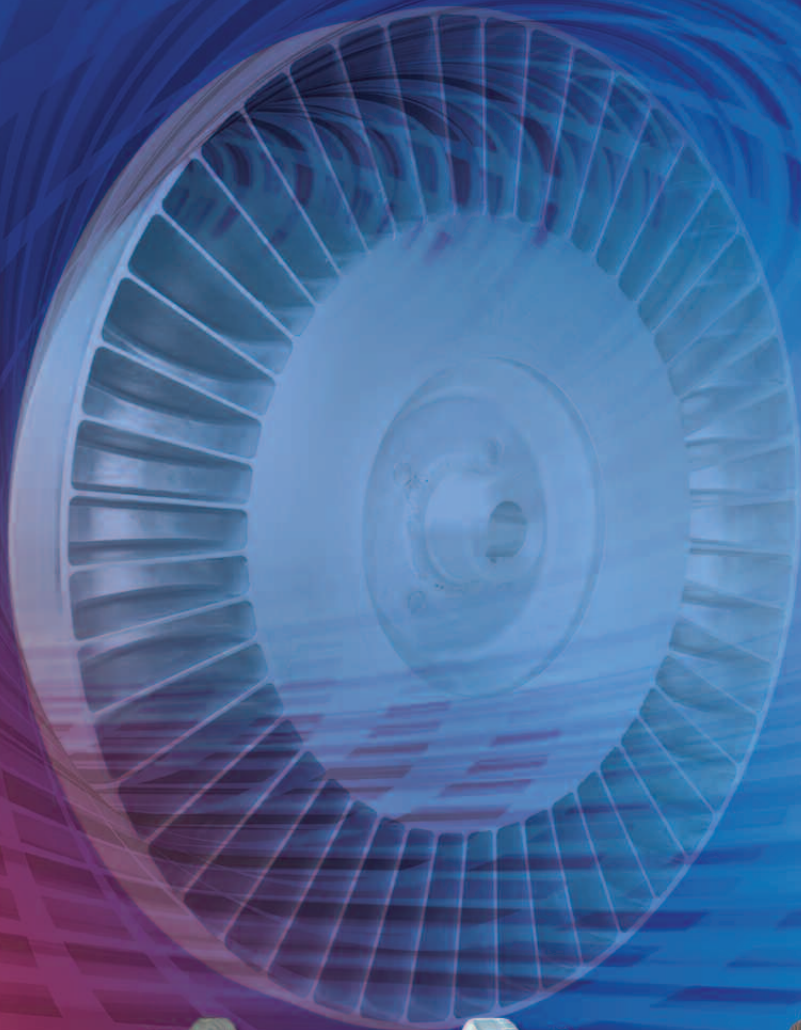


Spencer®

Vortex® Regenerative Blowers



TOMLIN
Equipment Co.



**INDUSTRIAL EQUIPMENT • MAJOR STOCKING DISTRIBUTOR
ENGINEERING • SALES • SERVICE • PARTS**

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Introduction

Vortex blowers are manufactured and stocked in the U.S. by Spencer, the air handling specialist.

U.S. production using domestic components

Vortex regenerative (side channel) blowers are products of The Spencer Turbine Company, manufactured in the United States with U.S.-made components.

They are produced in Spencer's 200,000 sq.ft. world headquarters in Windsor, Connecticut.

A single focus, a single mandate since 1892

Vortex blowers are just one of Spencer's product lines for efficient air and gas movement, which has been our sole focus since 1892. As a privately held company, Spencer concentrates all its resources on product innovations, application solutions and customer service in this field.

There are two advantages for customers in Spencer's independent status: one, by devoting more than a century to air and gas handling exclusively, we have accumulated an unmatched body of technical knowledge that can be applied to customer problems.

Two, since this is our only profession, we have to be constantly on the "top of our game"—giving excellent advice, attention and service to customers.

A broad selection of air and gas handling products

Besides regenerative blowers, Spencer offers centrifugal blowers, both single and multi-stage, custom blowers for special conditions and positive displacement blowers. Among our vacuum equipment are heavy-duty central and mobile vacuum systems, dust collectors and separators.



These products are served by Spencer's own electrical control panels for blower and vacuum system operation.

Spencer machines are used in the most demanding industrial, commercial, municipal, utility and governmental applications. These range from blower systems for continuous-duty chemical processing and wastewater treatment to central vacuum systems serving semiconductor cleaning rooms, industrial plants...and such unique sites as the Statue of Liberty in New York Harbor and Moscow Trade Center in Russia.

Vortex blowers continue the Spencer tradition of "industrial strength" machines that customers rely on through years of dependable operation.

Extensive product distribution network

Spencer has direct sales offices, manufacturers' representatives and stocking distributors across North America. They are supplemented by independent representatives in many countries internationally.

A call to Spencer at 800-232-4321 will start the ball rolling and assure fast attention. In-depth technical support is available regarding blower sizing, selection and application; multi-blower purchases for OEM equipment; and blower customizing for special needs.

The blower selection and application advice in this catalog is based on information we believe to be accurate, but it is the buyer's responsibility to determine the suitability of any product for a particular purpose. Before installing blowers with explosion-proof motors, the buyer must check federal, state and local codes to see if such motors are appropriate for the intended application environment.

For warranty information, obtain Spencer's Form 706, "Terms and Conditions of Sales."

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The Vortex Story

Product Characteristics

Vortex blowers offer your best total package of product features and performance advantages.

Compact, lightweight design

- Single stage blower with C-faced motor in a small package.
- Aluminum castings reduce weight.

Excellent performance range

- Volumes to 645 SCFM.
- Vacuum ratings to 104" H₂O.
- Pressures to 108" H₂O.

Long-life reliability

- Cast aluminum impeller and housing for high strength.
- Simple construction with only five major components—base, housing, impeller, bearings, motor.
- Sealed bearings prevent contaminant failure.
- Single annular compression cell prevents heat stress failure.
- Double lip elastomeric shaft seal minimizes leaks.
- Fully retained impeller prevents vane fracture and blower failure.
- Single seal gap reduces tolerance requirement and blower failures during high temperature operation.

Oil-free air delivery

- No hydrocarbon entrainment.
- Suitable for healthcare and scientific applications.

Less heat and noise

- Single-sided impeller with single vortex generates less heat and noise than "paddle wheel" designs.
- Unique annular chamber with smooth laminar airflow lessens noise.
- Aluminum housing offers excellent heat dispersion.

Application flexibility

- Constant velocity blower has no pulsation or surging.
- All blowers can be run in reverse without loss of performance.
- All TEFC models can operate on 50 Hz without modification.



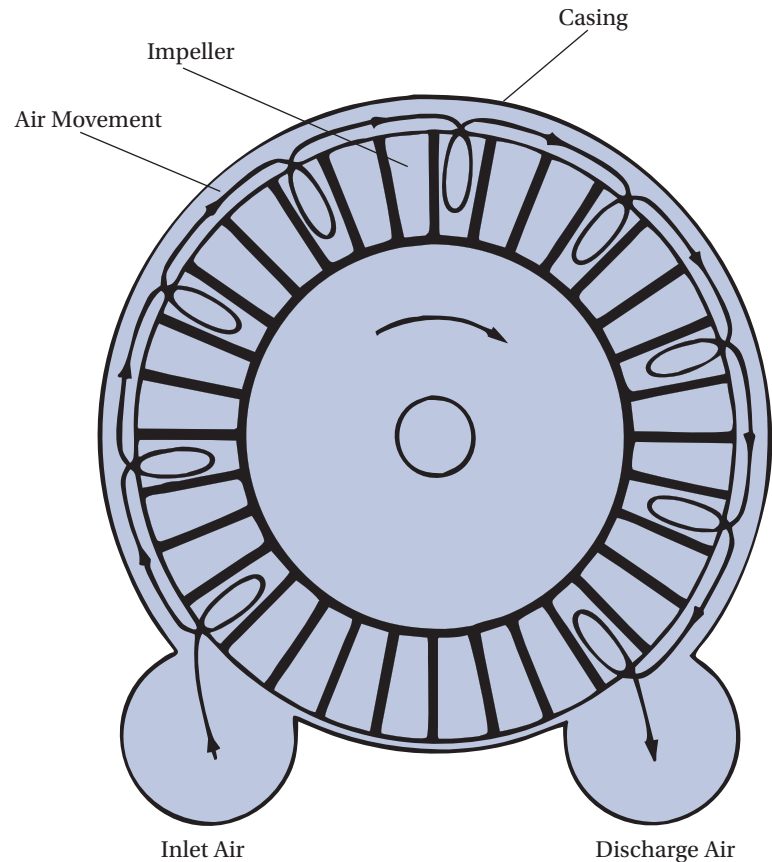
The Vortex Story Operating Principle

Vortex blowers generate high-pressure airflow during each rotation of a unique one-sided, single-stage impeller. The impeller has 30 to 50 vanes that create discrete air pockets. Air entering these pockets is accelerated in two directions, axially and outward (radially). Air entering the outer casing's annular chamber is redirected into successive pockets of the spinning impeller. This airflow cycle forms a vortex or stretched spring pattern (see diagram). Velocity energy is increased or regenerated many times as air moves between the blower inlet and discharge.

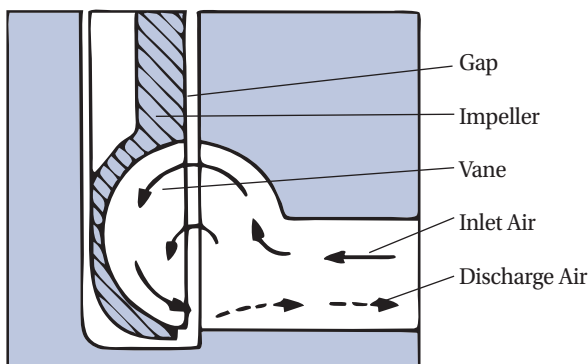
Competitive designs

Other regenerative blowers have a double-sided or "paddle wheel" impeller. This design, with its twin vortices, is characterized by higher noise levels as the vortices are created at the inlet and merged at the discharge.

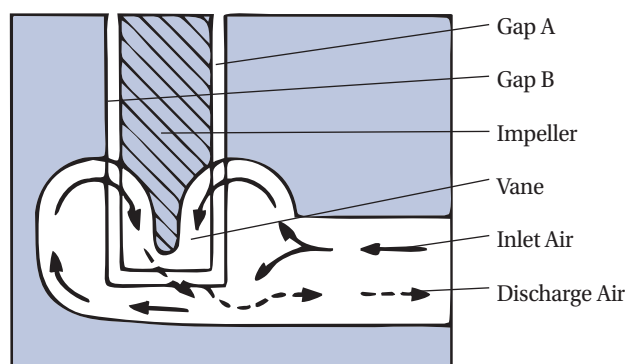
These blowers have two seal gaps between the housing and impeller, complicating tolerances during operation at high ambient temperatures.



Spencer One-Sided Impeller



Two-Sided Impeller



Blower Features

Standard and special features make it easy to customize blowers for OEM applications.

Versatile Standard Features

To adapt Spencer Vortex blowers for specific applications, often all you need is the flexibility built into the standard product line.

For example, Spencer has invented and patented a unique inlet/discharge flange (U.S. Patent 5,791,870) that is standard equipment on small blowers. This flange can be simply reversed to make either tube stub connections or threaded connections as desired.

All Vortex models offer:

- Pressure or vacuum use.
- Rotation in either direction without loss of performance (not possible with “paddle wheel” designs).

In addition, these specifications are selectable within the standard product line:

- Single or three phase power.
- 50 Hz or 60 Hz operation (all TEFC models).
- TEFC or explosion-proof motor.
- Variety of voltages.
- Airflow to 645 SCFM, vacuum to 104" H₂O, pressure to 108" H₂O.

Customizing Alternatives

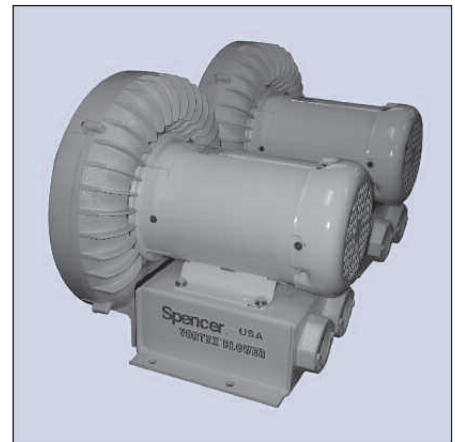
These are some of the easily arranged product changes which can adapt these machines for special needs:

- Special voltages.
- Special motor configurations (e.g., for severe duty or premium efficiency).
- Custom paint color.
- Special coatings.
- Special labeling.

Here are more custom possibilities for your shipping convenience:

- Flexible release schedules.
- Just-in-time shipments.
- Special blower packaging or palletizing.

Uncertain about whether we can meet your need? Just call 800-232-4321 for specialized assistance from Spencer.



Selection Tips

What you need to consider...

Here are some questions to consider regarding Vortex blower selection. Thinking about these issues now will “jump start” the selection process. You might also copy this page and write down your answers before you talk to a Spencer Representative. If you don’t know every detail, skip over it and discuss it with your representative later.

1. What is the pressure or vacuum application? _____

2. Will the blower use be continuous or intermittent? _____

3. What electrical input (volts, phase, Hz) will be used? _____

4. What airflow is required, in either SCFM or ICFM? _____

_____ SCFM (Standard Cubic Feet per Minute; flow based on industry standard 70°F, sea level, 36% relative humidity).

_____ ICFM (Inlet Cubic Feet per Minute; flow based on your blower’s actual operating conditions).

5. What is your pressure or vacuum requirement?

_____ Inches H₂O _____ PSIG _____ Inches Hg (mercury)

6. What are the inlet temperature and relative humidity?

_____ °F _____ %RH

7. What is the inlet pressure?

_____ Elevation (feet above sea level) _____ PSIA (atmospheric pressure)

(If blower will be used in a closed loop, indicate _____ PSIG or _____ inches Hg.)

8. Do you have any of these special considerations? (check all that apply)

- | | |
|---|---|
| ☐ Noise level restrictions | ☐ Discharge air temperature restrictions |
| ☐ Risk from corrosive vapors | |

9. What accessory equipment do you need? (check all that apply)

- | | |
|---|--|
| ☐ Inlet or inline filter (suggested) | ☐ Silencer or filter/silencer |
| ☐ Relief valve (suggested) | ☐ Pressure gauge |
| ☐ Temperature gauge | ☐ Weather or sound enclosure |

Sample Applications

There are many types of pressure and vacuum applications for Vortex blowers. Their compact size, low noise and reliable operation are particularly well-suited for OEM applications within printing, food and chemical processing, textile, metalworking, waste treatment, environmental protection, aquaculture, business machine and medical equipment. These are some typical uses involving holding, carrying, evacuating, transferring, aerating and ventilating:

Pressure

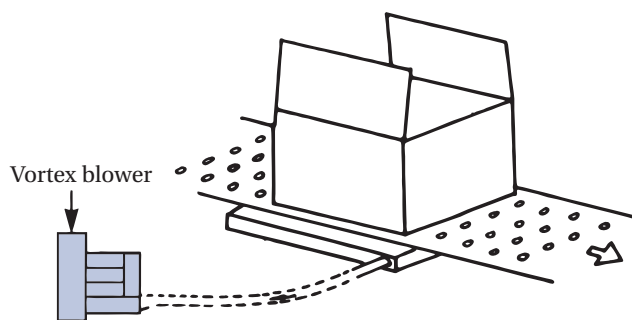
- Air beds and tables
- Refuse burning
- Automatic loading
- Product drying
- Air cushioning
- Liquid agitation
- Sewage aeration
- Pellet conveying
- Blister packaging
- Liquid spraying
- Fuel atomization
- Air knives
- Stack sampling
- Fluidized beds
- Respiratory systems

Vacuum

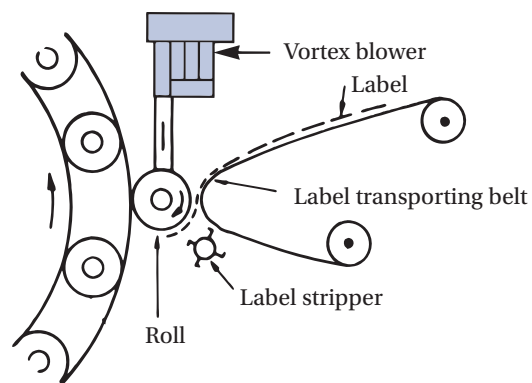
- Radon gas elimination
- Automatic bottling
- Pneumatic conveying
- Vacuum hold-down
- Soil remediation
- Paper transporting
- Scrap collection
- Powder recovery
- Gas sampling
- Thread holding
- Dust collection
- Trim removal
- Small vacuum systems
- Parts handling
- Material pickup

Applications listed here and in the following diagrams are presented as “thought-starter” examples to help you identify where Vortex blowers can help you.

Vacuum Applications

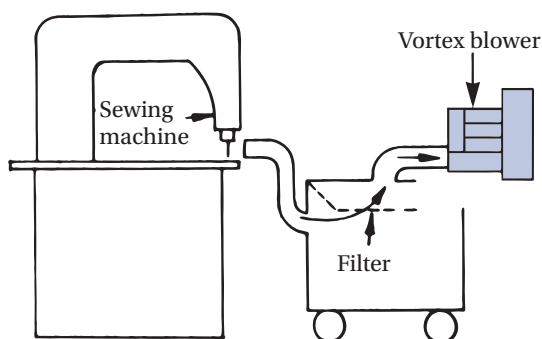


Corrugated box packer. A vacuum applied through a suction plate holds boxes in stable position for filling.

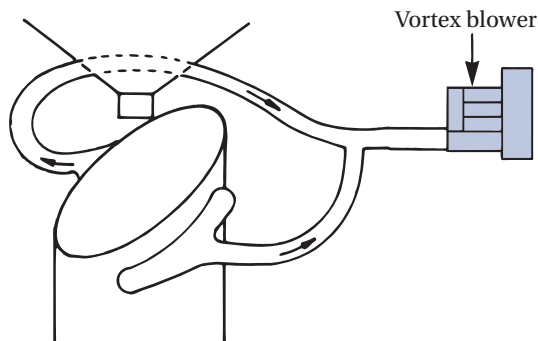


Automatic labeling machine. As a label stripper frees labels from their backing paper, they are held by suction on a roller for transfer to labeling equipment.

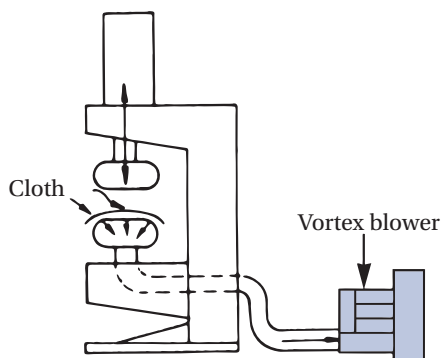
Sample Applications



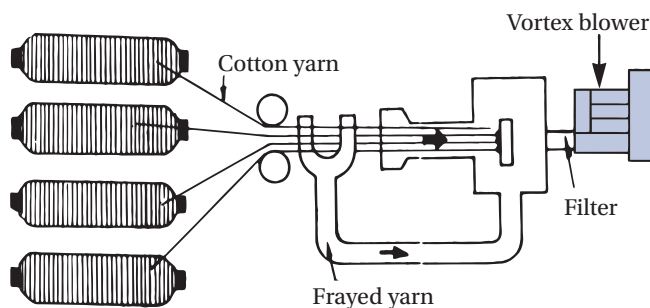
Industrial sewing machine. High-speed industrial sewing machines create large volumes of lint and waste yarn, which is scavenged by a Vortex vacuum system.



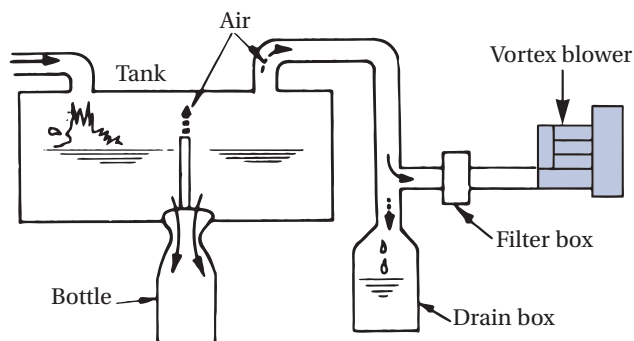
Bag filling equipment. Vacuum from a Vortex blower is used to hold bags open during filling operation for flour and other dry materials.



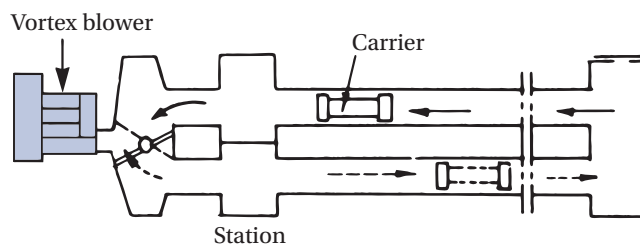
Commercial ironing machine. In this ironing machine, clothing is ironed on a padded surface with the aid of steam. The Vortex blower sucks the steam through the padded surface for evacuation.



Automatic loom. Cotton yarn is held in a vacuum stream before being supplied to the loom. The vacuum system also removes cotton scraps and frayed yarn.

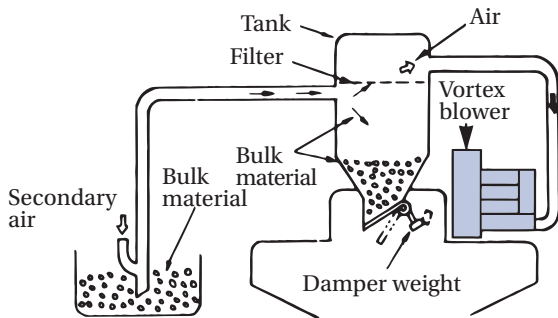


Automatic bottling machine. A Vortex blower facilitates high-speed bottling by removing air from the bottles during the filling operation.

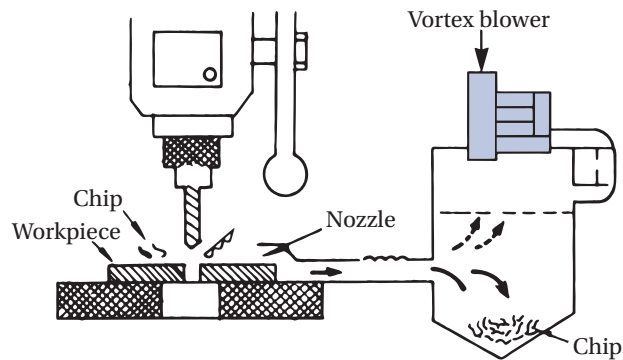


Pneumatic conveyor. Vortex vacuum systems convey checks, cash and documents in banks, hospitals, offices, etc. With its reversible operation, the Vortex blower eliminates the need for a diverter valve.

Sample Applications

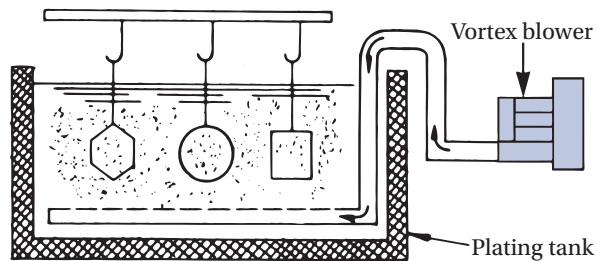


Bulk material handling. Air transport systems use Vortex blowers to convey dry materials such as pellets, granules and chips with either vacuum or pressure.

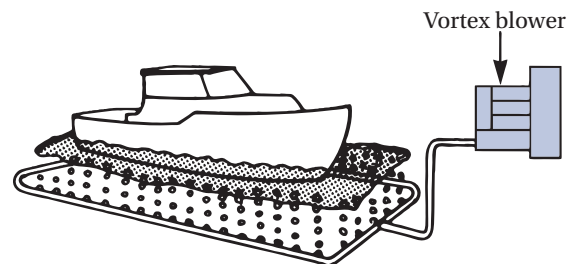


Chip removal. Chips generated during operations are automatically evacuated by a Vortex vacuum system.

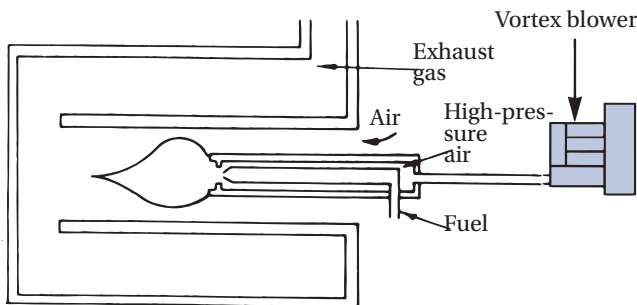
Pressure Applications



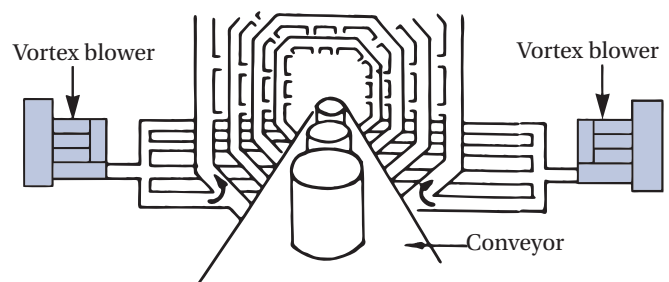
Plating tank agitation. High-pressure air circulates the electrolytic solution in a plating bath to promote uniform, rapid plating.



Ice prevention system. Air bubbles streaming from a diffuser ring keep water circulating to prevent icing.

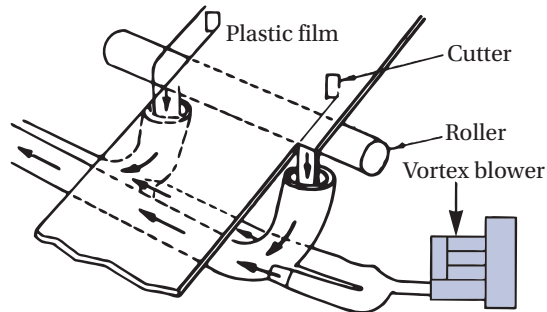


Gas burner. A steady flow of high-pressure air from a Vortex blower aids efficient combustion in gas burners.

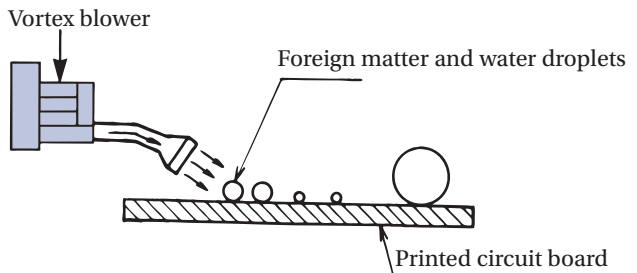


Component drying. Air discharge from single or ganged blowers powers a small drying system for parts or products.

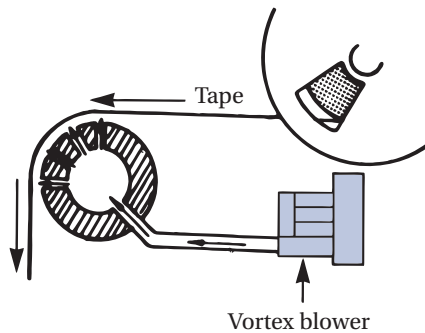
Sample Applications



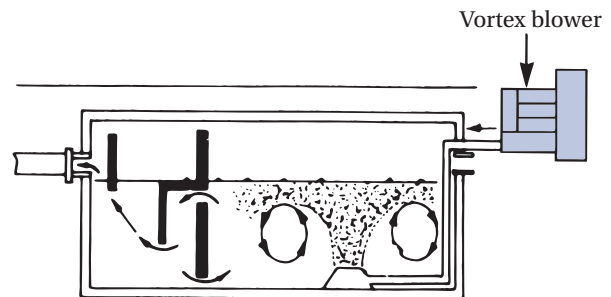
Film scrap collection. Scrap from plastic and paper slitting operations is collected by a pressure or vacuum evacuation system.



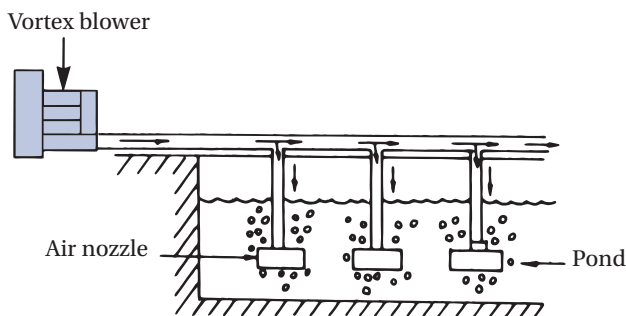
Air knife. High-pressure air jets remove foreign matter and liquid droplets from parts before further processing.



Air bearings. Air film rolls and air bearings create a cushion of air to guide sensitive, adhesive or wet films without contact and damage.



Septic tank. Vortex blowers are used in relatively shallow tanks to agitate effluent, promote bacterial action and separate sediment.



Fish pond aeration. Commercial fish farming is aided by aeration systems that increase the underwater oxygen supply in fish ponds.

VB001S, VB001

Single Phase or Three Phase TEFC Motor

- **Flow to 25 cfm**
- **1/8 hp**
- **NEMA Class F Insulation**
- **CE, UL Listed, CSA Certified Motor**
- **Patented Reversible Flange for Threaded or Tube Connection**

VB001S, VB001 Single Phase or Three Phase TEFC Motor

SPECIFICATIONS

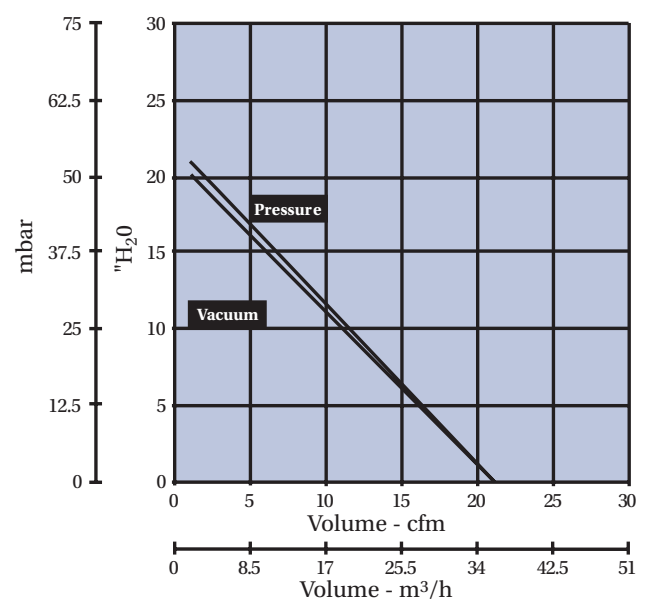
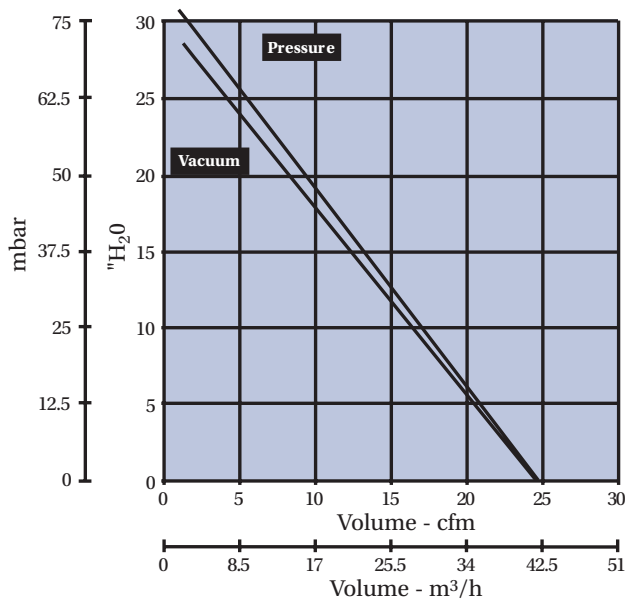
Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB001S	60	25	42.5	30.7	76.5	28.5	71	.13	115/230, 1Ø	1.25/.63	6.2/3.1	3450	62dba@60Hz	16	7.3
	50	21	35.7	21.3	53.1	20	49.8	.13	110/220, 1Ø	1.34/.67	6/3	2850		16	7.3
VB001	60	25	42.5	30.7	76.5	28.5	71	.13	200-230/460, 3Ø	.5-.48/.24	3.1-3.5/1.75	3450	61dba@60Hz	15	6.81
	50	21	35.7	21.3	53.1	20	49.8	.13	190-220/380-415, 3Ø	.5-.52/.25-.26	3.6-3.1/1.7-1.5	2850		15	6.81

Maximum Ambient Temperature: 140°F/60°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE

60Hz

50Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB002S, VB002

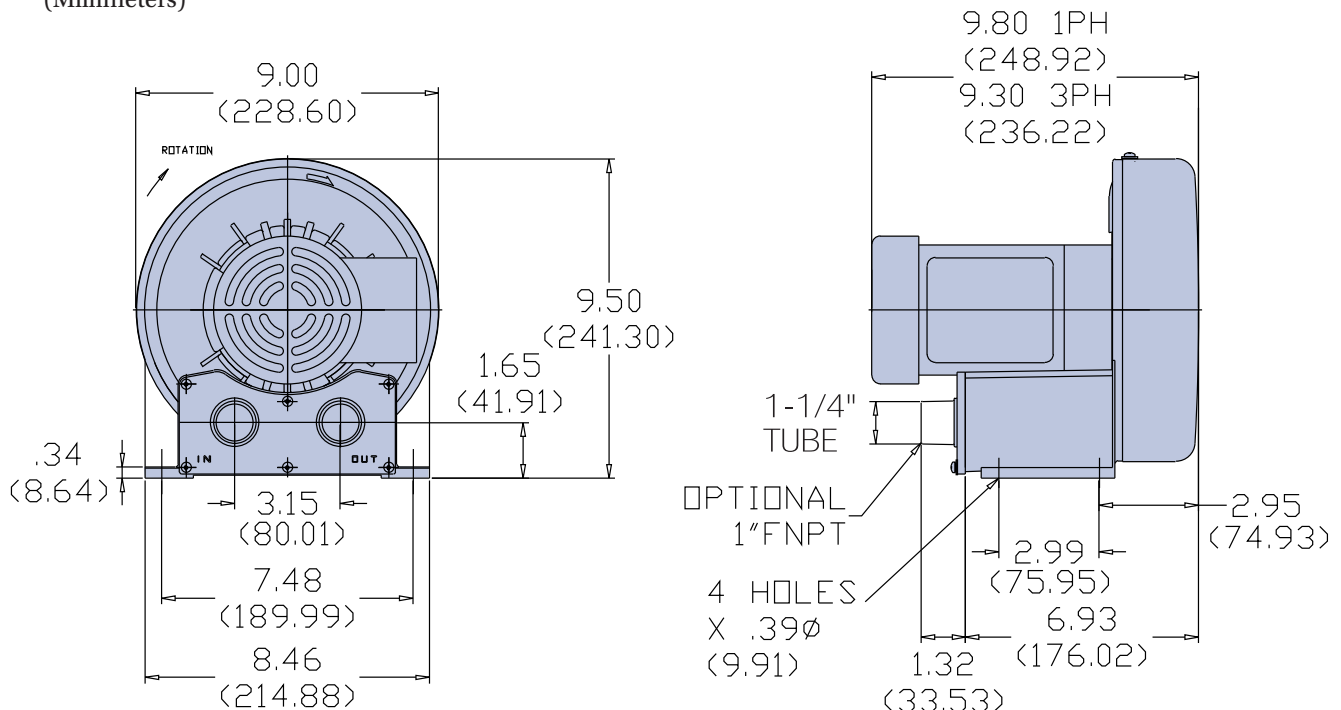
Single Phase or Three Phase TEFC Motor

- Flow to 40 cfm
- ¼ hp
- NEMA Class F Insulation
- CE, UL Listed, CSA Certified Motor
- Patented Reversible Flange for Threaded or Tube Connection



DIMENSIONS

Inches
(Millimeters)



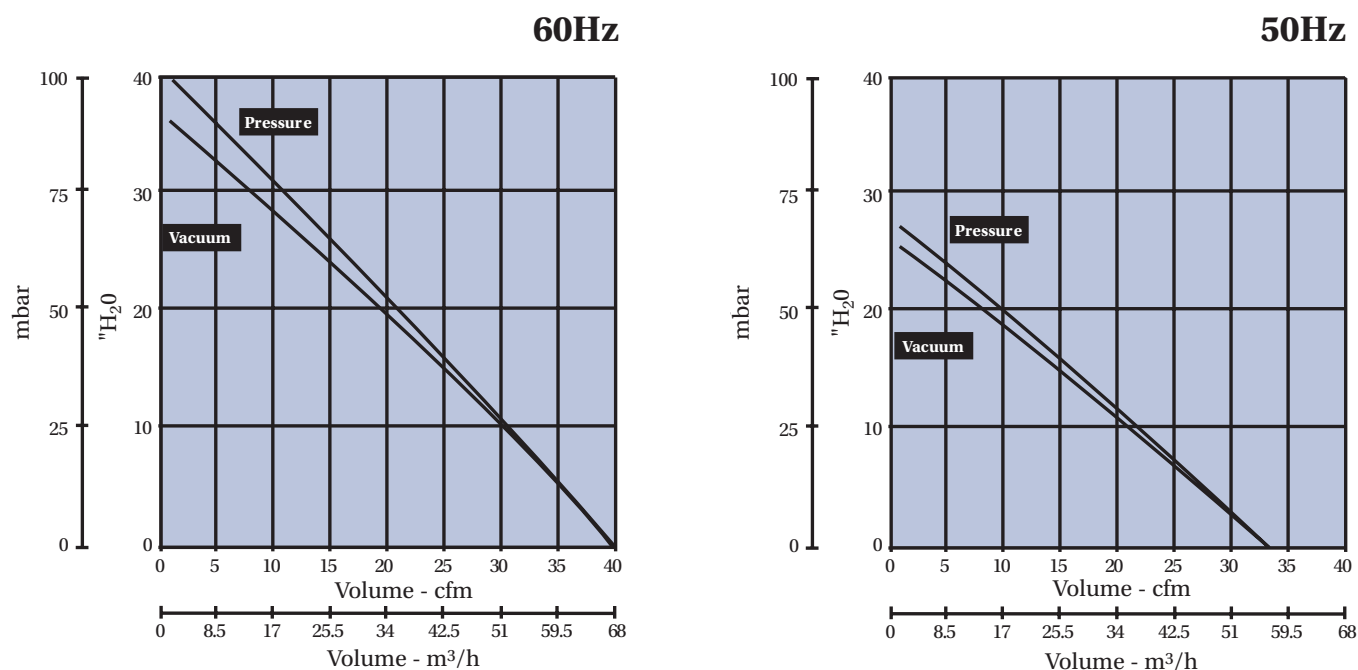
VB002S, VB002 Single Phase or Three Phase TEFC Motor

SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum		hp	Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB002S	60	40	68	40	99.6	36.5	90.9	.25	115/230, 1Ø	2.3/1.15	7.3/3.65	3300	61dba@60Hz	20.7	9.4
	50	33	56.1	27.5	68.5	25.5	63.5	.21	110/220, 1Ø	2.1/1.05	7/3.5	2700		20.7	9.4
VB002	60	40	68	40	99.6	36.5	90.9	.25	200-230/460, 3Ø	.86-.78/.39	3.4-3.9/1.95	3400	61dba@60Hz	19.5	8.9
	50	33	56.1	27.5	68.5	25.5	63.5	.21	190-220/380-415, 3Ø	.79-.74/.39-.38	3.3-3.8/1.6-1.8	2800		19.5	8.9

Maximum Ambient Temperature: 140°F/60°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB003S, VB003

Single Phase or Three Phase TEFC Motor

- **Flow to 60 cfm**
- **½ hp**
- **NEMA Class F Insulation**
- **CE, UL Listed, CSA Certified Motor**
- **Patented Reversible Flange for Threaded or Tube Connection**

VB003S, VB003 Single Phase or Three Phase TEFC Motor

SPECIFICATIONS

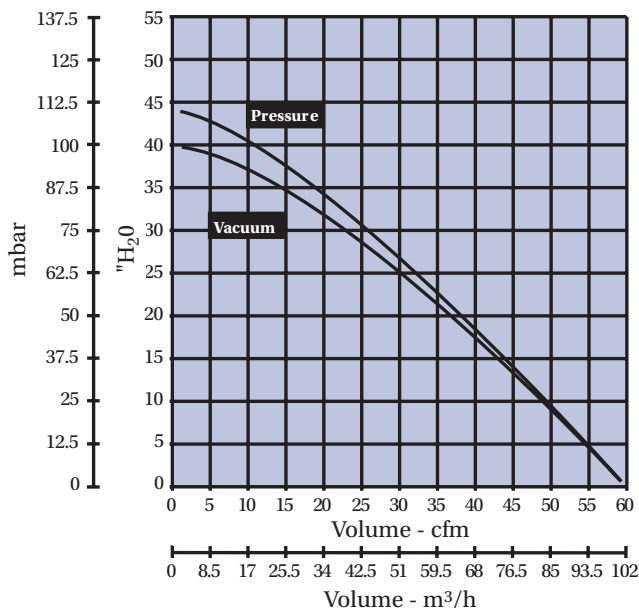
Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
	Hz	cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar	hp	Volts	Amperes	Amperes	rpm	@ 1.5m	lb	kg
VB003S*	60	60	102	44	109.6	40	99.6	.5	115/230, 1Ø	5.2/2.6	22.7/11.35	3400	66dba@60Hz	35	15.9
	50	49	83.3	30.2	75.2	28.2	70.2	.5	110/220, 1Ø	5.6/2.8	22.12/11.06	2800		35	15.9
VB003**	60	60	102	44	109.6	40	99.6	.5	208-230/460, 3Ø	1.8-1.6/.8	11.25-10.42/5.21	3450	66dba@60Hz	29	13.2
	50	49	83.3	30.2	75.2	28.2	70.2	.5	190/380-415, 3Ø	2/1-.9	9.6/4.8-4.7	2850		29	13.2

*Maximum Ambient Temperature: 140°F/60°C. Maximum Internal Motor Temperature: 311°F/155°C.

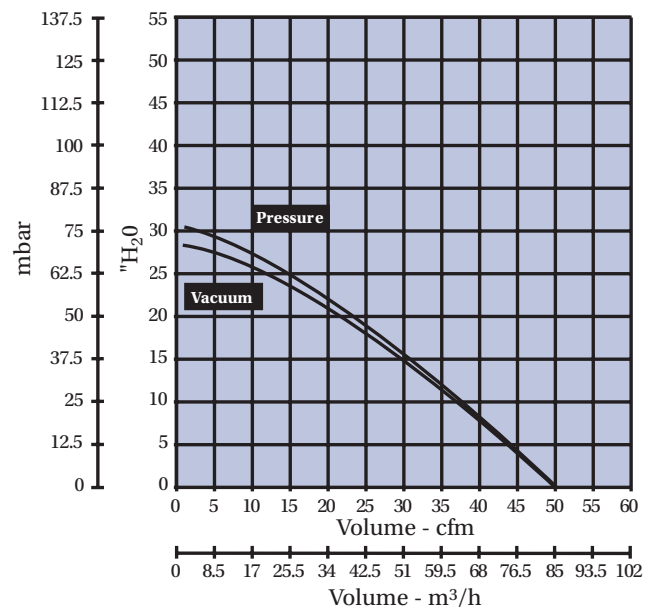
**Maximum Ambient Temperature: 140°F/60°C. Maximum Internal Motor Temperature: 356°F/180°C.

PERFORMANCE

60Hz



50Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB004S, VB004

Single Phase or Three Phase TEFC Motor

- **Flow to 72 cfm**
- **¾ hp**
- **NEMA Class F Insulation**
- **CE, UL Listed, CSA Certified Motor**

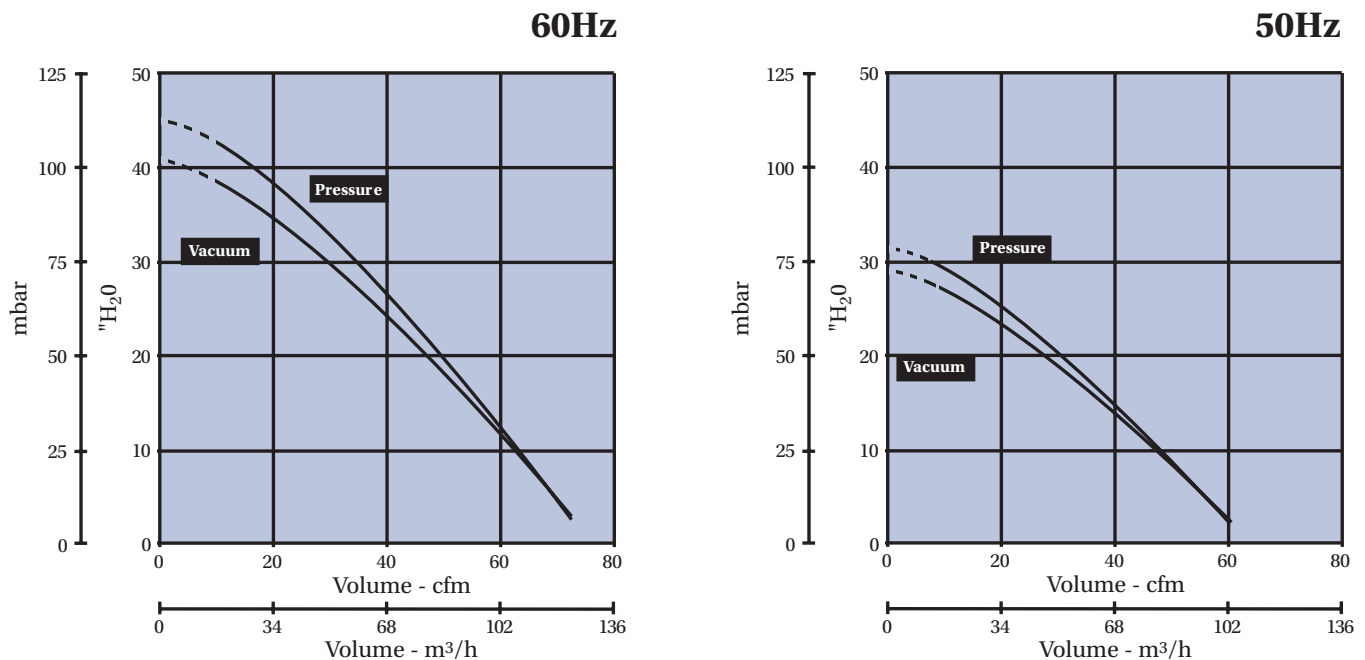
VB004S, VB004 Single Phase or Three Phase TEFC Motor

SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum		hp	Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
	Hz	cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar		Volts	Amperes	Amperes	rpm	@ 1.5m	lb	kg
VB004S	60	72	122.3	43.5	108.4	39.7	98.9	.75	115/208-230, 1Ø	9.6/5-4.8	56/25.3-28	3450	63dba@60Hz	45	20.4
	50	60	102	30	74.7	28	69.7	.63	100-110/220, 1Ø	9.9-11.6/5.8	48.2-53/26.5	2850		45	20.4
VB004	60	72	122.3	43.5	108.4	39.7	98.9	.75	200-230/460, 3Ø	2.3-2.4/1.2	13.7-15.8/7.9	3450	63dba@60Hz	40	18.2
	50	60	102	30	74.7	28	69.7	.63	190/380-415, 3Ø	2.4/1.2-1.3	14.6/7.3-6.7	2850		40	18.2

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB007S, VB007

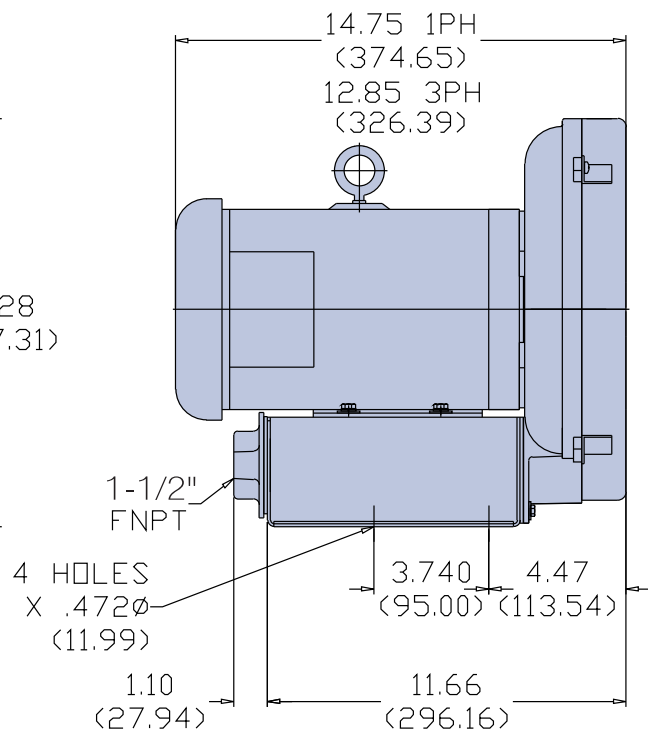
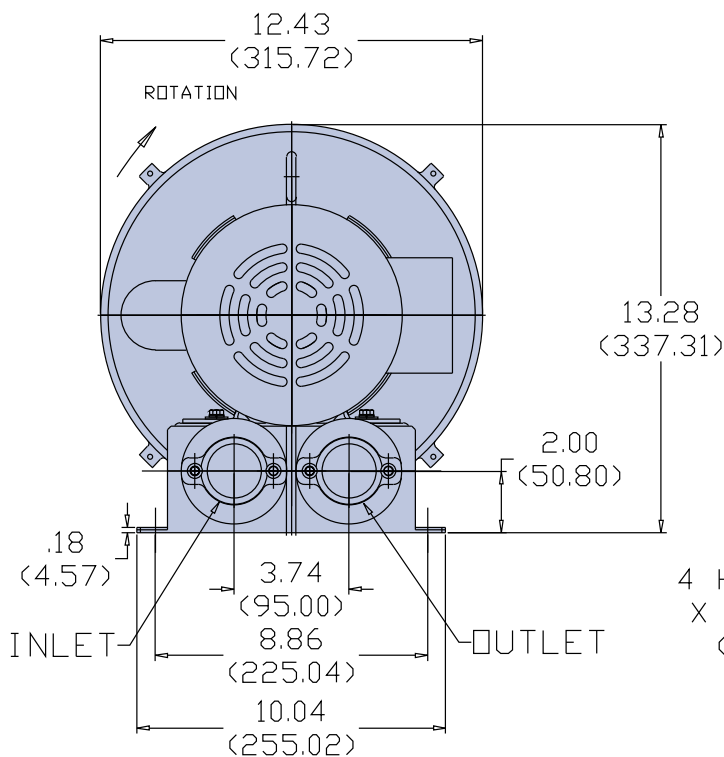
Single Phase or Three Phase TEFC Motor

- Flow to 107 cfm
- 1½ hp
- NEMA Class F Insulation
- CE, UL Listed, CSA Certified Motor



DIMENSIONS

Inches
(Millimeters)



VB007S, VB007 Single Phase or Three Phase TEFC Motor

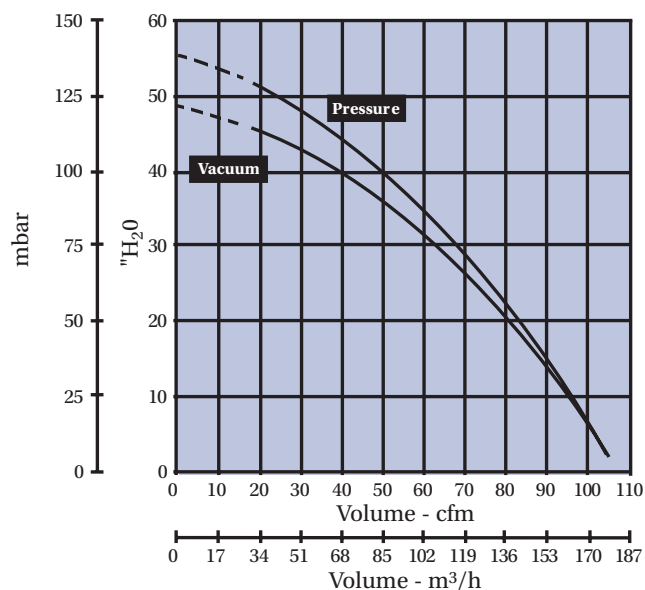
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB007S	60	107	181.8	51	127	45	112.1	1.5	115/230, 1Ø	13.4/6.7	97.8/49	3450	70dba@60Hz	65	29.5
	50	89	151.2	35	87.2	32	79.7	1.5	110/220, 1Ø	15.4/7.7	102.3/51	2850		65	29.5
VB007	60	107	181.8	51	127	45	112.1	1.5	200-230/460, 3Ø	4.4/3.8-1.9	41-35.7/18	3470	64dba@60Hz	50	22.7
	50	89	151.2	35	87.2	32	79.7	1.25	190/380-415, 3Ø	3.4/1.7-1.9	48.3/24-22	2890		50	22.7

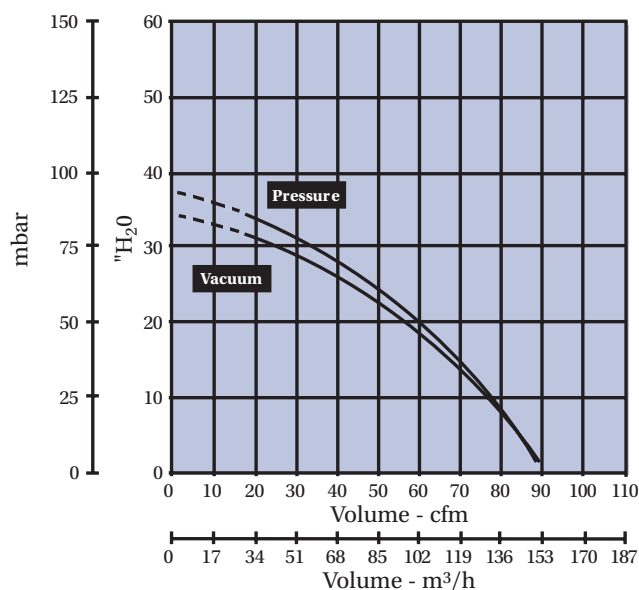
Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE

60Hz



50Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB019S, VB019

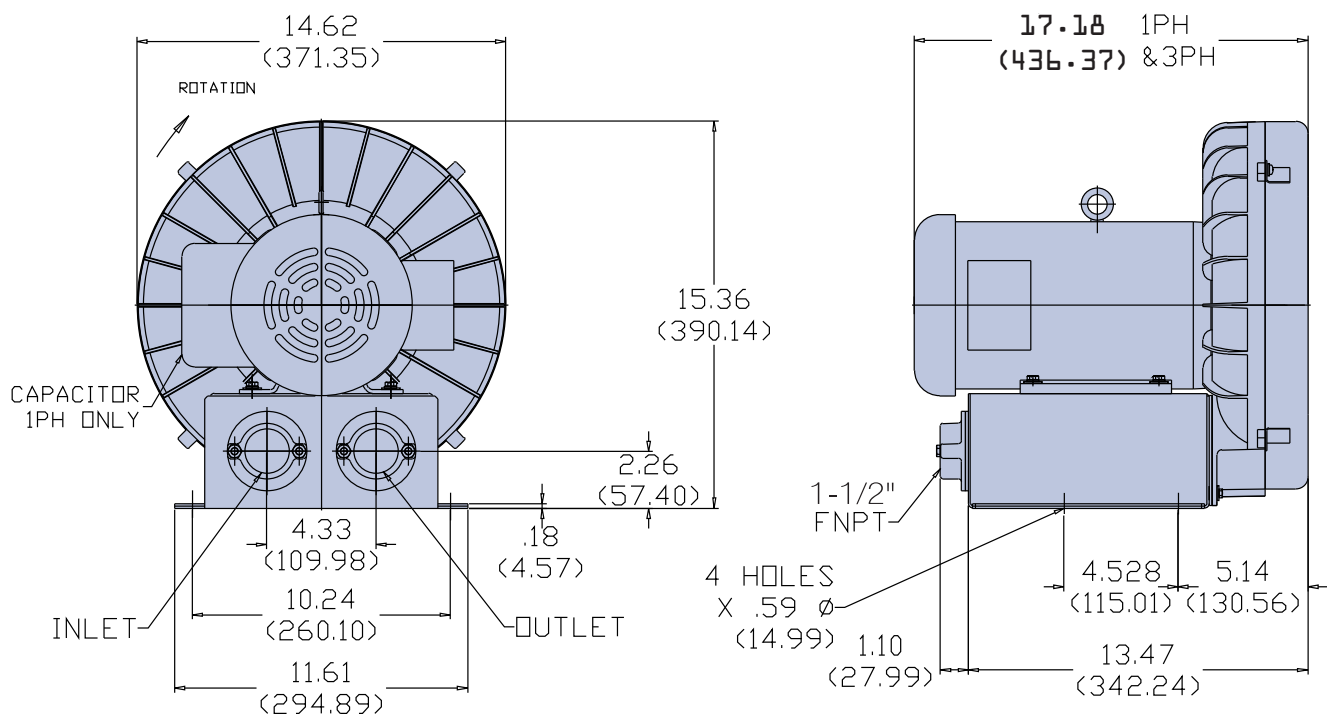
Single Phase or Three Phase TEFC Motor

- Flow to 160 cfm
- 2½ hp
- NEMA Class F Insulation
- CE, UL Listed, CSA Certified Motor



DIMENSIONS

Inches
(Millimeters)



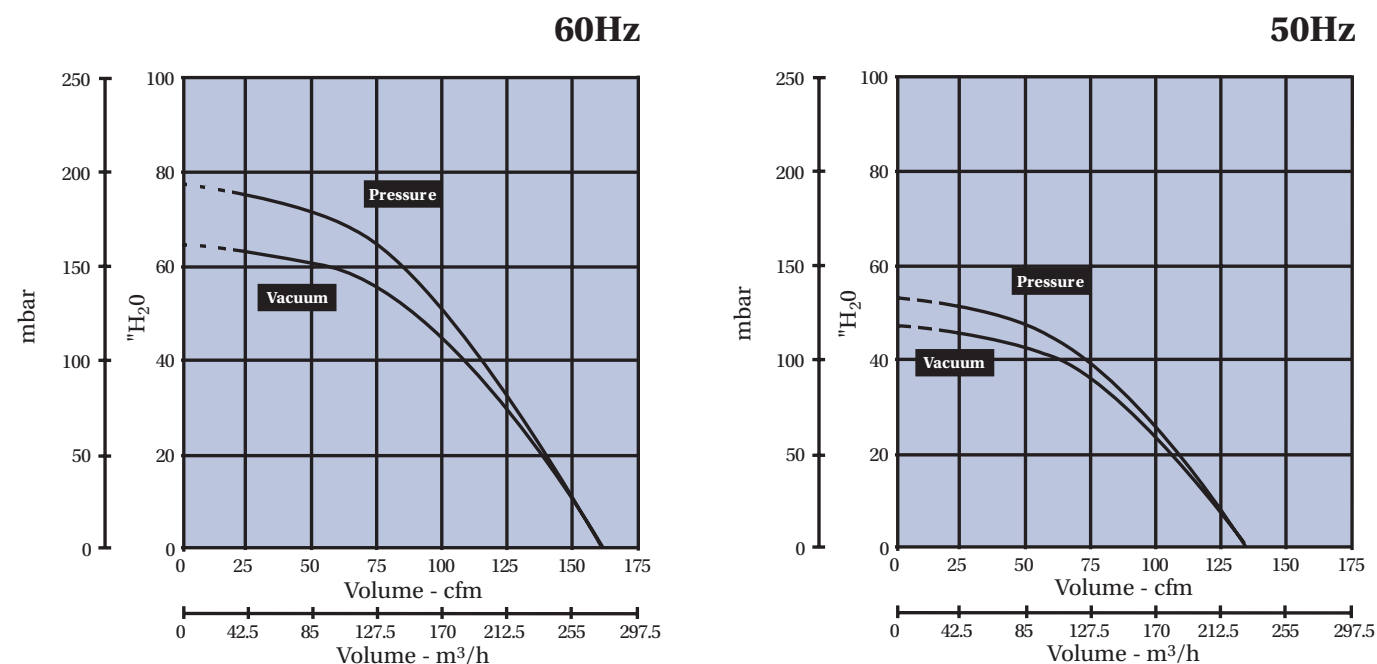
VB019S, VB019 Single Phase or Three Phase TEFC Motor

SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB019S	60	160	271.9	76	189.3	64	159.4	2.5	115/208-230, 1Ø	22/11.5-11	138/62.4-69	3450	70dba@60Hz	90	40.9
	50	133	226	52	129.5	46	114.6	2.1	100-110/220, 1Ø	22-21/10.5	122.7-135/67.5	2850		90	40.9
VB019	60	160	271.9	76	189.3	64	159.4	2.5	200-230/460, 3Ø	6.6-6/3	47-54/27	3450	73dba@60Hz	85	38.6
	50	133	226	52	129.5	46	114.6	2.1	190/380-415, 3Ø	6.2-3.1/2.9	55.7/27.8-25.5	2900		85	38.6

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

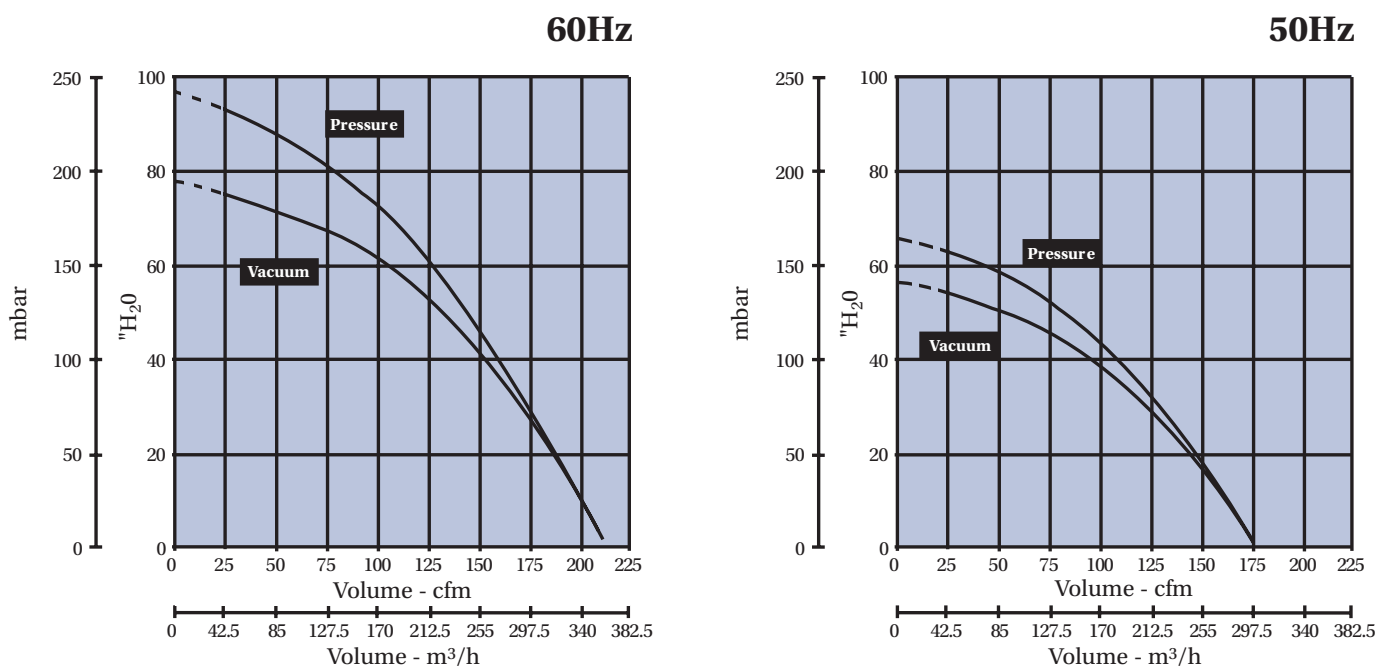
VB030S, VB030 Single Phase or Three Phase TEFC Motor

SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
	Hz	cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar	hp	Volts	Amperes	Amperes	rpm	@ 1.5m	lb	kg
VB030S	60	210	356.8	94	234.2	76	189.3	4	115/208-230, 1Ø	34.8/18.5-17.4	210/95-105	3450	71dba@60Hz	133	60.4
	50	175	297.4	63	156.9	57	142	3.3	100-110/220, 1Ø	42-38.6/19.3	176-194/97	2850		133	60.4
VB030	60	210	356.8	94	234.2	76	189.3	4	208-230/460, 3Ø	10.6-9.6/4.8	101.3-112/56	3450	73dba@60Hz	106	48.1
	50	175	297.4	63	156.9	57	142	3.4	190/380-415, 3Ø	9.8/4.9-4.8	102.6/51.3-47	2875		106	48.1

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB037S, VB037

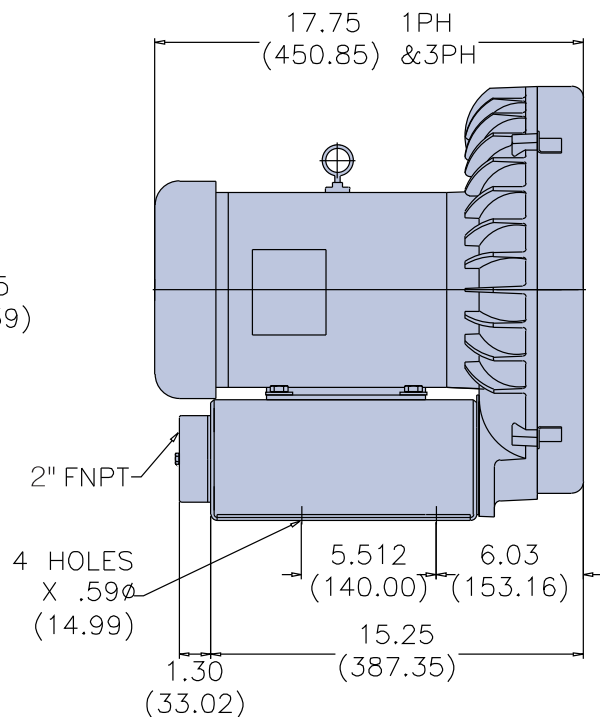
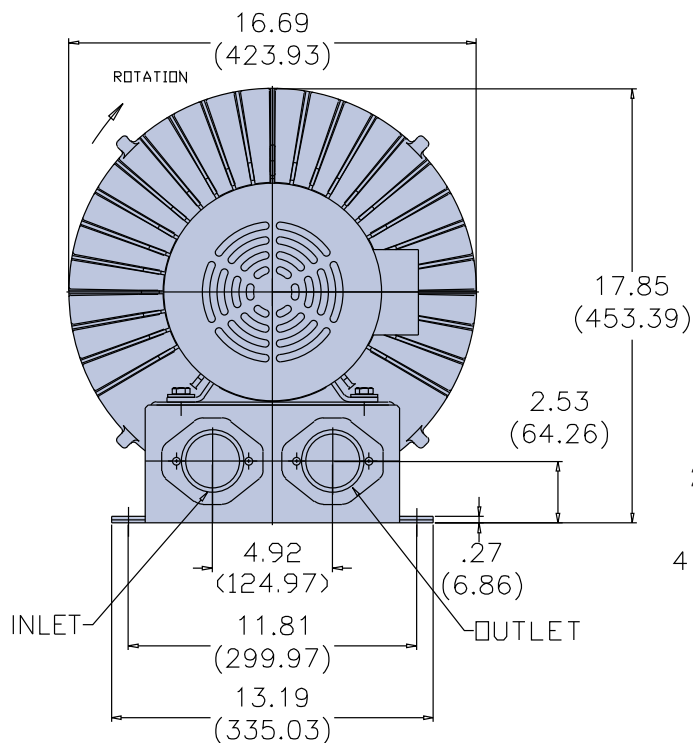
Single Phase or Three Phase TEFC Motor

- Flow to 262 cfm
- 5 hp
- NEMA Class F Insulation
- CE, UL Listed, CSA Certified Motor



DIMENSIONS

Inches
(Millimeters)



VB037S, VB037 Single Phase or Three Phase TEFC Motor

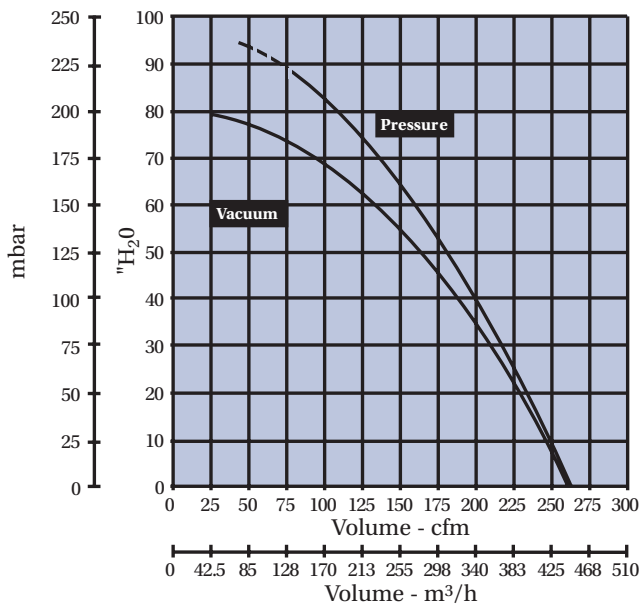
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level @ 1.5m	Weight	
		cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar	hp						lb	kg
VB037S	60	262	445.2	88	219.2	79	196.8	5	230, 1Ø	20.8	119	3450	74dba@60Hz	165	74.9
	50	218	370.4	66.5	165.7	57	142	4.2	220, 1Ø	19	113	2850		165	74.9
VB037	60	262	445.2	88	219.2	79	196.8	5	200-230/460, 3Ø	13-11.6/5.8	81.7-94/47	3450	76dba@60Hz	150	68.1
	50	218	370.4	66.5	165.7	57	142	4.2	190/380-415, 3Ø	12/6-5.6	92/46-42	2850		150	68.1

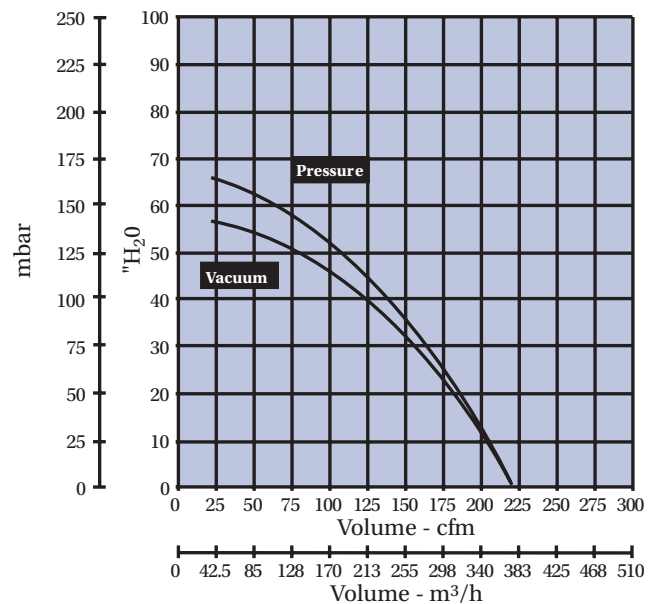
Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE

60Hz



50Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB055

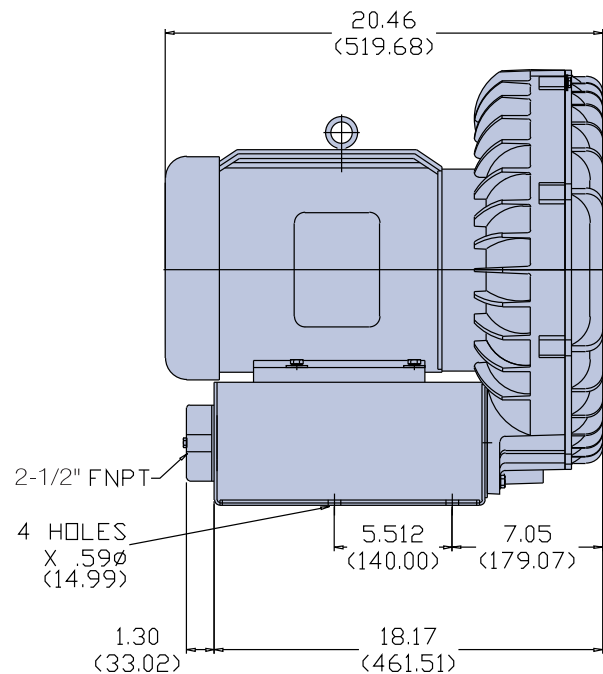
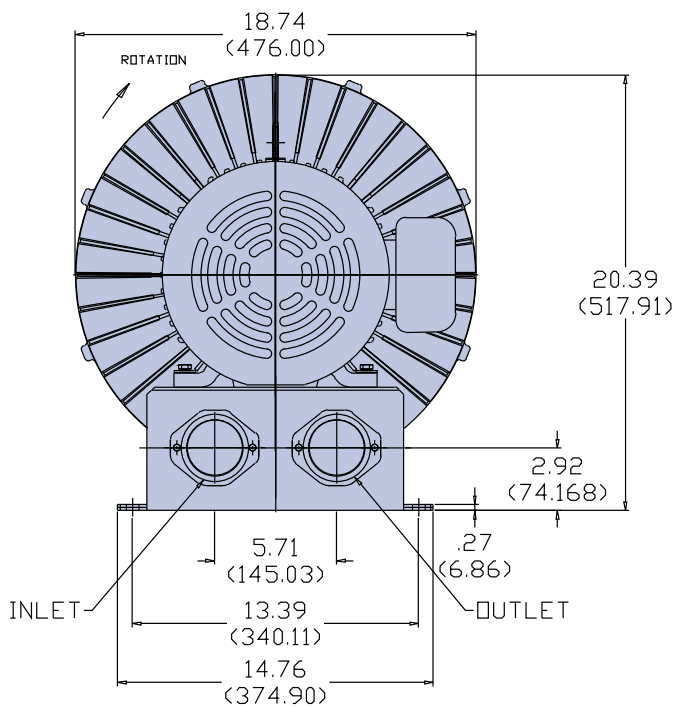
Three Phase TEFC Motor

- Flow to 370 cfm
- 7½ hp
- NEMA Class F Insulation
- CE, UL Listed, CSA Certified Motor



DIMENSIONS

Inches
(Millimeters)



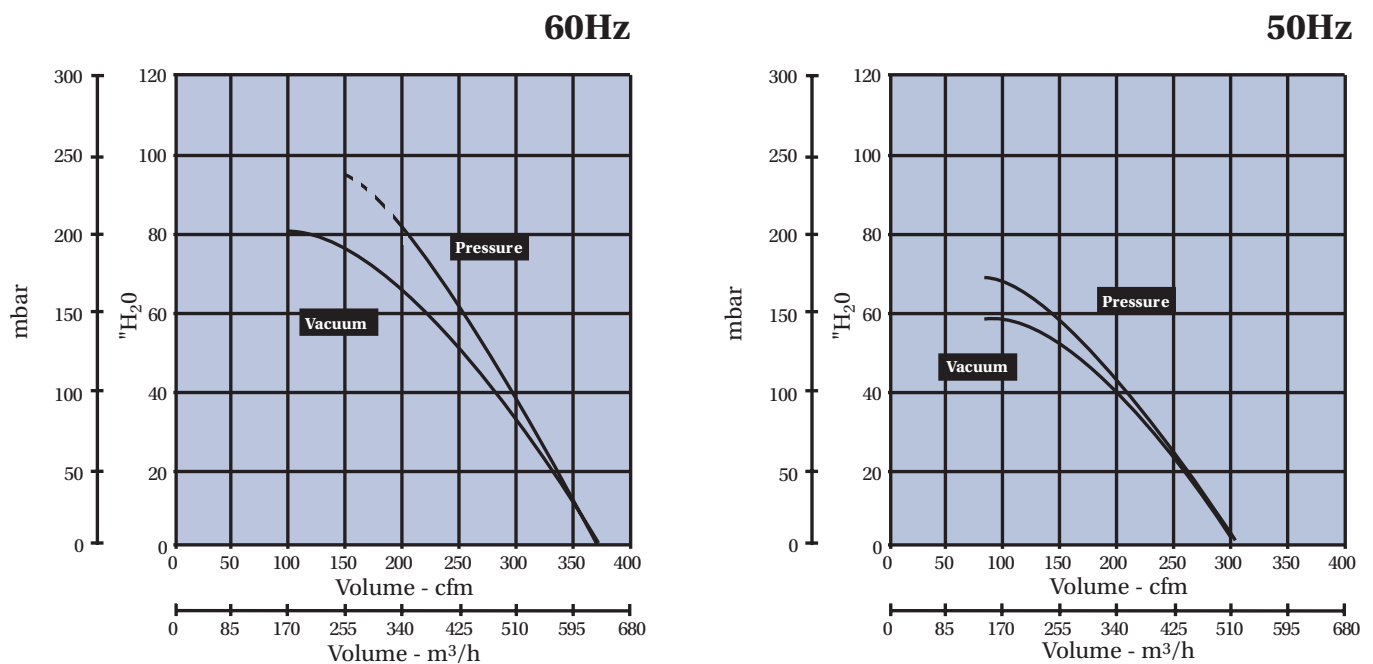
VB055 Three Phase TEFC Motor

SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB055	60	370	628.7	78	194.3	81	201.8	7.5	200-230/460,3Ø	20.8-19/9.5	125.2-144/72	3480	82dba@60Hz	250	113.5
	50	307	521.7	68	169.4	58	144.5	6.25	190/380-415,3Ø	19.2/9.6-9.4	138/69 63.2	2880		250	113.5

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB075

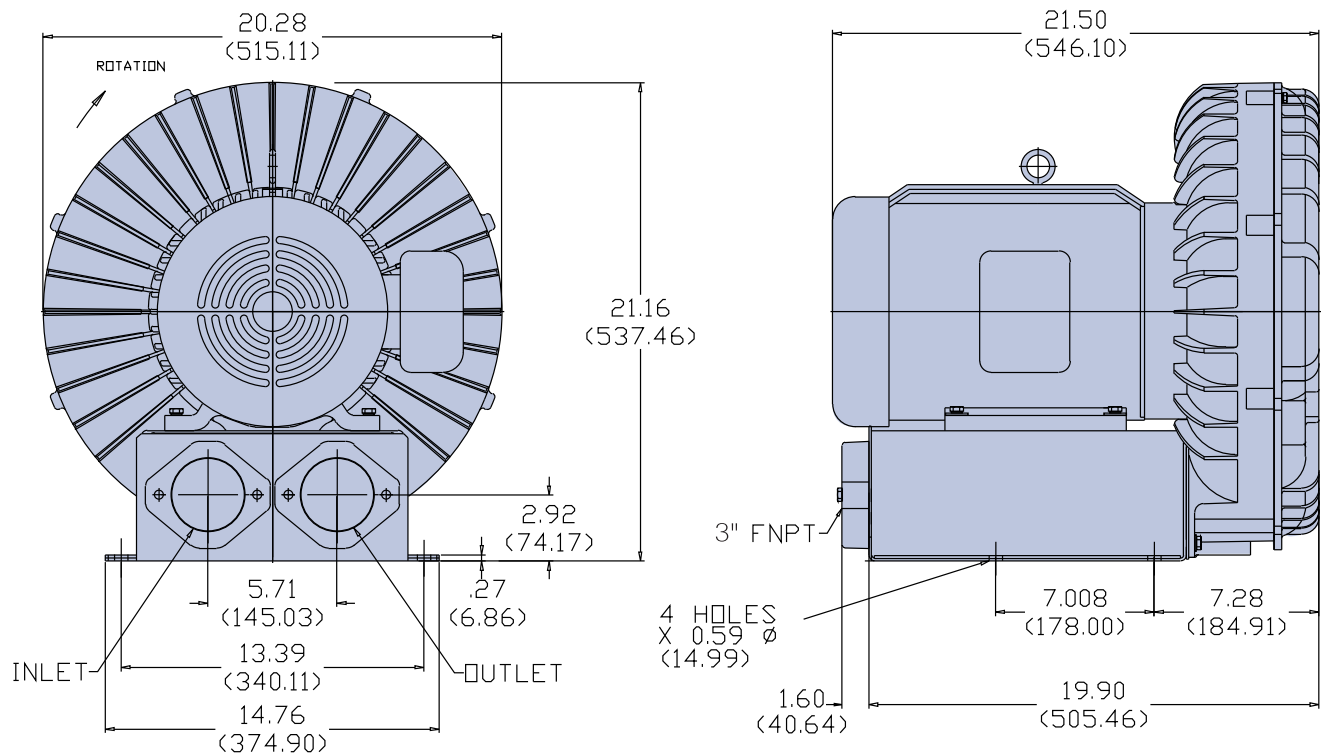
Three Phase TEFC Motor

- Flow to 495 cfm
- 10 hp
- NEMA Class F Insulation
- CE, UL Listed, CSA Certified Motor



DIMENSIONS

Inches
(Millimeters)



VB075 Three Phase TEFC Motor

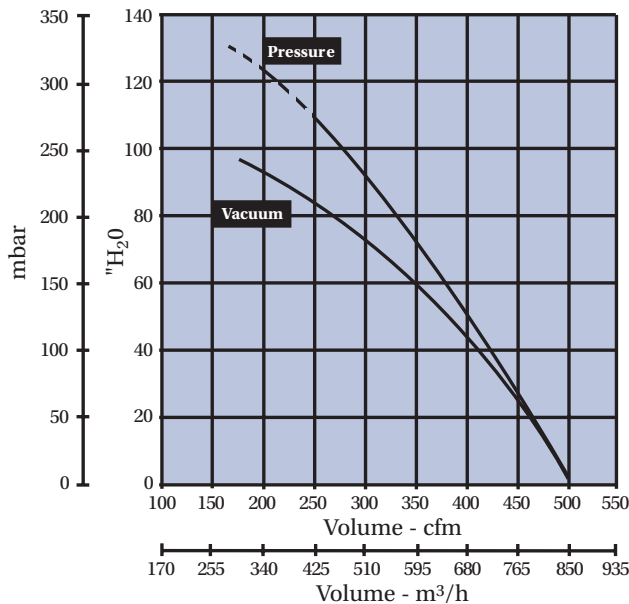
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar	hp						lb	kg
VB075	60	495	841.1	106	264	98	244.1	10	200-230/460,3Ø	27.5-27.2/13.6	197.6-227.2/113.6	3450	81dba@60Hz	265	120.3
	50	412	700	87	216.7	72	179.4	8.3	190/380-415,3Ø	27/13.5-14.5	218/109-99.8	2850		265	120.3

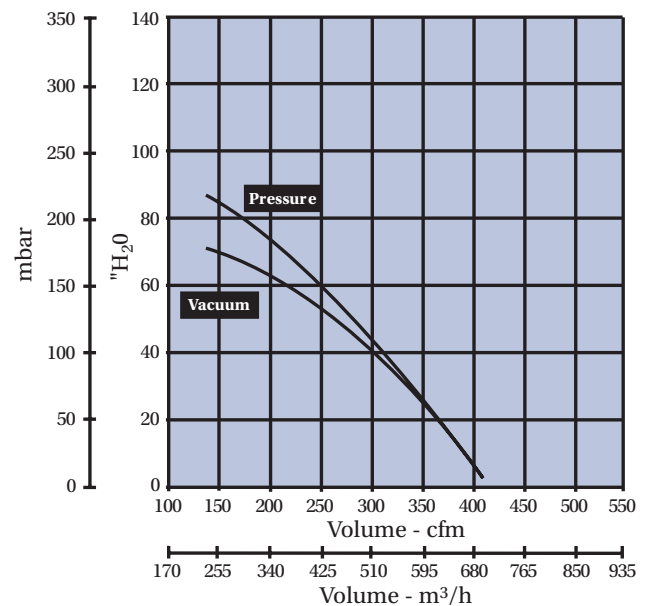
Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE

60Hz



50Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB110

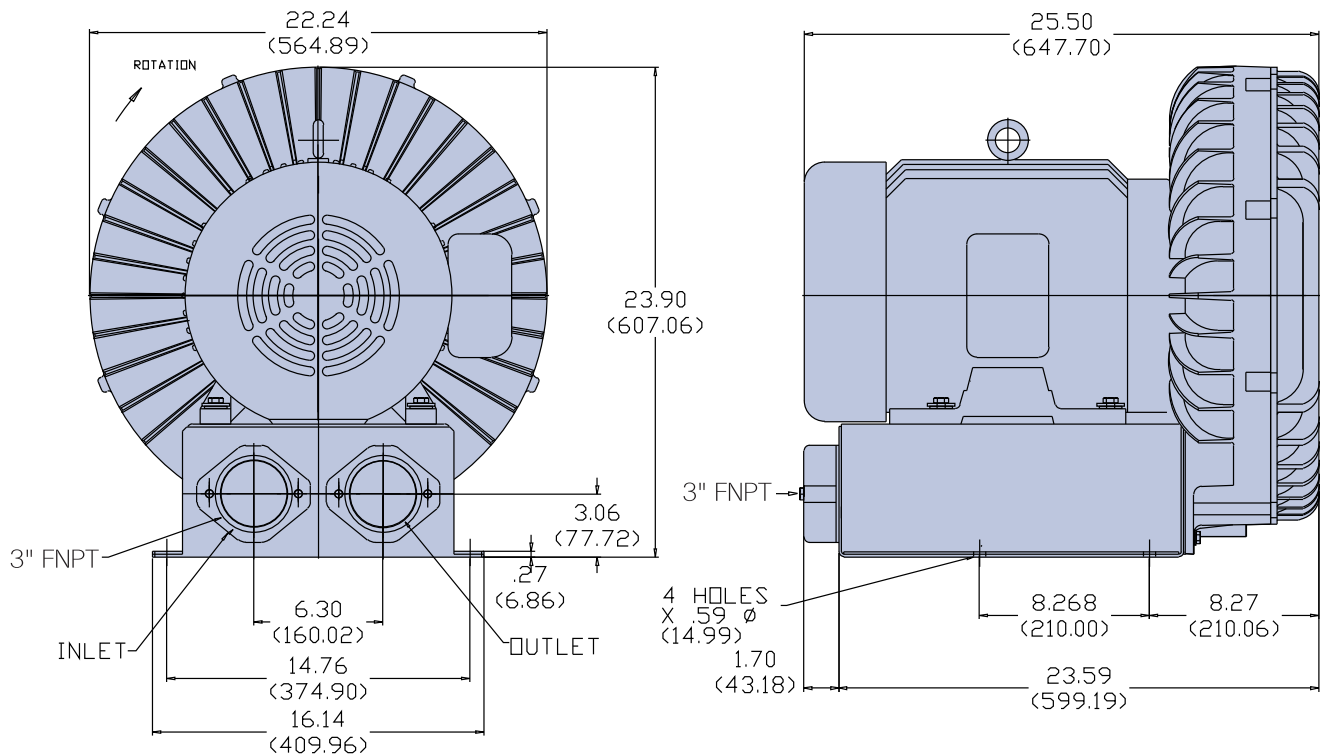
Three Phase TEFC Motor

- Flow to 645 cfm
- 15 hp
- NEMA Class F Insulation
- CE, UL Listed, CSA Certified Motor



DIMENSIONS

Inches
(Millimeters)



VB110 Three Phase TEFC Motor

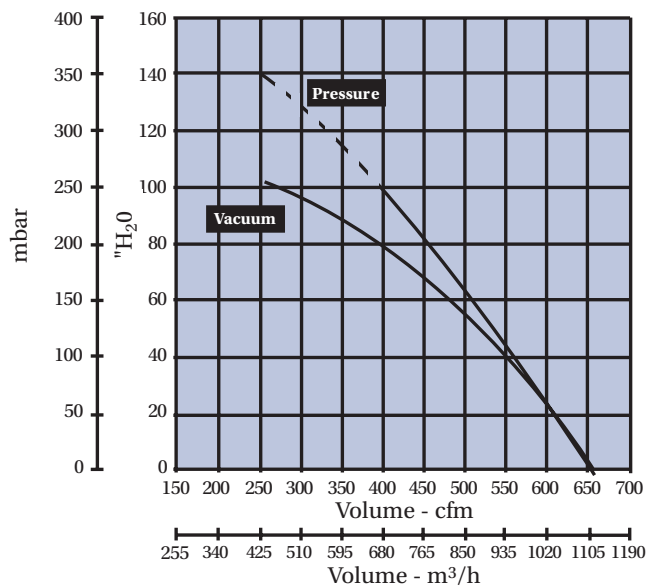
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
	Hz	cfm	m³/h	"H ₂ O	mbar	"H ₂ O	mbar	hp	Volts	Amperes	Amperes	rpm	@ 1.5m	lb	kg
VB110	60	645	1096	102	254.1	104	259.1	15	200-230/460,3Ø	38.5-35/17.5	250.4-288/144	3490	80dba@60Hz	370	168
	50	538	914.2	94	234.2	76	189.3	12.5	190/380-415,3Ø	35.2/17.6-16.6	276/138-126.4	2880		370	168

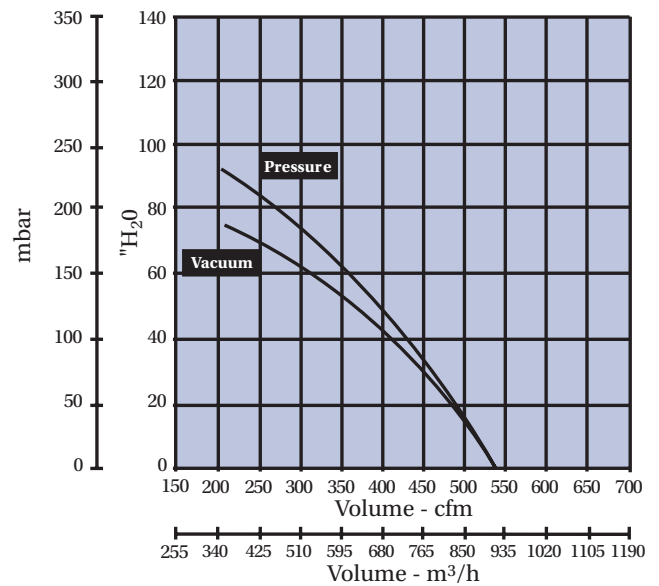
Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 311°F/155°C.

PERFORMANCE

60Hz



50Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.

VB007SXP, VB007XP

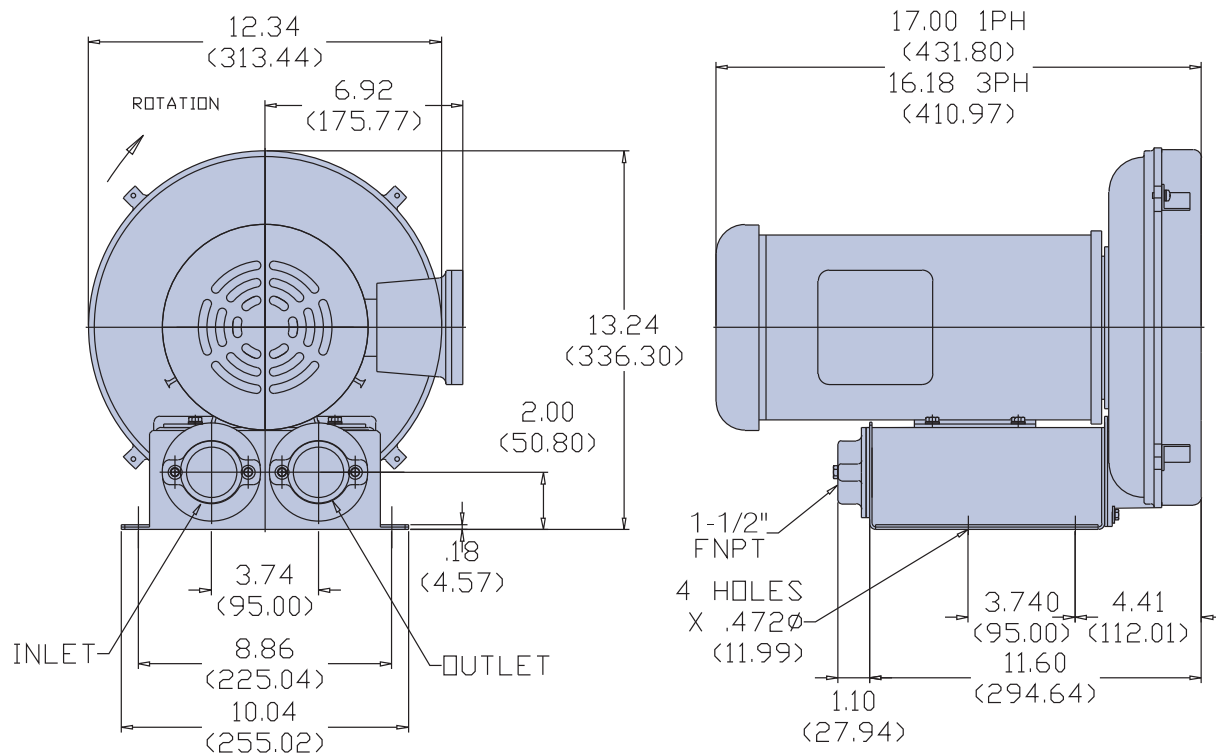
Single Phase or Three Phase Explosion-Proof Motor

- Flow to 107 cfm
- 1½ hp
- NEMA Class B Insulation
 - Pilot duty thermal protection
 - Class I, Group D; Div 1
 - Class II, Groups F and G
- Sealed Bearings
- UL Listed, CSA Certified Motor
- Viton® Shaft Seal
- High temperature anaerobic sealant



DIMENSIONS

Inches
(Millimeters)



VB007SXP, VB007XP

Single Phase or Three Phase Explosion-Proof Motor

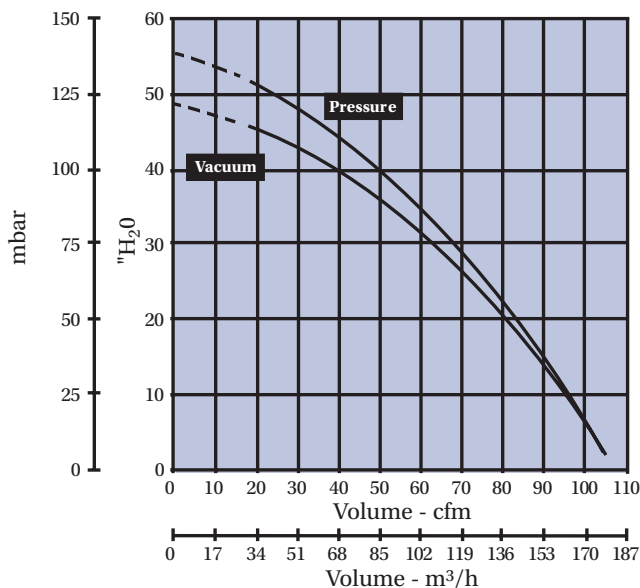
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ h	"H ₂ O	mbar	"H ₂ O	mbar	hp						lb	kg
VB007SXP	60	107	181.8	51	127	45	112.1	1.5	115/208-230,1Ø	15/7.9-7.5	87.4/48-43.7	3450	70dba@60Hz	78	35
VB007XP	60	107	181.8	51	127	45	112.1	1.5	200-230/460,3Ø	5.1-4.6/2.3	25.5-22.2/11	3450	64dba@60Hz	67	30.4

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 266°F/130°C.

PERFORMANCE

60Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.
Consult applicable federal, state and local codes regarding proper selection and use of explosion-proof motors.

VB019SXP, VB019XP

Single Phase or Three Phase Explosion-Proof Motor

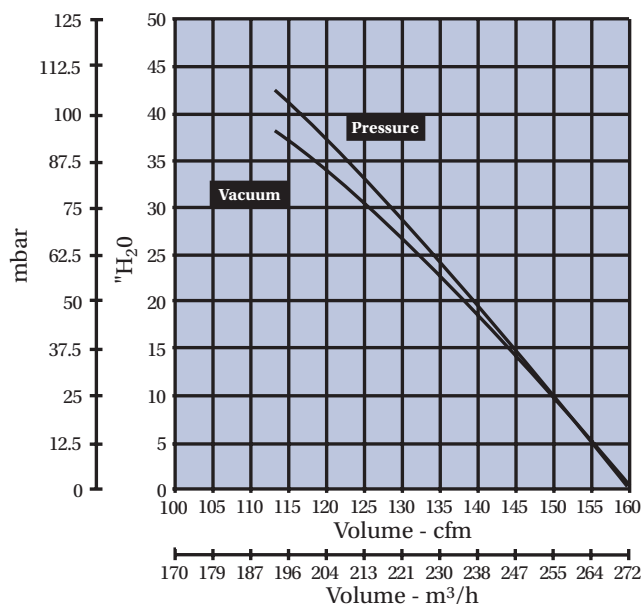
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ h	"H ₂ O	mbar	"H ₂ O	mbar	hp						lb	kg
VB019SXP	60	160	271.9	42.5	105.9	38.5	95.9	2	115/208-230,1Ø	21/11-10.5	165/74.6-82.5	3450	70dba@60Hz	114	51.8
VB019XP	60	160	271.9	42.5	105.9	38.5	95.9	2	200-230/460,3Ø	5.7-5.4/2.7	30.4-35/17.5	3450	73dba@60Hz	85	38.6

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 266°F/130°C.

PERFORMANCE

60Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.
Consult applicable federal, state and local codes regarding proper selection and use of explosion-proof motors.

VB030XP

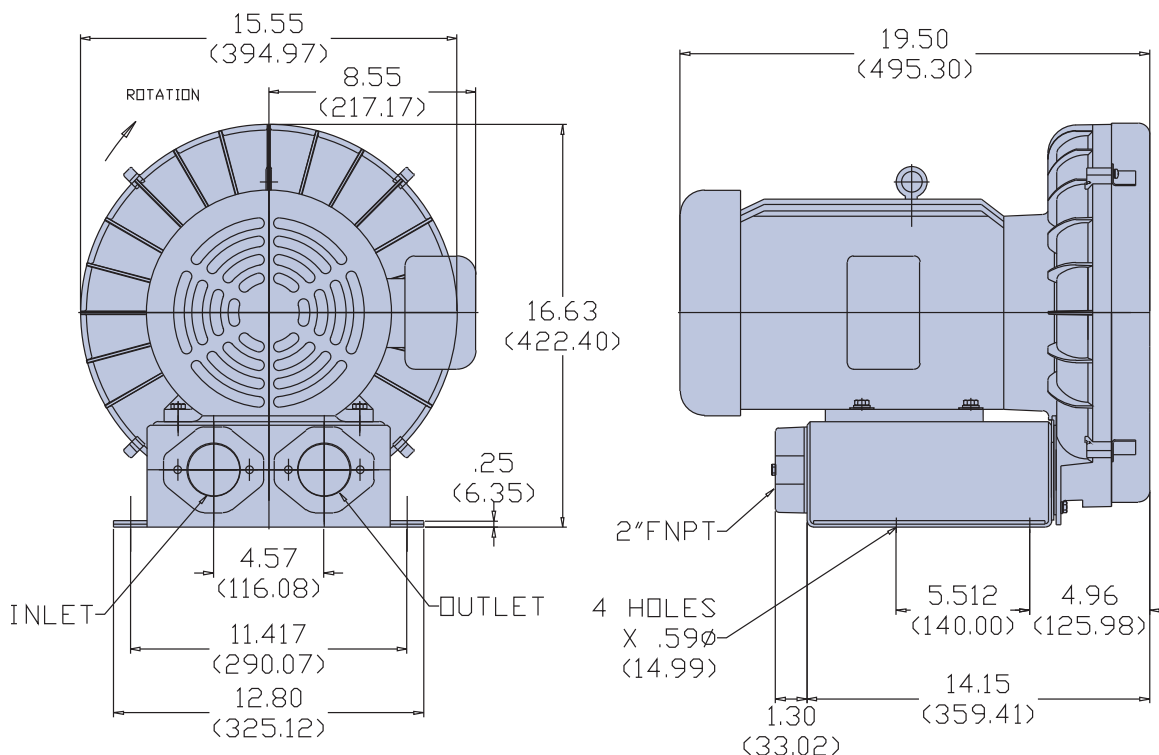
Three Phase Explosion-Proof Motor

- Flow to 210 cfm
- 4 hp
- NEMA Class B Insulation
 - Pilot duty thermal protection
 - Class I, Group D; Div 1
 - Class II, Groups F and G
- Sealed Bearings
- UL Listed, CSA Certified Motor
- Viton® Shaft Seal
- High temperature anaerobic sealant



DIMENSIONS

Inches
(Millimeters)



VB030XP

Three Phase Explosion-Proof Motor

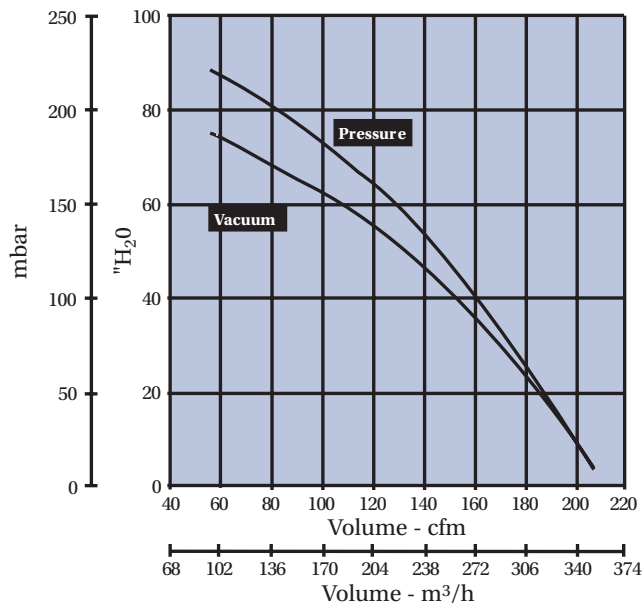
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum		hp	Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB030XP	60	210	356.8	87	216.7	72	179.4	4	200-230/460, 3Ø	10.6-10.2/5.1	101.3-112/56	3450	73dba@60Hz	160	72.6

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 266°F/130°C.

PERFORMANCE

60Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.
Consult applicable federal, state and local codes regarding proper selection and use of explosion-proof motors.

VB037XP

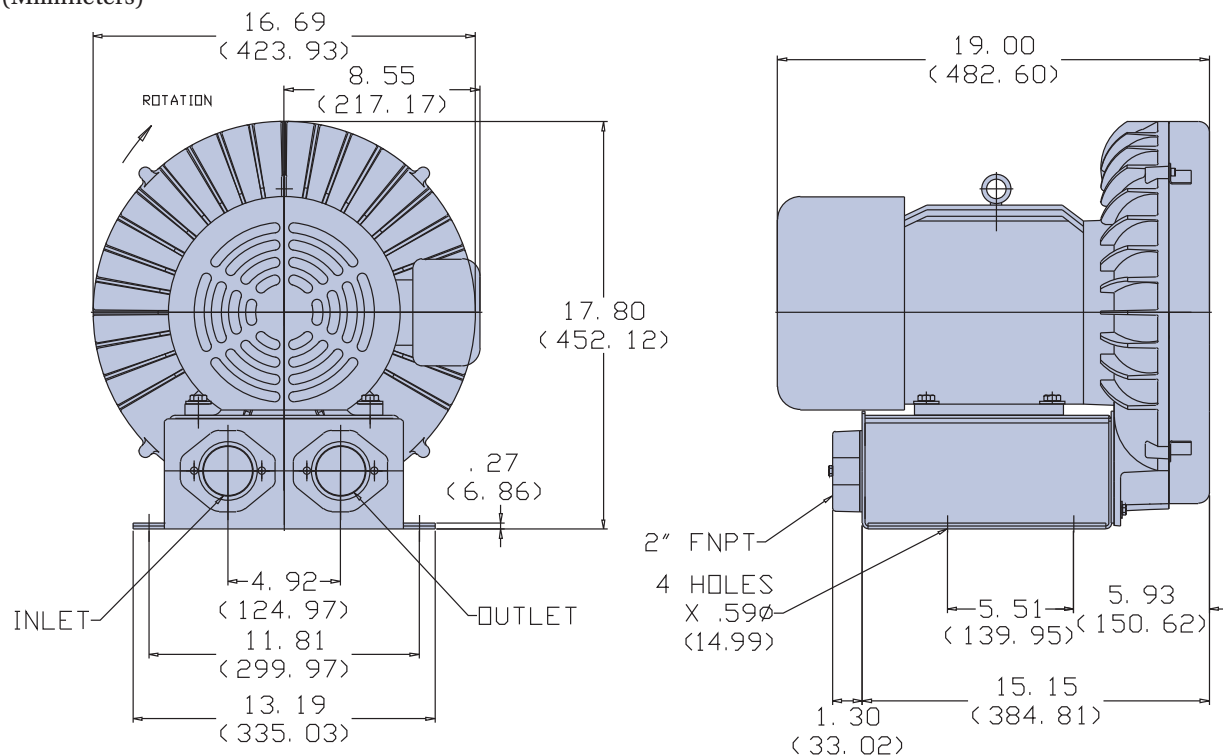
Three Phase Explosion-Proof Motor

- Flow to 262 cfm
- 5 hp
- NEMA Class B Insulation
 - Pilot duty thermal protection
 - Class I, Group D; Div 1
 - Class II, Groups F and G
- Sealed Bearings
- UL Listed, CSA Certified Motor
- Viton® Shaft Seal
- High temperature anaerobic sealant



DIMENSIONS

Inches
(Millimeters)



VB037XP Three Phase Explosion-Proof Motor

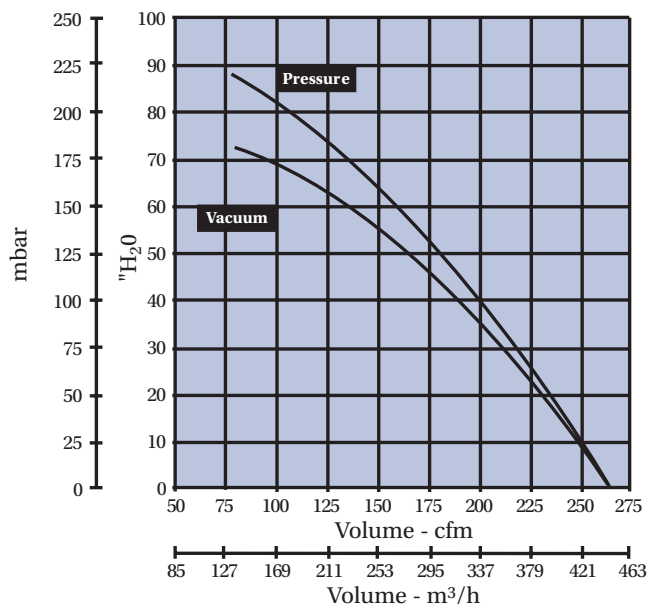
SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum			Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ /h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB037XP	60	262	445.2	88	219.2	72	179.4	5	200-230/460, 3Ø	13-12/6	92.2-106/53	3500	79dba@60Hz	203	92.2

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 266°F/130°C.

PERFORMANCE

60Hz



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.
Consult applicable federal, state and local codes regarding proper selection and use of explosion-proof motors.

VB055XP

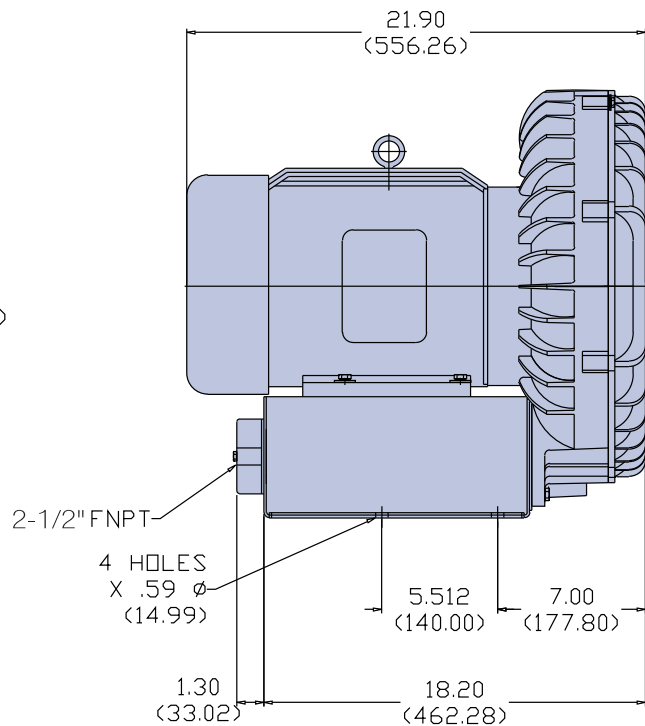
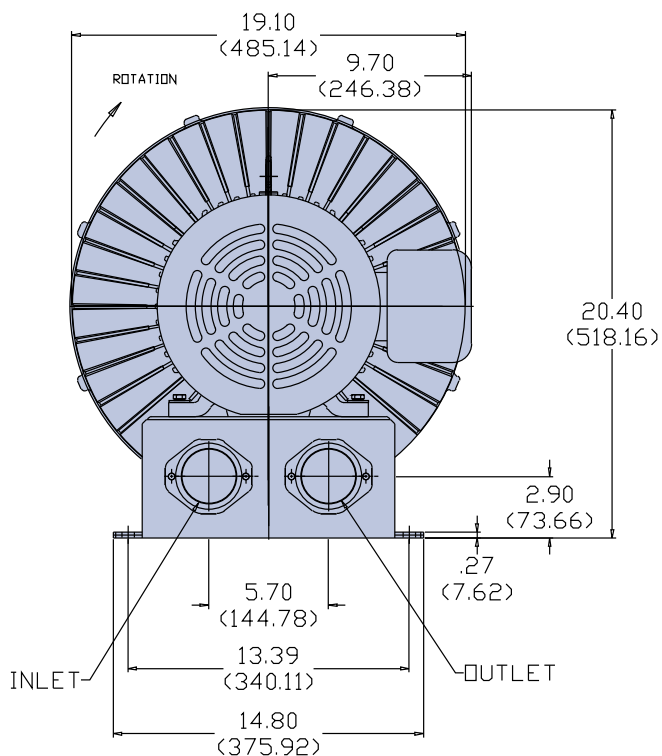
Three Phase Explosion-Proof Motor

- Flow to 370 cfm
- 7½ hp
- NEMA Class B Insulation
Pilot duty thermal protection
Class I, Group D; Div 1
Class II, Groups F and G
- Sealed Bearings
- UL Listed, CSA Certified Motor
- Viton® Shaft Seal
- High temperature anaerobic sealant



DIMENSIONS

Inches
(Millimeters)



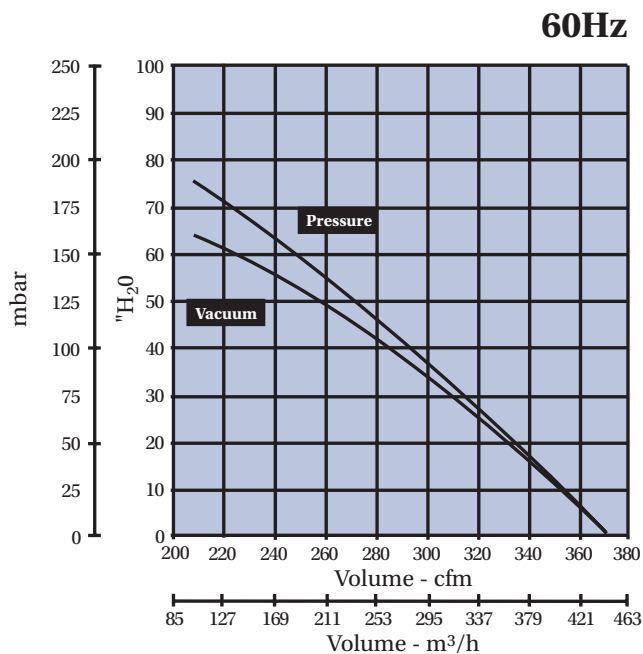
VB055XP Three Phase Explosion-Proof Motor

SPECIFICATIONS

Model No.	Freq	Maximum Volume		Maximum Operating Pressure		Maximum Operating Vacuum		hp	Standard Voltage	FLA Current	Locked Rotor Current	Speed	Estimated Acoustical Noise Level	Weight	
		cfm	m ³ h	"H ₂ O	mbar	"H ₂ O	mbar							lb	kg
VB055XP	60	370	628.7	76	189.3	64	159.4	7.5	200-230/460, 3Ø	20.7-18.6/9.3	154.3-177.4/88.7	3450	82dba@60Hz	297	134.8

Maximum Ambient Temperature: 104°F/40°C. Maximum Internal Motor Temperature: 266°F/130°C.

PERFORMANCE



Note: Dimensions, specifications and performance data are subject to change without notice. Contact factory for latest information.
Consult applicable federal, state and local codes regarding proper selection and use of explosion-proof motors.

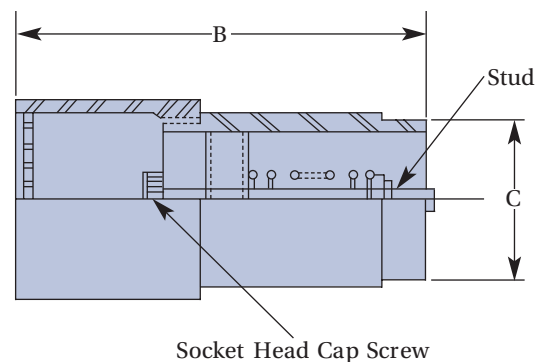
Blower Accessories Relief Valves

Spencer relief valves are designed to protect Vortex blowers from overheating in a blocked-off mode during vacuum or pressure operation. Follow the instructions furnished with each valve for adjustment procedures; avoid settings that involve blower operation beyond full load amperage of the motor as indicated on nameplate. No relief valve is required for the smallest Vortex blowers—Models VB001 and VB002 in vacuum service, Model VB001 in pressure service.



Pressure Relief Valves

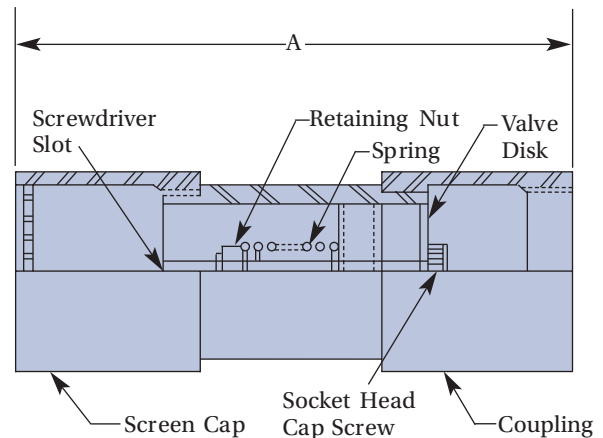
Blower Model	Part No.	*Max. Press. "H ₂ O		MPT Pipe Size, in.
		60 Hz	50Hz	
VB002	VLV90320	40	27	1½
VB003	VLV90320	44	30	1½
VB004	VLV90320	43	30	1½
VB007	VLV90314	51	35	1½
VB019	VLV90314	76	52	1½
VB030	VLV90316	94	63	2
VB037	VLV90316	88	66	2
VB055	VLV90316	78	68	2
VB075	VLV90321	106	87	2½
VB110	VLV90321	102	94	2½



Vacuum Relief Valves

Blower Model	Part No.	*Max. Vac. "H ₂ O		FPT Pipe Size, in.
		60 Hz	50Hz	
VB003	VLV90315	40	28	1½
VB004	VLV90313	40	28	1½
VB007	VLV90313	45	32	1½
VB019	VLV90313	64	46	1½
VB030	VLV90317	76	57	2
VB037	VLV90317	79	57	2
VB055	VLV90317	81	58	2
VB075	VLV90318	98	72	2½
VB110	VLV90318	104	76	2½

*Adjustment required.

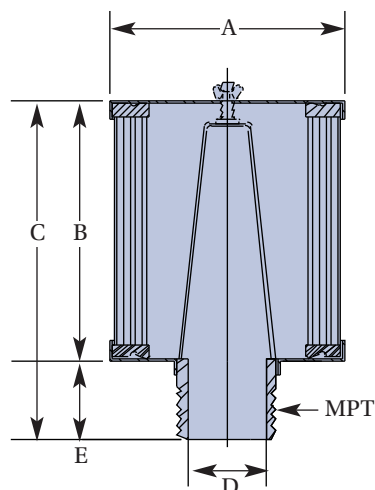


Blower Models	Dimensions, inches		
	A	B	C (NPT)
VB002, 003, 004, 007, 019	6¼	4 ¹¹ / ₁₆	1½
VB030, 037, 055	6¼	4 ¹¹ / ₁₆	2
VB075, 110	9 ³ / ₈	6¾	2½

Blower Accessories Inlet Filters and Accessory Arrangements

Inlet Filters

Inlet filters have a single connection and are typically used in pressure applications to prevent dust, abrasive particles and contaminants from entering the blower. The filter elements are made with pleated paper impregnated with thermoset resin; replacement elements are available. Filtration efficiency is >99% per SAE Fine Dust Test (10 micron particles).

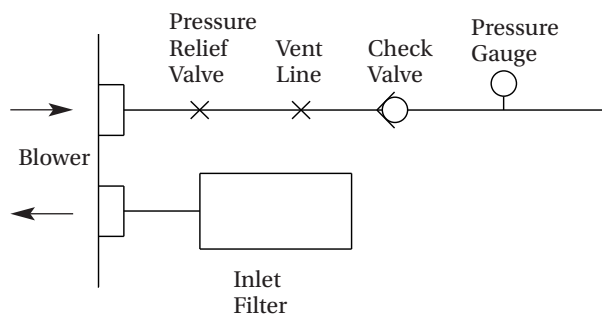


Blower Model	Inlet Filter Part No.	Replacement Filter Element Part No.	Dimensions, inches				
			A	B	C	D	E
VB001	FIL90164	ELE90043	4 ⁵ / ₈	4 ⁷ / ₈	6 ³ / ₈	1" tube	1 ¹ / ₂
VB002	FIL90164	ELE90043	4 ⁵ / ₈	4 ⁷ / ₈	6 ³ / ₈	1 ¹ / ₄ "	1 ¹ / ₂
VB003	FIL90164	ELE90043	4 ⁵ / ₈	4 ⁷ / ₈	6 ³ / ₈	1 ¹ / ₄ "	1 ¹ / ₂
VB004	FIL90164	ELE90043	4 ⁵ / ₈	4 ⁷ / ₈	6 ³ / ₈	1 ¹ / ₄	1 ¹ / ₂
VB007	FIL90154	ELE90043	4 ⁵ / ₈	4 ⁷ / ₈	6 ³ / ₈	1 ¹ / ₂	1 ¹ / ₂
VB019	FIL90154	ELE90043	4 ⁵ / ₈	4 ⁷ / ₈	6 ³ / ₈	1 ¹ / ₂	1 ¹ / ₂
VB030	FIL90161	ELE90045	6	4 ⁷ / ₈	6 ³ / ₈	2	2
VB037	FIL90161	ELE90045	6	4 ⁷ / ₈	6 ³ / ₈	2	2
VB055	FIL90162	ELE90045	6	4 ⁷ / ₈	7 ³ / ₈	2 ¹ / ₂	2 ¹ / ₂
VB075	FIL90166	ELE90044	6	9 ⁵ / ₈	12 ⁵ / ₈	3	3
VB110	FIL90166	ELE90044	6	9 ⁵ / ₈	12 ⁵ / ₈	3	3

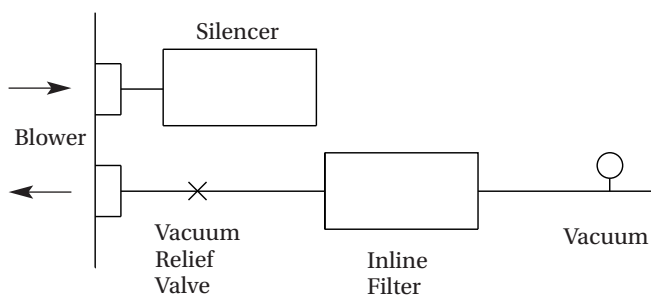
Blower Accessory Arrangements

These diagrams show the recommended location and sequence of placement for Vortex blower accessories, differentiated between pressure and vacuum applications.

Pressure



Vacuum

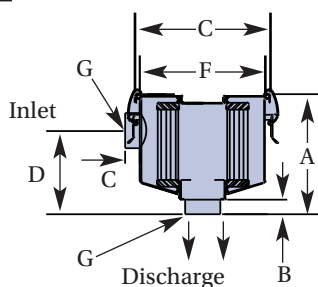


Blower Accessories

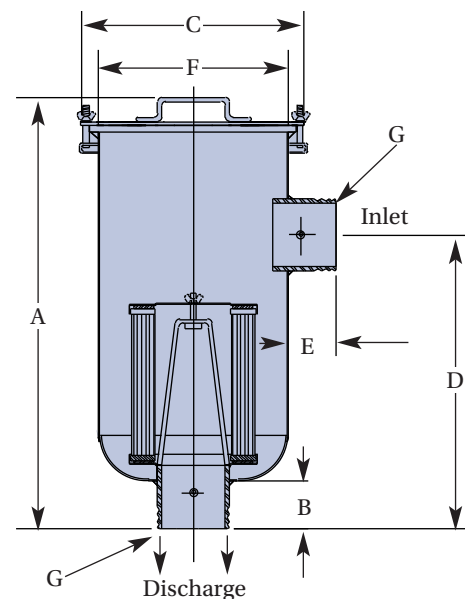
Inline filters



Inline filters have two connections and are typically used in vacuum applications to keep dust and abrasive particles from entering the blower through the connected piping. Filtration efficiency is >99% per SAE Fine Dust Test (10 micron particles). The pleated paper filter elements are replaceable. These filters have a low pressure drop and use a positive sealing O-ring system.



VB001 - VB055



VB075 - VB110

Blower Model	Inline Filter Part No.	Replacement Filter Element Part No.	Dimensions, inches							
			A	B	C	D	E	F	G	
VB001	FIL90174	ELE90059	6½	¾	7 ⁵ / ₁₆	4½	¾	6 ¹³ / ₁₆	1	FPT
VB002	FIL90174	ELE90059	6½	¾	7 ⁵ / ₁₆	4½	¾	6 ¹³ / ₁₆	1	FPT
VB003	FIL90175	ELE90059	6½	¾	7 ⁵ / ₁₆	4½	¾	6 ¹³ / ₁₆	1¼	FPT
VB004	FIL90175	ELE90059	6½	¾	7 ⁵ / ₁₆	4½	¾	6 ¹³ / ₁₆	1¼	FPT
VB007	FIL90176	ELE90059	6½	¾	7 ⁵ / ₁₆	4½	¾	6 ¹³ / ₁₆	1½	FPT
VB019	FIL90176	ELE90059	6½	¾	7 ⁵ / ₁₆	4½	¾	6 ¹³ / ₁₆	1½	FPT
VB030	FIL90177	ELE90067	10¼	¾	8¾	5	¾	7 ⁵ / ₈	2	FPT
VB037	FIL90177	ELE90067	10¼	¾	8¾	5	¾	7 ⁵ / ₈	2	FPT
VB055	FIL90178	ELE90067	10½	1	8¾	5½	1¼	7 ⁵ / ₈	2½	FPT
VB075	FIL90179	ELE90068	27 ⁷ / ₈	3	14	18½	3	12	3	MPT
VB110	FIL90179	ELE90068	27 ⁷ / ₈	3	14	18½	3	12	3	MPT

Blower Accessories Filter/Silencers And Silencers

Inlet Filter/Silencers

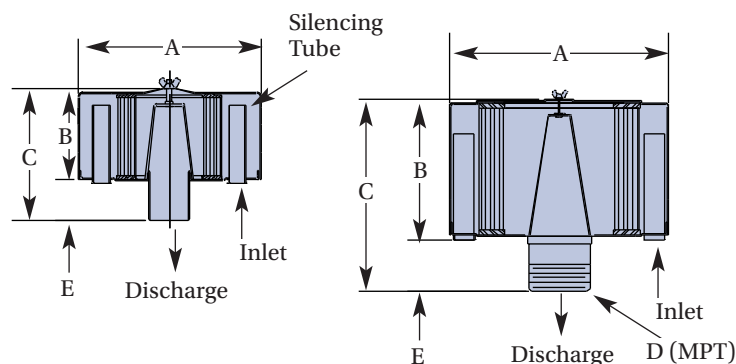
These filter/silencers combine filtration and sound absorption in one compact assembly. They have a single connection and are typically used in pressure applications. The filter elements are made with pleated paper impregnated with thermoset resin; replacement elements are available. Filtration efficiency is >99% per SAE Fine Dust Test (10 micron particles).

Blower Model	Inlet Filter/Sil. Part No.	Replacement Filter Element Part No.	Dimensions, inches				
			A	B	C	D	E
VB004	FSL90058	ELE90043	6.00	4.78	6.625	1¼	1.63
VB007	FSL90054	ELE90043	6.00	4.78	6.625	1½	1.63
VB019	FSL90054	ELE90043	6.00	4.78	6.625	1½	1.63
VB030	FSL90055	ELE90045	10.31	4.78	6.66	2	1.87
VB037	FSL90055	ELE90045	10.31	4.78	6.66	2	1.87
VB055	FSL90057	ELE90045	10.31	4.78	7.28	2½	2.5
VB075	FSL90056	ELE90044	10.31	10.0	12.5	3	2.5
VB110	FSL90056	ELE90044	10.31	10.0	12.5	3	2.5

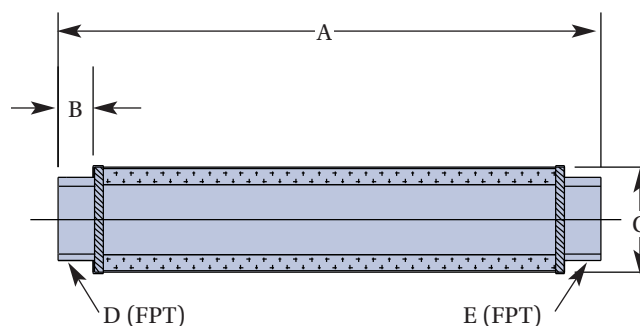


Tubular Silencers

These silencers are open-ended for connection at either or both ends. In pressure applications, they are typically used between the blower inlet and an inlet filter. In vacuum applications, they are attached to the blower discharge. The sound absorbent material is held in place by galvanized expanded metal.



Blower Model	Part No.	Dimensions, inches				
		A	B	C	D	E
VB004	SIL90124	12	.70	2.6	1¼	1¼
VB007	SIL90125	12	.70	3.1	1½	1½
VB019	SIL90125	12	.70	3.1	1½	1½
VB030	SIL90126	15¾	.70	3.63	2	2
VB037	SIL90126	15¾	.70	3.63	2	2
VB055	SIL90128	21	1.25	4.63	2½	2½
VB075	SIL90127	26	1.69	5	3	3
VB110	SIL90127	26	1.69	5	3	3



Blower Accessories

Gauges and Vortex Vacuum Separator

Pressure and Vacuum Gauges

These gauges monitor line pressure in either pressure or vacuum applications. The range is 0–200" H₂O, pressure or vacuum. The dial is 2½" diameter, brass fitting is ¼" NPT.

Pressure Gauge Part No. GAG90026

Vacuum Gauge Part No. GAG90032



Vortex Vacuum Separator

The Vortex Vacuum separator is used with a Vortex blower to create a compact, cost-effective central vacuum system for one to three operators. This combination offers a continuous-duty system with low maintenance and high filtration efficiency.

The separator has a permanent, two-layer filter fabric suspended above a dirt can. During vacuum operation, the fabric assumes a domed shape. When the vacuum producer is shut off, the weighted fabric inverts and sheds its accumulated dirt. This simple self-cleaning technique is a Spencer exclusive.

The separator weighs 21 lb and is furnished with brackets for wall mounting.

Separator Part No. SEP90307

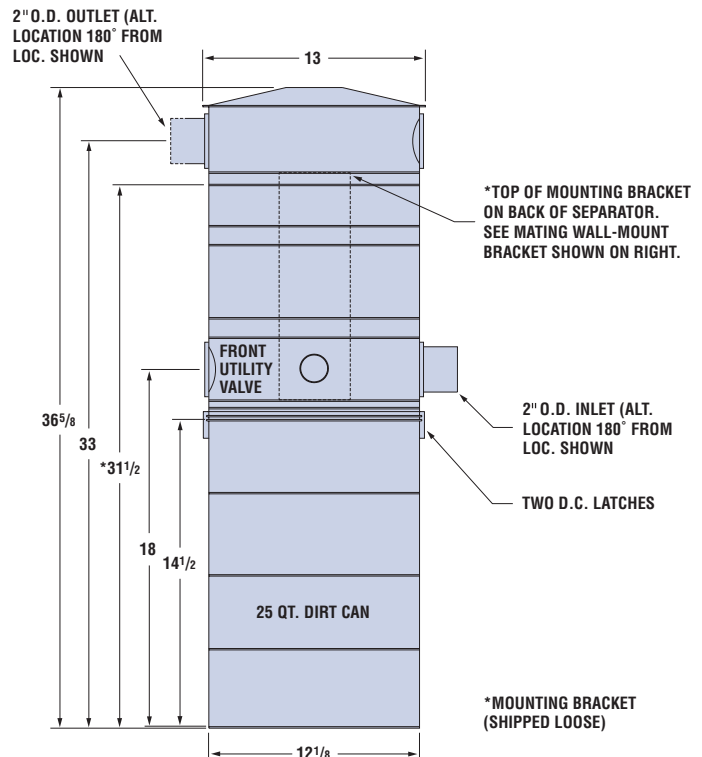


Filter Section

- Double filter fabric: cotton sateen liner with Dacron® cover. Part No. BVA90183
- Rugged steel construction.
- Filtration efficiency: 98.9% at 2 micron particle size.
- 2" OD tube inlet.
- Baked high-gloss enamel exterior finish.

Dirt Can

- Eight-gallon dirt/debris collection.
- Baked epoxy phenolic paint interior finish.
- Baked high-gloss enamel exterior finish.



Related Products

FastVac® Vacuum Cleaning Unit

The Spencer FastVac system is a solution to the need for a compact, cost-effective, one or two operator central vacuum system. This heavy-duty, industrially rated vacuum system is ideal for a variety of general cleaning applications. The system provides continuous-duty and quiet operation, combined with low maintenance and high filtration efficiency. It is designed for use with 15' x 1.5" diameter hose, with a maximum system length of 65 feet, at sea level conditions.

FastVac units are equipped with a Vortex® regenerative vacuum producer, two-stage separator with a cartridge filter and quick-release dirt can. The system is interconnected and mounted on a steel floor stand, ready for installation. Mobile units and optional HEPA filters are available.



Stationary Model – Shown with optional HEPA filter



Mobile Model – Shown with optional HEPA filter and hoses and tools