



# Power meets flexibility The new all-electric PX series

*Engineering Passion*

***Krauss Maffei***

# Facts and figures regarding the PX series

## Applications



Automotive



Medical



Electrical/electronics



Packaging

## Clamping/injection matrix

Machine/ clamping force in to	Clearance (h <sub>xv</sub> ) in mm	Injection units (screw diameter in mm)																															
		SP 55				SP 100				SP 180				SP 250				SP 380				SP 540				SP 750				SP 1000			
		15	18	20	22	20	22	25	28	25	28	30	35	30	35	40	35	40	45	40	45	50	45	50	55	50	55	60					
PX 50	370 x 320	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
PX 51	435 x 385	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
PX 80	420 x 370					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
PX 81	485 x 435					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
PX 120	470 x 420									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
PX 121	530 x 480									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
PX 160	520 x 470													■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
PX 161	585 x 535													■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
PX 200	570 x 520													■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				

■ Standard  
■ Option

## Power meets flexibility The new all-electric PX series

The PX series is the answer to your requests for more flexibility while increasing productivity. You can assemble your PX precisely to your production requirements from a wide selection of components based on a modular design. Simply configure the machine of your dreams!

A robust mechanical system, high-precision and dynamic drive technologies as well as intelligent energy management make the PX a reliable, productive and efficient performer in any injection molding operation.

An ergonomically optimized working height, with maximized free space below the clamping unit and the best accessibility ensure maximum ease of use.

The PX series stands out with its flexibility throughout the entire service life:

### **Flexibility in selection**

- Wide selection of clamping and injection unit combinations
- Many options for greater performance and function

### **Flexibility during production**

- User-friendly ergonomics and accessibility
- Easy mold change and fast startup

### **Flexibility for retrofitting**

- Options for an expanded range of applications
- Always up-to-date with service products

# Transparent technology

## Fascinating insights into the all-electric PX series

Extensive automation solutions

Ejector with a large stroke (hydraulic or electric)

Broad-based moving mold platen on linear guides

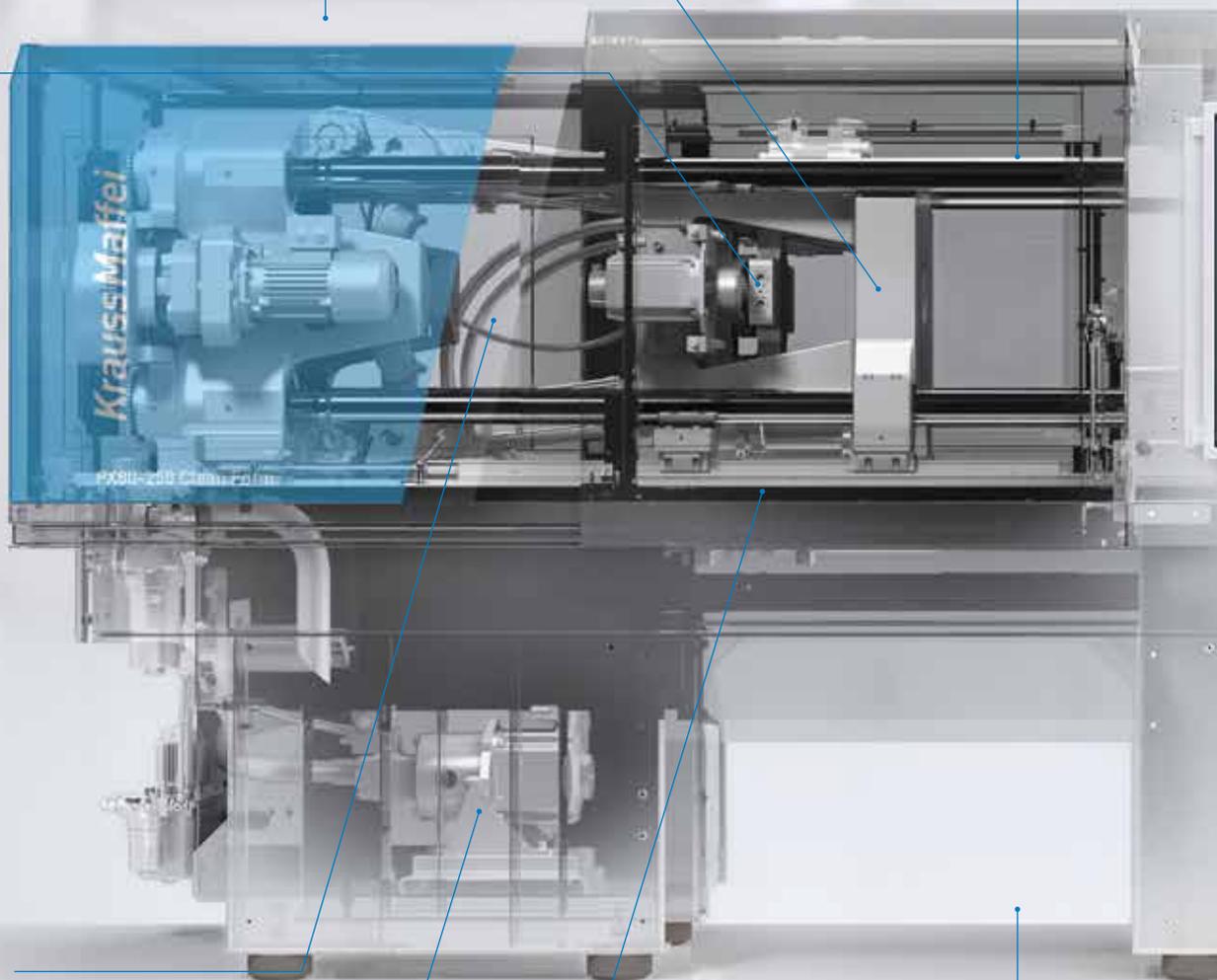
Two platen sizes for each clamping force

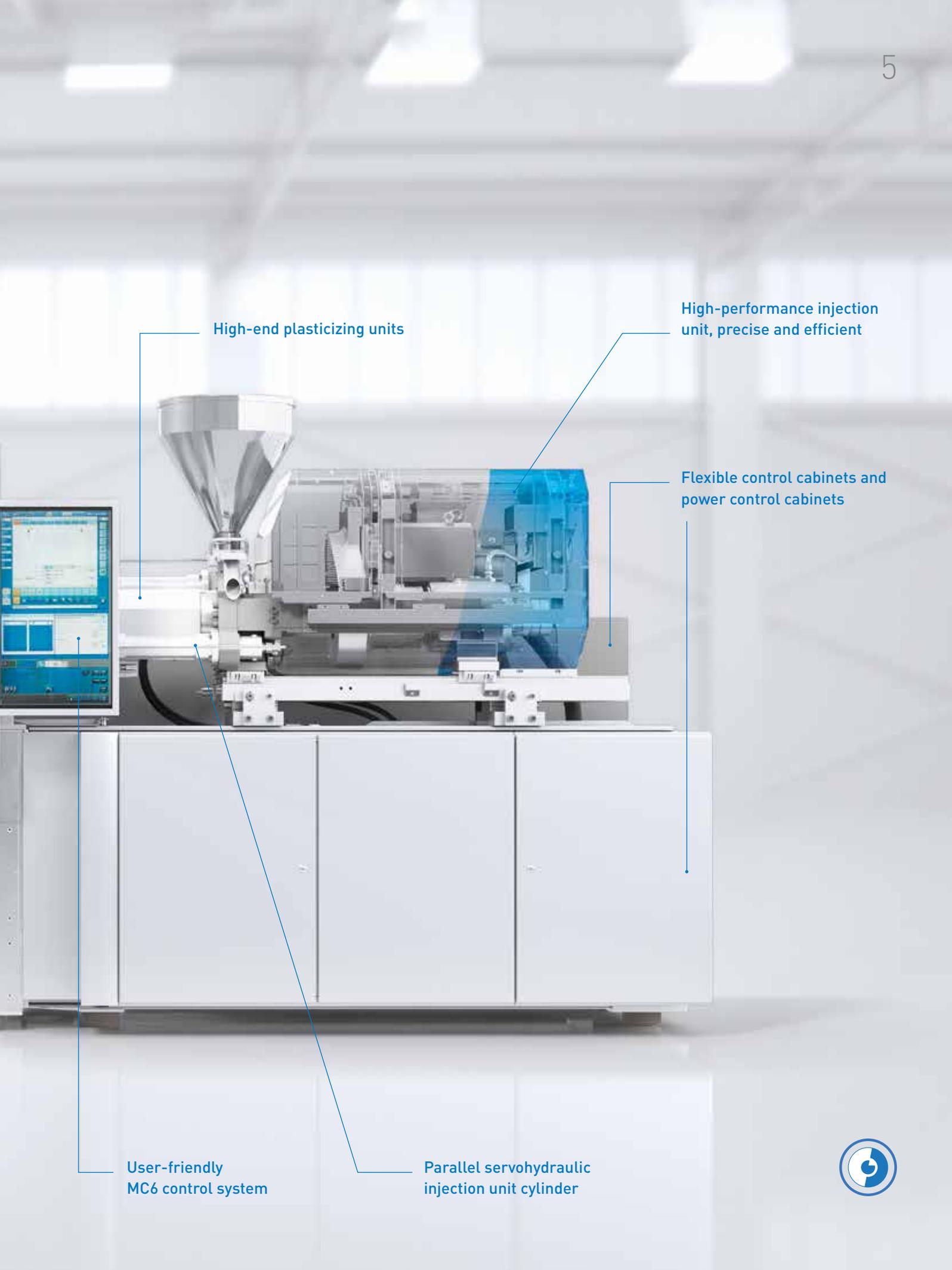
Fast, robust 5-point double toggle

Integrated servo hydraulics

Optimum accessibility

Maximum free space for parts logistics





High-end plasticizing units

High-performance injection unit, precise and efficient

Flexible control cabinets and power control cabinets

User-friendly MC6 control system

Parallel servohydraulic injection unit cylinder



## A marvel of flexibel design

### Leading combination for clamping and injection units

The custom combination of injection and clamping units forms a core feature of the PX. It allows the series to set new standards for production flexibility: configure the exact machine that you require. No more, no less.

#### Versatile clamping unit for outstanding productivity

The efficient and highly dynamic 5-point double toggle lever coupled with intelligent servodrive technology ensures outstanding productivity and cost-efficiency while also providing optimal mold protection.



#### Great variety of clamping unit/ injection unit combinations

Perfect utilization of production space: Thanks to the split machine bed, the clamping unit and the injection unit can be combined in a variety of ways – making the machine only as long as it really needs to be. For example, if a large clamping unit is combined with a small injection unit.

The 5-point double toggle is efficient and extremely dynamic.



The PX offers an enormous variety of clamping unit/injection unit combinations.

### First-class injection unit

When a first-class plasticizing unit and precise drive systems are working together in harmony, this results in maximum shot weight consistency. The PX reproduces parts with exceptional quality and efficiency – shot for shot.

Two parallel servohydraulic injection unit barrels allow for an optimal center nozzle contact force – extremely fast and free of lateral forces. This shortens the cycle times and prevents leaks at the nozzle.

### The entire bandwidth of screws and nonreturn valves

All standard PX plasticizing units stand out thanks to an excellent melt quality and cover a wide range of applications. Furthermore, if you have special processing requirements, you can choose from a wide range of screws and nonreturn valves – even for high-temperature and high-performance versions (HPS) and, of course, with suitable wear protection.

### Your advantages:

- Optimal length and space utilization
- Targeted investment in clamping force and injection capacity
- Flexible mold use
- Short cycle times
- High availability
- Low energy costs
- Extremely wide range of applications
- Long service lives
- Excellent melt quality
- High plasticizing capacity



Select your screws and nonreturn valves from a wide spectrum of products.



The PX represents quality and efficiency for every shot.

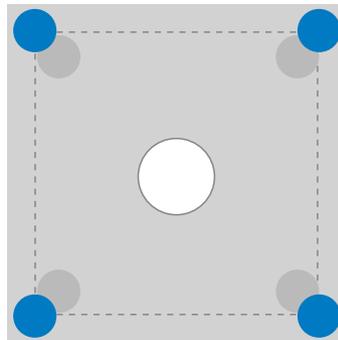
# Optimized clamping unit design

## The modular design creates freedom for mold use

The standard PX already features mold fixing platens with generous dimensions, mold installation heights and mold opening strokes for flexible use of molds of various sizes. And if that isn't enough, options are available to expand certain attributes, such as the mold installation height.

### Enlarged mold fixing platen

80 tonnes of clamping force would be enough, but your mold needs more space? If so, you should opt for the PX 81. This will give you considerably more mold installation space for even more adaptability in everyday manufacturing. You achieve this adaptability without having to purchase the machine with the next level of clamping force. Of course, the maximum permitted mold weight is increased as well.



### Your advantages:

- Lower investment costs
- More flexibility for mold use

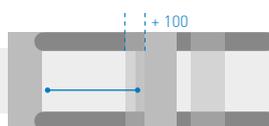


Enlarged platens

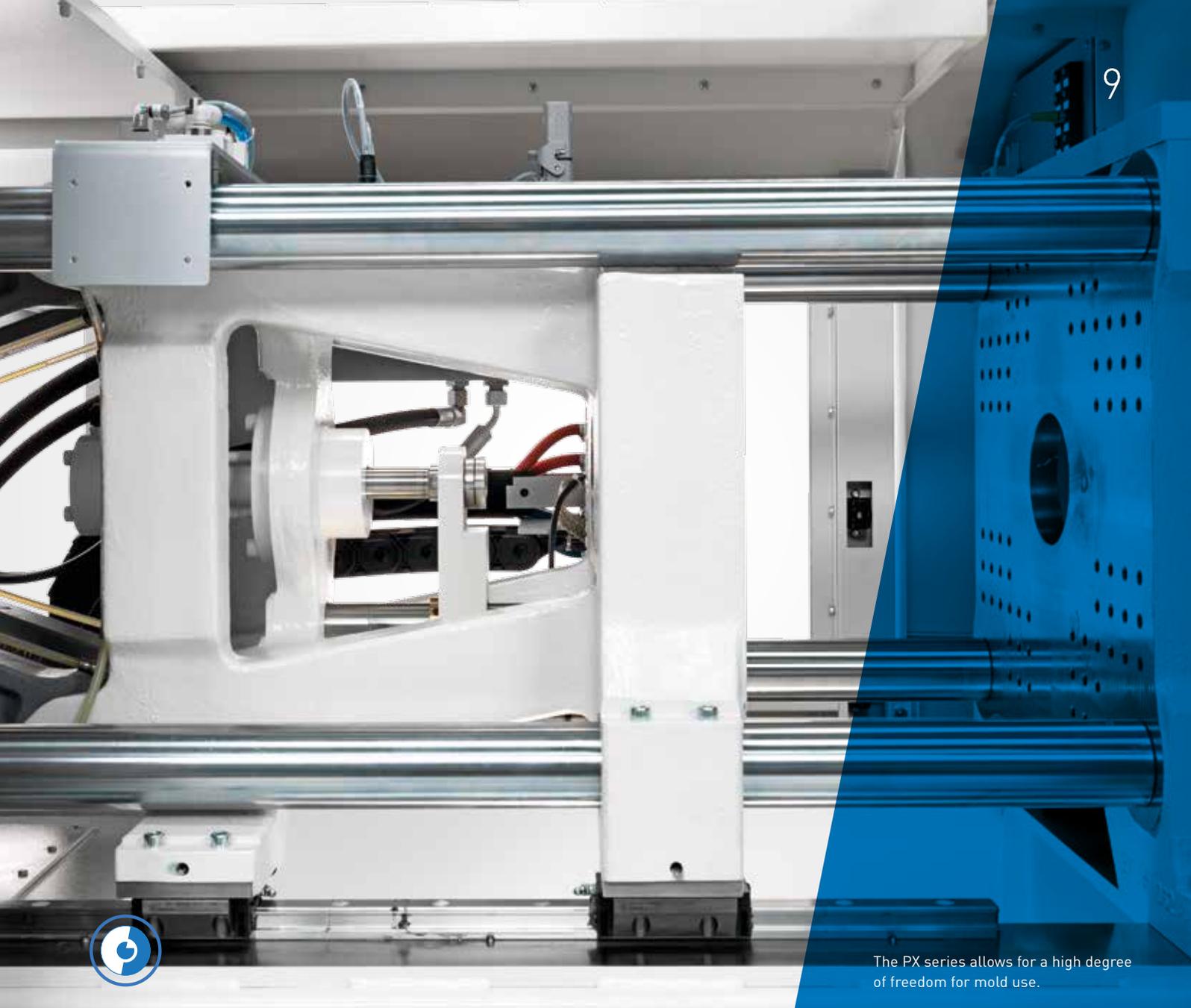
### The right clamping unit thanks to the modular design

	Clearance Mold weight	Mold installation height	Clamping force	Mold opening stroke
PX 80	750 kg 420	400	800 kN	350
PX 51	750 kg	350	500 kN	300
PX 50	450 kg 370		500 kN	

The following applies to all clamping units:



The mold installation height can be increased for every clamping unit.



The PX series allows for a high degree of freedom for mold use.

### Maximum platen parallelism for any mold weight

More space means more weight. With the PX, you can be sure that if the mold fits into the machine, then the clamping unit has also been designed for the greater mold weight. The wide support of the moving platens on linear guides and the stiff machine bed under the clamping unit guarantee perfect platen parallelism.

### Servohydraulic ejector

The standard ejector of the PX is driven using the integrated servo hydraulics and stands out on its own thanks to several features. The ejector stroke is especially large, enabling you to run molds with correspondingly long demolding paths. The ample opening range of the safety gate and the wide design of the moving platens allow for easy access to the ejector.

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### Your advantages:

- The largest ejector stroke on the market
  - Superior ejector accessibility
  - Outstandingly robust
  - Maximum platen parallelism
  - Use of heavy molds
  - Protection of the mold
-

## Absolute flexibility Greater selection of ejector versions

Robust or intricate: Either a servo-hydraulically driven ejector or an electrically driven ejector is advantageous depending on the requirements during parts removal. The PX offers both options.

### Your advantages:

- Suitable ejector for any mold
- Fast and easy setup
- Precision demolding for more OK parts
- Clean production

### Robust and flexible: The hydraulic ejector

In your production, are you using molds with hard striking ejector plates? If so, the extremely robust hydraulic standard ejector of the PX is perfect for your needs. It can withstand all mechanical pulses or impacts from the mold. The large ejector stroke also provides a great deal of flexibility for any mold.

If more ejector force is required, an increase of 50 percent can be selected for any PX. In order to optimize the removal of free-falling parts, the ejector speed can even be increased by 100 percent. Furthermore, every ejector is also optionally available as an ejector plate.

### Extremely precise: The electric ejector

Do you want precise transfer of parts to a robot removal? If so, the optionally available electric ejector for the PX is recommended. It works with absolute precision and reproducibility. As is the case with the hydraulic ejector, the electric ejector also features versions with increased force or speed. Every electric ejector features a motor brake to hold the position for spring force molds. For particularly clean ambient conditions, it can also be encapsulated.



**More speed:** The increased ejector speed compensates for the dynamic movement of the clamping unit in the case of falling parts.

**Increased ejector force:** When plastic parts shrink down to a core, the increased speed helps during demolding.

## Force and speed A “boost” for the injection unit

Material, part geometry, desired output. These values define how high the performance of the injection unit of a machine has to be. The PX meets your needs through flexibility.

### Your advantages:

- Flexible use for a wide range of applications
- High injection capacity
- Flexible use of molds and nozzles
- High plasticizing capacity
- Shorter cycle time
- Faster start-up

### More injection speed

For components with thin wall thicknesses or long flow paths, every PX has the option to be equipped with increased injection speed.

### More nozzle contact force

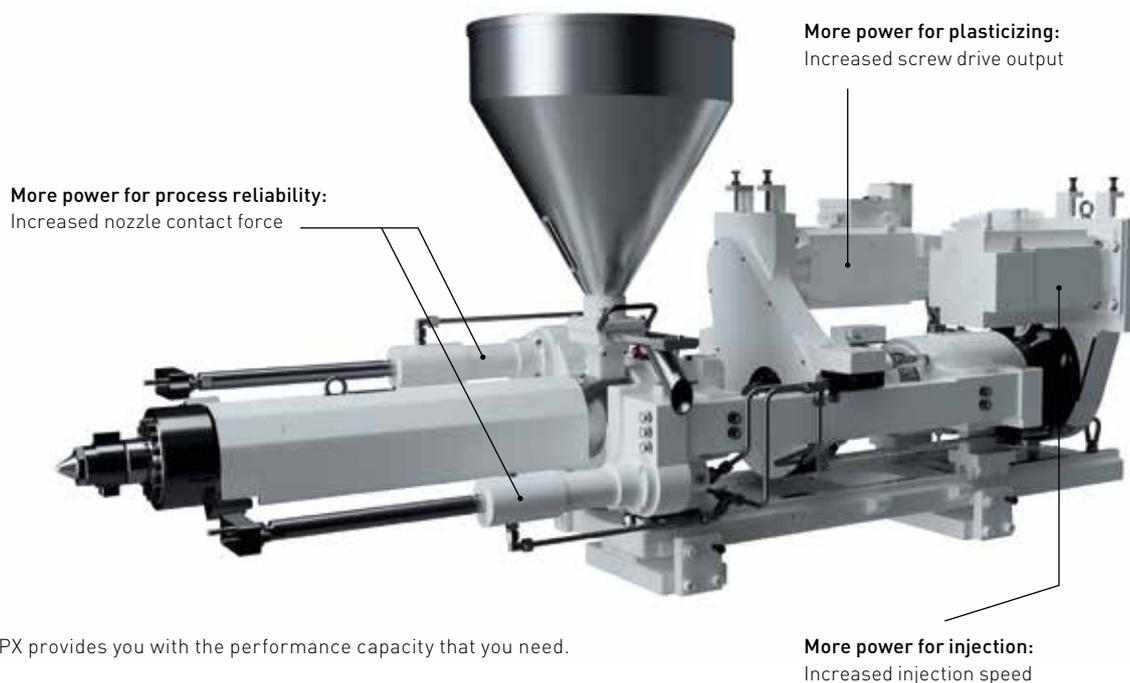
Thanks to the two servohydraulic injection unit barrels, the PX standard alone features sufficiently high nozzle contact forces. If very high nozzle contact forces are needed for special nozzle geometries, e.g. for dipping nozzles with large cross-sections, then this can easily be configured for the PX using the assembly kit with additional options.

### More plasticizing capacity

Do you want to increase the output for your applications by increasing material throughput? No problem. With the PX, each injection unit is also optionally available with increased screw drive capacity.

### More injection unit speed

Due to the high-performance integrated servo hydraulics, the travel speed of the injection units of the standard version alone is at least 50 mm/s. An option even exists to double the injection unit speed of any PX to 100 mm/s. Therefore, in applications using lift-off nozzles, cycle time can be significantly shortened and the start-up accelerated.



The injection unit of the PX provides you with the performance capacity that you need.

## Ideal for work in any size Always the right working height and convenient access



Access to the PX is very convenient and allows for ergonomic work.



Daily work has to run smoothly. This requires sophisticated processes, ergonomics and a practical machine that makes operation and maintenance easy.

### **Convenient:** **The center axis stays the same**

Whether it's the PX 50 or PX 200, the center axis of the machine is always at 130 cm. This makes it possible for every mold setter to work ergonomically at a comfortable height – for insertion and connection of the mold, for visual inspection of the nozzle or for cleaning tasks.

### **MC6: Height-adjustable**

The MC6 control panel can be swiveled as well as set to your desired working height easily and with infinite variation. In addition, you can select a "Multitouch" MC6 control unit and benefit from a capacitive 24-inch control unit. This gives you a view of all processes and allows you to create a custom setup of your user interface by dragging and dropping.

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### **Your advantages:**

- Perfect overview of all processes
  - Superior user-friendliness
  - Ergonomic working height
  - Optimal view into the machine
-



The PX leaves plenty of room for conveyor belts and part containers.



#### Perfect accessibility from all sides

The PX stands out due to extensive accessibility to all areas of the machine. Large, smooth safety gates ensure undisturbed access to the clamping unit without a frame getting in the way. And with removable housing elements, all machine parts can be accessed easily for maintenance and cleaning tasks.

#### Free space: more room for parts logistics

The clamping unit bed of the PX has been designed so that the area lengthwise and crosswise and all the way to the floor remains free for reject parts and parts logistics. As a result, parts containers or conveyor belts can be rolled under the machine very easily and practically, without any cross-beams getting in the way.

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#### Your advantages:

- Perfect accessibility
  - Simplified mold change
  - Generous free space below the clamping unit
  - Easy installation of conveyor belts
  - Optimal utilization of the production space
-

## It doesn't get any more precise Fewer rejects and perfect quality

A smooth, zero-play and robust mechanical system as well as accurately and dynamically functioning drive systems are the prerequisites for maximum precision. Both have been implemented for the PX without any compromises. The result is perfect part quality for maximum customer satisfaction.

### Symmetrical force transmission for optimum clamping of the mold

The tightly toleranced and totally symmetrical design of the clamping unit produces direct and uniform force transmission on the moving and fixed mold fixing platen.

A servomotor that is optimally coordinated with the toggle guarantees fast and high-precision clamping and opening movements. As a result, each position movement of the moving platen is always carried out with absolute reproducibility and accuracy.

### Parallel mold guidance always clean and efficient

The wide support of the moving platen on precision linear guides guarantees accurate mold parallelism in all positions. The frictional resistance is also reduced by up to 80 percent in comparison to the usual sliding guides or column guides.

Thanks to the linear guides, the tiebars are only used for force transmission and do not touch the moving mold fixing platen in any way. Lubrication is unnecessary and the product zone remains clean.




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#### Your advantages:

- High platen parallelism
  - Optimal mold clamping
  - Grease-free tiebars for increased cleanliness
  - Maximum energy efficiency
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Every PX clamping unit is optionally available with automatic clamping force regulation (+/- 2 percent).

**Reproducible processes due to built-in precision and dynamism**

High-precision and dynamic servomotors with extremely fast response characteristics generate the injection movement, which is transferred directly to the screw by a spindle system with zero play. The configured process parameters for speed, pressure and stroke are regulated quickly and precisely within the minimum tolerance range.

Sensitive sensor technology measures the injection pressure directly in the flow of force as an absolute value. This ensures precise regulation of holding and back pressure. By combining optimal repeatability and plasticizing, the PX offers ideal conditions for first-class shot weight consistency.

**APC: Intelligent machines**

APC recognizes process fluctuations, which can be caused by changing ambient conditions or fluctuating viscosity, and independently adopts counteractive measures. As a result, you will benefit from a uniformly high component quality, lower scrap and material costs and the simplified use of recycle.

**APC plus: Perfect shot weight consistency**

In the enhanced version, APC plus, we are providing numerous new, intelligent features, such as the capacity of the machine to account for the specific behavior of the raw material. The optimized user-friendliness makes process control easier. APC plus can also be used

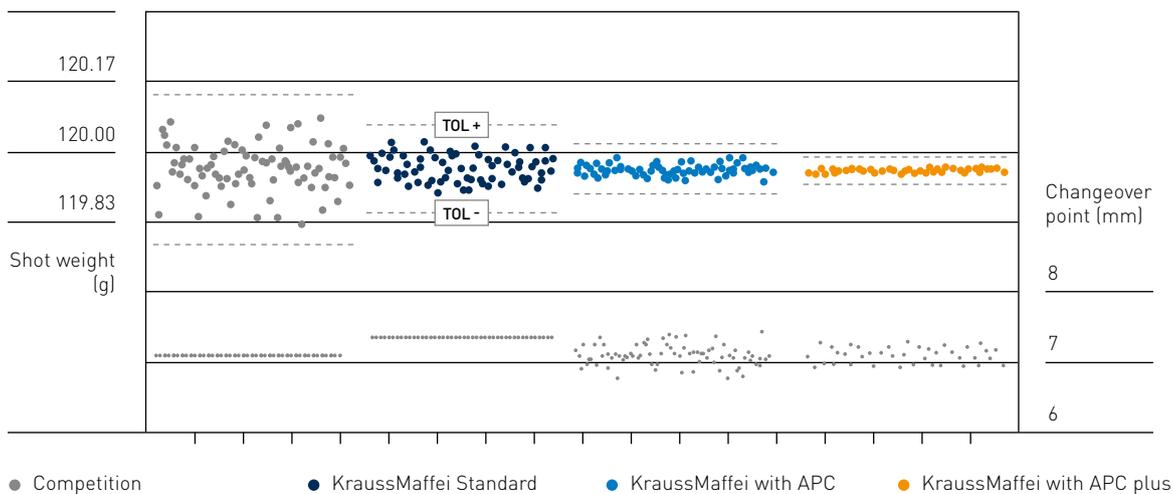
for new applications, such as manufacturing thin wall components or cascade injection molding.

**Your advantages:**

- First-class shot weight consistency
- High process reliability
- Consistently high component quality
- Compensation of batch fluctuations in the material



**Shot weight consistency: the best results with KraussMaffei**



The standard configuration of the PX alone features excellent shot weight consistency.

# Unbeatable energy efficiency

## Saving electricity, water and your money

Preserve resources and lower operating costs simultaneously: Intelligent energy management makes both possible. The PX recovers brake energy and can even feed electricity into the grid.

### Your advantages:

- Recovery of brake energy
- Feeding energy back into the grid
- Minimum energy consumption
- Low water consumption
- Low heat emissions

### Lowest energy consumption thanks to maximum efficiency

The PX is exceptionally economical, featuring very high overall efficiency and consuming an extremely small amount of energy under all load and application conditions. In many cases, this allows it to reduce energy consumption by 50 percent or more in contrast to similar injection molding machines.

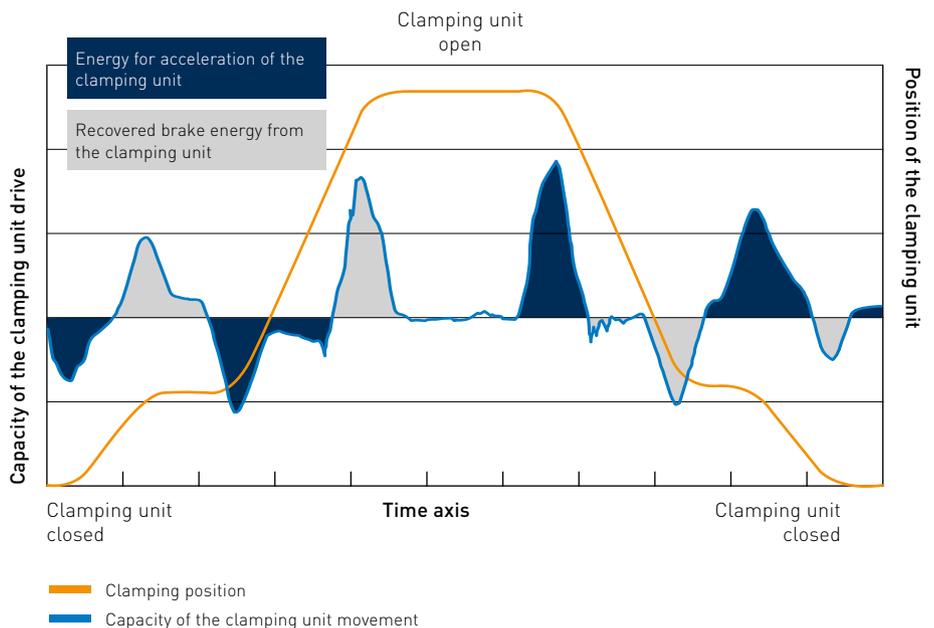
The PX has also proven itself to be economical when it comes to water consumption. Due to the low conversion losses in the drives, the inner cooling load is very low and reductions of up to 70 percent are not at all uncommon.

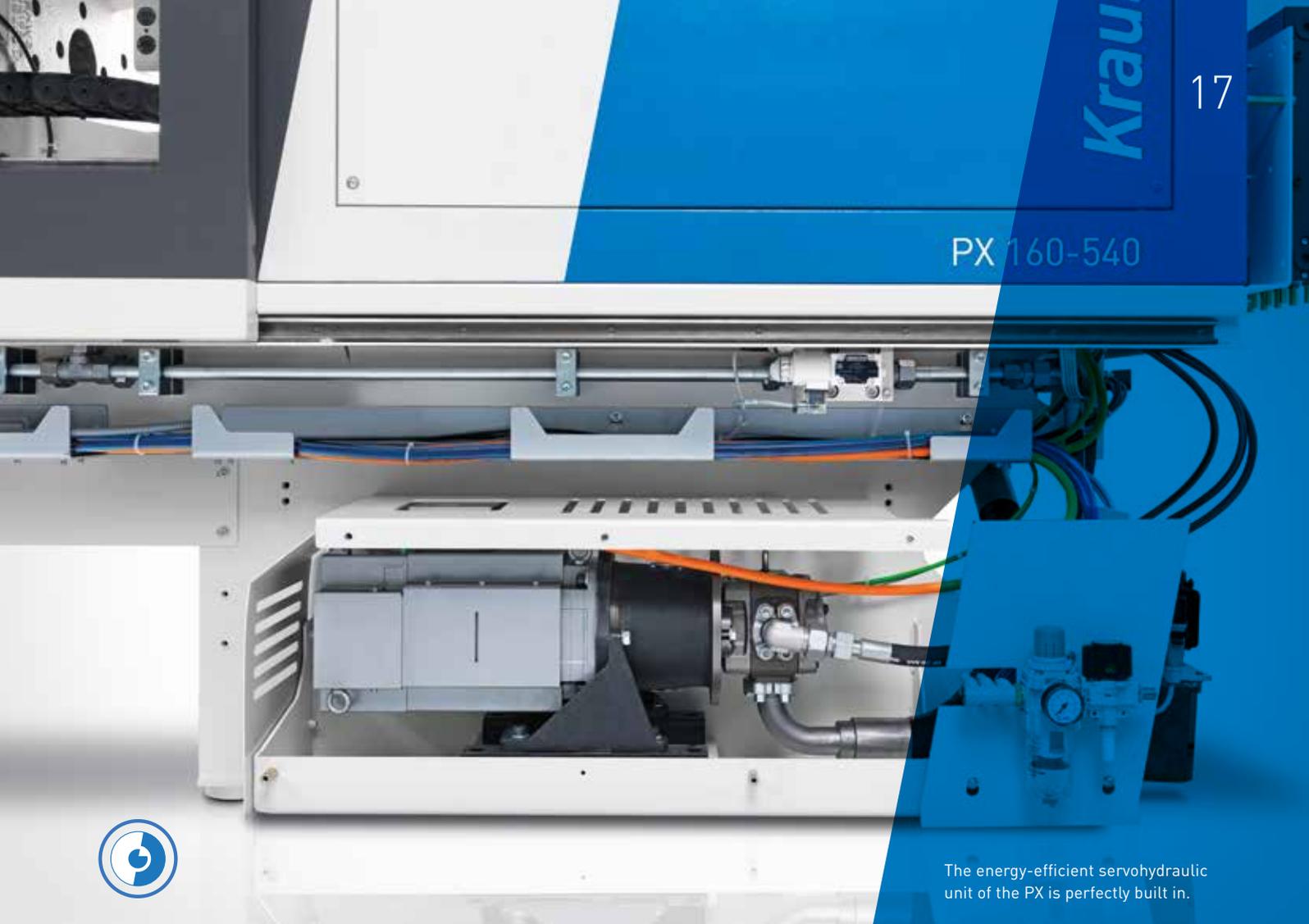
### Energy management with recuperative mode

Efficient drive systems with integrated energy recovery: The frequency converters and servomotors of the PX are perfectly adapted to the respective servo axis. Therefore, they respond quickly and directly to each control system command.

All servomotors also work in recuperative mode, whereby brake energy is converted back into electricity. This energy is recovered and stored in the intermediate circuit of the machine and then used in the same way at other axes or fed back into the power supply system. Up to 60 percent can be reused via this method.

### Feeding of brake energy for the PX series





The energy-efficient servohydraulic unit of the PX is perfectly built in.



## Everything you need is there Integrated servo hydraulics

Everything perfectly built in: For the PX, the servo hydraulics for injection unit and ejector movements are integrated into the machine. If necessary, the machine also drives core-pulling units or needle shut-off nozzle.

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### Your advantages:

- Easy use of core-pulling units without large additional investment
  - No additional space requirements for separate hydraulic units
  - Preparation for all contingencies
- 

### Integrated servo hydraulics, intelligent machine design

Unlike commonly available solutions, which waste space by including separate ancillary hydraulic injection units, the energy-efficient servo-hydraulic unit is already integrated into every PX. In the standard version, this unit operates the axes of the injection unit and ejectors. They save production space, since everything is built into the machine bed.

### Simple powering of additional hydraulic consumers

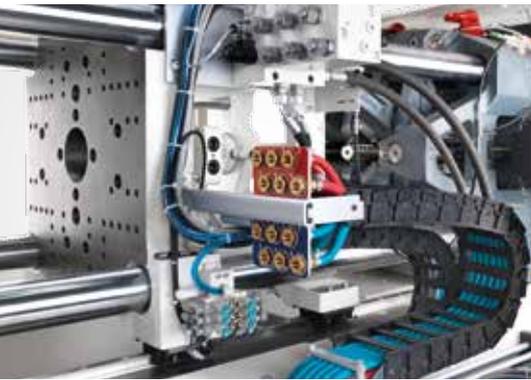
Using the integrated servo hydraulics, you can also use additional hydraulic machine and mold functions very easily – such as

core-pulling units, needle shut-off nozzle or cascades. All applications can be retrofitted easily and without a lot of effort and can then be programmed using the MC6 control system.

The servo hydraulics in the standard version alone offer sufficient volume flow for carrying out numerous hydraulic mold functions. For special cases, the capacity of the hydraulic unit can be increased further – all within the machine with no external components.

## Everything for your mold Additional options for retrofitting

Core-pulling units, cascades or cooling. In order to be able to manufacture using all types of mold technologies in the future, many retrofit options are available for the PX. You can buy only the functions that you need right now and still be sure that your machine is prepared to take on any additional functions as necessary. KraussMaffei is the only manufacturer to offer this level of flexibility in an all-electric range.



Core-pulling units can be retrofitted easily.

### Core-pulling units and needle shut-off nozzle

In the case of the PX, hydraulic mold functions such as core-pulling units or needle shut-off nozzle can be retrofitted very easily. This is because the servo hydraulics necessary for supplying these units/nozzles are integrated into every PX. Even in the standard version, the hydraulics achieve high volume flows that can be increased if necessary. All functions can be programmed directly using the MC6.

#### Your advantages:

- Space-saving and clean
- Easy, central control using the MC6
- Perfectly set up for all future tasks



The PX has a lot to offer for mold cooling and heat-balance as well.

### Well cooled and clearly arranged

Everything has its place on the PX. This makes it easy to take advantage of the options for mold cooling and heat-balance. Connections that have been pre-piped via the water distributor for cooling-water and temperature-control circuits are situated close to the mold, thus making mold changeover much easier and keeping everything in order.

The electronic water distributor also adds to the efficiency. It records the flow rate, pressure and temperature automatically and ensures that data no longer needs to be documented manually.

## Easy retrofitting

# Hardware retrofitting in the control cabinet

Expansion made easy: For additional control system electronics, the control cabinets are already preconfigured for additional retrofits.

### Your advantages:

- The highest safety standards
- Space and capacity reserves for retrofits
- Extensive options catalog

### Future-proof thanks to reserve space

Still not sure what your requirements will be in the future? That's not a problem for the PX. Every control system cabinet is already preconfigured for the entire range of additional options. This means that you can, for example, easily retrofit additional controllers for the plasticizing unit or for the mold heating unit.

### Some examples of possible retrofits

- Additional barrel heating units
- Boosted hydraulic unit
- Activation of the hydraulic system and pneumatic valves
- Automation interfaces
- Conveyor belts, drop-out chutes
- Interfaces for monitoring systems (camera, scales, etc.)
- Interface for magnetic clamping platens
- Data from interfaces (Ethernet, CIMI)
- Master computer interface (Industry 4.0)
- And much, much more...



The control system cabinet is preconfigured for many additional options.

## Superior user-friendliness Many additional functions make operation easier

With the intuitive MC6, Krauss-Maffei has developed a system that improves every facet of machine operation for the user. Our experienced software specialists always strive to develop useful functions that keep navigation simple.

### Your advantages:

- High user-friendliness
- Fast and accurate navigation
- Intelligent support of the mold setter
- Quick and efficient process control
- Supporting optimization tools

### Quick to program, clever configuration tools

The following tools in the MC6 control system help you when programming and setting up your injection molding machine

- SplitScreen & XtraScreen (MC6 Multitouch): The most important production processes at a glance
- Process Designer: Clear display & handling of all processes
- Barrel Heating Assistant: Fast loading of barrel temperature profiles and calculation of the target values
- Weekly Timer: The machine is completely heated at the defined production start time
- WizardX Programming Wizard: Achieve a functional basic program in only four steps

### Large selection of retrofits

The MC6 control system can be continually readjusted throughout the service life of the machine. To display any curve, such as the pressure curve, you can retrofit the graphic analysis package, for example. Trend graphics identify even the smallest fluctuations. Using APC plus, you can achieve a constant part quality. And interfaces for tempering units can be added easily.

### Perfect monitoring

Various tools help you in monitoring the processes. For example, the cycle time analysis continuously monitors whether all processes are running optimally. The logbook saves all data and thereby ensures maximum transparency. The camera function gives you the best insight into (and overview of) the machine. If problems arise, you can use the Remote Manager to get in contact with our experts.



### READY FOR INDUSTRY 4.0

We are working today on the possibilities of tomorrow: Communication among machines and peripherals, intelligent machines that configure themselves and a service that notices that something is wrong even before you do. **Please contact us.**

The MC6 control system represents superior user-friendliness.

# Retrofit for technology machine

## Silicone, lightweight construction and more

You never know what the future will bring. If you ever need to expand into new technological areas, you can count on the PX to provide you with a solid basis. For example, for lightweight construction processes such as CellForm or FiberForm, for processing liquid silicone or with applications in the high-temperature area.

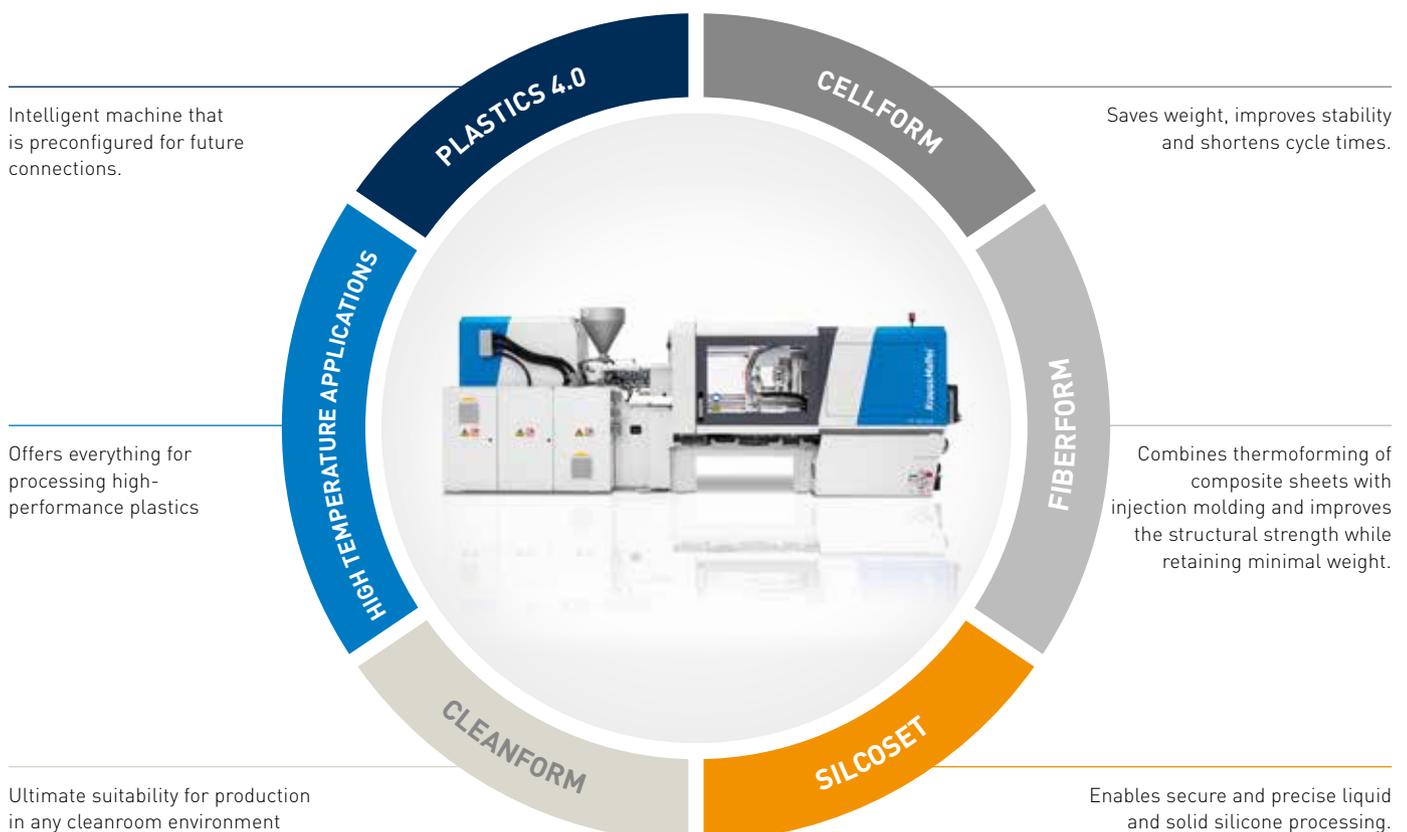
### 30 percent batch savings: HPS-M screw

Together with the nonreturn valve, the screw yields the best results. The HPS-M enables a high throughput and guarantees a uniform material, thanks to an excellent mixture. As a result, you can save precious masterbatch. In addition, the scrap rates are lowered and, thanks to the gentle material processing, higher service lives are possible.

### Your advantages:

- Cutting costs for color masterbatch
- Uniform color distribution in the component
- Up to 20 percent shorter color change times

### Set up perfectly for the future: The PX as a basis for all requirements





Whether it's the SPX10 sprue picker...



... or the LRX, there is always an ideal automation solution for the PX.

## Ideal interaction between automation and machine

### Proven overall economic concept

Utilize our extensive know-how in the areas of injection molding machinery and automation for your economic advantage. Standardized elements combined with customer-specific solutions are the basis for high flexibility in production. The integrated CE-approved safety concept ensures a high safety standard and reduces the machine costs.

#### Stable design

With the SPX10 servomotor-controlled sprue picker, KraussMaffei expands upon diverse automation options and significantly increases user-friendliness compared to pneumatic solutions. Its compact design and stability enable the safe and reliable removal of parts and sprues up to a weight of 1000 g. The servo-drive ensures highly dynamic demolding and precise repeatability, thus conserving energy and resources.

#### Maximum variability thanks to standardized automation systems.

The linear robots from the LRX series are ideally suited for simple pick & place solutions and quick removal. They also perform a very wide range of tasks in the injection molding process: Insertion,

demolding, processing and much more besides. Thanks to integration in the control unit of the machine, all work steps can be very easily programmed and saved with the dataset of the injection molding machine. This automatically ensures the right combination of data record and program – an advantage which also considerably increases machine safety.

#### WizardX – Smarter programming

The dialog-based programming assistant in the MC6 control system allows even beginners to create basic demolding processes in the shortest possible time. The interactive communication between the user and control system makes manual programming superfluous and eliminates programming errors.



Superior ergonomics for fast mold changing make the PX perfect for technical applications.

## Superior precision Advantages for technical applications

Whether for electronics or for the automotive industry – the high-precision PX is the perfect platform for all technical parts. The focus lies primarily on the following applications: complex geometries, reinforced or flame-proof materials, reliable part stability, lightweight construction, surface technologies, functional integration. These industries are also characterized by frequent mold changes.

### Strengths of the PX in TEC applications

- Wide range of plasticizing products for technical plastics (flame retardant, fiber-reinforced) with wear-resistance
- Extreme repeatability
- Optimal shot weight consistency (APC plus)
- High holding pressure capacity
- Integration of automation solutions (insertion, removal, stacking, sorting) – all using a singular control system

- Extensive core-pulling function
- Accessibility for easy mold change
- Generous free space below the clamping unit for integrating conveyor belts
- Swiveling injection unit for fast material change (easy maintenance)
- Easy integration of additional technologies (CellForm, DMH)

## Optimal speed Advantages for packaging applications



Thanks to its speed, the PX is the most suitable machine for packaging applications.

Short cycle times with maximum part output is the main requirement of the packaging industry. In practice, this means that molds are used with the highest possible number of cavities. This is precisely where the PX shows its strengths. Particularly where high flexibility is required due to small batch sizes and high functional integration. The PX offers the perfect package: It is robust, fast, cost-efficient and flexible.

### Strengths of the PX in PACK applications

- Enlarged mold fixing platens for molds with many cavities
- Dynamic clamping unit for short dry cycle time
- High injection speed for thin wall thicknesses
- High plasticizing capacity for high material throughputs
- High ejector speeds
- Parallel movements for short cycle times
- Low energy and water consumption
- Maximum free space for parts logistics under the clamping unit
- High-performance screw (HPS screw) for optimum melt quality with short cycle times
- Special automation solutions for the packaging industry

## Superior cleanliness Advantages for medical applications



Even the standard version of the PX meets the prerequisites for superior clean production.

Applications for medical technology require very high product cleanliness and quality. Even the standard version of the PX is suitable for clean production conditions. Furthermore, the machine can be adapted for use in specific medical industries through additional equipment and retrofitting options. In this version, belt drives are enclosed, lubrication systems are closed and operation is possible using food-grade NSF H1 oil.

### Strengths of the PX in MED applications

- Cleanroom-compliant surfaces in high-gloss and antistatic design
- Grease-free, chrome-plated tiebars
- Automatic central lubrication
- Closed lubrication of the toggle
- Complete encapsulation of all drives
- Removable housing elements for perfect accessibility
- Electric ejector
- Very quiet during operation
- Food-grade NFS-H1 oils
- Machine height setup to facilitate cleaning underneath the machine
- Qualification support

## Further information which might also interest you



### Are you looking for a suitable automation solution?

We can offer you the right robot for every production task. You can also choose special mold clamping systems or other accessories for your injection molding machines.

### Obtain information about the following, for example:

- SPX10 sprue picker
- Linear robots in the LRX/LRX-S series
- Industrial robots in the IR series



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

- Adaptive Process Control (APC)
- CX series

You can find our brochures and flyers on other topics online at: [www.kraussmaffe.com](http://www.kraussmaffe.com).  
On request, we would also be happy to send you 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](http://www.kraussmaffei.com)

## KraussMaffei Group

### Comprehensive expertise

#### Unique selling proposition Technology<sup>3</sup>

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](http://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.

# Power meets flexibility

## The new all-electric PX series

The PX series is the answer to your requests for more flexibility while increasing productivity. You can assemble your PX precisely to your production requirements from a wide selection of components based on a modular design. Simply configure the machine of your dreams!

A robust mechanical system, high-precision and dynamic drive technologies as well as intelligent energy management make the PX a reliable, productive and efficient performer in any injection molding operation. An ergonomically optimized working height, with maximized free space below the clamping unit and the best accessibility ensure maximum ease of use.