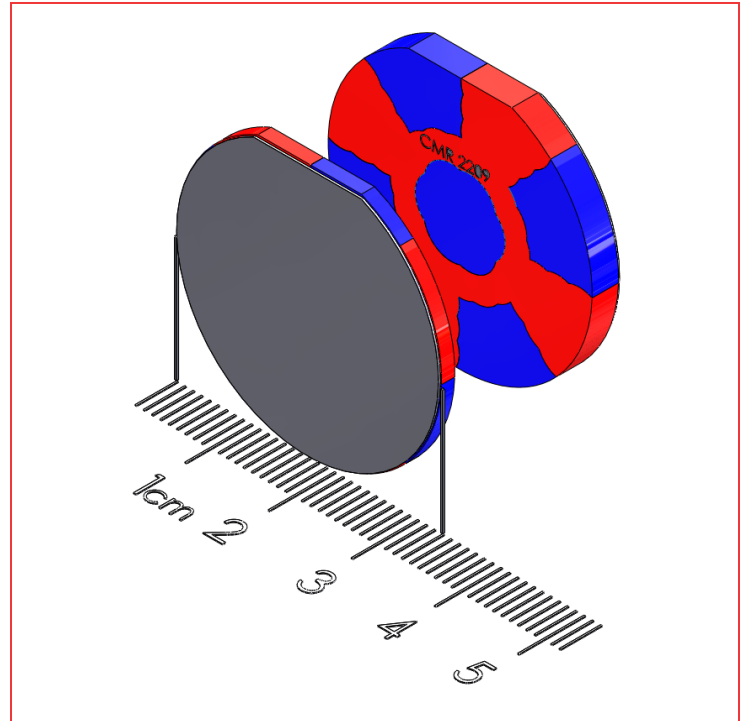


1002282

Large Tablet Polymagnet pair - Twist/Release

Twist/Release Polymagnets are engineered to provide a strong attachment/alignment force 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

- Rotational Alignment for mobile phone case/stand connections
- Compass friendly
- Twist/Release functionality
- 1002209 – D shape 1.25" OD 0.135" thick with shunt
- 1002210 – D shape 1.25" OD 0.073" thick with shunt

Technical Specifications:

Shape Type:	D-Shape	
Diameter:	1.25"	(31.8 mm)
Weight:	0.06 oz	(1.7 g)
Material:	NdFeB	
Magnet Grade:	N50	
Coating:	Ni-Cu-Ni	
Temperature Rating:	140° F	(60 C)
Holding Force:	7.8 lbs	(34.7 N)
Torque:	58.7 oz-in	(415mN*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 81.3N when the magnets are aligned. While keeping one magnet constrained, the holding force decreases as the repel force increases, reaching a minimum of -19N 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 holding force. This torque peaks at 415mN*m.

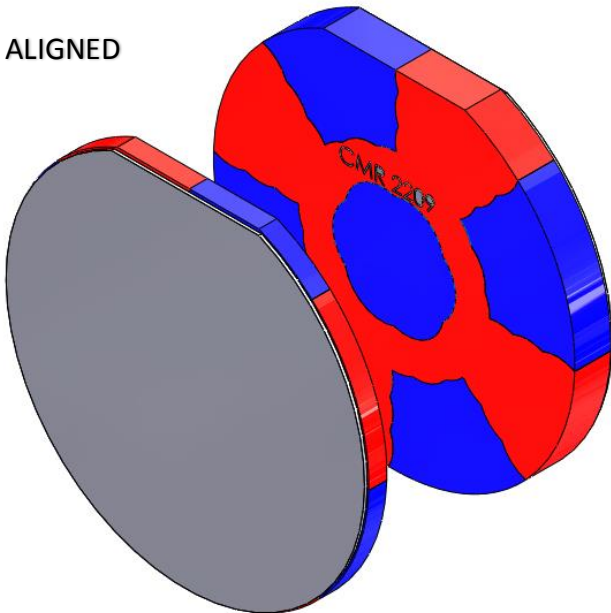
This Polymagnet pair differs from portrait/landscape in behavior as the holding force becomes a repulsion force at +/- 45° positions.

*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.

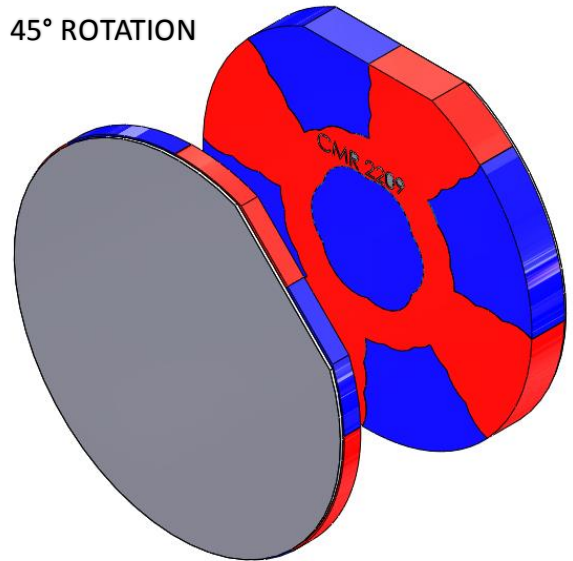
Holding Force:	18.2 lbs
Torque:	0 in

Holding Force:	-4.2 lbs
Torque:	-0.02 oz-in

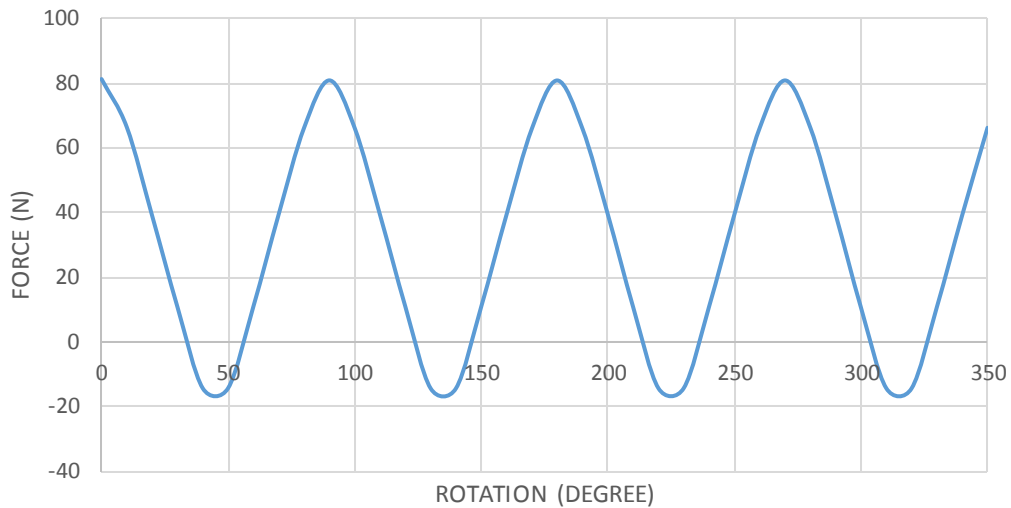
ALIGNED



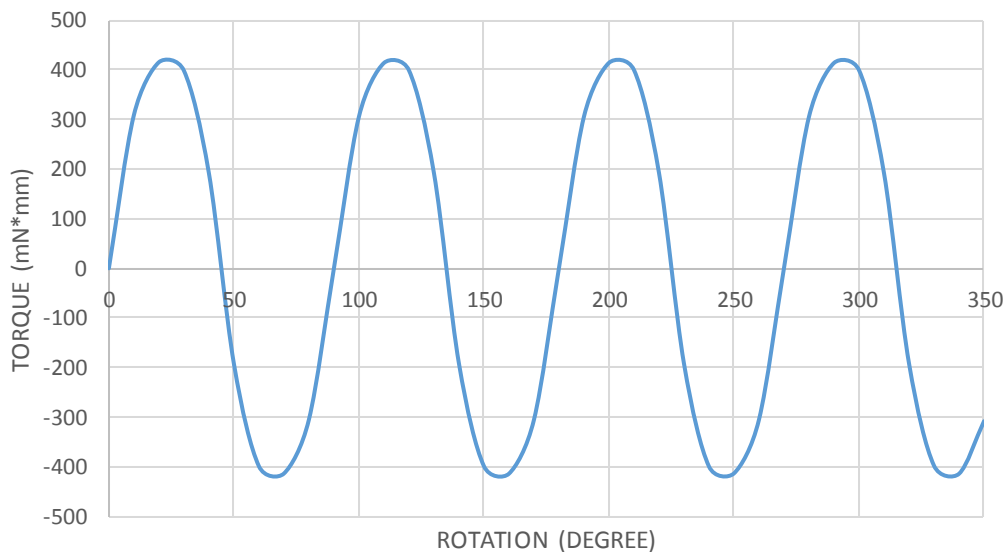
45° ROTATION



HOLDING FORCE VS ROTATION AT 1.5MM MAGNET TO MAGNET GAP

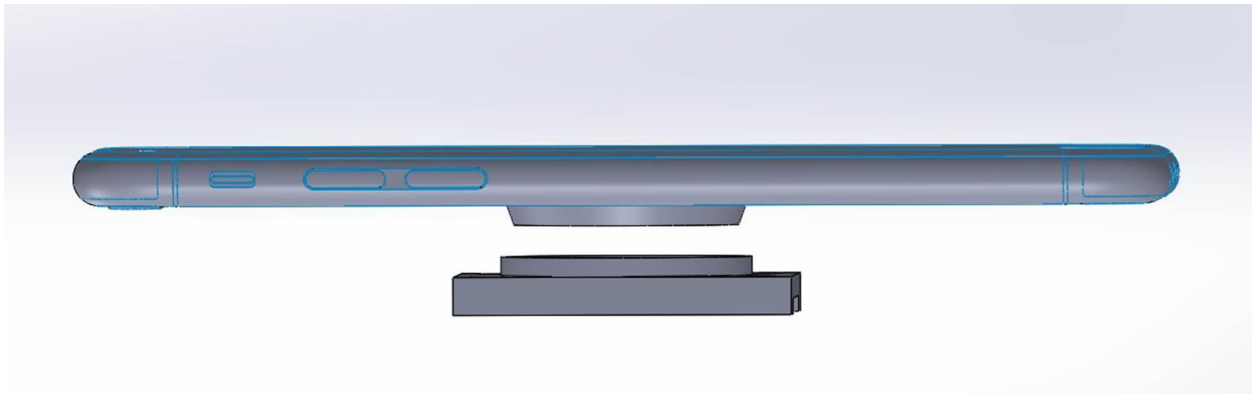


TORQUE VS ROTATION AT 1.5MM MAGNET TO MAGNET GAP



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These Polymagnets are D-shaped which provides an indexing feature. This aids in the assembly process and also provides a flat surface which resists torque as the magnets are rotated. In order for this system to work correctly, there must be a mechanical feature to constrain 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

