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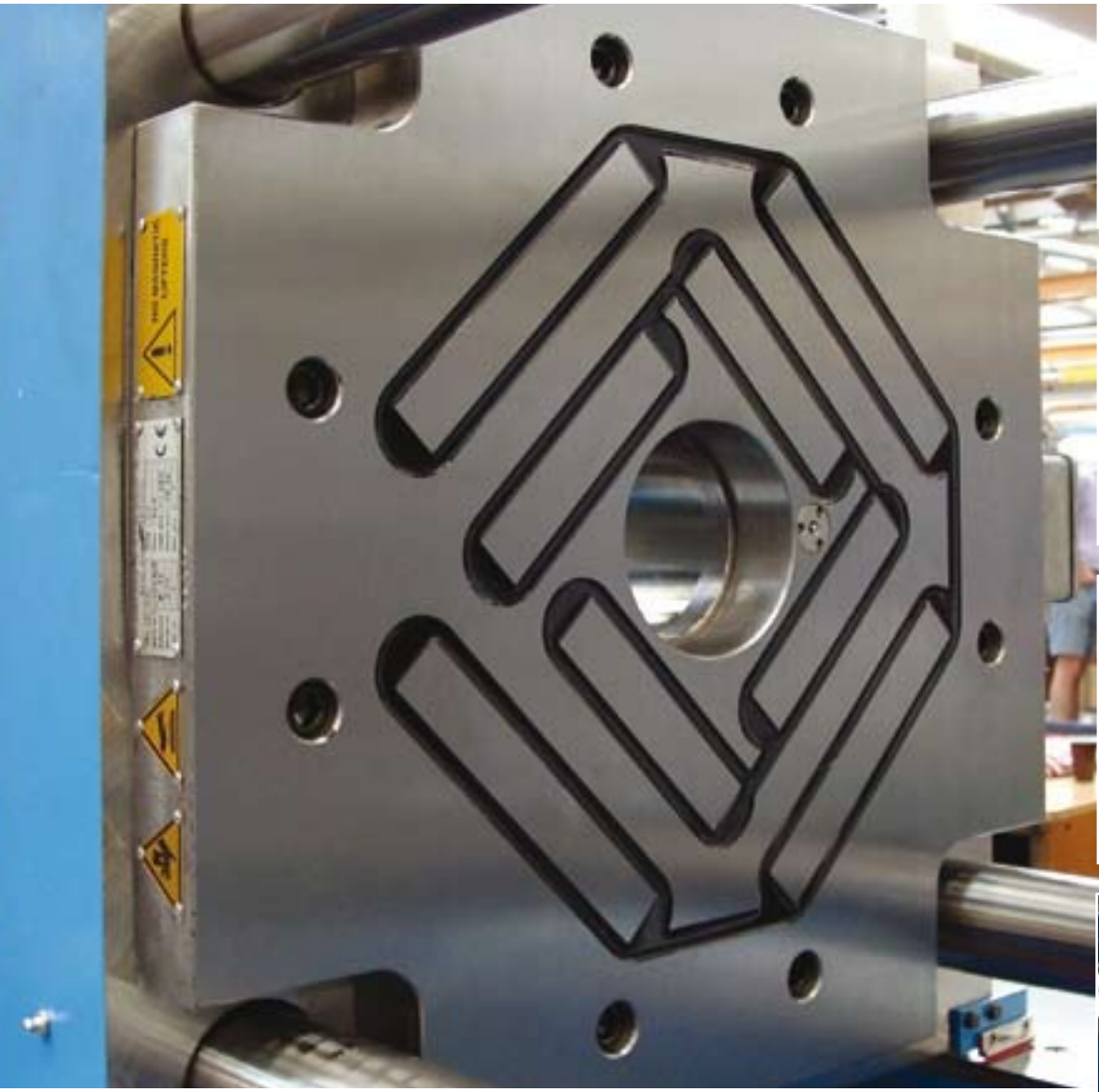
M-TECS
Magnetic clamping technique

Plastics processing, thermoplastics
Rubber processing, thermosetting plastics + elastomers
Diecasting industry
Metal forming



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Good start. Swift change.

Small batches entail frequent die change. Whenever only few parts are required, M-TECS magnetic clamping technique provides a clear competitive advantage by reducing down times and set-up costs, and hence increase your productivity.

M-TECS is a magnetic clamping technique that sets standards for magnetic quick change systems for the plastics processing industry. M-TECS 130 and M-TECS 210 operate with an electric permanent magnet technique. Special long poles give maximum safety, maximum power, and perfect reliability.

Ideal for processing thermoplastics, duroplastics or rubber.

The systems are designed to suit all types of machines (both horizontal and vertical) and can be easily retrofitted. Relatively low investment cost and short amortisation times will convince all those who depend on flexibility and speed in the plastics processing industry.

Even the smallest dies are securely held. Due to the long pole concentration effect maximum magnetic forces are transmitted into the die base plate. Machine FM 110 Electra, magnetic force 8 tons

Magnetic clamping system on URPE diecasting machine CC 125, closing force 1500 kN, magnetic force 110 kN, temperature range 230° C

Play for time with

M-TECS 130

Powerful, rapid and safe.

The quick change system for thermoplastics. Temperature resistant up to 130°C

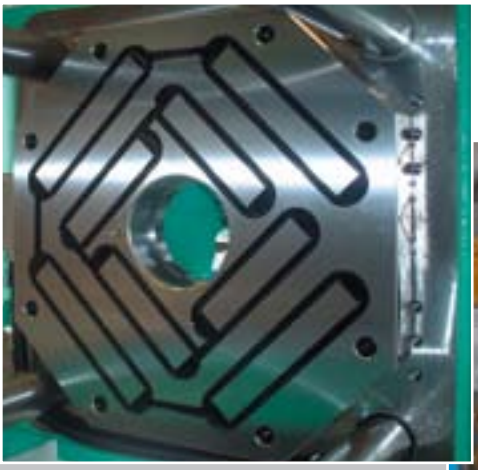
M-TECS magnetic clamping systems provide evident benefits: Injection moulds, even if not standardised, can be easily and swiftly changed without need for retooling. As a result of a clamping force which is evenly distributed all over the clamping surface, tool wear is considerably reduced which means lower tool maintenance costs. With no moving parts, the system itself is basically maintenance-free. It is suitable for retrofitting on existing injection moulding machines or incorporating into new machines.

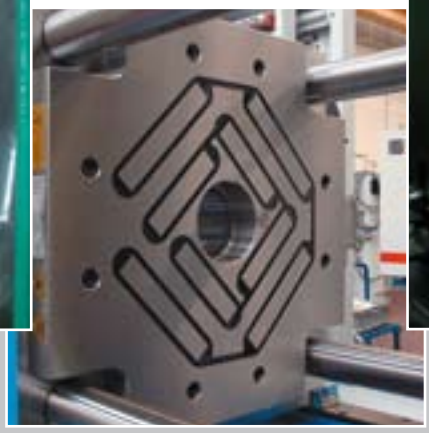
M-TECS 130 being stable up to 130°C largely covers the whole temperature range that may occur in the thermoplastics processing industry. The magnetic poles have been designed to build up an actual clamping force of 18 kg/cm².
Highest quality materials are used for the long pole design which is based on a double-magnet technique. Its outstanding power concentration makes the system much stronger than any comparable magnetic plates.

Technical data
M-TECS 130

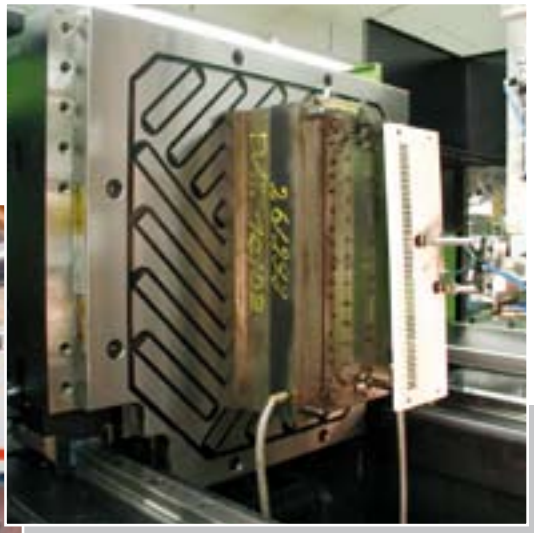
Max. temperature	130°C
Spec. magnetic force	18 kg/cm²
Effect. magnetic force	5-12 kg/cm²
Magnetic penetration depth	15-20 mm
Plate thickness	55 mm
Fastening	as per Euromap

Available for machines of between 300 kN and 50,000 kN. Larger systems on request.





M-TECS 130
Changing time just a few minutes.



M-TECS 130 – an exceptional concentration of force: the magnetic force is transmitted through the long poles with double magnets into the clamping surface.

A convincing technique to rely upon.

Basically, the electric permanent magnet clamping system is firmly kept in place even in the case of a power failure: electricity is required for just 1-2 seconds to first magnetise the system. Then permanent magnets generate the required magnetic clamping force so that the system operates independently of any power source. Only for releasing the mould is electric power required again (for 1-2 seconds) in order to demagnetise the clamping plate. The integrated electronic controls monitor the magnetic force and the tool centre and protect the system from overheating. This is our concept of advanced safety for man and machine.

M-TECS. Low downtimes. High productivity

M-TECS 210

**Reduced set-up times,
Improved temperature tolerance,
Higher production quality**

The quick change system for elastomer and duroplastics. Temperature resistant up to 210°C (240°C on request)

M-TECS 210 opens up brand new paths for the rubber and the duroplastics processing industries. With no downtime or waiting time to cool down or heat up tools, retooling times can sometimes be cut by hours. Using the advanced magnetic clamping technique, moulds can be changed even when they are hot as the operator will not make contact with them at all. This is both convenient and safe.

The magnetic plates have a complete metal surface. With no T-slot between the heating
and the tool, temperatures inside the tool are quite homogeneous, which gives an en-hanced production quality.

A real highlight is the magnetic clamping plate M-TECS 210 with an integral heating plate. Basically, M-TECS 210 is available in various designs, with or without heating, for presses, injection moulding machines or for vacuum techniques.

Technical data

M-TECS 210

For presses and injection moulding presses of any size, vertical and horizontal, with or without heating

Max. temperature	210°C (240°C on request))
Spec. magnetic force	18 kg/cm²
Effective magnetic force	Einzel: 2-7 kg/cm² Doppel: 5-12 kg/cm²
Magnetic penetration depth	15-20 mm
Plate thickness	47-85 mm (85 mm incl. heating plate)
Fastening	as per Euromap

M-TECS 210
Rubber press with vacuum chamber

M-TECS 210 on a vertical press – various shapes on a machine bed without loss of space due to clamping claws

M-TECS 210 magnetic heating plate on an elastomer machine – full-surface magnetic force gives full-surface contact and more homogeneous temperatures.

M-TECS 210
provides excellent temperature homogeneity

Guaranteed adaptability to any power level and any system design.

Both M-TECS 130 and M-TECS 210 have been CE tested and comply with the provisions of the applicable machine guidelines. The magnetic plates can be designed to fit various tool systems. With their highly flexible layout, they may be adapted to suit a large range of sizes and shapes. Each pole can be considered as an independent power source. M-TECS 130 and M-TECS 210 are available in standard or special designs, each with 2 years guarantee.

. Low set-up cost.

With optimum starting conditions, you'll make the race

M-TECS magnetic plates ensure maximum power concentration. If a die does not perfectly fit the magnetic plate surface, forces are directed to the clamping area, precisely where they are needed. This gives you maximum safety – a clear benefit particularly for small or medium moulds.

Also, large moulds are safely kept in place with the highest clamping forces. However for all types of machines, retooling takes just a matter of minutes. The solid webs between the poles result in outstanding rigidity of the structure which has a positive effect on product quality, tool wear and, as a consequence, on tool maintenance cost.

Magnetic clamping system on a vertical press for temperatures up to 240 °C

Best time for die changing

Plastic injection moulding using M-TECS 130

What advanced clamping is about:

- **Perfect technique**
- **Short downtimes**
- **Low set-up cost**
- **Increased productivity**
- **Low investment cost**
- **Rapid amortisation**
- **Enhanced production quality**
- **Fewer rejects**
- **Less mould wear,**
- **hence reduced maintenance cost**

Be ahead through innovation.
Magnetic clamping technique made by

HILMA
System
RIVI MAGNETICS

Test-run on exacting courses.

M-TECS clamping systems were first used in the ceramics industry. In this environment, where conditions are much rougher than in injection moulding, they have been widely applied and have handsomely stood the test. M-TECS 130 and M-TECS 210 have proved demonstrably convincing in terms of power, safety, and reliability. With their intriguing logic, both systems provide the most flexible and user-friendly handling.

Based on more than 30 years' experience in the field of magnetic clamping systems, M-TECS products have achieved a technological lead in the market.

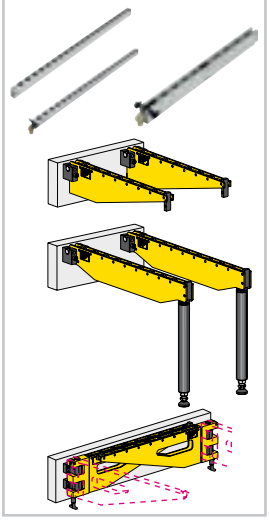
Quick change systems for any application

Hydraulic clamping elements

Couplings and multi-couplings

Die changing carts

Consoles, ball and roller ledges, accessories



Please contact us if you would like further information such as technical data sheets or spreadsheets for ROI calculation. Also, we will be pleased to provide sample calculations of investment cost and amortisation times, tailored to your application.

Partners with expertise.

ROEMHELD
Clamping technology, assembly and handling technique, linear systems, power units

STARK
Intelligent zero clamping systems

FTW Rundtischsysteme
Innovative rotary table systems

FRIEDRICHSHÜTTE
Gray cast and nodular iron castings complex and machined

HILMA
Flexible clamping systems
Machine vices
Die clamping systems
Magnetic clamping technique

We are members of the Römheld Group, and we benefit from numerous synergies which result from co-operation between companies specializing in various branches of technology. In our relationships we are globally orientated and we act as partners with industrial customers in many countries worldwide.

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