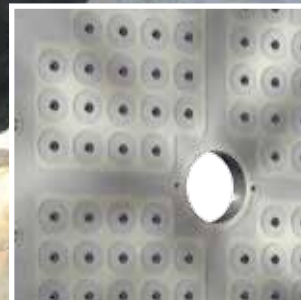


PRESSMAG THE MAGNETIC FORCE

The complete range of permanent electro-magnetic clamping solutions from the one global source you can trust:
EASchangesystems



Pressmag permanent electro-magnetic

EASchangesystems offers a complete range of cost-effective system automation solutions for all your QMC, QDC and coupling applications:

- mechanical clamping systems
- hydraulic adaptive and integrated systems
- magnetic clamping systems
- ejector couplers
- mould-locking devices
- mono- and multi-coupler solutions
- mould-change tables & transportation vehicles
- inspection- & mould-tilting units
- storage systems
- die-lifters
- pre-rollers
- solution consulting
- application engineering
- project management
- system installation
- trouble-shooting
- R.O.I. calculations

All your SMED solutions from one reliable, global source:
EASchangesystems

EASchangesystems are global, leading-edge innovators in the design and manufacture of factory automation solutions and have been serving the industry for nearly 25 years. We have a worldwide reputation for excellence in Quick Mould Change (QMC) and Quick Die Change (QDC) technology.

www.easchangesystems.com
info@easchangesystems.com



clamping solutions from EASchangesystems

Why magnetic clamping?

The primary advantage of magnetic clamping solutions over traditional hydraulic or mechanical clamping systems is that it avoids the need of standardized machine back-plates for vertically loaded moulds – which means:

- no extra investment needed to adapt moulds.
- moulds of any shape can quickly be clamped in place.
- existing moulding machines can easily be retrofitted.
- equally spread holding force avoids damages to the mould and prolongs its service life.
- lengthy machine standstill times for the mould-change operation are dramatically reduced from hours down to minutes.
- with the clamping force bigger than the opening force of the machine itself, operator safety is optimized.

What differentiates EASchangesystems from the rest?

With many vendors claiming to offer the best permanent electro-magnetic clamping solution, it is important to understand the technology differentiators available through EASchangesystems and their two distinct designs.

First of all, being a global company with an important worldwide distribution and service network, we have installed hundreds of permanent electro-magnetic clamping systems throughout the world. This extensive experience enables us to make sure that our **Pressmag** range of systems is engineered for use on injection moulding machines in combination with moulds... not just an application set-up taken from machining centres.

To meet the industry's specific requirements, our innovative **Pressmag** design takes into account all the application needs; day-light opening, holding force, and temperature range. It goes without saying that small machines with smaller platens have different requirements when compared with the needs of big machines using large and heavy moulds – and that these different application parameters cannot be fulfilled with only one system.

Pressmag SP systems with 47 mm square-pole design and only 38 mm plate thickness are for moulding machines up to 400 tons. Ensures maximum day-light opening and evenly maintained clamping forces.

Pressmag HP systems with long-pole design and only 55 mm plate thickness are for moulding machines bigger than 400 tons. Ensures highest magnetic flux concentration and superior clamping forces.

Pressmag SP 240 systems are for moulding machines working in operating temperatures up to 240 °C.



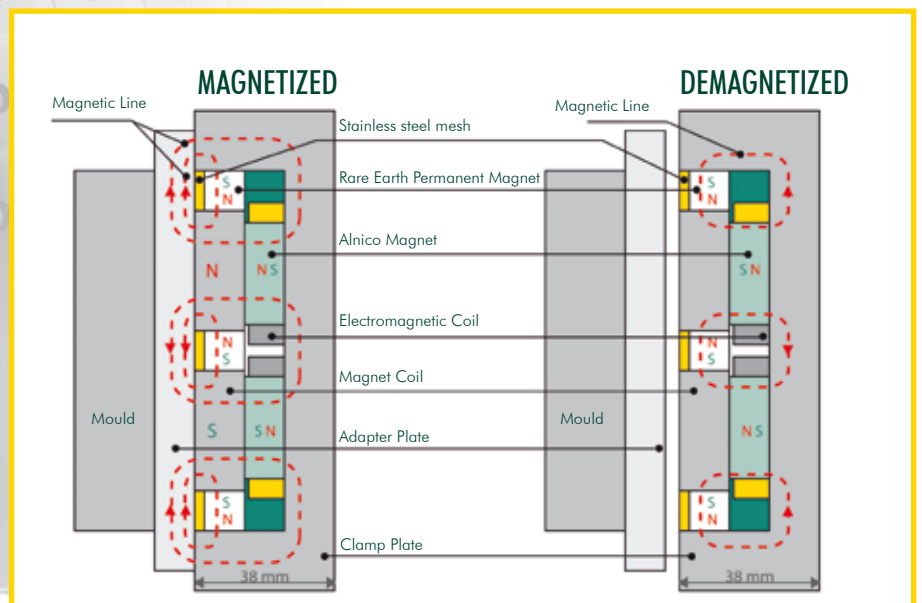
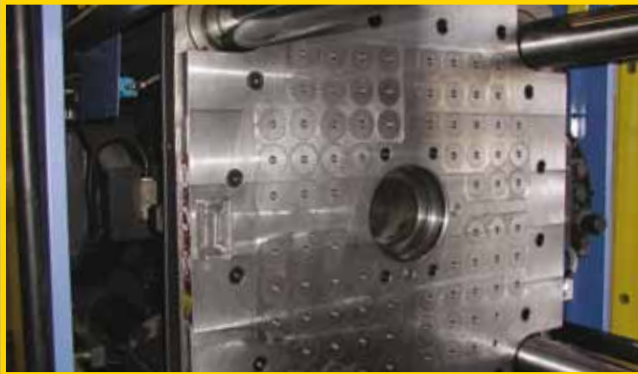
Permanent electro-magnetic clamping optimized

Pressmag SP

Permanent electro-magnetic **Pressmag SP** systems have a 47 mm square base and feature two invertible AlNiCo magnets which are surrounded by an isolated coil. The square poles are fitted with none-invertible, permanent, rare-earth magnets and are round on the clamping surface.

The coils surrounding the invertible magnets generate an electromagnetic field which inverts the magnets within a fraction of a second. The moulds are thus clamped for an unlimited amount of time – without the need for more electric energy... or heat generation. A new electric pulse will de-magnetize the system, releasing the mould and clearing the clamping surface of any magnetic flux. After a magnetizing sequence, each square pole becomes either a North or a South Pole – and is again neutralized after having been de-magnetized.

The total holding force is in direct proportion to the number of magnetic poles engaged with the mould, and takes into account the application's specific working condition. To ensure highest clamping forces at all times and to enable maximum application versatility within a specific area around ejector and mounting holes, **Pressmag SP** systems have small poles. Furthermore, the **Pressmag SP 100** model has square poles with resin, whilst for the **Pressmag SP 150** unit, a laser-cut stainless steel mesh seals and covers the complete system, providing an easy to clean, perfectly flat steel-to-steel surface.



with Pressmag solutions from EASchangesystems

Pressmag HP

Permanent electro-magnetic **Pressmag HP** models are compensated systems. This means that, when activated, the long pole becomes the North Pole and the frame plate the South Pole.

In this set-up, the permanent Neodymium and AlNiCo magnets stay always active. During the magnetizing sequence, the electric current in the coils reverses the polarity and the magnetic fields are oriented to the polar face of the chuck, which becomes active and clamps the mould in place. A new electric current then reverses the polarity of the magnets, turning the system off and releasing the mould.

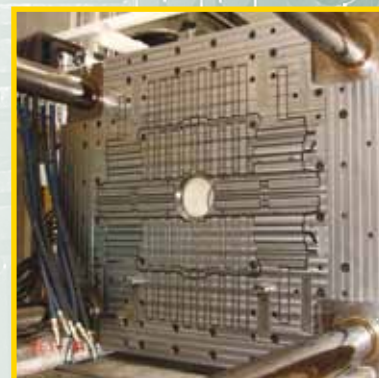
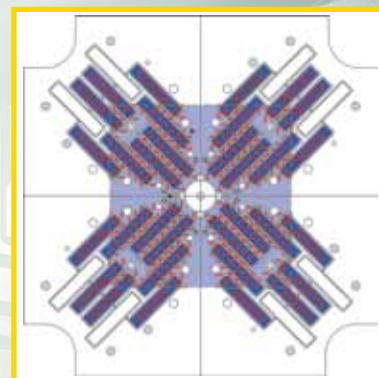
For larger moulding machines, higher magnetic flux concentration can be obtained – resulting in increased clamping forces. For this, all long poles need to be located within the tie-bar area, non magnetic filling plates must be added to the sides of the plates, and a stainless steel strip needs to be fixed at the back corner of the filling plate.



Working conditions and specifications

Permanent electro-magnetic Pressmag clamping solutions from EASchangesystems are totally reliable and safe. However, whenever the well-being of man and machine is at stake, some simple rules apply:

- Magnetic platens and mould back-plates must be free of marks, dirt, rust and grease. Failing to keep these areas clean creates an air gap between the magnetic platen and the mould back-plate – which results in a significant loss of clamping force.
- Mould back-plates must be made from non-alloy steel. In case alloy steel is used, EASchangesystems offers the specially designed **Pressmag T** electro-magnetic clamping solution.
- Back plates must be machined to a roughness of $Ra = 1,6$ or better, with a minimum flatness of 0,1 mm/meter.
- For **Pressmag SP** models, the mould back-plate must have a minimum thickness of 20 mm, and a minimum of 30 mm for **Pressmag HP** models.
- The standard **Pressmag HP** long-pole system generates a clamping force of 25,0 kN/pole, the **Pressmag SP** 47 mm square-pole system a clamping force of 2,4 kN/pole.
- **Pressmag SP 100** systems can withstand operating temperatures up to 100° C.
- **Pressmag SP 150** systems can withstand operating temperatures up to 150° C.
- **Pressmag HP** systems can withstand operating temperatures up to 100° C.
- With no interference of moving parts in moulds or dies, the magnetic flux depth for the **Pressmag SP** system is 20 mm, and 25 mm for all **Pressmag HP** models.
- The **Pressmag** system's magnetic holding power is based on the opening force of the injection moulding machine.
- Any opening in the back-plate of the mould will limit the clamping force.
- Minimum mould dimensions are provided for every system to ensure that the mould is clamped securely – in relation with the injection moulding machine's opening force.



Features and benefits of Pressmag

Location- and centering ring

For moulding machines with capacities of up to 200 tons, **Pressmag SP** systems are delivered without location and centering rings. If required, these are available as an option and must be requested separately.

All other **Pressmag** systems come with a replaceable, hardened centering ring to facilitate quick and precise mould set-up. The ring also ensures that the **Pressmag** plates are mounted correctly onto the moulding machine.



Sensors

Pressmag HP systems are equipped with two Proximity Switches and a Temperature Control Switch. The Proximity Switch gives a signal if there is an air gap that becomes too big – or when no mould is detected. It is also used to stop the machine.

A Flux Sensor can be supplied on request. It detects a change in the magnetic flux if an alloy steel mould is used that cannot be clamped. It also serves as an additional safety control measure when connected to the moulding machine.

Pressmag systems for moulding machines with capacities of less than 200 tons are supplied with one Proximity Switch for each plate.



Junction box

Machined into the body of the plate, the Junction Box becomes an integral part of platens. Sealed and waterproof, it can be removed to give access to cable connections.



solutions from EASchangesystems

Mounting and/or ejector holes

In accordance with international standards; Euromap, SPI and JIS, each Pressmag system is fitted with mounting and/or ejector holes. Furthermore, threaded holes located on top of the plate allow for lifting eyes to be installed to simplify transportation.

Patented mechanical safety device

With security being a key factor, EASchangesystems have developed a fully integrated, adaptive safety device which prevents moulds from falling into the machine in case of mishandling – or should clamping power not be sufficient to hold the mould in place.

Available as an option, this patented mechanical device stops the machine in case something goes wrong. It plugs onto the mould and key slots on the Pressmag system will actually prevent the mould from dropping – avoiding accidents, costly machine damage, and lengthy production standstill.



Controls according to VDMA/SPI

Controls

EASchangesystems controls are designed and built especially for **Pressmag** solutions. They ensure safe and trouble-free operation of your injection moulding or die-change operation.

- Responding to VDMA and SPI recommendations, we define the interface between moulding machine and our **Pressmag** system (MCS) as follows:
 - E70.0 when existing moulding machines are retrofitted.
 - E70.1 for new machines with controls already integrated.
- **Pressmag SP 100** systems can be delivered with a simple Proximity Switch interface for moulding machines that are not conform with the Euromap E70 interface.
- Magnetizing and de-magnetizing sequences are only to be carried out in the Mould Change Mode – never in Manual, Semi Automatic or Automatic Modes.
- Only activate the magnetizing sequence if Proximity Switch gives signal to do so (Mould Loaded).
- Two safety channels.
- Machine operation stops completely in case the magnetic clamping system alarm goes off, and it will be impossible to re-start the moulding machine until the problem has been corrected.
- To re-start the machine, the MCS Alarm Switch has to be re-set with a special key, the platens need to be de-magnetized, and a new magnetizing sequence has to be initiated. This procedure ensures the full recovery of the correct clamping force.
- Operators must carry-out magnetizing and de-magnetizing sequences using both hands; one hand to activate the Key Switch for plate selection, the other hand to operate the Push Button that initiates the magnetizing or de-magnetizing operation (two simultaneous controls must be activated to operate the MCS).

EASchangesystems controls fully comply with the Machine Directive (Safety of Machinery & Electrical Equipment of Machines) and the EMC Directive (Electro Magnetic Compatibility).



Sensors

EASchangesystems offers a complete range of sensors, especially designed for the **Pressmag** range of permanent electro-magnetic clamping units.

- Proximity Switch – Detects mould presence and monitors air gap during machine operations.
- Sensing Device – Detects any debris on tool back-plates, measures flux level after the magnetizing sequence, and monitors the air gap during machine operations.
- Temperature Sensor – Monitors operating temperatures.

Readings

- Data measurement during magnetizing process to confirm magnetic saturation.
- Data measurement during de-magnetizing process to confirm sequence completion.
- Voltage monitoring during magnetizing and de-magnetizing process.
- Monitoring of main frequency during magnetizing and de-magnetizing process.
- All readings are carried out by an integrated PLC system.

Human interface with control panel display of moulding machine

- Magnetic status of moveable and fixed plates during magnetizing and de-magnetizing process.
- Proximity switch status of moveable and fixed plates.
- Alarm status.
- Flux status of moveable and fixed plates.
- Temperature sensor status (only if system has this option included).

Temperature selection

Pressmag SP 100

For machine back-plates operating in temperatures up to 100° C.

Pressmag SP 150

For machine back-plates operating in temperatures up to 150° C.

Pressmag HP

For machine back-plates operating in temperatures up to 100° C.

Pressmag SP 240

For machine back-plates operating in temperatures up to 240° C.

For every application – the complete range of permanent electro-magnetic clamping solutions from EASchangesystems... and much more

Vertical presses

EASchangesystems offers an extensive range of innovative QDC (Quick Die Change) products, tools and systems for the metal stamping industry. Our line of QDC equipment is designed to help manufactures save time and costs during die-change operations on vertical presses used for applications such as metal stamping and injection moulding.

In addition to the **Pressmag** unit that clamps the tool's upper and lower part, EASchangesystems offers die lifters to raise the tool's lower part above the press-bed for easy positioning. Also available are pre-rollers to simplify loading and unloading of the tool in front of the press.



Horizontal mould-change on injection moulding machines

For horizontal mould-change operations, EASchangesystems offers – in addition to magnetic **Pressmag** clamping solutions – a wide selection of time-saving rollers (driven and non-driven), mould-change tables and transportation vehicles, multi-couplers, plus mould locking devices for standardized mould back-plates.

The application on the right from a leading automotive equipment supplier shows a horizontal, fully automated mould-change set-up from EASchangesystems. Thanks to our solution, the complete change-over time for a 40 ton mould is carried out within less than three minutes. It took several hours before – using conventional methods!

Hundreds of application examples such as this one attest to the important time and cost savings made possible with innovative QMC and QDC solutions from EASchangesystems. We can help you achieve similar improvements with your particular application. All you need to do is get in touch with us.



Rubber and ceramic presses

For high temperature applications such as rubber and ceramic presses, the EASchangesystems **Pressmag SP 240** solution can work in operating environments up to 240° C.



Die-casting machines

It is perfectly ok for the **Pressmag SP 240** system to work in high temperature die-casting applications.

Rotating tables

EASchangesystems also offers magnetic clamping solutions for multi-colour rotating plate presses – as well as for machines without tie-bars and other specialized applications. We're ready to help and await your call to action.





Worldwide contacts

Europe/The Netherlands

EAS Europe B.V.
De Hooge Hoek 19A
3927 GG Renswoude
The Netherlands
kvk: 30173173
Tel.: +31 318 477 010
Fax: +31 318 477 020
E-mail: info@easchangesystems.com

France

EAS France S.A.R.L.
604, Voie Galilée
ZI Alpespace
F 73800 Ste Hélène-du-Lac.
Tel.: +33 479650410
Fax: +33 479650686
E-mail: philippe.aubert@easchangesystems.com

Italy

EAS MED S.r.L.
Vimercate
Tel.: +39 335256569
Tel.: +39 3409343820
Fax: +39 039 9719504
E-mail: walter.brambilla@easchangesystems.com
E-mail: marcello.brambilla@easchangesystems.com

China

Suzhou EAS Mold & Die Change Systems Ltd. Co.
No.1188 Pangjin Road Wujiang City,
215200, PR China
Tel.: +86-(0)512-63093091
Fax: +86-(0)512-63093090
E-mail: sales-china@easchangesystems.com

USA

EAS Mold & Die Change System Inc.
N50 W13740 Overview Dr Suite F
Menomonee Falls, WI 53051
United States of America
Tel.: +1 262 783 7955
Tel.: +1 800 664 7086
Fax: +1 262 783 9799
E-mail: cliff.drake@easchangesystems.com



www.EASchangesystems.com