



ON/OFF MAG90™ MAGNETIC SQUARE OPERATION MANUAL

INTRODUCTION

READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLATION AND OPERATION OF YOUR PRODUCT. This Mag90 is designed to hold steel plate, pipe, bar and rod stock, flat stock or angle iron. This device has tremendous holding power as well as a great amount of shear force holding strength to prevent sideways movement. Mag90 WS0150R, WS0450R and WS1000R models. **Read all instructions! Failure to follow all instructions listed below may result in an unsafe or dangerous condition.**

GENERAL INFORMATION

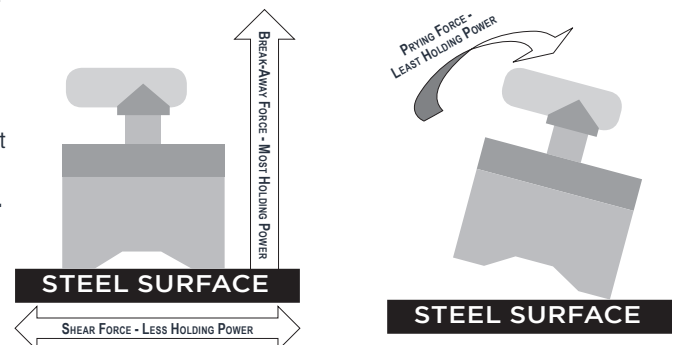
- » All Magnets need to be **kept at a safe distance** from all Magnetic storage devices, electronics and credit cards etc...
- » Ensure that the Mag90 is **stored in the "OFF" position** when not in contact with Ferromagnetic metals. The Mag90 can be left "ON" or "OFF" indefinitely without harm. **When "ON" and near Ferromagnetic metals there will be a sudden and powerful attraction.**
- » **Never use a Mag90 to lift any materials**, although it is ideal for debris cleanup, nuts and bolts, metal shavings, etc...
- » **DO NOT attempt to disassemble or alter** the Mag90; there are no user serviceable parts inside the device.
- » All On/Off Magnetic products are **designed for normal work/jobsite conditions**, do not use underwater or in a hazardous environment unless specifically designed for that purpose.
- » **DO NOT use the Mag90 if it is damaged or is not working properly.** Severe injury can occur if this device is not used properly and safely.
- » **DO NOT expose the Magnets to temperatures above 180 degrees Fahrenheit (80 Celsius).** High temperatures will permanently degrade the Magnet's effectiveness and may result in an unsafe condition.
- » **Never use a Mag90 for OVERHEAD LIFTING** or to transport any materials.
- » **Not recommended for painted or finish coated surfaces** as these will reduce the magnetic bond and the finish may be damaged.
- » **This product contains PTFE lubricant.** For SDS information contact Industrial Magnetics, Inc.
- » **Always keep the bottom of the magnet clean and free of debris and rust.** If needed wipe with WD40 or light oil.

TO USE THE MAG90

- » Always **test the connection** before attempting to use the Mag90 to ensure that it is capable of holding the material securely.
- » **Numerous factors can negatively affect the strength** of the Magnetic bond, dirt, debris, oils and grease, painted surfaces and any gap between the Magnet and the metal surface will decrease the bond. **Ensure that the connection point is clean** and free of these factors.
- » **Thicker metals will be held more strongly than thinner metals.** E.g.: 1/4" (6mm) steel will be held more strongly than thin gauge metals.
- » **Never exceed the rated capacity** of the Mag90. WS0150R's have up to 150 lbs (68kg) of Break-Away Force. WS0450R's have up to 450 lbs (204 kg) of Break-Away Force and WS1000R's have up to 1000 lbs (454 kg) of Break-Away force under ideal conditions. Tested in accordance with Magnet Distributors and Fabricators Association testing methods, ASME B30-20 and represents a straight Break-Away pull. Actual in-use results will vary greatly and **user must test every bond to determine the suitability of the magnet** to hold the material.
- » **Avoid sudden jerking or Shock force** as this will cause the Mag90 to lose its hold.
- » Threaded Holes are provided in this Mag90 to mount accessories to it or to mount the square into a fixture. For best results **do not attach Ferromagnetic Metals** to the Mag90, unless using spacers as described below. This will keep the magnetic grip at its most powerful.
- » **Industrial Magnetics, Inc. recommends that Stainless Steel screws be used to attach non-Ferromagnetic materials** to the sides. Wood, Plastics and Aluminum are all non-Ferromagnetic materials that make for excellent attachments. Alternatively non-Ferromagnetic spacers can be placed between the Mag90 and a jig/fixture
- » **This Mag90 is not designed to be used as part of an electrical circuit or a welding ground clamp** unless equipped with a ground contact bracket and configured as item WG200R, WG300R or WG800R.
- » For safe operation, the **bottom surface of the Magnet must always be Flat and Smooth.** If necessary, it is possible to sand the Magnet face smooth using 400 grit sandpaper and a flat surface. **Always file any burrs** that would interfere with full contact.
- » As with all precision devices, damage can occur from dropping, bumping and impact. **Industrial Magnetics, Inc. recommends periodic inspection** by the user to ensure that the 90 degree angles are still accurate and the Mag90 still fits their needs.

MAG90 OPERATION

- » **The handle on this Mag90 must be turned clockwise 180 degrees until it stops** in order to be turned "ON". It is not possible to hold the Magnet in place unless fully turned "ON".
- » **DO NOT turn "ON" unless in contact with Ferromagnetic Metal**
- » **To release the Mag90 push the handle down and turn the handle in the counter clockwise direction until it stops.** The Mag90 will **turn "OFF" and release immediately** upon turning the handle, Use Caution to ensure that it is safe to release the Mag90 and that nothing will fall or become dangerous.
- » **Always turn "OFF" power tools before turning the Mag90 "ON" or "OFF"** to avoid injury.
- » This Mag90 is capable of **exceptional Break-Away Force** holding power; Mag90s are exceptionally strong in **Shear Force** as well. **Prying Force is the least powerful** of the holding capabilities and great care must be used when attempting to use this device with Pry force. **See illustration.**





USAGE AND APPLICATION INFORMATION

Mag90 is a multi-purpose Workholding/Clamping tool with uses limited only by your imagination. Whether using it as a positioning aide, mounting tools to the magnet, or installing the magnet into a fixture, you now have a versatile Workholding tool that will last for many years.

Ideal for holding material in place when on any cast iron or steel surface including;

- Table Saw
- Planer
- Jointer
- Shaper
- Steel Router Table top
- Band Saws
- Drill Presses
- Steel Fit-Up Table
- Welding Table
- Steel Pipe
- Flat Stock
- Bar Stock
- Angle Iron
- Structural Steel
- Vehicle Frame/Chassis
- Shop Machinery
- And more!

Mag90s are precision machined to hold Ferromagnetic material at 90° angles. They are perfectly suited to work-holding applications when you are holding any Ferro-Magnetic substance such as steel plate, angle iron, pipe, and rod and bar stock. While the greatest holding power is straight at the base, the two sides of the Mag90 that have the "v" groove have very powerful magnetic attraction forces as well. This allows for Multi-Plane work holding for fit-up at precise 90 degree angles. Ferromagnetic Metals will be lightly held on the two non-"v" groove sides as well.

When used for material holding for metals that are to be welded, be careful not to overheat the magnets. Temperatures above 180 degrees internal will permanently degrade the magnetic power and holding strength. Industrial Magnetics, Inc. recommends a tack weld only to keep the heat transfer to a minimum. To help reduce heat buildup, keep the Mag90 at least 3 inches from the welding point and remove after the tack weld. **Attaching Ferromagnetic metals to the sides of the Mag90 will reduce the magnetic hold of the bottom** as this force is now shared among more than one direction.

MAG90 DRAWINGS

Mounting Holes:

WS0150R - #8-32 - approx. 0.330 deep

WS0450R - 1/4-20 - approx. 0.500 deep

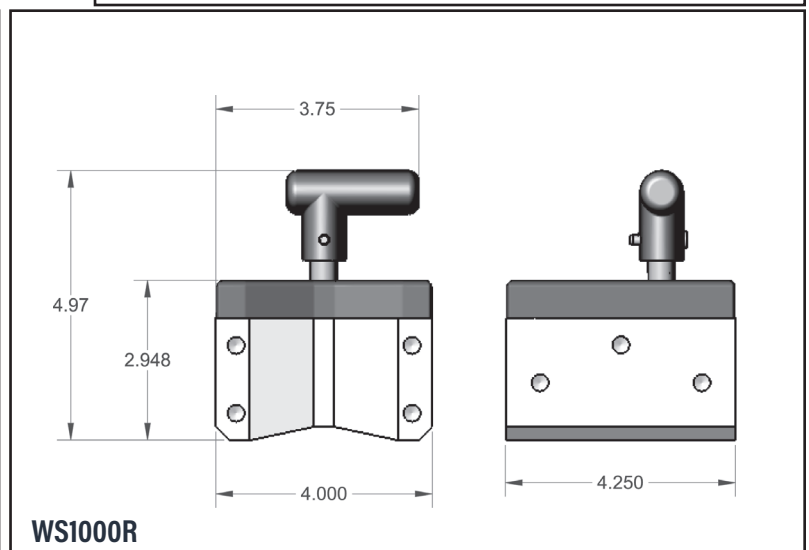
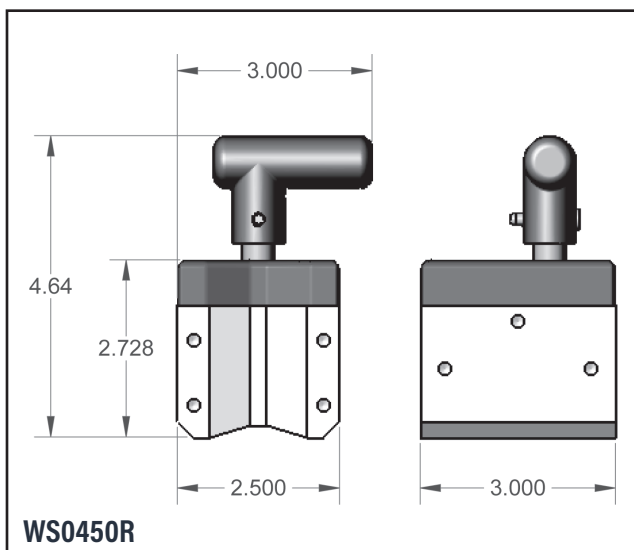
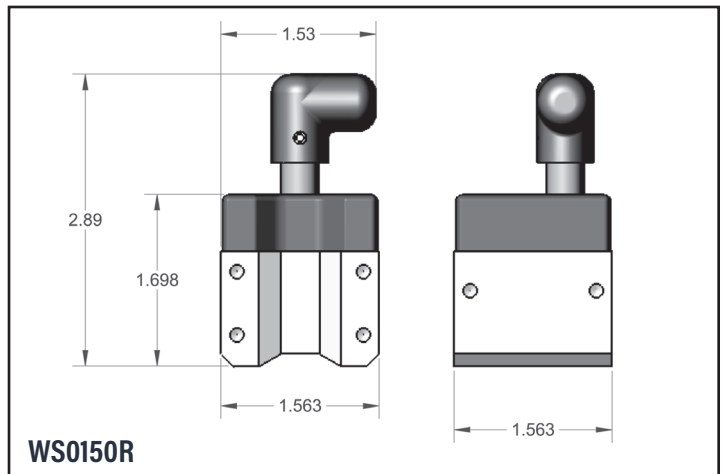
WS1000R - 3/8-16 - approx. 0.500 deep

Minimum Diameter:

WS0150R - 1.5"

WS0450R - 2"

WS1000R - 4"



COMMENTS, CONCERNS OR WARRANTY INFORMATION

We believe Industrial Magnetics, Inc. offers the finest line of magnetic workholding products available today. Great pride has gone into the design and manufacture of this unit. Any comments, concerns or warranty questions should be directed to our Customer Service Department at 1-888-582-0822. **We appreciate the opportunity to serve you!**