

The World Leading Provider of High Pressure Equipment for Research and Industry since 1945!

1.5004 - 1.5010

MagneDrive® II Series



At a Glance

Average Static Torque: 120-300 inch-lbs. (14 to 34 N-m)

Material of

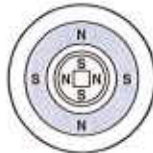
Construction: 316 Stainless Steel, Hastelloy C-276, Titanium GR 2

Maximum Pressure: 3000 psi @ 650° F
(207 bar @ 343°C)

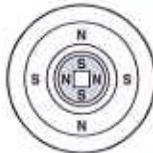
Applications: Agitator recognized worldwide as a highly efficient method of promoting chemical reactions and catalyst testing among gases, liquids and solids in high pressure autoclaves.

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

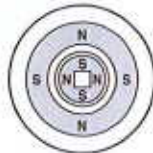
Facilitating tomorrows requirements in a proven mixing package for **Production** facilities the world over.



External driver magnets



Encapsulated driver magnet assembly and sealed rotor shaft



Outer magnets are rotated by a direct coupled motor, 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.

Features

- Capable of mixing as high as 3250 rpm.
- Operating pressures as high as 3,000 psi @ 650° F (207 bar @ 343°C).
- Carbon graphite and Rulon LR⁷ bearings available.

General Specifications

Base Model	Maximum Speed (RPM) ¹	Static Torque inch-lbs (N-m)	HP @ Maximum Speed (RPM) ^{2,3}
1.5004__03F	3250	120 (14)	6.19 @ 3250 rpm
1.5006__03F	3000	180 (20)	8.75 @ 3000 rpm
1.5008__03F	3000	240 (27)	11.42 @ 3000 rpm
1.5010__03F	2750	300 (34)	13.09 @ 2750 rpm

Material of Construction: 316 Stainless Steel, Hastelloy C276 or Titanium GR 2 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 Connection: 650 °F (343 °C)

Cover Connection: Four bolt flange.

Purge Connection: 1.5004-1.5010 Series MagneDrives are provided with a SW250 (0.250" (6.3 mm) O.D. tube gas purge connection)

Tachometer Pick-up: Solid state Reed switch pick-up, which senses the internal agitator shaft rpm, is standard. Optional hall effect tachometer pick-up (intrinsically safe).

Shaft and Impeller: 1.5004-1.5010 Series MagneDrives 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.

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

⁶ Pressures may vary by material.

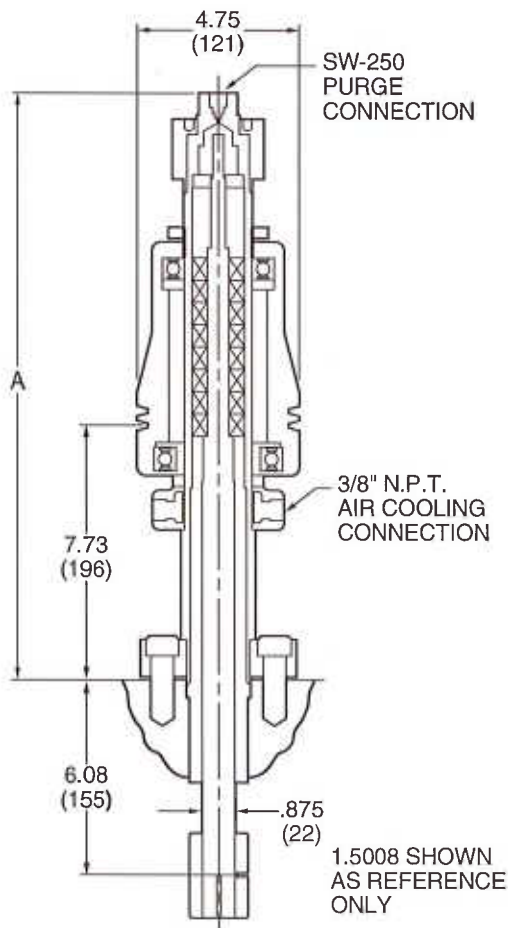
⁷ Rulon is a registered Trademark of Saint-Gobain Performance Plastics Corporation.

Please refer to the following sections of the catalog for complimentary products and additional technical details. See the 1.5004-1.5010 Ordering Guide on the back cover to configure a drive for your specific application.

MAG1.5004-1.5010 Drawings

- 316 Stainless Steel Drawing 40-6549
- Hastelloy C-276 Drawing 40A-8415
- Titanium GR 2 Drawing 20B-7429

Consult factory for other connection requirements



Model	A
1.5004__03F	17.78 (452)
1.5006__03F	19.78 (502)
1.5008__03F	21.78 (553)
1.5010__03F	23.78 (604)

Supporting Information

Dimensional

