



**Important:** Read and save these instructions. This guide to be left with equipment owner.

# Steam Distribution

## Installation Manual

Includes installation instructions for  
steam distributions ASD/BSD/CSD.

## ***Thank you for choosing Nortec.***

INSTALLATION DATE (MM/DD/YYYY)

MODEL #

SERIAL #

CYLINDER #

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# Installation

## Receiving and Unpacking Equipment

- Check packing slip to ensure ALL material has been delivered.
- All material shortages are to be reported to Nortec within 48 hours from receipt of goods. Nortec assumes no responsibility for any material shortages beyond this point.
- Inspect shipping boxes for damage and note on shipping waybill accordingly.
- After unpacking, inspect equipment for damage and if damage is found, notify the shipper promptly.
- All NORTEC products are shipped on an F.O.B. factory basis. Any and all damage, breakage, or loss claims are to be made directly to the shipping company.
- Each distributor is provided with: installation manual, one hose cuff, and two hose clamps.

## Pre-Installation Check

Ensure the total capacity of the humidifier is not higher than the allowable maximum steam capacity of the distributors used.

ASD 10: 22 lbs/hr (8 kg/hr)

ASD: 25 lbs/hr (9 kg/hr)

BSD: 35 lbs/hr (13 kg/hr)

CSD: 115 lbs/hr (45 kg/hr)

## Steam Line Installation

- NORTEC steam hose should only be used on short steam runs below 10 feet.
- Ensure that no condensate produced in the steam line will remain trapped. Steam naturally flows upward and condensate naturally flows downward.
- See material recommended for use in the chart below. To eliminate the metal corrosion, NORTEC does not recommend the use of steel piping.
- Consult the following pages for step by step distributor installation starting with Figure 1.
- Consult the charts below for steam and condensate sizing guidelines when using steam distributors.

**Table 1: Steam Line Material**

	Steam Hose	Copper Tube	Stainless Steel Tube
Short run < 10 feet (3 m)	✓	✓	✓
Long run > 10 feet (3 m)		✓	✓
DI/RO Water			✓

**Table 2: Recommended Material and Size for Steam Run**

Load		Steam Run		Steam Line Material	Steam Line Description
lb/hr	kg/hr	ft	m		
0-30	0-13	0-10	0-3	Copper Tube	¾" MED-L Tubing (7/8" O.D)
<b>0-30</b>	<b>0-13</b>	<b>10+</b>	<b>3+</b>	<b>Copper Tube</b>	<b>1" MED-L Tubing (1 1/8" O.D)</b>
0-30	0-13	0-10	0-3	Stainless Steel Tube	7/8" Tube x 0.049" Thick
<b>0-30</b>	<b>0-13</b>	<b>10+</b>	<b>3+</b>	<b>Stainless Steel Tube</b>	<b>1 1/8" Tube x 0.49" Thick</b>
30-100	13-45	0-20	0-6	Copper Tube	1 ½" MED-L Tubing (1 5/8" O.D)
<b>30-100</b>	<b>13-45</b>	<b>20+</b>	<b>6+</b>	<b>Copper Tube</b>	<b>2" MED-L Tubing (2 1/8" O.D.)</b>
30-100	13-45	0-20	0-6	Stainless Steel Tube	1 ¾" Tube x 0.065" Thick
<b>30-100</b>	<b>13-45</b>	<b>20+</b>	<b>6+</b>	<b>Stainless Steel Tube</b>	<b>2" Tube x 0.065" Thick</b>

Please note that options shown in bold-italic font require that reducers be used at both ends. These extra-large sizes are to allow for better condensation removal in long steam runs. These sizes will not permit you to use hose coupling to connect yourself to either humidifier or distributors.

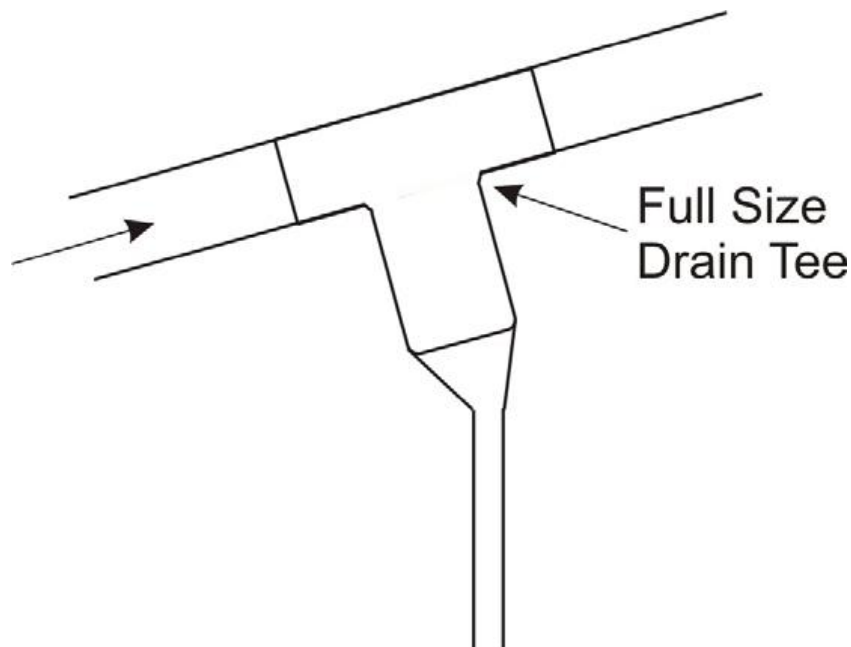
**Table 3: Recommended Condensate Line at Distributor(s)**

Dispersion Method	Condensate Hose	Copper Tube	Stainless Steel Tube
1 x Steam Distributor	3/8" Nortec 1328840	¼" MED-L Tubing (3/8" O.D.)	3/8" Tube 0.049 thick
3 x Steam Distributor	3/8" Nortec 1328840	½" MED-L Tubing (7/8" O.D.)	5/8" Tube 0.049" thick

\* When using more than one distributor, the condensate line should be trapped before joined together.

## Condensate Return Guidelines for Main Steam Lines

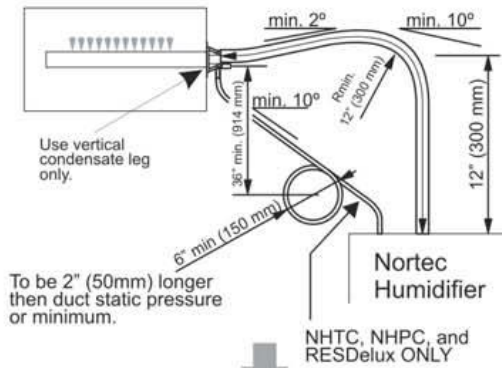
- Use vertical condensate leg of distributor only. Do not over-tighten clamp.
- Condensate traps on steam mains must be located at all low points in the system, at each elevation change and or directional change.
- Horizontal runs of steam must rise 2" per foot (10°) when flow is going upwards away from condensate trap, and fall ½" per foot (2°) when flow is going downwards towards a condensate trap.
- In a horizontal run of the steam main, condensate traps must be located at regular intervals of 20 feet.
- The condensate trap itself is a section of piping connected to the bottom of the main. A full size tee must be used to create a condensate trap to allow the condensate to fall away from the steam flow.
- Vertical drop of the condensate trap should be 1.5 times the diameter of the steam main but no less than 12".
- A P-trap should be installed at the bottom of the condensate trap. The center to center trap height should be 2" greater than duct static pressure.
- All distributors must be individually trapped.



**Figure 1: Drain Tee**

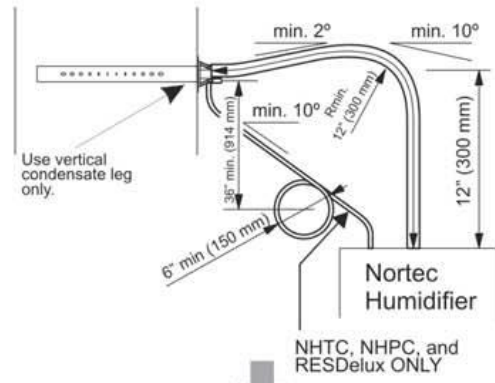
# A

## HORIZONTAL FLOW

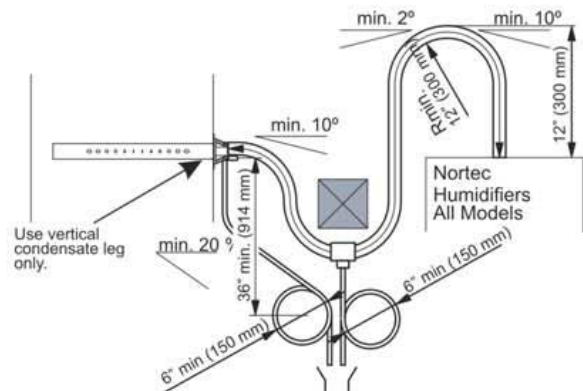
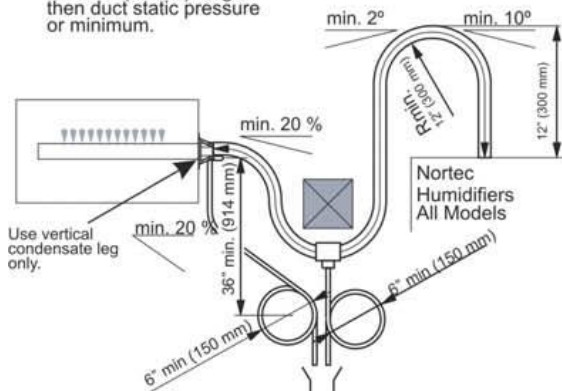
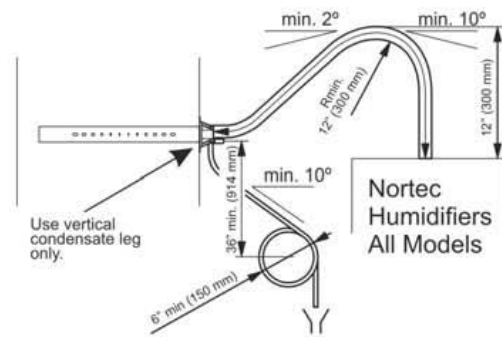
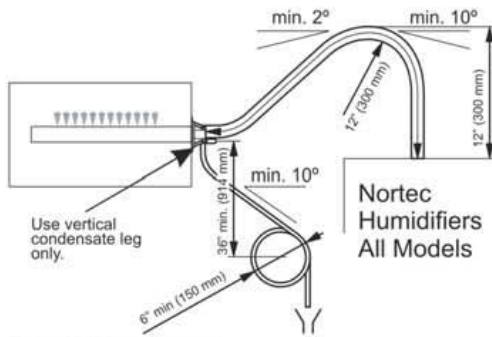


GO TO **C1**

## VERTICAL FLOW



GO TO **B**



GO TO **C1**

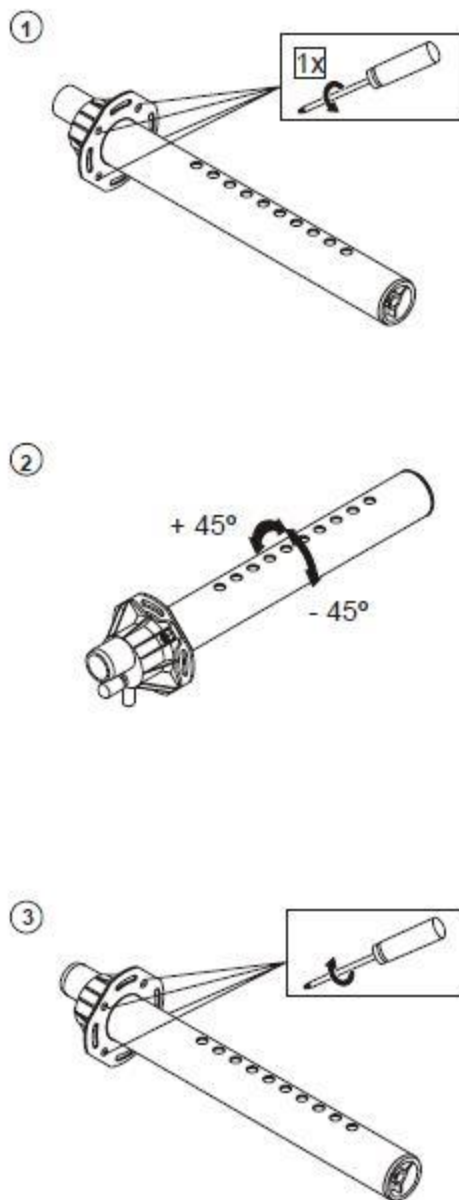
GO TO **B**

Figure 2: Distributor Mounting



## B

Always align distributor holes so that steam is discharged upwards to ensure condensate will remain in the distributor.



↓  
GO TO **C2**

**Figure 3: Vertical Airflow**

# C1

Always align distributor holes so that steam is discharged upwards to ensure condensate will remain in the distributor.

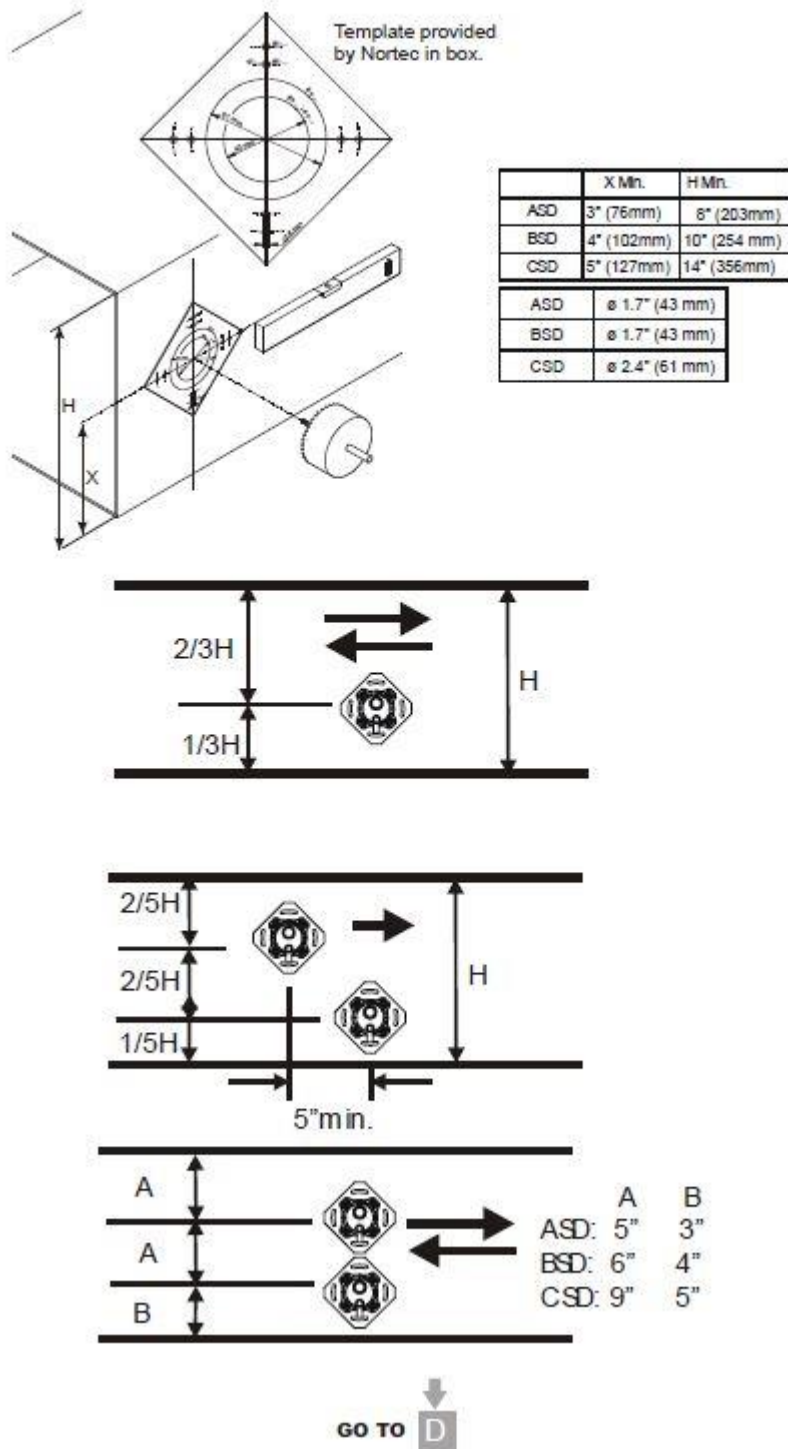
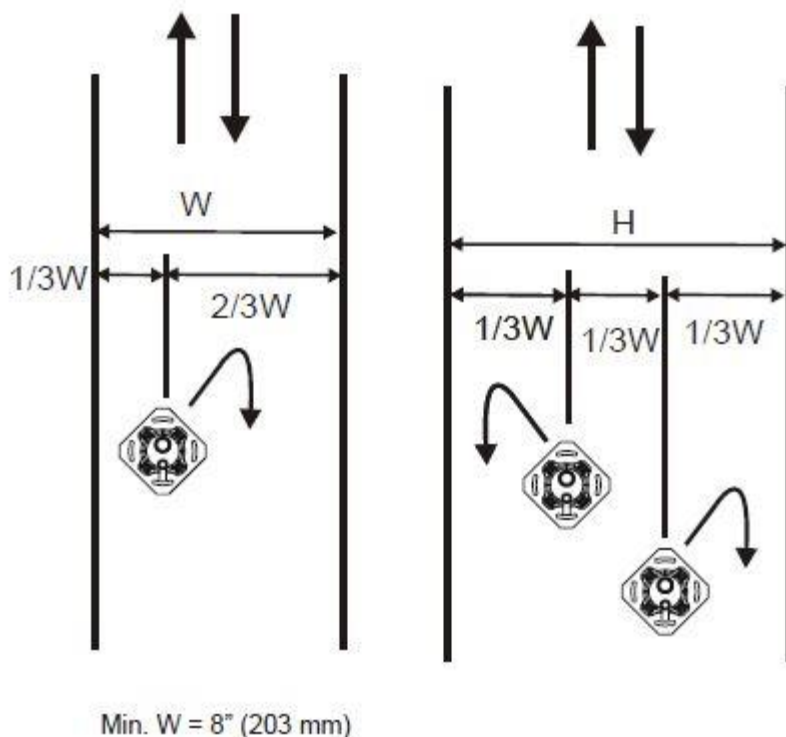


Figure 4: Horizontal Airflow

## C2

Always align distributor holes so that steam is discharged upwards to ensure condensate will remain in the distributor.



GO TO **D**

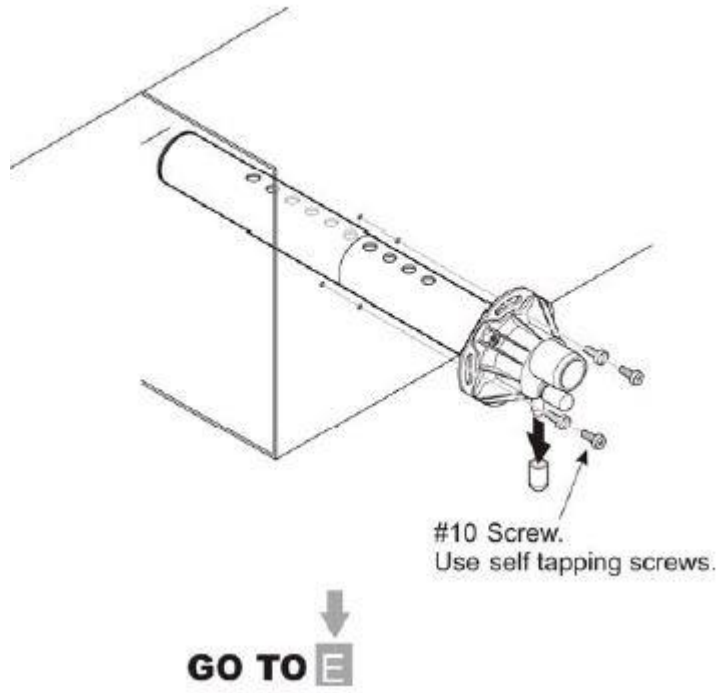
Figure 5: Vertical Airflow

### WARNING

- These installation guidelines apply for duct velocities under 2000 ft/min (610 m/min), please consult factory for higher velocities.
- Please make sure no obstacles (elbow, filter, or diffuser) are located after the distributor in the direction of the airflow closer than the absorption distance calculated for your application.
- Unless you know the exact absorption distance required for the steam absorption into the air steam, the distributor should be located at least 8-10 ft (2-3 m) away from any obstacle it may condense on (elbow, diffuser, filter, etc.).

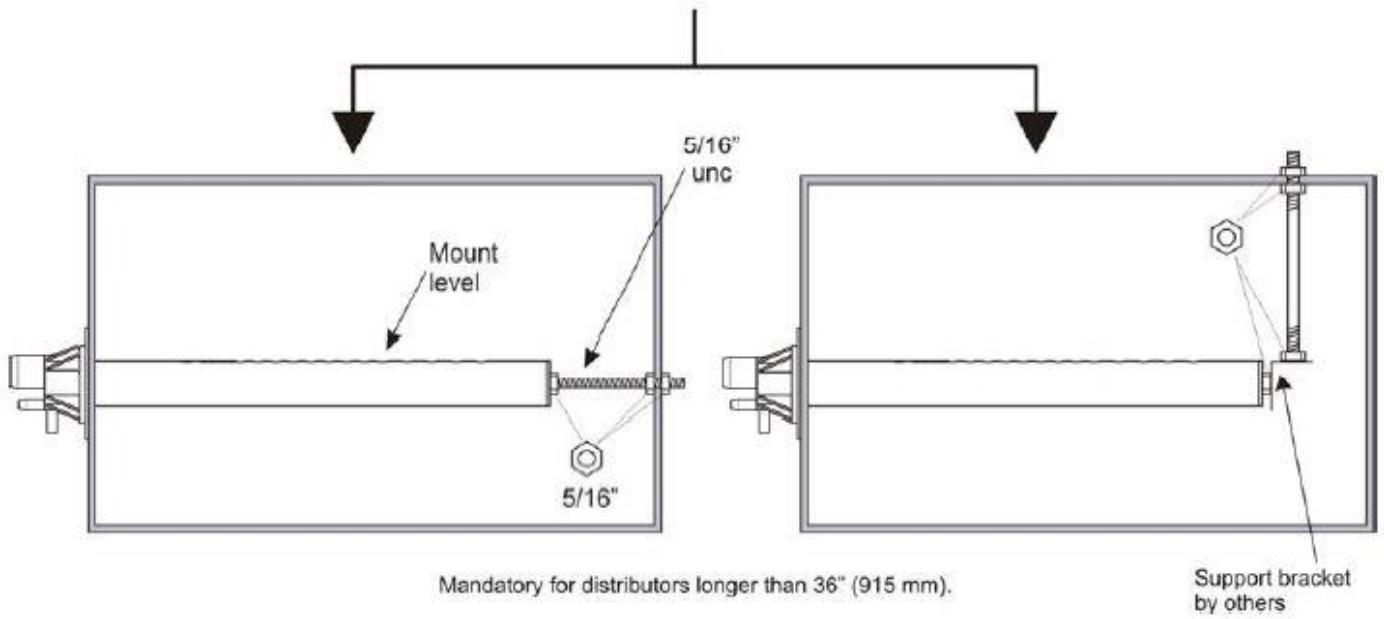


**D**

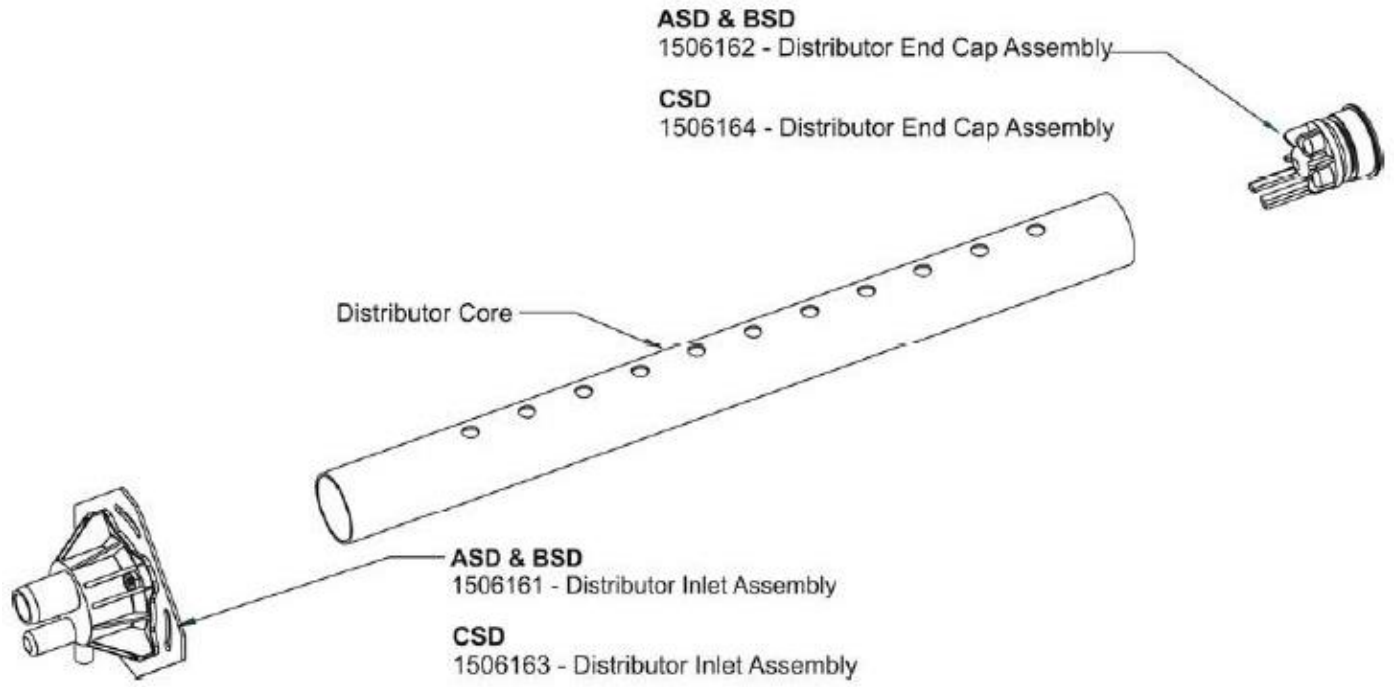


**Figure 6: Distributor Mounting – Horizontal & Vertical Flow**

**E**



**Figure 7: Distributor Mounting**



**Figure 8: Spare Parts**

# Warranty

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Nortec Humidity Inc. and/or Nortec Humidity Ltd. (hereinafter collectively referred to as THE COMPANY), warrant for a period of two years after installation or 30 months from manufacturer's ship date, whichever date is earlier, that THE COMPANY's manufactured and assembled products, not otherwise expressly warranted, are free from defects in material and workmanship. No warranty is made against corrosion, deterioration, or suitability of substituted materials used as a result of compliance with government regulations.

THE COMPANY's obligations and liabilities under this warranty are limited to furnishing replacement parts to the customer, F.O.B. THE COMPANY's factory, providing the defective part(s) is returned freight prepaid by the customer. Parts used for repairs are warranted for the balance of the term of the warranty on the original humidifier or 90 days, whichever is longer.

The warranties set forth herein are in lieu of all other warranties expressed or implied by law. No liability whatsoever shall be attached to THE COMPANY until said products have been paid for in full and then said liability shall be limited to the original purchase price for the product. Any further warranty must be in writing, signed by an officer of THE COMPANY.

THE COMPANY's limited warranty on accessories, not of the companies manufacture, such as controls, humidistats, pumps, etc. is limited to the warranty of the original equipment manufacturer from date of original shipment of humidifier.

THE COMPANY makes no warranty and assumes no liability unless the equipment is installed in strict accordance with a copy of the catalog and installation manual in effect at the date of purchase and by a contractor approved by THE COMPANY to install such equipment.

THE COMPANY makes no warranty and assumes no liability whatsoever for consequential damage or damage resulting directly from misapplication, incorrect sizing or lack of proper maintenance of the equipment.

THE COMPANY makes no warranty and assumes no liability whatsoever for damage resulting from freezing of the humidifier, supply lines, drain lines, or steam distribution systems.

THE COMPANY retains the right to change the design, specification and performance criteria of its products without notice or obligation

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