New WindJet® Air Knife Delivers Superior Drying Performance in a Complete, Customizable Package



Spraying Systems Co.®



A Breakthrough in Air Knife Technology

Spraying Systems Co.®, the world's leading manufacturer of spray nozzles and accessories, has put much effort into using our unparalleled spray technology expertise to develop a new advanced air knife. And the work has paid off. This exciting debut will make dryoff more controlled, more efficient and more reliable.

Unique Protruding Leading Edge Leads to a More Controlled Air Stream

The new WindJet Air Knife, the latest addition to our successful WindJet line, has many features that are sure to make your dryoff application more successful. The biggest development is our unique protruding leading edge that extends 1/8" beyond the air slot along the length of the knife. Because of this pronounced edge, the flow of air is directed out of the knife in a straight stream. This leads to a stream that retains its integrity in a more controlled manner.

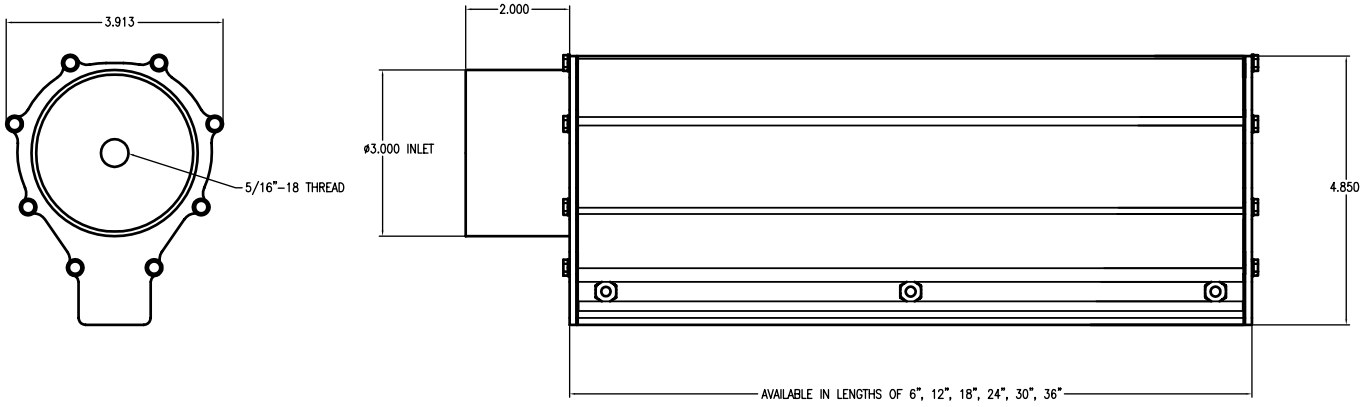
The extended edge also improves the air entrainment around the air knife body. The WindJet Air Knife operates on the principles of the Coanda effect and air entrainment to provide a steady, consistent, high-volume stream of air. The longer edge of the air knife takes advantage of the Coanda effect, which induces the supplied air to attach itself to the surface of the knife. Thus the integrity of the air stream is maintained further downstream, and a condition conducive to the entraining of ambient air is present, increasing the total volume of air (see Figure 2).

The benefit is clear— a uniform, high-volume, constant air stream along the entire knife length ensures no spotting or blotching. Which means you gain a higher quality, consistent dryoff process.

In addition to producing a uniform, controlled air stream, our leading edge helps application setup. The extended edge provides a visual guide as to where the air stream is headed. It literally points out the direction of the flow, so you can accurately position the knife for optimum performance.

The air knife comes in two air slot sizes, .040" for a higher impact air stream and .060" for a higher flow. Both offer greater flexibility in air knife performance.

Figure 1



The Entire Air Knife Performs

Our WindJet Air Knife features a teardrop shape, which gives the exiting air stream a higher velocity for a more effective result. Additionally, high-quality gaskets on each end cap of the knife avoid air leakage for higher efficiencies.

Our knife offers superior corrosion resistance, includes a 3" flanged air inlet and is designed with a threaded mounting insert. The knife is available in the following lengths: 6", 12", 18", 24", 30" and 36" (see Figure 1). Custom lengths are available, contact your Spraying Systems Co.® sales engineer for details.

WindJet® Air Knife Performance Features:

- Unique extended leading edge delivers consistent, controlled air stream
- Improved setup with added visual reference
- Two available air slot sizes
- High-velocity air stream, due to teardrop shape and improved air entrainment
- Corrosion-resistant finish
- Leak-proof end caps
- Standard lengths up to 3 feet

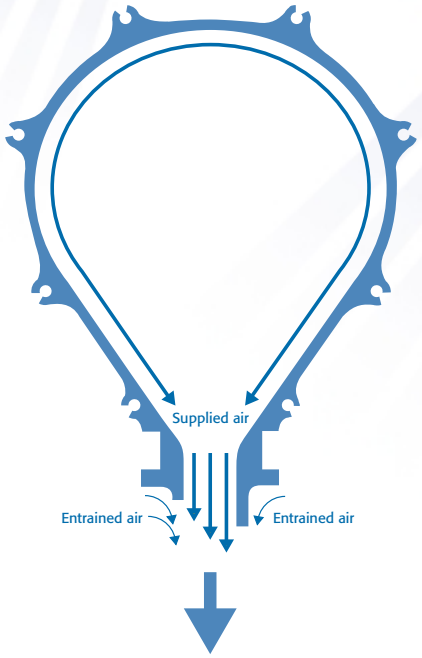


Figure 2
Extended edge improves air entrainment for better performance

WindJet Air Knife Part Numbers

Part Number	Knife Length	Air Slot
50750-06-040	6"	.040"
50750-06-060	6"	.060"
50750-12-040	12"	.040"
50750-12-060	12"	.060"
50750-18-040	18"	.040"
50750-18-060	18"	.060"
50750-24-040	24"	.040"
50750-24-060	24"	.060"
50750-30-040	30"	.040"
50750-30-060	30"	.060"
50750-36-040	36"	.040"
50750-36-060	36"	.060"

Dual inlet caps available. Ask your sales engineer.

Several Complete Drying Packages Available, Customizable and From a Single Supplier

To deliver peak performance that meets your needs and to provide you with a single supplier, Spraying Systems Co.® has put together complete WindJet Air Knife drying packages. Each fully customized package consists of:

- WindJet Air Knives, in varying lengths and two air slot sizes
- Gast® regenerative blower assemblies complete with:
  - Pressure relief valve
  - Pressure gauge
  - Inlet air filter
  - Fittings
  - Convenient mounting adapter for flexible or rigid tubing
- Package accessories include:
  - Mounting brackets
  - Muffler
  - Flexible and/or rigid tubing
  - Elbows
  - Motor starter
  - Couplings
  - Clamps
  - Manifolds

The number and length of knives, air slot choice, blower size and necessary accessories vary depending on your application. To assemble the best package choice, your Spraying Systems Co. sales engineer will work with you to assess your situation and make a WindJet Air Knife Drying Package design recommendation.

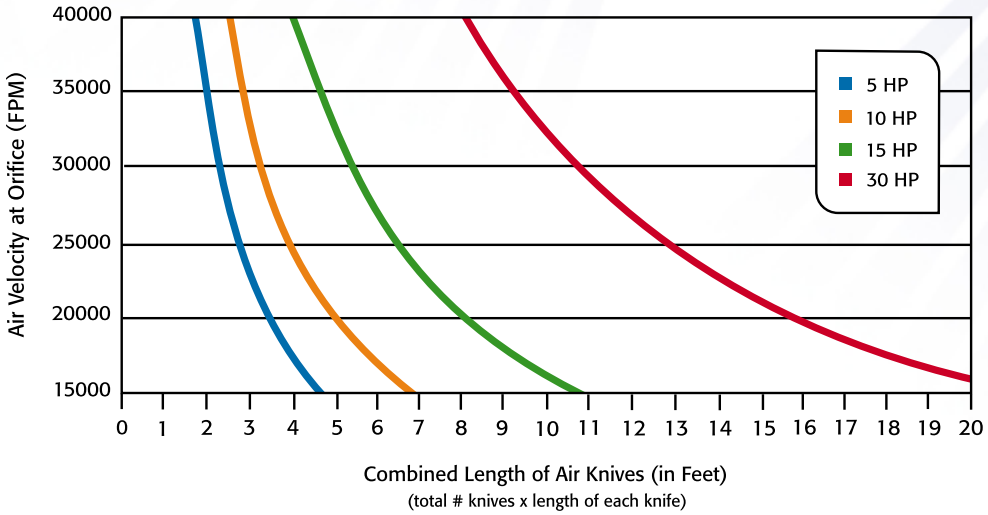
Packages are differentiated by the horsepower size of the included Gast blower; sizes are 5, 10, 15 and 30 HP.

Each package delivers the same important benefits:

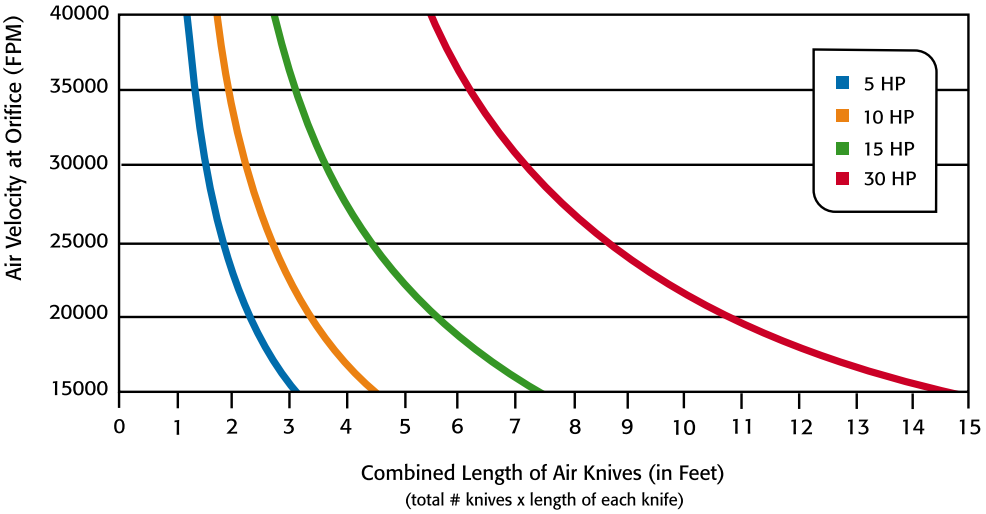
- A complete solution, fully customized
- Unique, high-performance WindJet Air Knives
- Low-maintenance blower
- Clean, heated air
- Energy-efficient air source
- Low operating noise, requiring no need of a sound enclosure
- Ease of installation



Package Sizing Guide - 0.040" Air Slot



Package Sizing Guide - 0.060" Air Slot





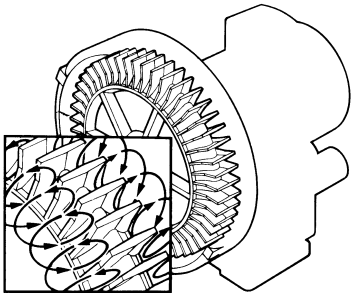


Figure 3
Regenerative Principle Illustrated

Gast Regenerative Blowers Deliver Maintenance-free, Highly Efficient Drying Performance

Spraying Systems Co.® is pleased to partner with Gast Manufacturing, a leading manufacturer of regenerative blowers, to provide the air source for the WindJet® Air Knife Drying Package. Gast regenerative blowers are exceptional in that they save you money because, unlike other blower choices, they require minimal maintenance and operate with greater efficiencies. Downtime is minimized; performance is guaranteed.

Gast regenerative blowers are powered by electric motors which are UL, CE and CSA certified and come in three-phase, dual frequency and multi-voltage versions for worldwide applications. Each blower features:

- Low maintenance
- Permanently sealed ball bearings that incorporate new polyurea grease to extend bearing life and offer superior resistance to washout, rust and corrosion
- Fan cooling dissipates heat around the bearings to help prolong bearing life
- Continuous, non-pulsating, oil-free air flow
- Low noise—integrated mufflers minimize operating noise
- Rugged construction of cast aluminum or cast iron, depending on model size
- No heating element; air is warmed by heat generated during operation

What is the Regenerative Principal?

In a regenerative blower, the compression space consists of a hollow, circular ring between the tips of the impeller blades and the walls of the housing. In operation, the rotating impeller draws in air from the inlet port into the compression space and moves it radially outward to the curved housing by centrifugal force (see Figure 3).

The action is called “regenerative” because a certain amount of air slips past each impeller blade during rotation and returns to the base of a succeeding blade for re-acceleration.

Because of this dynamic principal, regenerative blowers can generate pressure performance comparable to many multi-stage or positive displacement blowers.

Four Versions to Fit Your Application

Spraying Systems Co. offers four blower options: 5HP, 10HP, 15 HP and 30 HP. Choice of blower size will be contingent upon the number of knives used in the application, necessary air volume and distance from blower to points of dryoff. See the following blower performance table, the package sizing guide and your Spraying Systems Co. sales engineer to identify the right size.

Blower Assembly Considerations

- Operating the blowers at high altitude decreases their maximum pressure duty rating. If this is a consideration, contact your Spraying Systems Co.® sales engineer.
- The exhaust air temperature of the blowers increases with increasing duty. To prevent danger of burns, access to these pipes should be limited, guarded or marked “Danger Hot.”
- Pictorial and dimensional data is subject to change without notice.
- **Warning: Models without explosion-proof motors should not pump combustible gases or be used in combustible ambients.**

Performance Data

The performance data shown in this bulletin were determined under the following conditions:

- Line voltage @ 60 Hz. 230V or 460V for three-phase units.
- Line voltage @ 50 Hz. 220V for three-phase units.
- Units in a temperature stable condition
- Delivery measurements made with input port throttled
- Test conditions: Inlet air density at 0.075 lbs. per cu.ft. [20° C (68° F), 29.92 in. Hg (14.7 PSIA)].
- Normal performance variations on the resistance curve within ±10% of supplied data can be expected

Sound Levels of Gast® Blowers

60 Hz	dBa at Pressure	50 Hz	dBa at Pressure
5 HP	82-83	5 HP	77-80
10 HP	82-84	10 HP	77-79
15 HP	82-85	15 HP	78-85
30 HP	81-88	30 HP	79-86

Blower Performance

Model Series	Power Rating @ 50 Hz		Power Rating @ 60 Hz		Maximum Free Air Flow				Maximum Pressure			
					cfm		m^3/h		$"H_20$		mbar	
	hp	kW	hp	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
5 HP	4.8	3.6	5.0	3.7	245	290	416	493	70	60	174	149
10 HP	8	6	10	7.5	350	420	595	714	115	125	286	311
15 HP	10	7.5	15	11.1	585	680	994	1155	125	125	311	311
30 HP	19	14.1	30	22.3	1140	1350	1937	2294	110	125	274	311

To convert $"H_20$ to psi, multiply $"H_20$ x 0.03613

Gast® Regenerative Blower Assembly — 5 HP

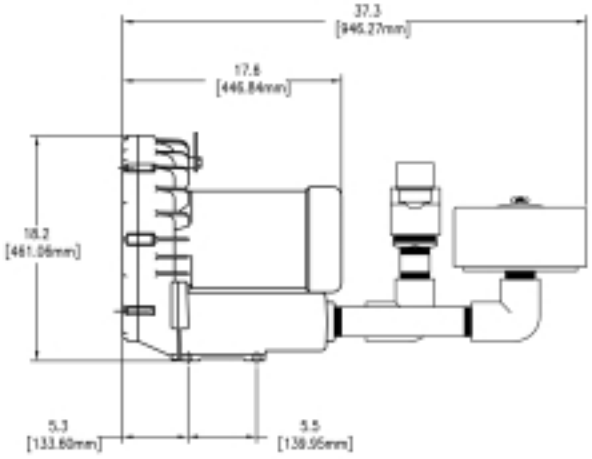
Product Features—50760-R5

- Rugged construction, low maintenance
- Oilless operation
- UL, CE and CSA approved TEFC motor with permanently sealed ball bearings
- Aluminum cover, impeller and housing
- Heated air
- Inlet and outlet have internal muffling

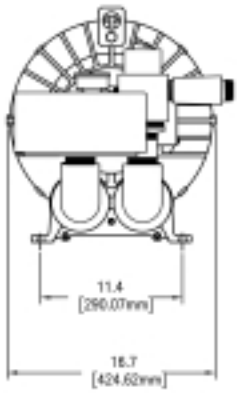


Standard Components

- Pressure gauge
- Inlet filter
- Pressure relief valve
- Outlet mounting adapter
- Fittings



Mounting in all planes is acceptable

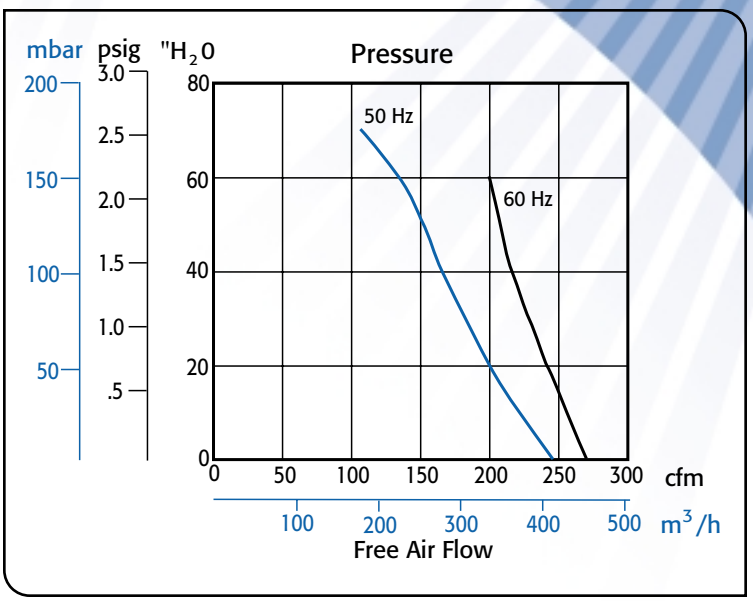


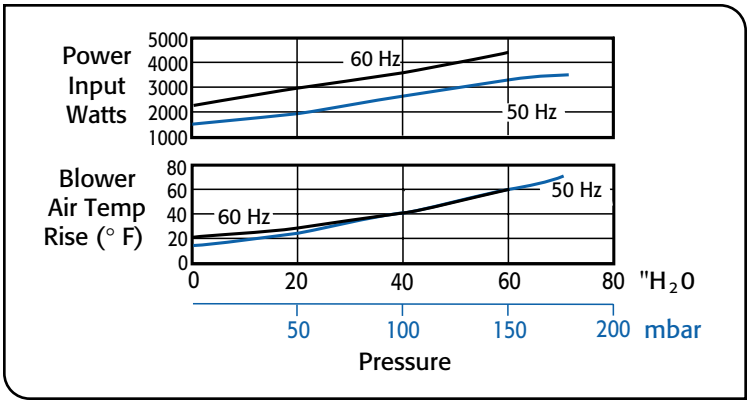
Blower Performance—50760-R5

Model Series	Power Rating @ 50 Hz		Power Rating @ 60 Hz		Maximum Free Air Flow				Maximum Pressure			
					cfm		m^3/h		"H_20		mbar	
	hp	kW	hp	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
5 HP	4.8	3.6	5.0	3.7	245	290	416	493	70	60	174	149

To convert "H_20 to psi, multiply "H_20 x 0.03613

Model		50760-R5
Motor Enclosure		TEFC
HP/kW	60 Hz	5.0/3.7
	50 Hz	4.8/3.6
Voltage	60 Hz	208-230/460-3
	50 Hz	190-220/380-415-3
Amps	60 Hz	13.0-12.0/6.0
	50 Hz	14.4-13.4/7.2-6.8
Starting Amps	60 Hz	125 @ 230V
	50 Hz	57 @ 380V
Insulation Class		F
Recommended NEMA Starter Size		1/0
Net Weight (lbs/kg)		176/80





Ordering Information

COMPLETE ASSEMBLY
50760-R5

Gast® Regenerative Blower Assembly— 10 HP

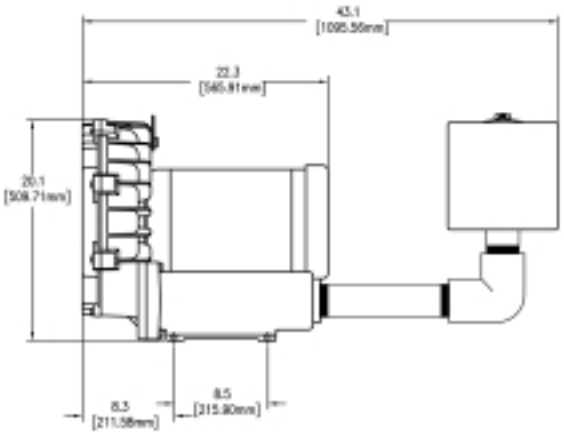
Product Features—50760-R10

- Rugged construction, low maintenance
- Oilless operation
- IP54 rated enclosures on motors
- UL, CE and CSA approved TEFC motor with permanently sealed ball bearings
- Aluminum impeller; cast iron cover and housing
- Inlet and outlet have internal muffling
- Heated air

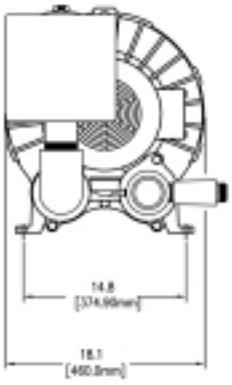


Standard Components

- Pressure gauge
- Inlet filter
- Pressure relief valve
- Outlet mounting adapter
- Fittings



Mounting in all planes is acceptable

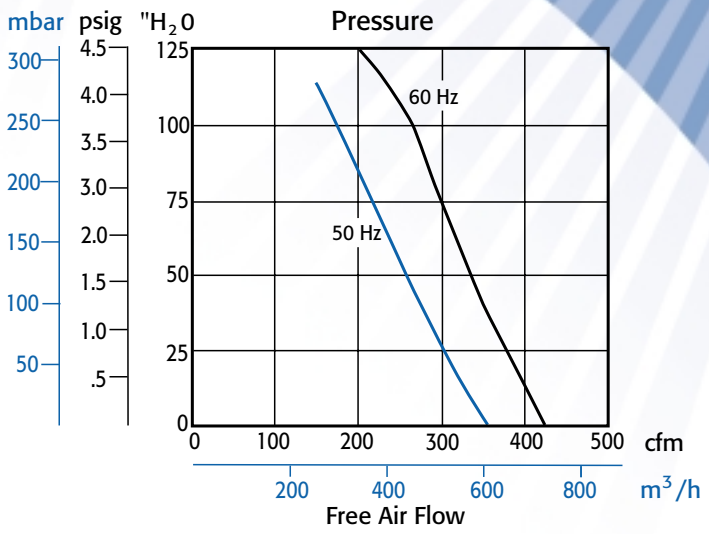


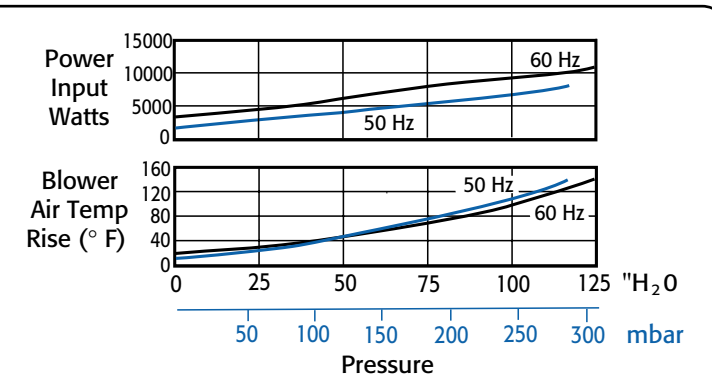
Blower Performance—50760-R10

Model Series	Power Rating @ 50 Hz		Power Rating @ 60 Hz		Maximum Free Air Flow				Maximum Pressure			
					cfm		m^3/h		"H_20		mbar	
	hp	kW	hp	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
10 HP	8	6	10	7.5	350	420	595	714	115	125	286	311

To convert "H_20 to psi, multiply "H_20 x 0.03613

Model		50760-R10
Motor Enclosure		TEFC
HP/kW	60 Hz	10/7.5
	50 Hz	8/6
Voltage	60 Hz	208-230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	35-29.5/15
	50 Hz	27-23/13.5-12.3
Starting Amps	60 Hz	120 @ 460V
	50 Hz	143 @ 380V
Insulation Class		F
Recommended NEMA Starter Size		2/1
Net Weight (lbs/kg)		293/133





Ordering Information

COMPLETE ASSEMBLY
50760-R10

Gast® Regenerative Blower Assembly — 15 HP

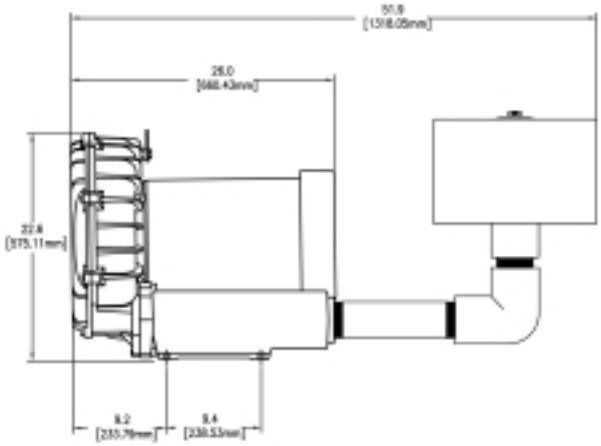
Product Features—50760-R15

- Rugged construction, low maintenance
- Oilless operation
- IP54 rated enclosures on motors
- UL, CE and CSA approved TEFC motor with permanently sealed ball bearings
- Cast iron cover, housing and muffler enclosure
- Cast aluminum impeller
- Inlet and outlet have internal muffling
- Heated air

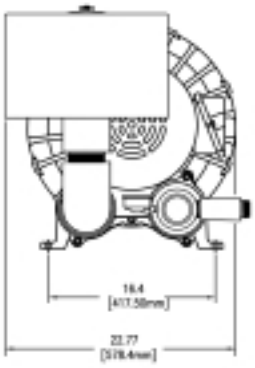


Standard Components

- Pressure gauge
- Inlet filter
- Pressure relief valve
- Outlet mounting adapter
- Fittings



Horizontal mounting only

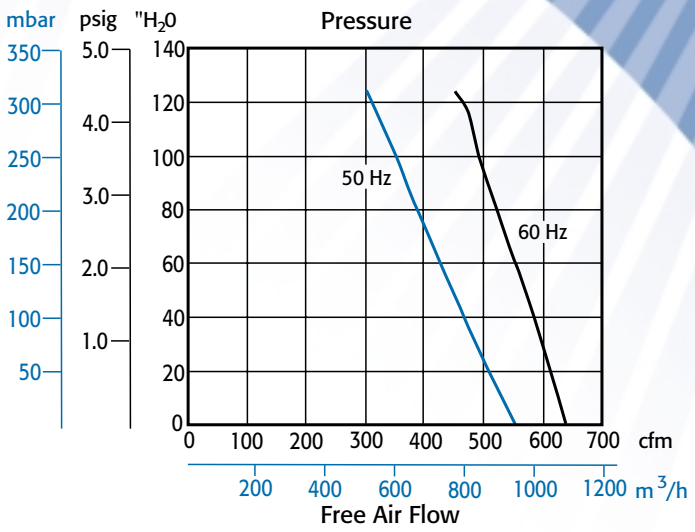


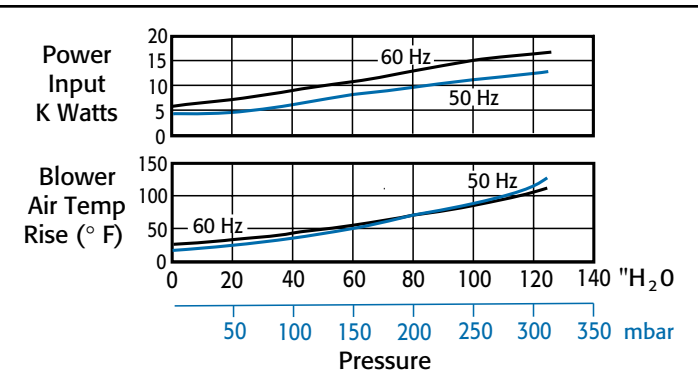
Blower Performance—50760-R15

Model Series	Power Rating @ 50 Hz		Power Rating @ 60 Hz		Maximum Free Air Flow				Maximum Pressure			
					cfm		m^3/h		"H_20		mbar	
	hp	kW	hp	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
15 HP	10	7.5	15	11.1	585	680	994	1155	125	125	311	311

To convert "H_20 to psi, multiply "H_20 x 0.03613

Model		50760-R15
Motor Enclosure		TEFC
HP/kW	60 Hz	15/11.1
	50 Hz	10/7.5
Voltage	60 Hz	208-230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	50-50/25
	50 Hz	46-42/23-21
Starting Amps	60 Hz	173 @ 460V
	50 Hz	185 @ 380V
Insulation Class		F
Recommended NEMA Starter Size		2/2
Net Weight (lbs/kg)		452/204





Ordering Information

COMPLETE ASSEMBLY
50760-R15

Gast® Regenerative Blower Assembly — 30 HP

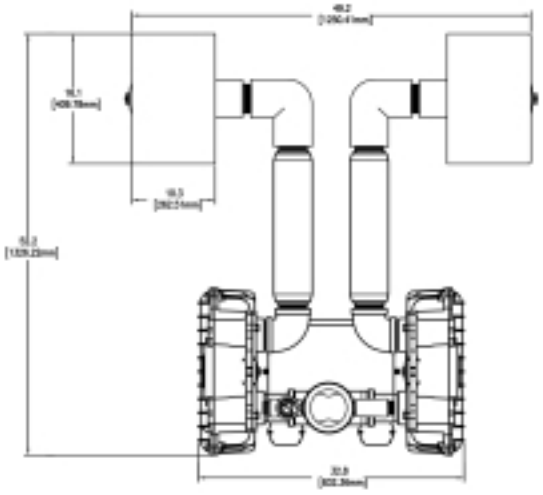
Product Features—50760-R30



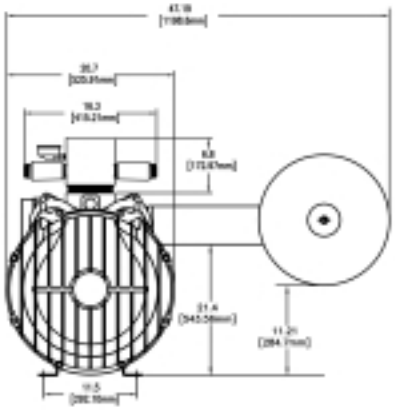
- Rugged construction, low maintenance
- Oilless operation
- IP54 rated enclosures on motors
- UL, CE and CSA approved ODP motor with permanently sealed ball bearings
- Cast iron covers and blower housing
- Cast aluminum impellers
- Includes external mufflers for additional silencing
- Smaller and less costly than two motor-mounted units
- Heated air

Standard Components

- Pressure gauge
- Two inlet filters
- Two external mufflers for additional silencing
- Two pressure relief valves
- Outlet mounting adapter
- Fittings



Horizontal mounting only

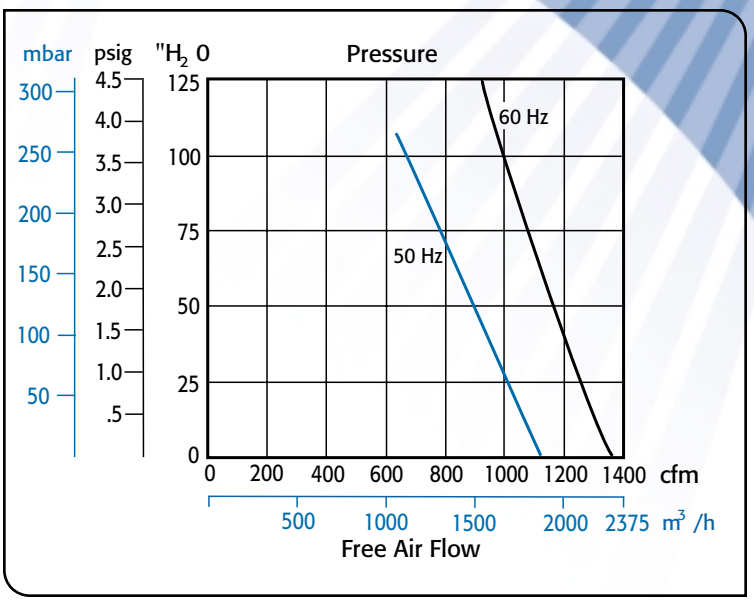


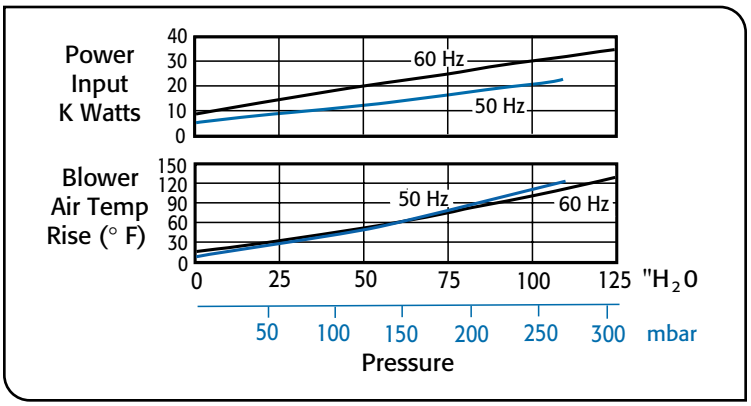
Blower Performance—50760-R30

Model Series	Power Rating @ 50 Hz		Power Rating @ 60 Hz		Maximum Free Air Flow				Maximum Pressure			
					cfm		m^3/h		$"H_2O$		mbar	
	hp	kW	hp	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
30 HP	19	14.1	30	22.3	1140	1350	1937	2294	110	125	274	311

To convert $"H_20$ to psi, multiply $"H_20$ x 0.03613

Model		50760-R30
Motor Enclosure		ODP
HP/kW	60 Hz	30/22.3
	50 Hz	19/14.1
Voltage	60 Hz	230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	78/39
	50 Hz	76-70/38-35
Starting Amps	60 Hz	280 @ 460V
	50 Hz	185 @ 380V
Insulation Class		F
Recommended NEMA Starter Size		3/3
Net Weight (lbs/kg)		622/282





Ordering Information

COMPLETE ASSEMBLY
50760-R30

Blower Assembly Components

Included with the blower assemblies are several components (see Figure 4):

- Regenerative blower
- Air inlet filter
- Pressure gauge to monitor inlet filter restrictions
- Pressure relief valve to protect the blower from excessive duties
- Convenient outlet mounting adapter with mounting flange
- All fittings required for connecting components to the blower

Unique Outlet Mounting Adapter Saves You Time and Money

The blower assembly arrives complete with our unique mounting adapter that incorporates the pressure gauge and pressure relief valve inline with out-going tubing. This saves you the necessity to custom-build such an adapter (see Figure 5).

Air Inlet Filter

Air inlet filters keep particles from entering the blower, ensuring smooth operation and trouble-free service. Filters come with all blower assemblies. Standard assemblies come with 2-micron filters.

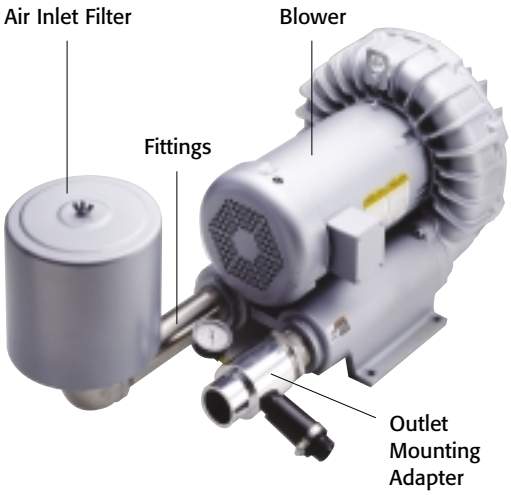


Figure 4
Blower Assembly

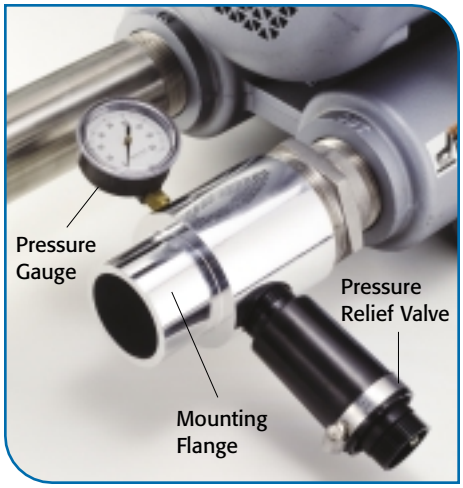


Figure 5
Convenient Outlet Mounting Adapter Incorporating Pressure Gauge, Pressure Relief Valve and Mounting Flange

Blower Assembly Accessories

Motor Starters

Allow for a convenient way to operate the blowers. Each unit is sized for the proper blower horsepower and voltage and features the following:

- UL, CE and CSA listed
- Overload protection
- Start/stop operation
- Pilot light in On position

Request Datasheet #DS50746 for more information.

Muffler

Designed to reduce noise by 5-8 dBa and remove high frequency sound associated with all blowers.

Replacement Air Inlet Filter Elements

Easy to use air inlet filter elements to replace clogged and dirty filter elements.

HEPA Filters

For extreme filtration applications, HEPA filters are available with complete blower assemblies or separately.

- 99% ± removal efficiency, with a standard .3 micron rating
- Replacement filter elements available

Request Datasheet # 50760-HEPA for sizing information.

Muffler Ordering Information

Part Number	Used With Blower Model:
50766-R5	50760-R5
50766-R10	50760-R10
50766-R15	50760-R15
50766-R30**	50760-R30

** Standard component on 50766-R30

Air Inlet Filter Replacements Ordering Information

Part Number	Used With Blower Model:
50761 - 2 FE	50760-R5
50761 - 2.5 FE	50760-R10
50761 - 4 FE	50760-R15 50760-R30

HEPA Filter Ordering Information

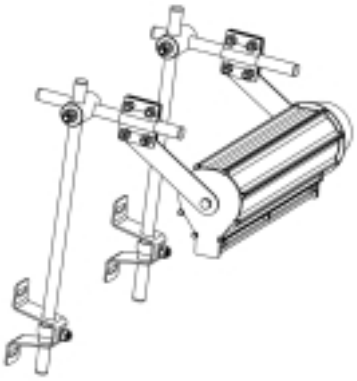
HEPA Blower Assemblies	Blower Hp Size	Complete HEPA Filter	Replacement HEPA Filter Element
50760-R5HEPA	5 Hp	50761-2HEPA	50761-2FEHEPA
50760-R10HEPA	10 Hp	50761-2.5HEPA	50761-2.5FEHEPA
50760-R15HEPA	15 Hp	50761-4HEPA	50761-4FEHEPA
50760-R30HEPA	30 Hp	50761-4HEPA	50761-4FEHEPA

All the Accessories For Convenient Assembly

In addition to the air knives and blowers, the WindJet Air Knife Drying Packages come with all the necessary accessories for mounting and implementing the product into your applications.

Based on the package you select and the design parameters, the following items are offered (all items are rated for a minimum of 225° F):

Mounting Brackets – for conveniently mounting air knives. These 100% stainless steel adjustable brackets include two specialized mounting plates that connect to each end cap on the air knife.



Mounting Bracket Ordering Information

Part Number
50040 - SS

Tubing – we offer both high temperature, steel-reinforced flexible tubing and stainless steel rigid tubing options. All tubing is available in 3" and 6" diameters and comes in increments of 10'. To attach the flexible tubing, we offer high-torque, worm-gear clamps.



Flexible/Rigid Tubing Ordering Information

Part Number		ID	Length
Flexible Tubing	50770 - 3 - 10	3"	10'
	50770 - 6 - 10	6"	10'
Worm-gear Clamp	50776 - 3 - SS	3"	—
	50776 - 6 - SS	6"	—
Rigid Tubing	50769 - 3 - 10	3"	10'
	50769 - 6 - 10	6"	10'

Elbows – To help reduce pressure losses in the system, we offer both 45 degree and 90 degree rigid elbows in both 3" and 6".

Elbow Ordering Information

Part Number	OD	Material	Degree
50779 - 45 - SS3	3"	SS	45°
50779 - 45 - AL6	6"	Aluminum	45°
50779 - 90 - SS3	3"	SS	90°
50779 - 90 - AL6	6"	Aluminum	90°

Couplings – Unique, easy to use 3" and 6" stainless steel outside, high temperature silicon rubber inside, couplings. The couplings compress for use between any rigid connections to prevent air leakage and to add support for the connections. They feature a single built-in clamp that you tighten by hand; no special tools are necessary.



Coupling Ordering Information

Part Number	ID
50775 - 3 - SS	3" Diameter
50775 - 6 - SS	6" Diameter

Manifolds – All stainless steel construction allows a single air outlet on the blower to be divided for multiple knives in various ways:

- Y-divider: Allows for single inlet to be divided into 2 outlets. Available in both 3" and 6" inlet OD, with 3" outlet OD.
- 3-port: Allows for a single inlet to bedivided into 3 outlets. Available in both 3" and 6" inlet OD, with 3" outlet OD.
- 4-port: Allows for a single inlet to be divided into 4" outlets. Available in both 3" and 6" inlet OD, with 3" outlet OD.
- 3- and 4-port manifolds are designed with mounting holes for support



Manifold Ordering Information

Type	Part Number	Inlet OD	Outlet OD
"Y"	50771	3"	3"
"Y"	50772	6"	3"
3-port	50773 - SS3	3"	3"
3-port	50773 - SS6	6"	3"
4-port	50774 - SS3	3"	3"
4-port	50774 - SS6	6"	3"

Typical Applications

- Food & Beverage
- High Tech
- Automotive
- Wire & Cable
- Construction Materials
- Medical Devices
- Metal Finishing
- Pharmaceutical
- Textiles
- Metal Forming & Fabrication
- Tire & Rubber
- And many more …

The Next Generation of Dryoff Begins With WindJet® Air Knife Packages

From the unique protruding edge of the WindJet Air Knife itself, to the exceptional Gast® regenerative blowers to a well-rounded list of accessories, the new WindJet Air Knife Package delivers a better controlled, more efficient, quieter and maintenance-free dryoff process.

And, because it's designed and produced by Spraying Systems Co., you can rely on a continuing high level of performance.

Testing Services Guarantee Optimal Performance

To ensure you make the optimum choice for your air knife package design, we offer full testing capabilities. We can bring the objects involved in your dryoff/blowoff application into our testing lab and run them on our test conveyer. We identify the proper blower size, the number of air knives needed and proper components.

For more information, or to contact a Spraying Systems Co. sales engineer for consultation, call 1-800-SPRAY or visit www.spray.com/airknife.

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