Magnet grippers
**Goudsmit Magnet grippers**

Magnet grippers lift both steel plates and perforated products. Also, aluminium and stainless steel plates and products up to approx. 4 mm are no problem. This makes these magnetic grippers universally applicable in automated processes in laser cutting machines, robotized press brakes and press-transfer systems in the automotive and sheet metal industry. Grippers are a proven technology in which the magnets can be switched on and off using compressed air.

If the magnet is set at high, there is no magnetic field that flows outside and the gripper is off. If the magnet is set at low, the magnetic field will be moved outside the housing and the magnet is on. Grippers are widely used for handling sheet metal up to about 4 mm and smaller steel objects. For heavier steel parts we recommend the Magswitch heavy lifter.

**Operation magnet gripper**

By first switching on the vacuum and then the magnetic force, only one plate is lifted.

**Magnet grippers with vacuum suction pad**

Magnet grippers can lift steel plates, but also perforated plates. In order to also lift non-magnetic parts, the gripper optionally available with a vacuum suction pad. This doubles the lifting power for steel plates. This causes the robot arm to be able to accelerate much faster, which speeds up the process considerably. Moreover, it is possible to lift non-magnetic plates without change-over costs. The vacuum suction pad prevents the gripper from picking up two thin plates simultaneously (provided the plates do not stick together too much due to oil residue; then a magnetic plates separator will be required).

**Switching diagram, see page 4.**

Magnet grippers are available from a diameter of 20 mm (lifting force approx. 3 N) up to a diameter of 160 mm (lifting force approx. 800 N). For dimensions we refer you to our website www.goudsmit.eu

<table>
<thead>
<tr>
<th>Type</th>
<th>Dimension (mm)</th>
<th>Magnetic force (N)</th>
<th>Vacuum force (N)</th>
<th>Tear Off force (N)</th>
<th>Advised lifting force (N)</th>
<th>Advised sheet Thickness (mm)</th>
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</thead>
<tbody>
<tr>
<td>TPGC02078</td>
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<td>540</td>
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</table>

The indicated lifting force is intended for ideal circumstances. The maximum allowable lifting force depends on the risk assessment, but must contain a safety factor of at least 2.
**Magnet grippers in combination with vacuum technology**

Magnet grippers are usually applied as replacement of or in combination with vacuum technology. The reason for this is that magnet grippers also adhere well on non-planar and perforated bases. This is not possible using only a vacuum suction pad. A magnet gripper requires less precision in the placement on the object and gives the user more space in the production process to perform other actions. A great advantage in the use of magnets is that no backup system is required to absorb disturbances. The magnetic force is still present, even when the vacuum or the electricity fails. The magnet gripper can also hold very small particles. This is not possible with only vacuum technology due to the minimum required diameter of the suction pad. Another important advantage is the longevity of magnetic grippers. Replacement of the gripper is not necessary in highly automated processes. This means lower maintenance costs.

**Available accessories and options**

- Vacuum suction pad at the bottom of the gripper for the lifting of non-magnetic parts. Plunger with flexolink for more variation in the engagement moment, so that the gripper can also firmly grasp the object under an angle.
- If you want to move the object vertically, we recommend the gripper with an abrasion-resistant NBR pad. This gives more friction and prevents that an imprint is left on the object.
- Special version for high temperatures >70°C up to max 180°C.
Standard connection scheme
vacuum valve

Goudsmit vacuum vent valve
TPMV000004

In this situation the vacuum connection is realized by a Goudsmit vacuum blow-off valve (TPMV000004).
Connection pressure : 5.5 bar
Realised vacuum pressure : -0.7 bar

Technical data
Maximum connection pressure (P): 6 bar
Optimal connection pressure (P): 5.5 bar
Realised vacuum pressure (C): -0.7 bar (with P 5.5 bar)
Air consumption (in ‘on’ position): 11.5 l/min
Dimensions: Connection P, C and U: G1/8”
Electric current: 24V DC
Temperatures: suited to ambient temperatures of -5 to +50°C

Vacuum and link valve if you have no vacuum pump. Suitable for the connection of two grippers with vacuum suction pad (TMPV000004) Connecting diagram: see above.

Connecting diagram if you want to first switch on the vacuum and then the magnetic force.
In this case the magnetic force is switched off for a moment (“off”), when the 3/2 valve is engaged (“on”) together with the 5/3 valve. As soon as the 3/2 valve is disconnected (“off”), the magnetic force will start. This is useful for lifting thin sheets from the stack one by one.
In this case vacuum is also generated by a Goudsmit blow-off valve (TPMV000004).
Connection pressure : 5.5 bar
Realised vacuum pressure : -0.7 bar

Connecting diagram if you already have vacuum
If you already have a vacuum connection (-0.7 bar), you can select a connection with 5/3-valves.
Connection pressure : 4 bar
Vacuum connection : 0.7 bar

Vacuum and link valve if you have no vacuum pump. Suitable for the connection of two grippers with vacuum suction pad (TMPV000004) Connecting diagram: see above.

Magswitch heavy lifter for lifting heavier parts, thicker than 6 mm.