FIGURE 4-1: VERTICAL AIR FLOW INSTALLATION

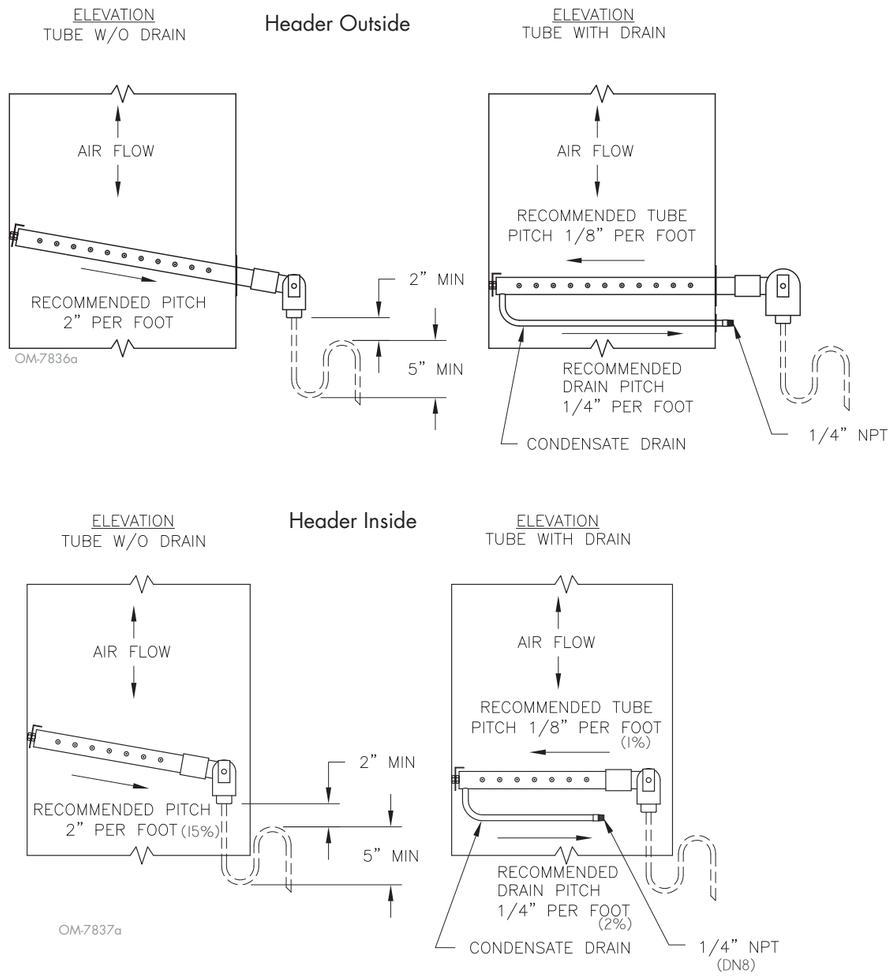

Table 4-1:
Rapid-sorb vertical air flow installations

Tube diameter		Without condensate drain*				With condensate drain*			
		Insulated		Noninsulated		Insulated		Noninsulated	
inches	DN	lbs/hr	kg/hr	lbs/hr	kg/hr	lbs/hr	kg/hr	lbs/hr	kg/hr
1 ½	40	29	13	28	13	65	30	62	28
2	50	65	30	62	28	97	44	93	42

* Face heights of less than 26" (660 mm) may have reduced tube capacities.

Notes:
- Pitch header towards drain 1/8" per foot (1%).
- Position L-bracket so the flange is upstream of dispersion tubes.
- Use L-bracket as a template to locate holes on duct wall.

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Form No. Rapid-sorb-IOM-EN-0515
Part No. 890000-621 REV A

DRISTEEM HUMIDIFIER DISPERSION

Before you begin installation, read all dispersion instructions.

- Unpack shipment and verify receipt of all Rapid-sorb® components with packing list. Report any shortages to the DriSteem factory immediately.
- When choosing a location for installation, select one that provides necessary access in and around ductwork or air handler.
- Rapid-sorb assemblies are typically installed centered side to side in duct, or across face of coil in air handler.
- The center line of the outer dispersion tubes should never be closer than 4.5" (114 mm) from side of ductwork or air handler wall.
- Rapid-sorb tubes are provided with an L-bracket for installation:
  - NOTE: Before marking and drilling holes in duct or air handler, refer to ALL pitch requirements for the Rapid-sorb assembly in the instructions. Size, quantity, and location of penetrations are determined by specific dimensions and configuration of Rapid-sorb assembly you received.

NOTE: Hardware for mounting L-bracket to duct or air handler wall and hardware for header support bracket is not provided. Use a fastener of sufficient length on the L-bracket to accommodate 1/8"/ft (1%) pitch requirements toward the 3/4" pipe thread (DN20) header drain fitting.

- Condensate drain connections to the Rapid-sorb header:
  - Piping must be minimum 3/4" I.D. (DN20) and rated for 212°F (100°C) minimum continuous operating temperature.
  - Condensate drain line must be piped as shown in the figure. Provide a 2" (50 mm) drop prior to a 5" (127 mm) water seal.
- If multiple humidifiers are supplying one Rapid-sorb, a multiple steam supply connector is needed:
  - Typically, the multiple steam supply connector attaches to the Rapid-sorb header supply end with hose cuff and clamps.
  - Route the necessary number of steam supplies from the humidifier tanks to the steam supply connector.
  - Position the steam supply connector to accept the steam supplies while maintaining the necessary pitch.
  - Make sure the hose clamps on the steam supply connector and header are tight.

Table 1-1:
Rapid-sorb tube capacities*

Tube diameter		Insulated (High-Efficiency Tubes)		Uninsulated	
inches	DN	lbs/hr	kg/hr	lbs/hr	kg/hr
1½	40	43	19.5	40	18.2
2	50	80	36.4	77	35

* Capacities shown are for horizontal airflow. If active tube length is <22" (559 mm), tube quantity per panel may need to increase to compensate for reduced capacity of short tubes. Consult DriSteem or see DriCalc for the correct calculation.

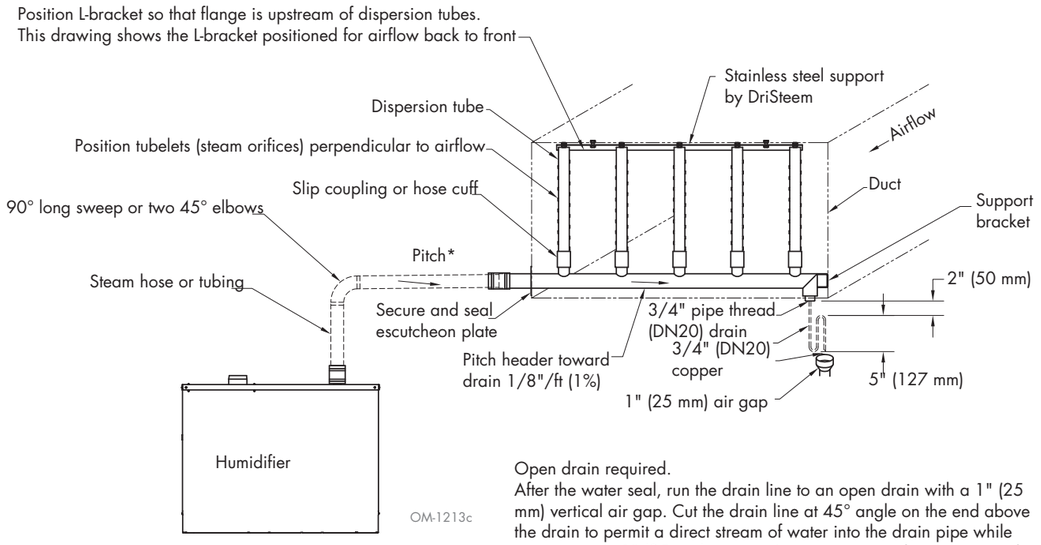
Table 1-2:
Rapid-sorb header capacities

Header capacity		Header diameter	
lbs/hr	kg/hr	inches	DN
≤ 250	≤ 113	2	50
251-500	114-227	3	80
501-800	228-363	4	100

Table 2-1: Rapid-sorb installation instructions

Rapid-sorb header inside of duct or air handler (horizontal airflow)	Rapid-sorb header outside of duct (horizontal airflow)
NOTE: See Figure 3-1 for steam supply and condensate drain line connection instructions.	NOTE: See Figure 3-2 for steam supply and condensate drain line connection instructions.
• Locate and cut holes in ductwork or air handler for steam header penetration, condensate drain piping, and header support bracket fastener. Allow for 1/8"/ft (1%) header pitch toward the support bracket when you drill the hole for the header support bracket fastener. Use L-bracket as a template to locate holes on duct/AHU ceiling.	• Locate and cut holes in ductwork for dispersion tubes. Use L-bracket as a template to locate hole centers on duct floor.
• Loosely fasten the header in place.	• Loosely suspend or support header below final location – vertical balance point of the dispersion tube length dictates where header should be suspended or supported temporarily.
• Rotate the header 90° so the header stubs point horizontally in the duct. When installing in an air handler, the rotation of the header is often less than 90°. Typically, due to the condensate drain piping requirements, the header can be set on the floor of the air handler, assembled in the horizontal position, and then raised and mounted in place.	
• Mount dispersion tubes to header with provided connector, either a slip coupling or a hose cuff. • When installing slip couplings for 1½" (DN40) dispersion tubes, take care not to tear or damage O-rings. • Slide coupling onto header stub until tube contacts the O-ring. Complete assembly with twisting motion to avoid damage to the O-ring. • O-rings are lubricated at factory. If additional lubrication is necessary, DO NOT use a petroleum-based lubricant.	
• Allow the dispersion tubes to rest against the bottom of the duct. • Position the flange of the L-bracket so it is upstream of the tubes when the assembly is rotated into position. Fasten the L-bracket to the end of the dispersion tubes with the provided bolt, lock washer, and flat washer.	• Position flange of L-bracket so it is upstream of tubes when assembly is raised and fastened into position. Fasten L-bracket to end of dispersion tubes with provided bolt, lock washer, and flat washer.
• Before tightening L-bracket bolts to dispersion tubes: • For 1½" (DN40) dispersion tubes: - Dispersion tube will rotate in slip coupling. Verify that dispersion tube orifices are directed perpendicular to airflow. • For 2" (DN50) dispersion tubes: - Before securing hose cuff in place with hose clamps on dispersion tube and header stub, verify that dispersion tube orifices are directed perpendicular to airflow.	
• Rotate the assembly up until the L-bracket aligns with the mounting holes in the duct or air handler.	• Slide assembly up until L-bracket aligns with mounting holes in duct.
• For 1½ (DN40) dispersion tubes: • Header pitch is duplicated in L-bracket. The L-bracket pitch must be the same as the header. • Dispersion tube and slip coupling must be fully engaged on header stub for O-rings to provide a seal. • High end of L-bracket can be fastened tightly to duct or air handler. • On low end of L-bracket, fastener must be long enough to compensate for pitch, and jam nuts should be provided and secured on both sides of L-bracket and duct or air handler for stability. • For 2" (DN50) dispersion tubes: • Fasten bracket to top of duct, and use hose cuffs to compensate for pitch of header.	
	• Permanently secure both ends of the header and verify that the header pitch, 1/8"/ft (1%) toward drain, is maintained.
• Verify that all fasteners are secure: • L-bracket to duct • Dispersion tubes to L-bracket • Hose clamps on 2" (DN50) tubes • Header support bracket to duct	• Verify that all fasteners are secure: • L-bracket to duct • Dispersion tubes to L-bracket • Hose clamps on 2" (DN50) tubes • Header support bracket to solid surface
• Secure and seal the header escutcheon plates around the header.	• Secure and seal dispersion tube escutcheon plates around respective tubes, if applicable.
NOTE: See Figure 3-1 for steam supply and condensate drain line connection instructions.	NOTE: See Figure 3-2 for steam supply and condensate drain line connection instructions.

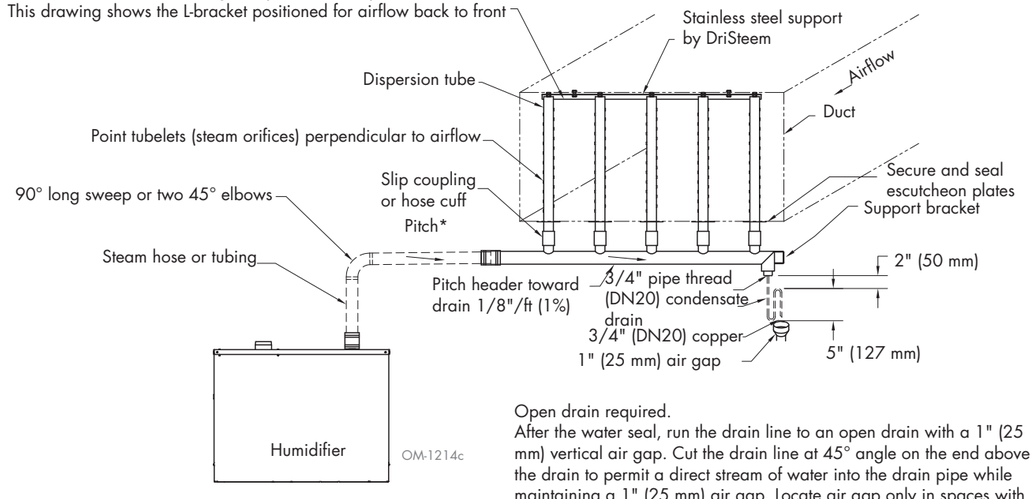
FIGURE 3-1: RAPID-SORB HEADER INSIDE THE DUCT, HORIZONTAL AIRFLOW



* Pitch steam hose or tubing toward Rapid-sorb:
– 2"/ft (15%) when using steam hose
– 1/8"/ft (1%) when using tubing

Open drain required.
After the water seal, run the drain line to an open drain with a 1" (25 mm) vertical air gap. Cut the drain line at 45° angle on the end above the drain to permit a direct stream of water into the drain pipe while maintaining a 1" (25 mm) air gap. Locate air gap only in spaces with adequate temperature and air movement to absorb flash steam, or condensing on nearby surfaces may occur. Refer to governing codes for drain pipe size and maximum discharge water temperature.

FIGURE 3-2: RAPID-SORB WITH HEADER OUTSIDE THE DUCT, HORIZONTAL AIRFLOW



* Pitch steam hose or tubing toward Rapid-sorb:
– 2"/ft (15%) when using steam hose
– 1/8"/ft (1%) when using tubing

Open drain required.
After the water seal, run the drain line to an open drain with a 1" (25 mm) vertical air gap. Cut the drain line at 45° angle on the end above the drain to permit a direct stream of water into the drain pipe while maintaining a 1" (25 mm) air gap. Locate air gap only in spaces with adequate temperature and air movement to absorb flash steam, or condensing on nearby surfaces may occur. Refer to governing codes for drain pipe size and maximum discharge water temperature.