

MAG 1.5001

MagneDrive® II Series

Average Static Torque: 27 inch-lbs (3.0 N·m)

Material of Construction: A-286, 316 Stainless Steel, Hastelloy® C276

Maximum Pressure: 6,000 psi @ 650°F (414 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.

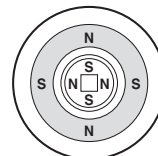
Continuous, high speed operation: No need to shut down in mid-reaction to change failed packing.

Applications:

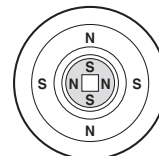
Agitator recognized worldwide as a highly efficient method of promoting chemical reactions and catalyst testing among gases, liquids and solids in high pressure autoclaves.

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

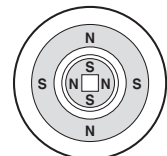
Facilitating requirements in a proven mixing package for University and Research facilities the world over.



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:

- Operating pressures as high as 6,000 psi @ 650° F (414 bar @ 343°C).
- Compact design with 27 inch-lbs (3 N·m) of static torque.
- Designed for simple disassembly and maintenance. Bearings can be replaced with minimal effort.
- Carbon graphite and Rulon LR® bearings available.
- Various impellers available, contact factory for details.



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Technical Specifications:

Base Model	Maximum Pressure at Connection psi (bar) @ 650°F (343°C)
1.5001AS06A-	6,000 (414)
1.5001AS06C-	6,000 (414)
1.5001HC05C-	5,400 (372)
1.5001AS06CBD-	6,000 (414)
1.5001HC05CBD-	5,800 (400)
1.5001HC04FBD-	4,800 (331)
1.5001SS04FBD-	4,400 (303)

Maximum Speed: 2500 rpm¹

Static Torque: 27 inch-lbs. (3.0 N-m)

Power at Maximum Speed (2500 rpm): 1.07 hp (0.8 kw)^{2,3}

Material of Construction: A-286 Stainless Steel, 316 Stainless Steel, and Hastelloy® C276. Optional material: Titanium, available upon request. For information on additional materials, please consult the factory.

Bearing Material: Purebon® 658RCH⁴, or Rulon® LR⁶

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

Maximum Temperature at Bearings: 650° F (343°C)⁷ with Purebon® 658RCH⁴ bearings.

Cover Connection: Threaded, collar and gland, or flanged. (see dimensional table)

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

Tachometer Pick-up: Hall effect proximity sensor or Reed switch.

Shaft and Impeller: Supplied without shafts or impellers, allowing for customizing of shaft length and impeller style. The shaft is pinned to the MagneDrive® encapsulation. Parker Autoclave Engineers offers a wide selection of impellers in a variety of materials, 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:

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

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 water cooling, if necessary. Additional information on cooling requirements can be obtained in the Operation and Maintenance manual.

⁶ Rulon is a registered trademark of Saint-Gobain

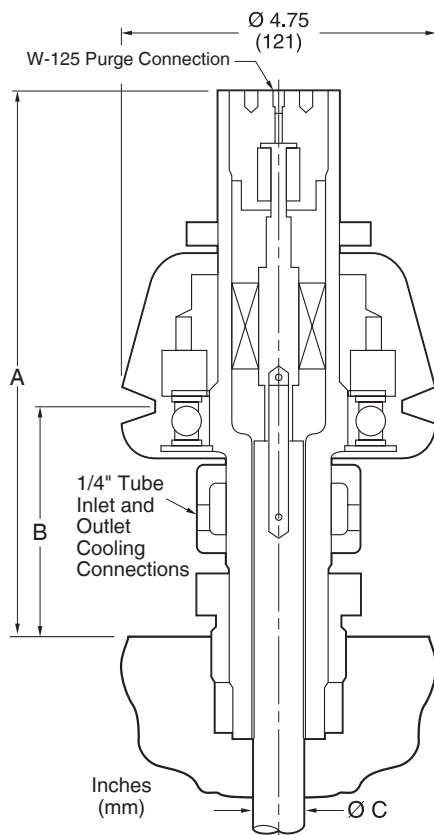
⁷ Maximum temperature at bearings is reduced to 500°F (260°C) with the use of Rulon® LR⁶ bearings.

Supporting Information:

Please refer to the following sections of the catalog for complimentary products and additional technical details. See the MAG1.5001 Ordering Guide on the back cover to configure a drive for your specific application.

Base Model	Drawing Number
1.5001AS06A-	30-7303
1.5001AS06C-	30-6245
1.5001HC05C-	30-7854
1.5001AS06CBD-	30-9767
1.5001HC05CBD-	30A-5715
1.5001HC04FBD-	30A-1431
1.5001SS04FBD-	30-9738

Dimensional:



"CBD" CONNECTION SHOWN AS REFERENCE ONLY



Base Model	A	B	C	Cover Connection
1.5001___A-	8.02 (203)	3.00 (76)	0.38 (10)	10-8086-B
1.5001___C-	7.53 (191)	3.00 (76)	0.38 (10)	10A-0772-A
1.5001___CBD-	8.02 (203)	3.38 (86)	0.63 (16)	10B-4933
1.5001___FBD-	9.25 (235)	4.62 (117)	0.63 (16)	10B-2584

Ordering Guide:

MagneDrive
1.5001

Material	
S	S
A	A

Pressure	
0	6
B	B

Connection
A
CCC

Bearing
PB
DD

Sensor
HS
EE

Top Seal
VO
FF

Part Number Example: **1.5001AS06A-PBHSVO** (example selections indicated in yellow below)

AA - Material	
SS	316 Stainless Steel
AS	A-286
HC	Hastelloy® C-276 ¹

BB - Pressure	
04	4,400 psi (304 bar)
05	5,400 psi (372 bar)
06	6,000 psi (414 bar)

CCC - Connection	
A	Threaded Housing
C	Collar Gland
CBD	Collar Gland - Large Diameter Shaft
FBD	Flanged - Large Diameter Shaft

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

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

FF - Top Seal	
TO	PTFE O-ring
KO	Kalrez O-ring ⁴
VO	FKM O-ring

NOTES:

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

- HASTELLOY® is a registered trademark of Haynes International Inc.
- Purebon® is a registered trademark of Morgan AM&T.
- Rulon is a registered trademark of Saint-Gobain.
- Kalrez is a registered trademark of DuPont.

WARNING

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06-0050SE November 2015



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Bulletin AGT-MAG1.5001

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