

Figure 1- MagneDrive Principle

The MagneDrive II® Principle

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.

2.75 Series MagneDrive II® Specification

Maximum RPM, torque, and horsepower

Model	Maximum Speed (RPM) ¹	Average Static Torque inch-lbs (N-m)	HP @ Maximum Speed (RPM) ^{2,3}
2.7504SS03F	1700	284 (32)	7.66 @ 1700
2.7506SS03F	1500	426 (47)	10.14 @ 1500
2.7508SS03F	1400	568 (63)	12.62 @ 1400
2.7510SS03F	1300	710 (80)	14.64 @ 1300

Materials of Construction: 316 Stainless Steel. Optional materials, including titanium and Hastelloy C276, are available upon request. For information on additional materials, please consult the factory.

Bearing Material of Construction: Standard bearing material is Purebon 658RCH⁴.

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

Minimum Metal Design Temperature: 40°F @ 3000 psi (4.4 °C @ 207 bar)

Maximum Temperature at Connection: 650 °F (343 °C)

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

Cover Connection: Four bolt flange.

Tachometer Pick-up: Solid state pick-up, which senses the internal agitator shaft rpm, is standard. Optional tachometer pick-up styles, including explosion-proof, are available on special order.

Purge Connection: 2.75 series MagneDrives are provided with a 0.375" (9.5 mm) gas purge connection.

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

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

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.

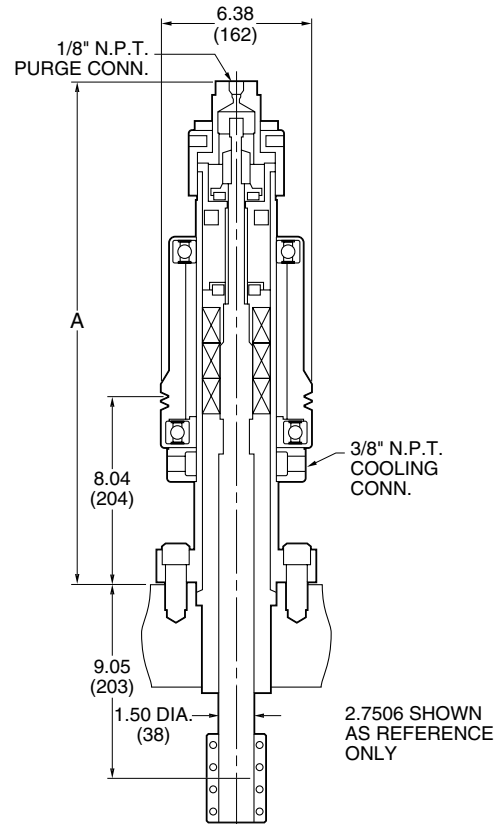
Model Code Chart

Example: 2.7506SS03F. 2.75 MagneDrive constructed of 316 SS, rated for 3000 psi (207 bar) with a flanged cover connection.

Model	Material of Construction	Pressure Rating	Cover Connection
2.7504	SS- 316 Stainless Steel	03= 3000 psi (207 bar)	F= Bolted Flange
2.7506			
2.7508			
2.7510			

Dimensions – inch (mm)

Model	A
2.7504SS03F	21.69 (551)
2.7506SS03F	23.69 (602)
2.7508SS03F	25.69 (652)
2.7510SS03F	27.69 (703)



! WARNING !

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