

MAG 1.5004 - 1.5010

MagneDrive® II Series

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

Material of Construction: 316 Stainless Steel, Hastelloy C-276, Titanium GR2

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.

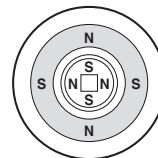
Continuous, high speed operation: No need to shut down in mid-reaction to change failed packing.

Applications:

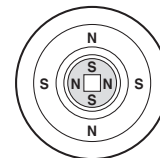
Agitator recognized worldwide as a highly efficient method of promoting chemical reactions and catalyst testing among gases, liquids and solids in high pressure autoclaves.

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

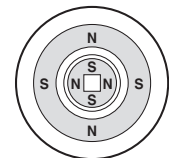
Facilitating requirements in a proven mixing package for Production facilities the world over.



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:

- Operating pressures as high as 3,000 psi @ 650° F (207 bar @ 343°C).
- Capable of mixing as high as 3,250 rpm.
- Carbon graphite and Rulon® LR⁷ bearings available.



ENGINEERING YOUR SUCCESS.

Technical 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 Bearings: 650° F (343°C)⁸ with Purebon 658RCH⁴ bearing.

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: Hall Effect proximity sensor or Reed switch.

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

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 air, 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

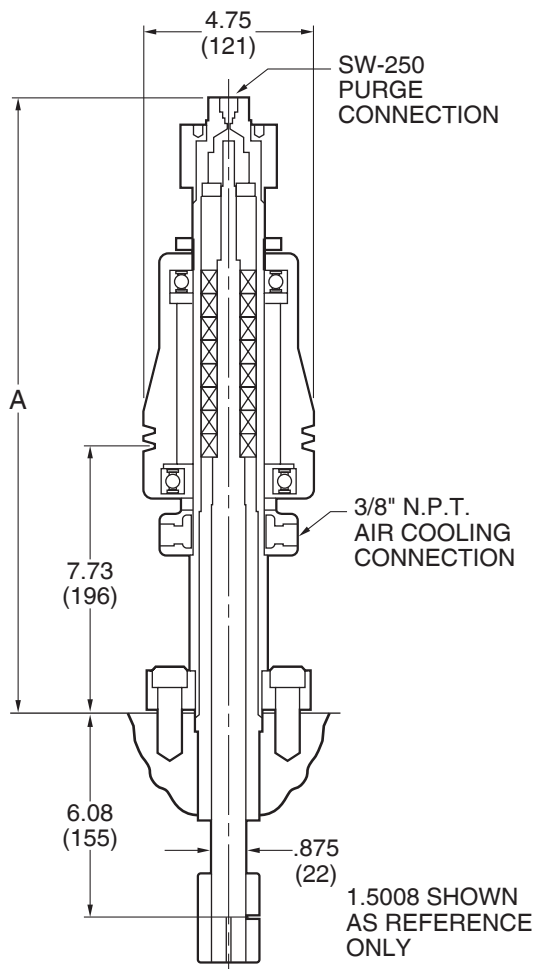
⁸ Maximum temperature at bearing is reduced to 500°F (260°C) with the use of Rulon® LR⁷ bearing.

Supporting Information:

Please refer to the following sections of the catalog for complimentary products and additional technical details. See the MAG1.5004-MAG1.5010 Ordering Guide on the back cover to configure a drive for your specific application. Consult factory for other connection requirements.

Material	Drawing Number
316 Stainless Steel	40-6549
Hastelloy C-276	40A-8415
Titanium GR2	20B-7429

Dimensional:



Base Model	"A" Dimension inches (mm)
1.5004_03F	17.78 (452)
1.5006_03F	19.78 (502)
1.5008_03F	21.78 (553)
1.5010_03F	23.78 (604)

Ordering Guide:

MagneDrive
1.50

Size	
0	4
A	A

Material	
H	C
B	B

Pressure/ Connection		
0	3	F-
C C C C		

Bearing	
R	B
DD	

Speed Sensor	
H	S
EE	

Top Seal	
V	O
GG	

Part Number Example: **1.5004HC03F-RBHSVO** (example selections indicated in yellow below)

AA - Size	
04	120 in-lb Static Torque
06	180 in-lb Static Torque
08	240 in-lb Static Torque
10	300 in-lb Static Torque

BB - Material	
SS	316 Stainless Steel
HC	Hastelloy C-276 ¹
TI	Titanium GR2

CCCC - Pressure/Connection	
02F-	2,000 psi (Titanium)
03F-	3,000 psi (Standard)

DD - Bearing	
PB	Purbon® 658RCH ²
RB	Rulon LR Bearings 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.

WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.
This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are available for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any sale contract entered by Parker will be governed by the provisions stated in Parker's standard terms and conditions of sale (copy available upon request).

©2015 Parker Hannifin Corporation | Autoclave Engineers is a registered trademark of the Parker Hannifin Corporation

06-0051SE December2015



Instrumentation Products Division
Autoclave Engineers Operation
8325 Hessinger Drive
Erie, PA 16509-4679
Tel: 814 860 5700 • Fax: 814 860 5718
www.AutoclaveEngineers.com

Caution! Do not mix or interchange component parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

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-MAG1.5004-1.5010

ENGINEERING YOUR SUCCESS.