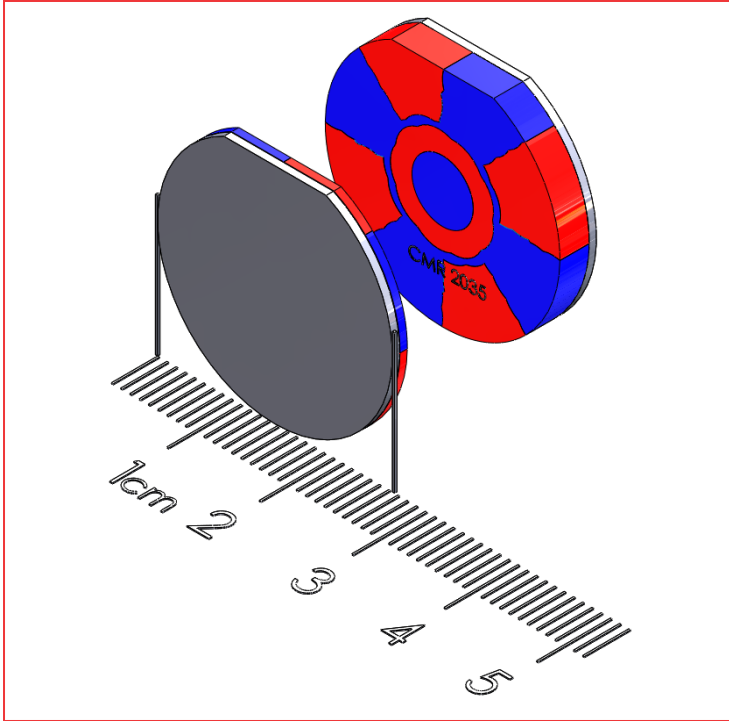


1002280

Mobile Device Polymagnet pair - Twist/Release

Twist/Release Polymagnets are engineered to provide strong attachment and alignment forces in portrait/landscape positions and a repulsion force once rotated +/- 45°. To achieve this behavior, these magnets are used in pairs and must be axially aligned. These Polymagnets also exhibit a tightly controlled magnetic field which minimizes interference with sensitive devices.



Features and Benefits

- Mobile phone case and stand design
- Compass friendly
- Rotational alignment
- 1002034 – D shaped 1" OD 1/32" thick with shunt
- 1002035 – D shaped 1" OD 1/8" thick with shunt

Technical Specifications:

Shape Type:	D-Shape	
Diameter:	1.0"	
Weight:	0.06 oz	(3.7 g)
Material:	NdFeB	
Magnet Grade:	N50	
Coating:	Ni-Cu-Ni	
Temperature Rating:	140° F	(60 C)
Holding Force:	12.4 lbs	(55 N)
Max Torque:	64.4 oz-in	(255 mN*m)



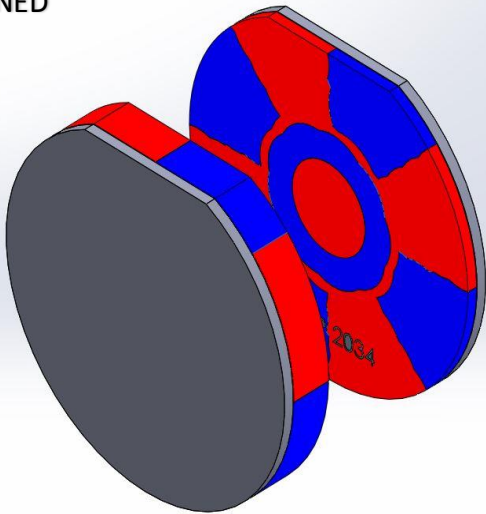
www.polymagnet.com

These Polymagnets exhibit a high holding force when they are rotationally aligned at 0°, 90°, 180° and 270°, and a repel force at +/- 45°. The holding force is at a maximum of 55.18N when the magnets are aligned. While keeping one magnet constrained, the holding force decreases as the repel force increases, reaching a minimum of -14.8N at 45°, when the other magnet is rotated. As the rotation continues past 45° the holding force increases in the direction of rotation until it reaches the maximum force in the 90° position. When the Polymagnets are offset, torque exists toward the position of higher attractive force. This torque peaks at 255mN*m. This Polymagnet pair differs from portrait/landscape in behavior as the attraction force becomes a repulsion force at +/- 45° positions.

*In the images below, north poles are indicated by the red regions, south poles are indicated by the blue regions, and steel is indicated by the grey region.

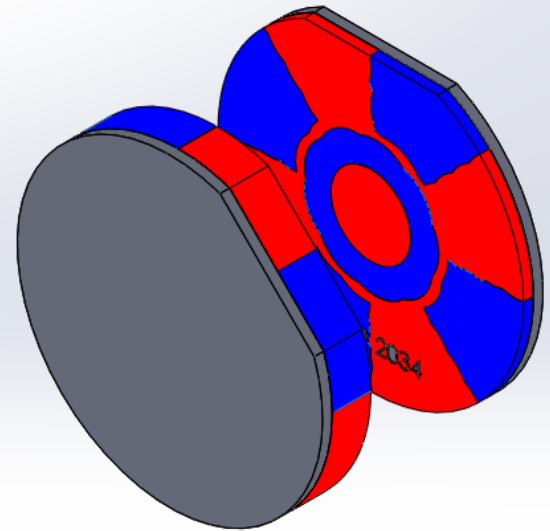
Holding Force:	12.4 lbs
Torque:	0 in

ALIGNED

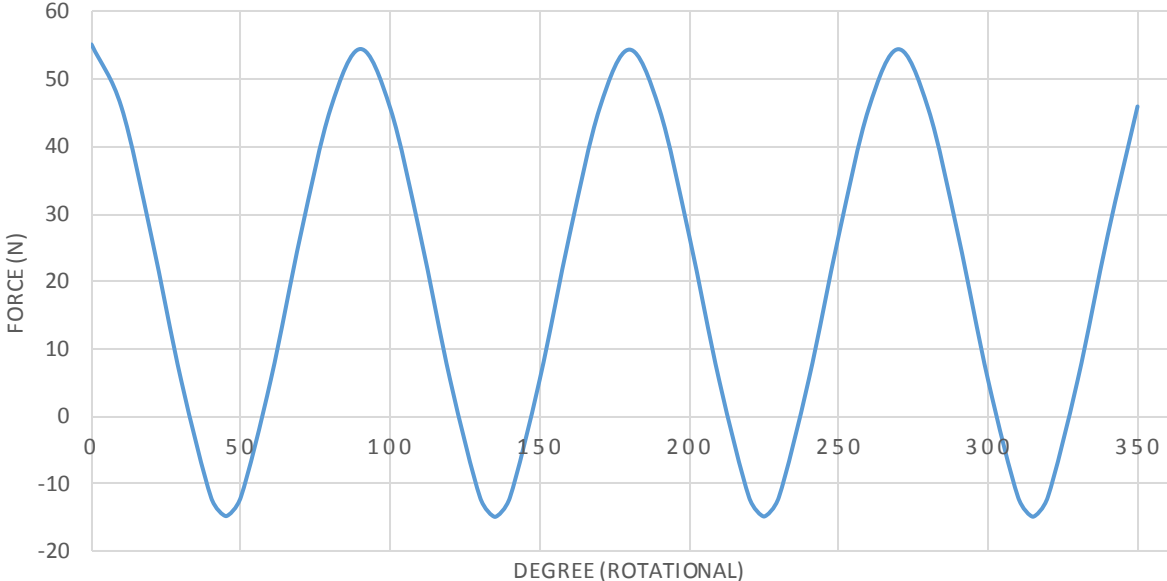


Holding Force:	-3.3 lbs
Torque:	36 oz-in

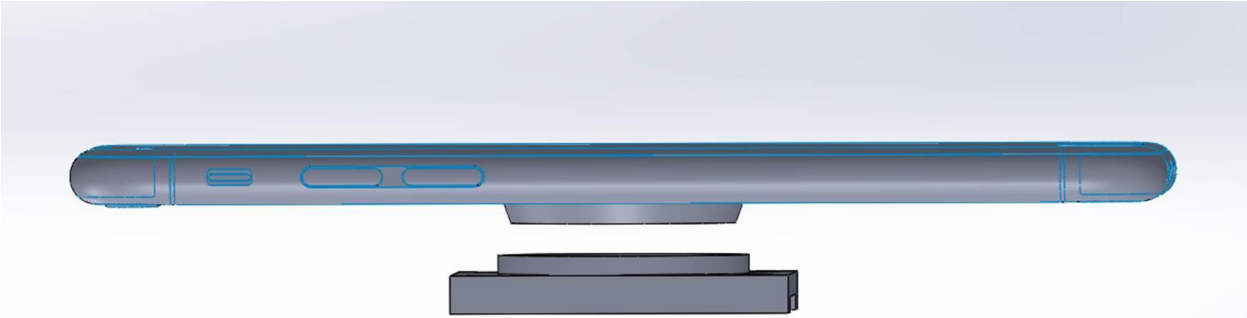
45° ROTATION



**HOLDING FORCE VS ROTATION AT 1.5MM
MAGNET TO MAGNET GAP**



These Polymagnets are D-shaped which provides an indexing feature. This aids in the assembly process as well as provides a flat surface to resist the torque created as the magnets are rotated. In order for this system to work correctly, there must be a mechanical feature which constrains the system as seen in the picture below.



Notes on Performance Data

The performance information provided in this data sheet is derived from test or simulation results of directly comparable magnets of the same size and grade under consistent conditions. The magnets are tested under controlled environmental conditions. Unconstrained application testing may give lower forces due to the magnet tilting or shifting away from target during engagement and disengagement.

Patent Information
Pat. www.cmrpatents.com

