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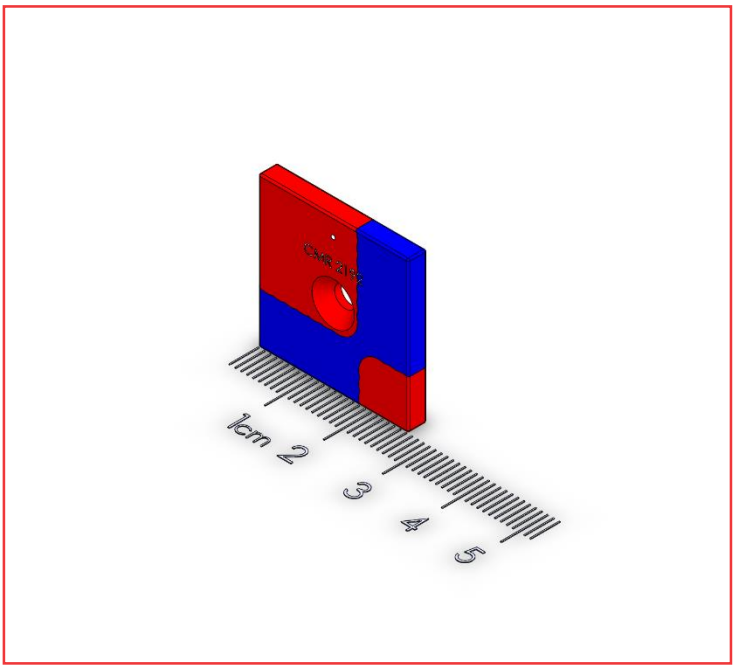
1002296

Align Polymagnets are designed to provide a high holding force when aligned and low holding force when out of alignment. As these Polymagnets approach alignment they provide a positive force toward the alignment position. These Align Polymagnets have high shear resistance in two directions.



Technical Specifications:

Dimensions:	1 x 1 x 0.125 in (25.4 x 25.4 x 3.175 mm)
Weight:	0.5 oz (14.9 g)
Material:	NdFeB
Magnet Grade:	N50
Coating:	Ni-Cu-Ni
Temperature Rating:	176 ° F (80 ° C)

Features and Benefits

- Magnet-To-Magnet
- Alignment: 2D
- Shear Resistance: 2D
- 82° CTSK #6
- 1002192 – 1” square 0.125” thick
- 1002193 – 1” square 0.125” thick

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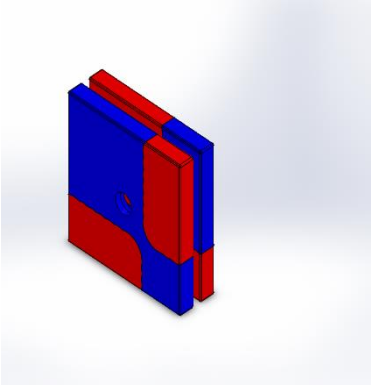
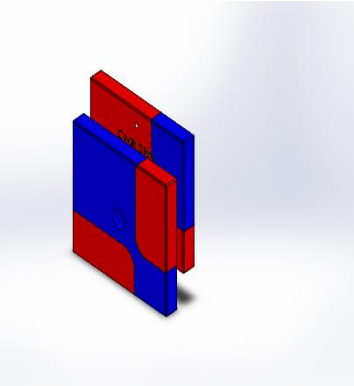
Align Polymagnets provide superior linear alignment attributes compared to conventional magnets. A pair of 1002192/1002193 Polymagnets provide a strong force toward their alignment position when offset in either the horizontal or vertical directions. Because of their alignment and shear resistance attributes these magnets can be used to transfer a linear force across a gap.

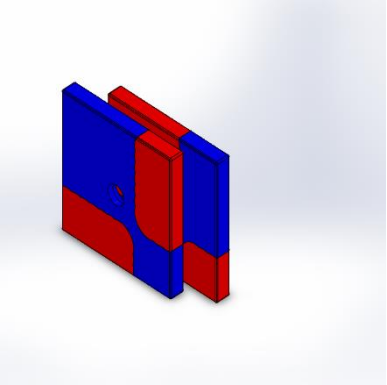
*In the images below, north poles are indicated by red regions and south poles are indicated by blue regions. The images below refer to a pair of 1002192/1002193 Polymagnets.



Aligned

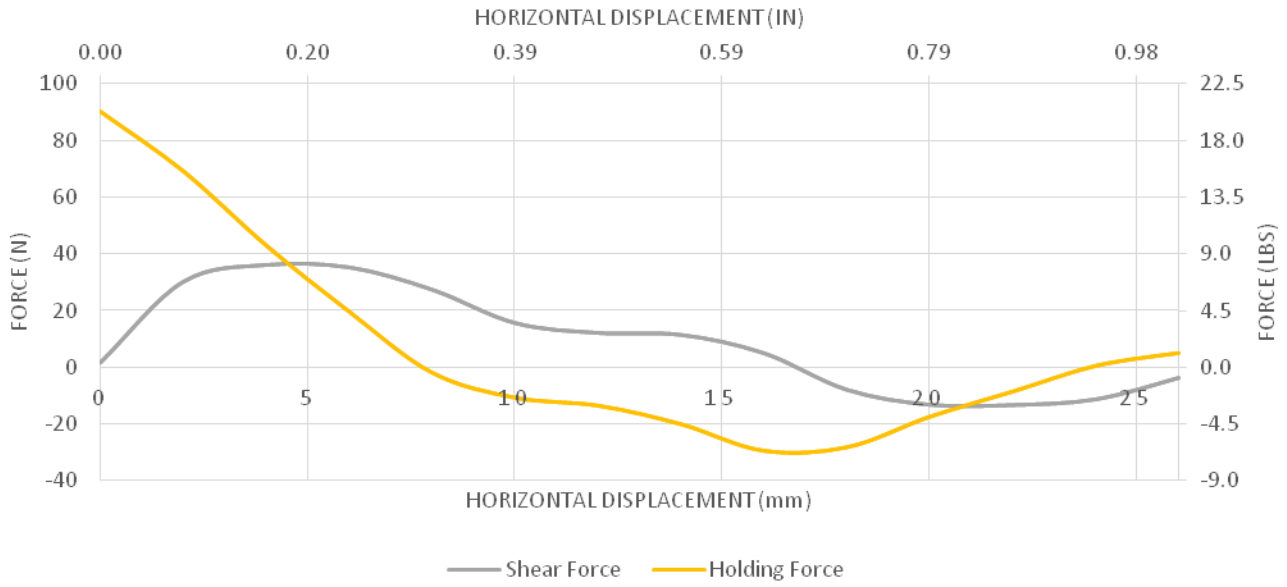


Vertical Offset

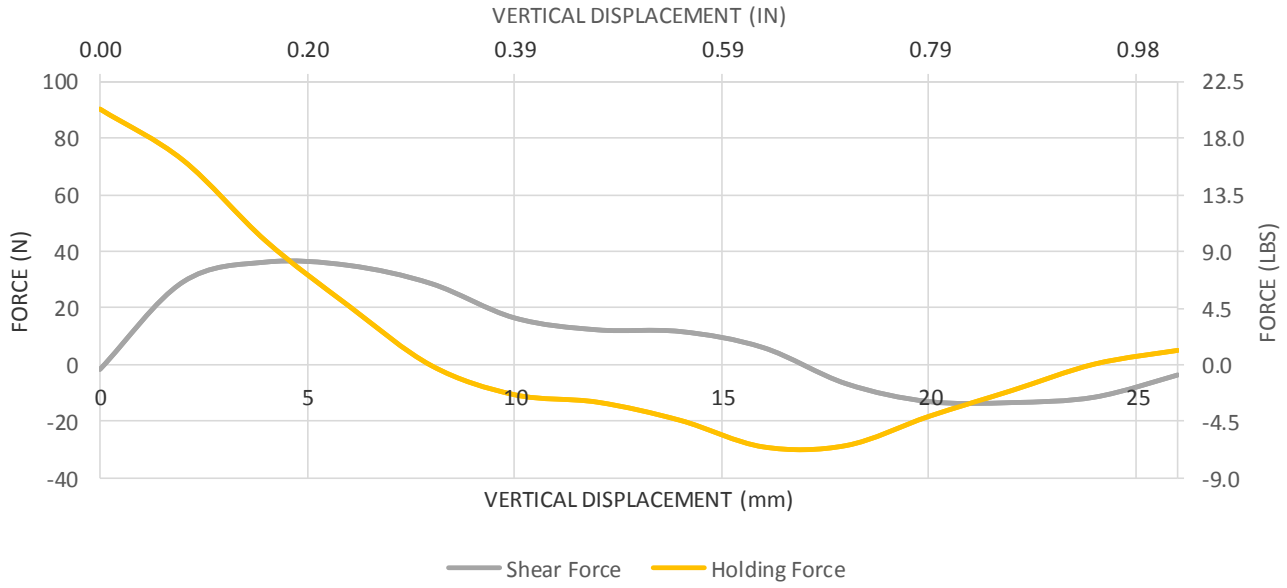


Horizontal Offset

HOLDING FORCE VS HORIZONTAL DISPLACEMENT AT 0.5MM MAGNET TO MAGNET GAP



HOLDING FORCE VS VERTICAL DISPLACEMENT AT 0.5MM MAGNET TO MAGNET GAP



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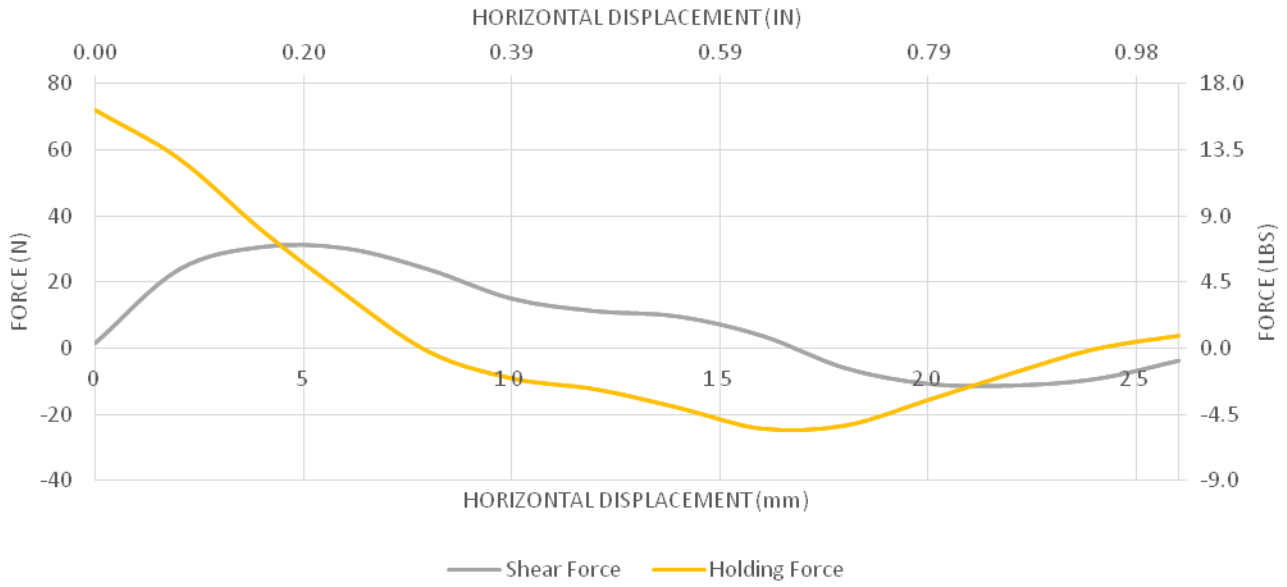
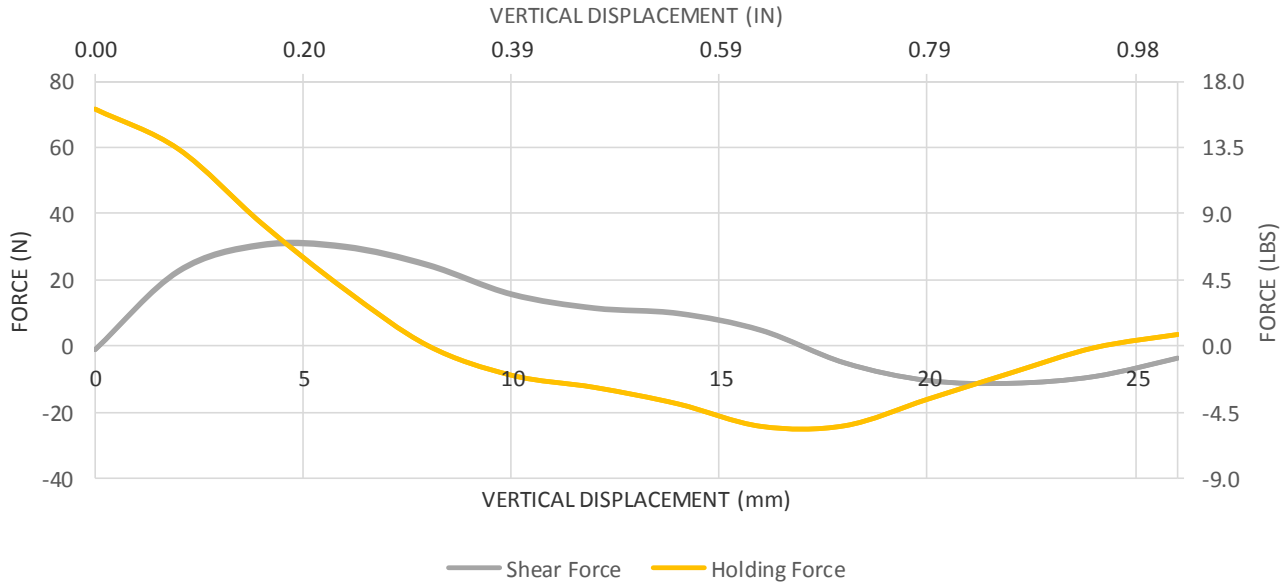
HOLDING FORCE VS HORIZONTAL DISPLACEMENT AT 1.0MM MAGNET TO MAGNET GAP



HOLDING FORCE VS VERTICAL DISPLACEMENT AT 1.0MM MAGNET TO MAGNET GAP



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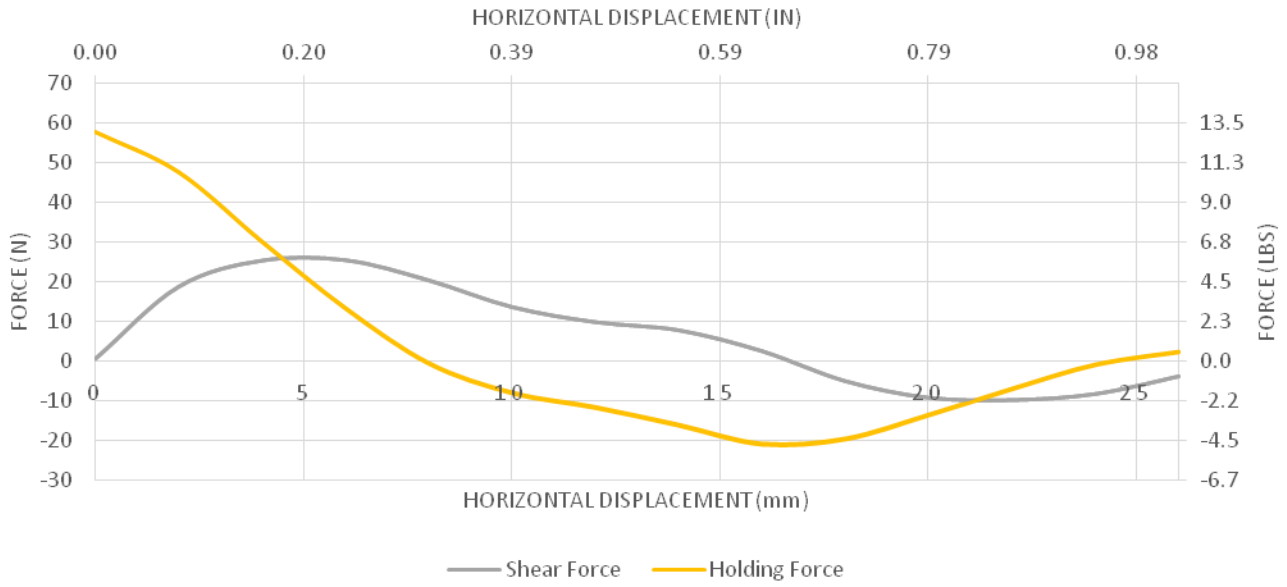
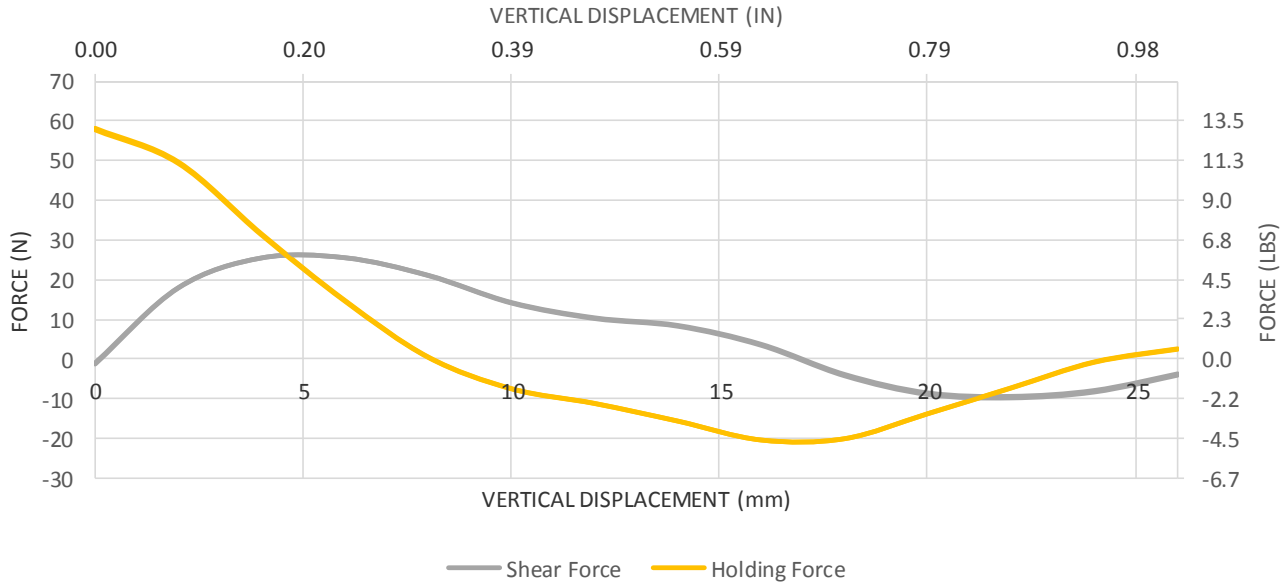
HOLDING FORCE VS HORIZONTAL DISPLACEMENT AT 1.5MM MAGNET TO MAGNET GAP



HOLDING FORCE VS VERTICAL DISPLACEMENT AT 1.5MM MAGNET TO MAGNET GAP



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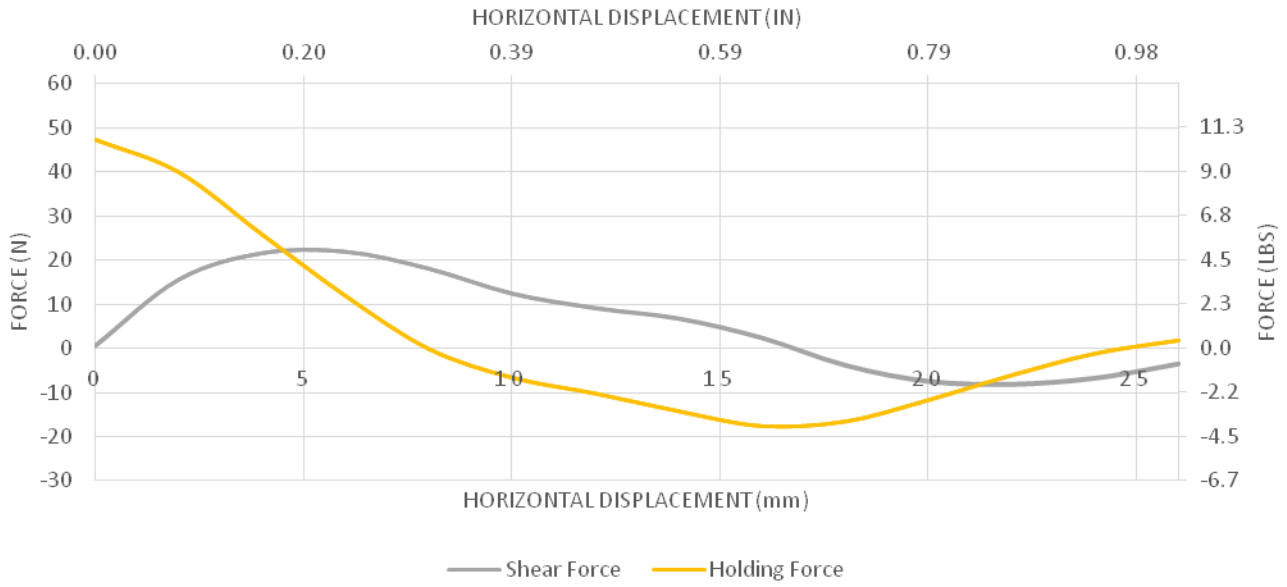
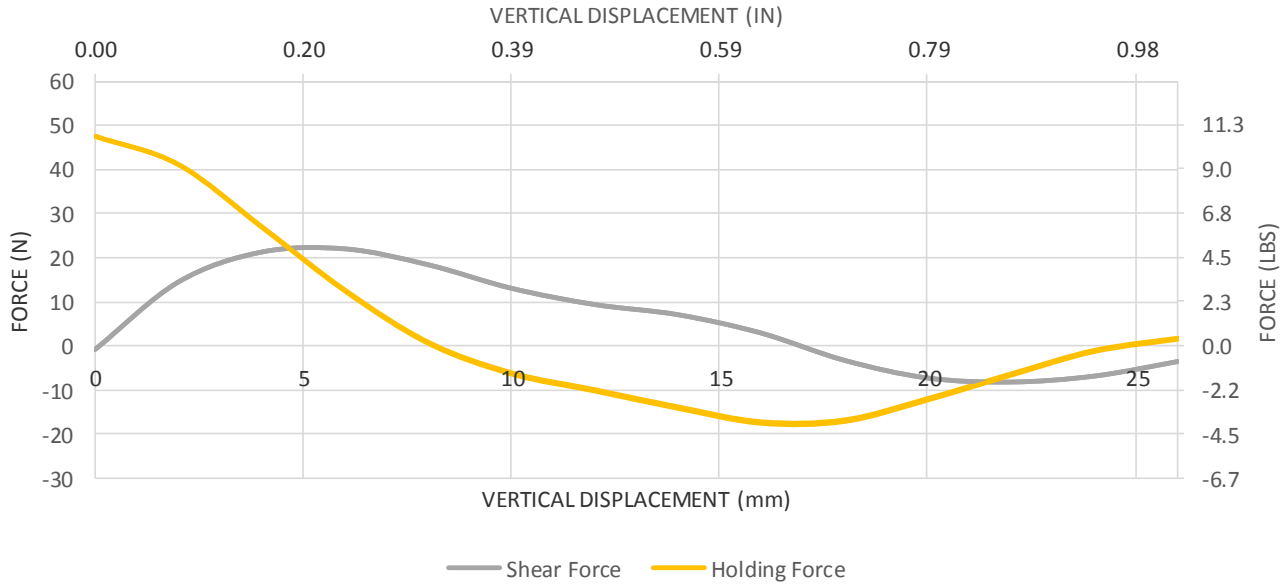
HOLDING FORCE VS HORIZONTAL DISPLACEMENT AT 2.0MM MAGNET TO MAGNET GAP



HOLDING FORCE VS VERTICAL DISPLACEMENT AT 2.0MM MAGNET TO MAGNET GAP



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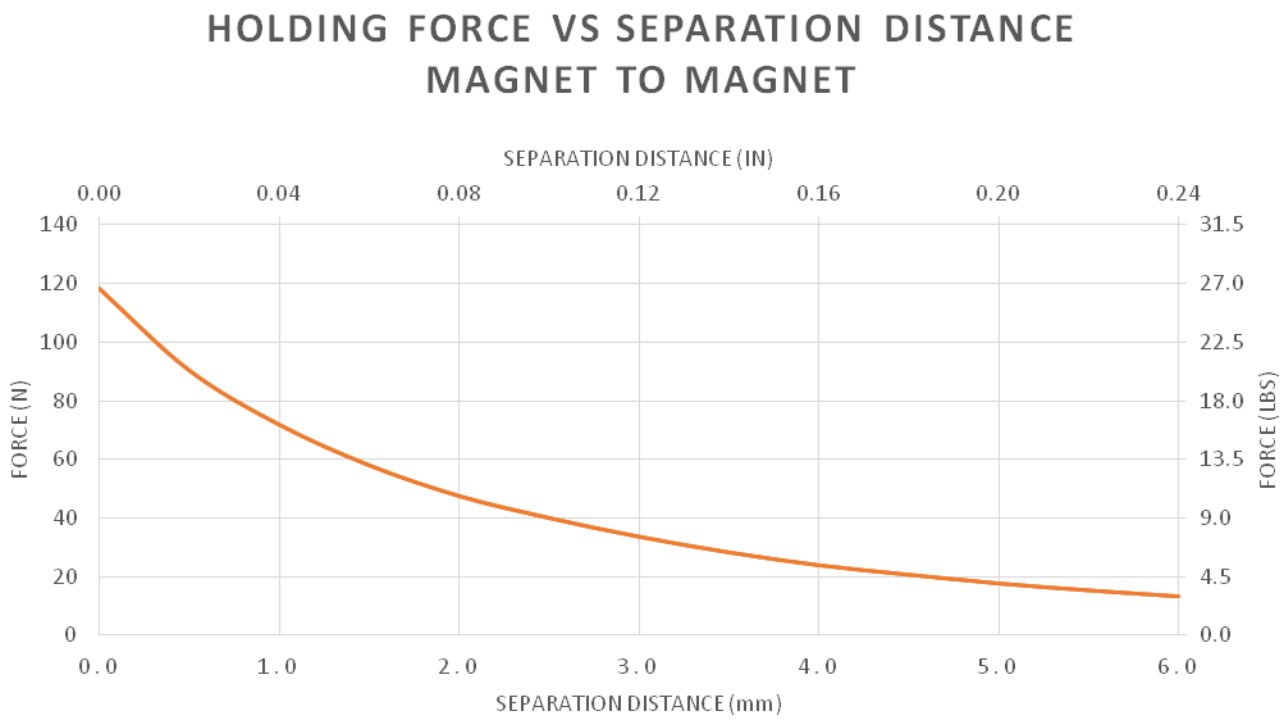


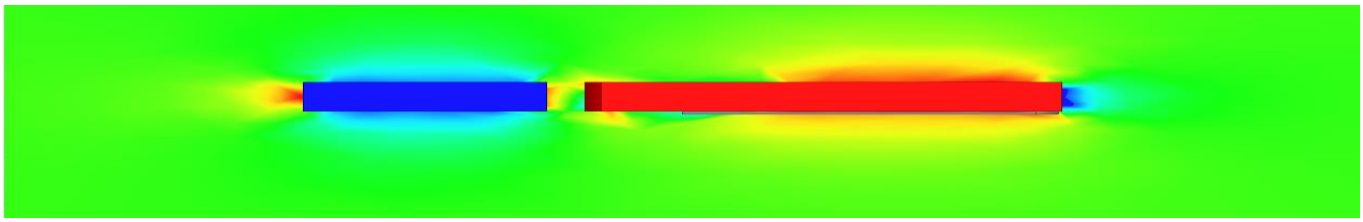
Target	Separation Distance						
	Contact	0.5mm (0.02in)	1.0mm (0.04in)	1.5mm (0.06in)	2.0mm (0.08in)	2.5mm (0.10in)	3.0mm (0.12in)
Magnet To Magnet 1002192/1002193	118.3N (26.6LBF)	90.4N (20.3LBF)	71.8N (16.1LBF)	58.0N (13.0LBF)	47.4N (10.7LBF)	39.9N (9.0LBF)	33.5N (7.5LBF)

The holding strength for these Polymagnets can be enhanced in many applications by using a thin steel shunt directly against the back of the Polymagnet, and this shunt will also help limit stray fields from the shunt side of the magnet.

The image below shows the magnetic field differences between a Polymagnet without a shunt and a Polymagnet with a shunt.

Polymagnet with no shunt

Polymagnet with shunt



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. Magnetic performance may vary by up to 7%, the values presented here are based on nominal magnetic properties

Patent Information

Pat. www.cmrpatents.com

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