

# Model 51

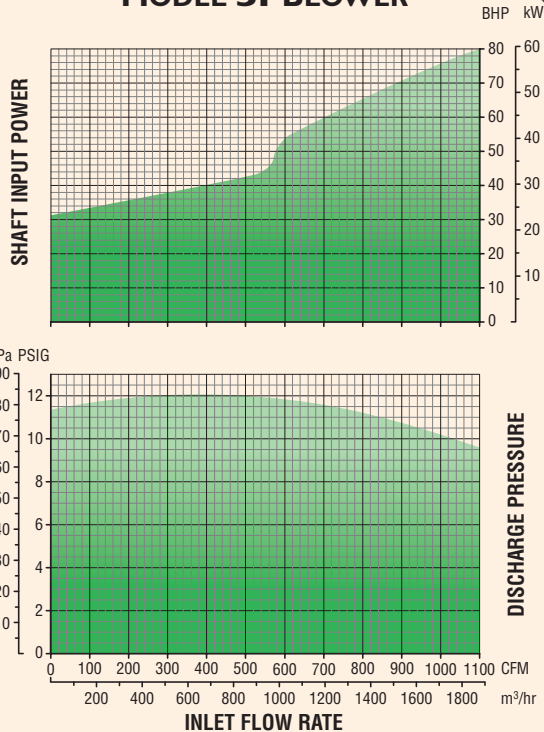
**HSI** MULTISTAGE  
CENTRIFUGAL  
BLOWERS



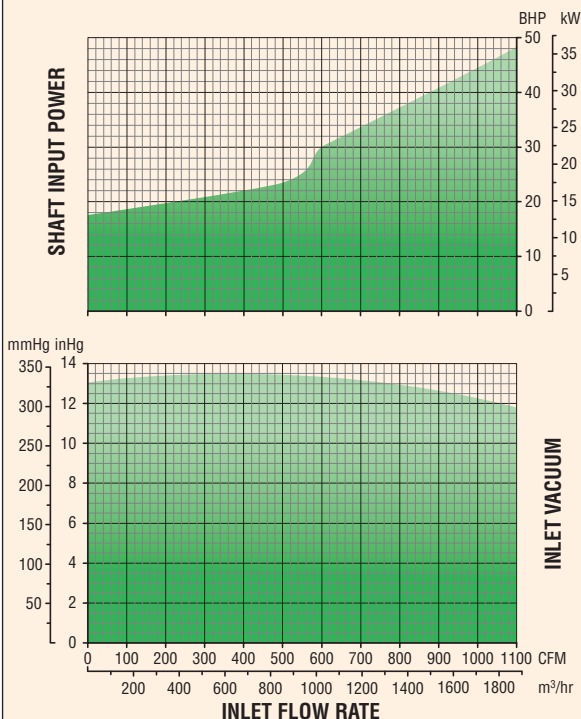
## General Performance

## Specifications Standard

### MODEL 51 BLOWER



### MODEL 51 EXHAUSTER



## TECHNICAL DATA

Number of Stages .....	1 through 10
Inlet Connection .....	5" (127.0 mm) flange, ASA 125# / ANSI 150# drilling
Outlet Connection .....	5" (127.0 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 <sup>2</sup> )
Seals (air).....	Labyrinth type
Seals (gas).....	Stuffing box type/custom available
Bearings.....	Ball, 10-year minimum life per AFBMA L <sub>10</sub> standard
Lubrication.....	Grease (oil available)
Impeller Diameter.....	22.00 in (558.8 mm)
Impeller Tip Speed .....	341 ft/s (104 m/s) @ 3550 RPM
First Critical Speed .....	4505 RPM (10-stage)
Drive Type .....	Direct coupled or Belt driven, Inlet driven (standard) or Outlet driven
Shaft End .....	1.625 in (41.28 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

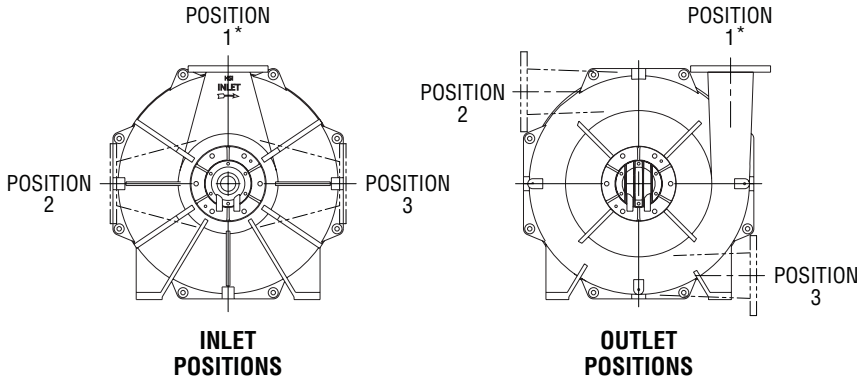
## MATERIALS OF CONSTRUCTION

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 .....	.50 in (12.7 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 51 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:



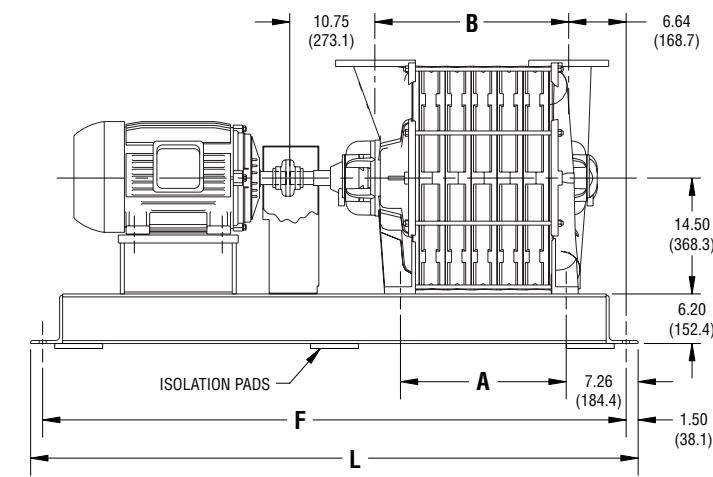
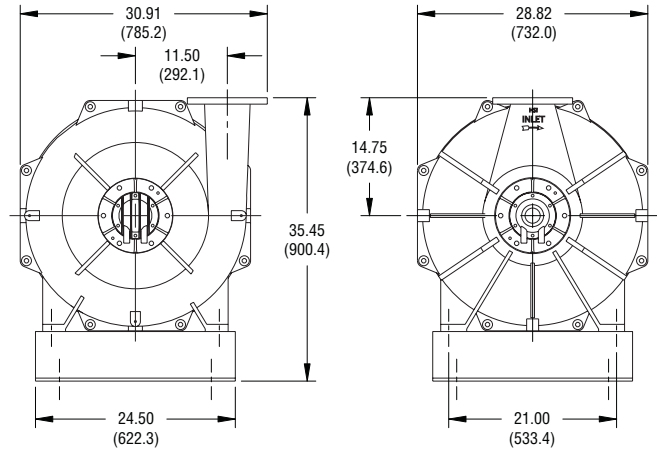
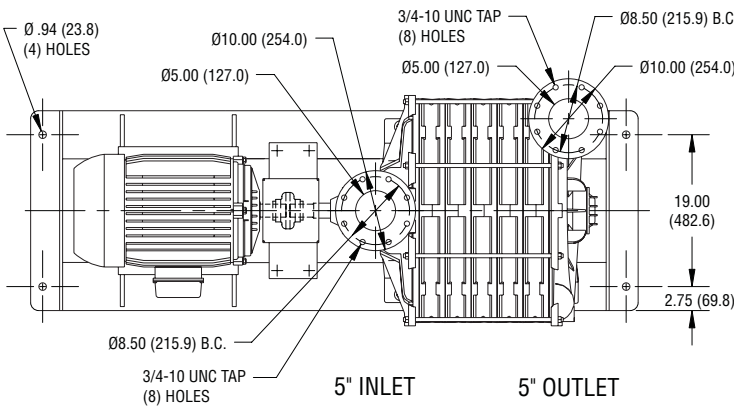
\*Standard configuration.

## Weight and Inertia

Model	Weight*		Wk <sup>2</sup>	
	lb	kg	lb-ft <sup>2</sup>	kg-m <sup>2</sup>
5101	480	218	6	0.26
5102	607	275	12	0.51
5103	730	331	18	0.76
5104	860	390	24	1.02
5105	987	448	30	1.27
5106	1113	505	36	1.52
5107	1240	562	42	1.77
5108	1367	620	48	2.03
5109	1493	677	54	2.28
5110	1620	735	60	2.53

\*Approximate weight for blower only.

## General Arrangement



Model	Dimensions*			
	A	B	F†	L†
5101	4.63 (117)	8.00 (203)	47 (1194)	50 (1270)
5102	7.88 (200)	11.25 (286)	56 (1422)	59 (1499)
5103	11.13 (283)	14.50 (368)	56 (1422)	59 (1499)
5104	14.38 (365)	17.75 (451)	66 (1676)	69 (1753)
5105	17.63 (448)	21.00 (533)	66 (1676)	69 (1753)
5106	20.88 (530)	24.25 (616)	77.5 (1969)	80.5 (2045)
5107	24.13 (613)	27.50 (699)	77.5 (1969)	80.5 (2045)
5108	27.38 (695)	30.75 (781)	77.5 (1969)	80.5 (2045)
5109	30.63 (778)	34.00 (864)	88 (2235)	91 (2311)
5110	33.88 (860)	37.25 (946)	88 (2235)	91 (2311)

\*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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