



# 90 Degree Angle Operation and Instruction Manual

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This Magswitch 90 Degree Angle Is Designed To Hold Steel Plate, Pipe, Bar And Rod Stock, Flat Stock Or Angle Iron. Using Patented Technology, This Device Has Tremendous Holding Power As Well As A Great Amount Of Shear Force Holding Strength To Prevent Sideways Movement.

90 Degree Angle 150/ 90 Degree Angle 400/ 90 Degree Angle 600/ 90 Degree Angle 1000 Models

**Read all instructions! Failure to follow all instructions listed below may result in an unsafe or dangerous condition.**

## General Information

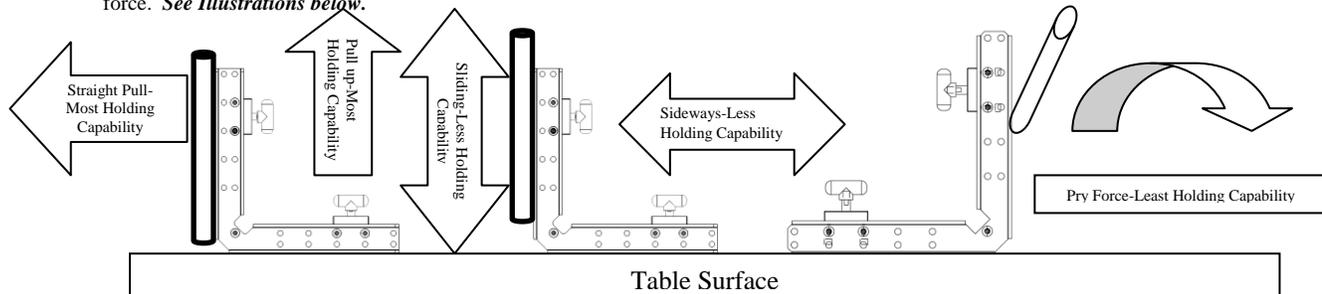
- All Magnets need to be *kept at a safe distance* from all Magnetic storage devices, electronics and credit cards etc...
- Ensure that the Magswitch Magnets is *stored in the "off" position* when not in contact with Ferromagnetic metals.
- *Never use a Magswitch Angle to lift any materials.*
- *Never use a Magswitch Angle for OVERHEAD LIFTING!*
- *DO NOT attempt to disassemble* the Magswitch Magnets; there are no user serviceable parts inside the device.
- All Magswitch 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 Magswitch Angle 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 Magswitch Magnets to temperatures above 180deg. Fahrenheit (80 Celsius).* High temperatures will permanently degrade the Magnet's effectiveness and may result in an unsafe condition.
- For painted or finish coated surfaces there will be a *reduction to the holding force* and the *finish may be damaged.*
- *This product contains PTFE lubricant.* For MSDS information contact Magswitch.

## To use the 90 Degree Angle

- Always *test the connection* before attempting to use the Magswitch Angle 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 Magnets and the metal surface will diminish the holding force.
- *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 device or attempt to alter the device in any way. Each Magnet in the 150 model has up to 150 lbs (68 kg) of Break-Away Force. Each Magnet in the 400 model has up to 400 lbs (182kg) of Break-Away Force. Each Magnet in the 600 model has up to 600 lbs (272 kg) of Break-Away Force. Each Magnet in the 1000 model has up to 1000 lbs (455kg) of Break-Away Force, under ideal conditions. Tested in accordance with Magnet Distributors and Fabricators Association testing methods 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.
- *We recommend that Stainless Steel screws be used if adding additional magnets.*
- When mounting this 90 Degree Angle to a fixture or steel table, *use of non-Ferromagnetic spacers between the Ferromagnetic metal and the 90 Degree Angle* will allow the magnet to retain its full power for material holding.
- *Avoid sudden jerking or Shock force* as this will cause the Magnets to lose its hold.
- *This 90 Degree Angle is not designed to be used as a welding ground clamp* or as part of an electrical circuit.
- 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.

## 90 Degree Angle Operation

- *The handles on this Magswitch Angle must be turned clockwise 180 degrees until it locks into place* in order to be turned on.
- ***DO NOT turn on unless in contact with metal!***
- *To release the Magnets push down and turn the handles in the counter clockwise direction until it stops.* The Magnets will *turn off and release immediately* upon turning the handle. Use Caution to ensure that it is safe to release the Magnets and that nothing will fall or become dangerous.
- This Magswitch 90 Degree Angle is capable of *exceptional Break-Away force* holding power; Magswitch Magnets 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 Illustrations below.*



Magswitch Limited Warranty  
Magswitch products are covered by a One Year Limited Warranty on Material and Workmanship. Warranty is Non-Transferable.  
Magswitch reserves the right to inspect all product claims under warranty. Any alteration of the device voids this warranty.  
User assumes all risk for the proper use of this device and for ensuring product suitability for intended application.  
This warranty shall not cover any incidental or consequential damages due to the improper use or failure of this device.

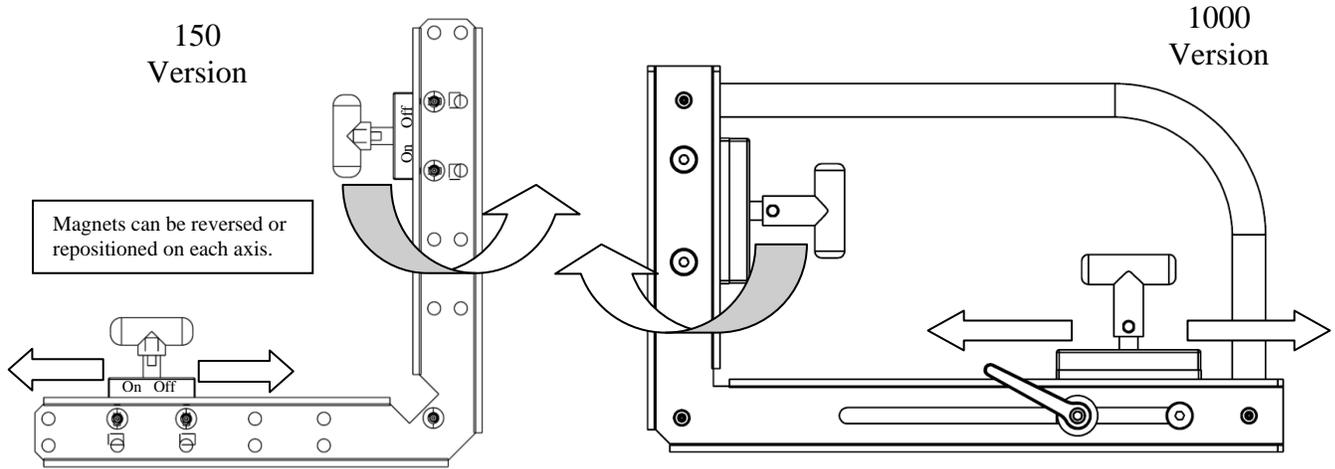
All Magswitch products are intended for the use identified on the package - not intended for resale or integration into products for resale. Contact Magswitch for inquires on integration of technology. Australian Patent: 753496, Chinese Patent: 254155, New Zealand Patent: 518865, Singapore Patents: 88931; 103413, South Africa Patents: 2002/3752; 2004/1785, US Patents: 6,707,360; 7,012,495. Additional Patents and Patent Applications Pending.

## 90 Degree Angle Usage Manual

90 Degree Angle 150/ 90 Degree Angle 400/ 90 Degree Angle 600/ 90 Degree Angle 1000 Models

- This 90 Degree Angle is perfectly suited to work-holding applications when you are holding any Ferromagnetic substance such as steel plate, angle iron, pipe, and rod and bar stock.
- As with all precision devices, damage can occur from dropping, bumping and impact. Magswitch recommends periodic inspection by the user to ensure that the 90 degree angle is still accurate and fits their needs.
- All Magnets can be turned to provide for Inside or Outside 90 degree angles. Attach the magnets using the upper holes in the magnet only.
- To adjust the magnets. Always place the 90 degree Angle on a flat Ferromagnetic surface, turn the magnets on to secure them to the surface. Push down on the side plates until they are flat on the surface and hold while tightening the screws. Check that the magnet bottoms are flush to the side plates for proper performance. The magnets can be moved along the side plates via screw placement (150/600/1000) or with the ratchet handle and slide (400/1000). Press on the silver center of the ratchet handle while pulling out the black portion of the handle to allow the handle to rotate without tightening. Release the handle to re-engage tightening capability.
- It is important to ensure that all four Magnets are oriented the same way (150 series). All “ON” indicators face the same way or the magnetic fields can interact resulting in dramatically reduced holding power. (150 series) *See Illustration Below!*
- Due to the orientation of the 400/600/1000 series magnets, the magnets should be installed such that similar poles face each other. This can be tested by placing the magnets such that the bottom surfaces of the poles of one magnet touches the bottom surfaces of the poles on the other magnet. Turn one magnet on. Attempt to turn on the other magnet. If the magnet turns on easily, the touching poles are opposite. If the magnet is hard to turn on, the touching poles are common. Turn off the magnets and turn one magnet 180 degrees and test again to verify. *See Illustration Below!*
- To use the 90 Degree Angle, simply position the material, and then turn the handle clockwise 180 degrees until it locks in place to the “ON” position. As you turn the handle, the magnetic grip increases allowing for accurate positioning until fully held in place.
- When welding pipe, where the cuts are not at exactly 90 degrees, it is possible to loosen the screws in the obround holes (600/1000 versions only). Lightly tighten the screws, adjust the metal until the joint fits, and turn the magnets “ON”. Tighten the screws and continue. Repetitive assemblies will require no further adjustment.
- Never turn the magnets on when not in contact with metal. Sudden impact to the metal can occur causing personal injury or damage to the surfaces.
- Always test the hold of the Magnets to ensure that it is sufficient to secure the material in place without slipping or falling.
- When finished, push down and turn the Magnets handle counter clockwise 180 degrees to the “OFF” position, taking care that nothing will fall or become a hazard as the magnets will release their hold immediately.
- When used for material holding for metals that are to be welded, be careful not to overheat the magnets. Temperatures above 180 degrees Fahrenheit (80° c) internal will permanently degrade the magnetic power and holding strength. Magswitch recommends a tack weld only to keep the heat transfer to a minimum. **Magswitch recommends a minimum of 3 inches (8cm) from the magnet to the weld point**, and that the magnet be removed immediately after the tack weld to reduce heat transfer.
- Holes are provided so that the 90 Degree Angle can be secured to a repetitive assembly fixture or an assembly table. Using the holes it is possible to move the existing magnets to better hold your material, or to add up to two additional magnets for greater grip strength and holding power. Always use stainless steel screws when adding additional magnets.
- MagSquare 150's require M5 x 0.8 fasteners. Holes are approximately 1/4" (6 mm) deep.
- MagSquare 600's require M6 x 1.0 fasteners. Holes are approximately 3/8" (9 mm) deep.
- MagSquare 1000's require M10 x 1.5 fasteners. Holes are approximately 1/2" (12.7mm) deep.
- Contact Magswitch for information regarding addition of magnets to 90 Degree Angle 400/1000.

## MagSquare Orientation

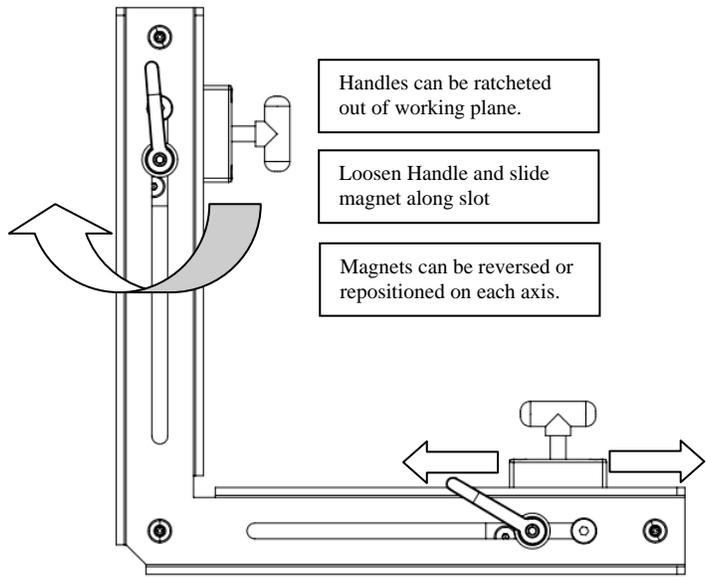


Magnets can be reversed or repositioned on each axis.

**VERY IMPORTANT!**  
Correct orientation of Magnets in Square.  
All "ON" facing same way

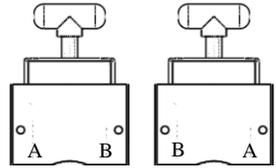
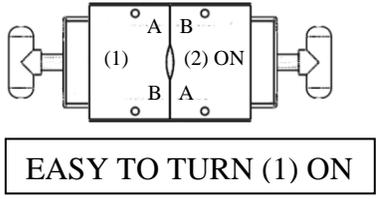
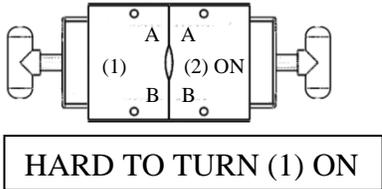
**For best holding power.**  
Use only Stainless steel screws to attach Squares to side plates. If attaching any fixture, clamp or jig to the side plates, use only stainless steel screws and non-ferromagnetic materials.

### 400/600 Version



- Handles can be ratcheted out of working plane.
- Loosen Handle and slide magnet along slot
- Magnets can be reversed or repositioned on each axis.

- Magnets can be reversed or repositioned on each axis.
- Handles can be ratcheted out of working plane.
- Loosen Handle and slide magnet along slot



Correct Pole Orientation for installing two magnets in 90 Degree Angle 400/600/1000.