

# SHORT ABSORPTION MANIFOLDS FOR STEAM HUMIDIFIERS



Carnes Steam Manifolds are designed to provide dry steam with rapid absorption in the duct air stream. It achieves this by distributing steam evenly across the face of the duct. The distance needed for absorption is dependent on a number of factors, some of which are air velocity, steam volume, air temperature, and characteristics of air flow in the duct. For minimum absorption distance, the manifold should be located in the warmest air stream of the duct and where fully developed laminar air flow occurs.

- **Stainless steel steam distribution tubes on three inch centers provide extremely short absorption distances**
- **Stainless steel manifold with flexible EPDM connections for thermal expansion without use of O-rings**
- **Strong galvanized flanged frame for easy and fast connection to duct**
- **Factory assembled for reduced installation costs**

**CARNES STEAM MANIFOLDS** are available in standard sizes from 18" x 12" through 72" x 48" in two inch increments. Additional special sizes are available.

Table 1  
Air Pressure Loss, "w.g."

500 fpm	.02
750 fpm	.07

Table 2 Model Numbering System

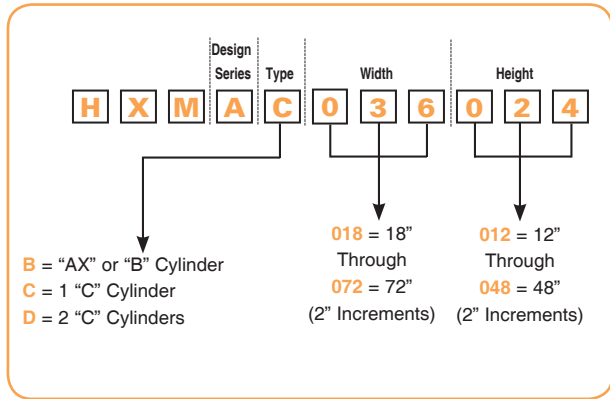
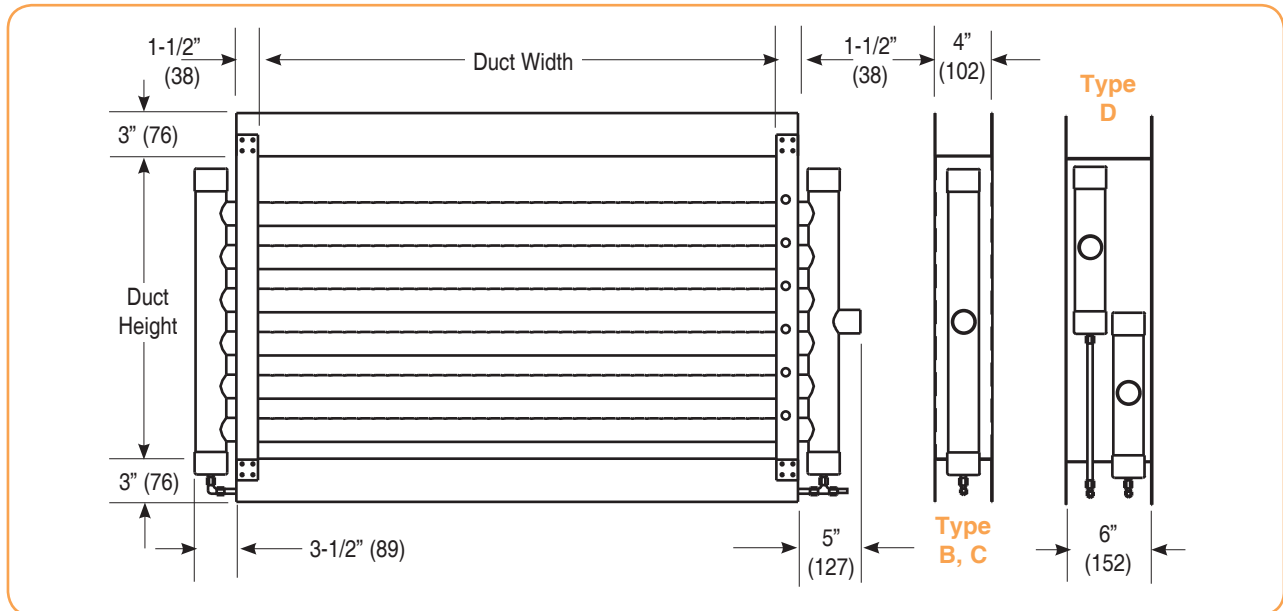


Table 3

Duct Height	Tubes
012	3
014	3
016	4
018	5
022	6
024	6
026	7
028	8
030	9
032	10
034	10
036	11
038	11
040	12
042	13
044	13
046	14
048	15

Dimensions



**CARNES STEAM MANIFOLDS** with strong galvanized flanged frames are factory assembled to reduce installation costs.

#### ▼ LOCATION OF MANIFOLD

The manifold is usually located in the supply duct downstream of the fan, heating coil, cooling coil, and/or filter. When installed in packaged units, the manifold is to be mounted just downstream of the fan discharge.

The non-wetting dimension is the distance necessary to prevent condensation on any obstruction downstream from the manifold. Condensation could occur on a cooling coil because of lower temperatures. Steam plumes may be visible beyond the non-wetting dimension and may moisten high efficiency filters. Additional distance is required for installation upstream of high efficiency filters.

Carnes humidifiers operate at .5 psi or less so there are limitation on the length between the humidifier cabinet and the steam manifold. The maximum distance depends on the static pressure in the duct and is shown in Table 8.

Table 8 - Maximum Steam Hose Length

Duct Static Pressure "w.g."	0	1	2	3	4	5
Maximum Steam Hose Length (Ft.)	40	35	30	25	15	10

Figure A

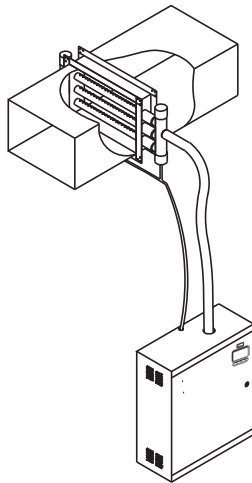


Figure B

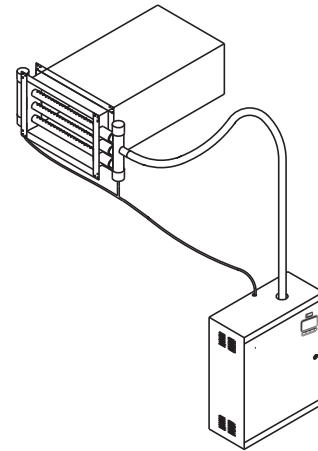


Figure C

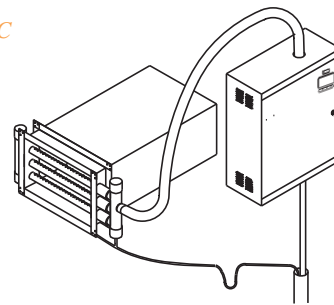


Figure D

