



 **FELSOMAT**®



Genius
Production

See the big picture

The transmission and engine production of tomorrow is being created today: by Felsomat.
Because we question standards and always replace what is good with what is better.
Because we achieve pioneering results in production technology every day.
Because we realize revolutionary profitability in processing and automation.

As a global system supplier, Felsomat is taking the automotive industry into a new era.
We analyze production processes and replace them with technologically innovative process chains, which opens up completely innovative prospects in production technology.
To recognize the potential in detail one must look at manufacturing in its entirety.

The clear mission: to lower costs, to reduce process times, to improve quality,
to protect the environment.

The ultimate strategy: Genius production.

HIGHLY

PRODUCTIVE



20SEC

RZ FL

FTC

FTC

FHC

SyncroTherm

FLW

The text '205EC' is rendered in a highly stylized, three-dimensional font. Each character is composed of multiple rectangular and trapezoidal segments that are illuminated from within, creating a bright yellow-orange glow. The characters are set against a dark, gradient background that transitions from a lighter grey at the top to a darker grey at the bottom. The text is centered horizontally and has a subtle reflection on the surface below it.

From rough part to completed work piece

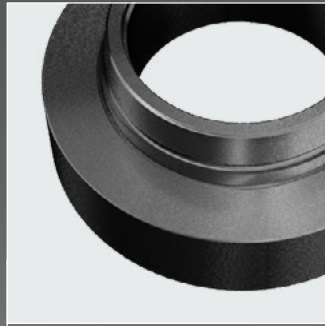
One piece flow with brilliant timing. All processing stages in a perfectly coordinated rhythm. All handling processes optimally integrated. Progress timed to the second. Standstill happens elsewhere. Productivity on a new level.

Welcome to the world of Felsomat.

Flexline – One Piece Flow – when every second counts

Efficient, cost-effective and in top quality

Green turning



FTC

Gear hobbing, chamfering and deburring



FHC

Gear & clutch body assembly and laser welding



FLW



Integrated
vacuum hardening



SyncroTherm

Hard turning / grinding



FTC

Hard finish grinding



RZ 160 FL



Flexline "Hauptzeit" Machines

Increasing synergy effects



FTC Flexible Turning Center

High-precision turned parts equal to grinding quality

Lowest unit costs, highest reliability, permanent precision accuracy in the micron range – FTC sets new standards for profitability and quality in turning. Having been developed specifically for high-performance processes and for eco-friendly dry machining of chuck components, it reduces previous unit costs by up to 50 % and achieves unprecedented results in the turning process.

Clear facts

- ▶ Chip-to-chip time < 1 sec
- ▶ Changeover time < 2 min

FHC Flexible Hobbing Center

Minimal idle times in the process

Dynamic performance for top gear quality. A clever process combination that produces new potential where nobody expects: Hobbing, in parallel with Chamfering and Deburring, without prolonging idle time. This unique 2 spindle combination provides a reliable process for changing the work piece on the second spindle while hobbing on the first spindle.

Clear facts

- ▶ Chip-to-chip time < 1 sec
- ▶ Reduced machining times due to high material removal rates
- ▶ Lowest unit costs



FLW Laser Welding Center

State of the art technology

The system partnership with Trumpf ensures improved productivity, quality and flexibility. Faster due to the dynamic rotary indexing ring with simultaneous multi-station processing and more accurate due to the high rigidity and outstanding damping behavior of the machine base in composite construction with mineral cast filling. Individual equipment packages facilitate the addition of assembly, joining, preheating, measuring and marking stations to the machine.

Clear facts

- ▶ Solid state laser with up to four independently controlled laser beams (Trumpf TruDisk laser)
- ▶ Distribution of the laser beams by fibre optic cable
- ▶ Compact design



SyncroTherm Heat Treatment Furnace

Case hardening within minutes

Through the strategic cooperation with ALD Vacuum Technologies, we have succeeded in converting the large batch-based heat treatment to the treatment of individual parts. As such, we attain better results in productivity and quality and we achieve a high level of environmental sustainability. With the newly developed heat treatment technology, the smallest dimensional and shape changes on the component can be realized by computer control using radiation heating, low pressure carburisation (with carbon carrier acetylene) and gentle gas quenching with nitrogen.

Clear facts

- ▶ Heat treatment in an one piece flow
- ▶ Highest precision on the work piece



RZ 160 FL Gear Grinding Machine

Innovation based on experience

For top performance we use the Generating Gear Grinding process invented and perfected by Reishauer which we have fully integrated into the Felsomat Flexline. The RZ 160 FL Reishauer gear grinder has two work spindles which allow work piece loading and unloading in parallel with gear grinding which minimizes idle time and provides a very high level of productivity.

Clear facts

- ▶ Low-noise surface structures on the tooth flank due to LowNoise shifting technology
- ▶ Compensation for grinding wheel wear by constant shifting for maximum productivity and process reliability
- ▶ Optimum load carrying capacity due to the option of grinding out the root

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FELSOMAT®



Modular Gantries

The future of lean production

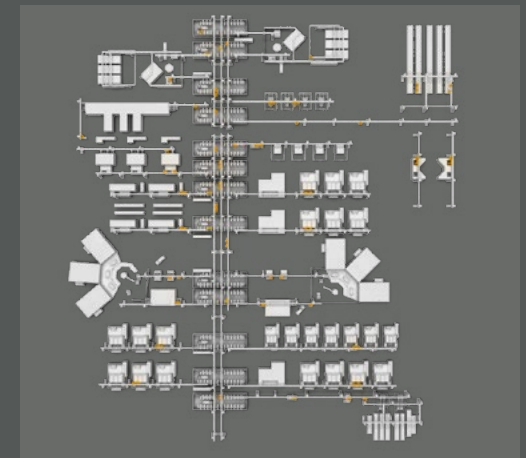
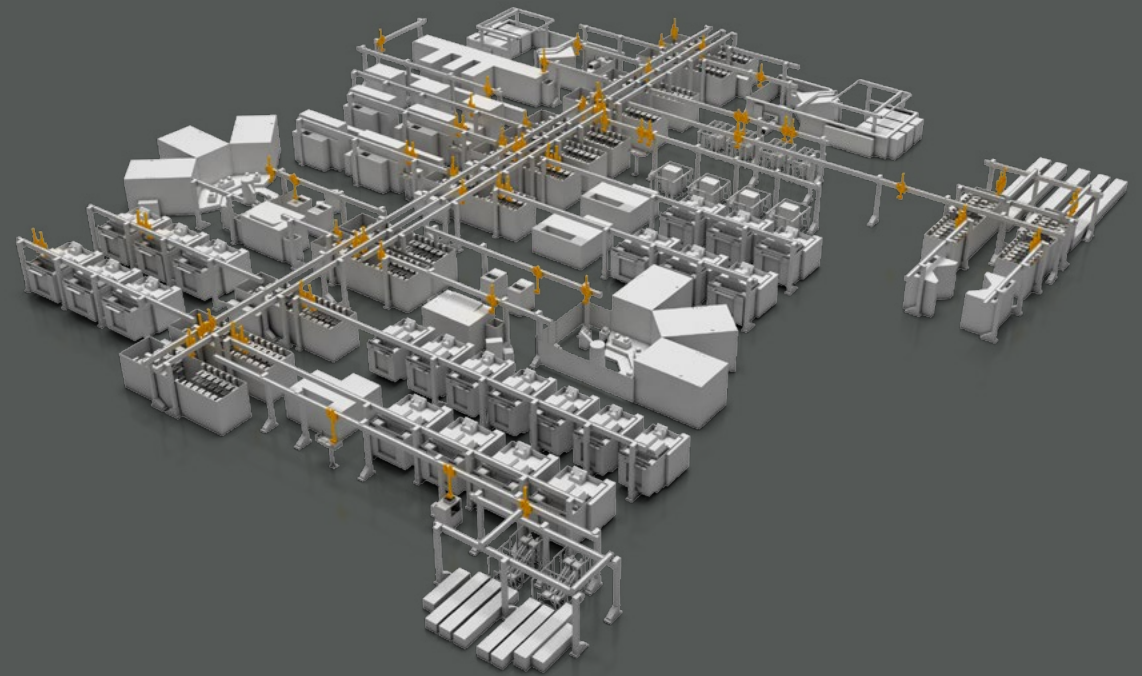
Whether First In, First Out or Last In, First Out, Felsomat makes flexibility its guiding principle.

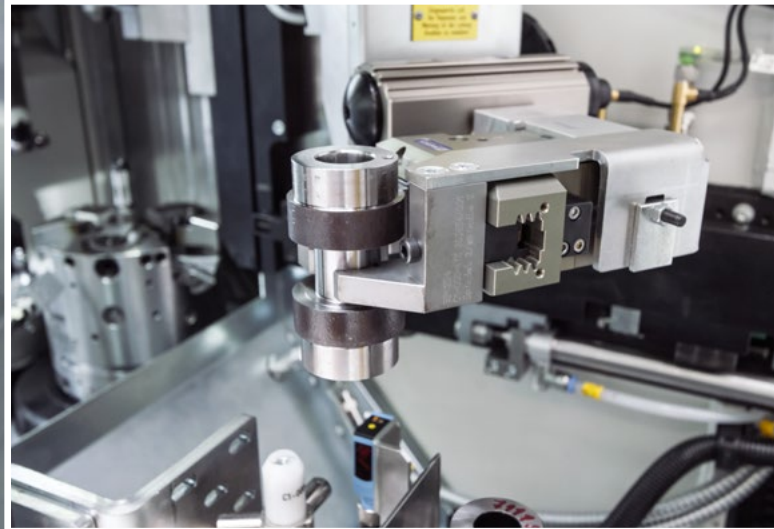
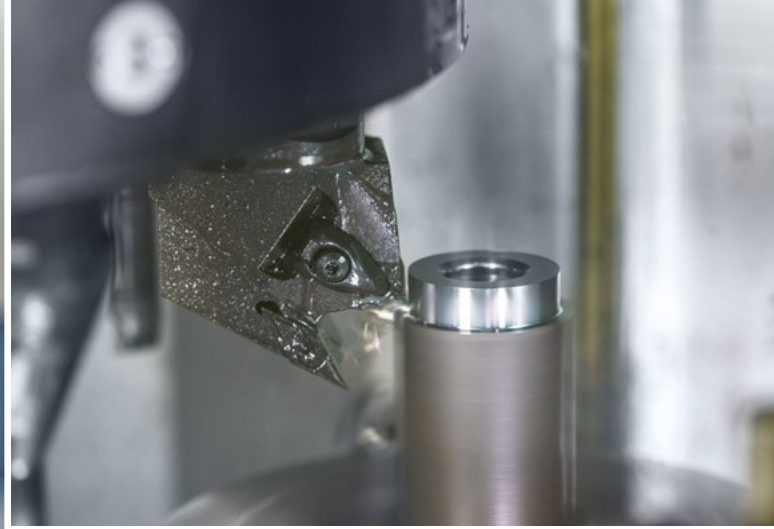
Intelligent linking is the key whereby Felsomat opens new doors to even greater productivity. From the FlexCell with a standardized and demand-based scalable system architecture to the Agile Production Systems, we create value added with tailored solutions. Because of the modular structure, adjustments to capacity and flexible extensions to the level of automation are possible at any time.

From manufacture in batch size 1 through variant manufacture in small batches to high-volume manufacture with comprehensive production order and material management: the Felsomat standard is always the best choice.

We raise the bar with every project and regularly surpass the standards we have set for ourselves. Together with our customers, we have only one objective: the leading position – which must be attained, secured and expanded. With our extensive, innovative concepts for optimum production architecture with central stock management by means of warehouse logistics modules and gantries, we create innovative production worlds both within and beyond the automotive sector.

In combination with our high-precision production machines in the Flexline series and our automation platforms, we achieve the objective of the greatest possible value added in a variety of production processes – with no additional interfaces and completely from one source.





Automotive

Cam Production

We have redefined the processing of cams from scratch. By looking at the entire process and with the integration into clever overall concepts, we have been able to eliminate many intermediate stages, resulting in dramatically improved throughput times and unprecedented accuracy. As such the Felsomat lean production manufacturing concept not only opens up floor space, but also new prospects.

Laser Welding

We create optimally coordinated machine concepts from rotationally symmetrical components such as gears, differentials, planetary carriers, coupling and torque converters. Here, in the strategic partnership with Trumpf, we are demonstrating our strengths: SPEED, ACCURACY AND FLEXIBILITY.

Assembly

We view assembly as an integral element of the production process. With the know-how of Felsomat, the most suitable technology will be applied.





SIEMENS VDO

VOLVO

ThyssenKrupp



Atlas Copco



MAHLE



DAIMLER

Danfoss



DELPHI

GETRAG

HEIDELBERG

Continental
TEVES

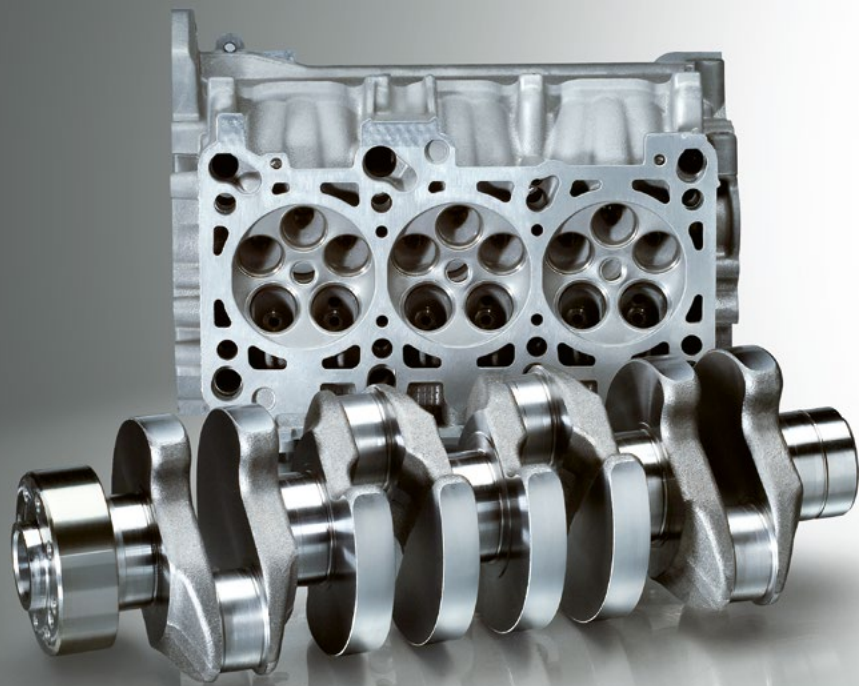


EATON

MAGNA

IVECO

Husqvarna



Drive for the best

Leading companies in the automotive industry use Genius Production solutions from Felsomat. As an engineering partner, we set the pace from the outset and thereby secure a significant competitive advantage for our customers.

Our high standards in international project management also ensure dependability and reliability with respect to the timing, implementation and performance of our technology solutions – to put you in the pole position.



Networked Globally – Specialized Locally

The concept of excellence governs our company from strategic direction through development to service. We follow this approach regardless of whether we are working for you locally, in Koenigsbach-Stein, or on site at your production facilities.

We are here for you – right where you need us.

Unique Engineering – Comprehensive Service

Our offer:

- ▶ Consulting
- ▶ Design and engineering
- ▶ Equipment selection and specification
- ▶ Project management
- ▶ Training
- ▶ Production support during the start-up phase
- ▶ Maintenance and service

Your value added:

- ▶ Ensuring quantity and quality
- ▶ Significant savings in the areas of processing, training, operation, commissioning, maintenance and spare parts, as the entire process chain including automation consistently comes from one source
- ▶ Reduction of investment and lifecycle costs
- ▶ Reduction of time-to-market

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GROUP

REISHAUER

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