

Krauss Maffei

Powerful. Versatile. Durable. Machines in the MX Series

Engineering passion

Krauss Maffei

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KraussMaffei is the market leader in large-scale injection molding machines. Our MX Series is recognized around the world and is principally characterized by the hydro-mechanical dual platen clamping unit which we developed ourselves. The performance spectrum ranges from compact injection-molding units with basic automation through to highly complex production cells and complete factory planning.

Developed by KraussMaffei and produced in China – with the MX, you can increase your process quality and your production efficiency. Take advantage of our well-founded expertise, individually customized solutions and a professional service team in China.

The highlights of the MX Series at a glance:

Powerful thanks to:

- Maximum speed combined with maximum precision
- Outstanding melt quality and excellent shot weight consistency
- High level of part quality

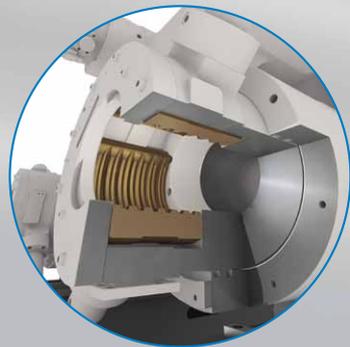
Versatile thanks to:

- Customer-specific solutions
- Platform for wide technology spectrum
- Intelligent, user-friendly control system

Durable thanks to:

- Construction and components optimized according to load case
- Low maintenance effort, simple retrofitting
- Intelligent pairing of premium-quality materials

Impressive tour around the MX injection molding machine



Innovative locking system
Maximum speed combined
with maximum precision

Maximum modularity
Customer-specific solutions

Krauss Maffei

MX FS3-8100

Compact dual platen clamping unit
Absolute platen parallelism for low mold
wear and first-class part quality

MC5 control system
Simple and clearly
arranged operation



Ideal interaction between automation and machine

Proven, cost-effective overall concept

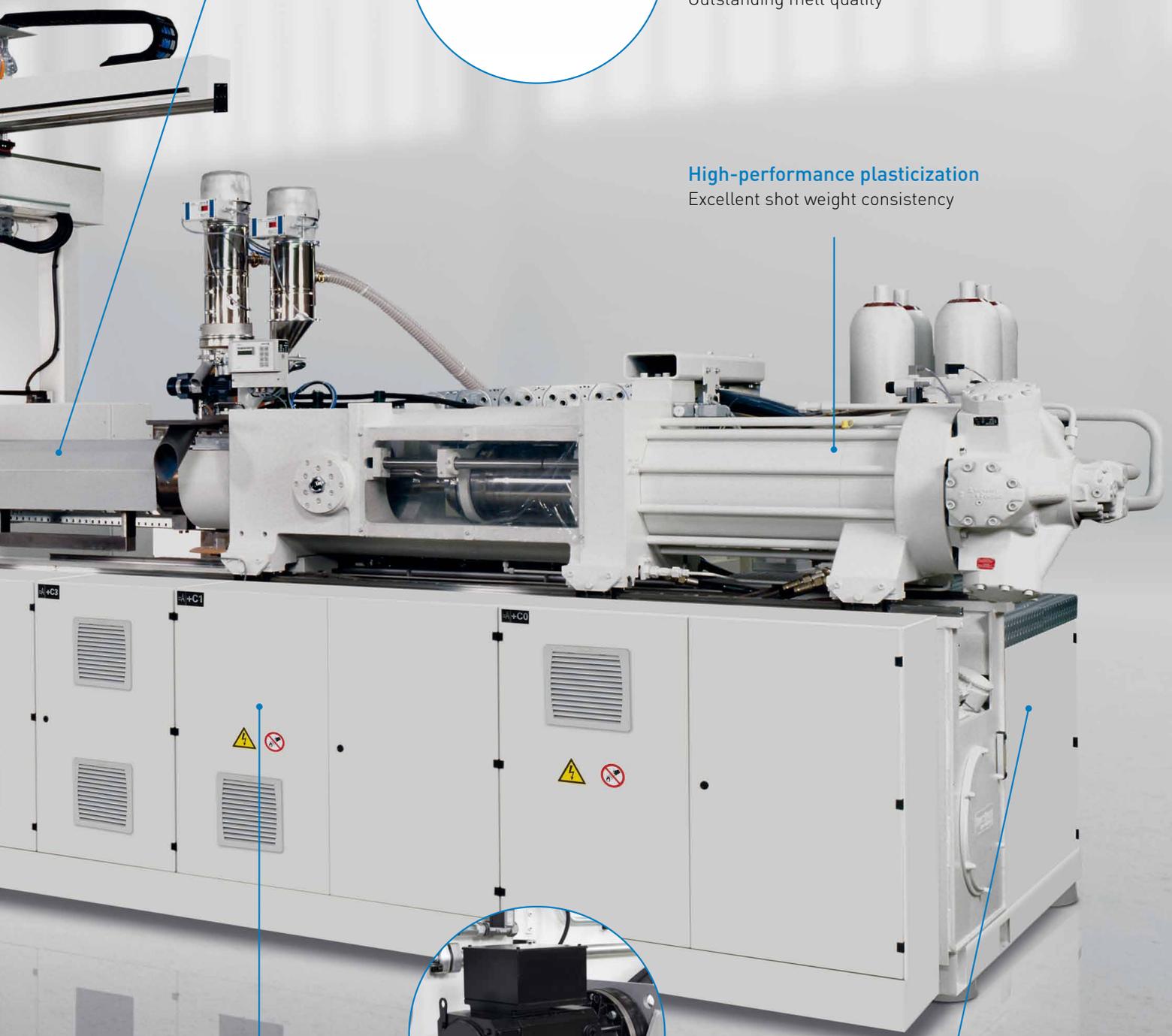


Tried-and tested screws and non-return valves

Outstanding melt quality

High-performance plasticization

Excellent shot weight consistency



Easy-maintenance design

Fast and easy preventive maintenance



Highly efficient hydraulic system

Energy-saving operation combined with high level of dynamism

Compact dual platen clamping unit

Robust in design, fast in production and low-maintenance in operation

The MX Series from KraussMaffei is your solution for demanding tasks. Its hydro-mechanical dual platen clamping unit is characterized by maximum reliability and flexibility. Force flow-optimized sliding shoes in combination with guided tiebars guarantee exactly parallel clamping movements and permanent mold protection. The intelligent locking concept ensures extremely short locking times.

Absolute platen parallelism thanks to innovative clamping technology

Force flow-optimized sliding shoes reliably support the moving mold fixing platen as it travels on the machine bed. The sliding shoes are guided horizontally at the side. Even for very heavy molds and maximum opening widths, exact platen parallelism is guaranteed at all times. In addition, the tiebars are permanently guided via guide bushings. The dynamic movement is produced by two movement cylinders which are arranged diagonally and positioned on the outside.

Very short locking times – bringing innovation, even down to the smallest detail

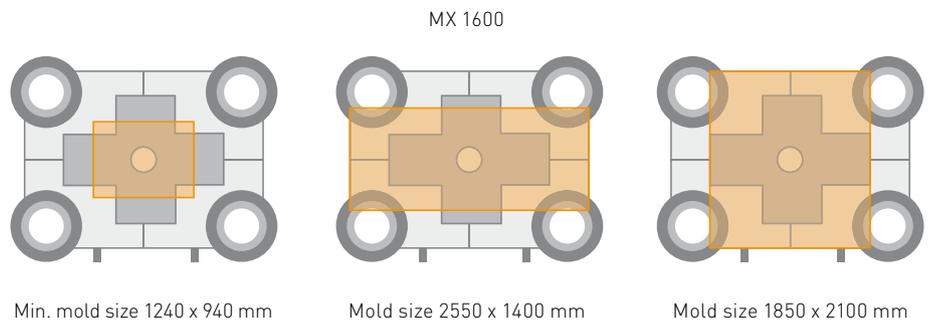
The hydro-mechanical fourfold locking on the tiebars is carried out by saw-tooth shaped elements behind the moving platen which mesh together. It is designed for very short locking times combined with precise positioning. The even application of force through progressive tooth flank play and the friction-optimized material combination of brass and steel together ensure maximum service life.

Building up clamping force quickly and reliably

The special pressure pads of the MX Series allow clamping force to be built up very quickly, and the pads always position exactly. The clamping force is built up at precisely the same time on all four tiebars.

Your advantages:

- Clamping concept which works with speed and precision
- Space-saving design
- Reduced servicing effort
- Increased mold service life (service life)
- Ideal for high mold weights



The solid mold fixing platens ensure outstanding rigidity and guarantee extremely low mold wear



Encapsulated locking unit and pressure pads for extremely short cycles. The moving platen is manufactured in a box structure and optimized according to FEM (finite element method).

Durability is the keyword: Maximum mold protection combined with first-class part quality

Solid mold fixing platens ensure a high level of mold size flexibility for the MX and guarantee excellent platen rigidity. The mold fixing platens have been designed

in such a way that the mold parting lines are not affected and the molds are permanently protected. Thanks to the reduction in mold wear, you benefit from significantly lower maintenance costs and can sustainably optimize your production costs.

Low-maintenance operation

Self-lubricating guide bushes and slide rails with centralized lubrication ensure low-maintenance and trouble-free operation.



The force flow- and weight-optimized sliding shoes ensure that the moving platens are guided securely.



Premium-quality material combinations increase durability.

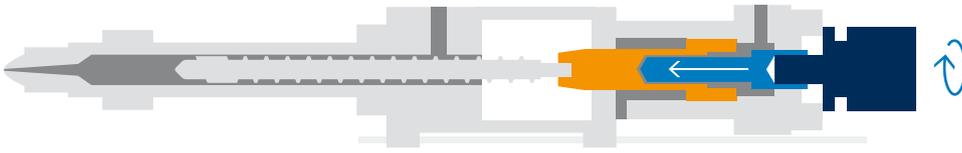


Molds are protected in every position thanks to the guided tiebars.

First-class plasticization, precise injection unit Exact in performance tuning, wear-resistant in operation



The injection unit is at the heart of our machines. It guarantees maximum precision and process stability.



Linear force transmission ensures maximum shot weight consistency.

Outstanding shot weight consistency combined with first-class repeatability

Take advantage of unlimited precision. The proven in-line injection unit with its rotary piston design transmits the force centrally via the injection piston onto the screw. Injection regulation of pressure and speed is a standard feature of the MX Series. It guarantees you maximum process stability and first-class repeatability.

Maximum productivity

The MX Series offers you a choice between hydraulic and electric screw drives. The electric drives enable plasticization in parallel to other machine movements, thereby creating a further increase in productivity.

High throughput with outstanding melt quality.

Our plasticizing systems are characterized by their excellent melt quality and cover a broad range of applications for an extremely wide variety of plastics. Thanks to our years of experience and technological expertise, we understand the complex operations involved in plasticization. This is why we can guarantee a high melt specification, high throughputs and optimum melt quality. Choosing the right plasticizing system can improve the qual-

ity of your products and increase value retention.

The right screw for every plastic.

In order to provide an ideal solution for the processing requirements of different polymers, we have developed material- and processing-specific plasticizing systems.

In addition to outstanding melt quality and high throughputs, high-tech plastics mostly require additional wear protection against adhesion, abrasion and corrosion. As a result, service life is also extended. Depending on the part requirement, special plasticizing systems containing specific screws, non-return valves and cylinder fittings are available to you. Using our plasticization systems, you can process the following materials, among others:

- PC and PMMA materials
- Short and long glass-fiber reinforced plastics
- Blends
- Recyclates

Plasticization is our core competence. In this area, there are virtually no limits set on your material-specific requirements.

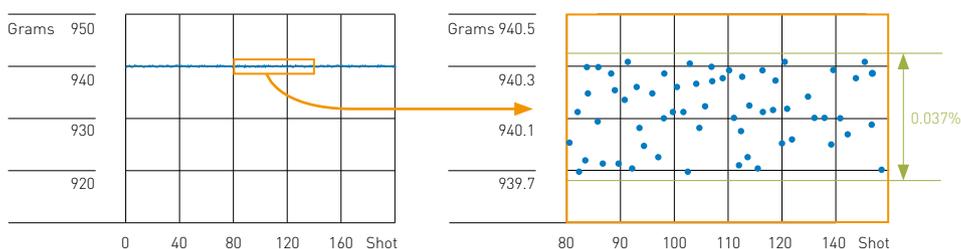


As a specialist in plasticization systems, we have a wide selection of screws in our range for you to choose from, up to a diameter of 265 mm

Your advantages:

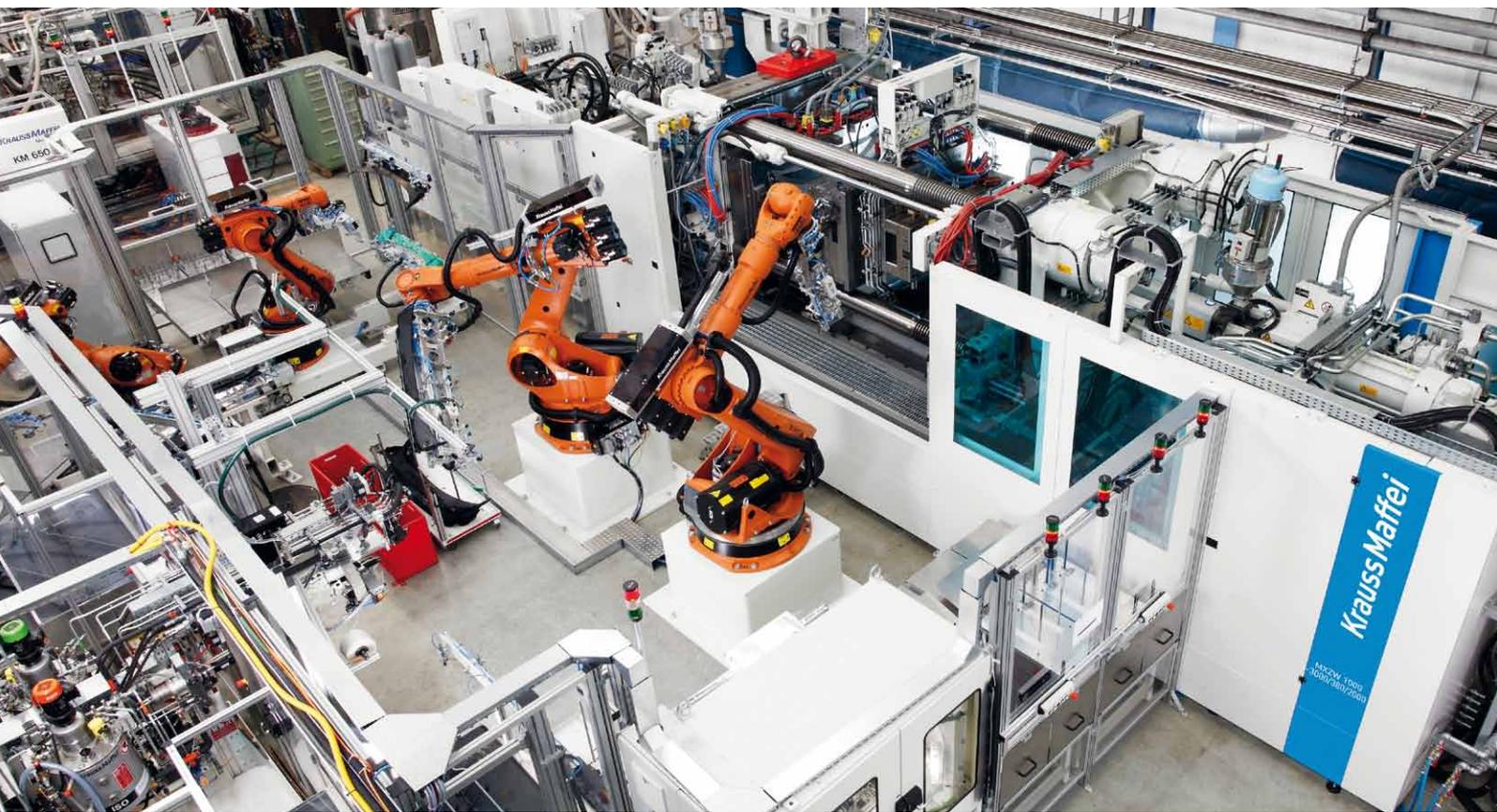
- Outstanding shot weight consistency
- High level of part quality
- First-class process stability
- Longer service life
- High expertise with special polymers
- Fast plasticizing change

Shot weight consistency



Shot weight consistency 0.037%, based on the example of 20 liter buckets in 2 cavities with a shot weight of 940 g (PE)

Flexibility through modularity The MX machine can be individually combined



Versatile through customer-specific solutions: The MX machine can be individually configured

For MX Series machines, KraussMaffei can offer a great number of combinations for your individual clamping, injection and screw selection. Thanks to the comprehensive option catalog (ZE/Additional equipment), the machines can be configured for your requirements. We offer classic options such as hydraulic and pneumatic cascade control, pneumatic and hydraulic core puller functions on a fixed or moving mold fixing platen. In addition, we also have optional modules

such as DecoForm for over-molding and back-compression molding sensitive decors (e.g. textiles, carpets, TPO/PP foam or imitation leather sheets) in our portfolio. These can be individually connected via the control system.

Standardized interfaces (according to EUROMAP 70.0 and 70.1) facilitate quick mold change through the use of magnetic clamping technology.

Your advantages:

- Machine built according to the customer's requirements
- Quick mold change
- Energy-efficient drive systems (possible savings of up to 50 per cent)
- Efficient, modular hydraulic systems

Highly efficient hydraulic system

Precise in control, fast in controller behavior, energy- and cost-efficient

No compromises: Maximum injection speed at maximum injection pressure

In combination with the in-line injection unit, the intelligent hydraulic drive concept allows the machine to be driven within the key parameters of application-related process control. Especially for large and complex components, maximum injection speed and maximum injection pressure is required during the filling and holding pressure stage. This allows extremely short injection times and, consequently, a cycle time reduction of 5 to 15 per cent.

With the MX Series, we have opened the most useful process window possible in injection molding technology.

High level of process reliability thanks to precise and quick-acting proportional valves

Contrary to the market trend, KraussMaffei has always appreciated the value of precise and premium-quality proportional and control valves. In combination with the in-line injection unit, the injection process is controlled as a standard feature. This leads to extremely low levels of component stress and component distortion. In turn, this allows the MX, with its premium-quality hydraulic system, to achieve a level of process stability that is unmatched by the competition. For us, maximum availability and energy efficiency go without saying.

Focus on oil filtering: For minimal maintenance and operating costs

A bypass filtration system in the low pressure range allows a high deposition rate and long filter service life. During filtration, oil is continuously cleaned of particles via a fine filter. The level of oil purity achieved in this way leads to a longer service life for hydraulic components and the oil itself.



Parallel movements of ejector and core puller systems

Standard parallel functions of ejector/core puller systems and mold movements reduce your cycle times.

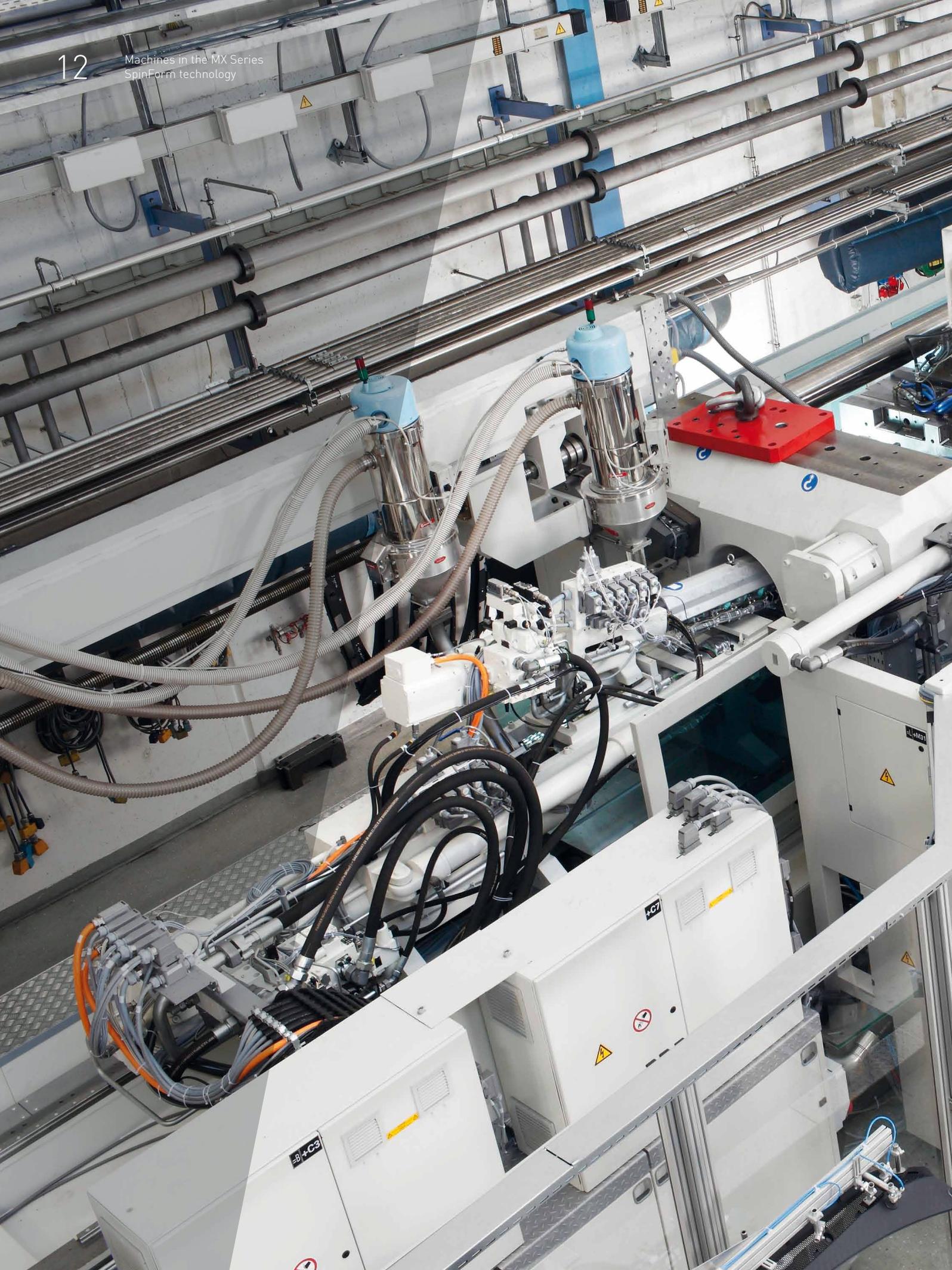
"Blue Power" efficiency solution – "Servo Drive Technology"

Through the optional use of "Blue-Power Servo Drive" technology, energy consumption is further optimized compared with variable delivery pumps. The savings made in comparison to other hydraulic concepts are between 10 and 30 per cent, depending on the particular application and, in comparison to

conventional hydraulic concepts on the market, may even be up to 50 per cent. A positive secondary effect is the lower noise level of servo drives.

Your advantages:

- Cycle time reduction of 5 to 15 per cent
- Quick dry-cycle time
- Increased injection performance
- Extremely low oil and lubricant consumption
- Easy-maintenance concept
- Durable hydraulic system
- High level of performance



MX SpinForm technology Your "turnaround" to more cost-effective production for functional components

SpinForm technology enables optimum use of multi-component injection molding with advanced machine and mold technology. KraussMaffei provides you with the robust machine basis for your mold technology and the necessary process expertise, in order to exploit swivel plate technology to the full extent.

With SpinForm swivel plate technology, KraussMaffei has provided a multi-component concept which can be used to effectively optimize multi-component injection molding. In comparison to turntable molds, SpinForm offers numerous advantages, among which doubling the output while maintaining the same clamping force achieves the greatest effect. The SpinForm concept cannot be overlooked even for the production of large-scale two-component parts. The basis for SpinForm consists of robust, standardized machine technology which has been successful on the market for many years and sets the standard in this technology sector. This concept works extremely accurately

and also provides the precision required for complex compression processes. Thanks to the dual platen system and the spin unit, an extremely wide variety of different automation solutions can be quickly and easily linked – perfect for linear and six-axis automation.

Your advantages:

- Maximization of output
- More possibilities for large-format components
- Standardized systems across all clamping force sizes
- Greater flexibility thanks to the unique design of the spin unit
- Unit cost reduction thanks to process integration from a single source



Due to their general design, the SpinForm machines provide sufficient room for even complex periphery and automation equipment to be easily integrated.

MX Series designed as three-component SpinForm technology (swivel plate)

Further information which might also interest you



Are you looking for the appropriate automation solution for your MX machine?

We can offer you the right robot for every production task. You can also have your machine equipped with a special clamping system or various accessories.

We have also compiled extensive information on the subject of service for you.

In this way, you can increase the flexibility of your injection molding machines for continuously new process requirements and permanently extend their performance level. We would be happy to provide you with detailed information on this.



You can find more information about the following for example:

- Basis for economical production –
Linear robots in the LRX/LRX-S Series
- Flexible molds for productive automation – Industrial robots in the IR Series
- Teleservice – The expert network at the push of a button
- Life Cycle Service: Production partner

You can find our brochures and flyers on other topics online at: www.kraussmaffe.com. On request, we would also be happy to send you the information and technical data for our products free of charge.

KraussMaffei

A strong brand in a unique global group

Cross-technology system and process solutions

Whether in Injection Molding, Reaction Process Machinery or Automation – the KraussMaffei brand stands for pioneering and cross-technology system and process solutions in plastics processing worldwide. For decades, our expertise, innovative ability and passionate commitment to plastics engineering have been your competitive edge. As a cross-industry system provider, we offer you modular and standardized systems as well as solutions customized to your needs.

There for you around the world

With our worldwide sales and service network, we offer our international customers an excellent basis for a successful business relationship. Due to the close proximity to our customers, we are able to answer your individual inquiries very quickly. We work out the best possible technical and economical solution for your product and production requirements together with you. Test our machine technology for your applications and let our experts put together an individualized service package for you.

Individualized service

Our employees from customer service, application technology and service help you with your questions and needs on every topic dealing with machines, systems and processes – around the globe, quickly and with a high level of expertise. We have developed an extensive customized service spectrum with our lifecycle design, which accompanies you throughout the entire lifecycle of your machines and systems. Take advantage of the personal interaction and flexibility we offer in our practically oriented seminars. We carry out customer-specific trainings either at your location or at our sales and service locations.

You can find additional information about KraussMaffei at: www.kraussmaffei.com

KraussMaffei Group

Comprehensive expertise

Unique selling proposition Technology³

The KraussMaffei Group is the only provider in the world to possess the essential machine technologies for plastics and rubber processing with its KraussMaffei, KraussMaffei Berstorff and Netstal brands: Injection Molding Machinery, Automation, Reaction Process Machinery and Extrusion Technology.

The group is represented internationally with more than 30 subsidiaries and over ten production plants as well as about 570 commercial and service partners. This is what makes us your highly skilled and integrated partner. Use our comprehensive and unique expertise in the industry.

You can find additional information at: www.kraussmaffeigroup.com



The KraussMaffei Group has a global presence. Countries with subsidiaries are marked in dark blue. In the white-colored regions, the Group is represented by over 570 sales and service partners.

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