ADAMAR INDUSTRIES, LLC.
2650 E. Mohawk Ln STE 160
Phoenix, AZ 85050

Calculation Report

Updated 10/17/2024

Purpose:
The purpose of this document is to provide generalized push/pull force calculation data by testing current, brand new production sample products and/or key components of a product. Push (compression) and pull (tensile) force tests are performed on the products listed below based on the intended design and intended uses of the product. The results of these tests are published below. Test data is updated periodically or whenever a significant change to manufacturing processes or components has occurred.

Methods:
Hydraulic machinery, load scales and load cells are used to measure the push and pull forces that can be exerted on a product before;

A. In the case of a magnetic product, the entire magnet surface is attached to a clean, 1" thick steel plate mounted firmly to and level with the ground. The push and pull force is applied at 0° angle to the steel plate until the magnet begins to slip or slide on the steel plate. (See Table 1)
B. In the case of a magnetic product, the entire magnet surface is attached to a clean, 1" thick steel plate mounted firmly to and level with the ground. The push and pull force is applied at a 30° angle to the steel plate until the magnet begins to slip or slide on the steel plate. (See Table 1)
C. In the case of a magnetic product, the entire magnet surface is attached to a clean, 1" thick steel plate mounted firmly to and level with the ground. The push and pull force is applied at 90° angle to the steel plate until the magnet begins to break away from the steel plate. (See Table 1)
D. In the case of a magnetic product, only part of the magnet surface is attached to an edge of a steel plate. Magnet is centered on the edge of the steel plate. Push force is applied until the magnet slips or 400 LBS force is reached. Pull force is gradually applied and the force in LBS is recorded at the point when the magnet breaks away from the steel. This test is performed on 3 different widths of steel: 3/4 inch (D1), 1 inch (D2), 1 1/2 inch (D3). (Note: This test **is not** performed with the magnet attached "off center" to the edge of a steel plate) (See Table 2)
E. In the case of a magnetic product, the magnet is attached to a clean, 1" thick steel plate mounted firmly to and level with the ground. The push force is applied at 0° angle to the tool handle at various distances away from the magnet (or up the tool handle) until the magnet releases or "peels off" the steel plate. (See Table 3)
F. In the case of a non-magnetic product, push and pull force is applied until the product structurally fails or deforms, or reaches 1000 LBS without structural failure but may have some deformation. (See Table 4)

Report Disclaimer:
The product calculations stated in this document **do not** imply official or recommended manufacturer normal/safe operating ranges, or official product certifications. Product calculation values are the maximum compression (push) and tensile (pull) strengths measured during testing before meeting or exceeding a method's criteria. All product calculations should be considered as "similar or close" to what can be expected in most operational environments using new or undamaged tools in good working condition during normal use. These product calculations **do not suggest or imply** that any product can or should be subjected to or expected to withstand these measured forces in normal use. These measurements were measured using testing equipment/machinery to discover and calculate maximum push/pull forces for each product up to a point where release, slip or failure can occur. Users should not attempt to exert lifting, pushing or pulling forces that are unsafe or that could cause personal injury to themselves or others. Always consult and adhere to your company's policies on lifting. Product calculation data may be used for marketing purposes by ADAMAR Industries. ADAMAR Industries recommends that users lift no more than 51 LBS when using products designed for lifting small objects per: NIOSH Publication 2007-131 found here www.cdc.gov/niosh/docs/2007-131/pdfs/2007-131.pdf. Please refer to individual product instruction sheets that come with each product or that can be found on https://adamarindustries.com for more information, usage instructions, warnings and disclaimers.

ADAMAR INDUSTRIES, LLC.
2650 E. Mohawk Ln STE 160
Phoenix, AZ 85050

Calculation Report

Updated 10/17/2024

TABLE 1

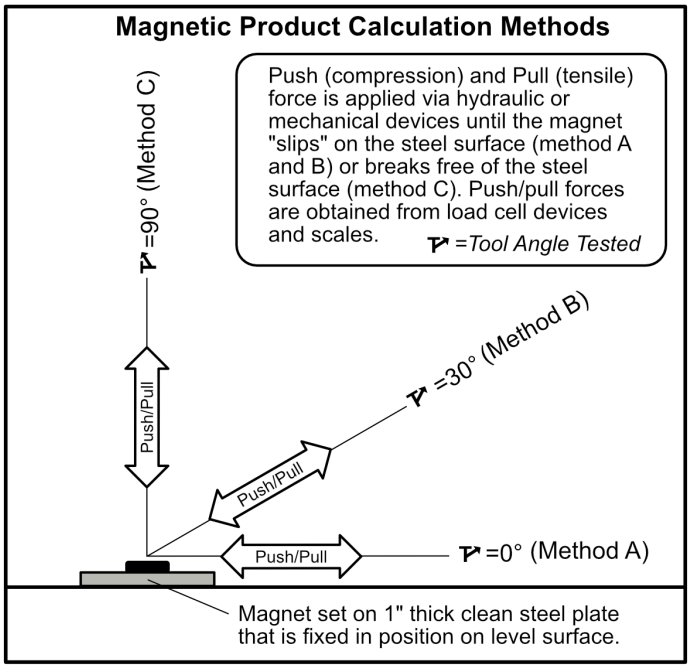


TABLE 2

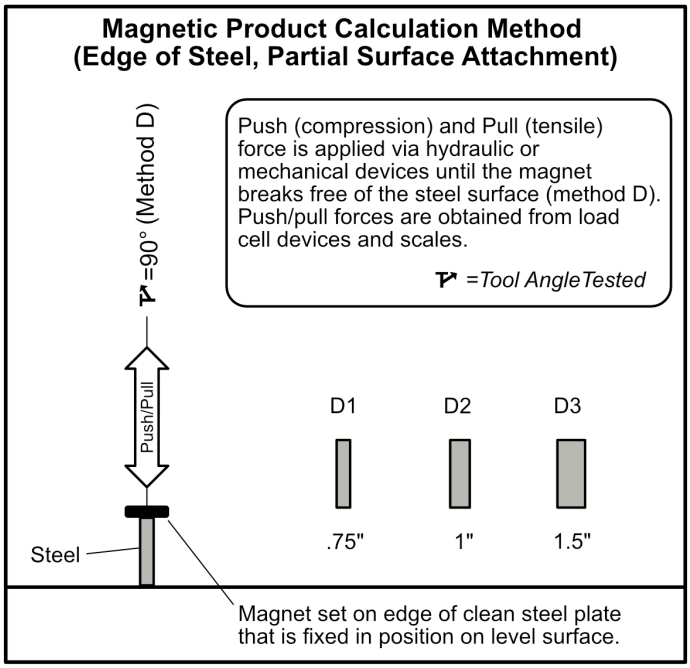


TABLE 3

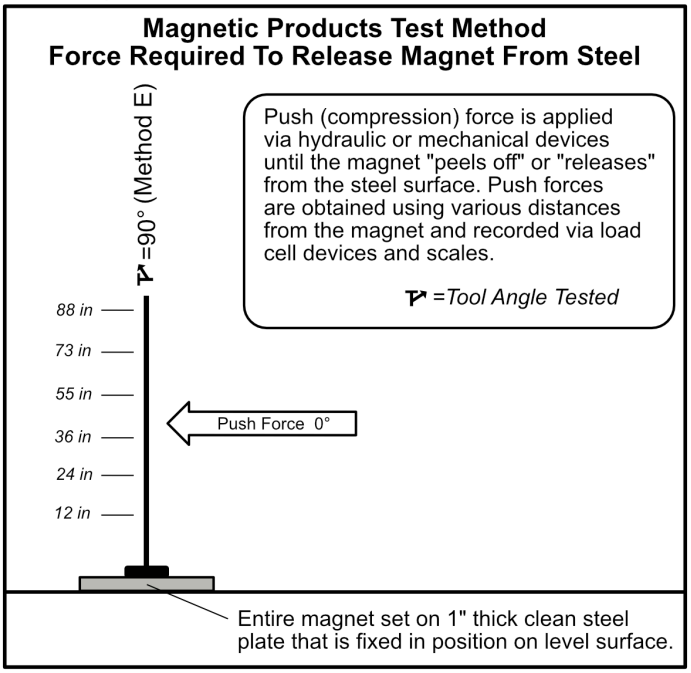
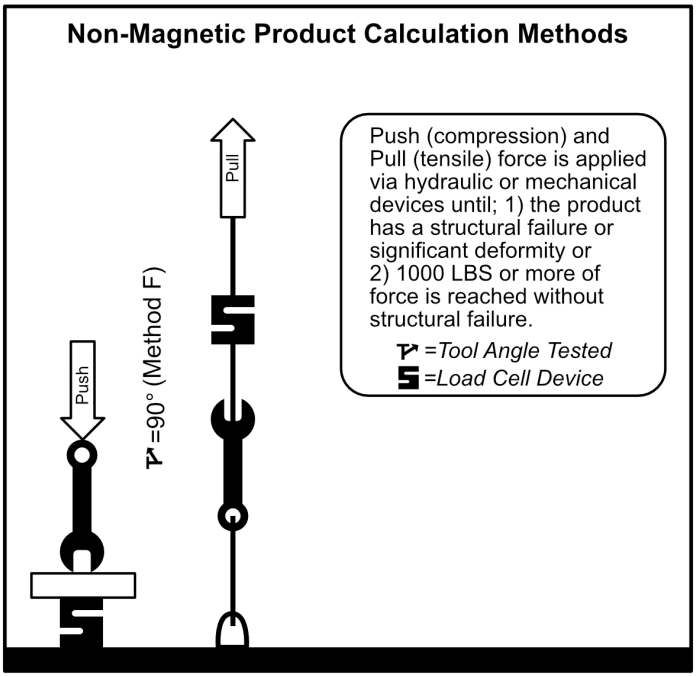


TABLE 4



ADAMAR INDUSTRIES, LLC.
2650 E. Mohawk Ln STE 160
Phoenix, AZ 85050

Calculation Report

Updated 10/17/2024

Product	Description	SKU(s)/Part #'s	Method	Pull (+/- 10 lbs)	Push (+/- 10 lbs)
SAFE-T-STIK	Magnetic push/pull suspended load control, material handling and positioning tools.	STS001, STS002, STS005, STS005D	A B C	125 140 130	125 190 130
SAFE-T-STIK Lite	Magnetic push/pull suspended load control, material handling and positioning tools.	STS006-16, STS006-28, STS006-40, STS006-52	A B C	65 80 100	65 120 100
SAFE-T-STIK Mini (DISCONTINUED)	Magnetic vertical lifting, pulling and pick up tool.	STS003, STS003D	A B C D1 D2 D3	110 130 500 150 220 340	110 130 500 400 400 400
SLING-STIK	Push/pull suspended load control, material handling and positioning tool.	SS001, SS002, SS003	F	1000 (steel hooks) 700 (alum hooks)	1000 (steel hooks) 400 (alum hooks)
SLING-STIK Lite	Push/pull suspended load control, material handling and positioning tool.	SSL014, SSL026, SSL038, SSL050	F	600 (steel hooks) 600 (alum hooks)	600 (steel hooks) 300 (alum hooks)
STEER-STIK	Push/pull suspended load control, material handling and positioning tool.	STE001, STE002	F	1000	1000

GRAPPLER	Push/pull suspended load control, material handling and positioning tool.	GRA001-16, GRA001-28, GRA001-40, GRA001-52, GRA004-16, GRA004-28, GRA004-40, GRA004-52, GRA008-16, GRA008-28, GRA008-40, GRA008-52, GRA011-16, GRA011-28, GRA011-40, GRA011-52,	F	600	300
MAGNA-GRAB	Magnetic portable tag line anchor point, retrieval, material handling, holding and positioning tool.	MG001 NOTE: Tests were performed using the lower tag line attachment holes. Do not use the hole or eye at the end of the handle for suspended load control operation. It only requires 30 lbs of push/pull force on the end of handle to remove/disengage the magnet from steel.	A B C D1 D2 D3	125 140 500 150 220 340	N/A N/A N/A N/A N/A N/A
MULTI-GRAB II MULTI-GRAB III	Magnetic push/pull material handling, suspended load control and pick up tools.	MG002, MG002-24, MG002-30T, MG002-36D, MG003, MG003-24, MG003-30T, MG003-36D	A B C D1 D2 D3	110 130 500 150 220 340	110 130 500+ 400 400 400
MULTI-GRAB IV	Magnetic push/pull material handling, suspended load control and pick up tools.	MG004, MG004-24, MG004-36, MG004-60, MG004-XL	A B C D1 D2 D3	110 130 500 150 220 340	110 130 500+ 400 400 400
MULTI-GRAB V	Magnetic push/pull material handling, suspended load control and pick up tools.	MG005, MG005-12D, MG005-24D	A B C	90 100 230	90 125 300+
TALON	Material handling, guiding and positioning dual hook tool.	TAL001, TAL002	F	1000	1000

TAG-RITE	Tag line ropes for suspended load control.	TL010SH, TL025SH, TL050SH, TL075SH	F	1000	N/A

Recommended Magnet Release Procedure (Test Method E, Table 4)

This test method (Method E) represents the push (compression) force required to release a magnetic tool using the recommended procedure as specified by the manufacturer. This test provides information as to the expected forces a human can exert on a magnetic tool in order to release it from clean, 1 inch thick steel. Being that some tools come in various lengths, the test was performed at various lengths vertically above the magnet on the tool handle.

See Table 4 Above.

	PUSH FORCE IN LBS RECORDED AT SPECIFIED DISTANCE AWAY FROM MAGNET VERTICALLY UP THE TOOL HANDLE. (+/- 5 LBS)					
Product	**12 IN**	**24 IN**	**36 IN**	**55 IN**	**73 IN**	**88 IN**
SAFE-T-STIK (not including Lite models) SAFE-T-STIK Mini MAGNA-GRAB MULTI-GRAB (all models except MULTI-GRAB V models w/ on/off magnet)	30-35 LBS	18-20 LBS	12-14 LBS	8-10 LBS	6-8 LBS	4-6 LBS
SAFE-T-STIK Lite	20-25 LBS	10-12 LBS	4-6 LBS	4 LBS	N/A	N/A

ADAMAR INDUSTRIES, LLC.
2650 E. Mohawk Ln STE 160
Phoenix, AZ 85050

Magnet Strength Testing & Use of Blue Rubber/Silicone Protective Caps (MAGI-CAPS)

The magnets used on ADAMAR products are manufactured to meet certain attraction or pull force specifications. ADAMAR periodically tests random samples to ensure these specifications are being achieved consistently. ADAMAR Industries provides a supplemental or accessory for magnetic tools called "MAGI-CAPS" which are designed not only to cover/protect a magnet but also to be used to reduce the attraction force of magnets and to prevent magnets from scratching finished (painted or powdercoated) surfaces. These caps can also be beneficial when using magnetic tools on small steel objects or on thin gauge steel. By reducing the magnetic attraction force, it is easier for the user to attach and remove small steel parts from the magnet and make it easier to use with thin gauge steel. Below are the testing results of our magnets with the blue MAGI-CAPS installed.

MAGNET SIZE	**METHOD A ↔ (horizontal push/pull)**	**METHOD C ↕ (vertical push/pull)**
3" Magnet	100 LBS	500 LBS
3" Magnet w/ Blue Cap Installed	100 LBS	150 LBS
2.5" Magnet	60 LBS	290 LBS
2.5" Magnet w/ Blue Cap Installed	25 LBS	30 LBS

FRP Tube (Tool Handle) Recommended Operating Temperature Range

MATERIAL	**MIN**	**MAX**
FRP Tube & Plastic No-Slip Grip	-20° F or -28° C	200° F or 93° C