ERIEZ

MAGNETIC PULL TEST KITS

About Eriez

Established in 1942, Eriez stands as a pioneering force in separation technologies, embodying a truly global presence.

With 12 wholly owned subsidiaries across the globe, we proudly design, manufacture, and support our magnetic separation, flotation, metal detection, and material handling equipment on an international scale.

Our dedicated team of knowledgeable and experienced sales engineers collaborates closely with customers, understanding their unique challenges to deliver dependable, high-performance equipment, systems, and solutions.

Whether clients require our standard equipment or custom solutions tailored to their precise specifications, Eriez delivers.

Drawing from more than 80 years of experience across diverse industries, including mining and minerals processing, food processing and packaging, aggregates, metals recycling, and many other sectors, Eriez leverages its extensive experience to design and supply products that elevate productivity, efficiency, and product purity.

Eriez remains steadfast in its commitment to setting the global standard for excellence in key technologies, driving innovation and reliability across industries worldwide.

Magnetic Pull Test Kits

Know Your Magnet's Strength

Extreme conditions can cause some magnets to weaken over time.

Be sure that your Magnetic Separator is working at its peak performance level.

Pull Test Kits, when properly used, will help you monitor the efficiency and strength of your separator.

Find Your Pull Test Values

We list typical pull test values to guide you in your inspection. These values can and will vary among separators due to a variety of magnet options.

We suggest you use the kit not to verify the values listed, but to monitor your separator's performance over time.

Record the pull test results of your periodic inspections to evaluate any changes in magnetic performance. Make sure it stands up to your application needs.

Reasons Magnets Can Weaken

Under normal operating conditions, magnet circuits retain their original strength indefinitely. However, some common factors that affect magnet performance include:

Extreme Temperatures — Rare Earth magnetic circuits subjected to conditions in excess of their design range may fail completely or show signs of weakening.

Direct Current Use — When welding equipment is used on or near permanent magnet circuits, it can short the magnetic field or cause heat damage.

Moisture — Subjecting the raw magnet material to liquids that would only result from breaching the magnet enclosure. Rare Earth magnets can oxidize, causing the circuit to fail over time if it gets wet.

Mishandling — The actual magnet material inside the separator is fragile and may break down when subjected to repeated heavy use or damaging conditions despite little exterior damage

Mechanical & Digital Kits

Eriez offers two accurate and reliable Pull Test Kits options with either a mechanical scale or a digital scale. The digital scale is recommended for industries that specifically require calibrated scale certification for auditor purposes.

Tips for Successful Magnet Inspections

- Test values are a result of averages, so we recommend two or three pulls per assembly to identify the average or appropriate value.
- It is not necessary to pull test every tube of every grate assembly.
- Do not pull test near the ends or edges of any magnetic separator. The magnetic strength will measure less due to its design. Test values taken from the center of a tube or plate should represent the magnet's true working strength.
- The kits contain two 13 mm (1/2") spacers. The gaps referenced in our table are best accomplished by stacking a 13 mm (1/2") spacer behind the magnet step with a second spacer stacked perpendicular to the first. This prevents the test piece from snapping to the magnet surface.
- The test specified is measured from the surface of the spacer.
- Review the magnet's physical condition with special attention to breaches in the magnet enclosure. Magnets with visible cracks or wear holes should be removed from operation immediately.

The Pull Test Procedure

1. Clean the magnet surface. Even a small gap between the pull test piece and the magnet will adversely affect the test results.
2. Select the appropriate pull test piece and spacer for your separator based on the guidelines and attach it to the scale (if using the Mechanical Scale).
3. Zero the scale with the appropriate pull test piece by rotating the adjustment knob on top until the scale line measures zero.
4. Allow the piece to attract to the magnet and position the scale perpendicular to the magnet surface.
5. Secure or hold the magnet and pull the scale directly away from the magnet smoothly and evenly. Be careful as the piece may snap unexpectedly from the magnet surface. Note the measurement by reading the metal slide as it moves down along the side barrel of the scale.
6. Repeat the test to verify the results and the method of testing.

MAGNET	PULL TEST PIECE	SPACER	MEASUREMENT
RE7HP Tube	6 mm ball (1/4")	None	2835 g (100 oz.)
RE7HT250 Tube	6 mm ball (1/4")	None	2551 g (90 oz.)
RE6HP Tube	6 mm ball (1/4")	None	2551 g (90 oz.)
RE6HT250 Tube	6 mm ball (1/4")	None	2381 g (84 oz.)
RE5HP Tube	6 mm ball (1/4")	None	2268 g (80 oz.)
RE5HT250 Tube	6 mm ball (1/4")	None	2126 g (75 oz.)
FE Ceramic Tube	6 mm ball (1/4")	None	425 g (15 oz.)
SuperPower Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	19 mm (3/4")	1984 g (70 oz.)
MaxiPower Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	25 mm (1")	1871 g (66 oz.)
Brute Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	76 mm (3")	652 g (23 oz.)
SuperBrute Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	76 mm (3")	794 g (28 oz.)
Rare Earth Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	32 mm (1-1/4")	1814 g (64 oz.)
Xtreme Rare Earth Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	38 mm (1-1/2")	2268 g (80 oz.)
Rare Earth+ Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	32 mm (1-1/4")	2551 g (90 oz.)
Xtreme Rare Earth+ Plate	3 x 25 x 76 mm bar (1/8" x 1" x 3")	38 mm (1-1/2")	2978 g (105 oz.)

Notes:

1. Actual pull test values may vary unit to unit. Please use the values listed above as a guideline.

2. Plate Magnets narrower than 305 mm (12" wide) may produce lower pull test values than the values listed above.

3. It is not uncommon for different individuals to record different results.

4. For testing information on magnet models not listed, please contact Eriez.

Testing Tube Magnets

Rare Earth and FE Ceramic Tube Magnets

Use 6 mm (1/4") Ball — No Spacer Required

Rare Earth circuits are designed to remove fine metallic materials, which are defined as iron particles typically associated with abrasion, scale, or small slivers such as threads stripped from a bolt. Since it would be difficult to measure the force associated with removing the small pieces from a tube magnet, we use a 6 mm (1/4") ball.

Testing Plate Magnets

Plate Magnets

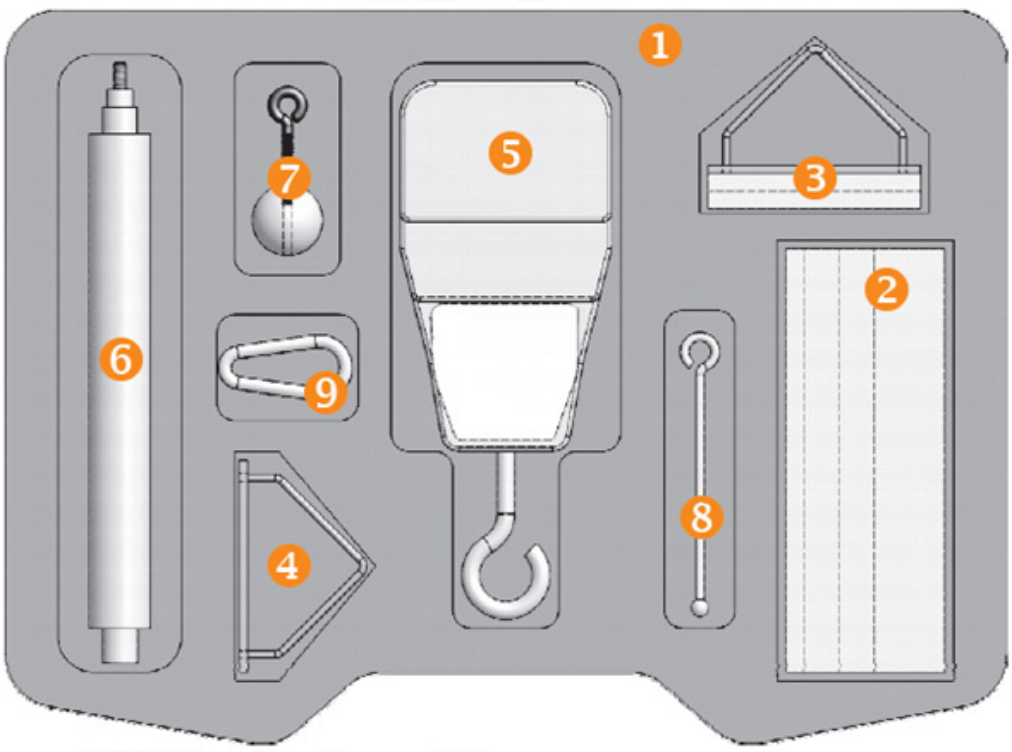
Use 3 x 25 x 76mm (1/8” x 1” x 3”) Bar and Non-Magnetic Spacers

We designed Plate Magnets to reach out and grab iron from deeper flows, so we suggest a minimum 19mm (3/4") non-magnetic spacer stack — 6mm (1/4") and 12.5mm (1/2") spacers stacked — between plate surface and test piece. We included two 12.5mm (1/2") non-magnetic spacers which can be stacked for ease in testing near the triangular one-step face which is an integral part of the plate magnet.

Magnetic Pull Test Kits

Digital/Analog Combo Kit

Includes both scales and all other components listed below P/N 201512425G1



	Test Kit Equipment	Standard Kit Part #107121E	Digital Calibrated Kit Part #201512425G2
1	Plastic Carry Case	✓	✓
2	Aluminum Spacer - 25 x 50 x 150 mm (1" x 2" x 6")	✓	✓
	Aluminum Spacer - (2) 12.5 x 50 x 150 mm (1/2" x 2" x 6")	✓	✓
	Aluminum Spacer - 6 x 50 x 150 mm (1/4" x 2" x 6")	✓	✓
3	Pull Test Bar - 25 x 76 x 6 mm (1" x 3" x .25")	✓	✓
4	Pull Test Bar-Plate Type - 25 x 76 x 3 mm (1"x 3" x 1/8")	✓	✓
5	Digital Scale		✓
6	Scale Tension Chatillion	✓	
7	25 mm Diameter Ball (1")	✓	✓
8	6 mm Diameter Ball (1/4")	✓	✓
9	Link Snap - Pear Shaped	✓	✓

ERIEZ

GLOBAL LEADER IN SEPARATION TECHNOLOGIES

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