



***GAST<sup>®</sup> MVP***

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***AIR MOTOR CATALOG***

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Original Gast Compressor

# WHY GAST?

Since 1921, Gast Manufacturing, Inc. has been a leader in the design and manufacturing of quality air-moving products.

We specialize in offering solutions to a wide variety of industries, including industrial manufacturing, healthcare, and environmental applications.

We set the standard in the pneumatic industry. With our comprehensive product portfolio, in-house design and prototyping capabilities, world-class customer service, and dedicated OEM training, we're continually committed to providing customers with a truly unforgettable experience.

In 1998, Gast was acquired by IDEX Corporation. IDEX is a global fluidics leader serving high-growth specialized markets. We are best known for our expertise in highly engineered fluidics systems and components, as well as for our expertise in fire and safety products, including the Jaws of Life® family of rescue and recovery tools.



Gast 16AM Series Motor

▶ [Read more at www.gastmfg.com](http://www.gastmfg.com)

**GAST** MVP

# MVP ROTARY VANE AIR MOTORS

MVP rotary vane air motors make Gast dependability available to manufacturers powering the next generation of rotating equipment. Rely on MVP's modular air motor technology to make your innovative engineered products lighter, quieter, more efficient, and easier to manufacture and service.

## Variable Speed and Power Output

Precisely control speed and power output by simply throttling inlet air pressure or restricting exhaust air. This is a cost-effective way over electric motor speed controls.

## Efficient

Machined to the highest tolerances, MVP air motors generate more power while consuming less energy. This also gives MVP improved power density, providing more torque output in a lighter-weight air motor.


## Modular

MVP's modular design makes it easy to maintain MVP air motors. Simply remove the back plate of any MVP air motor to swap out the internal cartridge.

## Universal Vanes

MVP air motors use a proprietary engineered vane material rated for operation with or without lubrication so operating conditions for the same motor can be varied.

## ATEX Approved and Non-Electrical Sparking

Most MVP models meet the requirements of ATEX Directive 2014-34-EU and applicable standards: EN80079-36, EN 80079-37, IEC 60079-0.  MVP air motors can be used in ambient temperatures up to 250°F (120°C) in non-hazardous atmospheres.

# CONSIDERATIONS WHEN SELECTING AN AIR MOTOR

Air motors have some general advantages when compared to other power sources, such as electric motors.

## 1 CONTROL

Adjust speed and power output by simply throttling inlet air pressure or restricting exhaust air.

## 2 NON-SPARKING

As a non-electrical devices, air motors greatly reduce the possibility of igniting flammable gases.

Consult Gast MVP air motor ATEX approvals for specifics.

## 3 COOL RUNNING

Air motors can be stalled or overloaded indefinitely without damage. Plus, expanding compressed air cools the motor.

### Output Power

The output power of an air motor is relative to speed and to air-line pressure.

### Torque vs. Speed

1. An air motor slows down when load increases. At the same time, its torque increases to a point where it matches the load. It will continue to provide increased torque all the way to the stalled condition and it can maintain the stalled condition without any harm to the motor.
2. As the load is reduced, an air motor will increase speed and the torque will decrease to match the reduced load.
3. When the load on an air motor is either increased or decreased, speed can be controlled by increasing or decreasing air pressure, or by restricting exhaust air.
4. Starting torque of an air motor is lower than running torque.

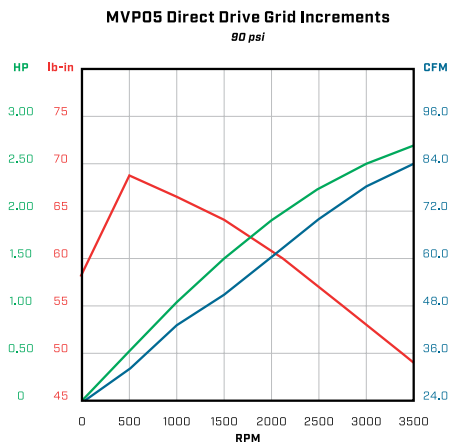
### Air Consumption

Air consumption increases as speed and air pressure are increased.

While low starting torque provides smooth, low-shock starting, additional air-line pressure is needed for starting under heavy loads. The rule of thumb for selecting an air motor is to choose one that will provide the horsepower and torque needed using only two-thirds (2/3) of the line pressure available.

# PERFORMANCE RANGES

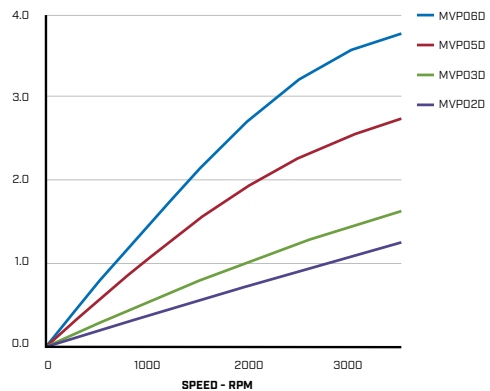
Each MVP air motor in this catalog has a performance graph that illustrates the relationship between power, torque, air consumption, and motor speed.



Example of the MVP05 direct-drive air motor performance curve. See individual catalog pages for model-specific performance data.

To the right is a graph illustrating the performance ranges for direct-drive MVP air motors charting power vs. speed.

Performance shown with 90 PSIG inlet pressure



# MVP APPLICATIONS

MVP air motors are manufactured with housings made of aluminum and stainless steel. Their lightweight construction, high power-to-weight ratios, operating efficiency, low levels of noise, and reasonable pricing make them ideal for a wide range of applications.



## Aluminum Construction Motors

Lightweight and powerful, aluminum-body MVP air motors are ideal for:

- **Industrial mixing equipment**
- **Motor-driven liquid pumps**
- **Chain hoists**
- **Conveyors**



## Stainless Steel Motors

MVP stainless steel air motors feature 316 stainless housings with a 32-Ra surface finish, making them perfect for food, lab, and pharmaceutical applications, including:

- **Sanitary mixing equipment**
- **Liquid pump drives**
- **Clean-room hoists and conveyors**
- **Rotating equipment in food processing or packaging environments**

# GUIDE TO PRODUCT NUMBERS

All enclosed MVP series rotary vane air motors have an alpha-numeric model number that encodes their basic specifications.

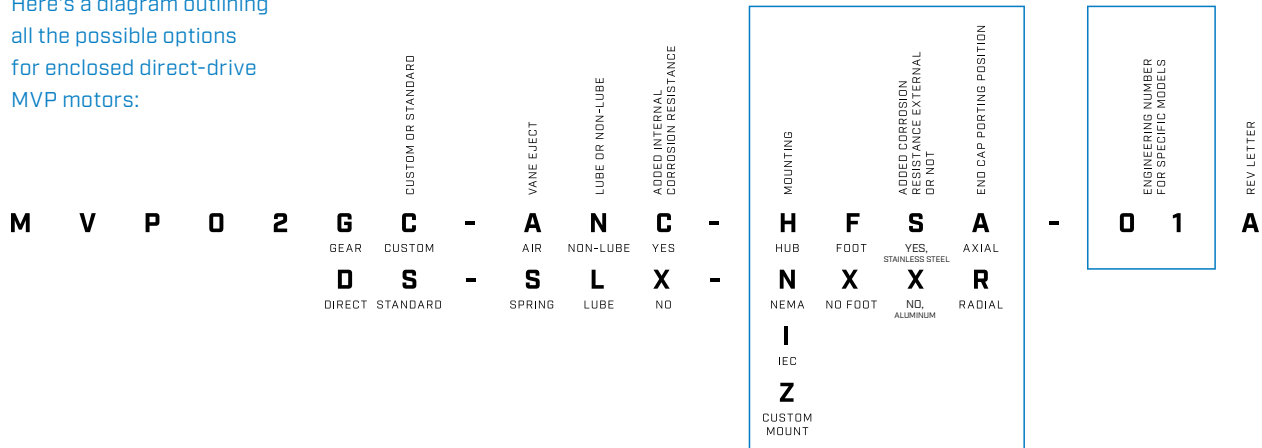
## DIRECT DRIVE MOTORS

Direct drive motors have model numbers that are 16 characters long in the following format:

MVP02DS-ANC-HXXA-01

- The first string of letters and numbers (“MVP02DS”) describes the product line (“MVP”), the relative power of the motor (“02”), and the type of drive (“DS” for direct, standard; “DC” for direct, custom).
- The second group of letters (“ANC”) breaks down the vane eject type (“A” for air), lubrication needs (“N” for non-lubricated), and added internal corrosion resistance (“C” for yes).
- The third section (“HXXA”) accounts for the mounting mechanism (“H” for hub), foot or no foot (“X” for none), enclosure material (“X” for aluminum, “S” for stainless steel), and end-cap porting position (“A” for axial).
- The fourth number (“01”) is an engineering number that tracks customizations.

Here’s a diagram outlining all the possible options for enclosed direct-drive MVP motors:



## OEM Custom Offerings

For projects with OEM production volumes that require lower speeds or higher torque, MVP air motors can be adapted for gear-reduced output using a wide variety of gear ratios. For more information, get in touch with your local distributor or contact Gast directly (see p. 16).





# MVP02

## 1.0 HORSEPOWER

### ALUMINUM AIR MOTOR SERIES

Model Number	Product Description	Weight (net)
MVP02DS-ANC-NXXA-01	NEMA 56C flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	5.4 lbs.
MVP02DS-ANC-IXXA-01	IEC D71 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	5.2 lbs.
MVP02DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	3.8 lbs.

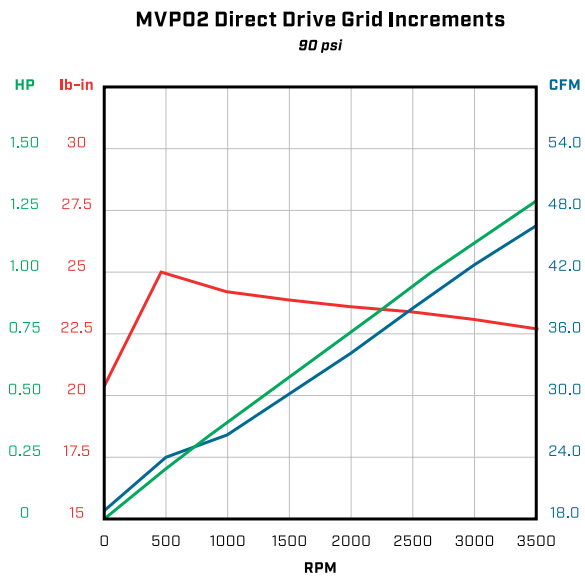
#### Features

- Lightweight and powerful
- Flange and hub mounting options
- Versatile vane material for long life in lubricated or non-lubricated operation

#### Options

- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

#### Performance Curves







# MVP02

## 1.0 HORSEPOWER

### STAINLESS STEEL AIR MOTOR SERIES

Model Number	Product Description	Weight (net)
MVP02DS-ANC-NXSA-01	NEMA 56C flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	10.0 lbs.
MVP02DS-ANC-IXSA-01	IEC D71 B5 flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	9.7 lbs.
MVP02DS-ANC-HXSA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	6.0 lbs.

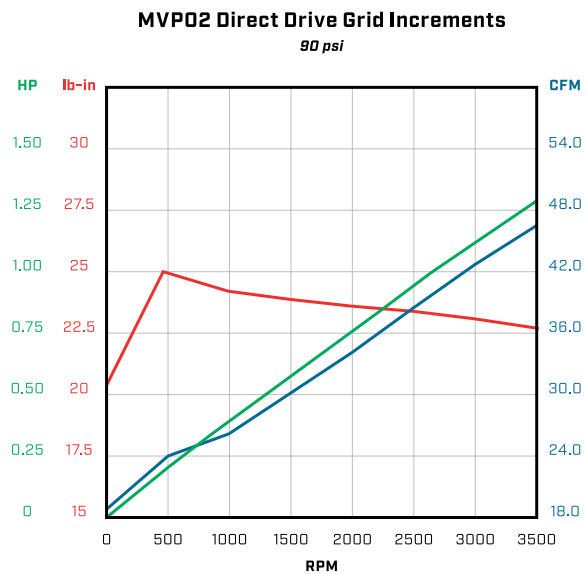
#### Features

- 316 stainless steel motor housing with 32-Ra surface finish
- Lightweight and powerful
- Flange and hub mounting options
- Versatile vane material for long life in lubricated or non-lubricated operation

#### Options

- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

#### Performance Curves





# MVP03

## 1.6 HORSEPOWER

### ALUMINUM AIR MOTOR SERIES

Model Number	Product Description	Weight (net)
MVP03DS-ANC-NXXA-01	NEMA 56C flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	5.9 lbs.
MVP03DS-ANC-IXXA-01	IEC D71 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	6.0 lbs.
MVP03DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	4.6 lbs.

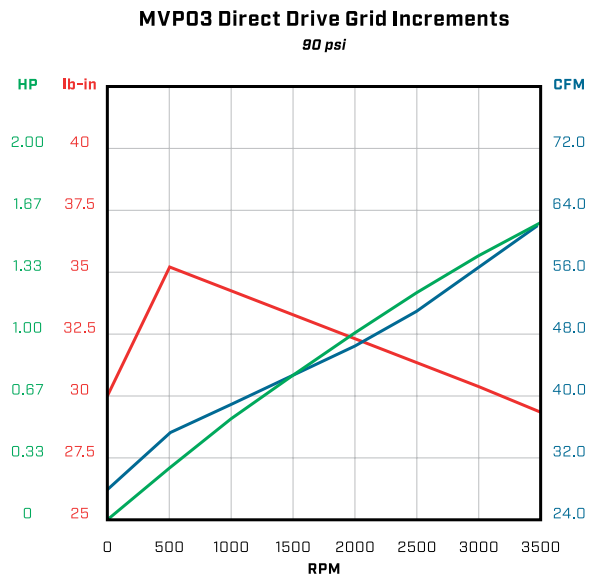
#### Features

- Lightweight and powerful
- Flange and hub mounting options
- Versatile vane material for long life in lubricated or non-lubricated operation

#### Options

- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

#### Performance Curves





# MVP03

## 1.6 HORSEPOWER

### STAINLESS STEEL AIR MOTOR SERIES

Model Number	Product Description	Weight (net)
MVP03DS-ANC-NXSA-01	NEMA 56C flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	10.7 lbs.
MVP03DS-ANC-IXSA-01	IEC D71 B5 flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	10.4 lbs.
MVP03DS-ANC-HXSA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	6.7 lbs.

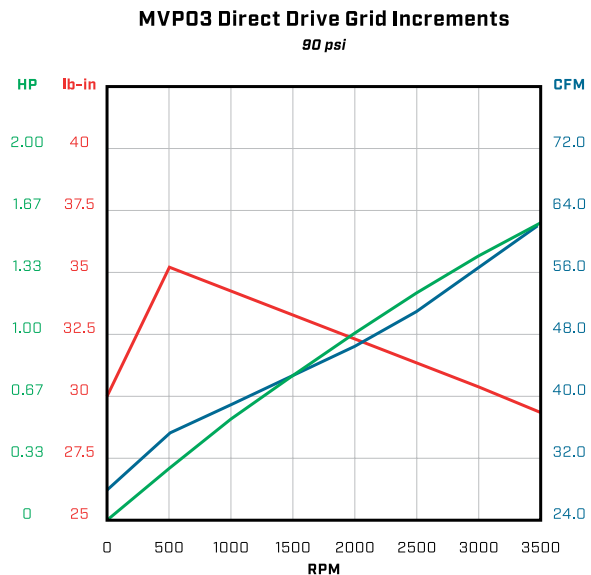
#### Features

- 316 stainless steel motor housing with 32-Ra surface finish
- Lightweight and powerful
- Flange and hub mounting options
- Versatile vane material for long life in lubricated or non-lubricated operation

#### Options

- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

#### Performance Curves





# MVP05

## 3.0 HORSEPOWER

### ALUMINUM AIR MOTOR SERIES

Model Number	Product Description	Weight (net)
MVP05DS-ANC-NXXA-01	NEMA 56C flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	7.8 lbs.
MVP05DS-ANC-IXXA-01	IEC D80 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	8.5 lbs.
MVP05DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	6.5 lbs.

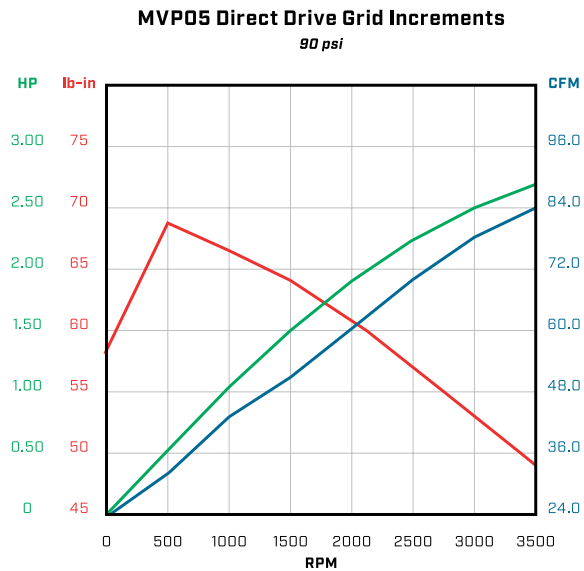
#### Features

- Lightweight and powerful
- Flange and hub mounting options
- Versatile vane material for long life in lubricated or non-lubricated operation

#### Options

- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

#### Performance Curves





# MVP05

## 3.0 HORSEPOWER

### STAINLESS STEEL AIR MOTOR SERIES

Model Number	Product Description	Weight (net)
MVP05DS-ANC-NXSA-01	NEMA 56C flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	14.0 lbs.
MVP05DS-ANC-IXSA-01	IEC D80 B5 flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	15.5 lbs.
MVP05DS-ANC-HXSA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	10.0 lbs.

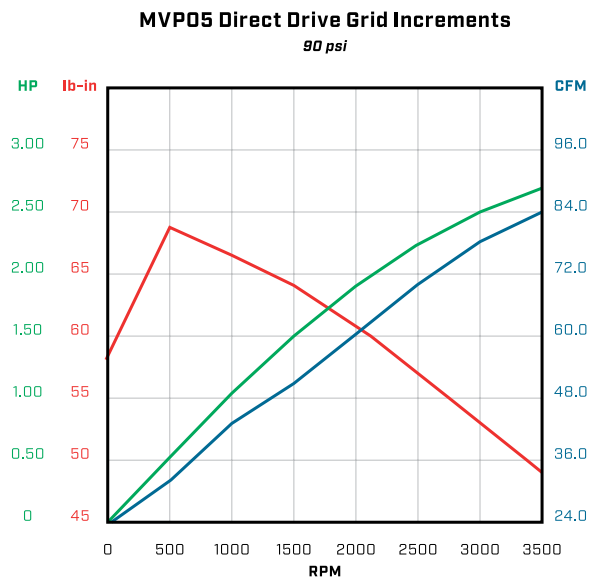
#### Features

- 316 stainless steel motor housing with 32-Ra surface finish
- Lightweight and powerful
- Flange and hub mounting options
- Versatile vane material for long life in lubricated or non-lubricated operation

#### Options

- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

#### Performance Curves





# MVP06

## 4.0 HORSEPOWER

### ALUMINUM AIR MOTOR SERIES

Model Number	Product Description	Weight (net)
MVP06DS-ANC-NXXA-01	NEMA 56C flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	8.5 lbs.
MVP06DS-ANC-IXXA-01	IEC D80 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	9.2 lbs.
MVP06DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	7.2 lbs.

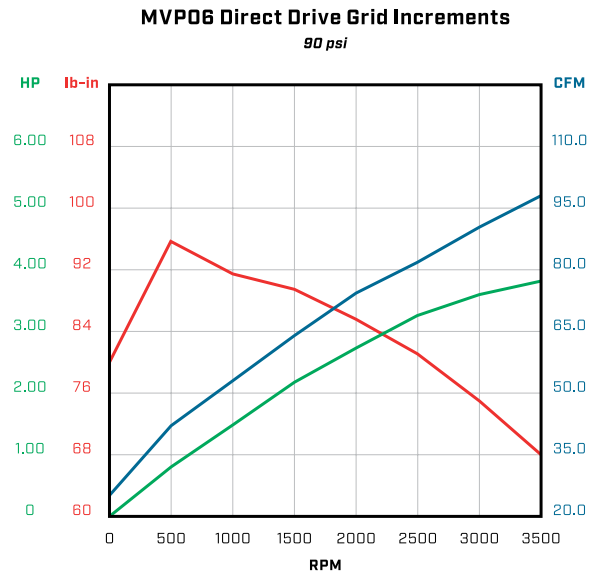
#### Features

- Lightweight and powerful
- Flange and hub mounting options
- Versatile vane material for long life in lubricated or non-lubricated operation

#### Options

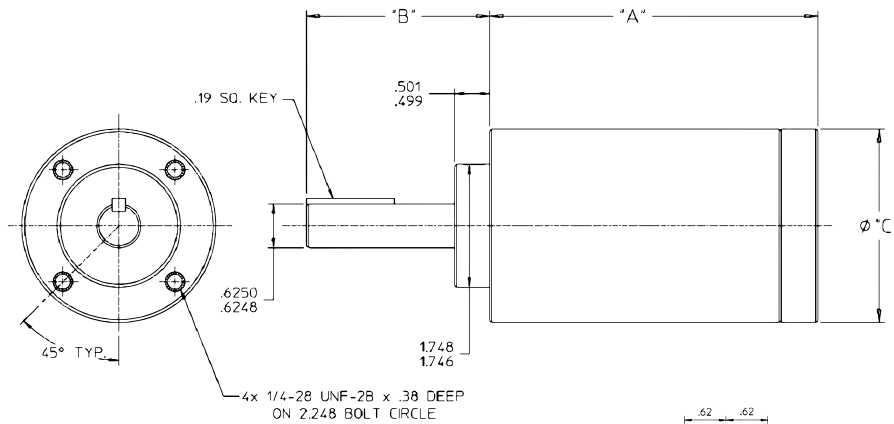
- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

#### Performance Curves



# MODEL DIMENSIONS

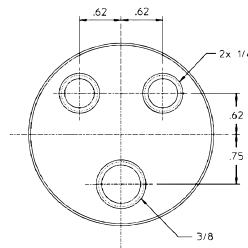
## MVP Hub Mount



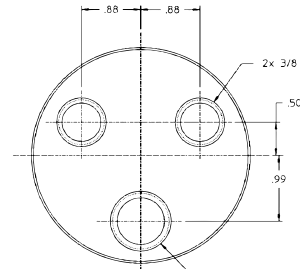
The hub face hole pattern is the same on all MVP models.

### Porting & Threading

MVP02 and MVP03 models have 1/4" and 3/8" porting. MVP05 and MVP06 models have 3/8" and 1/2" porting. Imperial models are NPT thread and metric models are BSP thread.



MVP02/MVP03



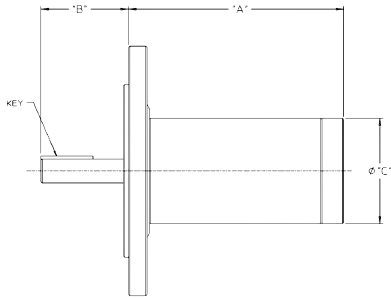
MVP05/MVP06

Model Number	Inches		
	A	B	C
MVP020S-ANC-HXXA-01	4.65	2.60	2.75
MVP020S-ANC-HXSA-01	4.65	2.60	2.75
MVP030S-ANC-HXXA-01	5.25	2.60	2.75
MVP030S-ANC-HXSA-01	5.25	2.60	2.75
MVP050S-ANC-HXXA-01	5.56	2.64	3.25
MVP050S-ANC-HXSA-01	5.56	2.64	3.25
MVP060S-ANC-HXXA-01	6.28	2.61	3.25

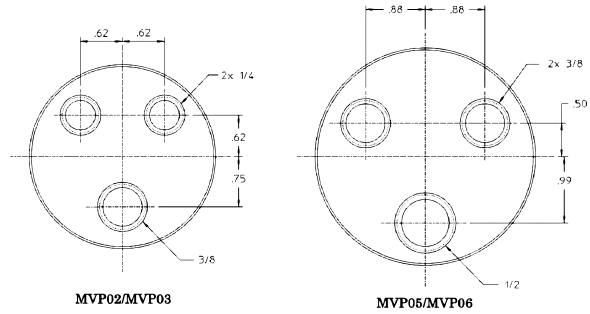
# MODEL DIMENSIONS

## MVP Flange Mount

### FLANGE MOUNT

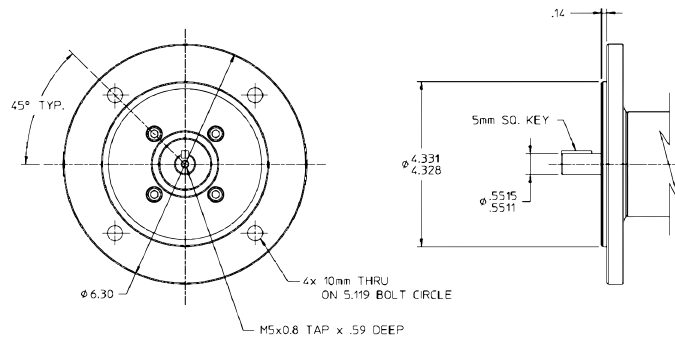


### FLANGE MOUNT PORTING & THREADING

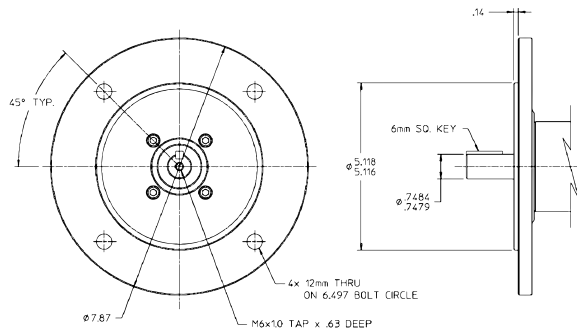


MVP02 and MVP03 models have 1/4" and 3/8" porting. MVP05 and MVP06 models have 3/8" and 1/2" porting. Imperial models are NPT thread and metric models are BSP thread.

### IEC D71-B5 FLANGE DIMENSIONS

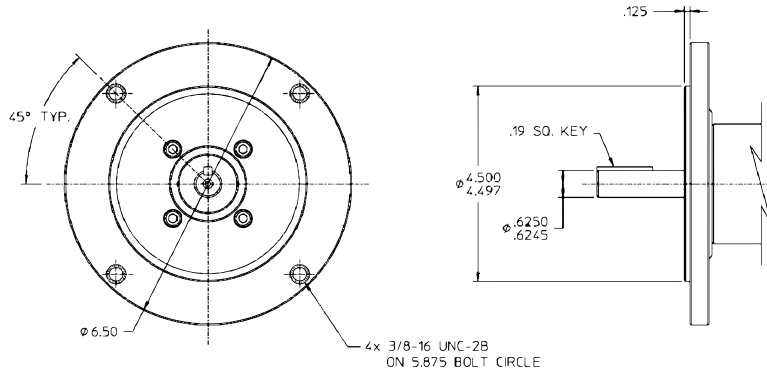


### IEC D80-B5 FLANGE DIMENSIONS





## NEMA 56C FLANGE DIMENSIONS



Model Number	Inches			Flange
	A	B	C	
MVP02DS-ANC-NXXA-01	5.15	2.10	2.75	NEMA 56C
MVP02DS-ANC-NXSA-01	5.15	2.10	2.75	NEMA 56C
MVP02DS-ANC-IXXA-01	5.15	1.18	2.75	IEC D71-B5
MVP03DS-ANC-NXXA-01	5.75	2.10	2.75	NEMA 56C
MVP03DS-ANC-NXSA-01	5.75	2.10	2.75	NEMA 56C
MVP03DS-ANC-IXXA-01	5.75	1.18	2.75	IEC D71-B5
MVP05DS-ANC-NXXA-01	6.06	2.14	3.25	NEMA 56C
MVP05DS-ANC-NXSA-01	6.06	2.14	3.25	NEMA 56C
MVP05DS-ANC-IXXA-01	6.05	1.59	3.25	IEC D80-B5
MVP06DS-ANC-NXXA-01	6.78	2.11	3.25	NEMA 56C
MVP06DS-ANC-IXXA-01	6.77	1.59	3.25	IEC D80-B5

# CONTACT

## ■ Gast Manufacturing, Inc.

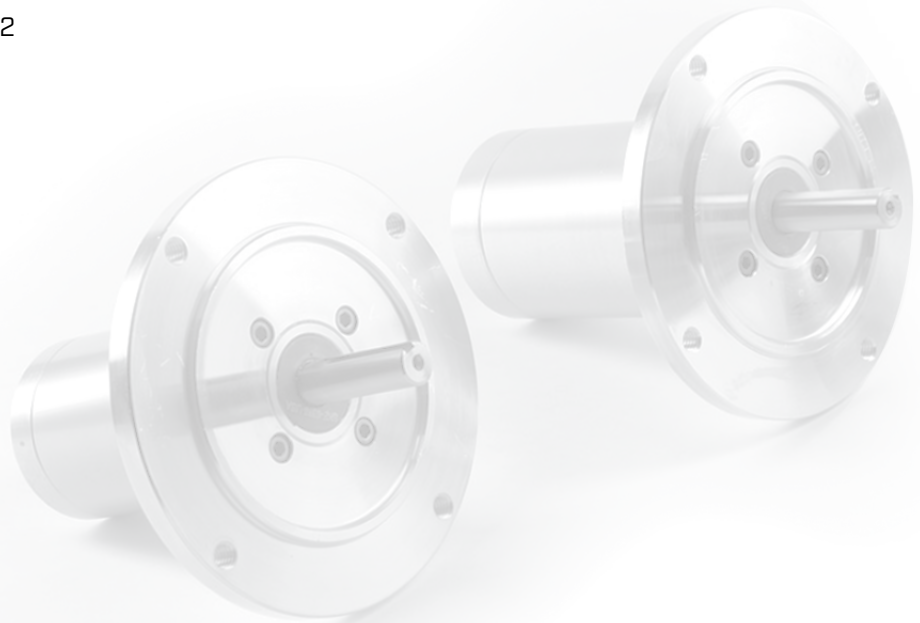
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# ROTARY VANE AIR MOTOR

6 sizes 1/20 to 9 Horsepower

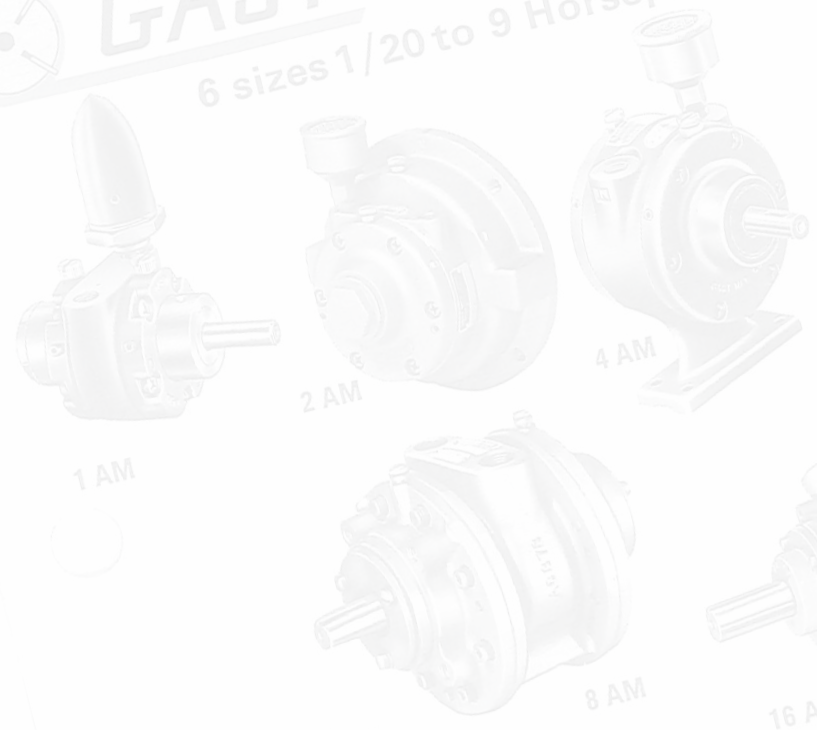
**Pipe Cutter and Threader**  
 Air motor drives chuck which holds and rotates pipe against stationary cutter or die head. Air motor speed and power may be varied by regulating air supply.

**Explosives Packager**  
 Air motor is the power source for mixing and augering an explosive mixture into containers for use in construction blasting.

**Paint Dip Tank**  
 A paint circulating pump in a dip tank is driven with an explosion-proof, variable speed air motor.

**Air-Hydraulic Sawmill Carriage**  
 One reversible air motor moves log feed carriage back and forth (through gears and chain and sprockets reducer). Another drives a hydraulic pump which operates log holding spikes.

**High Vacuum Evaporator**  
 An air motor is used to rotate a vacuum vessel. Rotation spreads the solution in a thin film over a large surface area, speeding up the process. Explosion proof air motor provides necessary safety when using explosive liquids. Speed of rotation is also readily changed and controlled.

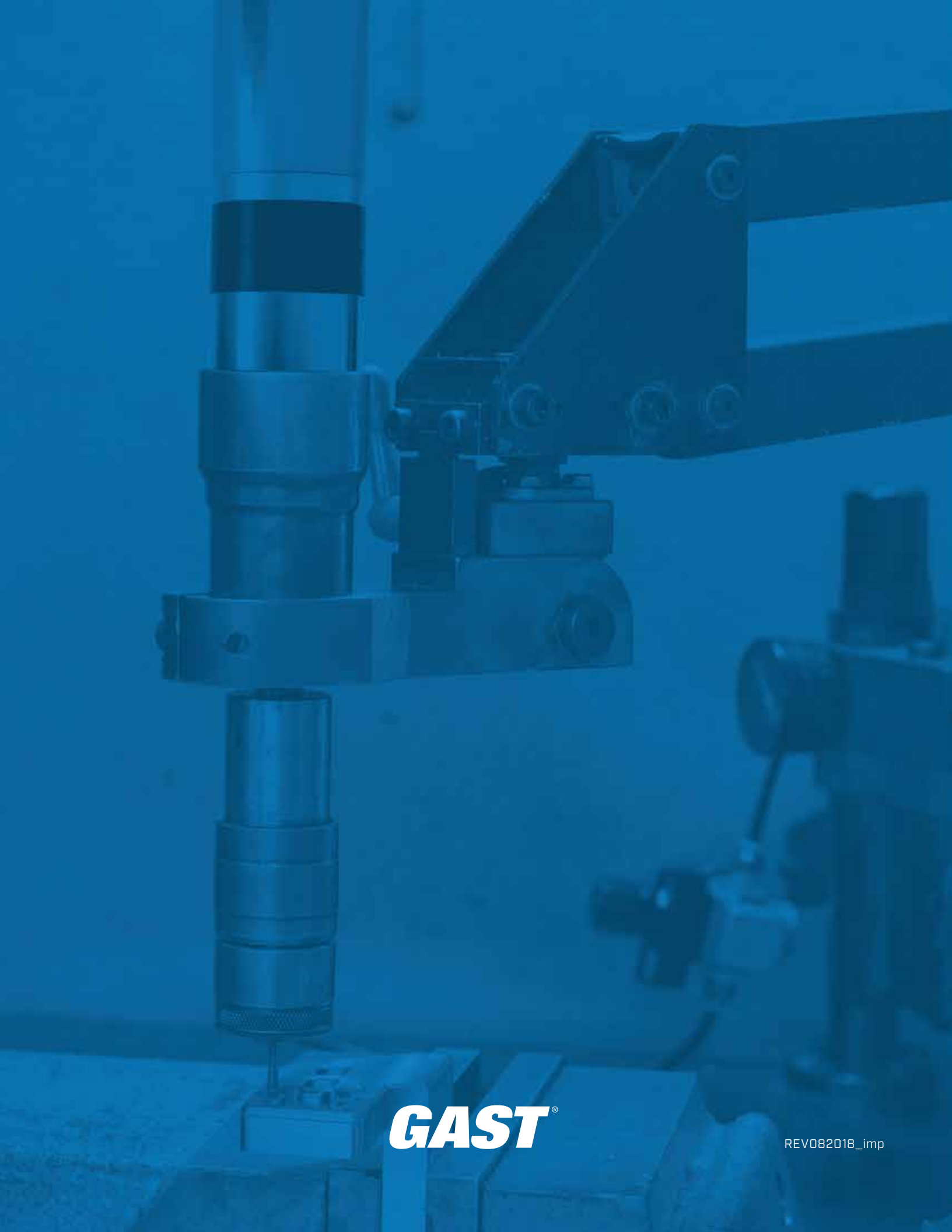


## Four Mounting Arrangements

Foot, hub, face and NEMA C flange mountings standard for most sizes.

Model	Rpm.	Hp. At 60 Psig.	Hp. At 80 Psig.	Net Wt. Lbs.
1 AM	1,000	0.06	0.08	1½
	2,000	0.11	0.14	
	6,000	0.25	0.33	
1 AM-GR11 Gearmotor. Output shaft 33 to 333 r.p.m.				
2 AM	1,000	0.22	0.30	5½
	2,000	0.38	0.55	
	3,000	0.50	0.70	
4 AM	1,000	0.50	0.60	8
	2,000	0.80	1.00	
	3,000	0.90	1.30	
6 AM	1,000	1.00	1.40	17
	2,000	1.80	2.50	
	3,000	2.50	3.30	
16 AM	1,000	1.70	2.20	25
	2,000	2.80	3.90	
	2,500	3.20	4.40	
16 AM	1,000	3.20	4.50	69
	2,000	5.70	8.00	

## Gast air motors speed and horsepower data



**GAST**<sup>®</sup>

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