

MAG 2.75

MagneDrive® II Series

Average Static Torque: 284-710 inch-lbs (32-80 N·m)

Material of

Construction: 316 Stainless Steel, Hastelloy® C276, Hastelloy® B2, Monel 400

Maximum Pressure: 3,000 psi @ 650°F (207 bar @ 343°C)



Principle of Operation:

The MagneDrive® II agitator uses rare earth magnets, permitting packless mixing at higher speeds in larger vessels 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® II is a sealed system, closed to the atmosphere, so even sensitive fluids can be processed safely.

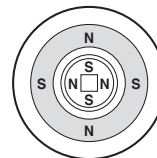
Continuous, high speed operation: No need to shut down in mid-reaction to change failed packing.

Applications:

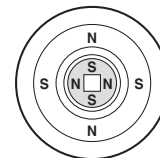
Agitator recognized worldwide as a highly efficient method of promoting chemical reactions and catalyst testing among gases, liquids and solids in high pressure autoclaves.

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

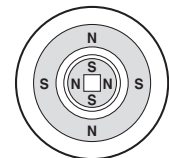
Facilitating requirements in a proven mixing package for Production facilities the world over.



External driver magnets



Encapsulated driver magnet assembly and sealed rotor shaft



Outer magnets are rotated by a motor driven belt, thus rotating inner magnets and rotor shaft.

The MagneDrive® Principle

Features:

- Capable of mixing gas as high as 1700 rpm.
- Operating pressures as high as 3,600 psi @ 650°F (248 bar @ 343°C).
- Carbon graphite and Rulon® LR⁷ bearings available.



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Technical Specifications:

Base Model	Maximum Speed (RPM) ¹	Static Torque inch-lbs (N·m)	hp @ Maximum Speed (RPM) ^{2,3}
2.7504__03F	1700	282 (32)	7.66 @ 1700 rpm
2.7506__03F	1500	426 (48)	10.14 @ 1500 rpm
2.7508__03F	1400	568 (64)	12.62 @ 1400 rpm
2.7510__03F	1300	710 (80)	14.64 @ 1300 rpm

Material of Construction: 316 Stainless Steel. Optional materials: Hastelloy® C276, Hastelloy® B-2 or Monel 400 are available upon request. For information on additional materials, please consult the factory.

Bearing Material: Standard bearing material is Purebon® 658RCH⁴ (Optional - Rulon® LR⁷)

Maximum Pressure at Connection: 3,000 psi at 650°F (207 bar @ 343°C)⁶

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

Maximum Temperature at Bearing: 650°F (343°C)⁸ with Purebon® 658RCH⁴ bearing.

Cover Connection: Four bolt flange

Purge Connection: 2.75 series MagneDrives® II are provided with a SW375 (0.375" [9.5 mm] O.D. tube) gas purge connection

Tachometer Pick-up: Hall Effect proximity sensor or reed switch.

Shaft and Impeller: 2.75 series MagneDrives® II are supplied without lower shafts or impellers, allowing for customizing of the shaft length and impeller style. One piece encapsulation and in-tank coupling provided.

Parker Autoclave Engineers offers a wide selection of impellers in a variety of materials, including the Dispersimax™ gas dispersion system. Please consult the 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:

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

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; however, the problem is avoided by using adequate cooling to limit the magnet temperature to 300°F (149°C). A cooling jacket with two NPT connections is provided for air cooling, if necessary. Additional information on cooling requirements can be obtained in the Operation and Maintenance manual.

⁶ Pressures may vary by material

⁷ Rulon is a registered trademark of Saint-Gobain

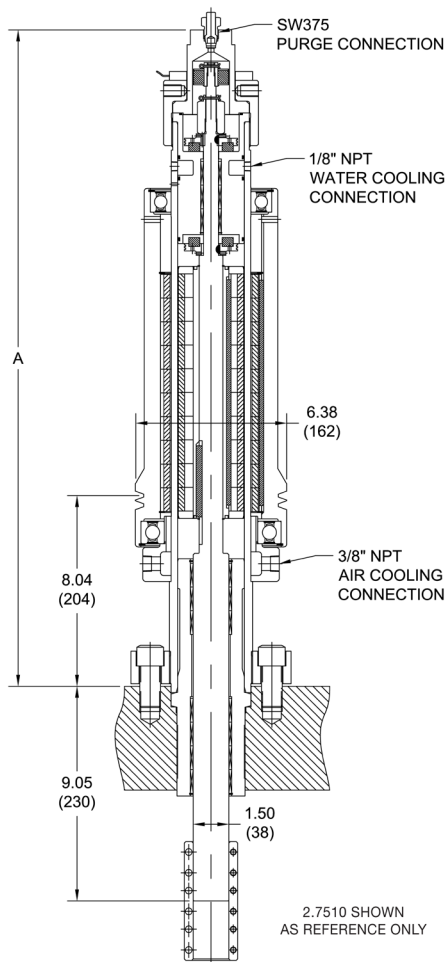
⁸ Maximum temperature at bearing is reduced to 500°F (260°C) with the use of Rulon LR⁷ bearing

Supporting Information:

Please refer to the following sections of the catalog for complimentary products and additional technical details. See the MAG2.75 Ordering Guide on the back cover to configure a drive for your specific application.

Material	Drawing Number
316 Stainless Steel	40-6555
Hastelloy B-2	40A-4285
Hastelloy C-276	40-9740
Monel 400	40A-7571

Dimensional:



Base Model	"A" Dimension inches (mm)
2.7504__03F	21.69 (551)
2.7506__03F	23.69 (602)
2.7508__03F	25.69 (652)
2.7510__03F	27.69 (703)

Ordering Guide:

MagneDrive	Size	Material		Pressure/Connection			Bearings		Speed Sensor		Top Seal	
2.75	0 4	H C	0 3 F-	P B	H S	V O	A A	B B	EE	GG		
		B B	CCCC	DD								

Part Number Example: **2.7504HC03F-PBHSVO** (example selections indicated in yellow below)

AA - Size	
04	282 in-lb Static Torque
06	426 in-lb Static Torque
08	568 in-lb Static Torque
10	710 in-lb Static Torque

BB - Material	
SS	316 Stainless Steel (3,000 psi, 207 bar)
HC	Hastelloy® C-276 ¹ (3,000 psi, 207 bar)
HB	Hastelloy® B-2 ¹ (4,400 psi, 304 bar)
MO	Monel (1,800 psi, 125 bar)

CCCC - Pressure/Connection	
03F-	3,000 psi (standard)

DD - Bearings	
PB	Purebon® 658RCH ²
RB	Rulon® LR ³

EE - Speed Sensor	
HS	Hall Effect Proximity Sensor
RS	Reed Switch
00	None

GG - Top Seal	
KO	Kalrez ⁴ O-ring
VO	FKM O-ring
EP	EPDM O-ring

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. Rulon® is a registered trademark of Saint-Gobain.
4. Kalrez® is a registered trademark of DuPont.

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Bulletin AGT-MAG2.75

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