XT SERIES

Electrode Steam Humidifiers

- *Easy to maintain*
- *Adaptable*
- *Comprehensive control with Vapor-logic® option*

driSteem™

Cost-effective steam humidification

Model XTP

Model XTR

XT SERIES ELECTRODE HUMIDIFIERS

The XT series electrode humidifier uses heat caused by electrical resistance in conductive fill water to boil the water into steam. Automatic drain and fill cycles keep electrical current within demand parameters, based on water conditions and steam production.

XT SERIES FAN PACK OR STEAM BLOWER

An optional fan pack or steam blower is available for use in finished spaces. They disperse steam into open spaces and are used when there is not associated air-handling equipment.

XT Series electrode steam humidifiers from DriSteem provide humidification for a wide range of buildings, including health care, commercial, industrial, and government facilities. Easy installation and minimal maintenance make XT Series one of the most affordable humidification systems to purchase and install.

EASY TO MAINTAIN

No cleaning required. Just replace the affordable steam cylinder when prompted by the controller display.

ADAPTABLE

- Compact in size to fit into small spaces
- Model XTP capacity range is 5 to 287 lbs/hr (2 to 130 kg/h); Model XTR capacity range is 5 to 11 lbs/hr (2 to 5 kg/h)
- Stage up to four Model XTP humidifiers together for maximum system capacity of 1148 lbs/hr (520 kg/h)
- Disperses steam into ductwork or open spaces
- Works with water conductivity from 350 to 1250 µS/cm (roughly comparable to water hardness of 10 to 36 grains per gallon).
- User-selectable drain water tempering, if desired

COMPREHENSIVE CONTROL

- The Vapor-logic controller is included with the Model XTP and sets the standard for control capabilities in electrode humidifiers.
- An easy-to-use standard controller is provided on the Model XTR.

Vapor-logic controller (Model XTP)

Standard controller (Model XTR)

	Vapor-logic controller (Model XTP)	Standard controller (Model XTR)
Easy-to-use menus for all humidifier functions	✓	
Push-button operation, with LED indicators for operating status and troubleshooting		✓
Web interface for Ethernet access to all functions	✓	
Accurate, responsive RH control with PID tuning for maximum performance	✓	
BACnet®, Modbus®, and optional LonTalk® for inter-operability with multiple building automation systems	✓	
Automatic drain and fill events for optimized humidifier performance based on water type	✓	✓
Cylinder drains after a user-specified time with no call for humidity to prevent microbial growth	✓	✓
A USB port is provided for downloading controller data to a PC for viewing and analysis, data backup and restore, and firmware updates	✓	

Table 3-1:
Line currents and recommended fusing for XT Series humidifiers

Model	Nominal steam capacity		kW	Phase	Volts	Maximum line current (amps)	Recommended fusing (amps)
XTP	lbs/hr	kg/h					
002	5	2	1.7	1	120	17	25
					208	10	15
					230	8	15
					240	8	15
003	10	5	3.3	1	208	19	25
					230	17	25
					240	17	25
					277	14	20
					400	10	13
					480	8	15
					600	7	10
				3	208	11	15
					240	10	15
					400	6	10
					480	5	10
					600	4	10
006	18	8	6.0	1	208	35	45
					230	31	40
					240	30	40
					277	26	35
					400	18	25
					480	15	20
					600	12	15
				3	208	20	25
					240	17	25
					400	10	13
					480	9	15
					600	7	10
010	30	14	10.0	3	208	33	45
					240	29	40
					400	17	25
					480	14	20
					600	12	15
017	50	22	16.5	3	208	55	70
					240	48	60
					400	29	40
					480	24	35
					600	19	25
025	75	34	25.0	3	400	43	63
					480	36	50
					600	29	40
033	100	45	33.3	3	400	58	80
					480	48	70
					600	39	50
042	125	57	41.7	3	400	72	100
					480	60	80
					600	48	70
048	143	65	47.8	3	400	80	100
					480	69	90
					600	55	70
050*	150	68	50.0	3	400	2 x 43	2 x 63
					480	2 x 36	2 x 50
					600	2 x 29	2 x 40
067*	198	90	66.7	3	400	2 x 58	2 x 80
					480	2 x 48	2 x 70
					600	2 x 39	2 x 50
083*	250	113	83.3	3	400	2 x 72	2 x 100
					480	2 x 60	2 x 80
					600	2 x 48	2 x 70
096*	287	130	95.7	3	400	2 x 80	2 x 100
					480	2 x 69	2 x 90
					600	2 x 55	2 x 70

*These models have two steam cylinders and require independent service connections.

Controllers

XT SERIES CONTROL INTERFACE WITH VAPOR-LOGIC KEYPAD/DISPLAY

Status display and menu selection

Softkeys for direct menu access

Navigation buttons for item selection

Controller on-off switch

VAPOR-LOGIC WEB INTERFACE

STANDARD CONTROLLER

Push-button operation, with indicators for operating status and troubleshooting information.

Automatic draining and filling optimize humidifier performance according to your specific water type.

USB port allows firmware updates.

Cylinder automatically drains after a user-specified time with no call for humidity to prevent microbial growth; default is 72 hours.

OPTIONAL VAPOR-LOGIC CONTROLLER

Vapor-logic provides the standard control features above, plus:

Accurate, responsive RH control with PID tuning for maximum performance.

Easy-to-use menus for all humidifier functions.

Modbus, BACnet, or LonTalk allow interoperability with multiple building automation systems. Modbus is standard, and BACnet or LonTalk are available options.

Web interface provides the capability to set up, view, and adjust humidifier functions via Ethernet, either directly or remotely through a network.

USB port allows firmware updates and data backup and restore.

Cycle counter triggers a message when it's time to replace the contactor.

Real-time clock allows time-stamped alarm and message tracking.

Programmable outputs allow remote signaling and device activation.

Data logging allows controller data to be downloaded to a PC for viewing and analysis.

Enhanced diagnostics include:

- Test outputs function using keypad/display or Web interface to verify component operation
- Test humidifier function using simulated demand to validate performance

1. **CONTROLLER RECEIVES A CALL FOR HUMIDITY**
   When the RH level in the humidified space drops below set point, the humidifier controller receives a call for humidity and calculates a corresponding electrical current. The controller closes the contactor, which energizes the electrodes. If there is not enough water in the steam cylinder, the fill valve opens and water enters the steam cylinder.

2. **ENERGIZED ELECTRODES BOIL WATER INTO STEAM**
   When the water level in the steam cylinder rises to touch the electrodes, electrical current flows through the water between the electrodes. Electrical resistance in the water causes the water to heat up and boil into steam. The steam flows through the steam outlet and through steam hose or tubing to the XT steam blower or dispersion assembly, where it is discharged into the airstream.

3. **ELECTRICAL CURRENT INCREASES TO MEET DEMAND**
   As the amount of water covering the electrodes increases, current flow increases. The fill valve remains open until the amperage increases to 10 percent above the current corresponding to the demand signal. Then the fill valve closes, and the water boils into steam.

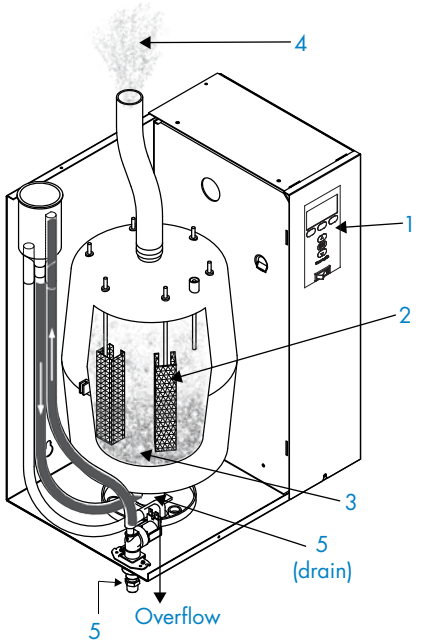
4. **WATER CONTINUES TO BOIL INTO STEAM**
   As the water boils into steam, the amount of water covering the electrodes decreases, and current flow decreases. When current flow decreases to 10 percent below the current corresponding to the demand signal, the fill valve opens to increase the water level in the steam cylinder, which increases current flow and steam production.

5. **CONTROLLER INITIATES DRAIN/FILL EVENTS TO FLUSH CONDUCTIVE IONS**
   As steam production continues, the concentration of conductive ions in the water increases, eventually leading to increased electrical current through the water. An algorithm monitors water conductivity and auto tunes drain and fill cycles to keep electrical current within demand parameters. This optimizes humidifier performance based on water conditions and steam production.

   The humidifier has user-selectable drain water tempering. When drain water tempering is selected, drain water is automatically cooled before entering the drain.

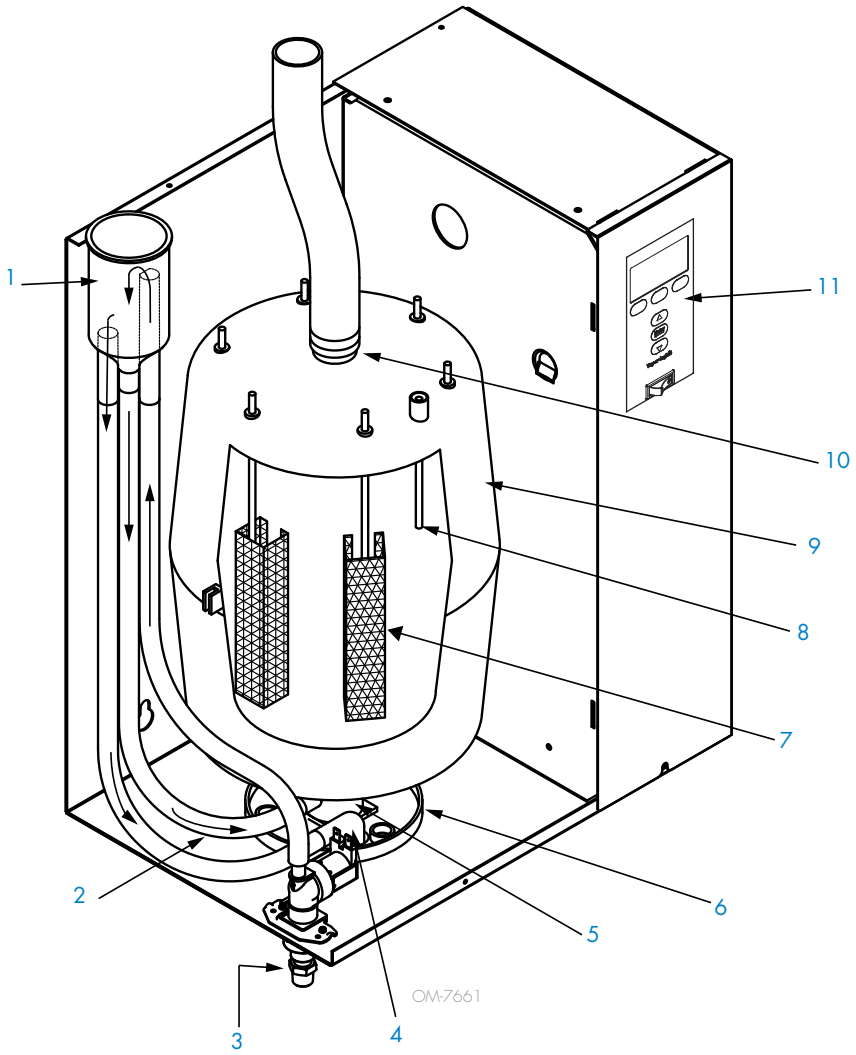
Humidifier performance is optimized based on water conditions and steam production. An algorithm in the on-board controller auto tunes drain and fill cycles to keep electrical current within demand parameters.

XT SERIES PRINCIPLE OF OPERATION



XT SERIES HUMIDIFIER COMPONENTS

Model XTP shown



1. **FILL CUP**
   Accepts supply water from fill valve and returned condensate from remote steam blower.

2. **FILL HOSE**
   Connects fill cup to steam cylinder. Water in fill cup enters bottom of steam cylinder.

3. **FILL VALVE**
   Controls flow of supply water and is connected to fill cup. Supply water connection is under cabinet.

4. **OVERFLOW**
   Overflow to drain prevents fill cup from overfilling.

5. **DRAIN**
   Drain valve at bottom of cylinder opens to allow water to exit.

6. **DRAIN CUP**
   Accepts drain water from cylinder and overflow from fill cup.

7. **ELECTRODES**
   Electrical current between electrodes heats water into steam.

8. **HIGH WATER SENSOR**
   Filling stops if water reaches high water sensor.

9. **STEAM CYLINDER**
   Where water boils and steam is produced. Indicator on control panel prompts user when time to replace steam cylinder.

10. **STEAM OUTLET**
    Steam generated in steam cylinder rises through steam outlet and travels to steam blower or dispersion assembly through steam hose or tubing.

11. **CONTROL PANEL**
    Controller in cabinet controls all humidifier functions. See Page 4.

DriSteem XT Series humidifiers are ideal for finished spaces and applications where space is limited. Electrical and plumbing connections are easily accessible for hassle-free installation.

No cleaning required. Just replace the affordable steam cylinder when prompted.

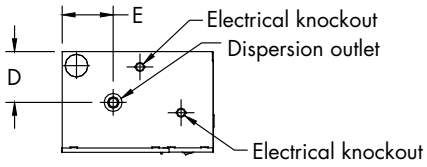
Insert a USB flash drive into the USB port on the controller board to perform firmware updates or back up and restore data (Model XTP).

Dimensions

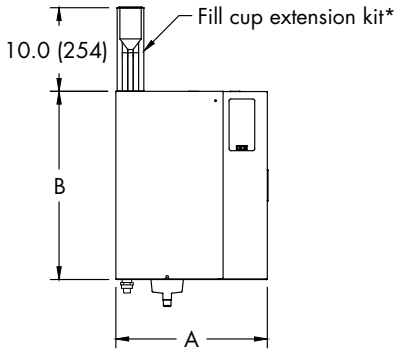
FIGURE 8-1: XT SERIES HUMIDIFIER DIMENSIONAL DRAWINGS

Models XTP 002 through 048

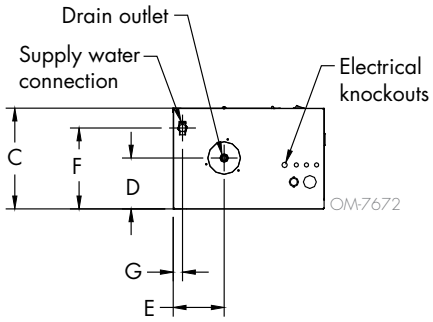
Top



Front

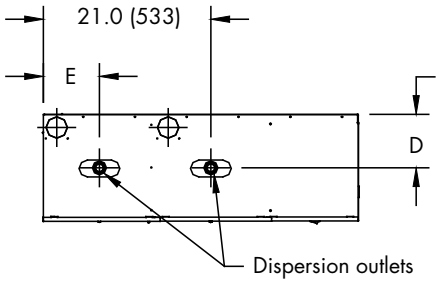


Bottom

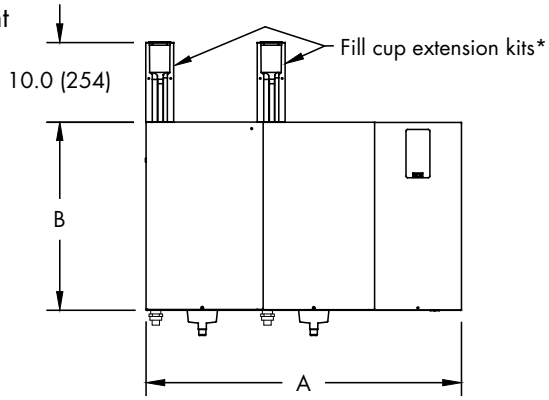


Models XTP 050 through 096

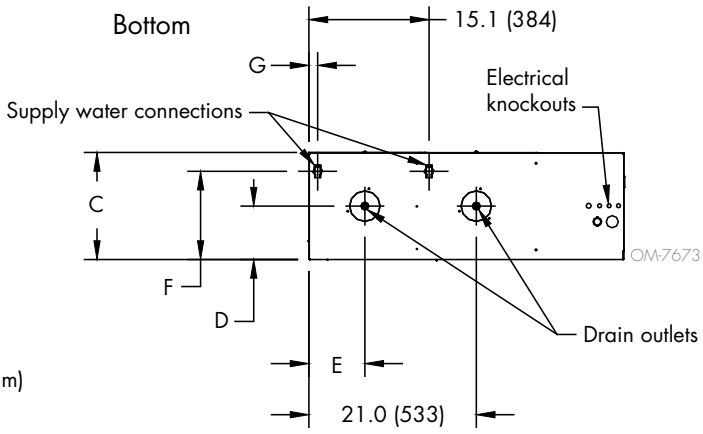
Top



Front



Bottom



Notes:

* Fill cup extension (Figure 8-1) is required for the following:
- All XT Series humidifiers using Ultra-sorb or Rapid-sorb
- When developed length of steam tubing is more than 20' (6 m) and duct static pressure exceeds 2" wc (498 Pa)

- Labeled dimensions: inches (millimeters).
- See mounting dimensions in Figure 10-1.

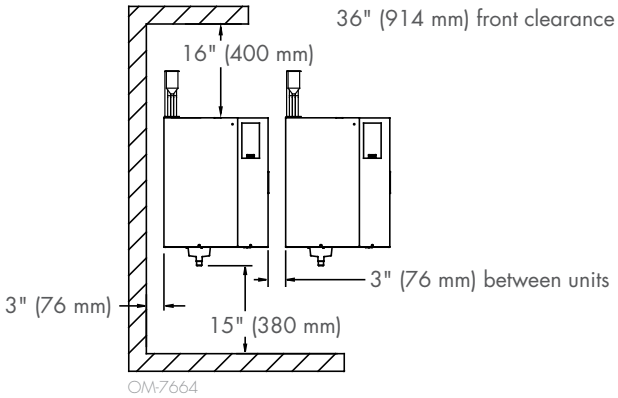
Table 9-1: Dimensions by model number

Dimension	Description	Model XTP							
		002, 003, 006		010, 017		025, 033, 042, 048		050, 067, 083, 096	
		inches	mm	inches	mm	inches	mm	inches	mm
A	Cabinet width	14.6	370	17.7	450	19.9	504	39.6	1005
B	Cabinet height	20.6	523	24.1	612	25.6	650	25.6	650
C	Cabinet depth	8.7	221	11.8	300	13.4	340	13.4	340
D	Cabinet back edge to steam/drain outlet centers	4.5	114	6.0	152	6.7	170	6.7	170
E	Cabinet left edge to steam/drain outlet centers	4.4	112	6.0	152	7.0	178	7.0	178
F	Cabinet back edge to supply water connection center	6.7	170	9.5	241	11.1	282	11.1	282
G	Cabinet left edge to supply water connection center	1.0	25	1.0	25	1.1	28	1.1	28

Table 9-2: Weights by model number

	Model XTP									
	002, 003		006		010, 017		025, 033, 042, 048		050, 067, 083, 096	
	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
Shipping weight	37	17	37	17	50	23	64	29	139	63
Maximum operating weight	38	17	46	21	79	36	115	52	219	99

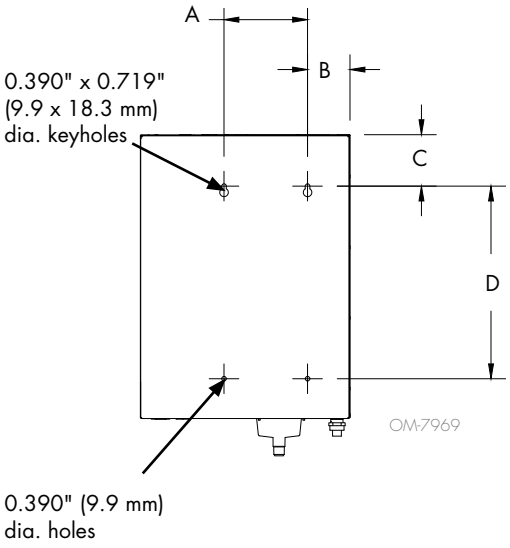
XT SERIES HUMIDIFIER RECOMMENDED MINIMUM CLEARANCES



Mounting keyhole locations

FIGURE 10-1: XT SERIES HUMIDIFIER MOUNTING KEYHOLE LOCATIONS

Models XTP 002 through 048



Models XTP 050 through 096

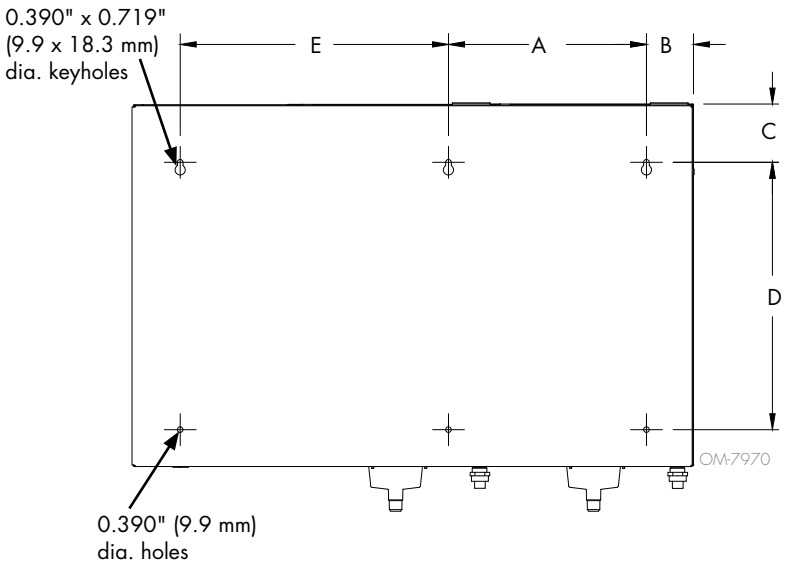
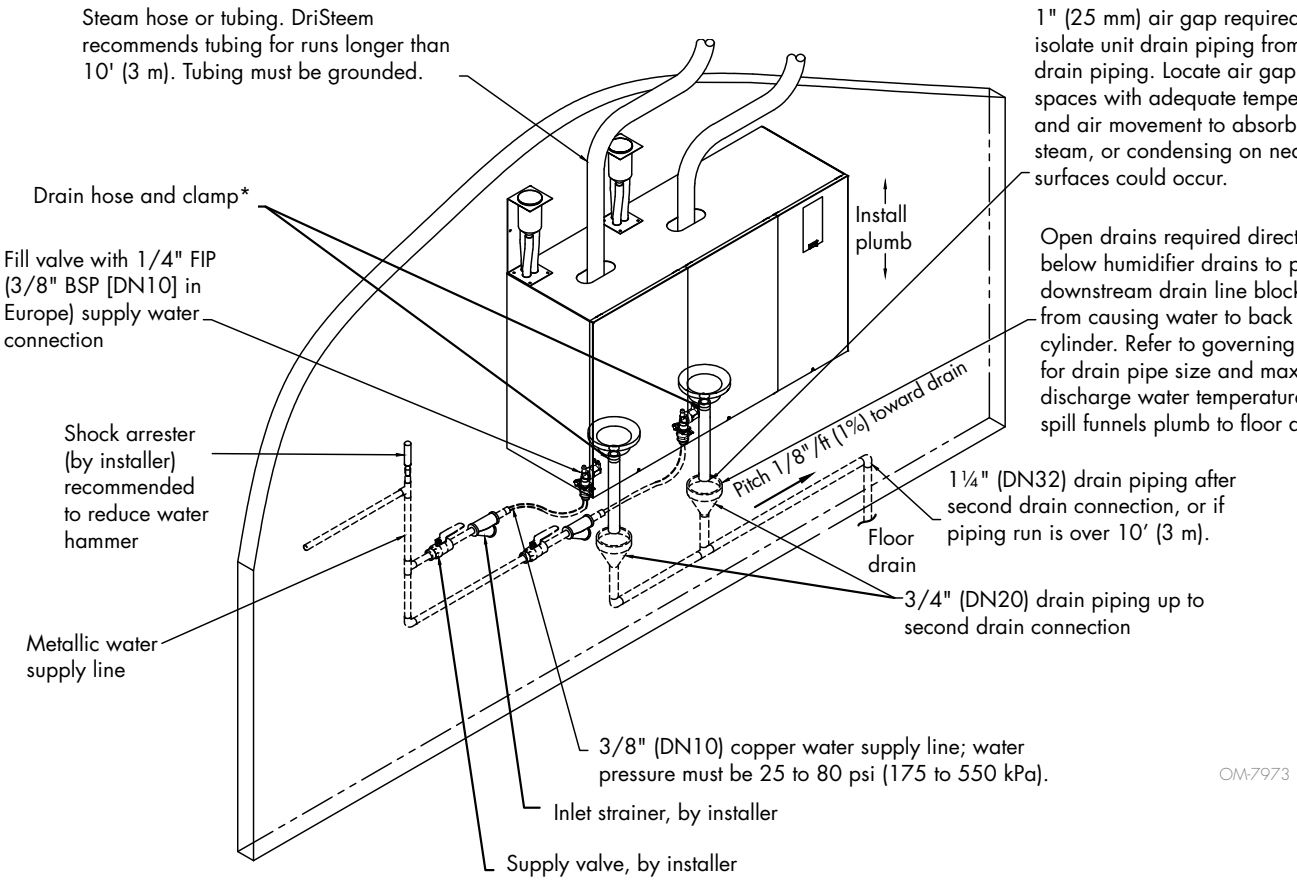


Table 10-1:
XT Series humidifier mounting keyhole dimensions

Dimension	Model XTP							
	002, 003, 006		010, 017		025, 033, 042, 048		050, 067, 083, 096	
	inches	mm	inches	mm	inches	mm	inches	mm
A	3.9	100	7.1	180	7.5	190	14.0	356
B	3.0	75	3.6	92	3.4	86	3.3	84
C	3.2	81	4.4	112	4.1	104	4.1	104
D	14.0	355	16.3	414	18.9	480	18.9	480
E	—	—	—	—	—	—	19.0	483

FIGURE 11-1: XT SERIES HUMIDIFIER FIELD PIPING OVERVIEW



Notes:
- Dashed lines indicate provided by installer.
- Two-cylinder model shown.

* Ships with humidifier

Steam dispersion options

Model LV:
Vertical tubes

Model LH:
Horizontal tubes

Rapid-sorb dispersion tube system

Ultra-sorb Model MP
Lowest total installed cost

ULTRA-SORB MODELS LV AND LH

Most versatile

- Guaranteed, short non-wetting distances — install within inches of downstream devices
- Available with high efficiency dispersion tubes
- Horizontal or vertical air flows

Capacity: Up to 1850 lbs/hr (840 kg/h) per panel

HIGH-EFFICIENCY DISPERSION TUBES OPTION

For new and existing Ultra-sorb, Rapid-sorb, single dispersion tube

- Increases tube capacity up to 6 lbs/hr (2.7 kg/h)
- Up to 85% reduction in wasted energy, airstream heat gain, and condensate production
- Plenum approved for in-duct installation

RAPID-SORB® DISPERSION TUBE SYSTEM

Multiple tubes, short non-wetting distance

- Short non-wetting distance, compared to single dispersion tube
- Horizontal or vertical airflows
- Install Rapid-sorb header inside or outside duct
- Available with High-Efficiency Dispersion Tubes

Capacity: Up to 2100 lbs/hr (955 kg/h) per system

SINGLE DISPERSION TUBE

Installation flexibility

- Low-capacity dispersion for horizontal or vertical airflows.
- Available as a High-Efficiency Dispersion Tube

Capacity: Up to 97 lbs/hr (38 kg/h)

Model MP: *Lowest total installed cost*

- **Same side steam inlet and drain** for reduced piping
- **In-frame drain piping** maximizes available face dimensions and minimizes blank-off requirements.
- **Integral steam header** allows clear space on exterior wall of AHUs or ducts
- **Capacity**
  Pressurized steam: Up to 2720 lbs/hr (1235 kg/h)
  Nonpressurized steam: Up to 700 lbs/hr (318 kg/h)

XT STEAM BLOWERS

XT steam blowers, designed to disperse steam directly into large open spaces, are particularly useful in finished spaces and rooms where there are no air-handling ducts.

There are two XT steam blower models:

SDU-006, for capacities up to 20 lbs/hr (9.1 kg/h), can be directly mounted on Models XTP 002 through 006.

SDU-017, for capacities up to 50 lbs/hr (22.7 kg/h), can be directly mounted on Models XTP 010 and 017.

XT Series humidifiers can be configured to operate with one or two steam blowers. Multiple SDU-017 are used remotely with Model XTP 025 or 033. See Table 13-1.

For more information on XT steam blowers, see Pages 20 and 21.

Table 13-1:
Single or multiple XT steam blowers for XT Series humidifiers*

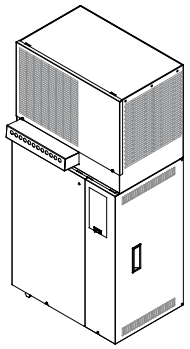
Model XTP	SDU-006 per kit	SDU-017 per kit
002	1	—
003	1	—
006	1	—
010	—	1
017	—	1
025	—	2
033	—	2
042 through 096	n/a	n/a

* XT steam blowers are sold as kits to match the associated XT Series humidifier. The number of XT steam blowers per kit are shown in this table.

TOP- AND REMOTE-MOUNTED XT STEAM BLOWER

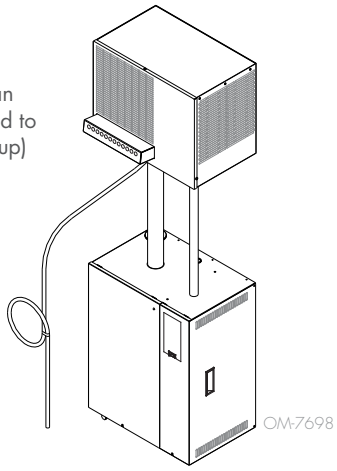
Mounted on top of humidifier

Condensate returned to steam cylinder fill hose



Mounted remotely from humidifier

Condensate returned to open drain (condensate can also be returned to humidifier fill cup)



One XT Series humidifier with two XT steam blowers

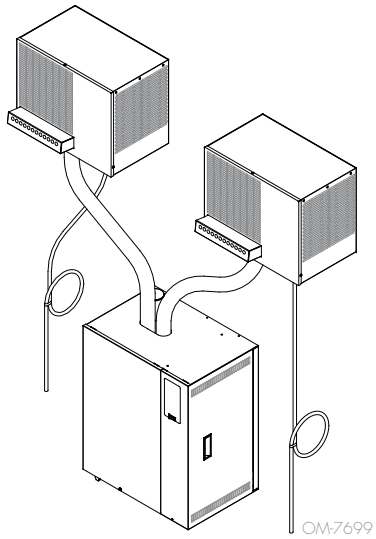
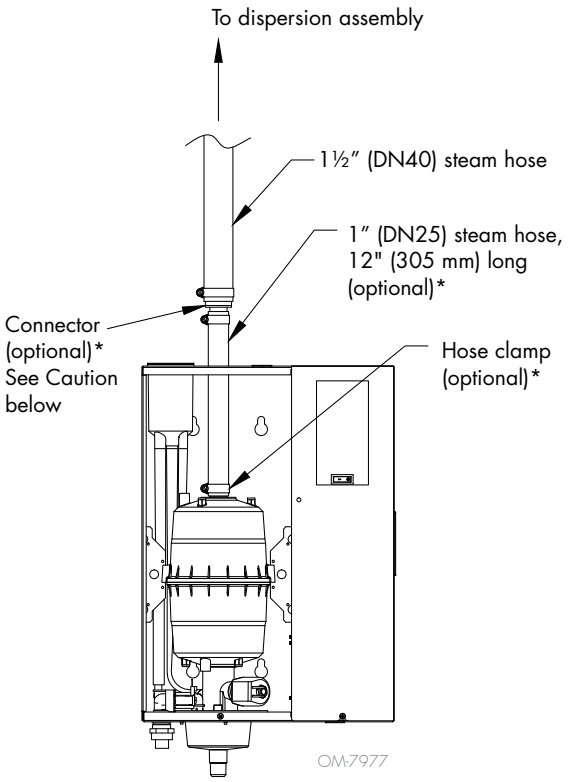
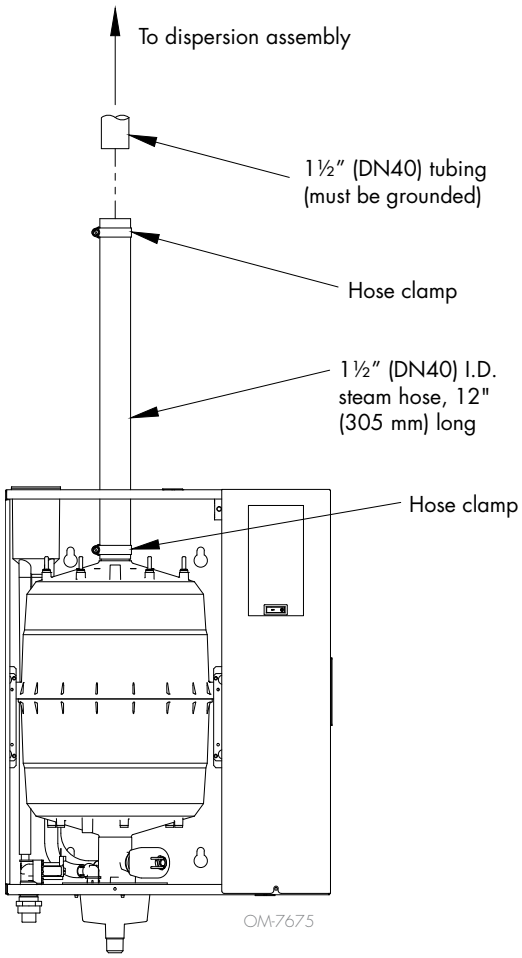


FIGURE 14-1: STEAM OUTLET CONNECTIONS, XTP MODELS 002 THROUGH 025

Steam outlet connections to steam hose (Models XTP 002 through 006)



Steam outlet connections to tubing (Models XTP 010 through 025)



* Provided in optional connector kit Part No. 191070-100 (see XT Series Humidifier IOM)

CAUTION

Connector kit location

Install the connector for increasing from 1" to 1½" (DN25 to DN40) hose or tube immediately above the XT Series humidifier as shown above.

Failure to install the connector kit immediately above the humidifier will cause system pressure fluctuations and increase cylinder pressure, steam velocity, and condensate noise.

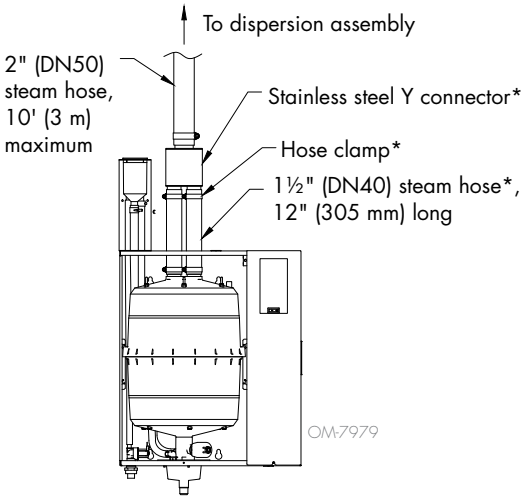
FIGURE 15-1: STEAM OUTLET CONNECTIONS WITH HOSE, MODELS XTP 033 THROUGH XTP096 WITHIN 10' (3 M) OF DISPERSION ASSEMBLY

⚠ WARNING

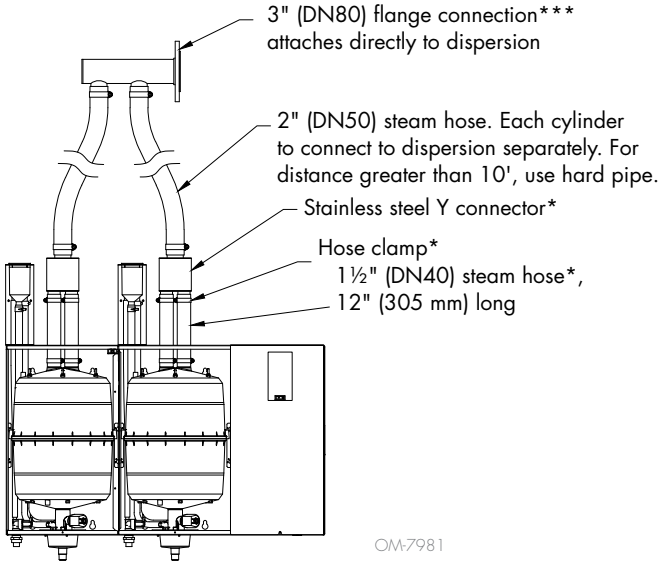
Preventing back pressure/abnormal operation in dual cylinder humidifiers and installations where two individual units are connected to a single dispersion panel.

Read and follow all steam hose installation instructions. Failure to follow these instructions could result in excessive back pressure or abnormal operation of the unit. Severe personal injury or damage to the unit may result.

Models XTP 033, 042, and 048



Models XTP 067 through 096

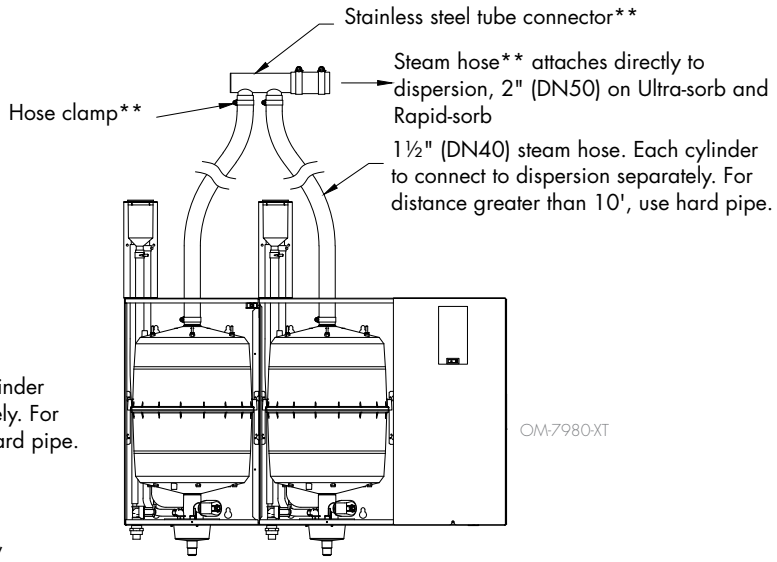


Notes:

- For horizontal runs longer than 5' (1.5 m) or vertical runs long than 10' (3m), tubing is required). Do not use steam hose.

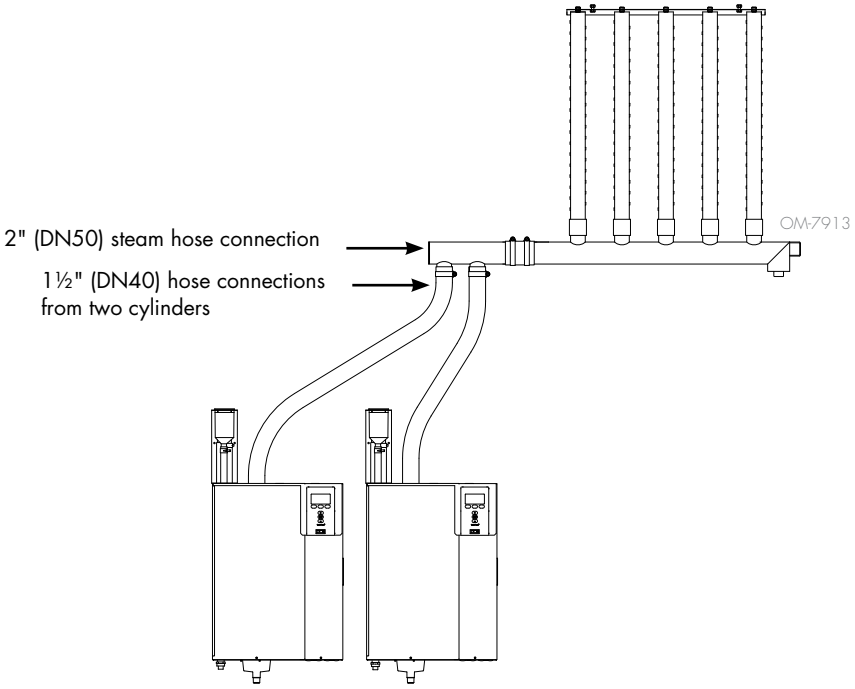
* Provided in optional connector kit Part No. 191070-101
** Provided in optional connector kit Part No. 191070-002
*** Provided in optional connector kit Part No. 162825-202F

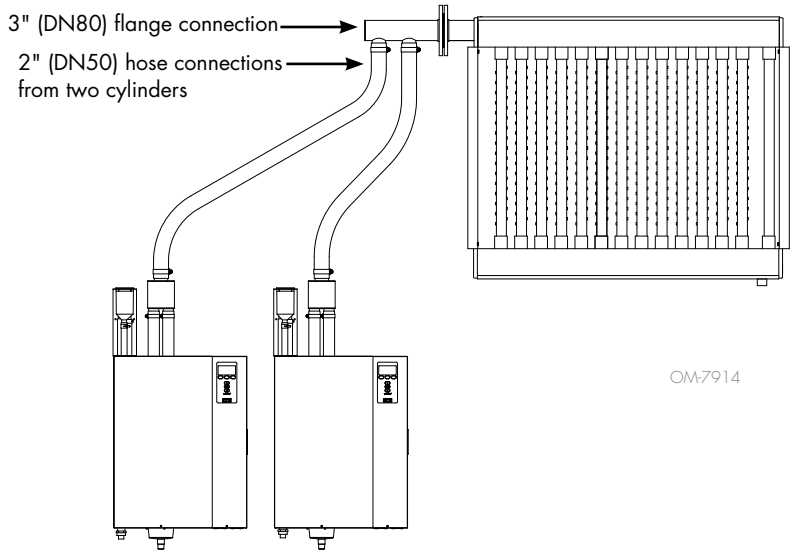
Model XTP 050



Dispersion: Steam outlet connections with hose

FIGURE 16-1: CONNECTING TWO CYLINDERS TO A DISPERSION ASSEMBLY





⚠ WARNING

Preventing back pressure/abnormal operation in dual cylinder humidifiers and installations where two individual units are connected to a single dispersion panel.
Read and follow all steam hose installation instructions. Failure to follow these instructions could result in excessive back pressure or abnormal operation of the unit. Severe personal injury or damage to the unit may result.

Notes:

- For two cylinders, connect the stainless steel tube connector directly to the dispersion inlet as shown. The diameter and pitch of the tube connector must match the inlet diameter and pitch of the dispersion unit.
- **Always run separate steam tubing from each cylinder to the connection of the dispersion device. Only connect a maximum of two cylinders to any single dispersion unit.**

To maximize humidifier performance, see Tables 17-1 and 17-2, and follow all installation recommendations in the *XT Series Humidifier IOM*, available at www.dristeem.com.

Table 17-1:
Insulated 1½" (DN40) steam tubing maximum lengths for Models XTP 002 through 017

Model	Maximum developed length*	
XTP	ft	m
002	13	4.0
003	25	7.6
006	50	15.2
010**	50	15.2
017**	50	15.2

Notes:
- For larger XT Series humidifier models, see Table 17-2.
- Values in this table are based on condensate flowing with steam (steam tubing pitched toward dispersion device).

* Maximum developed lengths are based on 5% steam loss in tubing. Developed length equals measured length plus 50% of measured length to account for fittings.

** Values in this table are based on duct static pressure of 2" wc (498 Pa). If maximum developed length is more than 20' (6 m) and duct static pressure exceeds 2" wc (498 Pa), a fill cup extension kit is required (see Page 20).

Table 17-2:
Maximum steam carrying capacity and length of interconnecting steam hose and tubing for Models XTP 025 through XTP096

Model	DriSteem steam hose*						Copper or stainless steel tubing (Insulate tubing to minimize loss of capacity and efficiency.)					
	Hose I.D.		Maximum capacity per cylinder†		Maximum length††		Tube size		Maximum capacity per cylinder†		Maximum developed length†††	
XTP	inches	DN	lbs/hr	kg/h	ft	m	inches	DN	lbs/hr	kg/h	ft	m
025, 050**	1½	40	75	34.0	10	3	1½	40	75	34.0	100	30
033, 067**	2	50	100	45.4	10	3	2	50	100	45.4	100	30
042, 083**	2	50	125	56.7	10	3	2	50	125	56.7	100	30
048, 096**	2	50	143	65.0	10	3	2	50	143	65.0	100	30

Notes:
- See Table 17-1 for XT Series humidifiers with lower capacities using 1½" steam tubing.
- Values in this table are based on XT Series humidifiers with fill cup extensions, and condensate flowing in direction of steam (steam hose or tubing pitched toward dispersion device).

* When using steam hose, use DriSteem steam hose for best results. Field-supplied hose may have shorter life and may cause foaming in cylinder, resulting in condensate discharge at dispersion assembly. Do not use steam hose for outdoor applications.

** These models have two steam cylinders.

† For Models XTP 050 through XTP096, capacities listed are maximum steam carrying capacity per tube attached to each cylinder, with separate steam tubing from each cylinder to connection on dispersion device. See Page 16.

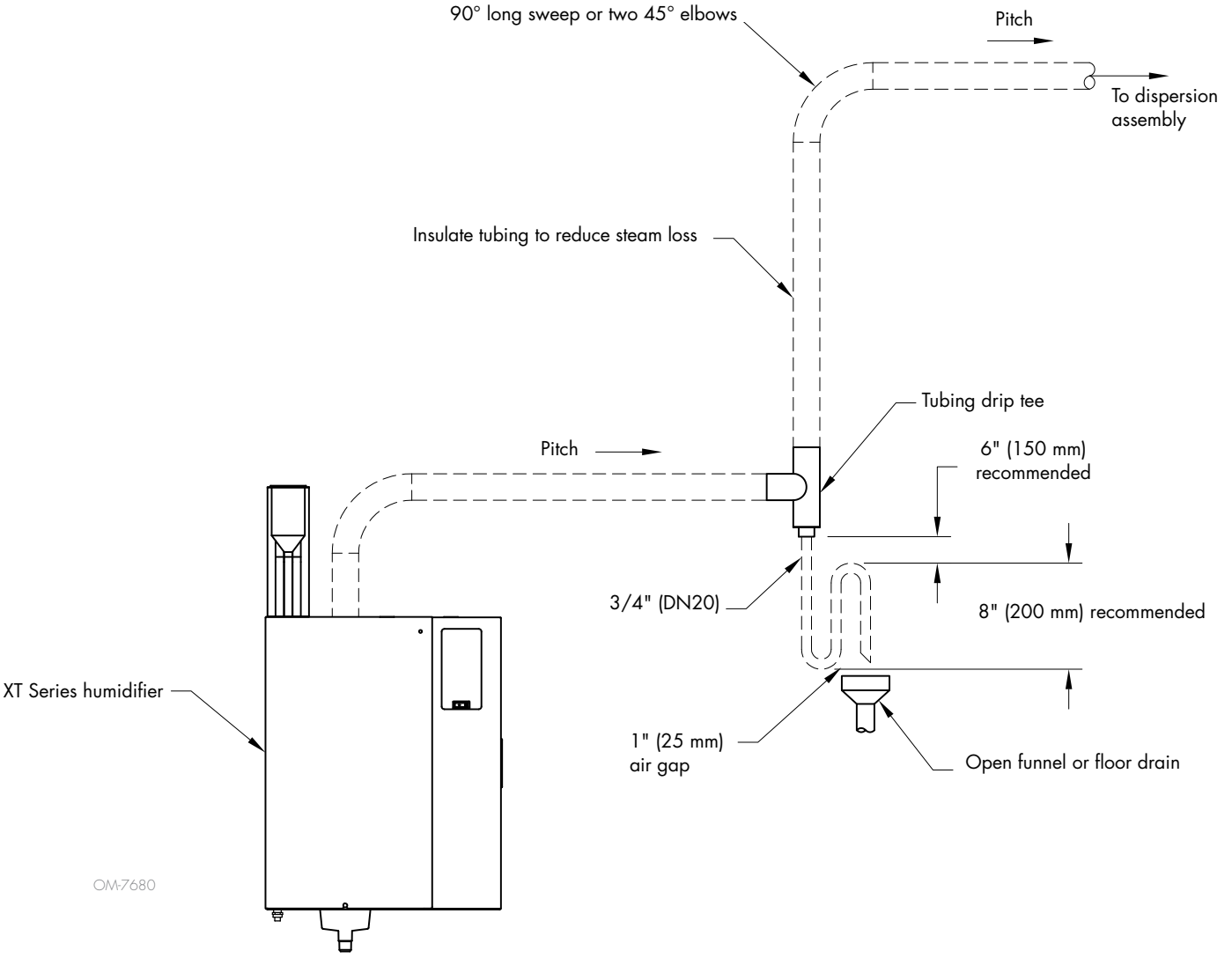
†† DriSteem typically recommends 10' (3 m) maximum steam hose length pitched at 2"/ft (15%). Steam hose tends to sag if not supported for its full length. Sagging leads to collecting condensate and system pressure issues. Tubing is less prone to sagging and can allow for 1/8"/ft (1%) pitch minimum and longer runs.

††† Developed length equals measured length plus 50% of measured length to account for fittings.

Piping: From humidifier to dispersion assembly

When a vertical riser is required in the steam tubing (shown below), a drip tee is required in order to eliminate a condensate collection point that will restrict steam flow.

FIGURE 18-1: DETAIL OF VERTICAL RISER DRIPS



Models XTP 050 through XTP 096 have capacities requiring dispersion devices with condensate drains (Figure below). For these models, DriSteem recommends the following:

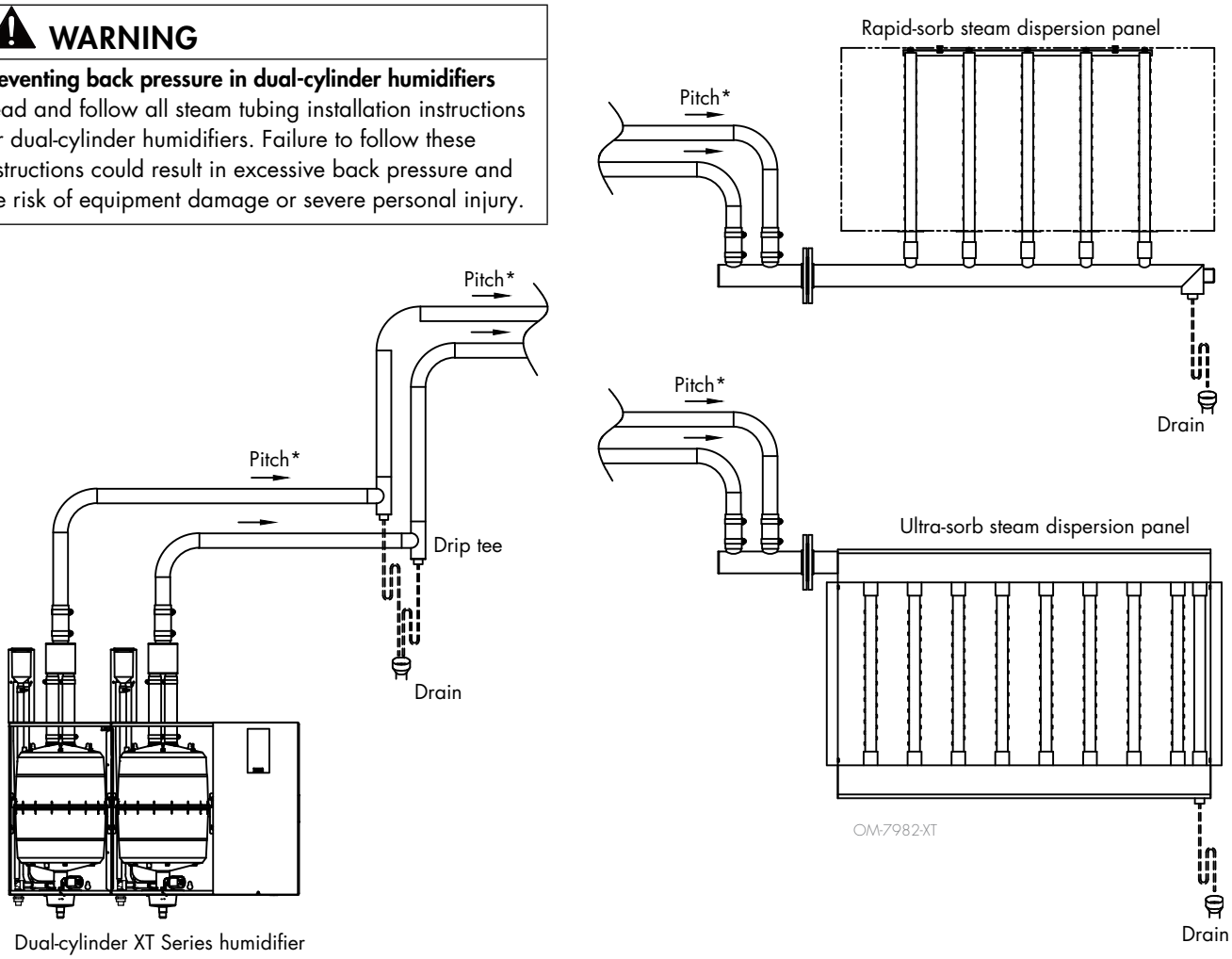
- Run separate steam tubing from each cylinder to connection on dispersion device.
- Pitch steam tubing toward dispersion device.

The installer should not attempt to drain condensate back to the cylinder. When a vertical riser is required in the steam tubing, a drip tee is required in order to eliminate a condensate collection point that will restrict steam flow.

FIGURE 19-1: DUAL-CYLINDER XT SERIES HUMIDIFIER CONNECTED TO RAPID-SORB OR ULTRA-SORB WITH RISER DRIPS IN STEAM SUPPLY LINES

WARNING

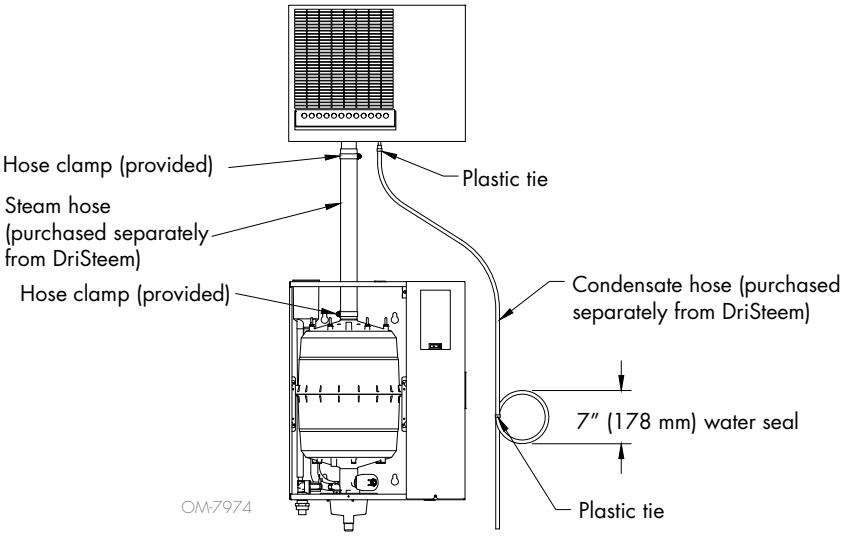
Preventing back pressure in dual-cylinder humidifiers
Read and follow all steam tubing installation instructions for dual-cylinder humidifiers. Failure to follow these instructions could result in excessive back pressure and the risk of equipment damage or severe personal injury.



Notes:
* Pitch 1/8"/ft (1%) minimum toward dispersion panel.
• See installation notes in Figure 15-1.

Piping: XT steam blowers

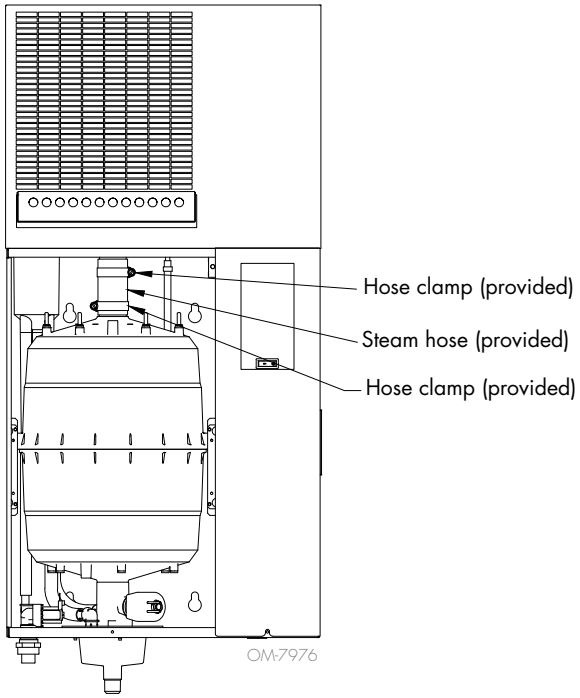
FIGURE 20-1: PIPING FROM XT SERIES HUMIDIFIER TO REMOTE XT STEAM BLOWER



To open drain or humidifier fill cup.
Water seal is required, whether condensate is piped to open drain or returned to humidifier fill cup.

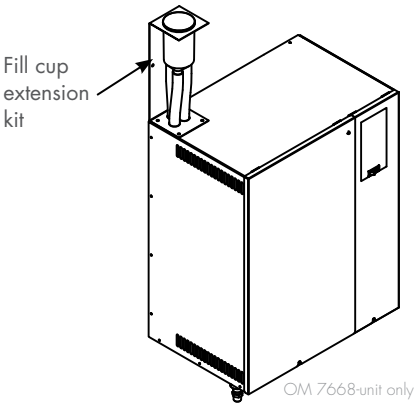
Notes:
- Maximum recommended distance between humidifier and XT steam blower is 10' (3 m).
- Models XTP 042 through 096 are not intended for use with a steam blower.

FIGURE 20-2: PIPING FROM XT SERIES HUMIDIFIER TO TOP-MOUNTED XT STEAM BLOWER



Notes:
- Maximum recommended distance between humidifier and XT steam blower is 10' (3 m).
- Models XTP 025 and 033 are not intended for use with a direct-mounted steam blower.
- Models XTP 042 through 096 are not intended for use with a steam blower.

FIGURE 20-3: FILL CUP EXTENSION KIT

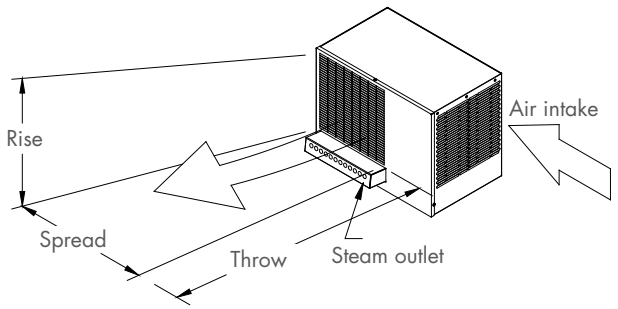


Fill cup extension is required for the following:
- All XT Series humidifiers using Ultra-sorb or Rapid-sorb
- When developed length of steam tubing is more than 20' (6 m) and duct static pressure exceeds 2" wc (498 Pa)

On a call for humidity, the controller closes the contactors to energize the humidifier electrodes and the XT steam blower. When the call for humidity is satisfied, the controller opens the humidifier contactor, which stops the steam blower.

As steam is discharged from the XT steam blower, it quickly cools and turns to a visible fog that is lighter than air. As this fog is carried away from the XT steam blower by the airstream, it tends to rise toward the ceiling. If the fog contacts solid surfaces (columns, beams, ceiling, pipes, etc.) before it disappears, it can condense and drip. The greater the space relative humidity, the further the fog will rise, spread, and throw.

XT STEAM BLOWER RISE, SPREAD, AND THROW



OM-7686

Table 21-1 lists the maximum rise, spread, and throw non-wetting distances for XT Series humidifiers with XT steam blowers. Surfaces cooler than ambient temperature, or objects located within this minimum dimension, can cause condensation and dripping. To avoid steam impingement on surrounding areas, observe the minimum non-wetting distances in the table.

XT steam blowers are field wired to the XT Series humidifier blower terminals. A wiring diagram is included with the XT steam blower.

Table 21-1:
XT steam blower minimum non-wetting distances

Model	Nominal steam capacity		30% RH @ 70 °F (21 °C)						40% RH @ 70 °F (21 °C)						50% RH @ 70 °F (21 °C)						60% RH @ 70 °F (21 °C)					
			Rise		Spread		Throw		Rise		Spread		Throw		Rise		Spread		Throw		Rise		Spread		Throw	
XTP	lbs/hr	kg/h	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
002	5	2	0.7	0.2	0.9	0.3	1.9	0.6	0.8	0.2	1.2	0.4	2.1	0.6	1.1	0.3	1.5	0.5	2.5	0.8	1.5	0.5	1.5	0.5	3.2	1.0
003	10	5	1.4	0.4	1.9	0.6	3.8	1.2	1.7	0.5	2.4	0.7	4.3	1.3	2.3	0.7	3.0	0.9	5.0	1.5	3.0	0.9	3.0	0.9	6.5	2.0
006	20	8	2.5	0.8	2.8	0.9	6.5	2.0	3.0	0.9	3.3	1.0	7.4	2.3	3.8	1.2	4.0	1.2	8.5	2.6	4.0	1.2	4.0	1.2	10.0	3.0
010	30	14	3.1	0.9	3.0	0.9	7.5	2.3	3.6	1.1	3.4	1.0	8.7	2.7	4.3	1.3	4.0	1.2	9.5	2.9	4.2	1.3	3.5	1.1	11.0	3.4
017	50	22	3.3	1.0	3.1	0.9	9.6	2.9	3.8	1.2	3.5	1.1	10.7	3.3	4.4	1.3	4.0	1.2	12.0	3.7	4.8	1.5	4.7	1.4	14.0	4.3
025*	75	34	3.3	1.0	3.1	0.9	9.6	2.9	3.8	1.2	3.5	1.1	10.7	3.3	4.4	1.3	4.0	1.2	12.0	3.7	4.8	1.5	4.7	1.4	14.0	4.3
033*	100	45	3.3	1.0	3.1	0.9	9.6	2.9	3.8	1.2	3.5	1.1	10.7	3.3	4.4	1.3	4.0	1.2	12.0	3.7	4.8	1.5	4.7	1.4	14.0	4.3

Rise: Minimum non-wetting height above the steam outlet of the XT steam blower
Spread: Minimum non-wetting width from the steam outlet of the XT steam blower
Throw: Minimum non-wetting horizontal distance from the steam outlet of the XT steam blower
* These models use two XT steam blowers.

mc_051712_1240

FIGURE 22-1: XT STEAM BLOWER DIMENSIONS

SDU-006E shown

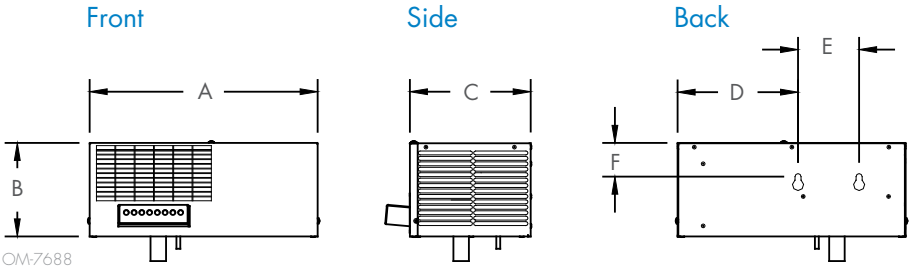
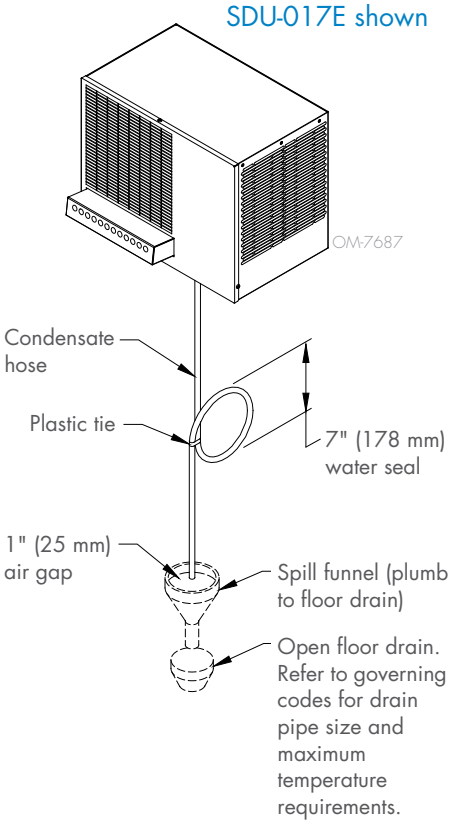


FIGURE 22-2: PIPING CONDENSATE TO DRAIN



Note:
Shown with condensate to open drain. Condensate can also be returned to cup through field-installed hole in fill cup cap.

Table 22-1: XT steam blower dimensions

Dimension	SDU-006E		SDU-017E	
	inches	mm	inches	mm
A	14.7	373	17.9	455
B	6.0	152	13.8	350
C	7.8	198	11.0	279
D	3.0	76	3.6	91
E	3.9	99	7.1	180
F	2.7	69	4.2	107

Table 22-2: XT steam blower specifications

Model	Maximum capacity		Shipping weight		Operating weight		Volume airflow		Current draw at 115V (50/60 Hz)	Input power	Sound*
	lbs/hr	kg/h	lbs	kg	lbs	kg	cfm	m^3/min			
SDU-006E	20	9.1	14.0	6.4	11.0	5.0	106	3.0	0.16 A	17 W	49 dBA
SDU-017E	50	22.7	29.0	13.2	24.0	10.9	665	18.8	0.23 A	23 W	53 dBA

Notes:
* Sound measurements taken 6.5' (2 m) in front of XT steam blower cabinet.
• XT steam blowers ship separately from XT Series humidifiers.

Electrode humidifiers function very differently from other humidifier technologies. Some of the factors to consider are steam output consistency, efficiency, cylinder life, and start-up time. Understanding these factors and the variables that impact them will result in proper application of this technology.

Recommended supply water conductivity for DriSteem electrode humidifiers is 350 to 1250 µS/cm (roughly comparable to water hardness of 10 to 36 grains per gallon)

OUTPUT CONSISTENCY AND EFFICIENCY

DriSteem's controller algorithm optimizes steam output consistency, water efficiency, and energy efficiency by managing the frequency and duration of drain and fill events for the supply water being used. The frequency and duration of drain and fill events is proportional to the conductivity of the supply water. Less conductive supply water requires less frequent drain and fill events, resulting in more consistent steam output and more efficient use of energy and water.

CYLINDER LIFE

Hard water scale coats the electrodes and eventually requires a cylinder replacement. The harder the water, the more frequent the need for a new cylinder.

Softened water is an option in some facilities. Because softened water ions stay in solution to much higher concentrations than hard water ions, softened water does not coat the electrodes nearly as much as hard water, potentially extending cylinder life.

There are benefits and trade-offs to consider when the application allows a choice between hard and softened water:

- The benefit of softened water is longer cylinder life (depending on water chemistry), but the trade-off is more frequent drain and fill events.
- The benefit of hard water is less frequent drain and fill events but may result in more frequent cylinder replacement.

START-UP TIME

Start-up time is how long it takes the humidifier to reach output from a given demand when first installed and after cylinder changes. The more conductive the water, the shorter the start-up time.

WATER CONDUCTIVITY

In electrode humidifiers, steam output is directly related to the resistance of the water in the steam cylinder and, therefore, the conductivity of the water between the electrodes. Higher water levels cover more electrode surface and result in more steam; lower water levels cover less electrode surface and result in less steam. Since water conductivity and water level both correlate to steam output, DriSteem's algorithm monitors conductivity and manages drain and fill events to optimize humidifier performance and provide proper steam output.

DRAIN AND FILL EVENTS

As the water in the cylinder boils into steam, the concentration of conductive ions increases until it reaches a threshold that triggers a drain and fill event. This rids the cylinder of highly conductive water and replaces it with less conductive fill water. The more conductive the fill water and the higher the demand, the more quickly the threshold is reached, and the more frequently the cylinder automatically drains and fills to stay within the parameters for proper steam output.

DriSteem Corporation
A subsidiary of Research Products Corporation
DriSteem U.S. operations are
ISO 9001:2015 certified

U.S. Headquarters:
14949 Technology Drive
Eden Prairie, MN 55344
800-328-4447 or 952-949-2415
952-229-3200 (fax)

European office:
Marc Briers
Grote Hellekensstraat 54 b
B-3520 Zonhoven
Belgium
+3211823595 (voice)
+3211817948 (fax)
E-mail: marc.briers@dristeem.com

Form No. XT-Catalog-0119

EXPECT QUALITY FROM THE INDUSTRY LEADER
For more than 45 years, DriSteem has been leading the industry with creative and reliable humidification solutions. Our focus on quality is evident in the construction of the XT Series humidifier. DriSteem leads the industry with a Two-year Limited Warranty and optional extended warranty.

For more information
www.dristeem.com
sales@dristeem.com

For the most recent product information visit our website:
www.dristeem.com