HVAC Air-Trap™ **FCN-Series**

Installation, Operation and Maintenance Manual

WATERLESS HVAC CONDENSATE TRAPS

Made in U.S.A.

FCN-Series: IOM

Positive Pressure Waterless Trap

Patented

This is a guide to the user of an FCN Series *Air-Trap* during installation, commissioning, operation, or periodic maintenance.

The Benefits of the FCN *Air-Trap* are:

- Eliminates the geyser effect that is caused when the standard P-trap dries out and condensate begins to form
- Operates dry except when condensate is being produced
- Will not freeze
- No sludge build-up in bottom of trap
- Requires less than half the height of a standard P-trap
- Easily comes apart for cleaning

DO NOT USE EXCESS CEMENT. Too much cement could interfere with ball movement and cause trap failure.

NEVER CONNECT CONDENSATE DRAIN DIRECTLY TO A SANITARY DRAIN LINE.

Standard connection is 3/4" slip. A 3/4" to 1/2" bushing can be used to accommodate a 1/2"- size PVC SCH 40 pipe.

Negative-Pressure Application

When operating with a negative pressure plenum, install the FCN *Air-Trap* in a horizontal orientation with the "FLOW" arrowhead pointing in the direction of water flow as shown in ***Figure 1***. The direction of condensate flow is indicated on the larger of the two tabs that clamp together the two parts of the trap.

Condensate enters the end of the trap with the 3/8" diameter hole and the word "TOP" is molded into the inlet end of the FCN as shown in ***Figure 2***.

When disassembling the FCN for maintenance, use a small flat head screwdriver and lightly, and slowly, pry the wider tab outward a few thousandth of an inch until the two parts separate. There should be no maintenance required other than cleaning. Reassembling requires that the O-ring be properly placed in the groove and the ball-valve be properly positioned as shown in ***Figure 3***.

Figure 4. Installation of the FCN for negative pressure showing arrowhead pointing in direction of water flow.

FCN traps are rated at up to 1 GPM of condensate flow at essentially any negative pressure, but H (refer to ***Figure 4***) increases linearly with pressure.

Figure 5. FCN with integral 3/4" slip connections
There are two clips that connect the two parts of the trap, one clip is wider than the other, so make sure to match wide to wide and narrow to narrow.

Figure 1

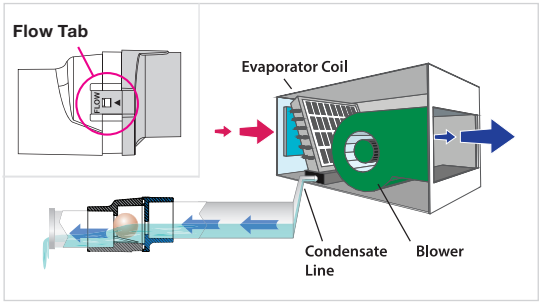

Figure 2

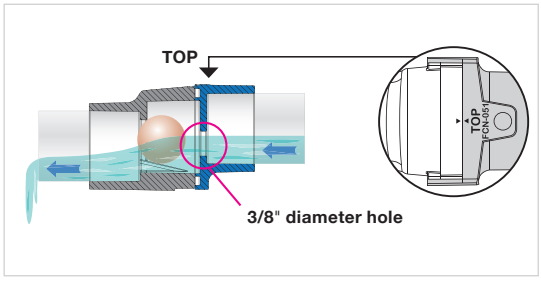

Figure 3

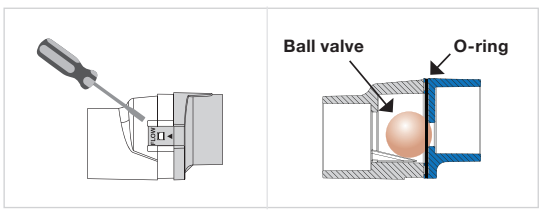

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Figure 4

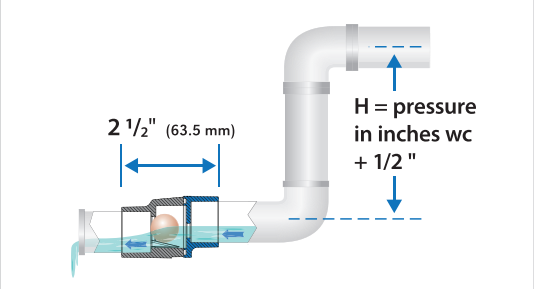
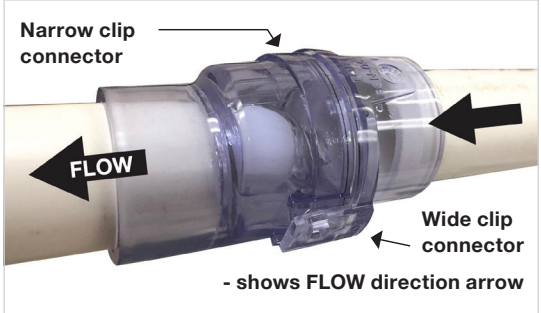


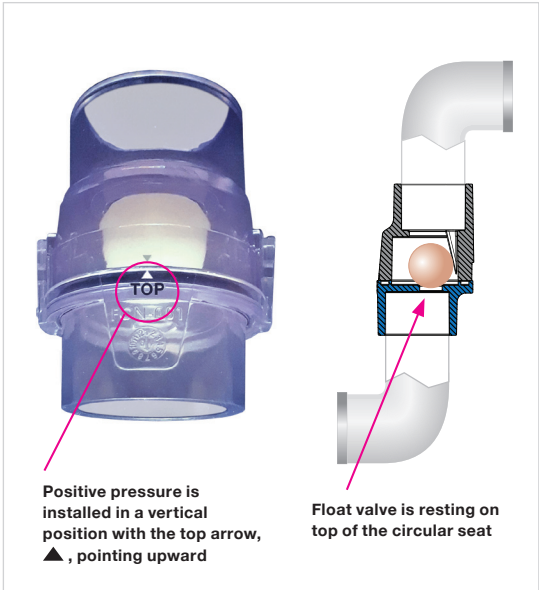
Figure 5



Positive-Pressure Application - Up to 0.5 inches WC

When using an FCN *Air-Trap* for positive pressure it is installed in a vertical position with the top arrow, ▲, pointing upward, in such a manner that the float valve is resting on top of the circular seat. ***See Figure 6.***

Figure 6



Note on Installation:

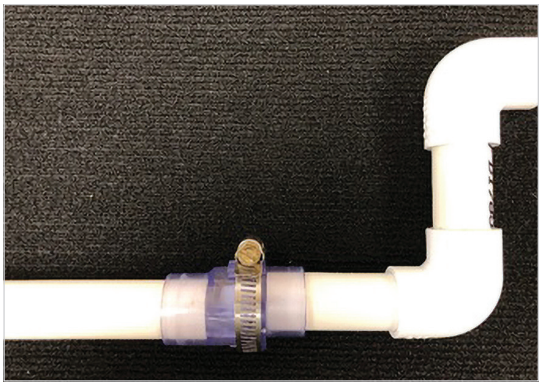
The design of the FCN *Air-Trap* is a result of customers requesting a small, compact, easily serviceable trap for fan-coil and residential air-conditioning equipment. For ease of service we decided to use integral latches to allow the trap to be easily taken apart for cleaning. This assembly method works great for its intended application. Two conditions may exist after installation that could exert extreme force on the trap that cause the FCN to come apart:

1) If the drain line on the leaving side of the trap is rather long and rigidly supported near the end then thermal contraction of the condensate line could exert such a tension force that it will overcome the ability of the compression latches to function properly.

2) If the condensate line leaving the trap runs a considerable length with no support it could develop a torque acting on the trap that could overcome the ability of the latches to function properly.

If either of these conditions exist after installation, then we recommend that you place an SAE #20 (13/16" to 1-3/4" diameter by 1/2" wide) SS hose clamp around the FCN so that the clamp is over the latches and then tighten the clamp so that the latches can not be pulled from their socket. ***Figure 7*** illustrates the position of the hose clamp relative to the trap.

Figure 7



The *Air-Trap*™ concept has been incorporated into IAPMO IGC 196-2018 *Standard for Condensate Traps and Overflow Switches for Air-Conditioning Systems.*

***Air-Traps* meet IMC® Code Section M307.2.4.1**

ICC-ES Evaluated

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