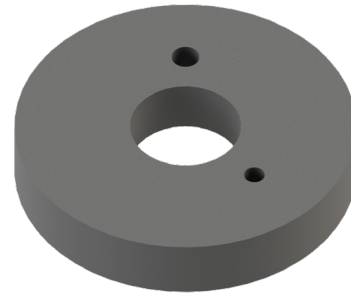


Features and Benefits

- Four grades of magnetic materials
- Cost effective design
- High resistance to demagnetization
- Operation from -40°C to 125°C
- Tough environmental endurance
- Very resistant to chipping



Molded Target Magnet
(Alignment holes optional)

Physical Properties of Magnetic Material

Table 1.1

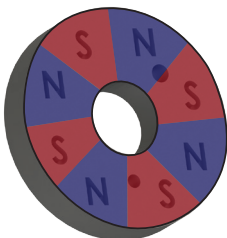
| Characteristic | Value | Units |
|--------------------------------|-----------------------|-------|
| Tensile Strength | 6500 | PSI |
| Flexural Strength | 9750 | PSI |
| Flexural Modulus | 1.3 X 10 ⁶ | PSI |
| Continuous Service Temperature | 100 | °C |

Magnetic Properties

Table 1.2

| Characteristic | Magnalox 300 | Neobond 12M | Neobond 30M | Neobond 50L | Units |
|---|--------------|-------------|-------------|-------------|---------|
| Remanence (B _r) | 1370 | 2500 | 4000 | 5000 | Gauss |
| Coercive Force (H _c) | 1180 | 2400 | 3250 | 4000 | Oersted |
| Energy Product (BH _{MAX}) | 0.40 | 1.3 | 3.1 | 5.0 | MGOe |
| Intrinsic Coercive Force (H _{ci}) | 2300 | 7500 | 7000 | 7500 | Oersted |
| Reversible Temperature Coefficient (B _r) | -0.2 | -0.35 | -0.4 | -0.43 | %/deg C |
| Reversible Temperature Coefficient (H _{ci}) | +0.5 | -0.25 | -0.36 | ---- | %/deg C |
| Peak Magnetizing Force (>95% Saturation) | 596 | 1100 | 1600 | ---- | kA/m |
| Specific Gravity | 3.5 | 4.0 | 4.7 | 5.0 | --- |

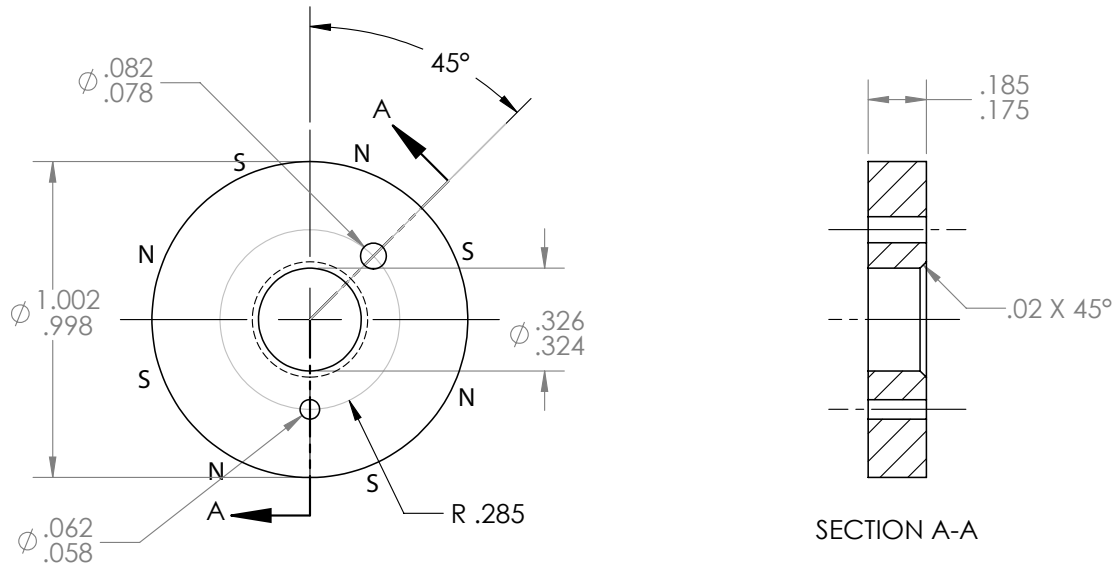
Pole Counts



Note: (N)orth/(S)outh markings are for illustration purposes and do not appear on the actual product.

| | |
|-----------------------|-----------------|
| Available Pole Counts | 2, 4, 8, 12, 36 |
|-----------------------|-----------------|

Target Rotor Physical Outline - Molded (Mounting Style A)



Note: Alignment holes optional

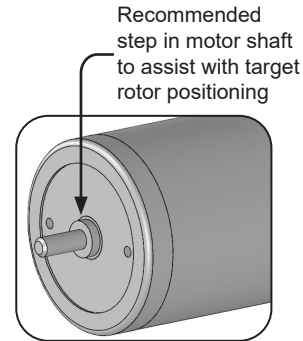
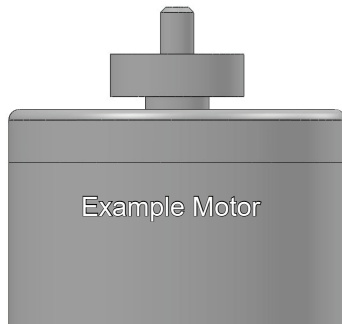
Table 2.1

| Bore Size (.inch) | Motor Shaft OD Size (nominal) | NEMA Guide Shaft Tolerance | Magnet Bore MIN. (inch) | Magnet Bore MAX. (inch) |
|-------------------|-------------------------------|----------------------------|-------------------------|-------------------------|
| 079 | 2 mm (.0787") | +0.0000"/-0.0005" | .0777 | .0807 |
| 118 | 3 mm (.1181") | | .1171 | .1201 |
| 125 | 1/8 in (.1250") | | .1240 | .1270 |
| 156 | 5/32 in (.1563") | | .1553 | .1583 |
| 157 | 4 mm (.1575") | | .1565 | .1595 |
| 188 | 3/16 in (.1875") | | .1865 | .1895 |
| 197 | 5 mm (.1969") | | .1959 | .1989 |
| 236 | 6 mm (.2364") | | .2354 | .2384 |
| 250 | 1/4 in (.2500") | | .2490 | .2520 |
| 276 | 7 mm (.2758") | | .2747 | .2777 |
| 313 | 5/16 in (.3125") | | .3115 | .3145 |
| 315 | 8 mm (.3150") | | .3140 | .3170 |
| 375 | 3/8 in (.3750") | | .3740 | .3770 |
| 394 | 10 mm (.3940") | | .3930 | .3960 |
| 473 | 12 mm (.4728") | | .4718 | .4748 |
| 500 | 1/2 in (.5000") | | .4990 | .5020 |
| 625 | 5/8 in (.6250") | | .6240 | .6270 |
| 748 | 19 mm (.7480") | | .7470 | .7500 |
| 750 | 3/4 in (.7500") | | .7490 | .7520 |

Other bore sizes available upon request.
Contact sales@phoenixamerica.com.

Target Rotor Mounting Guidelines - Molded (Mounting Style A) For Slip Fit Application

- Proper alignment of the target rotor is critical for optimal performance.
- A machined step on the motor shaft provides a quick and repeatable method for positioning the target rotor. Spacers or other fixturing should be used to properly position the rotor if no mechanical locating features are on the shaft.
- Various adhesives can be used to bond the target rotor to the motor shaft. Shaft alloys, operating environment, and shaft speed and acceleration should be taken into consideration when selecting an appropriate bonding agent. Loctite threadlockers and retaining compounds have proved effective in bonding the target rotor to the motor shaft. Loctite 263 and 2760 threadlockers and Loctite 638 and 680 retaining compounds are good candidates. These materials have been effective in past experience; testing under actual operating conditions should be used to qualify any bonding material.
- For best results, the motor shaft should be clean and free of any oils, lubricants, or solvents.
- Apply adhesive around the leading edge of the shaft and inside the hole in the rotor. Use a rotating motion when assembling the magnet to the shaft to insure good adhesive coverage.
- The use of primers and activators can be used to improve bond strength and cure rate.
- For non-critical applications or for fast bonding for evaluation, a cyanoacrylate adhesive (super glue) can be used. Loctite 401 and 410 have proven effective for quick bonding applications.



Bore Size Range Per Pole Counts

Table 3.1

| Pole Count | Bore Size Range |
|--------------------|-----------------|
| 2 Poles | 079 - 750 |
| 4 poles | 375 - 750 |
| 8 Poles - 36 Poles | 625 - 750 |

Part Number Description

| | | | | | |
|---------------|---------------------|------------------------|--|---|---|
| F16 | A | N | 0125 | 25 | 008 |
| Series | Design Style | Alignment Holes | Bore Size* | Magnet Material | Pole Count |
| F16 | <i>A Molded</i> | N No Y Yes | 0079 2 mm 0118 3 mm 0125 1/8 in <i>(default)</i> 0156 5/32 in 0157 4 mm 0188 3/16 in 0197 5 mm 0236 6 mm 0250 1/4 in 0276 7 mm 0313 5/16 in 0315 8 mm 0315 8 mm 0375 3/8 in 0394 10 mm 0473 12 mm 0500 1/2 in 0625 5/8 in 0748 19 mm 0750 3/4 in | 25 <i>Megnalox 300</i> 60 <i>Neobond 12M</i> 75 <i>Neobond 30M</i> 85 <i>Neobond 50L</i> | 002 <i>2 Poles</i> 004 <i>4 Poles</i> 008 <i>8 Poles</i> 012 <i>12 Poles</i> 036 <i>36 Poles</i> |

Example: F16-A-N-0125-25-008

*Please refer to Table 3.1 prior to ordering.