

MAG075

MagneDrive® II Series

Average Static Torque: 7 to 16 inch-lbs. (0.79 to 1.8 N·m)

Material of Construction: 316 Stainless Steel, Hastelloy® C276, Titanium, Inconel 600

Maximum Pressure: 5,000 psi @ 950°F (344 bar @ 510°C)
6,000 psi @ 850°F (414 bar @ 454°C)



Principle of Operation:

The MagneDrive® agitator uses rare earth magnets, permitting packless mixing at higher speeds and with higher viscosity fluids. Outer drive magnets, rotated by a motor driven belt exert powerful attraction on the encapsulated inner magnet assembly. As the outer drive magnets are rotated, the inner magnets are actuated, resulting in rotation of the agitator shaft.

Contamination-free mixing: Packless design eliminates shaft packing and need for lubrication.

Zero leakage to atmosphere: The MagneDrive® is a sealed system, closed to the atmosphere, so even sensitive fluids can be processed safely.

Continuous, high speed operation: No need to shut down in mid-reaction to change failed packing.

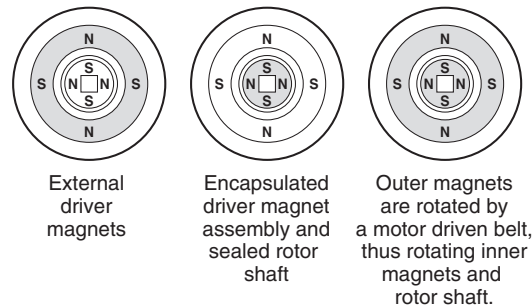
Liquid Cooled: Water cooling (user supplied) for over-temperature protection of magnets and bearings. Cooling flow is not always required and can vary depending on vessel operating temperature and drive speed.

Applications:

Agitator recognized worldwide as a highly efficient method of promoting chemical reactions and catalyst testing among gases, liquids and solids in high pressure autoclaves.

Dispersimax® agitation is available for gas dispersion through the liquid during mixing.

Facilitating requirements in a proven mixing package for University and Research facilities the world over.



The MagneDrive® Principle

Features:

- Capable of mixing vessel sizes from 50 ml up to 4000 ml.
- Capable of mixing at 3,300 rpm and 20,000 cp.
- Operating pressures as high as 6,000 psi @ 650° F (414 bar @ 343°C).
- Compact design with 7 to 16 inch-lbs (0.79 to 1.8 N·m) of static torque.
- Designed for simple disassembly and maintenance. Bearings can be replaced with minimal effort.
- Carbon graphite and fluoropolymer with carbon fiber bearings available.



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Technical Specifications:

Base Model	Maximum Speed (RPM) ¹	Static Torque inch·lbs (N·m)
MAG075-01	3300	7 (0.79)
MAG075-02	3300	16 (1.8)

Material of Construction: All wetted parts 316 SS, Hastelloy® C-276, Titanium, Inconel 600 or Inconel 625. For information on other materials, please consult factory.

Bearing Material: Purebon® 658RCH ⁴, Purebon® 3310 ⁴ or fluoropolymer with carbon fiber

Maximum Pressure at Connection: 6,000 psi @ 850° F (414 bar @ 454° C)- dependent on material

Maximum Temperature at Magnet Zone: 300° F (149°C) ⁵

Maximum Temperature at Bearing: 650° F (343°C) ⁶ with Purebon® 658 RCH Bearings

Cover Connection: 10C-7227 (1"-14 UNF)

Purge Connection: Provided with a 0.125" (3 mm) tube gas purge connection (top).

Tachometer Pick-up: Hall effect proximity sensor.

Shaft and Impeller: Mag075 MagneDrives® are supplied without shafts or impellers, allowing for customizing of shaft length and impeller style. A drive shaft, supplied separately, is screwed into the MagneDrive® encapsulation assembly. Parker Autoclave Engineers offers a wide selection of impellers, including the Dispersimax® gas dispersion system. Please consult factory for more information.

Notes

¹ Maximum speeds may be limited by mixing requirements and shaft vibration, including critical speed.

² Motor horsepower should be sized at least 25% higher than the intended application requirement.

³ To determine horsepower at a certain speed, use the formula:

$$\text{hp} = \frac{T \times n}{63,025} \quad \text{where: } T = \text{torque in inch-lbs} \\ n = \text{speed in rpm}$$

⁴ Purebon is a registered Trademark of Morgan AM&T.

⁵ The magnets are stabilized at 300° F (149° C). When the temperature of the magnets exceeds the stabilizing temperature for an extended period, loss of magnetic torque will occur. Some of this loss is reversible and torque will regenerate.

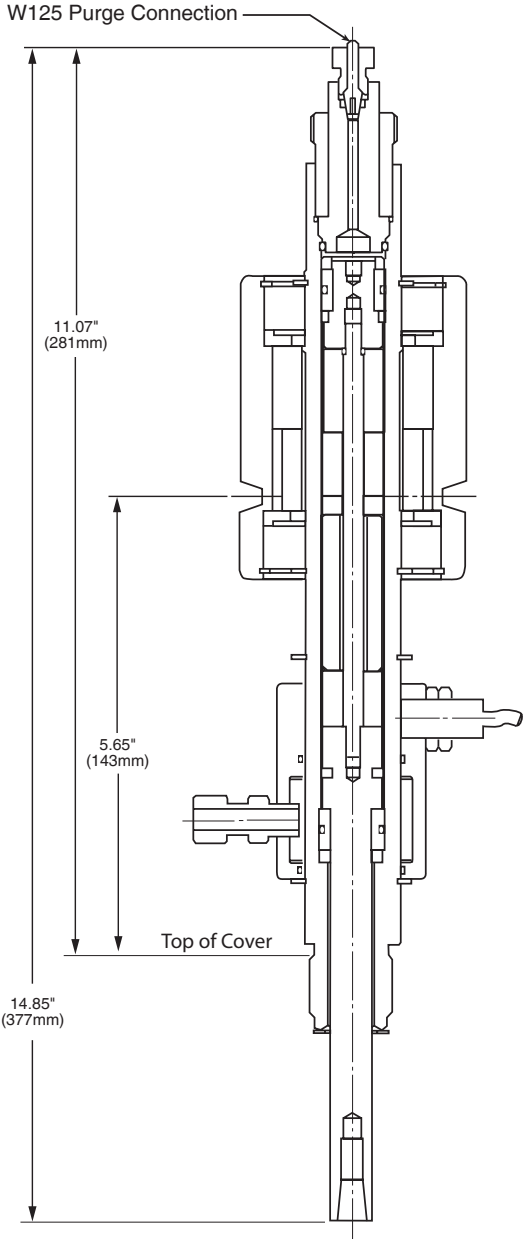
⁶ Maximum temperature at bearings is reduced to 500° F (260° C) with the use of fluoropolymer with carbon fiber.

Supporting Information:

Please refer to the following sections of the catalog for complimentary products and additional technical details. See the MAG075 Ordering Guide on the back cover to configure a drive for your specific application.

MAG075 Drawings			
Material	Drawing Number	Material	Drawing Number
316 Stainless Steel	30A-9605	Titanium Gr2	30B-1224
Hastelloy C-276	30B-0382	Inconel 600	30B-0832
Hastelloy C-276 (Sour Gas)	40A-9356	Inconel 625	30B-1222
		Zirconium	30B-1383

Dimensional:



Ordering Guide:

MagneDrive
MAG075

Material	
S	S
A	A

—

Size	
0	1
B	B

Bearing
1
C

Drive Type
0
D

Speed Sensor
1
E

Approval
0
F

Part Number Example: **MAG075SS-011010** (example selections indicated in yellow below)

AA - Material	
SS	316 Stainless Steel
HC	Hastelloy® C-276 ¹
HG	Hastelloy® C-276 (Sour Gas) ¹
TI	Titanium
IN	Inconel 600
I6	Inconel 625
ZI	Zirconium

BB - Size	
01	7 in-lb Static Torque
02	16 in-lb Static Torque

C - Bearing	
1	Purebon® 658RCH ²
2	FPGL (Fluoropolymer with Carbon Fiber) ³
3	Purebon® 3310 ²

D - Drive Type	
0	Belt Driven (No motor included)

E - Speed Sensor	
0	None
1	General Purpose Hall Effect

F - Approval	
0	None Required
C	CE Mark

NOTES:

Drive shafts and Impellers are not included with MagneDrive®, consult factory for availability.

¹ Hastelloy® is a registered trademark of Haynes International Inc.

² Purebon® is a registered trademark of Morgan AM&T.

³ Fluoropolymer bearings have a maximum recommended service temperature of 500 °F (260 °C).

WARNING

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Caution! Parker Autoclave Engineers Valves, Fittings, Systems, and Tools are not designed to interface with common commercial instrument tubing and are designed to only connect with tubing manufactured to Parker Autoclave Engineers AES specifications. Failure to do so is unsafe and will void warranty.

Bulletin AGT-MAG075

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