

Technical data for holding magnets (gripper magnets)



Structure:

Gripper magnets are magnets that have only one adhesive surface, because of their structure. No magnetic force action originates from any of the other surfaces of the gripper magnet body. This construction makes it possible to limit the three-dimensional affect of the magnetic field so that no unintentional magnetization of the entire workpiece in contact with the gripper magnet, or of the machine elements surrounding the gripper magnet, occurs.

Designs:

The round gripper magnets of the the model series:

K0545.01 through K0545.10

K0546.01 through K0546.09

K0547.01 through K0547.10

have a core made of the permanent magnetic material AlNiCo, which is inserted for magnetic shielding into a soft iron pot with an intervening sleeve made of a non-magnetizable material. The ceramic permanent magnetic material SrFe (hard ferrite) is used for the Flat Gripper magnets of the model series

K0548.01 through K0548.10 and

K0549.01 through K0549.26.

Here as well, a pot of soft iron ensures the desired magnetic shielding.

The magnets of the model series

K0550.01 through K0550.18 and

K0551.01 through K0551.15

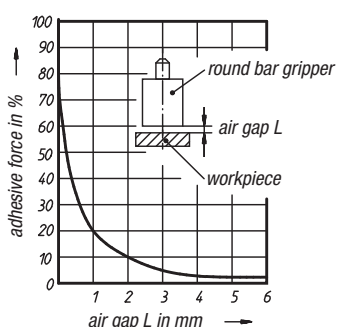
have a core of SmCo, an alloy of metallic rare earth elements with cobalt. For a given overall size, SmCo increases the adhesive force by three to five times that of AlNiCo or hard ferrite grippers.

Adhesive forces:

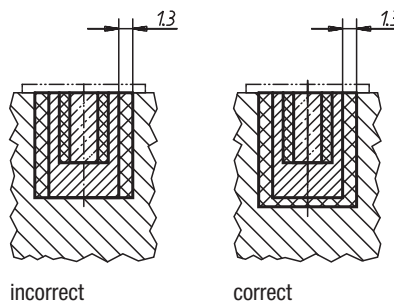
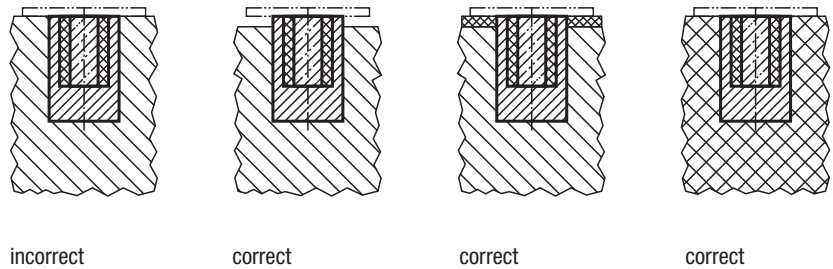
The values indicated in the table are minimum values that are achieved for a vertical pull-down with full-surface contact of the gripper magnets on soft iron or low-carbon steel workpieces of sufficient thickness. In case of unclean pole faces or non-flat workpieces, air gaps are formed, which sharply decrease the adhesive forces. It is therefore advisable to always ensure a clean pole face and to clean it from time to time if necessary.

Diagram:

Reduction of the adhesive force of a round bar gripper with increasing air gap (magnetically nonconductive intermediate layers function like air gaps).

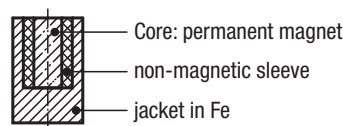


Fixing instructions for screened gripper magnets with no pins



Holding magnets (round bar and flat grippers) must not be used directly in iron, but must be bolted, glued, pressed or poured into a sleeve of non-magnetic material (see representation opposite).

Gripper magnets - Series type Shielded system



- workpieces to clamp
- iron
- Non-magnetic material such as CuZn, Al, Cu or plastic

Installation or fastening possibilities of gripper magnets

Order No.	Description	System	Temperature* max. °C	Fastening possibility
from K0545.01 to K0545.10	Round bar gripper	shielded	450	Pressing in/shrink-fitting/ gluing in
from K0546.01 to K0546.10	Round bar gripper	shielded	450	Soldering in (soft soldering)/ gluing in
from K0547.01 to K0547.10	Round bar gripper	shielded	450	Riveting the pin in/ screwing in
from K0551.01 to K0551.15	Round bar gripper	shielded	200	Pressing in/gluing in screwing in
from K0548.01 to K0548.10	Flat gripper	shielded	100	Pressing in/gluing in
from K0549.01 to K0549.26	Flat gripper	shielded	100	Screwing in
from K0550.01 to K0550.18	Flat gripper	shielded	200	Pressing in/gluing in

* Long-term heating or alternating thermal stresses may result in mechanical changes of the magnet system in some cases. In many cases they have no influence on the function. The same applies to the case of chemical stresses (chemical baths, aggressive gases, etc.).