GAST® MVP

AIR MOTOR CATALOG

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

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. Ⓔx 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.

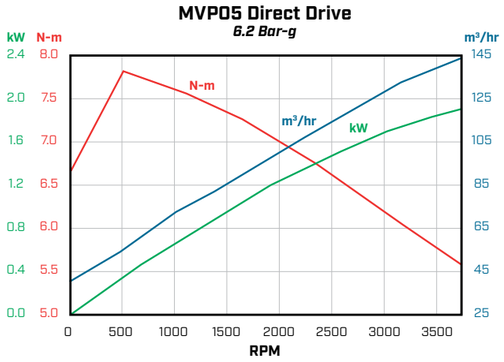
Air Consumption

Air consumption increases as speed and air pressure are increased.

While low starting toque 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.

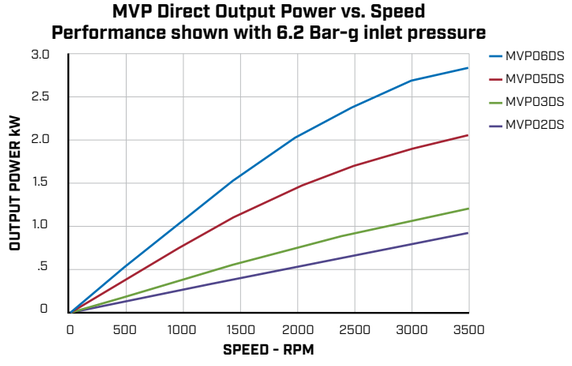
PERFORMANCE RANGES

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.



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.

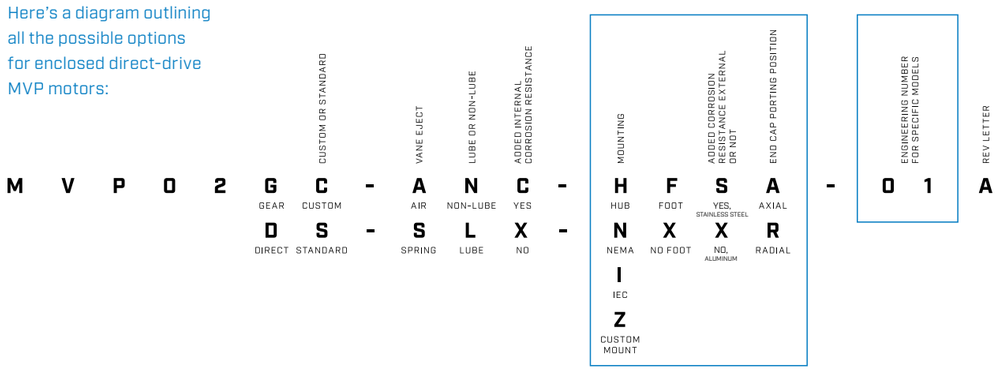
DIRECT DRIVE MOTORS

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

0.75 KILOWATT

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.	2.4 Kgs
MVP02DS-ANC-IXXA-01	IEC D71 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	2.3 Kgs
MVP02DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	1.7 Kgs

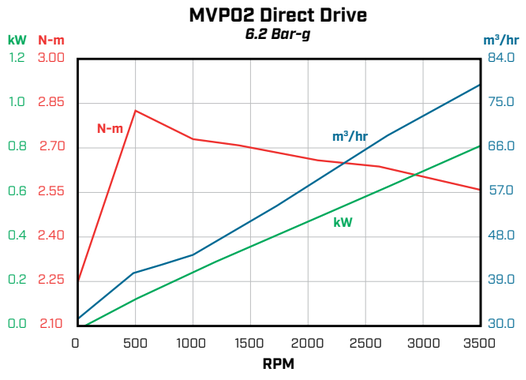
Features

- 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

0.75 KILOWATT

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.	4.6 Kgs
MVP02DS-ANC-IXSA-01	IEC D71 B5 flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	4.4 Kgs
MVP02DS-ANC-HXSA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	2.7 Kgs

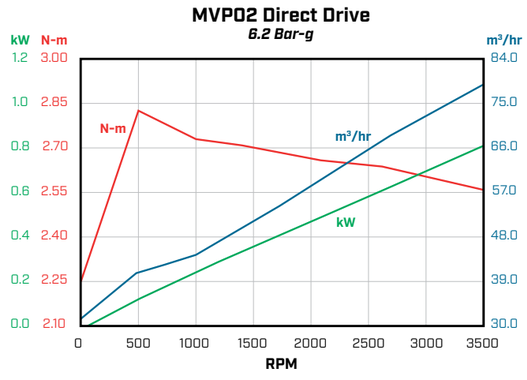
Features

- 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

1.2 KILOWATT

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.	2.7 Kgs
MVP03DS-ANC-IXXA-01	IEC 071 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	2.7 Kgs
MVP03DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	2.1 Kgs

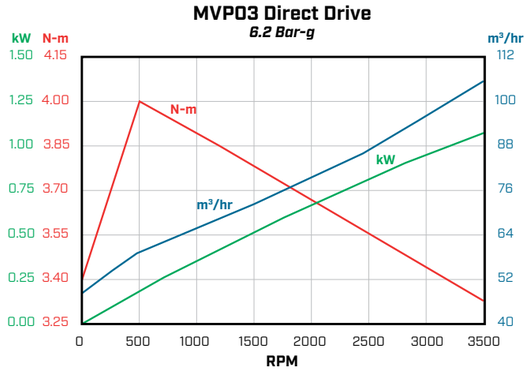
Features

- 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

1.2 KILOWATT

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.	4.9 Kgs
MVP03DS-ANC-IXSA-01	IEC 071 B5 flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	4.7 Kgs
MVP03DS-ANC-HXSA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	3.0 Kgs

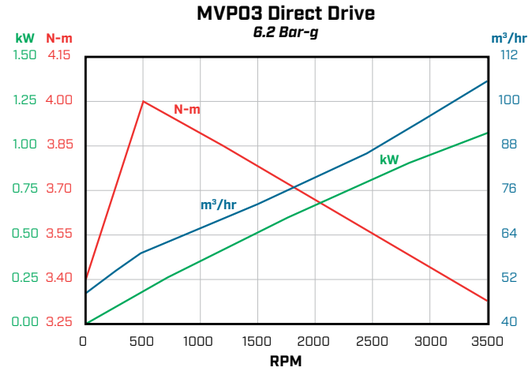
Features

- 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

2.25 KILOWATT

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.	3.5 Kgs
MVP05DS-ANC-IXXA-01	IEC D80 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	3.7 Kgs
MVP05DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	2.9 Kgs

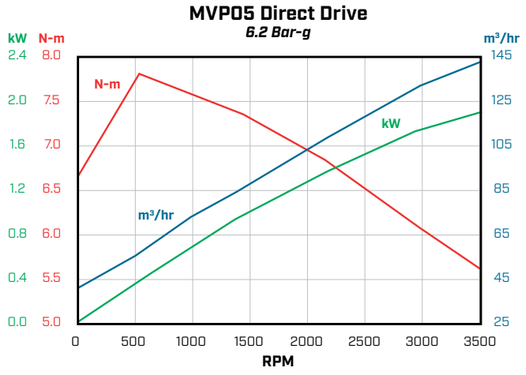
Features

- 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

2.25 KILOWATT

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.	6.3 Kgs
MVP05DS-ANC-IXSA-01	IEC D80 B5 flange mounting (also stainless), rated for lubricated or non-lubricated operation. Porting for reversible operation.	7.1 Kgs
MVP05DS-ANC-HXSA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	4.5 Kgs

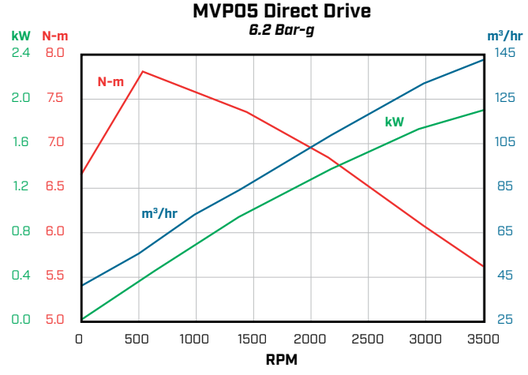
Features

- 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

3.0 KILOWATT

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.	3.8 Kgs
MVP06DS-ANC-IXXA-01	IEC D80 B5 flange mounting, rated for lubricated or non-lubricated operation. Porting for reversible operation.	4.1 Kgs
MVP06DS-ANC-HXXA-01	Hub mount, rated for lubricated or non-lubricated operation. Porting for reversible operation.	3.2 Kgs

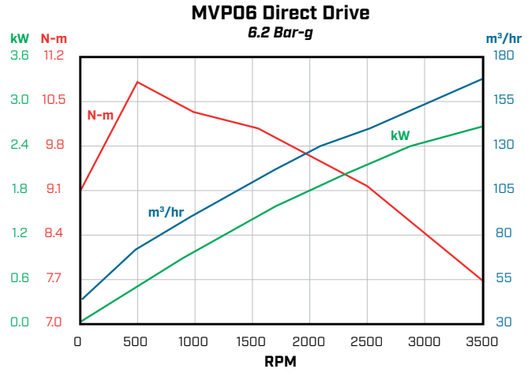
Features

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

Options

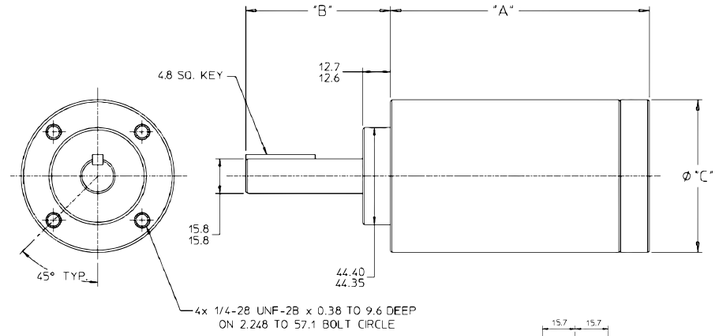
- Single rotation
- Gear Reduction: Consult Factory
- Consult factory or your sales representative for any special requirements

Performance Curves



MODEL DIMENSIONS

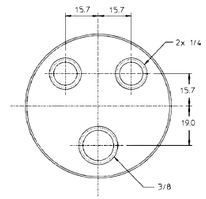
MVP Hub Mount



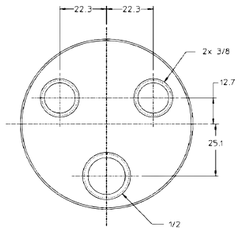
The hub face hole pattern is the same on all MVP models.

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



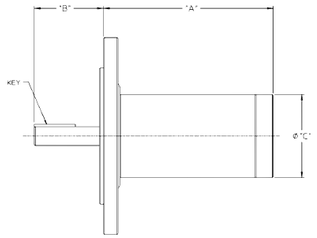
MVP05/MVP06

Model Number	Millimeters		
	A	B	C
MVP02DS-ANC-HXXA-01	118.1	66.0	69.9
MVP02DS-ANC-HXSA-01	118.1	66.0	69.9
MVP03DS-ANC-HXXA-01	133.4	66.0	69.9
MVP03DS-ANC-HXSA-01	133.4	66.0	69.9
MVP05DS-ANC-HXXA-01	141.2	67.1	82.5
MVP05DS-ANC-HXSA-01	141.2	67.1	82.5
MVP06DS-ANC-HXXA-01	159.5	66.3	82.5

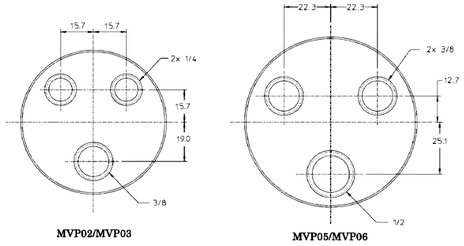
MODEL DIMENSIONS

MVP Flange Mount

FLANGE MOUNT

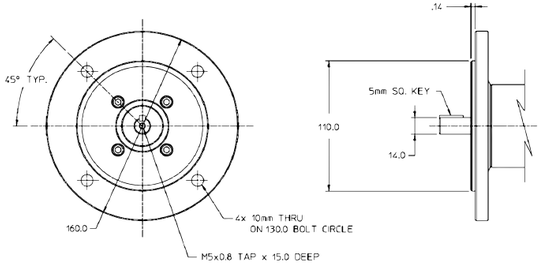


FLANGE MOUNT PORTING & THREADING

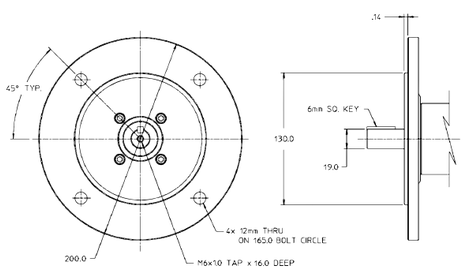


MVP02 and MVP03 models have 1/4" and 3/8" porting. MVP05 and MVP06 models have 3/8" and 1/2" porting. Imperial models are NPT thread and metric models are BSP thread.

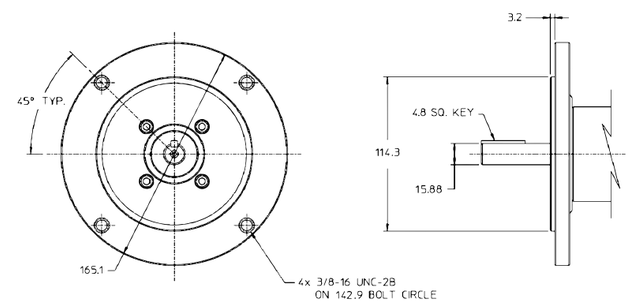
IEC D71-B5 FLANGE DIMENSIONS



IEC D80-B5 FLANGE DIMENSIONS



NEMA 56C FLANGE DIMENSIONS



Model Number	Millimeters			
	A	B	C	Flange
MVP02DS-ANC-NXXA-01	130.8	53.3	69.9	NEMA 56C
MVP02DS-ANC-NXSA-01	130.8	53.3	69.9	NEMA 56C
MVP02DS-ANC-IXXA-01	130.8	30.0	69.9	IEC D71-B5
MVP03DS-ANC-NXXA-01	146.1	53.3	69.9	NEMA 56C
MVP03DS-ANC-NXSA-01	146.1	53.3	69.9	NEMA 56C
MVP03DS-ANC-IXXA-01	146.1	30.0	69.9	IEC D71-B5
MVP05DS-ANC-NXXA-01	153.9	54.4	82.6	NEMA 56C
MVP05DS-ANC-NXSA-01	146.1	54.4	82.6	NEMA 56C
MVP05DS-ANC-IXXA-01	153.7	40.4	82.6	IEC D80-B5
MVP06DS-ANC-NXXA-01	172.2	53.6	82.6	NEMA 56C
MVP06DS-ANC-IXXA-01	172.0	40.4	82.6	IEC D80-B5

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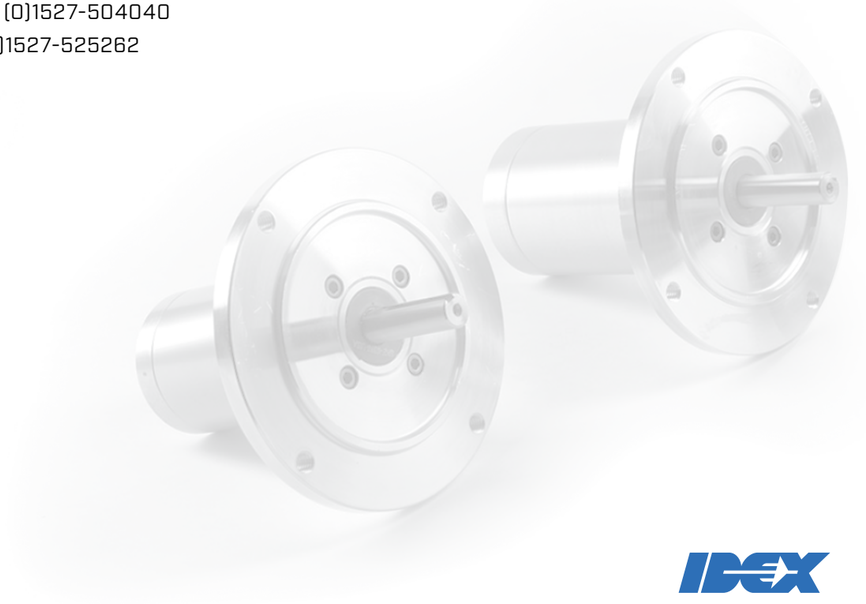

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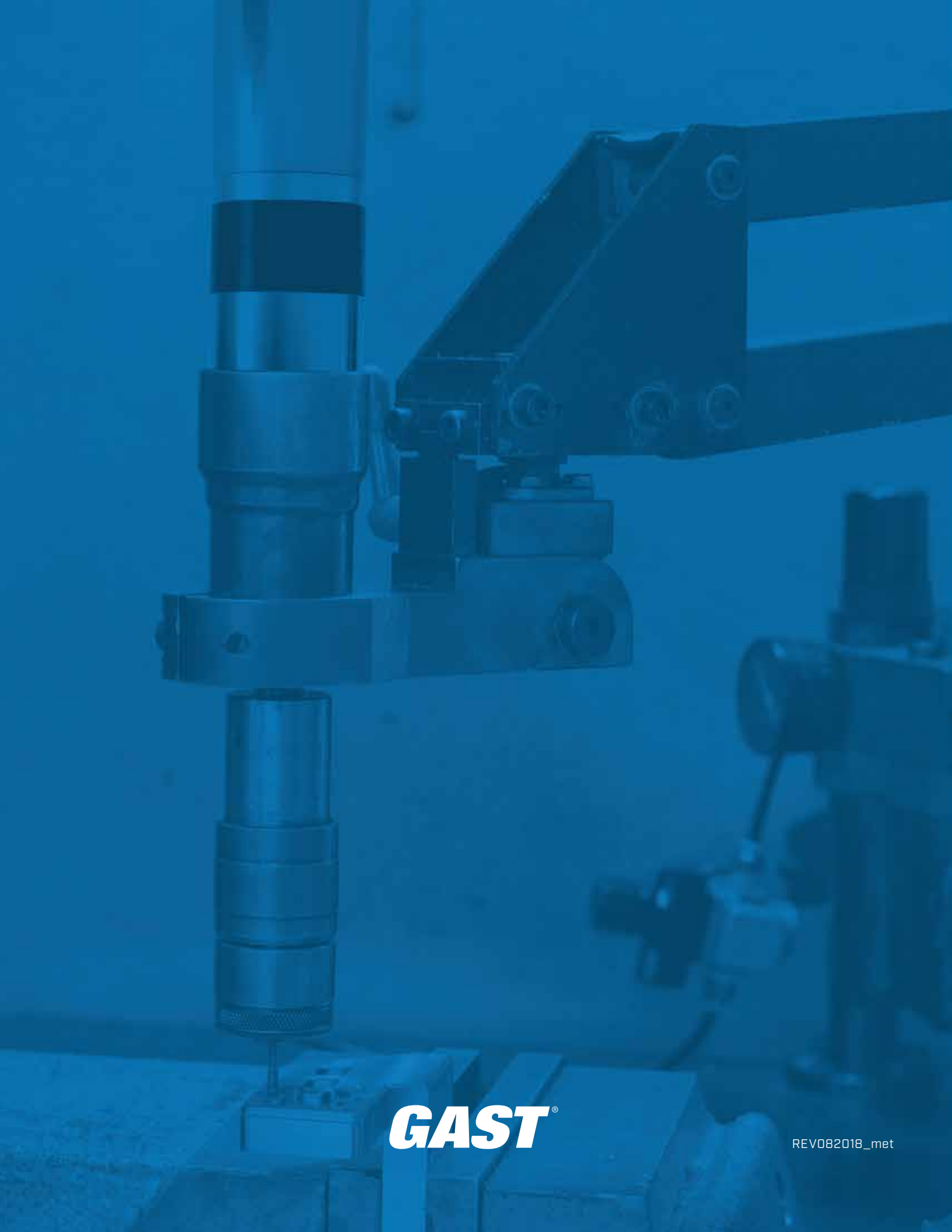

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