

Membrane Air Dryers for Bead and Shot Blasting

Market Application Publication



Background:

When considering the air supply to their equipment, smart engineers know that they cannot rely on the compressed air of their customers to meet the requirements of their systems. In some cases the air supply comes in contact with product as is the case in shot or bead blasting.

Application:

In bead blasting, air is used to propel the bead material at the substrate through a fine nozzle to clean or prepare the surface for a finish. If this air is laden with moisture and oil, the bead material will clump together leading to clogged nozzles. Typically the bead material must be replaced. Down time of bead blast equipment is costly, both to repair the nozzle and the lost production time. Warranty and service calls can add up.



Case Study:

Two OE manufacturers of bead and shot blasting equipment (one in California and one in Georgia) had service issues with clogged nozzles and ruined bead material. Moisture and oil from their customer's compressed air lines mixed with the bead material and led to clogged nozzles. The clogged nozzles led to service calls, warranty claims and dissatisfied customers. Parker Balston sales personnel recommended the Balston Membrane air dryer to completely remove oil and water contamination. Since using the Balston dryer, the problem of oil and moisture has disappeared. Customers are more satisfied with their equipment. By adding the dryer, their product's perceived value is much greater in the eyes of their customers. Parker Balston offers a complete line of membrane air dryers that can supply clean dry air from as low as 1 scfm up to several hundred scfm.

Flow Rates at 35°F (2°C) Pressure Dewpoint (1)

| Model Number | IT0010-35 | IT0030-35 | IT0080-35 | IT0150-35 | IT0250-3560 | IT0250-3500 | IT0500-3560 | IT0500-3500 | IT1000-3560 | IT1000-3500 |
|---|------------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Flow @ 100 psig Inlet Pressure, scfm (Nm ³ /Hr) | 1 (1.7) | 3 (5.1) | 8 (13.6) | 15 (25.5) | 25 (42.5) | N/A | 50 (85) | N/A | 100 (170) | N/A |
| Flow @ 101-150 psig Inlet Pressure, scfm (Nm ³ /Hr) | 1 (1.7) | 3 (5.1) | 8 (13.6) | 15 (25.5) | N/A | 25 (42.5) | N/A | 50 (85) | N/A | 100 (170) |
| Regeneration Flow @ 100 psig, scfm (Nm ³ /Hr) (1) | 0.25 (.42) | 0.5 (.85) | 1.5 (2.5) | 2.7 (4.6) | 4.5 (7.6) | 4.5 (7.6) | 9.0 (15.3) | 9.0 (15.3) | 18.0 (30.6) | 18.0 (30.6) |

Notes:

1 Dewpoint specified for saturated inlet air at 100°F (38°C) and 100 psig

Principal Specifications - HFX Series Membrane Nitrogen Generators

| Model Number | IT0010-35 | IT0030-35 | IT0080-35 | IT0150-35 | IT0250-3560 | IT0250-3500 | IT0500-3560 | IT0500-3500 | IT1000-3560 | IT1000-3500 |
|------------------------------------|---|--|--------------------------------------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------------------|----------------------------------|
| Min/Max Inlet Air Temp. | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) |
| Min/Max Ambient Air Temp. | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) | 40°F/120°F (4°C/49°C) |
| Min/Max Inlet Pressure | 60/150 psig (4.1/10 barg) | 60/150 psig (4.1/10 barg) | 60/150 psig (4.1/10 barg) | 60/150 psig (4.1/10 barg) | 60/100 psig (4.1/6.9 barg) | 100/150 psig (6.9/10 barg) | 60/100 psig (4.1/6.9 barg) | 100/150 psig (6.9/10 barg) | 100/150 psig (6.9/10 barg) | 100/150 psig (6.9/10 barg) |
| Max. Pressure Drop (1) | 3 psid (.2 bard) | 3 psid (.2 bard) | 3 psid (.2 bard) | 3 psid (.2 bard) | 5 psid (.34 bard) | 5 psid (.34 bard) | 5 psid (.34 bard) | 5 psid (.34 bard) | 5 psid (.34 bard) | 5 psid (.34 bard) |
| Wall Mountable | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Mechanical Separator (Included) | F14F17B | F06F18B | F06F18B | F07F38B | F07F38B | F07F38B | F07F38B | F07F38B | F602-08WJR | F602-08WJR |
| Coalescing Prefilters (1) | 8A02N-0B2-BX | 2002N-0B1-BX | 2002N-0B1-BX | 2004N-1B1-DX 2004N-0B1-BX | 2104-1B1-DX 2104-0B1-BX | 2104N-1B1-DX 2104N-0B1-BX | 2208N-1B1-DX 2208N-0B1-BX | 2208N-1B1-DX 2208N-0B1-BX | 2208N-1B1-DX 2208N-0B1-BX | 2208N-1B1-DX 2208N-0B1-BX |
| inlet Port Size | 1/4" NPT | 1/4" NPT | 1/4" NPT | 1/2" NPT | 1/2" NPT | 1/2" NPT | 1/2" NPT | 1/2" NPT | 1" NPT | 1" NPT |
| Outlet Port Size | 1/4" NPT | 1/4" NPT | 1/4" NPT | 1/2" NPT | 1" NPT | 1" NPT | 1" NPT | 1" NPT | 1" NPT | 1" NPT |
| Electrical Requirements | None | None | None | None | None | None | None | None | None | None |
| Dimensions (cm) | 17.5"Lx8"Wx2.5"D (44.5 x 20.3 x 6.3) | 18.1"Lx10"Wx4"D (45.2 x 10.5 x 6.3) | 24"Lx11.1"Wx4"D (61 x 28.2 x 6.3) | 25"Lx16"Wx4.5"D (63.5 x 40.6 x 11.4) | 26"Lx18"Wx6"D (66 x 45.7 x 15.2) | 26"Lx18"Wx6"D (66 x 45.7 x 15.2) | 39"Lx21"Wx6"D (99 x 53.3 x 15.2) | 39"Dx21"Wx6"D (99 x 53.3 x 15.2) | 47"Dx28"Wx7"D (119 x 71 x 18) | 47"Dx28"Wx7"D (119 x 71 x 18) |
| Shipping Weight | 1.62 lbs (.73 kg) | 6.68 lbs (3 kg) | 6.68 lbs (3 kg) | 14.88 lbs (6.75 kg) | 24.5 lbs (11.11 kg) | 24.5 lbs (11.11 kg) | 36.5 lbs (16.55 kg) | 36.5 lbs (16.55 kg) | 52 lbs (24 kg) | 52 lbs (24 kg) |

Notes:

1 If compressed air is extremely contaminated, a Grade DX prefilter should be installed directly upstream of the membrane dryer.

2 Filtration efficiency: 99.99% at 0.01 micron.

Ordering Information

| Model Number | IT0010-35 | IT0030-35 | IT0080-35 | IT0150-35 | IT0250-3560 | IT0250-3500 | IT0500-3560 | IT0500-3500 | IT1000-3560 | IT1000-3500 |
|--------------------------------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Replacement Filter Elements | | | | | | | | | | |
| 1st Stage | 050-05-BX | 100-12-BX | 100-12-BX | 100-12-DX | 100-18-DX | 100-18-DX | 150-19-DX | 150-19-DX | 150-19-DX | 150-19-DX |
| 2nd Stage | --- | --- | --- | 100-12-BX | 100-18-BX | 100-18-BX | 150-19-BX | 150-19-BX | 150-19-BX | 150-19-BX |

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