**FIGURE 4-1: SDU-E REPLACEMENT PARTS**

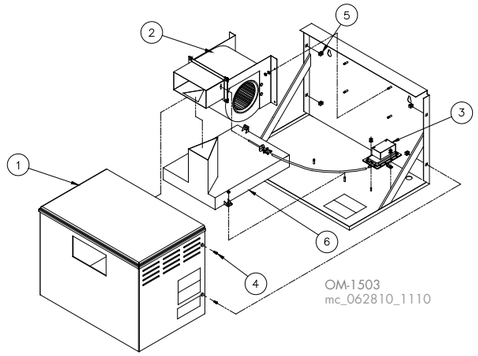


Table 4-1:
SDU-E replacement parts

| No. | Description | Qty. | Part No. |
|---|---|---|---|
| 1 | Shroud | 1 | 330002-001 |
| 2 | Blower, SDU external assembly | 1 | * |
| 3 | Switch, airflow | 1 | 406190 |
| 4 | Screw, 8-32 × ½" Phillips, black | 4 | 700170-007 |
| 5 | Nut retainer, 8-32 | 4 | 409593-001 |
| 6 | Dispersion chamber for SDU with 1½" outlet | 1 | 160445-003 |
| | Dispersion chamber for SDU with 2" outlet | 1 | 160445-004 |

* This is an assembly of multiple parts.

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**FIGURE 4-2: SDU-I REPLACEMENT PARTS**

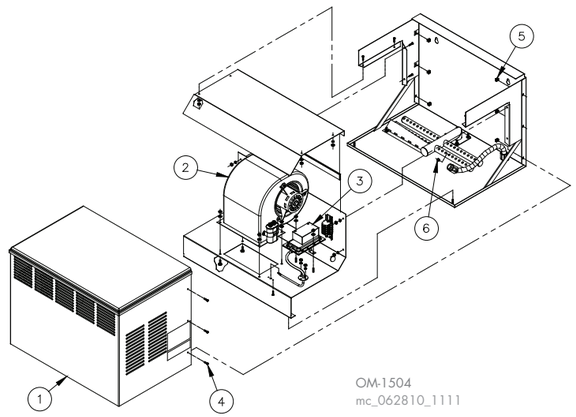


Table 4-2:
SDU-I replacement parts

| No. | Description | Qty. | Part No. |
|---|---|---|---|
| 1 | Shroud | 1 | 330001-002 |
| 2 | Blower, SDU external assembly | 1 | * |
| 3 | Switch, airflow | 1 | 406190 |
| 4 | Screw, 8-32 × ½" Phillips, black | 6 | 700170-007 |
| 5 | Nut retainer, 8-32 | 6 | 409593-001 |
| 6 | Tubelet, 0.375"× 0.375" molded | 44 | 310280-006 |

* This is an assembly of multiple parts.

mc_062810_1113

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952-229-3200 (fax)



Form No. SDU-IOM-EN-0515
Part No. 890000-651 Rev A



# DRISTEEM SPACE DISTRIBUTION UNITS

**MOUNTING SDU-I AND SDU-E**

SDUs can be mounted on a wall directly above a Vapormist humidifier cabinet, 18" above any other DriSteem humidifier, or mounted on a wall remote from the humidifier.

- Installation must comply with governing codes.
- See interconnecting piping requirements, and the drip tee installation instructions in General Piping Instructions.
- Provide at least 6" (150 mm) clearance on each side of the SDU.
- Field wiring is required to connect the SDU fan and airflow proving switch terminals to humidifier electrical panel terminals. Refer to the wiring diagram in the package shipped with your unit. Minimum wire size for field wiring is 18-gauge (1.5 $mm^2$) stranded wire.
- Two 3/8" lag bolts (M10 × 50 mm coach screws) are provided with each fan unit.
- When mounting on a stud wall (studs 16" [406 mm] on center), locate studs and position lag bolts (coach screws) in place so that each of the two lag bolts (coach screws) centers on a stud. Mark hole locations and predrill ¼" (6 mm) diameter pilot holes for a 3/8" × 2" lag bolt (M10 × 50 mm coach screw).
- For hollow block or poured concrete wall mounting, drill appropriate pilot hole for two 3/8" (M10) toggle bolts or two 3/8" (M10) machine bolt lead anchors (expansion bolts). Secure SDU frame in place.
- To provide power to the SDU used with 208V/240V/single-phase and 208V/three-phase humidifiers, run a neutral line with the power supply to provide a 120V circuit for the fan.
- On a call for humidity, the humidifier begins producing steam, and the start relay energizes the SDU blower. When the call for humidity is satisfied, the Vapor-logic controller keeps the blower running to disperse residual moisture using a time delay.

**FIGURE 1-1: SDU-I MECHANICAL DETAIL**

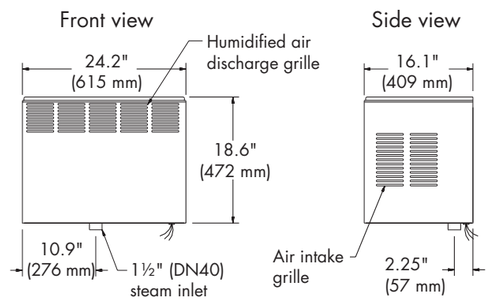


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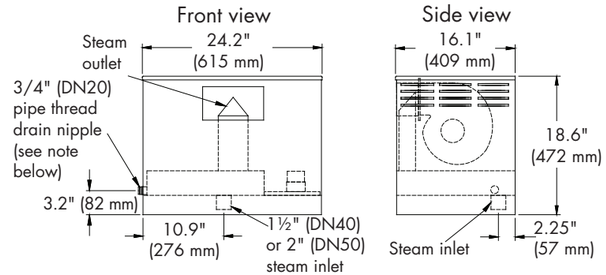
**FIGURE 1-2: SDU-E MECHANICAL DETAIL**

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Note:

Failure to follow the recommendations in this section can result in excessive back pressure on the humidifer. This will result in humidifcation system problems including leaking gaskets, blown water seals, erratic water level control, and spitting condensate from dispersion tubes.

**SDU-I: Instant, internal absorption, up to 30 lbs/hr**

SDU-I (Space Distribution Unit Internal Absorption) disperses humidity with no visible vapor trail or wetness, making it ideal for use in finished spaces. The SDU-I fan mixes room air and steam to ensure complete absorption before discharge as humidified air.

**Important:**

For visible vapor to be absorbed completely within the SDU-I unit before being discharged as humidified air, room air must be 45% RH or less. Trying to maintain greater than 45% RH will cause visible vapor and potential for moisture collection on the discharge grille.

**DISPERSION: SDU-I AND SDU-E**

Table 2-1:
SDU specifications

| SDU model | Maximum capacity | | Shipping weight | | Amps at 120V (50/60 Hz) | Horsepower | cfm | $m^3/s$ | dB* |
|---|---|---|---|---|---|---|---|---|---|
| | lbs/hr | kg/h | lbs | kg | | | | | |
| SDU-I | 30 | 13.6 | 68 | 31 | 3.20 | 1/5 | 760 | 0.36 | 58 |
| SDU-E | 102 | 46.3 | 61 | 28 | 2.07 | 1/8 | 545 | 0.26 | 64 |

* Measurement taken 6.5' (2 m) in front of SDU cabinet.

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Three phase Vapormist models with AMP draw greater than 32.7A with SSR will NOT permit SDU option (except 208V and 240V three phase models).

**SDU-E: HIGHER CAPACITY, UP TO 102 LBS/HR**

SDU-E (Space Distribution Unit External Absorption) is designed for higher capacity dispersion.

**MOUNTING SDU-E**

- SDU-E requires an installed condensate drain line and water seal (provided by installer). See Figure 2-2 and instructions below.
- Spread dimensions greater than 3' (1 m) may require additional side clearance. See Table 3-1).

**DRAIN CONNECTION**

1. Piping must be minimum 3/4" I.D. (DN20) and rated for 212 °F (100 °C) minimum continuous operating temperature.
2. All drain lines must be installed and sized according to governing codes.
3. The drain line should have a union installed directly on the dispersion box ¾" nipple to accommodate future removal of the SDU-E shroud.
   The dispersion box is constructed with a pitch toward the drain; however, the SDU-E frame must be installed plumb and level for the dispersion box to drain properly.
4. Drain line must be piped as shown in Figure 2-2.
   - Provide a 6" (152 mm) drop prior to a 4" (102 mm) water seal to ensure condensate drainage from the SDU-E, and to keep steam from blowing out of the drain line.
   - 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 a 45 degree 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.
   - If the condensate is not properly drained, standing water will accumulate in the dispersion box.

**HAZARDS OF STANDING WATER IN SDU-E**

If standing water is allowed to accumulate in the dispersion box, it can:
- Cause bacteria and mold growth, which can cause illness.
- Affect SDU-E fan unit performance.
- Cause 212 °F (100 °C) water to discharge from the SDU-E fan unit, which can cause severe personal injury.

**FIGURE 2-1: PIPING WHEN SDU IS BELOW HUMIDIFIER**

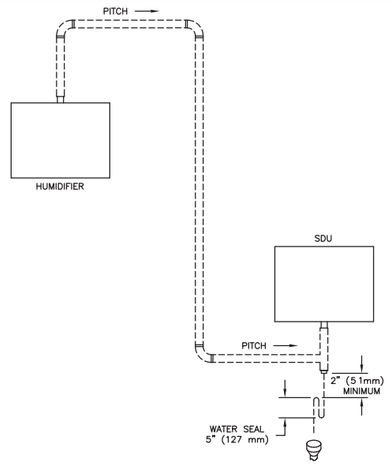


**FIGURE 2-2: SDU-E DRAIN LINE PIPING**

Install SDU-E frame plumb and level

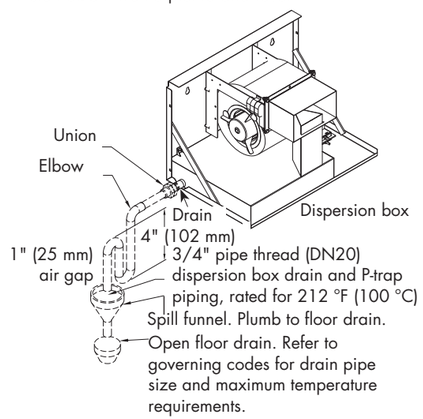


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**FIGURE 2-3: SDU-E RISE, SPREAD, AND THROW**

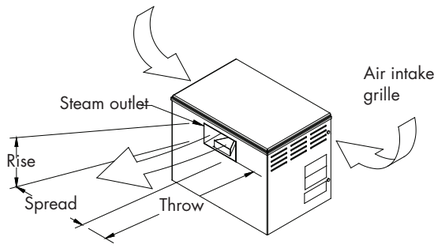


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Table 3-1:
SDU-E minimum nonwetting distances

| kW | Maximum steam capacity | | 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 | |
| | lbs/hr | kg/h | ft | m | ft | m | ft | m | ft | m | ft | m | ft | m | ft | m | ft | m | ft | m |
| 2 | 6 | 2.7 | 1.0 | 0.3 | 1.0 | 0.3 | 5.0 | 1.5 | 1.5 | 0.5 | 1.5 | 0.5 | 6.5 | 2.0 | 2.5 | 0.8 | 2.5 | 0.8 | 7.5 | 2.3 |
| 4 | 12 | 5.4 | 1.0 | 0.3 | 1.0 | 0.3 | 5.0 | 1.5 | 1.5 | 0.5 | 1.5 | 0.5 | 6.5 | 2.0 | 2.5 | 0.8 | 2.5 | 0.8 | 7.5 | 2.3 |
| 6 | 18 | 8.2 | 1.0 | 0.3 | 1.0 | 0.3 | 5.0 | 1.5 | 1.5 | 0.5 | 1.5 | 0.5 | 6.5 | 2.0 | 2.5 | 0.8 | 2.5 | 0.8 | 7.5 | 2.3 |
| 8 | 24 | 10.9 | 1.0 | 0.3 | 1.0 | 0.3 | 5.5 | 1.7 | 1.5 | 0.5 | 1.5 | 0.5 | 6.5 | 2.0 | 2.5 | 0.8 | 2.5 | 0.8 | 7.5 | 2.3 |
| 10 | 30 | 13.6 | 1.5 | 0.5 | 1.5 | 0.5 | 6.0 | 1.8 | 2.0 | 0.6 | 2.0 | 0.6 | 7.0 | 2.1 | 3.0 | 1.0 | 3.0 | 1.0 | 8.0 | 2.5 |
| 12 | 36 | 16.3 | 1.5 | 0.5 | 1.5 | 0.5 | 6.0 | 1.8 | 2.0 | 0.6 | 2.0 | 0.6 | 7.0 | 2.1 | 3.0 | 1.0 | 3.0 | 1.0 | 8.0 | 2.5 |
| 14 | 42 | 19.1 | 2.0 | 0.6 | 2.0 | 0.6 | 7.0 | 2.1 | 2.0 | 0.6 | 2.0 | 0.6 | 7.0 | 2.1 | 3.0 | 1.0 | 3.0 | 1.0 | 9.0 | 2.7 |
| 16 | 48 | 21.8 | 2.0 | 0.6 | 2.0 | 0.6 | 7.0 | 2.1 | 2.0 | 0.6 | 2.0 | 0.6 | 7.0 | 2.1 | 3.0 | 1.0 | 3.0 | 1.0 | 9.0 | 2.7 |
| 21 | 63 | 28.6 | 2.0 | 0.6 | 2.0 | 0.6 | 7.5 | 2.3 | 2.5 | 0.8 | 2.5 | 0.8 | 10.0 | 3.0 | 3.0 | 1.0 | 3.0 | 1.0 | 12.0 | 3.7 |
| 25 | 75 | 34.0 | 2.0 | 0.6 | 2.0 | 0.6 | 8.0 | 2.5 | 2.5 | 0.8 | 2.5 | 0.8 | 10.5 | 3.2 | 3.5 | 1.1 | 3.5 | 1.1 | 12.5 | 3.8 |
| 30 | 90 | 40.9 | 2.0 | 0.6 | 2.0 | 0.6 | 8.0 | 2.5 | 2.5 | 0.8 | 2.5 | 0.8 | 10.5 | 3.2 | 3.5 | 1.1 | 3.5 | 1.1 | 12.5 | 3.8 |
| 34 | 102 | 46.3 | 2.0 | 0.6 | 2.0 | 0.6 | 8.0 | 2.5 | 2.5 | 0.8 | 2.5 | 0.8 | 10.5 | 3.2 | 3.5 | 1.1 | 3.5 | 1.1 | 12.5 | 3.8 |

Notes:
- Surfaces or objects directly in the path of steam discharge may cause condensation and dripping.
- To avoid steam impingement on surrounding areas, observe the minimum nonwetting dimensions in this table.
- Rise: The minimum nonwetting height above the steam outlet of the SDU-E.
- Spread: The minimum nonwetting width from the steam outlet of the SDU-E.
- Throw: The minimum nonwetting horizontal distance from the steam outlet of the SDU-E.

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**FIGURE 3-1: STACKING A WALL-MOUNTED VAPORMIST AND SDU-I OR SDU-E**

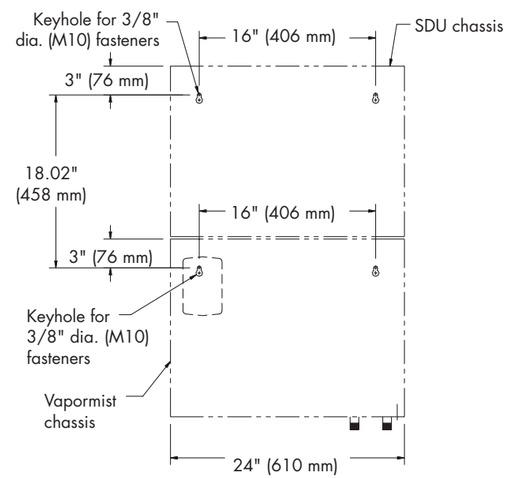


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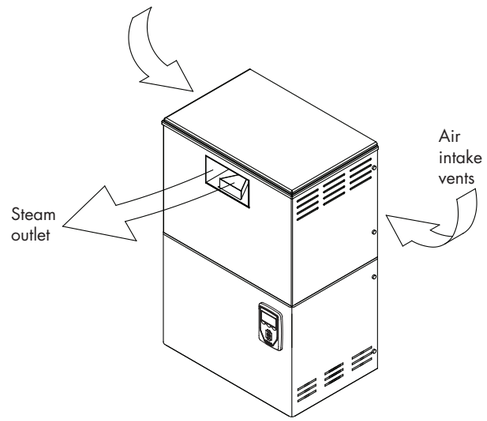
**FIGURE 3-2: SDU-I OR SDU-E MOUNTED DIRECTLY ABOVE VAPORMIST**

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**Performing Vapormist® humidifier tank maintenance**

If the Space Distribution Unit (SDU-I or SDU-E) is installed directly above the Vapormist humidifier, the interconnecting steam hose is moved up to allow for removal of the Vapormist tank. Disconnect both hose clamps on the steam hose, grip the hose and rotate it to break it loose from the tubing. Slide the hose up onto the SDU steam tube until sufficient clearance is provided to remove the tank. Hose cuffs and clamps are provided for direct connection of the Vapormist humidifier to the SDU-I/SDU-E.