

FORMING THE FUTURE



HOT STAMPING 4.0 –
FLEXIBLE, PRODUCTIVE, EFFICIENT

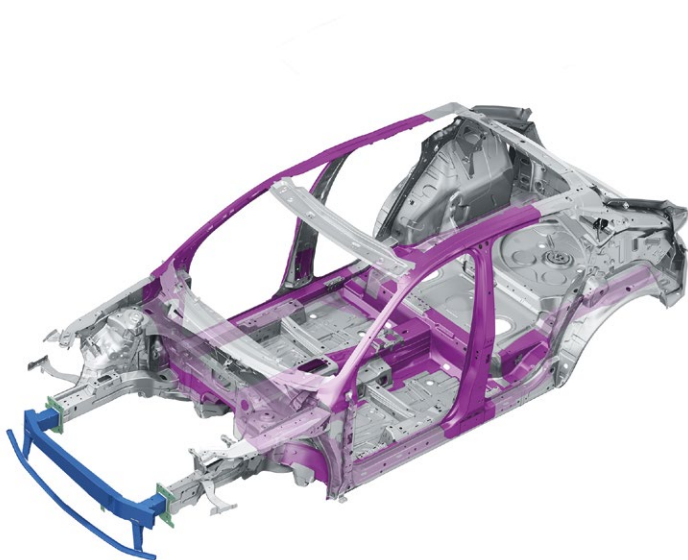
HOT STAMPING 4.0. PROVEN TECHNOLOGY WITH A FUTURE.

We are confident that hot stamping will remain an important part of automotive lightweight construction into the future. Compared to other processes, hot stamping remains the most cost-effective manufacturing technology. Manufacture your lightweight components reliably and economically using Schuler systems.



SYSTEMATIC SUCCESS. YOUR PARTNER FOR THE ENTIRE PROCESS CHAIN.

Schuler accompanies you from the parts development phase to series production – and beyond. As a global market leader in the field of hot stamping, Schuler possesses unique knowledge of the entire process chain, from the blank to the finished part.



Higher strengths result in optimal body rigidity, and therefore improved crash characteristics—a key feature that is also particularly important for the floor assembly on electric vehicles.

With our experience and knowledge in process engineering, press construction, die engineering, and automation and laser technology, we've got you covered. A successful start to series production depends on a part geometry that is optimally tailored to the specific process. As part of a joint simultaneous engineering project, we'll help you develop viable hot stamping parts that work with your process. We'll also supply you with the right dies, tailor-made to match your parts.

We live and breathe plant engineering. We'll build you presses and feeders that are optimally designed for your specific process. From the coil to the finished and racked product, we handle every single upstream and downstream process step, including the entire hot stamping system.

We equip your employees with everything they need to know about the hot stamping process—by imparting important process know-how, holding instructional sessions, or conducting on-the-job training. Of course, we're also here to help you start up your system and get your series production up and running, for example, by assisting with process optimization.

Take advantage of our experience, and turn our competence into your own!

The hot stamping technology. In hot stamping, high-strength parts are produced from workpieces that are heated, formed on a hydraulic press, and subjected to rapid, controlled cooling in the die. Lasers are then used to trim the finished parts.

The benefits:

- Higher strength and lower part weight
- High body rigidity
- Improved crash characteristics
- Stable floor assemblies for electric vehicles
- New possibilities for part design
- Excellent repeatability with no deflection
- Material is more cost-effective than high-strength steel
- No press forces necessary

STRONGLINE, SPEEDLINE AND PCH-LINE. SCHULER HOT STAMPING SYSTEMS ADAPT TO YOUR REQUIREMENTS.



As a system supplier, Schuler provides the entire hot stamping line, from the blankloader all the way to the destacking station.

The right line concept for everyone. Combining the individual requirements of our customers with our extensive experience in the field of hot stamping is key to the success of the hot stamping line.

Our design engineers have developed three series of presses for this very purpose: StrongLine, SpeedLine and PCH-Line. By selecting from various options and integrating the press in the right line concept, we can flexibly adapt the equipment to different customer requirements.

Quality is standard at Schuler. A solidly welded, stress relief annealed press frame designed to resist fatigue is assembled with tie rods to ensure minimal deformation and maximum durability of the press. Whether it's separately filtered hydraulic functions for the dies, slide-tilt monitoring with a shut-off function, or an extremely powerful hydraulic drive – quality down to every last detail is our unwavering standard.

Part of quality is making sure that all basic press functions can be run quickly – with high repeatability and zero errors – even under rougher application conditions. All three lines deliver the high level of quality that Schuler is known for.

GET UP AND RUNNING RELIABLY. STRONGLINE.

The StrongLine offers a high level of performance and is the ideal entry level solution.

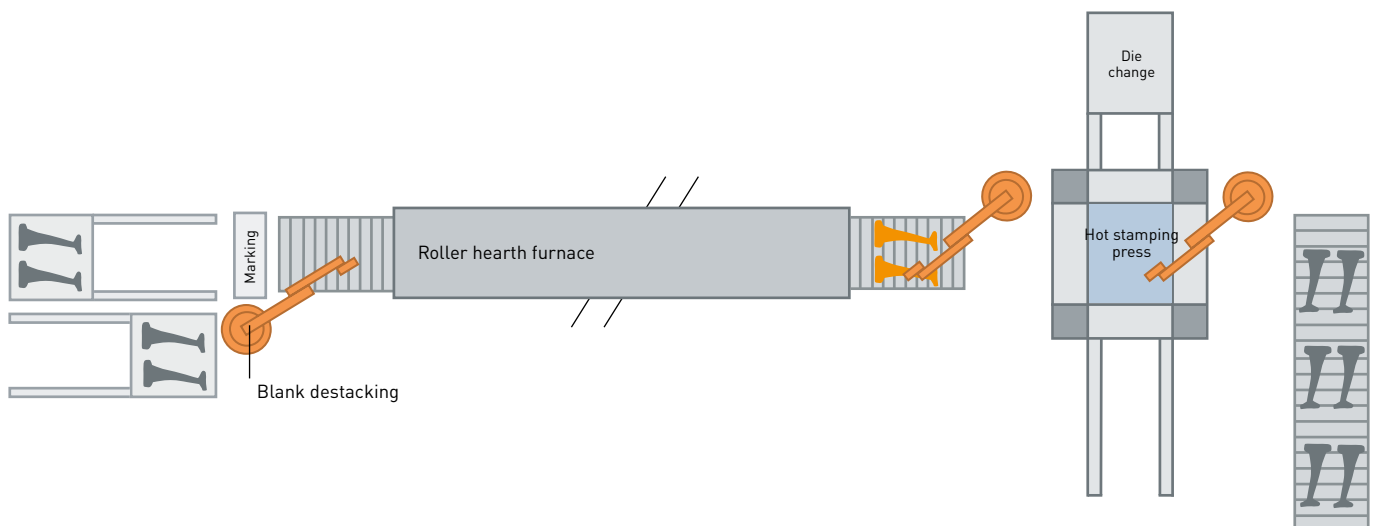


The StrongLine is the ideal entry level solution for low initial production quantities.

StrongLine. This line is defined by its ability to deliver reliable production with a focus on streamlining investment costs. The StrongLine comes with a press force of 12,000 kN and a bed size of 3.0 m × 2.5 m. With a controlled drive and conventional standard components, this line is a solid introduction to production with hot stamping.

The system can be equipped robots or feeders for a production speed of 4.5 strokes per minute with up to four blanks.

Engineered for the Asian market.



WHEN HIGH OUTPUT IS THE KEY. SPEEDLINE.

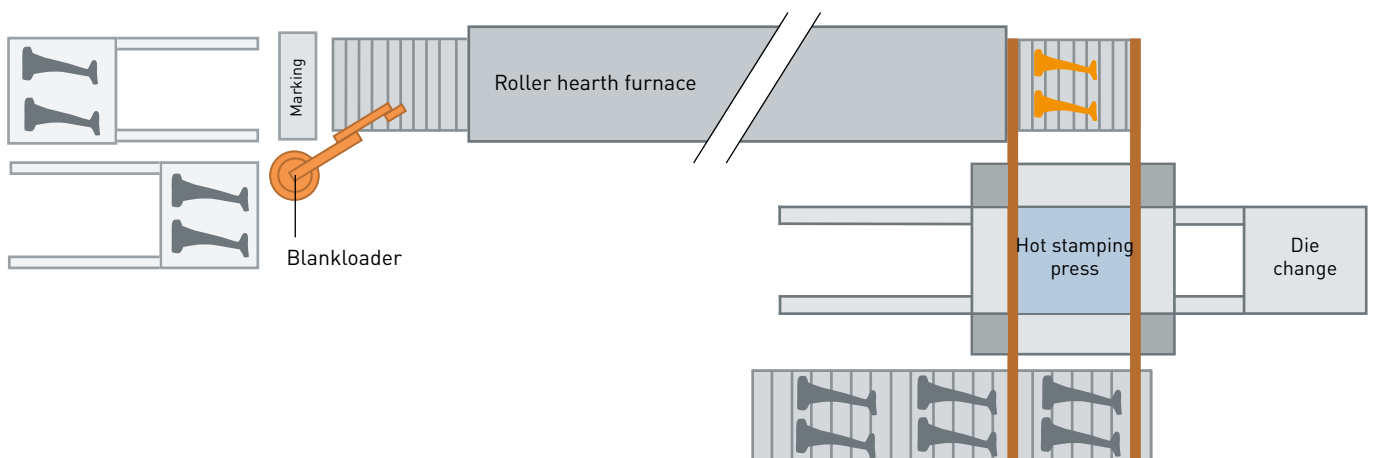
The SpeedLine is fast and accurate, and can handle the toughest demands for hot stamping applications with conventional technology.



The name speaks for itself: The SpeedLine impresses with its output performance.

SpeedLine. Speed, precision and flexibility for conventional hot stamping technology are what sets this line apart. The SpeedLine is available in two different sizes. In order to meet different requirements, it is available as a 12,000 kN press with a clamping surface measuring 3.0 × 2.5 m or a 16,000 kN model with a 3.6 × 3.0 m clamping surface. Combined with superior stroke repeatability, the controlled hydraulic drive and select high-tech components also give customers the ability to implement attractive energy-saving solutions from the Schuler EHF lineup (Efficient Hydraulic Forming).

The SpeedLine is automated with robots or feeders for an output rate of 5.5 strokes per minute with up to four blanks.



FOR MAXIMUM PERFORMANCE, QUALITY AND AVAILABILITY.

PCH-LINE.

The PCH-Line brings together high-tech and innovative hot stamping technology to create a system that sets new standards for productivity and competitiveness.



Even more productivity and performance: The PCH-Line features the latest PCH flex technology.

PCH-Line. In addition to the features of the SpeedLine, the PCH-Line offers an even higher level of productivity as well as an improved competitiveness. Not only does the PCH-Line offer the standard multiple-part production (up to four blanks per stroke) of the SpeedLine, it also includes a hydraulic cushion and an accompanying die. The result is shorter cooling and cycle times, compensation for different material tolerances, and lower and more uniform die wear.

The PCH-Line comes exclusively equipped with highly efficient high-tech components that are compatible with the latest generation of EHF. EHF stands for the “Efficient Hydraulic Forming” technology developed by Schuler, which is an intelligent solution for increasing the energy efficiency of hydraulic presses.

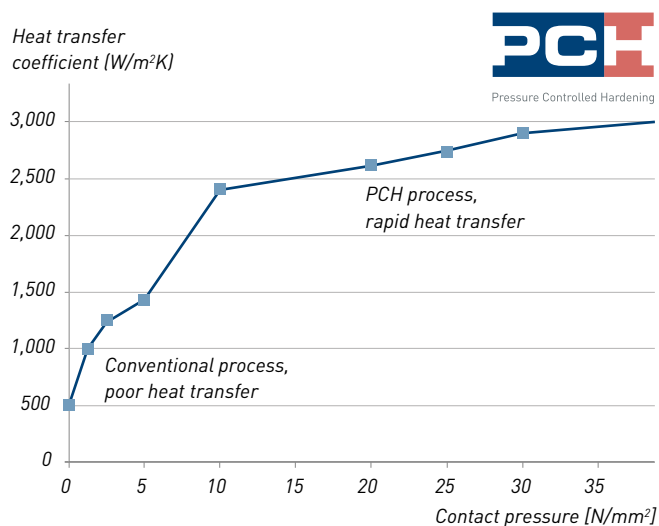
To take full advantage of the benefits of PCH flex technology, the PCH-Line is automated with feeders for production rates of 7.5 strokes/minute with up to four blanks.

TECHNICAL DATA

	STRONGLINE	SPEEDLINE	PCH-LINE
Press force (kN)	12,000	12,000	12,000
Clamping surface (m)	3.0 × 2.5	3.0 × 2.5	3.0 × 2.5
Designation	WH 1200 3.0 × 2.5	WH 1200 3.0 × 2.5	WHC 1200 3.0 × 2.5
Optional press force (kN)	16,000	16,000	16,000
Optional clamping surface (m)	3.6 × 3.0	3.6 × 3.0	3.6 × 3.0
Designation	WH 1600 3.6 × 3.0	WH 1600 3.6 × 3.0	WHC 1600 3.6 × 3.0
Approx. output (stroke/min)	4.5	5.5	7.5
PCH flex technology	–	–	included
Efficient Hydraulic Forming (EHF)	–	optional	included

PRESSURE CONTROLLED HARDENING. THE FUTURE OF HOT STAMPING.

HEAT TRANSFER CURVE



High heat transfer → short cooling time → high output
 Low heat transfer → long cooling time → low output



Hands-on hot stamping training at the Hot Stamping TechCenter.

PCH (Pressure Controlled Hardening). With this technology, Schuler has developed a revolutionary new solution for hot stamping. A special hydraulic cushion in the press bed ensures the contact pressure is distributed evenly even for dies with multiple cavities for different components, and for blanks with different material thicknesses.

This results in an almost halving of the cooling time in the die compared to conventional dies as well as a consistent component quality and fast run-in of the die after maintenance. The output and availability of the system increases, while the maintenance time for the dies decreases. The end result is an approx. 30% increase in the total productivity of the system – which is extremely noticeable boost in competitiveness.

The process is also especially advantageous when using tailor welded (TWB) and tailor rolled (TRB) blanks, for example complete inner side panels of vehicles.

Training as the foundation for safe series production.

Especially for newcomers to the technology or new employees in the area of hot stamping, we provide hands-on training programs for different systems.

Participants learn the physical fundamentals of hot stamping, as well as the design and function of automated hot stamping systems and how to operate them safely.

TURN-KEY HOT STAMPING SYSTEMS. EVERYTHING FROM A SINGLE SOURCE.

From material feeding to stacking of the finished parts – Schuler delivers the entire system for producing high-quality components.



Perfectly matched components ensure a consistently high part quality.

Good quality begins with a reliable partner.

Schuler has already established itself as a competent plant manufacturer and general contractor for production equipment in a wide variety of industry sectors. So too for hot stamping.

Besides our reliable in-house produced products such as presses, blankloaders, marking stations, press loading feeders, and master and linking controllers, we also integrate all the necessary externally purchased parts such as furnaces, dies, robots, cooling systems, conveyor belts and lots more.

All subsystems are assembled into an optimally matched production system in your production hall.

Project management, commissioning and production support services as well as a special process team with experienced engineers are available for this. This enables us to guarantee optimal advice, from method planning right through to optimization of the production process.

Schuler has already delivered well over 100 hot stamping presses and systems for different processes since 1993. Both for direct and indirect processes as well as for diverse starting materials such as uncoated, AlSi-coated, or zinc-coated blanks.

Each of these processes and materials require a specially tailored system, which Schuler has already successfully implemented many times in the past. This has enabled Schuler customers around the world to successfully commence series production with a new technology.

DIGITAL SOLUTIONS. DIGITALIZATION IN THE PRESS SHOP.



Digitize your press shop with Metris Digital Solutions and boost your output.

TAP INTO THE BENEFITS OF DIGITALIZATION.

Have you ever wondered how you can use digitalization to boost the productivity of your press shop? As a leading supplier in the field of metal forming, we want to help you increase your efficiency and boost the productivity of your presses.

With its Digital Solutions, Schuler offers you new opportunities to boost the productivity of your press shop:

- Set up dies easier than ever
- Monitor production systems
- Track parts from start to finish
- Protect dies, prevent damage
- Get immediate assistance from experts
- Put your system to the ultimate test.



<https://digitalsuite.schulergroup.com/en/>

Embark on the path to digitalization with Metris. Reliable, uncomplicated, and customized to your individual needs.

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THE SERVICE IN METAL FORMING TECHNOLOGY



Quick help with your system
24/7 Hotline & Remote Support



Service centers worldwide
Field Service



Quick and easy
Spare Parts Service



For Schuler or third-party presses
Smart Modernization Solutions



Remain flexible at all times in production
More than 400 Used Presses



Increase efficiency with digital solutions
Digital Solutions



Achieve your financial and ecological goals
Eco-Form Package & Energy Monitor

Visit our website:
service.schulergroup.com



SERVICE
MADE
FOR YOU



WHEN BUSINESS AS USUAL
BECOMES **TOTAL SATISFACTION.**

DISCOVER NOW HOW THE NEW SCHULER
SERVICE CAN BENEFIT YOU.

Service – Made for you stands for service that is precisely tailored to your needs. Regardless of what type of press or system you work with.
Fast. Competent. Reliable.

ABOUT THE SCHULER GROUP – WWW.SCHULERGROUP.COM

Schuler offers customized cutting-edge technology in all areas of forming – from the networked press to press shop planning. In addition to presses, our products include automation, dies, process know-how and service for the entire metalworking industry. Within the Metris platform by ANDRITZ, Schuler brings together digital solutions for networking forming technology and develops them continuously to further improve line productivity and availability. For battery production in gigafactories, Schuler provides equipment and services in the process steps of cell assembly and formation. Our customers include automotive manufacturers and suppliers, as well as companies in the forging, household appliance and electrical industries. Presses from the Schuler Group mint coins for more than 180 countries. Founded in 1839 at our headquarters in Göppingen, Germany, Schuler has approx. 5,000 employees at production sites in Europe, China and the Americas, as well as service companies in more than 40 countries. The company is part of the international technology group ANDRITZ.

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