

## **APPLICATION AREAS** OF THE GX SERIES







Consumer goods

Packaging

Automotive







Electrical/electronics



Transport packaging

#### Clamping/injection matrix

Machine/ clamping	Clearance (h x v) mm	Injection units (screw diameter in mm)																						
force in metric		SI	2 140	00	SI	20	00	SF	30	00	SI	P 43	00	S	P 61	00	SI	P 8100	SP 12000		SP	172	.00	
tons		55	60	70	60	70	75	70	80	90	80	90	100	85	95	105	95	105 115	105	120	135	120	135	150
GX 400	920 x 830																							
GX 450	920 x 830																							
GX 451	1055 x 925																							
GX 500	1040 x 910																							
GX 550	1040 x 910																							
GX 551	1130 x 980																							
GX 600	1110 x 960																							
GX 650	1110 x 960																							
GX 651	1200 x 1020																							
GX 750	1180 x 1000																							
GX 900	1180 x 1000																							
GX 901	1440 x 1190																							
GX 1000	1420 x 1170																							
GX 1100	1420 x 1170																							
GX 1101	1590 x 1290																							
GX 1200	1570 x 1270																							
GX 1300	1570 x 1270																							
GX 1450	1570 x 1270											_												

## POWERFUL. USER-FRIENDLY. VALUE PROVEN.

### MACHINES IN THE GX SERIES

Use to your advantage the first-class hydromechanical two-platen design of the GX series in conjunction with the single-piston injection system. Thanks to the modular design, the compact two-platen clamping unit can be individually configured with all available injection units. You can also benefit from one-of-a-kind and intelligent product innovations: the GearX locking mechanism and the GuideX guide shoe with clamping sizes of up to 14,500 kN.

Highlights of the GX Series at a glance:

#### Powerful thanks to:

- Very short dry cycle time (2.3 seconds \*)
- High precision with maximum dynamic performance
- Minimum energy consumption

#### User-friendly thanks to:

- Outstanding accessibility
- Fast mold set-up
- Intelligent, user-friendly control system

#### Value proven thanks to:

- Robust clamping and injection unit
- Low maintenance costs
- Simple retrofitting





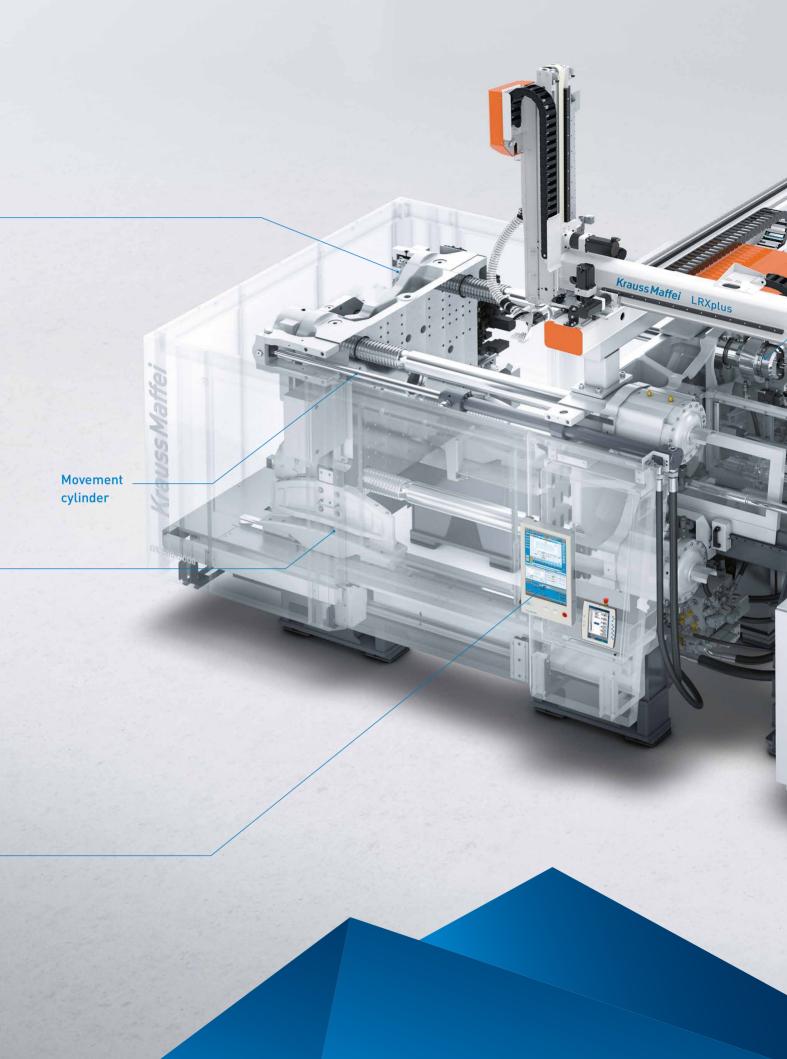
GearX locking device



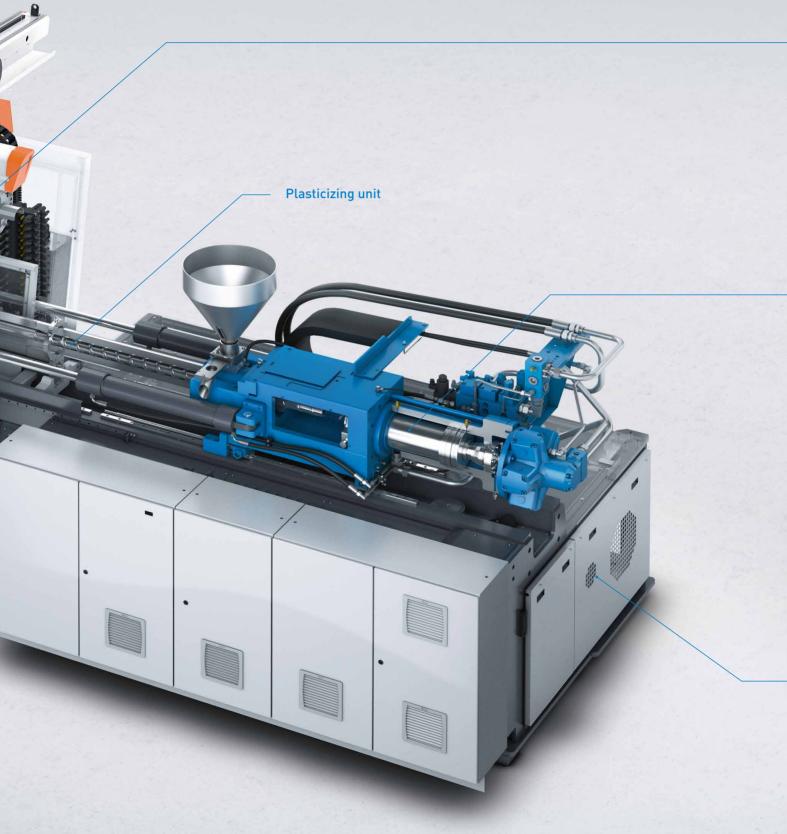
GuideX guide shoe with linear guides



MC6 control system



# AT A GLANCE THE MODULAR GX CONCEPT





Pressure pads

In-line injection unit



Powerpack and pump area





# EXCELLENT TWO-PLATEN TECHNOLOGY

# THE POWERFUL GUIDEX AND GEARX TEAM ENSURES FAST LOCKING AND EXCELLENT PART QUALITY

The hydromechanical two-platen clamping unit in the GX machine sets new standards in terms of quality and productivity. The ingenious GuideX guide shoe absorbs forces perfectly and increases the service life of molds. The innovative GearX locking device functions immediately and reliably.

# GuideX guide shoe – the intelligent machine element for absolute platen parallelism with high force absorption.

As an intelligent fixed bearing joint with an optimized FEM design, the GuideX guide shoe is a genuine highlight in the GX Series. Its stable design is the basis for the machine's outstanding platen parallelism.

Thanks to the innovative technology, the greatly reduced forces are transmitted to the linear guides.

This keeps the guides protected over the long term and maintains their precise ease of movement. The movements are energy-efficient and the sensitive mold area protection can achieve its full effect.

#### Fast locking thanks to GearX

GearX locks the machine within the shortest possible time. The locking element is positively engaged in the tiebar notches via a short flux of force inside the unit. The enclosed locking unit is located behind the moving mold fixing platen and is permanently protected. Thanks to the optimized and no-frills design, accessibility to the ejector area remains as spacious and clear as usual.

Depending on the need, customer-specific ejector hole patterns, ejector plates, unscrewing units or rotary distributors can be placed flexibly behind the moving platen.



The GuideX guide shoe absorbs forces and protects the guides. This ensures that the linear guide maintains its ease of movement and precision over the long term.



The GearX locking device is quick and reliable.



## Clamping force – quick and energy-efficient with the "BluePower" optimized clamping block

The clamping force is built up through four pressure pads behind the permanent mold fixing platen. The refined contact surfaces and seals in the pressure cushions are specially designed for high permanent operation as a result of their material pairing. One of the impressive features of the new energy-efficient clamping block is its speed in building up and reducing clamping force.



Long service life of the seals thanks to refined contact surfaces.



Cast-optimized platens are the basis for maximum part quality

## Stable, permanently precise mold platens guarantee the highest possible part quality

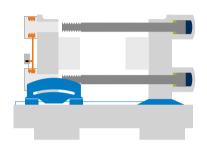
Excellent stiffness is ensured through the cast-optimized mold fixing platens with a rib structure. The rigid central node, the diagonal ribs and the large distances between the tiebars permit the installation of small, medium-sized and large molds. Thanks to the coherent overall concept of the GX clamping unit comprising platens, a clamping bed and GuideX, all occurring forces are ideally distributed. Your molds are therefore permanently protected.

#### YOUR BENEFITS:

- · Short dry cycle time (2.3 seconds \*)
- · Space-saving clamping unit
- · Maximum part quality
- · Minimum energy consumption
- · Excellent accessibility
- · Service-friendliness

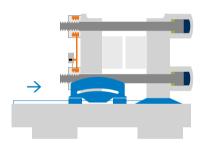
# EXCELLENT TWO-PLATEN TECHNOLOGY

# FUNCTIONAL DESCRIPTION OF GUIDEX AND GEARX



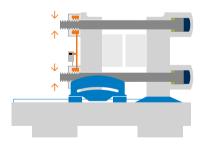
#### Open clamping unit

Thanks to the intelligent GuideX guide shoe, absolute platen parallelism is attained even with extremely heavy molds.



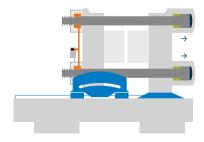
#### Closing movement

In conjunction with the linear guides, GuideX produces almost frictionless mold movements. The roller guide impresses through its precision and ease of movement.



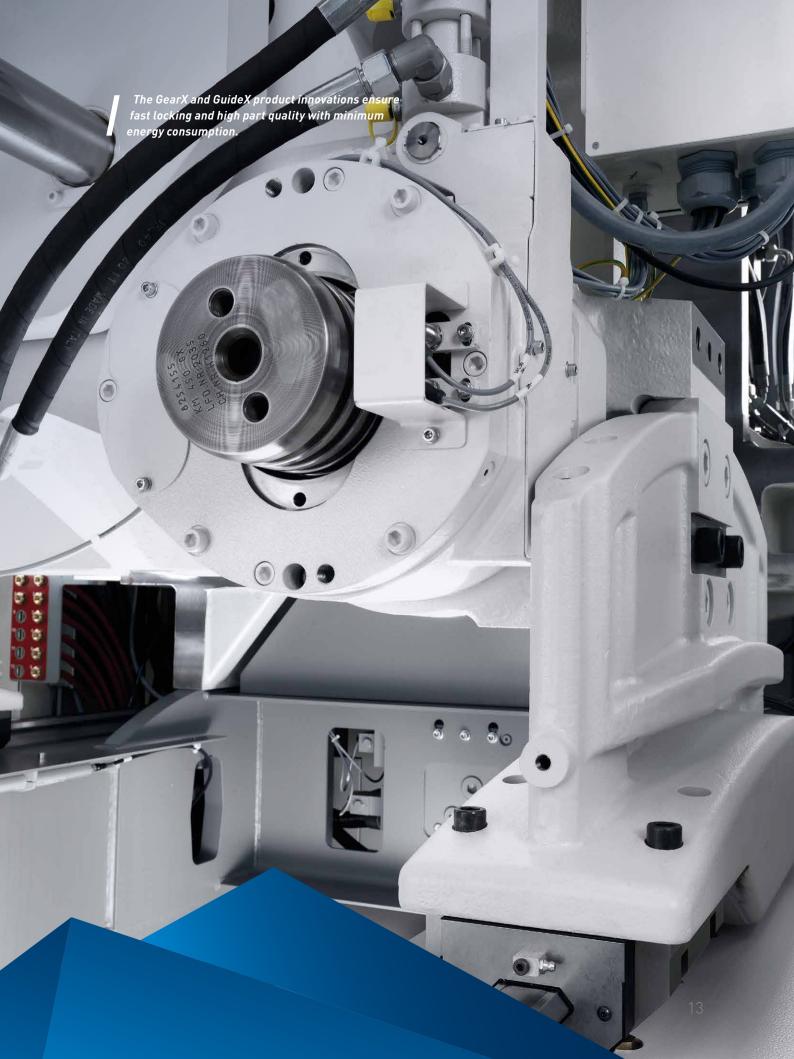
#### Locking device

Thanks to GearX, the machine is locked quickly and reliably. When they interact with one another, the new GuideX and GearX technologies produce an extremely energy-efficient clamping principle, precise mold movements and quick dry cycle times.



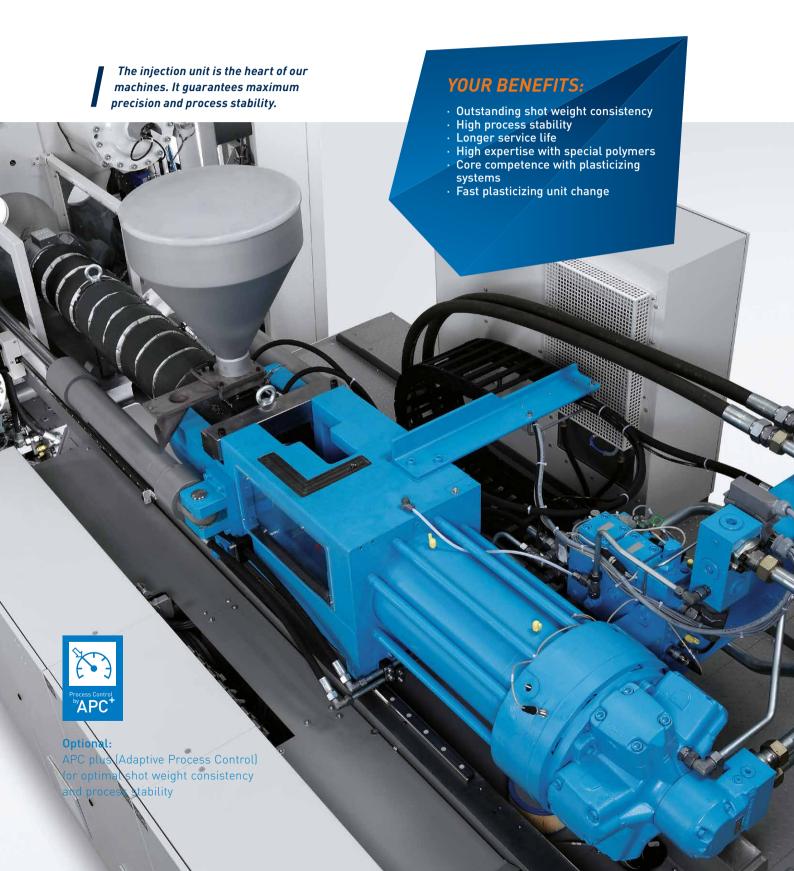
#### Clamping force build-up

The clamping force is built up quickly with exact reproducibility through the pressure pads. The intelligent design of GuideX protects the linear guide against overloading and guarantees its long service life.





Linear force transmission ensures maximum shot weight consistency.



# POWERFUL INJECTION UNIT WITH PROVEN PLASTICIZING SYSTEM

# FOR MAXIMUM REPRODUCIBILITY AND HIGH MELT QUALITY

### Maximum shot weight consistency with optimum reproducibility

Profit from unlimited precision – the proven in-line injection unit with its rotary piston design transmits the force centrally to the screw via the injection piston. This direct path ensures absolute precision and maximum reproducibility. Injection regulation of pressure and speed is a standard feature of the GX and guarantees you maximum process reliability.

#### High throughput with outstanding melt quality

Our plasticizing systems are characterized by their excellent melt quality and cover a wide range of applications for many and various plastics. The GX plasticizing system can be exchanged with other KraussMaffei series. Our many years of experience and technology expertise in coordinating complex processes during plasticizing ensure high melt specifications with corresponding throughputs and optimum melt quality. The right choice of plasticizing system leads to improved quality of your products and higher 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 resistance against adhesion, abrasion and corrosion in order to extend their service life. Depend-

ing on the part requirement, special plasticizing systems containing specific screws, check valves, and cylinder fittings are available to you. Extract from our wide range of plasticizing solutions for processing:

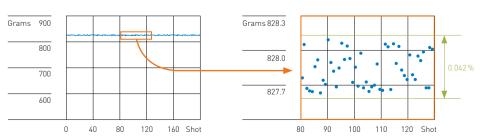
- PC and PMMA materials,
- Short- and long-fiber-reinforced plastics,
- Blends,
- Thermosets and silicones.

With our core competence, i.e. plasticizing, there are practically no limits to your material-specific requirements.



As a plasticizing specialist, our product range contains the right screw for you for every material

#### Shot weight consistency



Shot weight consistency of 0.042% based on the example of a box lid with a shot weight of 828 g (PP) and a cycle time of 39 seconds.

# USABILITY IS OUR TOP PRIORITY

# THE MC6 CONTROL SYSTEM WITH SPLIT-SCREEN AND ECO FUNCTION

## The new MC6 control system meets all of your usability needs.

Whether you are working with a KraussMaffei control system for the first time or you are accustomed to its MC5 predecessor – MC6 technology is so intuitively accessible that you will work better and more efficiently than ever before.

### Everything at a glance – thanks to the split-screen technology

SplitScreen technology is one of the special highlights of the MC6: Thanks to the split-screen display, you can see the most important production processes simultaneously. In parallel with the actual value cycles, you can control, for example, the injection process.

#### Clarity thanks to the ProcessDesigner tool

The integrated ProcessDesigner tool provides a clear visual presentation of all current processes and enables you to modify them, depending on requirements, by means of simple drag-and-drop movements or swiping movements.

## Destination reached with just two taps – thanks to a drop-down menu and a favorites bar

To ensure that handling the control unit is as user-friendly as possible, deeper navigation levels have generally been avoided with the MC6. Based on the motto "Get where you need to go as quickly as possible," this offers a clear overall concept with individually configurable favorites bars. In order to guarantee optimum use, the machine keypad only provides the keys which can be selected in regard to the operating states of the machine. Our user-friendly principle is rounded off by a special field for selecting systems. You can therefore directly select all components of the machine up to automation and technology.

#### Go Eco! Energy efficiency at the push of a button

In keeping with our overall energy-efficient design, the MC6 control system has an "Eco button". This allows you to configure the machine for optimal energy efficiency at the push of a button.

#### Intelligent user profiles

Thanks to standardized role profiles – from the machine operator and mold setter through to the production manager – you can assign different authorizations quickly and easily. Of course, you can also create additional hierarchy levels and assign individual rights to users. Another feature of the MC6 is the resistive dual-touch function which also allows the screen to be operated by a person wearing gloves. With the Windows 7 Embedded operating system, the MC6 is ideally equipped for today's technologies and those in future. The MC6 control system can be ordered in more than 30 languages. And best of all: Every feature is available not only with the control system, but also on the handheld pendant.

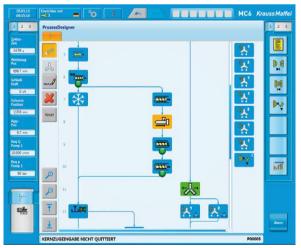


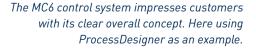
Want the machine set for optimum energy efficiency? Always on demand! – Simply press the Eco button.

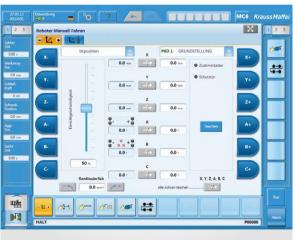
#### YOUR BENEFITS:

- User-friendly function principle
- Simple process control thanks to SplitScreen and ProcessDesigner
- · Clear structures
- · Standardized user administration
- Two-way operation of automation and machine possible









You can operate the automation both from the handheld pendant and from the injection molding machine. And with the MC6, even reverse operation of the injection molding machine is easy from the robot's manual control panel.



# OPTIMAL ACCESSIBILITY FOR FAST SET-UP AND EASY MAINTENANCE

#### User-friendliness in a new dimension

The machines in the GX series feature easy access to the clamping unit area, ejector area and nozzle area as well as to the control cabinets and the pump area. Thanks to this accessible concept, you always work in an extremely convenient and time-saving manner.

### The new dimension of accessibility has many positive sides

Direct access to interfaces close to the mold: All cooling water connections, core puller valves, cascade control systems and the related interfaces for electric signals are arranged in fixed positions on the mold fixing platens. The interface for the hot-runner control stations is located on the operator's side. This extremely clear concept ensures clear structures and simple set-up.

## Everything under control - thanks to an easy-to-install ejector area

The ejector area offers great freedom of movement, especially when coupling mold ejectors. The large doors provide easy access for set-up. The large observation windows actually allow optimum viewing during production.

#### Simple parts removal

The machines (4000–9000 kN) are standardized for parts transportation in the direction of the machine with a chute. Depending on the production requirements, conveyors can be integrated and make non-automated production possible.

#### Nozzle change and cleaning made easy

Opening the movable and transparent safety gate creates a large space through to the nozzle area. The nozzle is therefore easily accessible and can be simply replaced and cleaned.

#### Fast production changeover for a fast-moving market

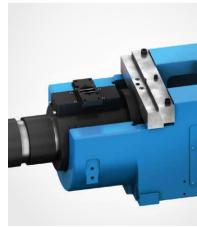
Using our quick mold clamping systems, plasticizing units can be changed quickly and easily so that you can immediately retool for the following process. The nozzle area is clearly visible and extremely easy to access. Even with lower shot weights, we can install a smaller plasticizing unit for you using an adapter.



All of the important interfaces for the mold can be reached easily.



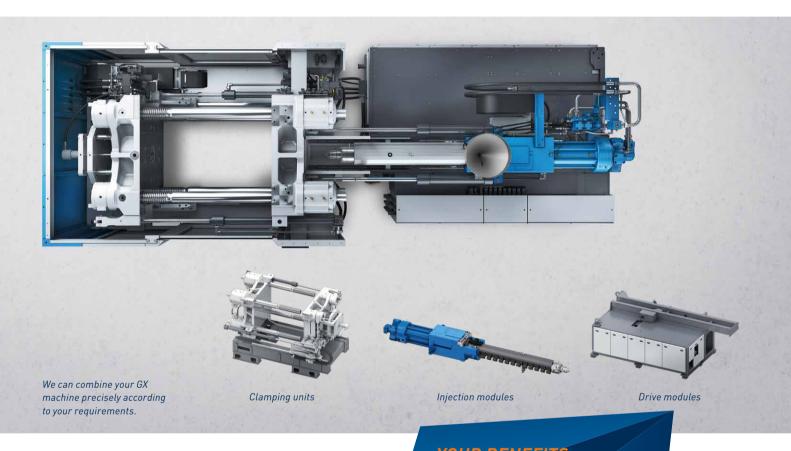
The spacious ejector area is also suitable for special ejectors or turntables.



Our quick mold clamping system creates ideal conditions for a quick product change and easy cleaning.

# FLEXIBILITY THROUGH MODULARITY

# THE GX MACHINE CAN BE INDIVIDUALLY COMBINED

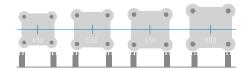


## Profit from the flexibility, productivity and efficiency of our machine concept

The new modular system of the GX series enables us to take account of your individual needs. Depending on which injection unit, clamping unit or drive unit you require, our modular machine concept enables us to satisfy your requirements precisely. Thanks to the constant height of the machine center, the modular system is compatible with all clamping/injection unit combinations.

#### YOUR BENEFITS:

- Machine combination according to the customer's requirements
- Energy-efficient drive systems (potential savings up to 50%)
- · Premium-quality hydraulics



The height of the center axis remains identical in the GX (deviation ≥ SP 12000) thus permitting a flexible combination of the injection and drive modules.

# THE POWERPACK CONCEPT ENERGY-EFFICIENT DRIVE UNITS FOR EVERY NEED



## The PowerPack concept improves productivity and increases energy efficiency

In the modular drive system of the GX series, the latest generation of the variable delivery pumps is a standard feature. Their use improves efficiency and guarantees you maximum cost-efficiency. The parallel movement of the ejector and core pullers increases productivity and is available as an option. The new premium-quality hydraulic components were designed with the focus on higher availability and a long service life to meet the latest state of the art regarding energy efficiency.

Depending on the application and production cycle, the machines can be supplied with different Power-Pack performance classes for first-class economical production.

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

The optional use of "Blue Power Servo Drive" technology further optimizes energy consumption compared with variable delivery pumps. The savings amount to 10 and 30 percent depending on the particular application. Compared with conventional hydraulic concepts on the market, savings of up to 50 percent are actually possible. Another positive secondary effect is the lower noise level of servo drives



# IDEAL INTERACTION BETWEEN AUTOMATION AND MACHINE INTELLIGENT, COST-EFFECTIVE OVERALL 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.

## Compatible. Simple. Always – The new LRXplus linear robot

The linear robots of the LRXplus series from KraussMaffei offer a wide range of applications and cover all clamping force ranges – from small to large. They can be used universally: from simple pick-and-place solutions to challenging tasks in the injection molding process such as insertion, demolding, processing and more.

The new LRXplus linear robots are particularly robust and durable and feature optimized profile geometry for the axes of movement. These now consist of crash-proof aluminum or steel, so only minimum damage occurs in the event of a crash. Consequently, downtimes and maintenance expenses are reduced to a minimum.

### Unlimited opportunities with the KraussMaffei industrial robot

The industrial robot (IR) guarantees maximum flexibility during complex demolding and a wide range of other assembly steps or production steps. The intelligent control system concept featuring a simplified user interface and an extended expert mode is suitable for every user group and helps you reach your goal with often just two clicks. The user interface of the handheld pendant can also be selected in the beginner mode or expert mode depending on the user authorization and hierarchy.

# IDEAL INTERACTION BETWEEN AUTOMATION AND MACHINE

## COMBINATION OPTIONS

Machine/ clamping force in metric tons	LRX 150 (payload: 15 kg)		(pa	LRX 250 yload: 25 k	g)	LRX 350 (payload: 35 kg)	) ( <sub>F</sub>	LRX 500 payload: 50		LRX 750 (payload: 75 kg)		
GX 400												
GX 450												
GX 451												
GX 500												
GX 550												
GX 551							_					
GX 600							_					
GX 650 GX 651												
GX 750												
GX 750 GX 900												
GX 900 GX 901												
GX 1000												
GX 1100												
GX 1101												
GX 1200												
GX 1300												
	Indust	rial rob	oot (floc	or)		Indust	rial rob	ot (con	sole)			
Machine/ clamping force in	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	IR 1500 R3100 F/K	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	IR 1200 R3500 S/K	R370	
Machine/clamping force in metric tons	IR 500	IR 1200	IR 900	IR 1200		IR 500	IR 2100	IR 1800	IR 1500		R370	
Machine/clamping force in metric tons	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 451	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 451 GX 500	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 451 GX 500 GX 550	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500		
Machine/clamping force in metric tons GX 400 GX 450 GX 451 GX 500 GX 550 GX 551	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	IR 900 R3700 S/K	
Machine/clamping force in metric tons GX 400 GX 450 GX 451 GX 500 GX 550 GX 551 GX 600	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 550 GX 551 GX 600 GX 650 GX 650 GX 651	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 550 GX 551 GX 600 GX 650 GX 650 GX 651 GX 750	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 550 GX 551 GX 600 GX 650 GX 651 GX 750 GX 700	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 550 GX 551 GX 600 GX 651 GX 750 GX 750 GX 750 GX 900 GX 901	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 550 GX 551 GX 600 GX 651 GX 750 GX 750 GX 900 GX 901 GX 1000	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/clamping force in metric tons GX 400 GX 450 GX 550 GX 551 GX 600 GX 651 GX 750 GX 900 GX 901 GX 1000 GX 1100	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/ clamping force in metric tons GX 400 GX 450 GX 451 GX 500 GX 551 GX 600 GX 650 GX 651 GX 750 GX 900 GX 901 GX 1000 GX 1100 GX 1100	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	
Machine/ clamping force in metric tons GX 400 GX 450 GX 451 GX 500 GX 551 GX 600 GX 651 GX 750 GX 900 GX 901 GX 1000 GX 1100 GX 1101 GX 1200 GX 1300	IR 500 R2500	IR 1200 R2500	IR 900 R2700	IR 1200 R2900	R3100	IR 500 R2500	IR 2100 R2900	IR 1800 R3100	IR 1500 R3300	R3500	R370	



# CUSTOMIZED AUTOMATION SOLUTIONS FOR MAXIMUM EFFICIENCY

Our automation expertise includes customized solutions from removal to post-processing in highly productive manufacturing processes.

#### **Gripper expertise**

Development and production of end-of-arm tools, including innovative 3D printing grippers.

#### Versatile automation solutions

Testing, inserting, marking and mounting – precise and reliable.

#### Multirobot systems

Seamless combination of linear and industrial robots for maximum flexibility.

#### Traceability applications

Seamless traceability for maximum quality and safety





# OUR WORLDWIDE EXPERTISE IS YOUR ADVANTAGE DIGITAL & SERVICE SOLUTIONS

With your KraussMaffei machine, you have chosen a product that delivers the highest levels of productivity and reliability. In addition to our range of machinery, KraussMaffei focuses on comprehensive and future-oriented solutions, innovative business models and an innovative portfolio of digital products.

#### Customer service at the touch of a button

The process of digital transformation is becoming faster and easier than ever for the customer. Our Digital & Service Solutions unit makes your production chain even more flexible and efficient with future-oriented solutions. KraussMaffei thus globally provides an all-inclusive customer service package and networks machines and processes with each other. Our global support offers a sound basis for your local long-term success.

## Individual challenges in mechanical engineering call for intelligent solutions

With our services portfolio, we support you throughout your machine's lifecycle with a strong focus on your specific needs. In order to satisfy your wishes, we offer you a wide range of solutions in order to ensure maximum availability and optimum productivity of your machines.

#### Technology<sup>3</sup> as a unique selling proposition

KraussMaffei is the only supplier in the world with a product range comprising the most important machine technologies for plastic and rubber processing: injection molding machinery, automation, reaction process machinery and extrusion technology. KraussMaffei is represented worldwide with more than 30 subsidiaries and over 10 production plants as well as about 570 commercial and service partners. Working together with our customers and partners, we are thus in a position to offer vast and unique expertise in the industry.

You can find further information at

# KRAUSSMAFFEI – PIONEERING PLASTICS



#### Extensive expertise from a single supplier

KraussMaffei is one of the world's leading manufacturers of machinery and systems for producing and processing plastics and rubber. Our brand has been synonymous with cutting-edge technology for over 180 years. Our product range includes all technologies in injection molding, extrusion and reaction process machinery. KraussMaffei has a unique selling proposition in the industry as a result. By drawing on our proven innovative capacity, we can guarantee our customers sustained additional value over their entire value-adding chain through our standardized and individual product, process, digital and service solutions. The range of our products and services allows us to serve customers in

many sectors including the automotive, packaging, medical and construction industries. We also supply manufacturers of electrical and electronic products and household appliances.

#### At your service all over the world

KraussMaffei is represented all over the world. Subsidiaries provide you with support in the countries shown in light blue. Our sales and service partners take care of you in the regions shown in white.

You can find all contact information at www.kraussmaffei.com

# POWERFUL. USER-FRIENDLY. VALUE PROVEN.

EXPERIENCE OUR GX SERIES INJECTION MOLDING MACHINES



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