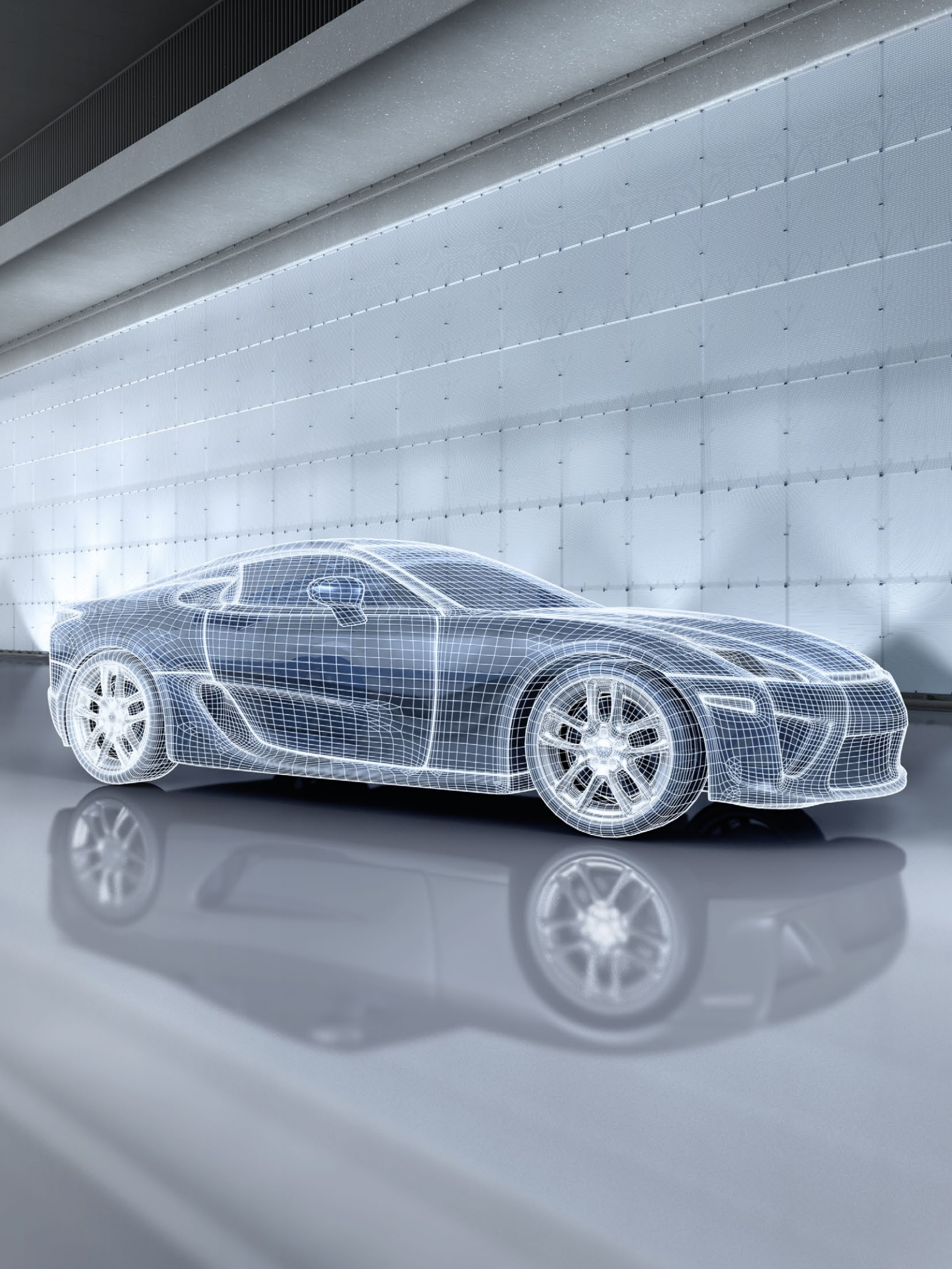


FORMING THE FUTURE



## HYDRAULIC PRESS SYSTEMS FOR FIBER-REINFORCED PLASTICS





# WE PLAN TOMORROW'S SUCCESS TODAY. PROGRESS MANIFESTS ITSELF IN DETAILS.

As the technology and global market leader in forming technology, we have the necessary Know-How in press and plant engineering and can provide you with optimal guidance.

## SUCCESS IN SERIES PRODUCTION: SERIES SYSTEMS FOR THE PRODUCTION OF FIBER-REINFORCED PLASTICS

Thanks to close collaboration with our partner Frimo, we offer you a workflow, which efficiently integrates the entire production process. This covers per-forming and pre-cutting to forming, cutting, joining and bonding as well as component assembly and automation.

## COMPOSITE COMPETENCY ALONG THE WHOLE VALUE CHAIN.

Innovative system solutions from Schuler combine most modern components and proven modules into highly automated production lines. We provide consulting services along the entire value chain. It is possible thanks to our technical expertise about materials for lightweight construction and multi material mix, which for example will allow production of stable and lighter hybrid parts made of steel with fiber-reinforced plastics. In addition, our specialists also provide consulting for constant process improvement and flexible systems, which you can use for manufacturing innovative products such as B-Pillars as fiber composite.

You tell us what you need and we will take care of the rest.

### OVERVIEW OF THE PROCESS

	Thermoset	Thermoplastic
Long fibers < 50 mm unsorted fibers	<ul style="list-style-type: none"> <li>• SMC</li> </ul>	<ul style="list-style-type: none"> <li>• GMT</li> <li>• LFT/LFT-D</li> </ul>
Continuous fibers > 50 mm oriented fiber direction	<ul style="list-style-type: none"> <li>• HP-RTM</li> <li>• Wet presses</li> <li>• Prepreg</li> </ul>	<ul style="list-style-type: none"> <li>• Organic sheet / tape</li> </ul>

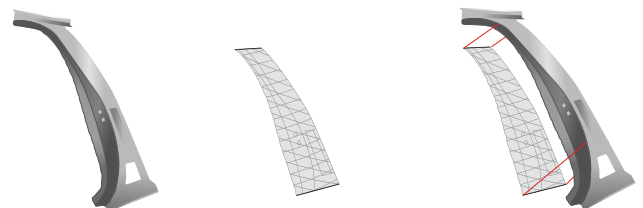


Series production of carbon roofs.

For example in the production of CFR components for large-scale production. The result: maximizing resource efficiency with up to 30% less cycle time and 50% lower costs!

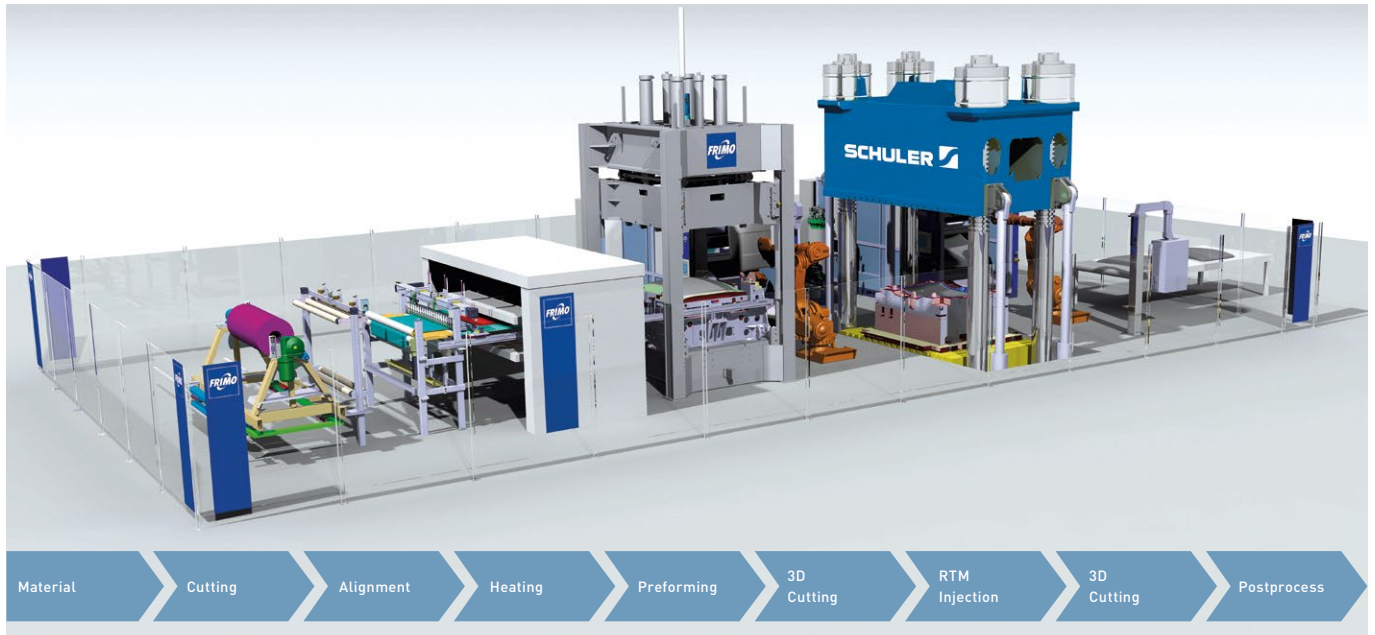
### HYBRID PART MANUFACTURING

Hot Stamping of steel + Fibre reinforced plastics (FRP) = FRP-Steel Hybrid





# THE TURNKEY SOLUTION FROM SCHULER, A TECHNOLOGY AND GLOBAL MARKET LEADER. REACH THE GOAL WITH EASE.



Modular system Production line for RTM components

We support you through close collaboration and thus provide you with a simple and uncomplicated planning and changeover to the new system.

**As a systems and process specialist, we can offer you a turnkey solution.** Thanks to our experience and Know-How and our partner Frimo.

Thus, we not only support you with the pressing plant and process planning, but we also help you in the selection and integration of appropriate tools leading to shortened production cycle.

Our on-site Schuler Service team will also provide constant support even during ongoing processes. In addition, we also offer you an opportunity to react to production peaks in a flexible manner by deploying our production systems and presses and to expand your capacity temporarily if required. These advantages have already convinced many of Schuler customers. Let us persuade you: We look forward to receiving your request!

## COMPOSITES ALLIANCE

Partners in Lightweight Technology



# HYDRAULIC PRESS SYSTEMS FOR FIBER-REINFORCED PLASTICS

## COST AND ENERGY EFFICIENT PRODUCTION.



### Your benefits:

Cost-efficient presses for fiber-reinforced plastics

- Minimal parts rejection
- Reduction of cycle time
- Energy-efficient production
- Production of prototypes
- Reduced hall height
- Reduced tool change time
- Quicker process integration and analysis

Schuler 36.000 kN short-stroke press for our customer NCC.

### TECHNICAL DATA

Press force [kN]	< 10,000	10,000	18,000	25,000	36,000
Press force at max. Parallel control force [kN]		8,500	16,000	22,000	32,000
Table size [mm]	on request	2,000 x 1,600	2,800 x 1,800	2,800 x 2,000	3,600 x 2,400
Slide stroke [mm]		1,700	1,800	1,800	1,900
Shut height [mm]		2,200	2,400	2,400	2,500

Other sizes on request. Subject to technical modifications.

### OUR CUSTOMERS

DAIMLER

BMW Group

IVECO

HYUNDAI  
STEEL

TENCATE

# INNOVATIVE SOLUTIONS FOR YOUR SUCCESS. CONVINCING ANSWERS FOR FUTURE CHALLENGES.

Our capability to innovate is the main pillar of our market success.

**We sell future.** Our systems make it possible to produce products today with future requirements - for example in the domain of lightweight construction or energy efficiency.

**The world moves with our help.** As a complete solution provider, we make major investments in Research & Development to make it possible for our customers to achieve top performance in serial production of cars.

**Innovative advanced technology for your daily operations.** Due to this reason, it is our tradition that we are committed to high end research as a leading company and make the results of this research relevant for your daily production. NCC, AZL, IACMI: We are members in many important research institutes: Just like our own experts who are in the management board of VDMA working group for hybrid components. We do everything to keep up with the times.

## AN EXAMPLE: ICOMPOSITE 4.0.

Change goes on. Under the leadership of Schuler, a new path is opened up with iComposite 4.0: This research project helps in economical serial production of parts made of fiber-reinforced plastics and increases resource efficiency. Additive continuous fiber spray-ups help in the quick and efficient production of base structure of



Continuous research and development help us excel.

the component. A networked production system with a controlling system intelligence - keyword: 'Industry 4.0' - enables cost savings, which make it possible to achieve cost-efficient serial use of composites. Thus, we merge two apparent contradictions: Performance with efficiency, speed and quality, innovation and cost effectiveness.

## OUR MEMBERSHIPS





## 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 Suite**



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

Visit our website:  
[service.schulergroup.com](http://service.schulergroup.com)



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MADE  
FOR YOU**



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

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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](http://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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