

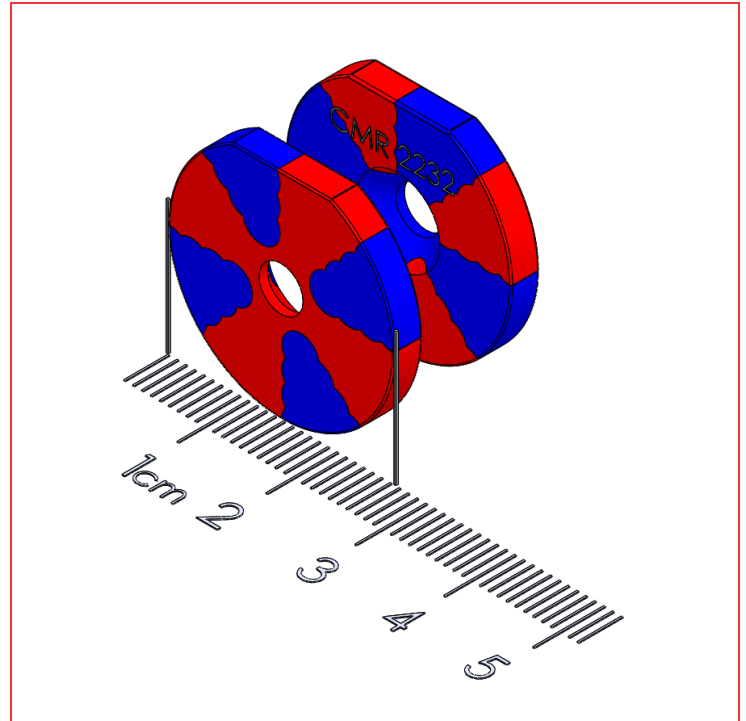
www.polymagnet.com

1002304

Twist/Release Polymagnet Pair – Long range – 45 degrees

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.

This Polymagnet has a stronger magnetic field and may not be suitable for sensitive devices.



Features and Benefits

- Twist/Release functionality
- Rotational alignment
- M4 countersink
- 1002232 – D Shape 1" OD 0.125" thick
- 1002233 – D Shape 1" OD 0.125" thick

Technical Specifications:

Shape Type:	D-Shape
Diameter:	1" (25.4mm)
Weight:	0.05 oz (1.4 g)
Material:	NdFeB
Magnet Grade:	N50
Coating:	Ni-Cu-Ni
Temperature Rating:	140° F (60 C)

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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 13.9 lbs when the magnets are aligned. When one magnet is constrained and the other rotated, the holding force decreases until it becomes a repel force, reaching a minimum of -11.6 lbs at 45°. As the rotation continues past 45° the attraction 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 60.3 oz-in.

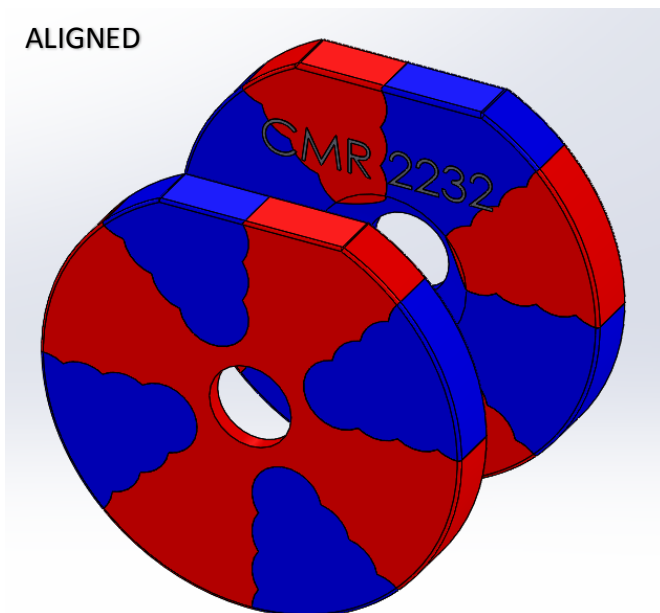
This Polymagnet pair differs from portrait/landscape in behavior as the holding force becomes a repulsion force at +/- 45° positions.

*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.

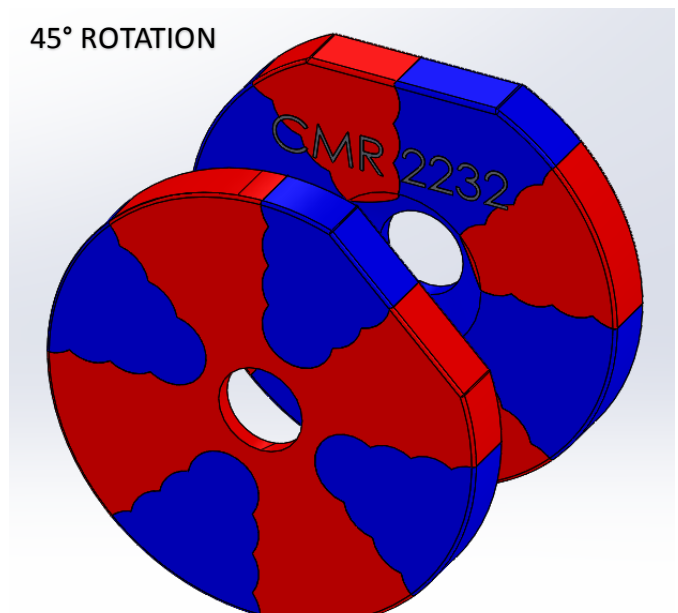
Holding Force:	13.9 lbs
Torque:	0 in

Holding Force:	-11.6 lbs
Torque:	22.3 oz-in

ALIGNED

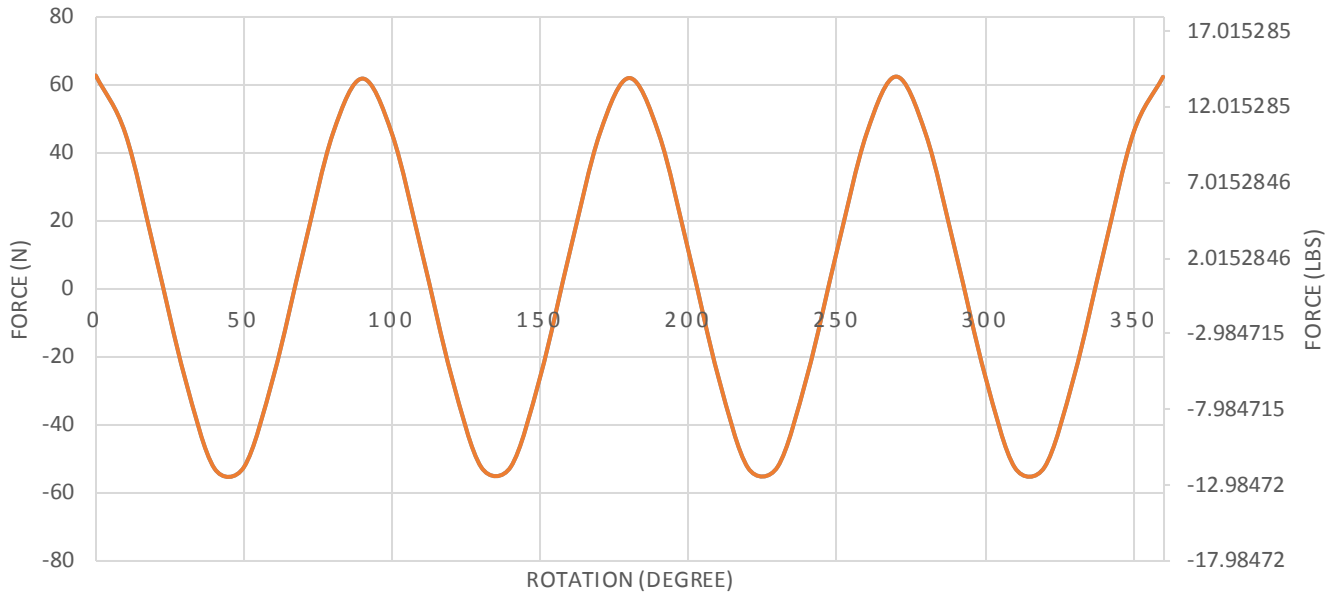


45° ROTATION

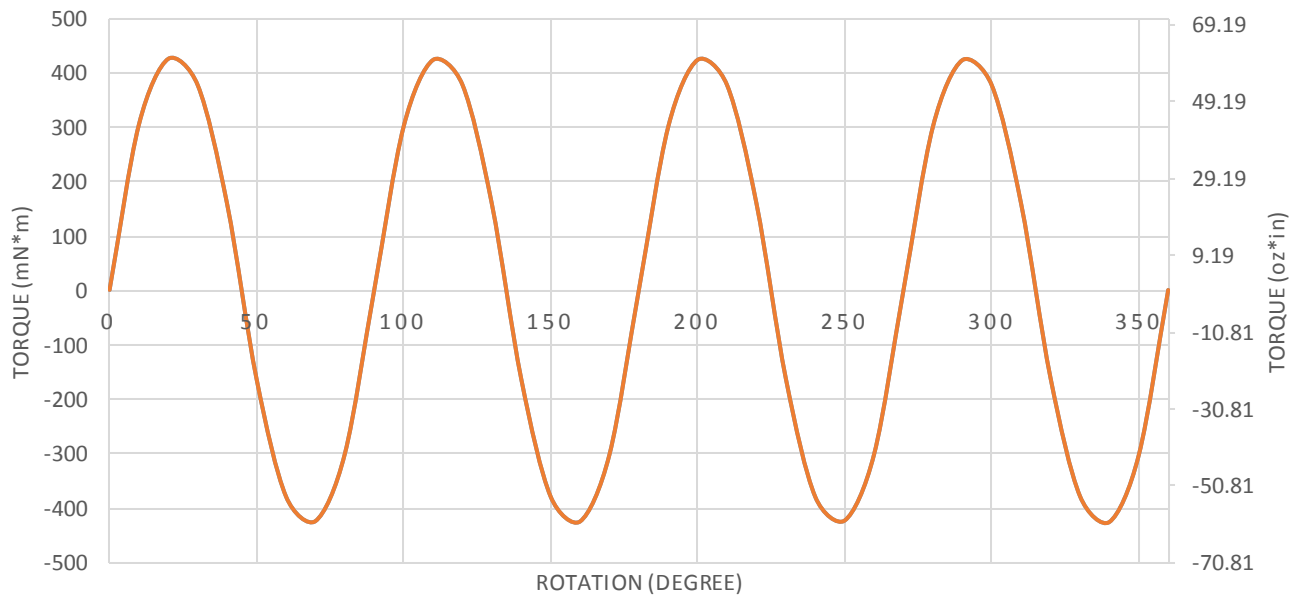


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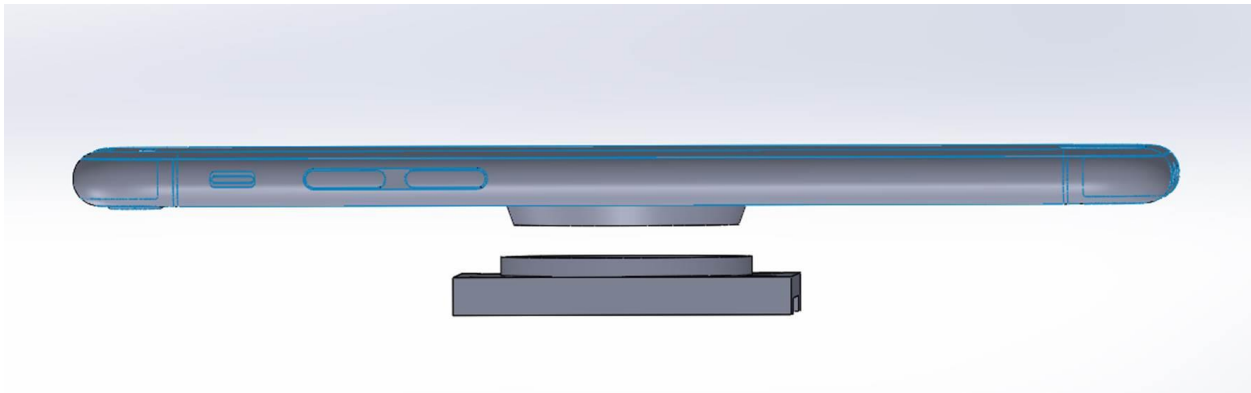
HOLDING FORCE VS ROTATION AT 1.5MM MAGNET TO MAGNET GAP



TORQUE VS ROTATION AT 1.5MM MAGNET TO MAGNET GAP



Polymagnets 1002232 and 1002233 are D-shaped to provide an indexing feature. This aids in the assembly process as well as providing a flat surface to resist torque 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