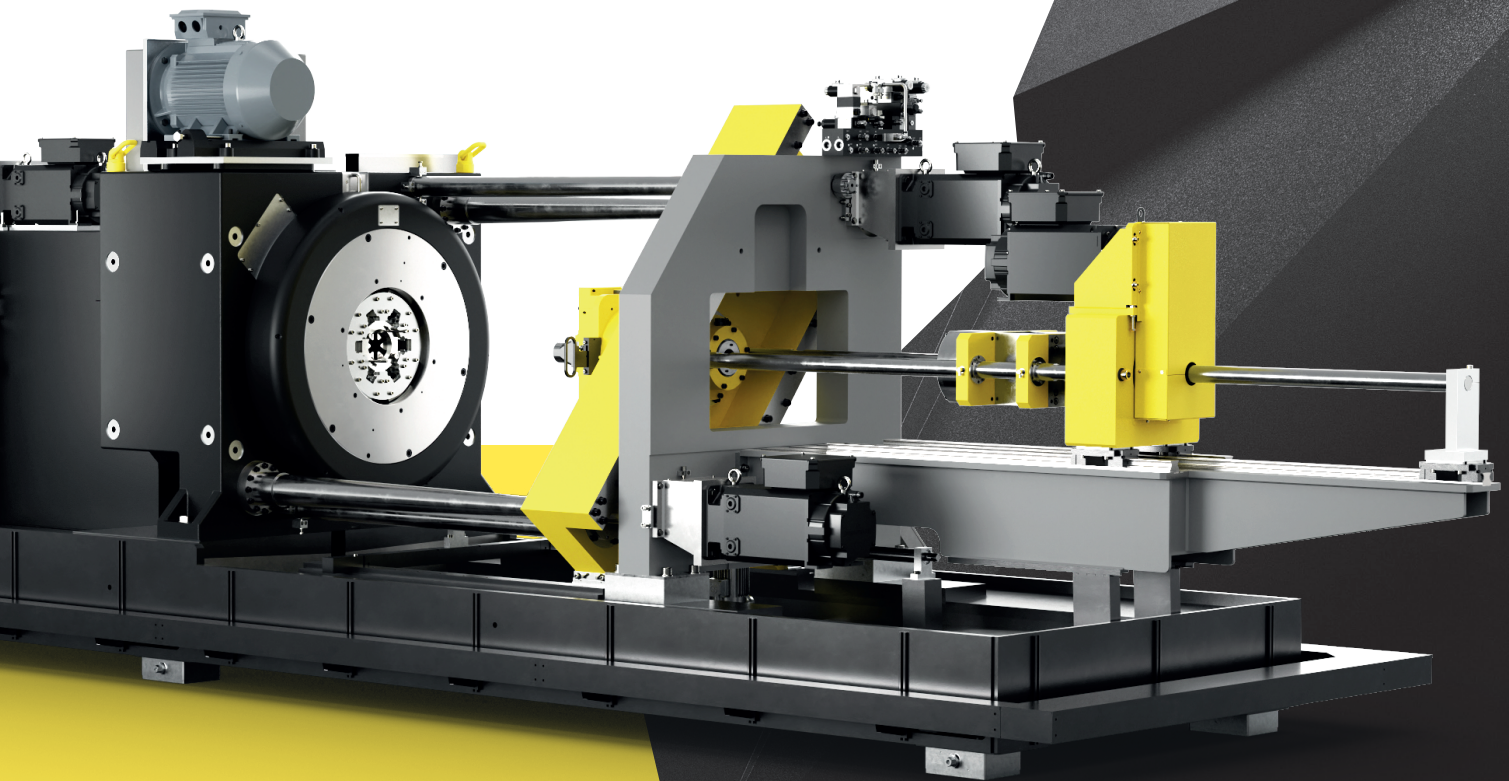


FELSS

The smarter way of forming.

GENERATION E10

ROTARY SWAGING REDEFINED.



SETTING NEW STANDARDS.

The Gen E10 combines modularity, precision and process stability, delivering performance where dynamic forming processes meet the highest component quality standards.

ROTARY SWAGING MACHINE GENERATION E10

MORE OUTPUT. LESS ENERGY. MORE CONTROL.

The Generation E10 is the new machine concept for rotary swaging – developed for applications where cycle time, run-out accuracy and process stability must work in parallel. Its design is consistently built for repeatability and robust series production.

The electric concept reduces complexity and supports efficient, safe operation in the machine environment. At the same time, the Gen E10 remains service- and setup-friendly – so that process performance does not become a burden in day-to-day operation.

FASTER

High process dynamics for shorter cycle times and higher output per shift.

MORE PRECISE

Its strength and the NC system support repeatability and consistent run-out.

RESOURCE EFFICIENT

Its electric design enables lower energy consumption, depending on application and benchmark.

STRONGER

High forming performance and stable power transmission – designed for robust series production.

PERFORMANCE IN NUMBERS.

Forming concept	6-jaw system (instead of 4)
Forming force	6,000 kN total (1,000 kN per segment)
Dynamics	up to 50 Hz swaging frequency
Precision	50% higher run-out accuracy
Recess feed speed	radial 10 mm/s
Component range	blanks up to Ø 100 mm
Energy	up to 30 % lower energy consumption



THE GEN E10 PRINCIPAL

MODULAR SYSTEM

Clearly structured for variants, scaling and service.

STANDARDIZED MODULES

A high share of identical spindles and motors for predictable maintenance and fast availability.

APPLICATION PROFILE

For the series production of drive components.

APPLICATION AREAS

- Automotive
- E-Mobility
- Drive train
- Motor/drive unit
- Special applications

SIMPLIFIED SETUP

Optimized tool adjustment, no wedge change during setup.

LARGELY ELECTRIC

Reduced hydraulic content for clearer and safer processes in the machine environment.

FELSS DIGITAL

Supports process reliability and quality assurance.

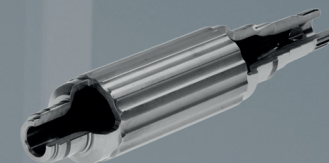
FAST IMPLEMENTATION

Short lead times and a TCO-oriented concept (investment & operation).

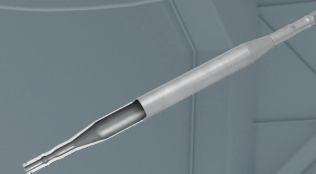
OPTIMIZED FOR THESE COMPONENTS

Rotor shafts, side shafts and transmission shafts are representative of the components for which the Generation E10 is technically optimised – wherever process dynamics and precision in the finished part need to come together.

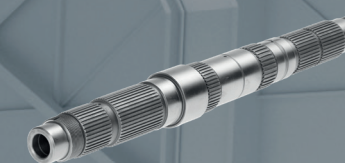
For deviating geometries and specific process requirements, the machine concept can be selectively extended right through to special applications.



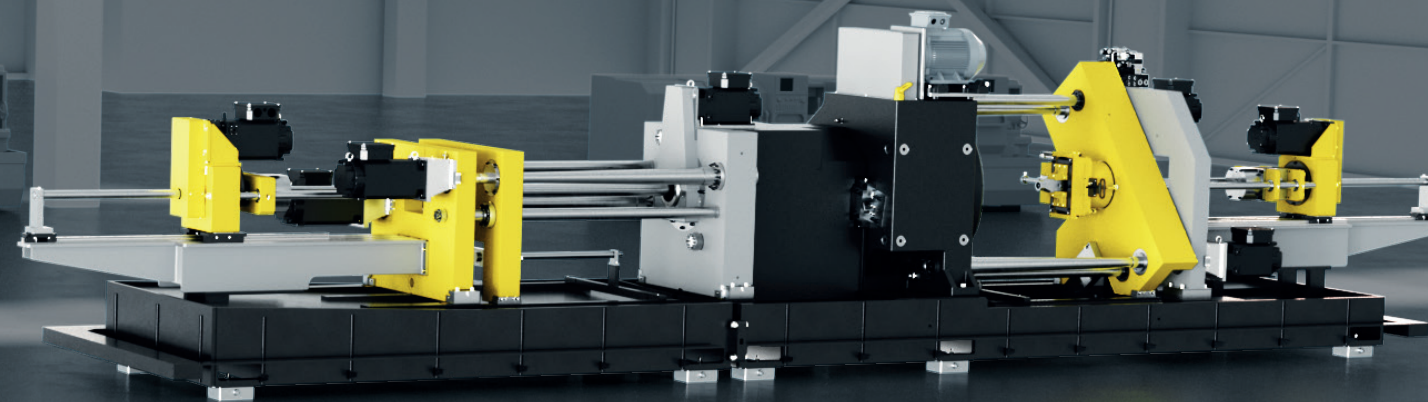
ROTOR SHAFT



SIDE SHAFT



TRANSMISSION SHAFT



36 t
WEIGHT

2 m
WIDTH

2,2 m
HEIGHT

12 m
LENGTH

THE NEXT STEP IN ROTARY SWAGING: **PLATFORM OVER STAND-ALONE.**

The Gen E10 translates technology into production reality: a robust structure, clear process control and high availability – turning demanding geometries into stable series production.

1 FEED UNIT & CLAMPING UNIT

Positions and clamps the workpiece reproducibly and feeds it into the process in a controlled manner – for safe operation and consistent component quality.

2 FEED MANDREL

Supports the workpiece from the inside and enables complex internal geometries as well as defined wall thicknesses in hollow components.

3 6-JAW FORMING UNIT

With 6 jaws, it forms the material in fast, uniform impulses – for high forming performance and high process stability at the same time.

4 TOOL ADJUSTMENT

Positions the forming tools precisely and reduces setup times, as diameter variants are implemented by positioning instead of complex changeovers.

5 REAR MANDREL UNIT

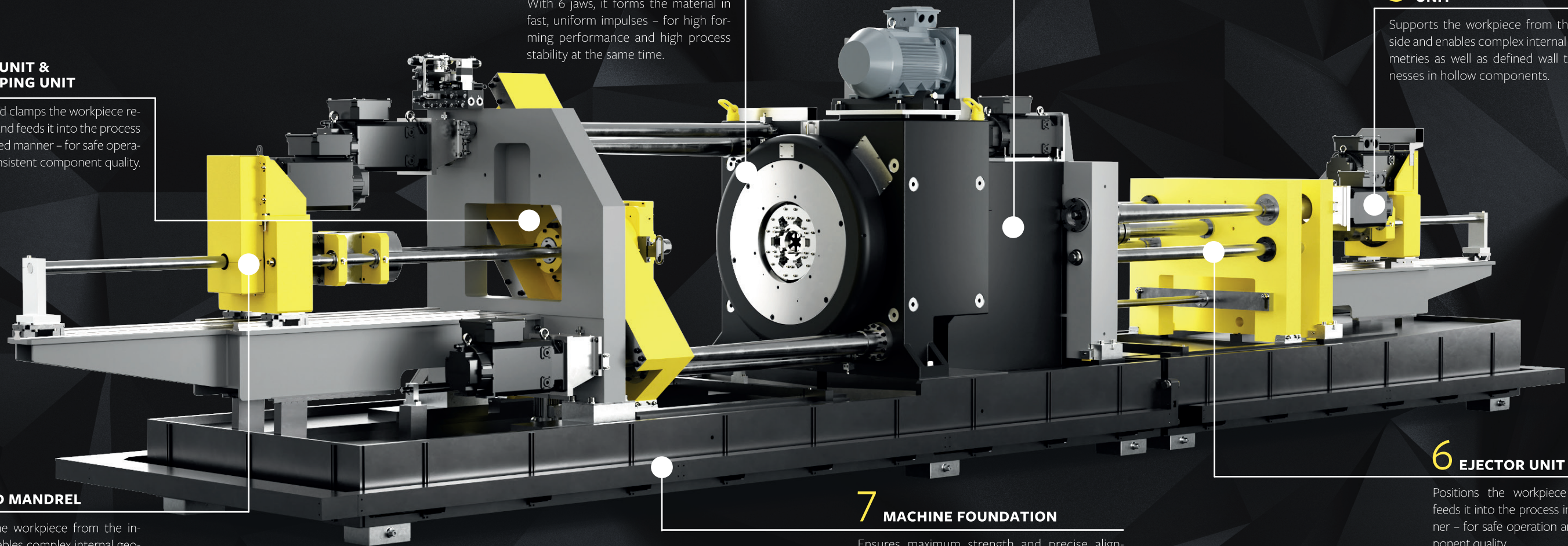
Supports the workpiece from the inside and enables complex internal geometries as well as defined wall thicknesses in hollow components.

6 EJECTOR UNIT

Positions the workpiece reproducibly and feeds it into the process in a controlled manner – for safe operation and consistent component quality.

7 MACHINE FOUNDATION

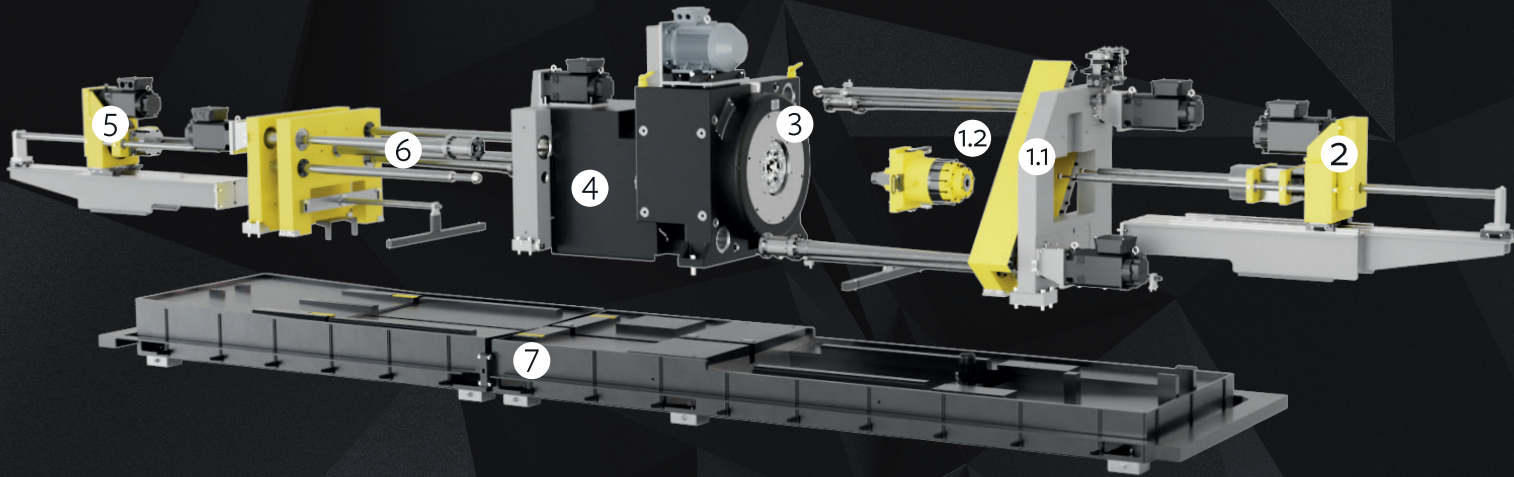
Ensures maximum strength and precise alignment of all assemblies – the basis for repeatability and consistent run-out.



MODULAR INSTEAD OF COMPLEX

The modular design of the Gen E10 is the basis for flexibility, efficiency and availability. Each functional area is designed as an independent module that, in interaction with the others, supports the machine's performance while simplifying service, setup and lifecycle management.

This concept creates a structure in which individual components can be selectively replaced, expanded or serviced without compromising the overall process and while maintaining reliable operation.



1.1 FEED UNIT

Drive	2x planetary roller screw drive
Motor type	servo motor
Drive power	2x 75 kW
Max. working speed	100 mm/s
Max. rapid traverse speed	666 mm/s
Max. feed force	100 kN (dyn.) / 300 kN (stat.)
Max. stroke	1000 mm

1.2 CLAMPING UNIT / COMPONENT STOP

Drive	hydraulic
Clamping jaw stroke	45 mm
Clamping force	40 kN
Component stop stroke	40 mm
Component stop force	300 kN
Component stop passage	65 mm

4 TOOL ADJUSTMENT

Drive	trapezoidal screw drive
Motor type	servo motor
Drive power	75 kW
Max. working speed	10 mm/s (radial infeed)
Max. diameter adjustment	40 mm
Tool mounting	form-fitting

5 REAR MANDREL UNIT

Drive	2x planetary roller screw drive
Motor type	servo motor, reinforced bearings
Drive power	1x 75 kW
Max. working speed	100 mm/s
Max. rapid traverse speed	666 mm/s
Max. feed force	50 kN (dyn.) / 150 kN (stat.)
Max. stroke	1000 mm

2 FEED MANDREL

Drive	2x planetary roller screw drive
Motor type	servo motor, reinforced bearings
Drive power	1x 75 kW
Max. working speed	100 mm/s
Max. rapid traverse speed	666 mm/s
Max. feed force	50 kN (dyn.) / 150 kN (stat.)
Max. stroke	1000 mm

3 ROTARY SWAGING UNIT

Max. blank diameter	100 mm
Max. rotating ring speed	350/min
Max. swaging shaft speed	350/min
Max. swaging frequency	50 Hz
Number of forming segments	6
Radial forming force / segment	1000 kN
Swaging shaft locking	integrated
Wedge adjustment	servo-mechanical

6 EJECTOR UNIT

Drive	2x planetary roller screw drive
Motor type	servo motor
Drive power	2x 75 kW
Max. working speed	100 mm/s
Max. rapid traverse speed	666 mm/s
Max. feed force	100 kN (dyn.) / 300 kN (stat.)
Max. stroke	1000 mm

7 MACHINE FOUNDATION

Two-part design
Top surfaces chamfered for KSM return
Walkable surfaces with anti-slip coating
Dimensions approx. 10 x 2 m
Total weight approx. 11 t

THE FELSS GROUP

The Felss corporate group, founded in 1905, is a provider of solutions in the field of cold forming of tubes and solid materials and a specialist for the automobile industry. Since the integration of the HMP companies purchased in May 2019, Felss now also serves numerous customers in other sectors. Among these are customers from industry, aerospace, medicine and precision mechanics.

As lightweight construction experts, we develop optimal processes, machines or also the finished product in component manufacturing for our customers.

Around 700 employees work worldwide at our seven locations in Germany, the USA, China and Slovakia.

MAKE: FELSS SYSTEMS.

MECHANICAL ENGINEERING

As experts in lightweight design, we realize optimal solutions and processes for our customers' individual machines, production systems, and process chains. Furthermore, we support customers at all times – be it with maintenance and training measures, with the providing of new tools, and with the possibility to further develop and expand upon systems on request.

BUY: FELSS ROTAFORM.

COMPONENT MANUFACTURING

The Felss Group offers component manufacturing extending from prototypes to large series. In the process, we concentrate not only on our core technologies, but instead also offer a broad range of services for ready-to-install components through additional in-house technologies.



USA

Component manufacturing
New Berlin // WI



GERMANY

Machine building
Königbach-Stein
Pforzheim
Nesselwang

Component manufacturing
Bretten-Gölshausen



CHINA

Machine building
Kunshan

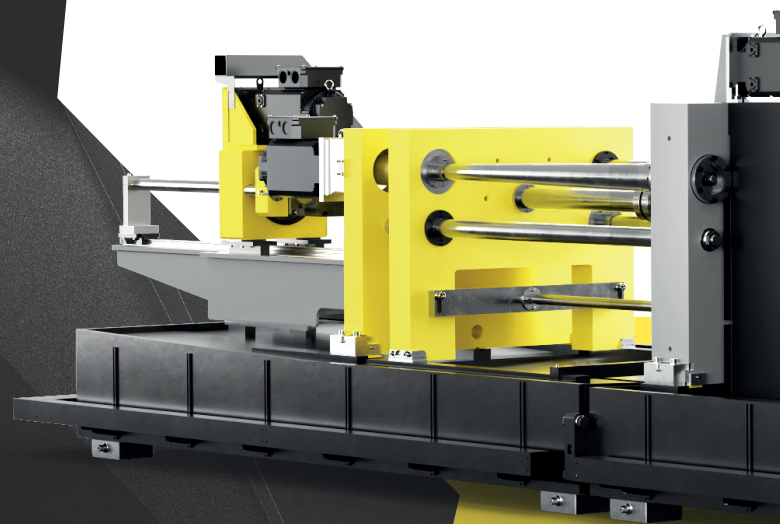
Component manufacturing
Kunshan

SLOVAKIA

Component manufacturing
Ilava

SINCE

1905



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