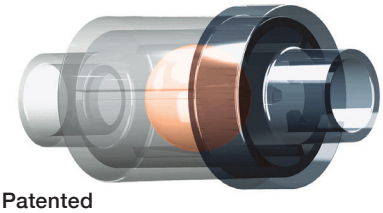
HVAC Air-Trap™

N-Series

Negative Pressure Waterless Trap

The Air-Trap™ allows liquid condensate to drain from HVAC equipment while simultaneously preventing air from entering or escaping the equipment.



Patented

Available sizes: ¾" 1" 1¼" 1½"

MADE IN U.S.A.

Why a Waterless Trap?

Typically, HVAC equipment is fitted with "P" traps that require water, or another liquid, within a standpipe to prevent gas from entering or leaving the unit. As a result, the "P" traps are susceptible to freezing - expansion - bursting. At other times, the traps dry out allowing gas to escape or enter the HVAC equipment. The *Air-Trap* never requires addition of water to prevent unwanted air leakage.

The *Air-Trap* reduces trap height by up to 60%. A total height equal to the maximum water pressure in inches WC. With negative pressure plenum, the HVAC *Air-Trap* requires less than ½ the height required for P-Trap installation.

Figure 1: Shows for a standard "P" Trap the vertical distance required between center lines of unit connection and the center line of the bottom of the trap is 4 inches when there is a 2-inch negative plenum pressure. By comparison, the *Air-Trap* N-Series is only 2 inches, not the 4 inches required with the standard "P" trap.

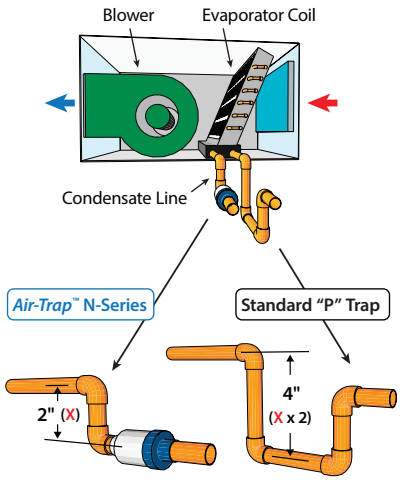
Figure 2: When condensation is not present, the negative pressure within the plenum draws the internal mechanism against the valve seat preventing air from entering the AHU through the drainpipe.

Figure 3: As condensate forms, water builds up in the vertical pipe. When the water pressure equals the negative air pressure in inches of water column, the force of the water head becomes equal or greater than the negative pressure — the internal mechanism moves to the right, and water flows.

Figure 4: When there is no longer a requirement to remove condensation, the negative pressure returns the ball to the valve seat and prevents airflow to the unit plenum. The internal rails aid in returning the ball to the seat in case the variable speed fan is operating at a low flow and low negative pressure.

Figure 1: Trap Required in Condensate Line

If the condensate drain line is under negative pressure (e.g., upstream of blower as shown here) a trap is required.



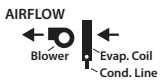


Figure 2

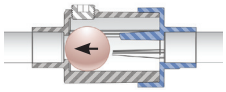


Figure 3

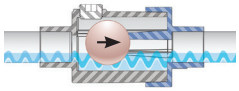
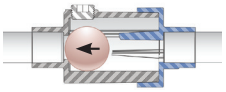


Figure 4



Note: The attached drawings represent traps that operate under negative pressure.
Never connect condensate drain directly to a sanitary drain line.

For detailed information and to see the N-Series *Air-Trap* during operation, please visit:
YouTube video: https://youtu.be/aVWH3Il4oHs
Facebook: facebook.com/DesChampstech/
Instagram: des.champs

waterless-trap.com

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

NS-0619

DES CHAMPS Technologies™

For more information and purchase options please visit
waterless-trap.com or
deschampstechnologies.com

2 Nikki Lane
Natural Bridge Station, VA 24579
Phone: 540.228.1967
info@deschampstechnologies.com