

# MAG075

## MagneDrive® II Series

### At a Glance

**Average Static Torque:** 7-16 inch-lbs. (0.79 to 1.8 N-m)

### Material of

**Construction:** 316 Stainless Steel, Hastelloy C276, Titanium, Inconel 600

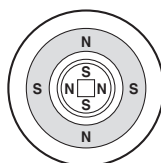
### Maximum Pressure:

6000 psi @ 850° F (414 bar @ 459°C) - except Titanium  
2200 psi @ 600°F (152 bar @ 316°C) - Titanium

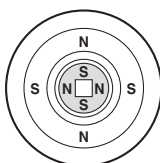
**Applications:** Agitator recognized worldwide as a highly efficient method of promoting chemical reactions and catalyst testing among gases, liquids and solids in high pressure autoclaves.

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

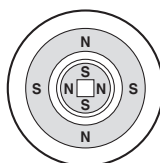
Facilitating tomorrows requirements in a proven mixing package for **University** and **Research** facilities the world over.



External driver magnets



Encapsulated driver magnet assembly and sealed rotor shaft



Outer magnets are rotated by motor driven belt, thus rotating inner magnets and rotor shaft.

### The MagneDrive® Principle



## Principle of Operation

The MagneDrive® agitator uses rare earth magnets, permitting packless mixing at higher speeds 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® 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

- Capable of mixing vessel sizes from 50 ml up to 4000 ml.
- Capable of mixing at 3,600 rpm and 20,000 cp.
- Operating pressures as high as 6,000 psi @ 650° F (414 bar @ 343°C).
- Compact design with 7-16 in-lb (0.79 to 1.8 N-m) of static torque.
- Designed for simple disassembly and maintenance. Bearings can be replaced with minimal effort.
- Carbon graphite and fluoropolymer with carbon fiber bearings available.

## General Specifications

<b>Base Model HD</b>	<b>Maximum Speed (RPM)<sup>1</sup></b>	<b>Static Torque inch-lbs (N-m)</b>
MAG075-01	3300	7 (0.79)
MAG075-02	3300	16 (1.8)

**Material of Construction:** All wetted parts 316 SS, Hastelloy® C-276, Titanium, Inconel 600 and Inconel 625. For information on other materials, please consult factory.

**Bearing Material:** Purebon® 658RCH<sup>4</sup>, Purebon® 3310<sup>4</sup> or fluoropolymer with carbon fiber

**Maximum Pressure at Connection:** 6,000 psi @ 850° F (414 bar @ 454° C)- except Titanium

**Maximum Temperature at Magnet Zone:** 300° F (149°C)<sup>5</sup>

**Maximum Temperature at Connection:** 650° F (343°C)<sup>6</sup> with Purebon® 658 RCH Bearings

**Cover Connection:** 10C-7227 (1"-14 NF)

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

**Tachometer Pick-up:** Hall effect proximity sensor.

**Shaft and Mag Impeller:** Mag075 MagneDrives® are supplied without shafts or impellers, allowing for customization of shaft length and impeller style. A drive shaft, supplied separately, is screwed into the MagneDrive® encapsulation assembly. Autoclave Engineers offers a wide selection of impellers, including the Dispersimax gas dispersion system. Please consult factory for more information.

<sup>1</sup>Maximum speeds may be limited by mixing requirements and shaft vibration, including critical speed.

<sup>2</sup>Motor horsepower should be sized at least 25% higher than the intended application requirement.

<sup>3</sup>To determine horsepower at a certain speed, use the formula:

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

<sup>4</sup>Purebon is a registered Trademark of Pure Carbon.

<sup>5</sup>The magnets are stabilized at 400° F (204° 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.

<sup>6</sup>Maximum temperature at connection is reduced to 500° F (260° C) with the use of fluoropolymer with carbon fiber.

## Supporting Information

Please refer to the following sections of the catalog for complimentary products and additional technical details. See the *MAG075 Ordering Guide on the back cover* to configure a drive for your specific application.

### MAG075 Drawings

**316 Stainless Steel** .....Dwg. 30A-9605

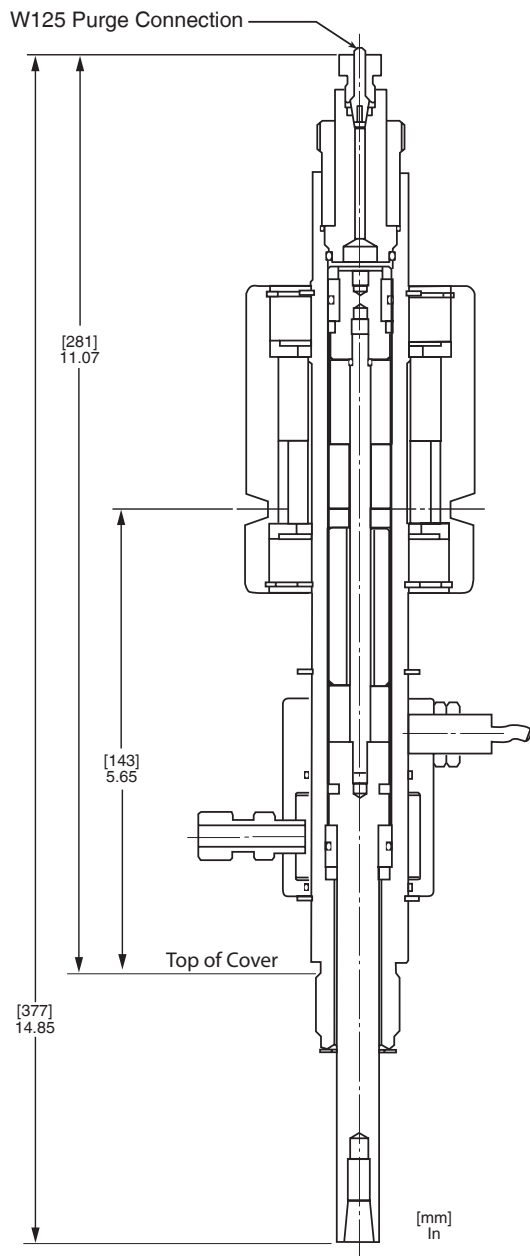
**Hastelloy C-276** .....Dwg. 30B-0382

**Hastelloy C-276** .....Dwg. 40A-9356  
(Sour Gas)

**Titanium**.....Dwg. 30B-1224

**Inconel 600** .....Dwg. 30B-0832

**Inconel 625** .....Dwg. 30B-1222



## Dimensional

# Ordering Guide

## MAG075

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A A B B C D E F

AA - Material	
SS	316 Stainless Steel
HC	Hastelloy®1 C-276
HG	Hastelloy® C-276 (Sour Gas)
TI	Titanium
IN	Inconel 600
IG	Inconel 625
BB - Size	
01	7 In-lb Static Torque
02	16 In-lb Static Torque
C - Bearing	
1	Purebon® 658RCH
2	FPGL (Fluoropolymer with Carbon Fiber)
3	Purebon® 3310
D - Drive Type	
0	Belt Driven (No motor included)
E - Speed Sensor	
0	None
1	General Purpose
2	Intrinsically Safe (IS barrier not provided)
F - Approval	
0	None Required
2	CE Mark Compliance

**Example:** **MAG075SS-011010** is a Mag075 series MagneDrive® in 316 SS with 7 in-lbs of torque, Purebon® bearings, (no motor) belt driven, general purpose speed sensor, and no approvals required.

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

Purebon® is a registered trademark of Pure Carbon.



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ISO-9001 Certified



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### ! WARNING !

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Bulletin AGT-MAG075

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