ASSFALG magnets

# Operating Manual

## Electro-Permanent Lifting Magnet
## Type Safebat 10

**Art. no. 60643**


| Type | Dimensions LxWxH [mm] | Lifting load [kN] | Weight [kg] | Art. no. |
|---|---|---|---|---|
| | | | | |
| **Safebat 10** | **315x175x225** | **10** | **39** | 60643 |

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# 1. Product indication

## 1.1 Notices

The purpose of the present operating manual is to provide information about intended usage, safety notices, safe handling and other important issues: Ensure you allow sufficient time to carefully read this operating manual before unpacking the magnet.
Please also observe the applicable laws and stipulations for accident prevention.

## 1.2 Magnet designation / Information for queries

The most important characteristics are located on the type label at the side of the magnet casing:
- Magnet type
- Serial number

Also indicate:
- Detailed description of the occurred malfunction

## 1.3 Technical data

| Type | Max. lifting force [kN] for: | | Tested pull-off strength [kN]* | Material thickness [mm] for: | | Supporting surface L x W [mm] | Dimensions LxWxH [mm] | Weight [kg] | Art. no. |
|---|---|---|---|---|---|---|---|---|---|
| | Flat material | Round material | | Full/Flat material | Round material | | | | |
| **Safebat 10** | **10** | **2*** | **30** | **>4** | **80-150** | **275x115** | **275x175x225** | **39** | **60643** |

***Only lift round material in switching level A/P020.**

## 1.4 Standard accessories

1x power supply unit
1x power cable

### 1.5 Product liability/Warranty

- Once you have received the magnet, check the package for damage.
- Notify the freight forwarder in case of damage.
- Be mindful of accessory parts while unpacking.
- Warranty claims must be submitted in writing.
- Only use the magnet in temperatures ranging from -10°C to 70°C and at a maximum humidity of 80%.
- The manufacturer reserves the right to technical changes or improvements.
- Work performed due to legal warranty claims may only be executed by the manufacturer or by persons authorised by the manufacturer.
- We are not liable for damages and accidents caused by improper usage. We reserve the copyright according to DIN ISO 16016.

## 2. General safety

### 2.1 Safety regulations

Health hazards cannot be completely excluded while operating the lifting magnet. Please carefully observe these regulations. The general work and accident prevention regulations must also be observed.

- Do not lift loads while persons are located in the work area.
- Do not lift porous or uneven loads.
- Do not walk, stand or work under a raised load.
  Do not allow a load to sway during transport.
- Do not turn on the lifting magnet before it has been placed on the load.
- Do not raise the load ...before the hand lever has been arrested in the secure position/ ...if the permissible lifting capacity or the permissible dimensions are exceeded/ ...if the load is distributed unevenly.
- Lifting surfaces must be clear of liquids, oils and fats.
- Only move the load when it has been ensured that the holding force is sufficient after raising the load to a height of approximately 10 cm.
- Only demagnetise the lifting magnet (deactivate) when the entire load has been placed on the ground and the load rests on a stable foundation.

**Careful and considerate handling can also minimise this!**

### 2.2 Maintenance and storage

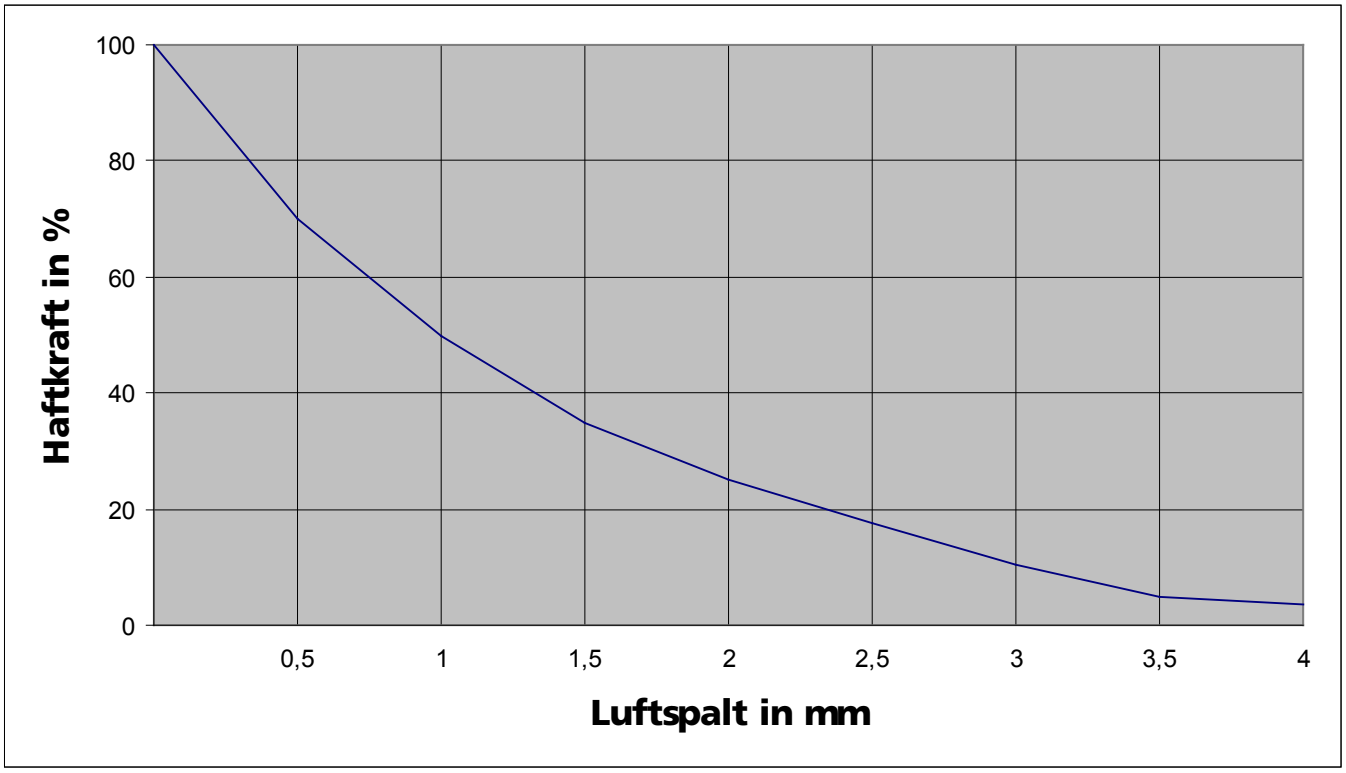
- EPM lifting magnets are to be checked regularly for proper functioning as well as for mechanical or electronic deficiencies (identification plate still legible/pole surfaces clean and in order/ control elements function properly/magnet casing, arrest position and lifting bracket in order/ full holding force available – or impairment due to external force or heat or poor contact).

**Attention: Separate the device from electronics beforehand!!**

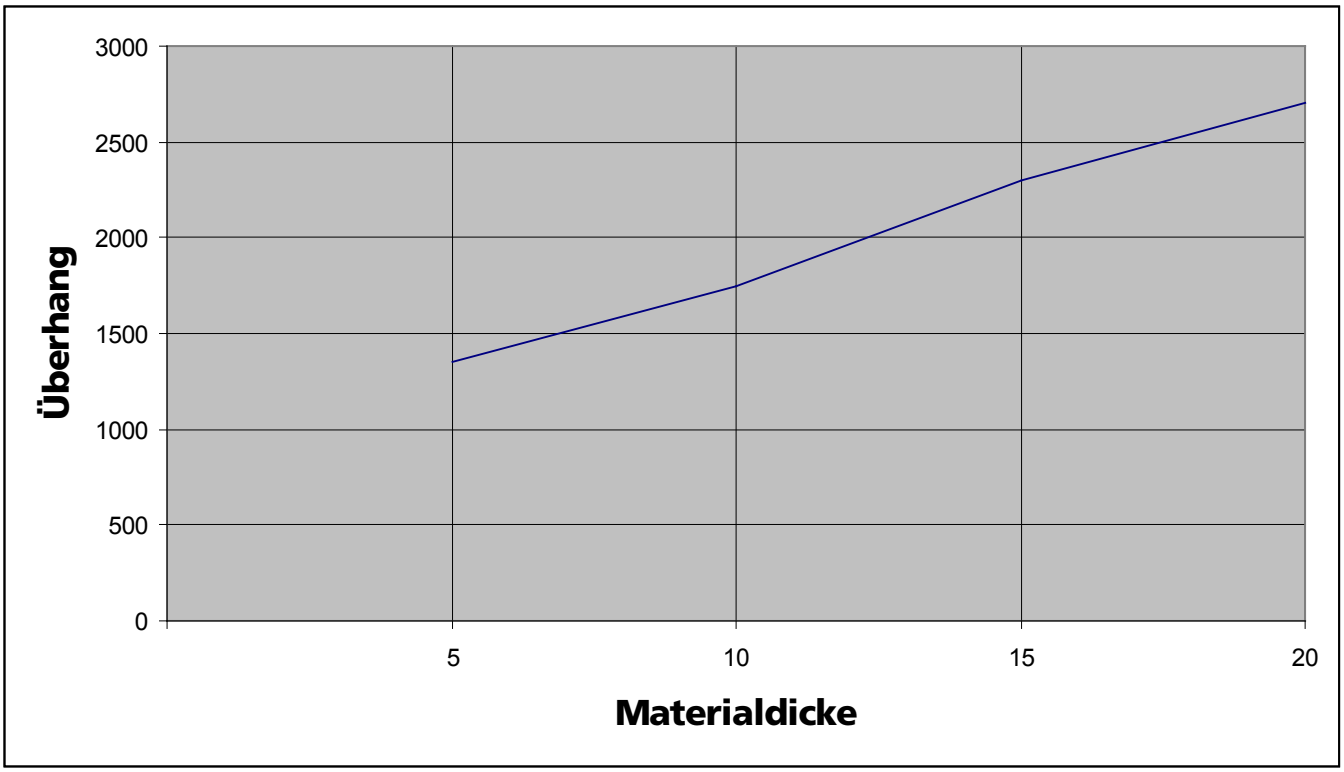
- Lifting magnets must be protected from aggressive substances and weather effects since these can negatively affect the safety characteristics and performance of the magnet as well as the charging state of the battery.

## 3.0 Holding force/Overhang charts

### 3.1 Holding force/Air gap chart




### 3.2 Overhang/Material thickness chart



## 4. Control elements and connections


**Front:**

1. Mag button (green)
2. Common button (yellow)
3. Demag button (red)
4. On/Off button (black)
5. Loudspeaker
6. Illuminated display „Switch ready“ (LED illuminated)
7. Display
8. Power supply

## 5. Activation

- Examine magnet pole and supporting surface for the workpiece for cleanliness and evenness (shavings, grinding dust, weld splatter, tinder or dents, roughness or the like significantly minimise the holding force -> **air gap!** ).

- Activate the magnet with the on/off button at the front (display is illuminated). Demag button [C] at the front of the casing is also illuminated in red and signals operational readiness and a demagnetised state.

- Place lifting magnet onto the workpiece at the centre of gravity (take minimum material thickness into consideration).

## 6. Operation

### 6.1 Selection of operation modes

a) The red demagnetisation button is held.
The green magnetisation button is pressed repeatedly until the desired load range is displayed.

b) The Safebat magnet lifter has 2 operating modes:
Normal Mode (P): Manual operation

and
Auto Mode (A): Sensor-guided operation
Mounted automatic
The operator can choose between 4 load ranges in both operating modes.

Load range:

0100 = 30 mm and greater sheet metal thickness
Max. weight 1000 kg

050 = up to 20-30 mm sheet metal thickness
Max. weight 500 kg

020 = up to 10-20 mm sheet metal thickness
Round material Ø 80-150 mm
Max. weight 200 kg

010 = up to 4-10 mm sheet metal thickness
Max. weight 100 kg
(display indication -L0-)


## 6.2 Operation in Normal Mode/Display indications

**a)** Simultaneously pressing the green magnetisation button and the yellow safety button magnetises the magnet.


b) Battery charge confirmation is displayed with a bar chart.


c) Display shows the weight range that can be safely lifted („SAFE“). Initial magnetisation is only at 70%.

„Attention“: Kg is not displayed in step 010, but only „-L0-“ (= low = minor sheet metal thickness).


d) 100% magnetisation is executed immediately after lifting the load. Display indicates „SAFE“, i.e. a safety factor of 3x is achieved. The load can now be transported securely (SAFE).

e) The display blinks if „SAFE“ does not appear on the display. The lifting process is crucial. The person responsible for safety must decide how to proceed.

### 6.3 Demagnetising the magnet in Normal Mode/Display indications

a) The load is set down. The magnet releases.
The yellow safety button and the red demagnetisation button are pressed simultaneously.
The magnet is demagnetised as soon as the signal sounds.

### 66.4 Operation in Auto Mode (A)

The magnet is always deactivated automatically
when the crane hook has been fully unburdened and the shackle falls back completely, i.e. the mag net is alternately magnetised or
demagnetised. The respective signal button is also illuminated (Mag/Demag)
at the front of the casing.

Refer to 6.1 for display indications. Operation in Normal Mode/Display indications

## 7. Charging procedure

### 7.1. General information

- A charge corresponds to approx. 200 switching cycles.
- The charging time for the battery is approx. 5 hours.
- The battery is firmly integrated and should only be changed by professional personnel.

### 7.2. Instructions for the charging procedure

- Turn the safety cap of the power supply unit [8] to the right or left.
- Insert the power supply unit with the „3-pin plug“ into the socket.
- Connect the power supply unit to the 230V socket with the power cable.
- Once the magnet is fully charged, the display is illuminated and displays „Full charge“ on the power supply unit.

***Operating notice - Complete charging cycles preserve the service life of the battery.**

## 8. Spare parts/Special accessories

- Information about spare parts and special accessories is available upon request.

## 9. Dismantling and disposal

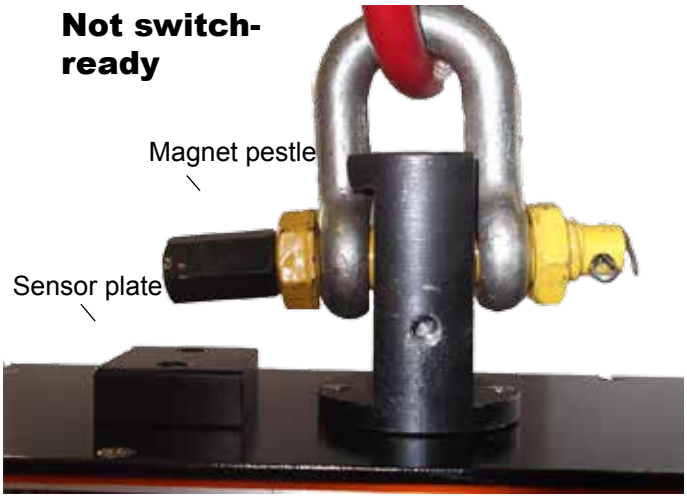
Protect the environment by separately disposing the various recyclable materials according to legal regulations

(e.g. electronic parts, batteries, metal).

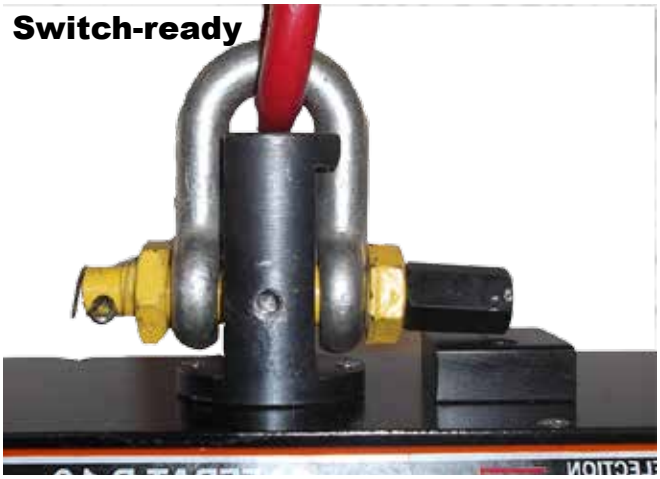
## 10. Malfunction correction and problem solving

**Error: Magnet cannot be turned off.**
Cause: Lifting bracket is not completely unburdened - the sensor is not releasing the power supply; the distance between the magnet pestle and the sensor plate is too great.
Remedy: Check if the pestle at the shackle is mounted all the way at the bottom of the casing (display indicates „Switch-ready“).

**Not switch-ready**




**Switch-ready**



**Error: Magnet cannot be turned off.**
Cause: Battery charge too low.
Remedy: Charge the magnet as described under 7.2.

**Error: Warning sound does not expire!**
Cause: Magnet must be magnetised again.
Remedy: Magnetise the magnet by pressing the buttons Mag [1] + Common [2] again.

## 11. Need-to-know - Notices for users – Hazard warning – Safe handling

- All EPM magnets can be used independently of the power supply, i.e. in a magnetised state the load is held permanent-magnetically, i.e. with the most secure holding force, even in case of a power outage and even when the magnet is disconnected from the battery.
- Never press the green „ON“ or red „OFF“ button repeatedly
  since the electric current is very strong when magnetising or demagnetising!
- Only immerse magnets up to 15 mm in liquids, but never submerge.
- The max. usage temperature is 80°C.
- Always place the magnet onto even surfaces at the centre of gravity (keep the load from swaying)!
- The contact area between the magnet and the load must be even and clean. An air gap occurs when this is not the case, and this significantly minimises the strength of the magnet (-> see holding force and air gap chart).
- 100% of the magnet‘s contact area must be occupied in order to achieve maximum holding strength.
- The holding force is significantly reduced if the minimum material thickness is deceeded.
- The magnet overhang may not exceed the table values (-> refer to overhang and material thickness chart).
- The greater the alloy of a load, the poorer the magnetisation and demagnetisation.
- Work material + material thickness + air gap + contact area + overhang + temperature significantly affect the holding force of the magnet. Therefore, the recommended lifting force of an electromagnet or battery magnet is indicated with a safety factor.

ASSFALG magnets

**EC - Declaration of Conformity**
**according to the EC Machine Guideline (2006/42/EC)**

The

company Assfalg GmbH
Buchstraße 149

D - 73525 Schwäbisch Gmünd,

hereby declares that the

EPM Lifting Magnet Safebat 10,

build year: 20.....

serial number: .....

fulfils the safety and health requirements of the following EC guideline:

EC Machine Guideline (2006/42/EC).

It also adheres to the protection targets of the

Low Voltage Directive 2014/35/EU and

Electromagnetic Compatibility EMC 2014/30/EU.

The following harmonised standards have been applied:

EN ISO 12100:2010 Machine Safety - General Design Principles - Risk Evaluation and Risk Reduction

EN ISO 60204 Machine Safety - Electronic Machine Equipment

Name and address of the person authorised
to compile the technical documents:

Ronald Assfalg
Buchstraße 149
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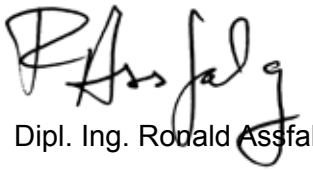
Signature



Dipl. Ing. Ronald Assfalg