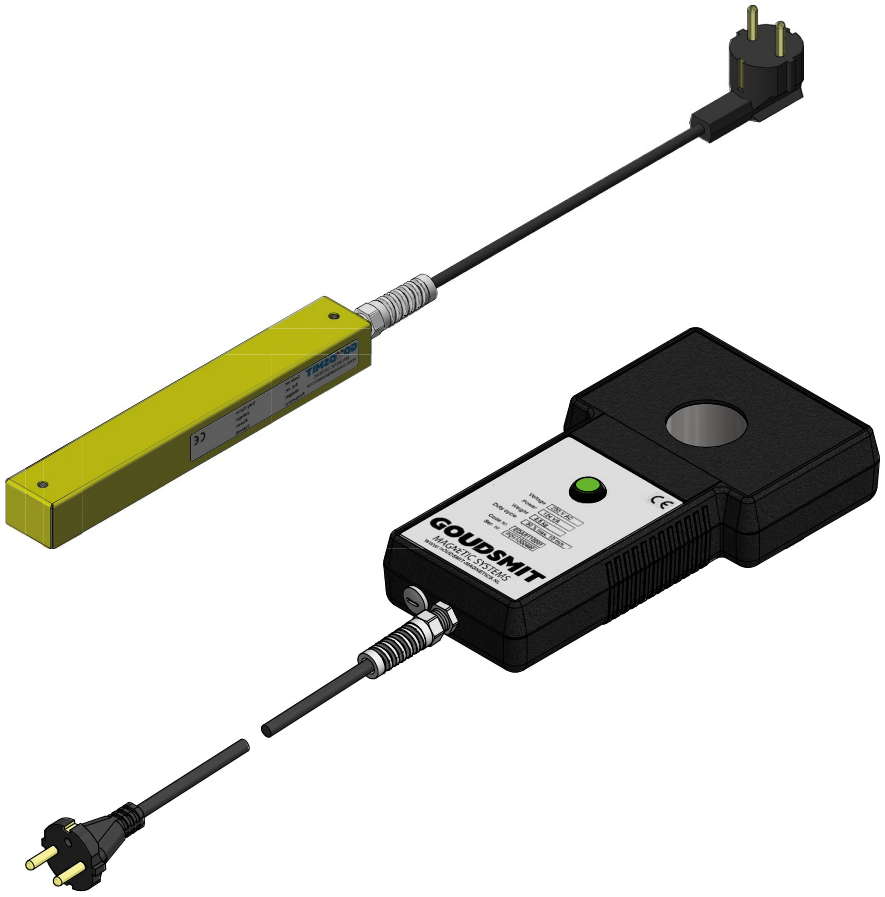
GOUDSMIT MAGNETICS

User manual

Portable demagnetizers

Applicable to the demagnetization of soft-magnetic (ferromagnetic) materials (such as iron)



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CE

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Disclaimer

Information about magnetism

The magnetisation of ferromagnetic materials

Ferromagnetic (or magnetically conductive) materials such as steel and steel alloys can easily become magnetic. Depending on the type of material or alloy, the material remains magnetic; this is referred to as remanent magnetism. Even non-ferritic stainless steel (AISI304, AISI316) can become magnetically conductive by deforming or welding.

The magnetism that is recorded usually comes from another magnetic source, such as lifting magnets, clamping tables, loudspeakers or magnetic transport systems. However, magnetic fields around transformers, welding cables and welding processes can also form a magnetic source. In addition, operations such as drilling, grinding, sawing and sanding of the material can cause remanent magnetism.

The consequences of unwanted magnetism

The consequences of unwanted magnetism can be from annoying to very costly. A nut that sticks to a screwdriver is annoying. However, 2 products glued together in a mould will stop production and cost money. Other examples of consequences: a rough surface after electroplating, welds that are stuck on one side, extra wear on bearings and chips that stick.

By demagnetizing the material you avoid the above consequences. Goudsmit has designed demagnetization systems for this purpose.

Measuring the amount of magnetism in materials

The amount of magnetism stored in materials is not always easy to measure. This is because it is often spread over the entire material. The best places to measure are at the ends or around the holes. Use a (Goudsmit) Gaussmeter with Hall Sensor to find and measure the field.

The easiest way to determine magnetism is with a metal paper clip. By moving it on a thin piece of string close to the surface of the material, you can detect the magnetic spots. If the material actually attracts and sticks to the paper clip, the magnetic value is at least 20 Gauss. Less than 20 Gauss releases the paper clip and above 40 Gauss it is firmly attached. Iron filings are already held from 10 Gauss. This is very little, because the geomagnetism depending on the place on earth is about 0.25 to 0.65 Gauss. After demagnetization of materials, the residual magnetism will be approximately around this value; do not expect that the value will drop to 0!

Little or none magnetically conductive metal, like stainless steel, can become magnetically conductive after for example welding, bending or machining. These materials and tools can also become magnetic again after demagnetization if the material comes into contact with a magnetic field.
This material does not change its structure after demagnetization and therefore remains more sensitive to magnetization than the original base material, despite demagnetization.

Safety instructions

DANGER: risk of electric shock!

During operation, the demagnetization bar has a voltage of 230 V.

▶ DO NOT use the device if the cable is damaged.

The demagnetization bar is equipped with a (thermal) protection against overheating. If the internal coil rises above 90 °C, the power supply is interrupted. The unit can be used again if the temperature of the internal coil drops below 80 °C. The surface temperature is then about 40 °C.

DO NOT place any (flammable) objects on the device after use. This will increase the surface temperature, which may cause scorch marks or even a fire hazard.

Product standards and directives

CE-marking

This device complies with all the European and national requirements for construction and operation.

The CE marking confirms the compliance of the device with all the for this marking applicable EU regulations.

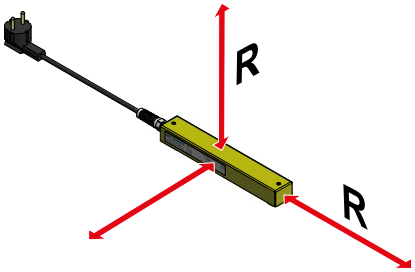
Directives

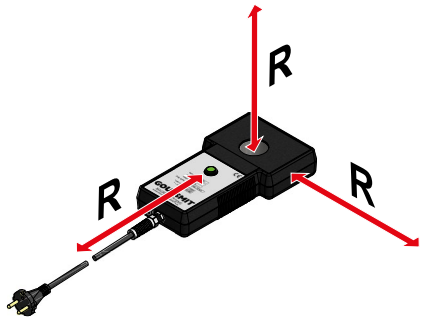
The standard version of this device complies with the requirements of these European Directives:

- Machine Directive 2006/42/EC
- EMC Directive 2014/30/EU.

Occupational and public exposure limit values for (electro) magnetic fields

The limit values of magnetic fields are defined by the EMV-guideline 2013/35/EU as follows:
Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 on minimum health and safety requirements regarding the exposure of workers to the risks arising from electromagnetic fields.
Observe the following measures regarding exposure to magnetic fields according to EN12198-1 (machine category = 0, no restrictions) of the device:





Life danger for persons with implanted medical devices

Persons with active implanted medical devices (i.e. pacemaker, defibrillator, insulin pump) must not enter within a radius "R" of **50 cm** from the device.

Damage to magnet sensitive objects

Objects which contain ferromagnetic parts, such as bank, credit or chip cards, keys and watches can be irreparably damaged when they come within a radius “R” of **20 cm** from the device.

Pregnant personnel should keep a minimal distance of **50 cm** from the magnet bars.

N.B. Occupational exposure limit values (general and for limbs) are not exceeded.

Warranty conditions

The device may only be used for the demagnetization of soft-magnetic materials. Any other use does not comply with the regulations. Any damage resulting from this is not covered by the manufacturer's warranty.

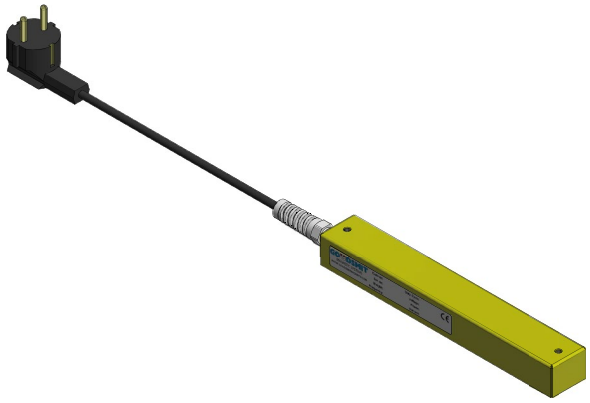
Application

The magnetic neutralization is done by applying a strong demagnetization field, produced by an electromagnetic coil in the bar or device. Small workpieces, such as drills, can easily be demagnetized with a portable demagnetizer.

The device can be used in an ambient temperature of -10 °C to +40 °C.

The **demagnetization bar** is intended for the demagnetization of tools and machine parts in hard-to-reach places.

These bars are frequently used in workshops, tool shops, machine building and watch repair shops.



The **demagnetizer with round feed** is suitable for the demagnetization of tools and small materials.

Commissioning

Before use, make sure that the device is not damaged or defective.

Demagnetization bar

- ▶ Check that the device is clean.
- ▶ Plug the device into a power outlet.
- ▶ Hold the magnetic side of the demagnetization bar as close as possible to the object to be demagnetized and move along it at an even speed.

Do not use the device for too long at one time. The operating time is 15% up to a maximum of 10 minutes. The device may only be switched on 15% of the time, the other 85% of the time is needed for cooling down.

- ▶ After use, remove the plug from the socket.
- ▶ Clean the device with a clean dry cloth.

Demagnetizer with round feed

- ▶ Check that the device is clean.
- ▶ Plug the device into a power outlet.
- ▶ Hold down the button on the device and guide the material to be demagnetized as close as possible to the edge of the passage or at an even speed through the round passage.
- ▶ After use, do not release the button on the device until 50 cm from the object to be demagnetized. The device is now switched off.
- ▶ Remove the plug from the socket.
- ▶ Clean the device with a clean cloth.

Maintenance and malfunctions

- Be sure to clean the device with a clean soft cloth before use. Demagnetization systems attract a lot of iron particles and possibly other dirt.

If the device does not work (or no longer works), check if:

- there is a break in the (power) cable. The cable is NOT interchangeable.
- there is power supply to the socket. Fix the interference.
- ***Demagnetization bar:*** thermal protection is activated. Let the device cool down for half an hour.
- ***Demagnetizer with round feed:*** by operating the push button the device will not be activated.

If the device is still under warranty, please send it to Goudsmit Magnetic Systems for repair.

Storage and disposal

Storage

- ▶ Store the demagnetization bar in a clean place after use.
- ▶ Store the demagnetizer with round feed in the corresponding case.

Disposal

Waste electrical and electronic equipment that is no longer usable must be collected separately and disposed of in an environmentally friendly manner (European Directive on Waste Electrical and Electronic Equipment).

For the disposal of waste electrical and electronic equipment, use the national return systems.