Workholding Systems

Magnetic clamping plates
M-TECS SP 50 · M-TECS SP 70
Your benefits at a glance:

⭐ Rapid positioning of workpieces
⭐ Suitable for each workpiece shape and size
⭐ 5-axis workpiece machining with one single clamping operation
⭐ Low tool wear as a result of avoiding vibration
⭐ Long service life, low investment costs
The workpieces are positioned against lateral stops or using pole extensions on the magnetic plate.

Perfect adaptation to the workpiece contour. Workpieces of any shape can be clamped perfectly using flexible HILMA pole extensions. The pole extensions adapt ideally to the workpiece contour, the workpiece is supported from beneath and is positioned in a stable manner for 5-axis machining.

The 5 axes are freely accessible and can be machined in one single clamping operation. Thin-walled or delicate workpieces are clamped gently and safely by the magnetic retention force of the M-TECS SP clamping system. Thus, workpiece distortion is avoided.

Less wear of tools results from the uniform and high magnetic retention force over the complete workpiece. Vibrations are effectively minimized. This leads to improved surfaces and clearly higher precision.

Low investment costs, usable independently from the machine.
Long service life by regrinding of the clamping plate up to 3 mm.
Stable basic body in monobloc design made from C45

Thread M8 for fixation of stops or pole extensions

Reference groove for alignment on the machine table

Clamping edge for fixation with clamping claws

Square pole 50 mm or 70 mm

Connection for control
The series M-TECS SP50 or SP70 is the versatile clamping system for your machining centre. Electro-permanent magnetic clamping plates with square pole technology produced by Hilma are designed for maximum retention force and the highest flexibility. Large and small workpieces of unalloyed or alloyed steels, tool steels or ferrous steels with a high ferro-magnetic content can be clamped rapidly and with high process reliability.

Hilma-Röhmheld magnetic clamping plates are only electrically energized during the magnetizing and demagnetizing phases. Thus, the system is clamped independent of the power supply which is energy-saving and ensures the required safety.

The magnetizing and demagnetizing cycles are activated by means of a separate remote control. The process just takes 1 – 2 seconds and is controlled electronically.

The control system is designed to allow the connection of a safety signal (machine safety option). Then starting of the machine is blocked if the plate is not magnetized.

### Technical data

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### Retention forces and standard dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>Part no.</th>
<th>Retention force/pole [daN]</th>
<th>Number of poles</th>
<th>d Pole size [mm]</th>
<th>Dimensions in mm</th>
<th>Weight [kg]</th>
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<tbody>
<tr>
<td>M-TECS</td>
<td>9.1050.0304</td>
<td>350</td>
<td>12</td>
<td>50 x 50</td>
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<td>B 575</td>
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</table>

Further dimensions and special designs on request.
Multi-channel device for control of several magnetic plates

Hilma magnetic clamping plates are supplied with a well-proven electronic control unit and a separate manual remote control which are suitable for the control of single and multiple clamping plates.

Each control unit is equipped with a current sensor for measuring the power supply. The multi-channel control units are equipped to fit into a machine safety system.

The separate manual remote control is supplied with a magnetic surface (standard version) which allows positioning on a metallic surface close to the operator.

M-TECS safety
- The magnetic clamping plates have the CE mark
- Low voltage directives 73/23/EEC
- Electromagnetic compatibility EMC 89/336
Individual solutions and adaptations

We will be pleased to send more data as a PDF or CAD file. Please contact info@hilma.de

Magnetic clamping system for a mould carrier 1500 x 1000 mm,
retention force 200 kN, temperature range up to 120 °C

Magnetic clamping plate with square poles 70 x 70 mm,
plate size 630 x 630 mm with lateral bore holes for stop bars

Long poles for heavy machining, plate size 2200 x 1200 mm
with 2 connections, magnetic retention force 800 kN

Customized magnetic clamping plate:
Slots for coolant,
slots for roller bars,
various bore holes for stops

M-TECS long poles LP with force concentration for very small moulds
and special applications

Magnetic clamping system for a sliding table 2500 x 1200 mm,
retention force 800 kN, temperature range up to 230 °C

Magnetic clamping system for a mould carrier 1500 x 1000 mm,
retention force 200 kN, temperature range up to 120 °C
Tower design using VarioLine for large workpieces

Clamping of plate-shaped workpieces with high cutting performance

3 SCS 120 H as a customer-specific system in a pallet station. The clamping pressure is controlled by the hydraulic system of the machine.

MC 60 Z and QUINTUS 1 on a 5-axis machining centre