

1.5001

MagneDrive® II Series

At a Glance

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

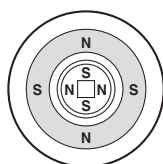
Material of Construction: A-286, 316 Stainless Steel, Hastelloy C-276

Maximum Pressure: Up to 6000 psi @ 650° F
(415 bar @ 343°C)

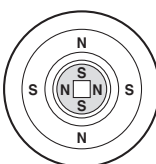
Applications: Agitator recognized worldwide as a highly efficient method of promoting chemical reactions and catalyst testing among gases, liquids and solids in high pressure autoclaves.

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

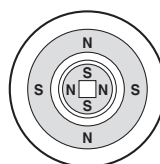
Facilitating tomorrow's requirements in a small proven stirred reactor package for **University** and **Research** facilities the world over.



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

Principle of Operation

MagneDrive II agitators use 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.

Autoclave Engineers

Division of Snap-tite, Inc.

Features

- Operating pressures as high as 6,000 psi @ 650° F (415 bar @ 343°C).
- Compact design with up to 27 in-lb (3 N-m) of static torque.
- Designed for simple disassembly and maintenance. Bearings can be replaced with minimal effort.
- Carbon graphite and Rulon LR⁶ bearings available.
- Various impellers available, contact factory for details.

General Specifications

BASE MODEL	Maximum Pressure at Connection psi (bar) @ 650°F (343°C)
1.5001AS06A-	6000 (414)
1.5001AS06C-	6000 (414)
1.5001HC05C-	5400 (3720)
1.5001AS06CBD-	6000 (414)
1.5001HC05CBD-	5800 (400)
1.5001HC04FBD-	4800 (331)
1.5001SS04FBD-	4400 (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 Connection: 650°F (343°C)

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

Purge Connection: 1.5001 series MagneDrives are provided with a 0.125" (3 mm) tube gas purge connection.

Tachometer Pick-up: Hall effect proximity sensor or Reed switch which sense the internal shaft rpm.

Shaft and Impeller: 1.5001 series MagneDrives are supplied without shafts or impellers, allowing for customization of the shaft length and impeller style. The shaft is pinned to the MagneDrive encapsulation. 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.

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 Pure Carbon Company, Inc.

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

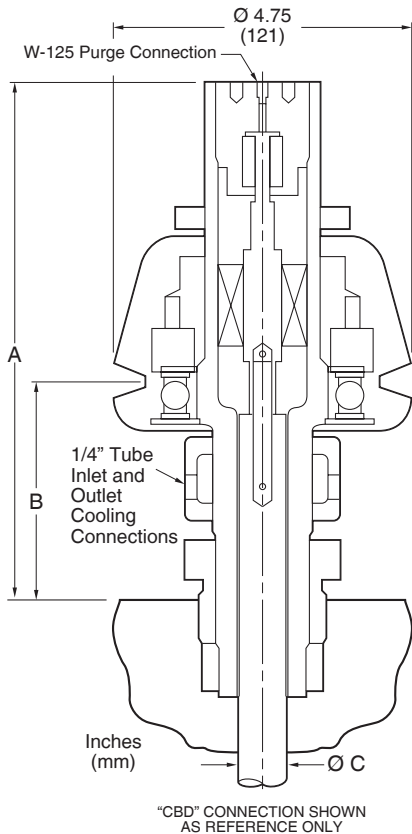
Supporting Information

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.*

1.5001 Drawings

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

Consult factory for other connection requirements



Dimensional

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

1.5001 - - - - - A A B B C D E F

AA - Material	
SS	316 Stainless Steel
AS	Hastelloy®1 C-286
HC	Hastelloy®1 C-276
BB - Pressure	
04	4400 psi (304 bar)
05	5400 psi (872 bar)
06	6000 psi (415 bar)
C - Connection	
A	Threaded Housing
C	Collar Gland
CBD	Collar Gland - Large Diameter Shaft
FBD	Flanged - Large Diameter Shaft
D - Bearing	
PB	Purebon® 658RCH
RB	Rulon® LR
E - Speed Sensor	
HS	Hall Effect Proximity Sensor
RS	Reed Switch
F - Top Seal	
KO	Kalrez O-ring
VO	Viton O-ring

Example: 1.5001AS06A-PBHSVO is a 1.5001 series MagneDrive® in Hastelloy A-286, rated 6000 psi, a threaded housing, Purebon® bearings, speed sensor, and Viton O-ring.

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

Purebon® is a registered trademark of Pure Carbon.

Rulon® is a registered trademark of Saint-Gobain.

Hastelloy® is a registered trademark of Haynes International



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ISO-9001 Certified



06-0050SE-0908

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Bulletin AGT-MAG1.5001

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