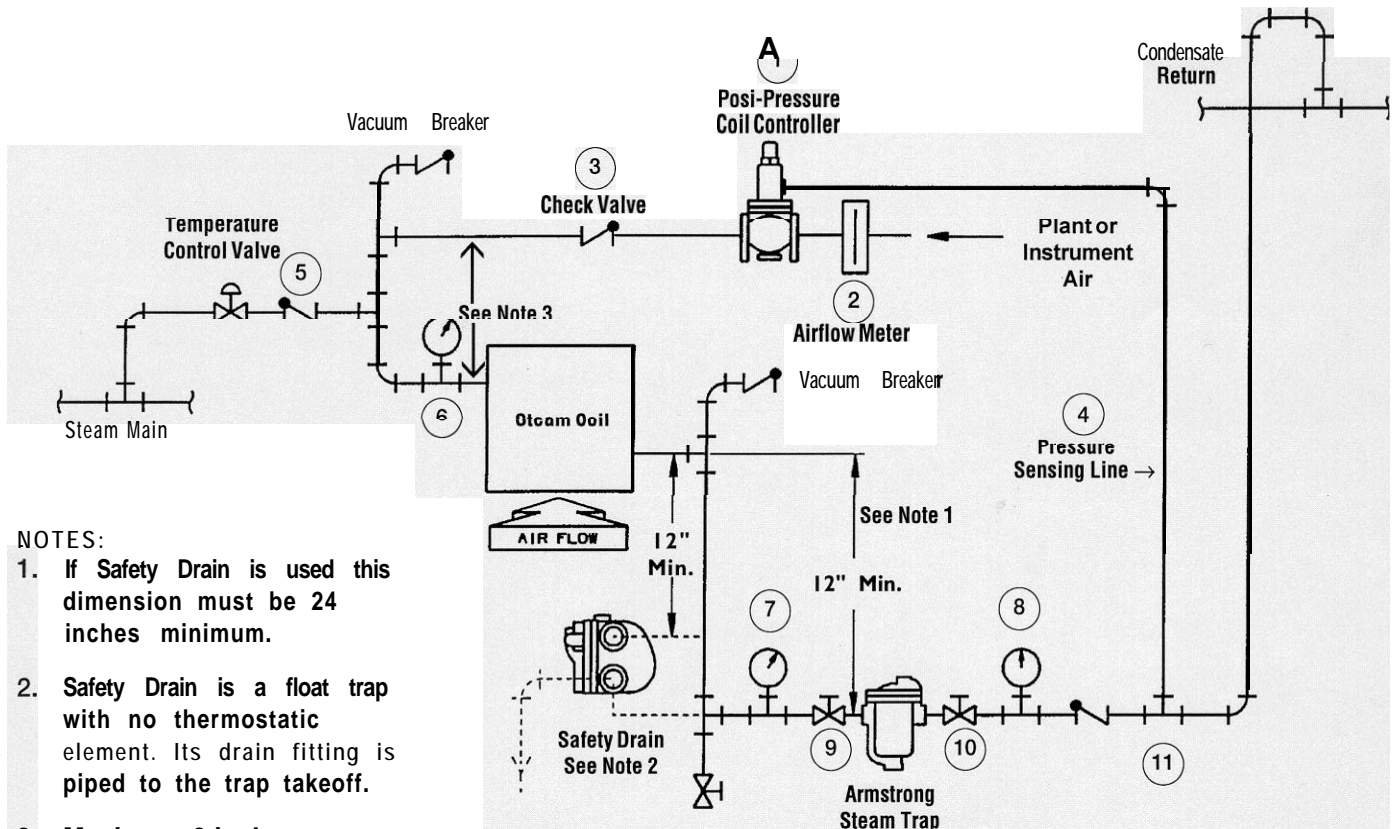
between the two pressure gauges (7) and (8). Check to make sure the pressure gauges read the same before attempting the calibration.

Once calibration has been accomplished, open the **ISOLATION VALVE**, reconnect the **CONTROLLER SENSING LINE** (if disconnected) and turn the steam on. The system should then maintain the differential set during calibration.

The two (2) **PRESSURE GAUGES** should be checked from time to time during initial operation to ensure that the desired minimum differential pressure is maintained. The **CONTROLLER** may be m-calibrated during normal operation. When the **TEMPERATURE CONTROL VALVE** is wide open or not modulating, the pressure differential will be higher than the set point. This is normal operation under these conditions.

Please feel free to contact your Armstrong-Hunt Representative or the factory if you have any questions.

Installation Sketch Armstrong Posi-Pressure Coil Controller (PPC)



NOTES:

1. If Safety Drain is used this dimension must be 24 inches minimum.
2. Safety Drain is a float trap with no thermostatic element. Its drain fitting is piped to the trap takeoff.
3. Maximum 6 inches.



Armstrong-Hunt, Inc.

8100 Armstrong Road, Milton, Florida 32583 • USA Phone (904) 626-0051

648 Moeller Street, P.O. Box 355, Granby, Quebec J2G 8E5 • Canada Phone (514) 378-2655