



MAGLOGIX[®]

Operation Manual

MagnaDrill[®] MX-V

EN Universal Magnetic Drill Stand



Contents

Safety Instructions, Proper Use	10
Technical Data, Available Accessories	11
Description	12
Start-up	13
Special Information on Handling Switchable Permanent Magnets	14
Maintenance and Inspection	15
CE Declaration of Conformity	16

Before use read and save these instructions!

Dear customer,

Thank you for purchasing a Maglogix® product. Read these operation instructions closely before using your device for the first time and keep them for later reference.

Safety Instructions

During work with this machine, improper handling and/or poor maintenance result in significant hazards which can lead to destruction of the machine and serious accidents with considerable injuries. Observe all safety instructions of this operation manual and contact the manufacturer if you have any questions.

Always...



- activate the switchable permanent magnet completely
- activate the magnet on metallic, ferromagnetic materials
- use the whole magnetic surface for working
- work on plane surfaces



- clean the magnetic surface and keep it clear of dirt, swarf and welding sputter
- set the magnetic drill stand down gently to prevent damage to the magnetic surface
- secure yourself with a safety belt when drilling on walls or ceilings



- follow the instructions in the operation manual
- familiarise new users with the safe use of the machine
- wear safety goggles and ear protection during work



- use safety guard if supplied
- observe local, country-specific guidelines
- store in a dry place

Never...



- drill without first having activated the magnet
- work on round or curved objects
- drill several workpieces on top of one another
- modify the machine or remove signs



- use the machine when damaged or when parts are missing
- strain or damage the underside of the magnet through heavy impact or blows



- use the machine without having been properly instructed
- operate the machine without having read and understood the complete operation manual
- use the drill stand to support, lift or transport persons or loads



- store or operate at temperatures above 50°C (122°F)
- leave the machine hanging unsupervised
- allow the machine to come into contact with corrosive materials



People with cardiac pacemakers or other medical appliances may only use the magnetic drill stand following approval by their physician.



Never touch rotating parts! Keep hands and fingers away from the work area while the motor is running! Failure to do so can result in severe injuries!

Proper Use

This MagnaDrill® MX-V magnetic drill stand with a tool holder of Ø 43 mm (Euro collar) and a switchable Maglogix® MXL permanent magnet is intended for use with wired, mains-operated drilling machines. Combined with a drilling machine, this magnetic drill stand is destined to be used with core or solid drills on ferromagnetic workpieces. It may only be used in a dry environment which is protected from the weather. The machine may be used horizontally, vertically or overhead.

Technical Data

Prod.-no. and designation: MagnaDrill® MX-V Drill Stand

Collar:	Ø 43 mm Euro standard	Ø 1.69" Euro standard
Max. drilling Ø in steel		
- Core drill:	12 - 35 mm	1/2" - 1 3/8"
- Twist drill:	up to Ø13 mm DIN 338	1/2"
Stroke:	105 mm + 80 mm height adjustment at slide	4 1/8" + 3 1/8" height adjustment at slide
Size of magnetic base:	72 x 190 mm	2 3/4" x 7 1/2"
Magnetic holding force:	7500 N	1686 lbs
Tool force: (on 10 mm steel)	2800 N	630 lbs @ 3/8" steel
Tool force: (on 6 mm steel)	2300 N	520 lbs @ 2/8" steel
Min. material thickness:	3 mm	1/8"
Weight:	7 kg	15 lbs

Available accessories

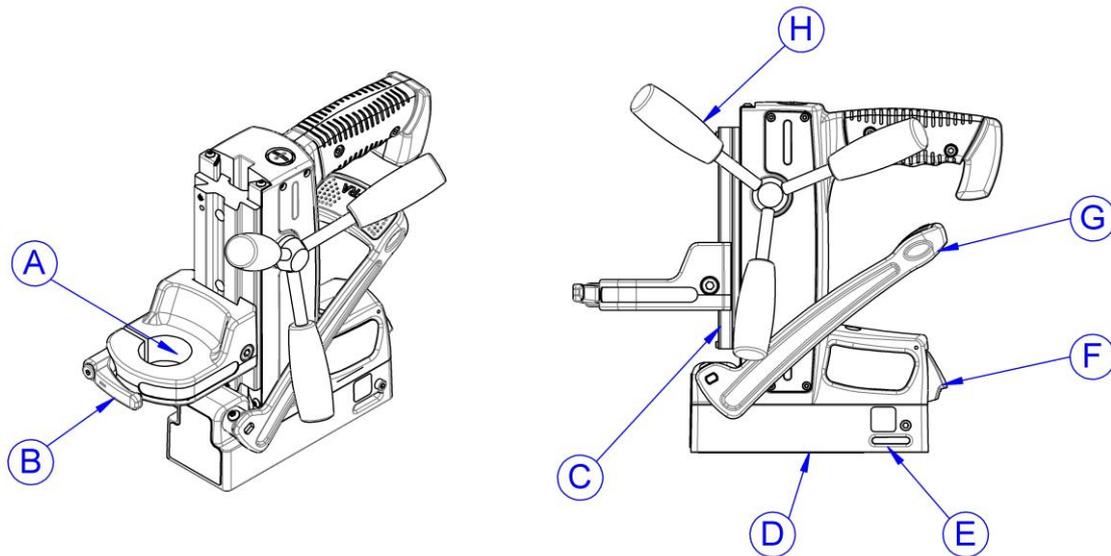
Prod.-no.

Carrying case	02120.K
Coolant ALFRA BIO 4000	21040
Coolant equipment	189412029
Safety guard	189414052
Chuck with Weldon shank up to Ø 13 mm	18107
Safety belt	189490501
Allen key 2.5 mm	DIN911-2,5
Allen key 4.0 mm	DIN911-4
Allen key 6.0 mm	DIN911-6
Swarf hook	189480022

Description

The MagnaDrill® MX-V drill stand can be attached to ferromagnetic workpieces using the installed mechanically switchable MXL permanent magnet (D). For this purpose, the magnetic lever (G) must be pressed downwards and the safety tab (F) must latch into place correctly. A self-adjusting dovetail guide (C) which the collar (A) is attached to can be vertically adjusted using the star handle (H). Wired, mains-operated drilling machines can be fixed tightly to this collar (Ø 43 mm).

As an additional torque support there is a nose on the collar in order to engage the drilling machine into the collar. The type plate and an attachment possibility for the Allen keys included can be found on the back of the machine.



A) Tool holder (Ø 43 mm)

B) Quick clamping lever

C) Slide and setting screws
for adjustment on the back

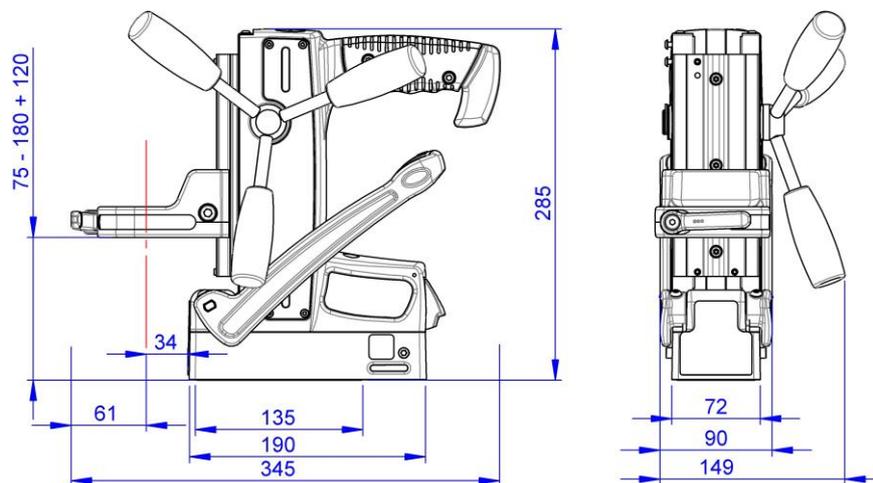
D) Magnetic base

E) Recess for safety belt

F) Safety tab

G) Lever for magnet

H) Star handle



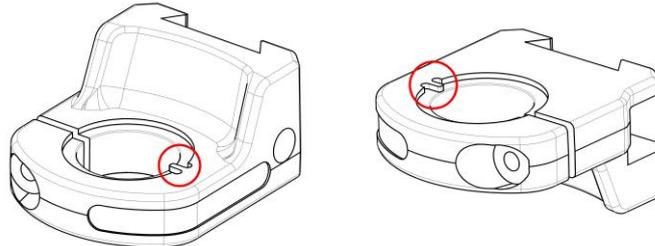
Start-up

You have received a completely assembled MX-V drill stand and detailed operation manual. Please check the condition of the goods on receipt for any transport damage, and make sure the delivery is complete. Otherwise contact the manufacturer immediately.

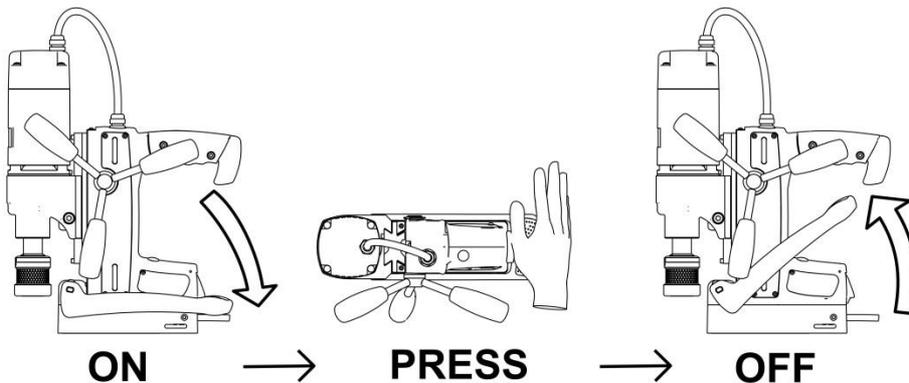


Always read the operation manual before using the device for the first time!

1. First, open the quick clamping lever and set the drilling machine as complete as possible into the tool holder. The nose (see red mark) should be used as a torque support to avoid inadvertent twisting of the drilling machine.



2. Close the quick clamping lever tightly.
3. The lever of the switchable permanent magnet is pointing upwards. The magnet is deactivated so that you can position the machine. A slight magnetic pre-tension helps with alignment of the machine on vertical walls or for overhead work. Secure the drilling unit using the safety belt when working on walls and ceilings.
4. Press the lever down as far as it will go. Make sure that the safety tab audibly latches into place. The magnet is now activated.



Before drilling, make sure that the lever of the magnet is in the ON position.

5. After having activated the magnet, insert the plug of the drilling machine in the mains socket and turn the motor on.
6. Turn the star handle to lower the motor and the rotating drill slowly to the workpiece. Ensure sufficient cooling during the drilling process.
7. When you have finished drilling, move the motor upwards by turning the star handle. Deactivate the motor of the drilling machine and pull the plug.
8. Once the motor has come to a complete standstill, remove swarf and other drilling waste.



Use a swarf hook to remove the swarf. Do not touch with your bare hands. Risk of injury!

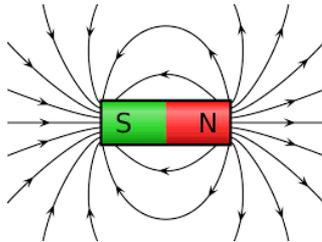
9. To deactivate the permanent magnet, press the black safety tab inwards using the ball of your hand and lift the lever up. Then clean the underside of the magnet of swarf or any other residue stuck to it.

Special Information on Handling Switchable Permanent Magnets

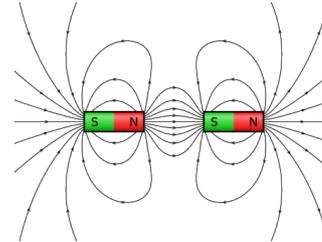
The magnetic surface of the incorporated Maglogix[®] MXL permanent magnet is located on the underside of the magnetic drill stand and generates the magnetic holding force through magnetic flux when activated. The magnet can be activated independently of the mains voltage by pressing the lever down. For the magnet to be released the black safety tab must be pushed by using the ball of your hand and the lever pulled upwards. The machine remains attached to the workpiece even in the event of a power failure.

Material thickness

The magnetic flux (north to south field lines) of the permanent magnet requires a minimum material thickness to flow completely into and across the material below the magnetic contact area. Beyond this minimum material thickness, the maximum holding force continues to decrease (see **Detailed Performance Data**, Table 1).



Conventional (singular) switchable permanent magnet



Maglogix[®] (multi-field) switchable permanent magnet

Conventional switchable permanent magnets have a deep penetrating singular (north to south) magnetic field. The way conventional switchable permanent magnets hold onto steel would be similar to stapling paper together using one large heavy staple in the center of the page, and not bending the legs together.

The compact multi-field magnetic array of the Maglogix[®] switchable permanent magnets would be similar to stapling paper together in a circular pattern with many small lightweight staples close together, and bending the legs together to achieve an even greater holding force. An infinite number of small magnetic field arrays are the principle behind the Maglogix[®] patented switchable magnetic clamps.

Material

Every material reacts in different ways to the penetration of magnetic field lines. The breakaway force of the magnetic contact area is determined by using common (low carbon) A36 steel. The given load-bearing capacity of the magnet should be De-Rated based on **Table 1**. It is up to the user to determine adequate magnetic holding force for alloys not shown in this table.

Table 1

Material	Magnetic force in %
Non-alloyed steel (0.1-0.3% C content, includes A36)	100
Non-alloyed steel (0.3-0.5% C content)	90-95
Cast steel	90
Grey cast iron	45
Nickel	11
Stainless steel, aluminium, brass	0

Surface quality

If a kind of “air gap” is produced between the magnet and the workpiece, this reduces the holding force. In the same way, paint, rust, scale, surface coatings, grease or similar substances all form an air gap between the workpiece and the switchable magnet, reducing the holding force.

Maximum operating temperature

The high-power permanent magnets installed in the magnetic clamp will maintain their load-bearing capacity up to a maximum operating temperature of 176°F (80°C). Exceeding this maximum operational temperature may cause irreversible damage.

Maintenance and Inspection

The user is obliged to maintain and service the drill stand and the drilling machine and in compliance with the specifications in the operation manual and according to the country-specific standards and regulations.

The maintenance intervals are classified according to the frequency with which the maintenance should be carried out.



Always disconnect the machine from the mains before any maintenance operation; otherwise there is a risk of injury due to unintentional machine switch-on.

Before every use...

- inspect the core drilling machine, drill stand and underside of the magnet for visible signs of damage
- clean the surface of the workpiece and the underside of the magnet
- check the blocking function of the safety tab on the lever

Weekly...

- check that the operating lever and safety tab are working properly
- check the underside of the magnet for scratches, pressure points or cracks. Have the magnet repaired by the manufacturer if necessary

Monthly...

- check the markings and labelling on the drill stand for legibility and damage. Replace them if necessary
- clean all the sliding surfaces regularly, re-lubricate them and set the pre-tension of the slide

Maintenance, testing and repair work may only be carried out by qualified electricians according to the regulations valid in the respective country.



Only use genuine Maglogix® spare parts.

EC Declaration of Conformity

Herewith we,

Alfra GmbH
2. Industriestr. 10
68766 Hockenheim

declare that the universal magnetic drill stand

MagnaDrill® MX-V

corresponds to the following directives:

Machinery Directive: 2006/42/EC

Following directives or normative documents were applied:

Machine safety :
DIN EN ISO 12100:2011

Authorized for the compilation of the documents:

Alfra GmbH
2. Industriestr. 10
68766 Hockenheim, Germany

Hockenheim, 15.11.2017

A handwritten signature in black ink, appearing to read 'Markus A. Döring', with a stylized flourish at the end.

Markus A. Döring
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