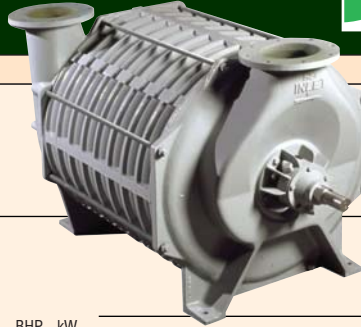


Model 81

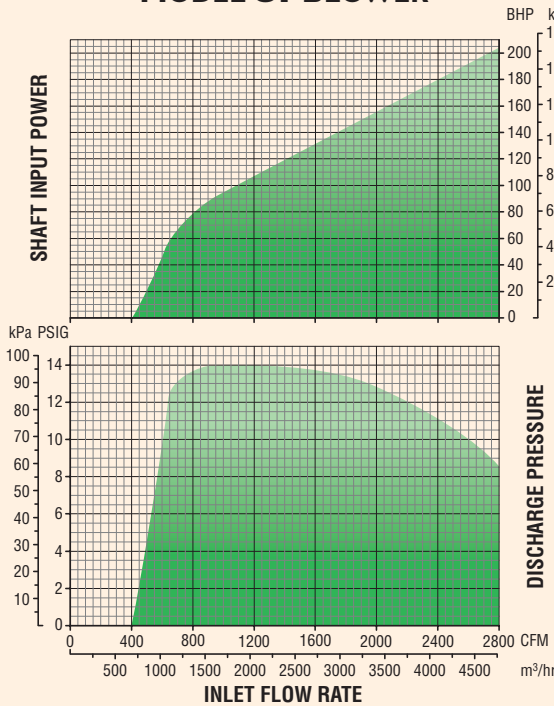
HSI MULTISTAGE
CENTRIFUGAL
BLOWERS



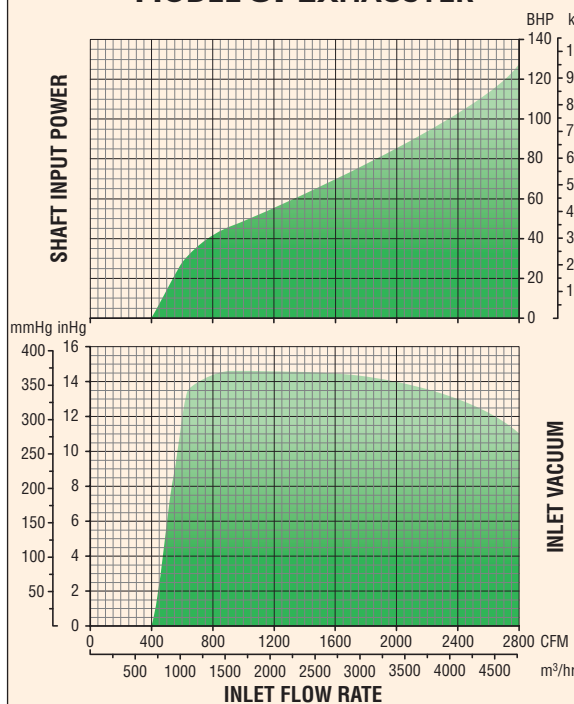
General Performance

Specifications Standard

MODEL 81 BLOWER



MODEL 81 EXHAUSTER



TECHNICAL DATA

| | |
|----------------------------|--|
| Number of Stages | 1 through 9 |
| Inlet Connection | 8" (203.2 mm) flange, ASA 125# / ANSI 150# drilling |
| Outlet Connection | 8" (203.2 mm) flange, ASA 125# / ANSI 150# drilling |
| Operating Speed..... | 3550 RPM (60 Hz), 2960 RPM (50 Hz) |
| Casing Pressure..... | 20 PSIG (1.41 kg/cm ²) |
| Seals (air)..... | Labyrinth type |
| Seals (gas)..... | Stuffing gas type/custom available |
| Bearings..... | Ball, 10-year minimum life per AFBMA L ₁₀ standard |
| Lubrication..... | Grease (oil available) |
| Impeller Diameter..... | 24.10 in (612.1 mm) |
| Impeller Tip Speed | 373 ft/s (114 m/s) @ 3550 RPM |
| First Critical Speed | 4701 RPM (9-stage) |
| Drive Type | Direct coupled or Belt driven, Inlet driven (standard) or Outlet driven |
| Shaft End | 1.875 in (47.63 mm) diameter at coupling |
| Vibration Tolerance | .25 in/s (6.4 mm/s) ISO overall specification, 1.25 mils (0.03 mm) peak to peak |
| Rotor Balance..... | Military standard 167-1. Individual impellers and rotating assembly dynamically balanced |

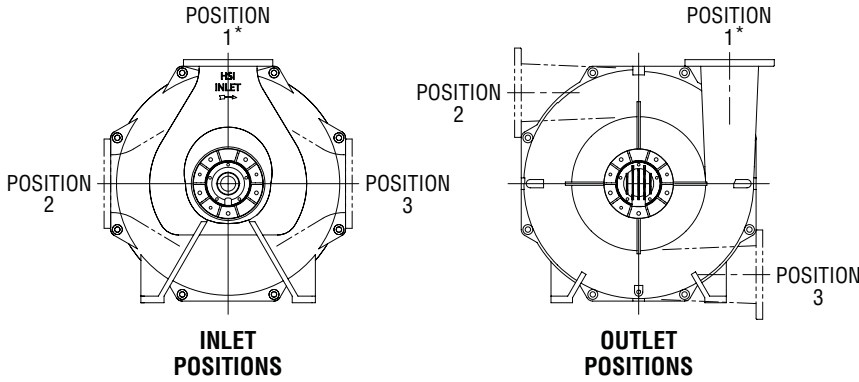
MATERIALS OF CONSTRUCTION

| | |
|------------------------------|--|
| Casing | Cast iron ASTM A48 grade 25/30 |
| Bearing Caps & Housings ... | Cast iron ASTM A48 grade 25/30 |
| Oil Reservoir | Cast iron ASTM A48 grade 25/30 |
| Shaft | Carbon steel AISI 4140 (stainless steel available) |
| Impellers | Cast aluminum ANSI AA319/356 or fabricated aluminum ANSI AA6061 with cast Al AA356 hub stainless steel/custom alloys available |
| Seals (air)..... | Cast iron ASTM A48 grade 30 with lead babbitt insert Zinc-Alloy, ZA-12 |
| Seals (gas)..... | Cast aluminum ANSI AA319 stuffing box with braided packing |
| Tie Rods | .75 in (19.1 mm) diameter, high strength steel ASTM A193-B7/B7M available |
| Blower Base | Welded structural steel ASTM A36 ASME/AWS D1.1 WPS's available |
| Motor Pedestal..... | Welded steel plate ASTM A36 |
| Joint Sealing Compound | RTV silicone |
| Base Isolation Pads..... | Neoprene rubber |
| Finish | HSI standard |

MODEL 81 MULTISTAGE CENTRIFUGAL BLOWER

Inlet and Outlet Orientation Options

The orientation of the inlet and outlet is selectable from any of three different positions, as viewed when facing the exterior of the part:



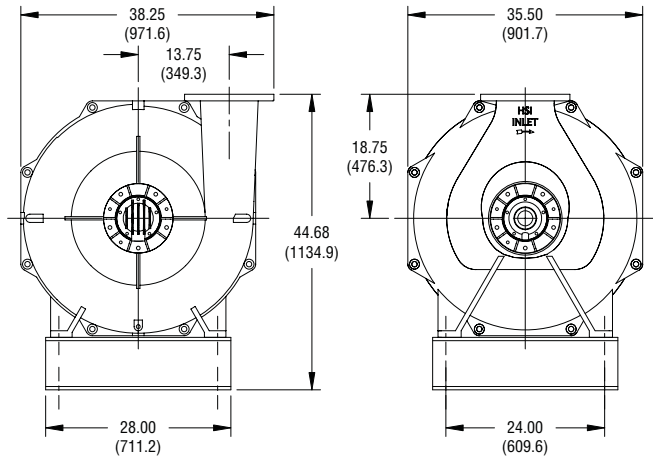
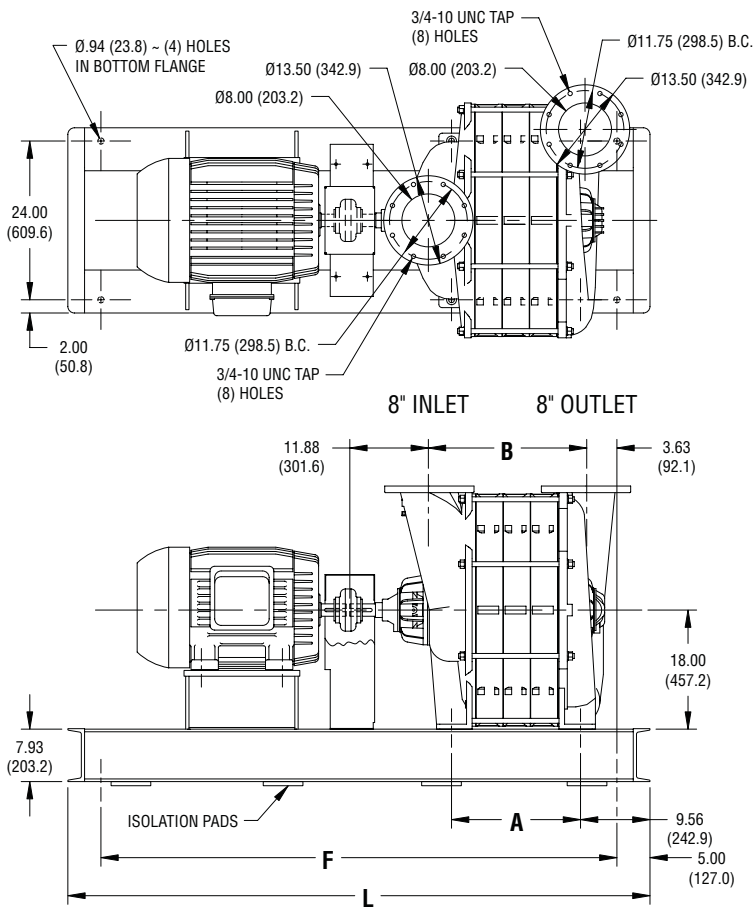
*Standard configuration.

Weight and Inertia

| Model | Weight* | | Wk ² | |
|-------|---------|------|--------------------|-------------------|
| | lb | kg | lb-ft ² | kg-m ² |
| 8101 | 560 | 254 | 10 | 0.42 |
| 8102 | 860 | 390 | 19 | 0.81 |
| 8103 | 1160 | 526 | 29 | 1.21 |
| 8104 | 1460 | 662 | 38 | 1.61 |
| 8105 | 1760 | 798 | 47 | 2.01 |
| 8106 | 2060 | 934 | 57 | 2.41 |
| 8107 | 2360 | 1070 | 66 | 2.80 |
| 8108 | 2660 | 1207 | 76 | 3.20 |
| 8109 | 2960 | 1343 | 86 | 3.62 |

*Approximate weight for blower only.

General Arrangement



| Model | Dimensions* | | | |
|-------|--------------|--------------|----------------|----------------|
| | A | B | F [†] | L [†] |
| 8101 | 7.13 (181) | 11.56 (294) | 58 (1473) | 68 (1727) |
| 8102 | 11.25 (286) | 15.69 (398) | 58 (1473) | 68 (1727) |
| 8103 | 15.38 (391) | 19.81 (503) | 71 (1803) | 81 (2057) |
| 8104 | 19.50 (495) | 23.94 (608) | 71 (1803) | 81 (2057) |
| 8105 | 23.63 (600) | 28.06 (713) | 83 (2108) | 93 (2362) |
| 8106 | 27.75 (705) | 32.19 (818) | 83 (2108) | 93 (2362) |
| 8107 | 31.88 (810) | 36.31 (922) | 83 (2108) | 93 (2362) |
| 8108 | 36.00 (914) | 40.44 (1027) | 94 (2388) | 104 (2642) |
| 8109 | 40.13 (1019) | 44.56 (1132) | 94 (2388) | 104 (2642) |

*Dimensions in inches and (millimeters) and are approximate.

Do not use for construction purposes.

[†]Dimension may vary depending on motor frame size.



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