



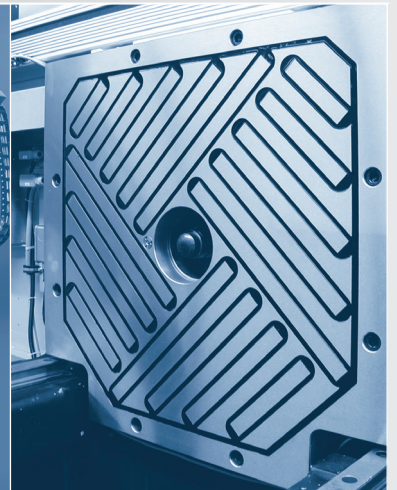
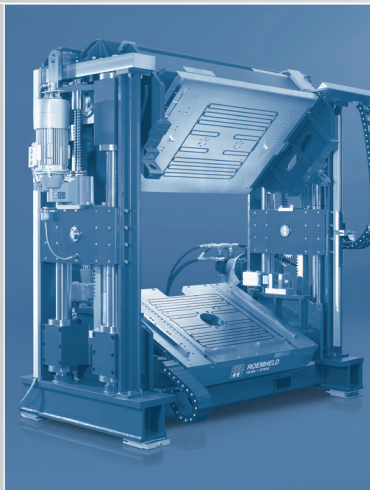
## Program Summary

# Rivi Magnetics® Magnetic Clamping Systems M-TECS



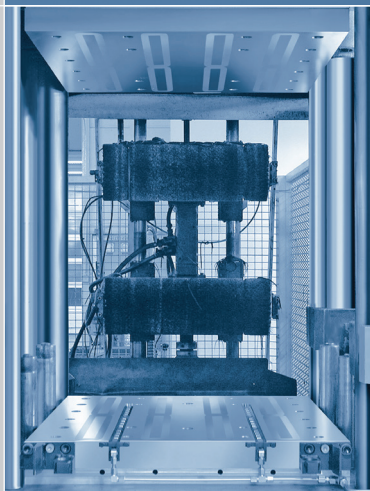
### Plastics processing M-TECS P

For thermoplastics  
up to 120° C



### Rubber processing M-TECS R

For elastomer and  
thermosetting plastics  
up to 240° C





## Good start – quick change

Gain time with M-TECS – Low downtimes.  
High productivity. Low set-up cost.



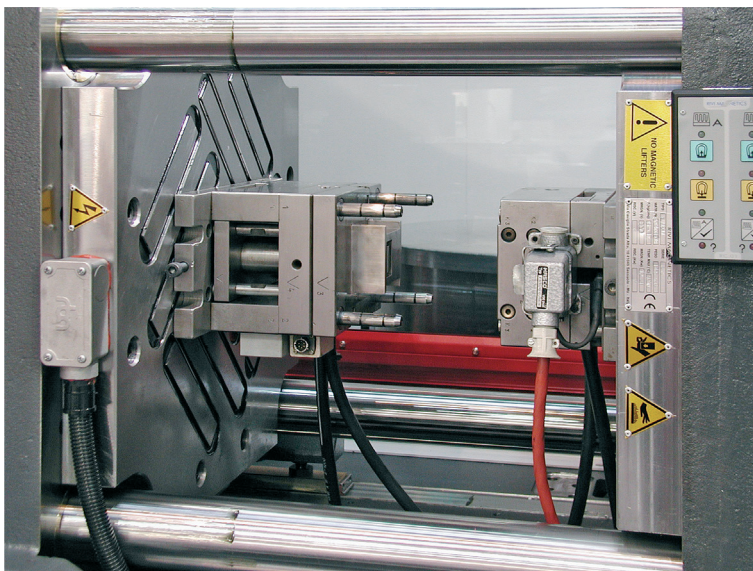
Small batches entail frequent mould change. Whenever only a few parts are required, Rivi Magnetics magnetic clamping systems M-TECS provide a clear competitive advantage:

- low downtimes
- low set-up costs
- increased productivity

### Ideal for processing thermoplastics, thermosetting plastics, or rubber

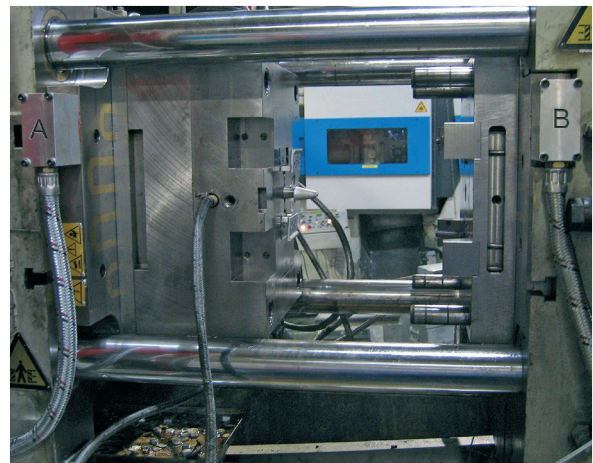
M-TECS is a magnetic clamping technology that sets standards for magnetic quick-change systems for the plastics processing industry. M-TECS P and M-TECS R operate with electro-permanent magnets. Special long poles give maximum safety, maximum force, and perfect reliability.

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 amortization times will convince all those who depend on flexibility and speed in the plastics processing industry.



Even the smallest moulds are securely held. The long pole power concentration transmits maximum magnetic forces into the mould base plate.

Machine FM 110 Electra, magnetic force 8 tons



Magnetic clamping system on URPE die casting machine CC 125, closing force 1500 kN, magnetic force 110 kN, temperature range up to 240°C.

## Test-run on exacting courses

Rivi Magnetics magnetic 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 P and M-TECS R have proved demonstrably convincing in terms of force, 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 magnetic clamping systems, M-TECS products have achieved a technological top position in the market.

## M-TECS P

### The quick-change system for thermoplastics Temperature stable up to 120 °C

Rivi Magnetics magnetic clamping systems provide evident benefits: injection moulds, even if not standardized, can be easily and quickly changed without the need for mould change. As a result of a clamping force that is evenly distributed all over the clamping surface, moulds' wear is considerably reduced which means lower mould 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.

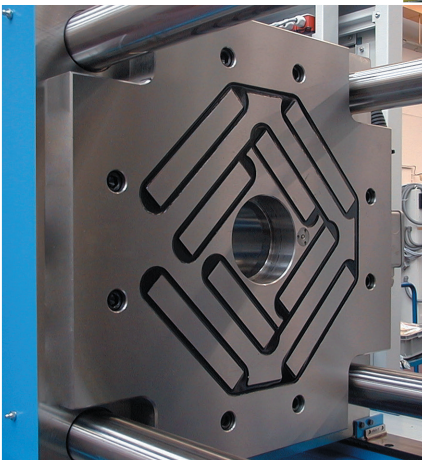
M-TECS P is stable up to 120 °C, which largely covers the whole temperature range in the thermoplastics processing industry. The magnetic poles have been designed to build up an actual clamping force of 18 kg/cm<sup>2</sup>. The highest quality materials are used for the long pole design based on a double-magnet technology. Its outstanding power concentration makes the system much stronger than any comparable magnetic plates.

#### Technical data

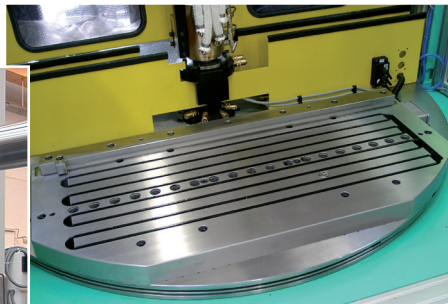
##### M-TECS P

Max. temperature	120 °C
Spec. magnetic force	18 kg/cm <sup>2</sup>
Effective magnetic force	5–12 kg/cm <sup>2</sup>
Magnetic penetration depth	15–20 mm
Plate thickness	47 mm
Fixing	as per Euromap

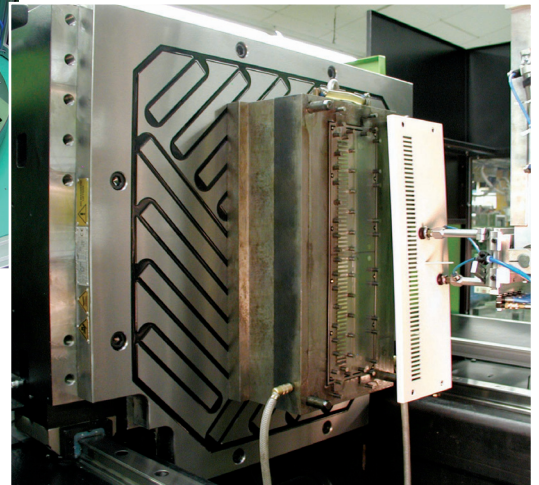
Available for all machine sizes



**M-TECS P –  
mould change in a few minutes only**



**M-TECS P –  
on a vertical rotary turntable machine**



**M-TECS P – the M-TECS power concentration:  
The magnetic force is transmitted through the long poles  
with double magnets into the clamping surface**

## A convincing technology to rely upon

The electro-permanent magnetic clamping system is firmly kept in place even in the case of a power failure. Power is only required for approx. 1 to 2 seconds to magnetize the system.

Then, the clamping system works independently of any power supply.

The magnetic clamping force is exclusively generated by the permanent magnets. Only for unclamping the mould, electrical energy is required again (for 1 to 2 seconds) to demagnetize the clamping plate.

The integrated electronic control monitors the magnetic force and the mould contact and protects the system from overheating. This is our concept of advanced safety for man and machine.



## M-TECS R

### The quick-change system for elastomer and thermosetting plastics Temperature resistant up to 240 °C

M-TECS R opens up new paths for the rubber and the thermosetting plastics processing industries. With no downtime or waiting time to cool down or heat up moulds, changing times can sometimes be cut by hours.

With magnetic clamping technology, 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 mould, temperatures inside the mould are quite homogeneous, which gives an enhanced production quality.

The system is available in various designs, for presses and injection moulding machines of all sizes, vertical and horizontal, with or without heating.

A real highlight is the magnetic clamping plate M-TECS R with an integral heating plate.

#### Technical data

##### M-TECS R

Max. temperature	240 °C
Spec. magnetic force	18 kg/cm <sup>2</sup>
Eff. magnetic force	5 - 12 kg/cm <sup>2</sup>
Magn. penetration depth	15 - 20 mm
Plate thickness	55 - 85 mm
	(85 mm incl. heating plate)



**M-TECS R**

Rubber press with a vacuum chamber

**M-TECS R on a vertical press**  
– various moulds on a machine bed without loss of space due to clamping claws

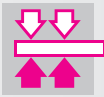
**M-TECS R magnetic heating plate on an elastomer machine** – full-surface magnetic force gives full-surface contact and more homogeneous temperatures

## Guaranteed adaptability to any power level and any system design

Rivi Magnetics magnetic clamping systems M-TECS have been CE tested and comply with the provisions of the applicable machine guidelines 98/37 EEC, 73/23 EEC and EMC 89/336.

The magnetic plates can be designed to fit various mould systems. In design, they are flexible and adaptable to different requirements in size and shape. Each pole can be considered as an independent power source. Standard or special designs are available.

You get a two-year guarantee on both systems.



## With optimum starting conditions, you'll make the race

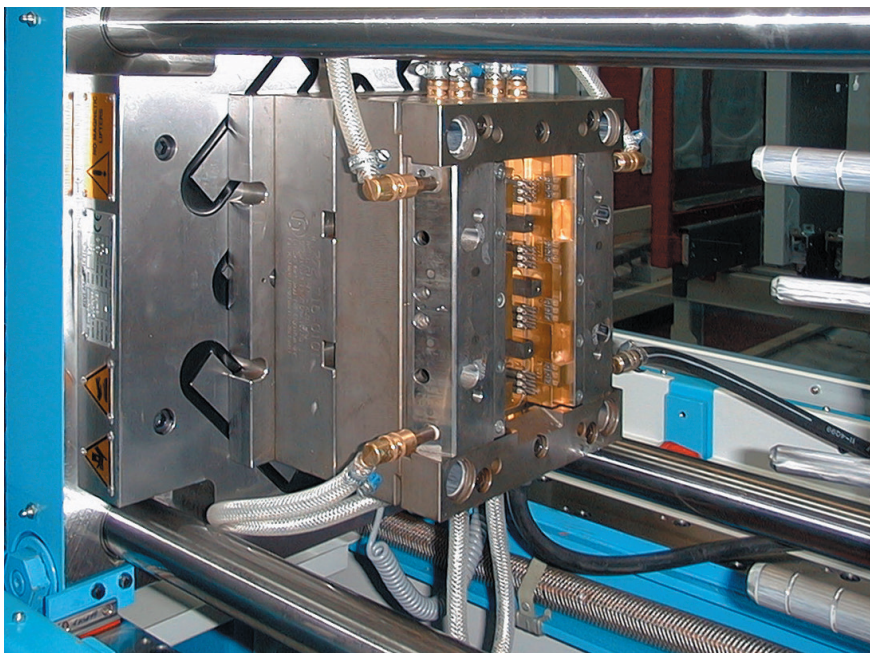
M-TECS magnetic plates ensure maximum power concentration. If a mould does not completely cover the magnetic plate surface, forces are directed to the clamping area, precisely where they are needed. This gives you maximum safety – a clear benefit, particularly for small or medium moulds.

Also, large moulds are safely kept in place with the highest clamping forces. For all types of machines, mould change takes just a matter of minutes. The solid webs between the poles give the structure high rigidity. This has a positive effect on the quality of the production and the mould's wear or maintenance costs.



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

## Best times for retrofitting



Plastic injection moulding using M-TECS P

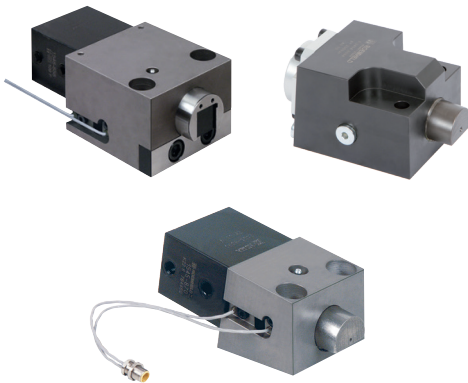
### What advanced clamping is about:

- perfect technology
- short downtimes
- low set-up costs
- increased productivity
- low investment costs
- rapid amortization
- enhanced production quality
- fewer rejects
- less mould wear, hence reduced maintenance costs

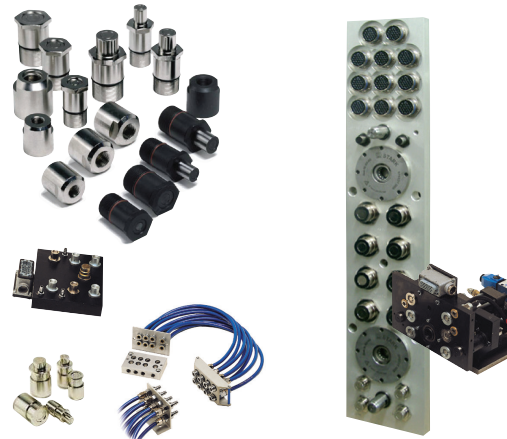


## Die clamping and changing systems from Hilma-Römhheld

### Hydraulic clamping elements



### Couplings and multi-couplings



### Die changing carts



### Ball and roller bars, consoles and accessories



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

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**Magnetic Clamping Systems**



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