

Quick Start Installation Guide

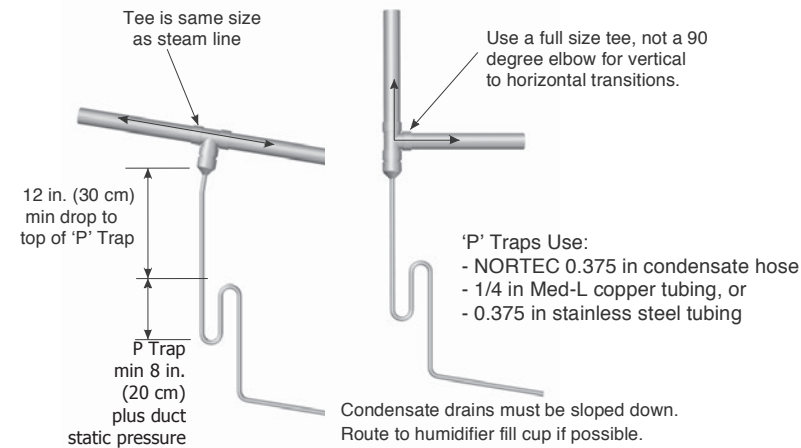
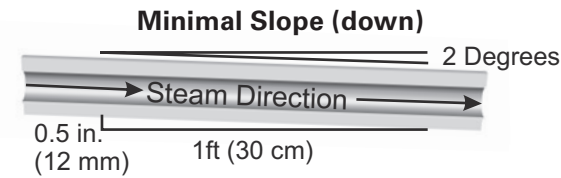
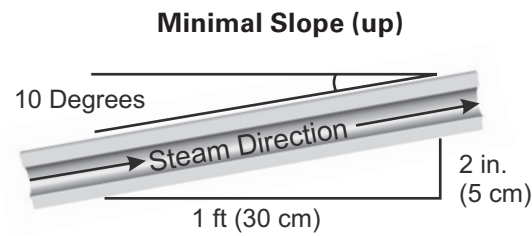


Mounting
Plumbing
Electrical
Steam Distribution

Atmospheric Steam Lines

Install Requirements

1. Use ONLY copper, stainless steel tube, or Nortec supplied steam line for the atmospheric steam distribution line.
2. Follow recommended steam line materials, size, and length. See tables to right.
3. Slope the steam lines, minimum 2" for every horizontal foot against the flow of steam, 1/2" for every horizontal foot with the flow of steam.
4. The first vertical 12" of steam line off the top of the humidifier must not have any bends or turns.
5. Insulate copper or steel tube steam lines with 1.0 in. (2.5 cm) pipe insulation.
6. Steam lines must not have any restrictions or condensate trapping which could cause back pressure.
7. Trap condensate (Use full size 'T' for Traps) at all low points.
8. Install a condensate trap at every 15 foot / 4.5 meters of steam line.



Recommended Steam Line Material

Steam Line Material	Lb/hr (kg/hr)	Steam Line Length		Steam Line Description
		ft	m	
Copper Tube	0-100 (0-45)	0-90	0-27	1 1/2 in. MED-L Tubing (1.625 in. OD)
	101-250 (46-113)	0-180	0-54	3 in. MED-L Tubing (3.125 in. OD)
	251-650 (114-295)	0-260	0-79	**4 in. MED-L Tubing (4.125 in. OD)
*Stainless Steel Tube	0-100 (0-45)	0-90	0-27	1.75 inch Tube x 0.065 inch thick wall
	101-250 (46-113)	0-180	0-54	3 inch Tube x 0.065 inch thick wall
	251-650 (114-295)	0-260	0-79	**4 inch Tube x 0.065 inch thick wall
Nortec Hose	31-100 (14-45)**	<15	<4.5	***Part Number 1328820 (1 3/4")

Note: * Use only stainless steel tube for reverse osmosis and deionized water applications.

** Use 2 x 4 in. steam lines for steam capacities higher than 750 lb/hr (307 kg/hr)

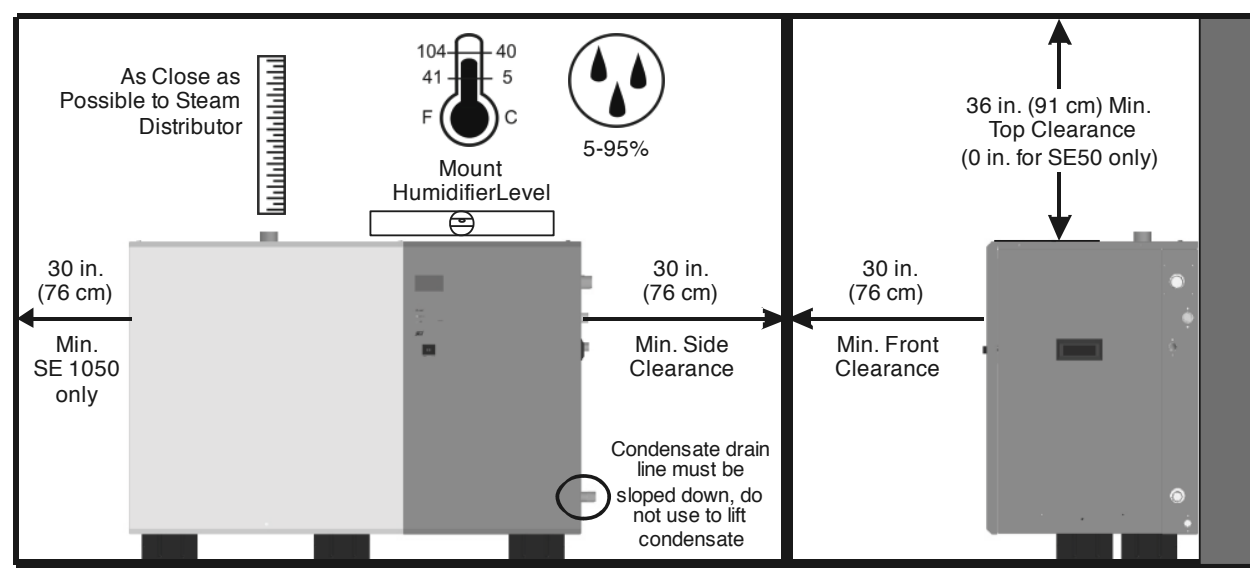
*** Use one steam hose per 100 lb/hr (45 kg/hr) of output.

Maximum Recommended Length of Steam Line

Unit Size	Steam Output		Steam Outlet and Line Size		Maximum Length ft (m)	Possible Loss		Possible Loss at Max. length	
	lb/hr (kg/hr)		Copper	(SST)		lb/hr/ft (kg/hr/m)		lb/hr (kg/hr)	
50	50 (23)		1 1/2	(1 3/4)	37 (11)	0.11	(0.16)	4	(2)
100	100 (45)		1 1/2	(1 3/4)	90 (27)	0.11	(0.16)	10	(4.5)
175	175 (80)		3	(3)	90 (27)	0.16	(0.24)	14	(6.5)
250	250 (114)		3	(3)	180 (55)	0.16	(0.24)	28	(13)
375	375 (170)		4	(4)	180 (55)	0.22	(0.33)	39	(18)
525	525 (239)		4	(4)	220 (67)	0.22	(0.33)	48	(22)
750	750 (341)		2 X 4	(4)	260 (79)	0.44	(0.66)	114	(52)
1050	1050 (477)		2 X 4	(4)	260 (79)	0.44	(0.66)	114	(52)

Equivalent Length of Some Common Fittings

Tube Diameter in.	90 Degree Elbow ft (m)	45 Degree Elbow ft (m)	Side Outlet Tee ft (m)	Gate Valve ft (m)	Globe Valve ft (m)
1 1/2 or 1 3/4	3.5 (1)	1.75 (0.5)	7 (2.1)	0.8 (2.4)	34 (10)
3	5 (1.5)	2.5 (0.75)	11 (3.3)	1.1 (3.1)	54 (16)
4	8 (2.4)	4 (1.2)	15 (4.5)	1.6 (0.5)	80 (24)



Model	Net/Full Weight – lbs (kg)
50	125/180 (57/82)
100-175	267/423 (121/192)
250-375	355/599 (161/272)
525-750	529/992 (240/450)
1050	703/1384 (318/628)

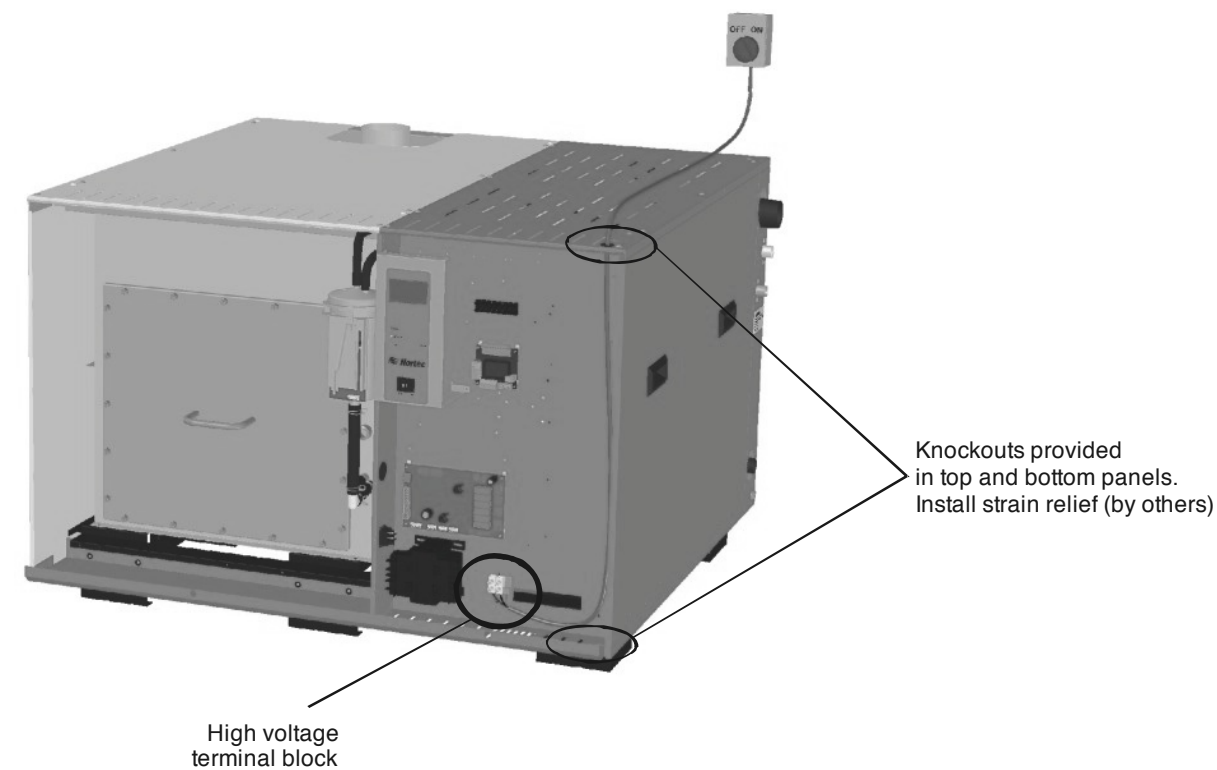
**NOTE: Condensate drain line must be sloped downward to boiler condensate return. Use pump (by others) or stand (optional) if necessary.*

Mounting

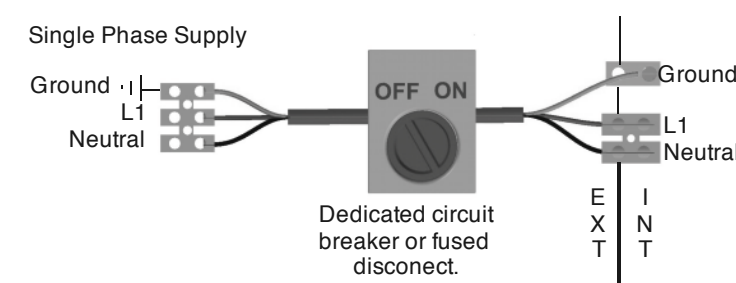
Mount either floor mounted or on a mounting stand (stand optional). SE 50 models can also be ceiling mounted with the optional ceiling installation kit, part number 2520345.

1. Install on a level platform in an area with ambient temperature 41-104 °F (5 – 40 °C) relative humidity 5-95% (non-condensing).
2. Ensure mounting surface is strong enough to support the full weight of the humidifier and accessories. If mounting on the optional stand, assemble stand according to the instructions provided with the stand and secure stand to the floor via the holes in the leg support plates following any local codes or regulations.
3. Install in location where the electrical power, boiler steam, and drain lines can be connected.

4. Locate the humidifier as close as possible to the steam distributor location, net output will be reduced as a result of heat loss through the steam line.
5. Condensate drain is located close to the bottom of the humidifier. Locate the unit so that condensate lines slopes down to boiler or use pump (by others) to lift to boiler. Use stand if necessary.
6. Avoid mounting humidifier on combustible surfaces including (but not limited to) carpet, tile, or certain insulating materials.
7. Clearance dimensions shown are for reference only and are the minimum required for maintenance of the humidifier. Consult local and national codes before final location and installation.
8. location. Net output will be reduced as a result of heat loss through the steam line.



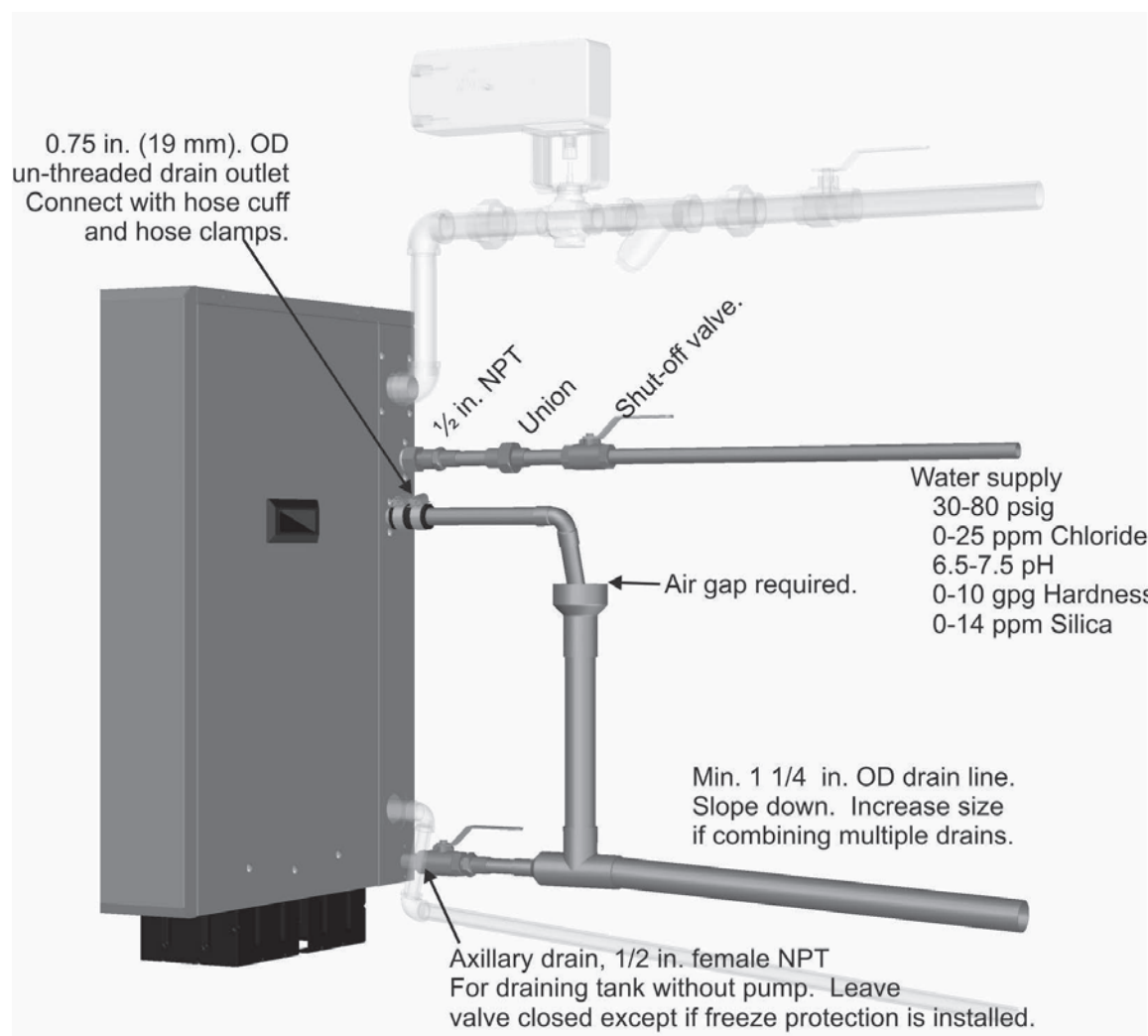
SETC / P Primary Power



Install Requirements

1. Dedicated external fused disconnect must be installed. Fusing must not exceed max circuit protection as indicated on the specification label.
2. An electrical disconnect must be installed within view of the humidifier.
3. Ensure that adequate power is available to carry full humidifier amp draw as indicated on the specification label.
4. All wiring to be in accordance with national and local electrical codes.

WARNING Wiring needs to be performed by a licensed Electrician.
All SE humidifiers operate on 120 VAC, single phase, 60 HZ power. Refer to specification label for power requirements.



Water Supply

1. All water supply and drain line connections must be installed in accordance with local plumbing codes. Nortec accepts no liability for installation code violations.
2. Install water shut off valve and union before humidifier to facilitate servicing.
3. Supply water requirements:
30 - 80 PSIG
Hardness 5-7 gpg
Chlorides 0-25 ppm
Alkalinity 7.5-8.5 pH

Drain Line(s)

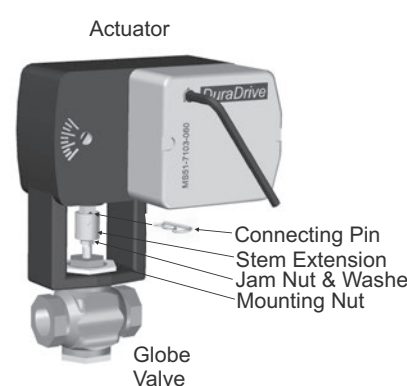
1. Drain line should be a minimum of 1.25" OD copper, sloped away to allow proper drainage.
2. Drain line must have an air gap installed within three feet of the drain outlet.
3. Auxiliary drain connection with manual shut off valve is recommended for all units. Valve to be left closed on units without freeze protection option installed.
4. Drain Water is very hot, do not use plastic pipe for drain or condensate lines, do not drain to public sink. Route to floor drain or equivalent.

Install Requirements

1. Boiler steam supply line design is the responsibility of the installer. Nortec does not accept liability for installation code violations.
2. The SE will operate on supply steam pressures between 5 and 15 psi measured at the globe valve. Pressure exceeding 20 psi will damage the humidifier. If connecting via pressure reducing valve, install a safety relief valve to prevent pressures in excess of 15 psi.
3. Boiler steam supply line must be designed so that design pressure is present at the globe valve when the globe valve is completely open (100% demand).
4. Nortec supplies a globe valve, actuator and wye strainer with each SE humidifier.
5. Humidifier condensate drain should be returned to the boiler and not mixed with water from the humidifier tank or auxiliary drains.
6. The steam supply pressure can be entered into the SETC control software in the 'Control Settings' menu to provide an accurate display of unit output. Pressure Based on page 56 of the 2552940 SE Install and Operations manual.

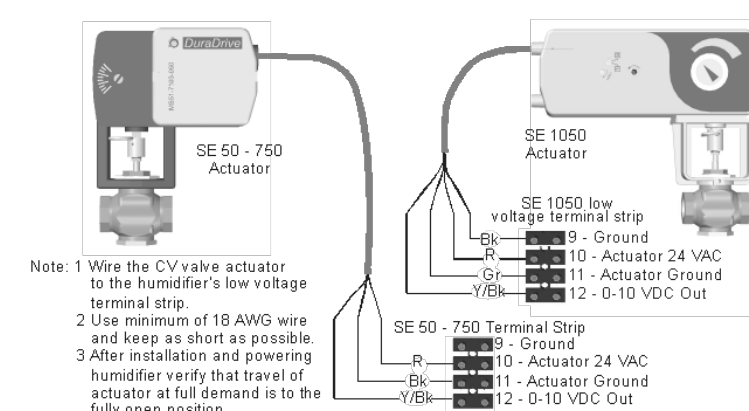
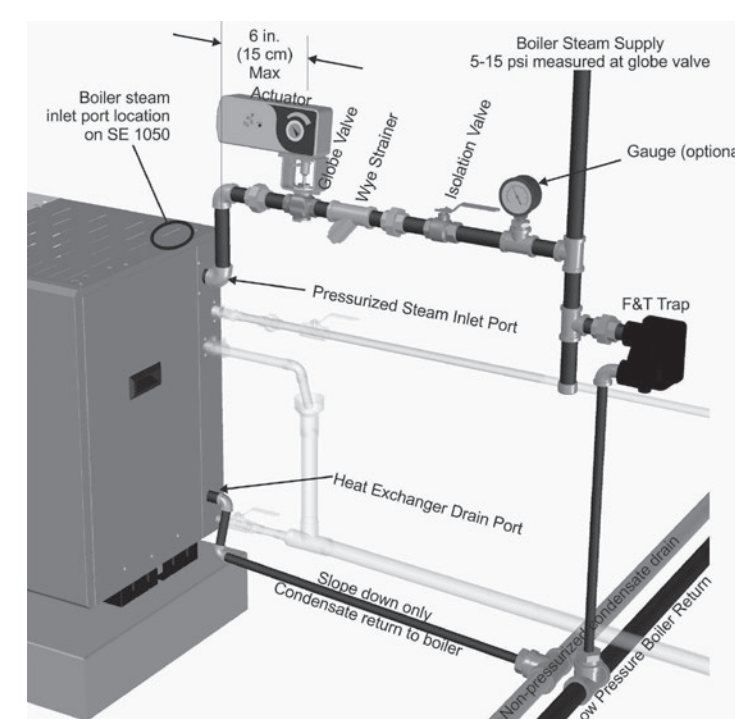
Actuator Mounting

1. Install Jam nut and lock washer on globe valve stem.
2. Thread the stem extension onto the globe valve.
3. Mount the actuator to the globe valve and secure to the valve with the mounting nut.
4. Extend the valve stem, fully closing the globe valve.
5. Load the actuator with the provided allen key, two full turns clockwise.
6. Thread the stem extension until the extension pin hole aligns to the actuator pin hole and secure with the connecting pin.
7. Tighten the jam nut against the stem extension.
8. Ensure the valve completely closes when the actuator is not powered.



Supplied Component Port Size by Humidifier Capacity

Capacity	Globe Valve CV	Valve, Steam Inlet, Wye Port (NPT)	Condensate Port (NPT)
50	2.8	1/2"	3/4"
100	5.5	3/4"	3/4"
175	10	1"	3/4"
250	12	1"	3/4"
375	20	1 1/4"	3/4"
525	28	1 1/2"	1 3/4"
750	40	2"	1"
1050	65	2 1/2"	1 1/4"



All information contained in this Quick Start Guide is for general information purposes only. For complete Nortec installation/operation recommendations for your Nortec equipment, please refer to the installation manual for your specific system, accessories, and components.

All electrical connections must be installed in accordance with local and national electrical code requirements by a licensed electrician.

All water supply and drain line connections must be installed in accordance with local plumbing codes by a licensed plumber.

Nortec does not accept any liability for installations of humidity equipment installed by unqualified personnel or the use of parts/components/equipment that are not authorized or approved by Nortec.



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