



RIFAST® – Integrated functional elements with processing technology

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# ONE SYSTEM EVERY POSSIBILITY

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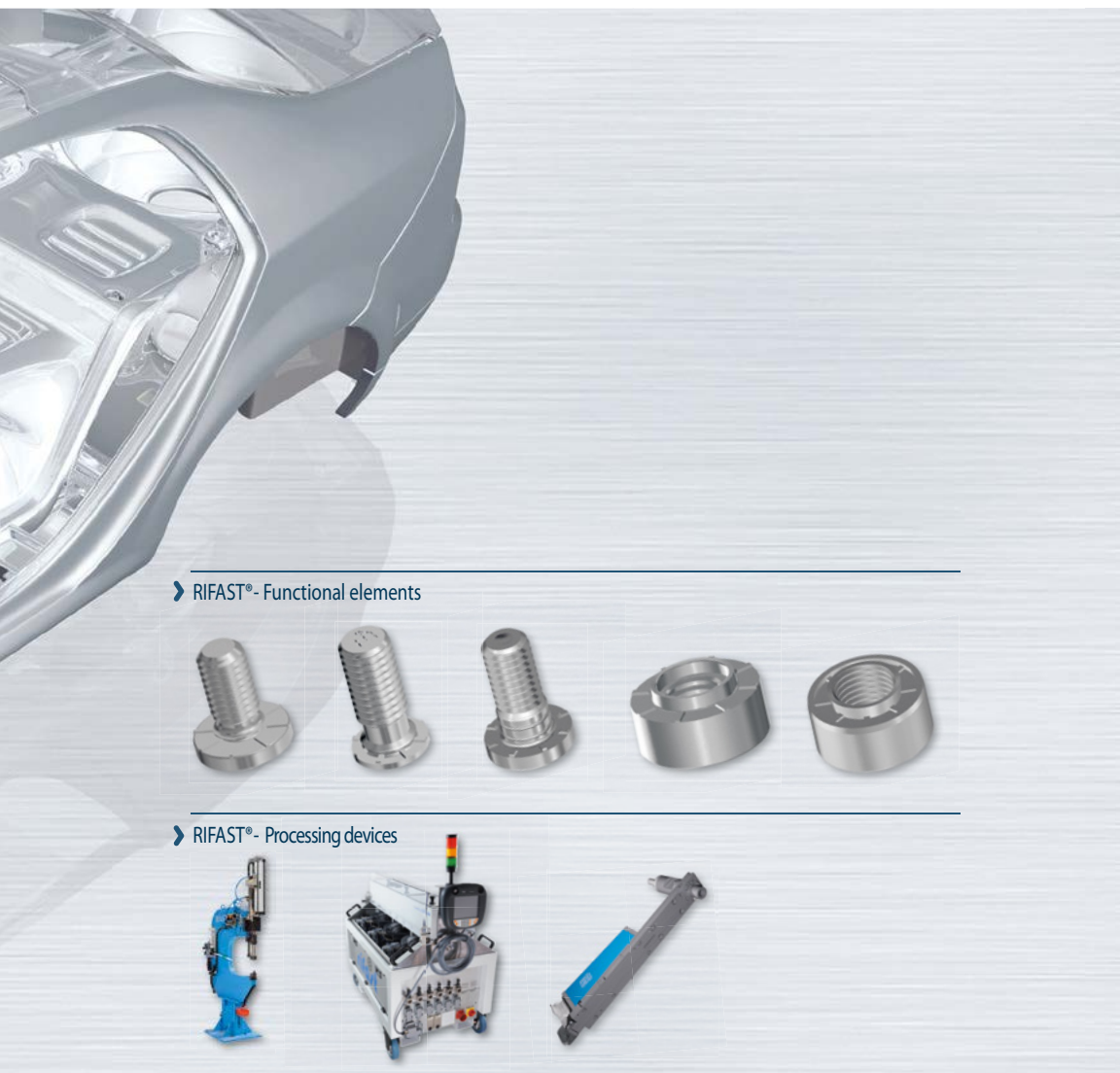
Connecting solutions tried and tested a million times

## RIFAST® – INTEGRATED FUNCTIONAL ELEMENTS

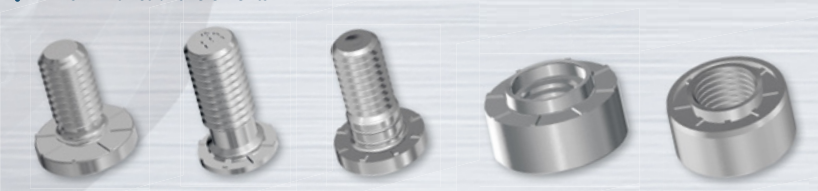
Tried and tested a million times. Cost-effective, flexible and highly efficient use. Thanks to functional optimisation and weight savings in connection with simultaneous lowering of costs, our tried and tested system RIBE® RIFAST® makes you meet the permanently increasing requirements of body frameworks.

RIFAST® provides functional elements for sheet metal parts and profiles without any impact of heat. The automatically pressed RIFAST® connections are significantly more cost-effective than welded elements and offer a particularly high stability with torques and push-out forces. These are benefits highly appreciated by our customers in the press plants and robot-supported manufacturing lines in America, Asia and Europe.





#### › RIFAST® - Functional elements



#### › RIFAST® - Processing devices



#### ◀ The RIFAST® system

Functional elements and processing technology from one source.

This is because they benefit from a broad range of high-quality functional elements and processing devices with reliable and guaranteed product characteristics for the whole service life.

### RIBE® – WE ARE YOUR PARTNER FOR SOLUTIONS

Being a provider of systems with more than 100 years of experience in manufacturing of cold-formed parts and long-term experience in plant manufacturing, we aim at providing accurately fitting and safe connections.

That is why we do not only provide a comprehensive product range of sheet metal joining components and automation devices, but also offer our know-how. We provide comprehensive support - from advice on sampling and planning of the system particularly customised for your needs to commissioning including training and after-sales service. Connecting solutions from one source. Customised. Made by RIBE®.



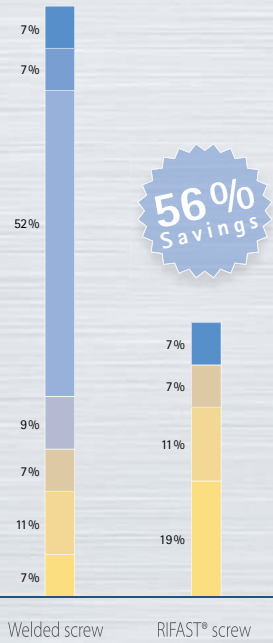
RIBE® Technology

## SOLUTIONS FROM ONE SOURCE

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When using RIFAST®, you rely on the benefits of a safe comprehensive system that does not only grant competitive advantages with regard to cost effectiveness; right from the beginning, we provide advice from our application engineers, manufacturing with the perfectly fitting elements as well as optimal engineering. We also provide support with professional maintenance by our technicians and our support department. With RIFAST® you are optimally prepared - both now and in the future. Our research and development department invents the future connection solutions already now. For a RIFAST® system that reliably meets your future requirements.





### Welded screw vs. RIFAST® screw

using engine cross member as example,  
equipped with 4 screws (M5 x 18) and 4 screws (M8 x 25)

Components per year: 250,000 pieces | Service life of component: 7 years

	Welded screw	RIFAST® screw
<b>Total costs / component</b> Fixed costs, wage costs, costs for screws, logistics costs	1.07 EUR	0.42 EUR
<b>Saving / component</b>		0.65 EUR
<b>Savings / year</b>		162,500.00 EUR
<b>Saving / total service life</b>		1,137,500 EUR



◀ RIFAST®- comparison of costs  
Compared to welded screws RIFAST® offers significant cost benefits

◀ RIFAST®- potential savings  
Engine cross member with press bolt

### YOUR MANUFACTURING-RELATED BENEFITS:

- Specialists' advice based on manufacturing and function
- Application specific examination with determination of parameters with customer components using RIFAST® elements
- Provisioning of functional elements
- Provisioning of automated process technology for feeding and pressing of functional elements

### YOUR ECONOMIC BENEFITS:

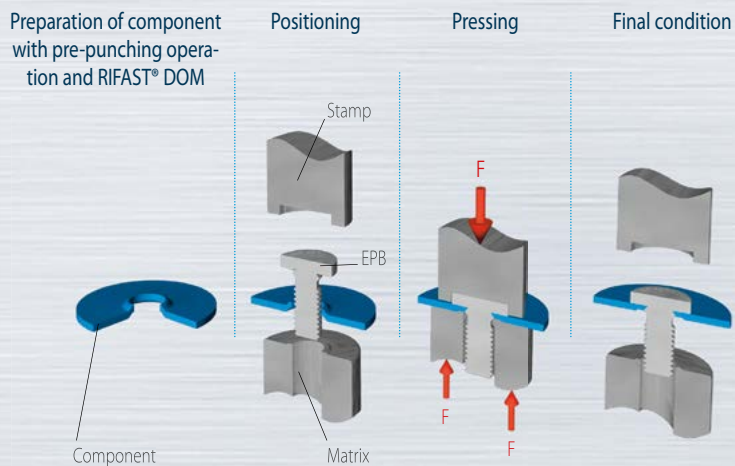
- You save logistics costs because only a single fastening element – irrespective of the metal sheet thickness - should be purchased and stored.
- Lower personnel and wage costs as there is a reduction of the manufacturing stages of production.
- You eliminate in-house transports between the manufacturing stages.
- You lower costs for quality management as the RIFAST® system grants reliable connections granting highest possible quality thanks to fully automated manufacturing.



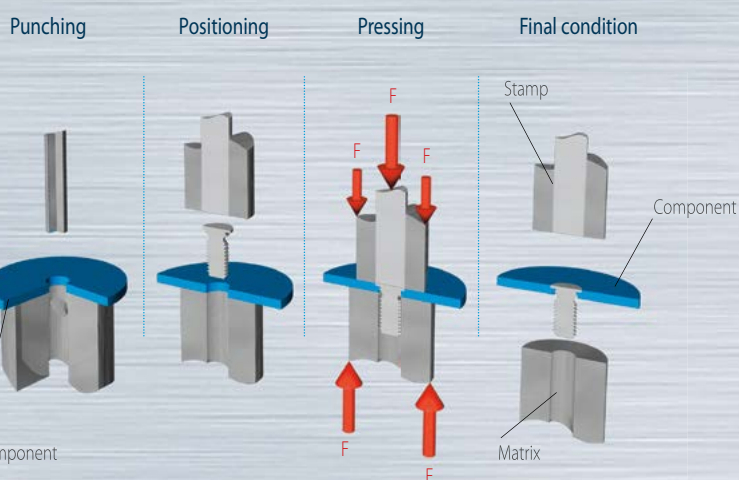
Integrated benefits for various needs

## FUNCTIONAL ELEMENTS AND PRESS PROCEDURES

Do you have special requirements? Then our RIFAST® technology will be perfect. The product range of the flexible system ensures a multitude of possible applications. Besides the standard functional elements, particular joining requirements such as customer-specific special solutions with additional functions or riveting applications can also be implemented.



EPB- pressing procedure  
with a staking bolt

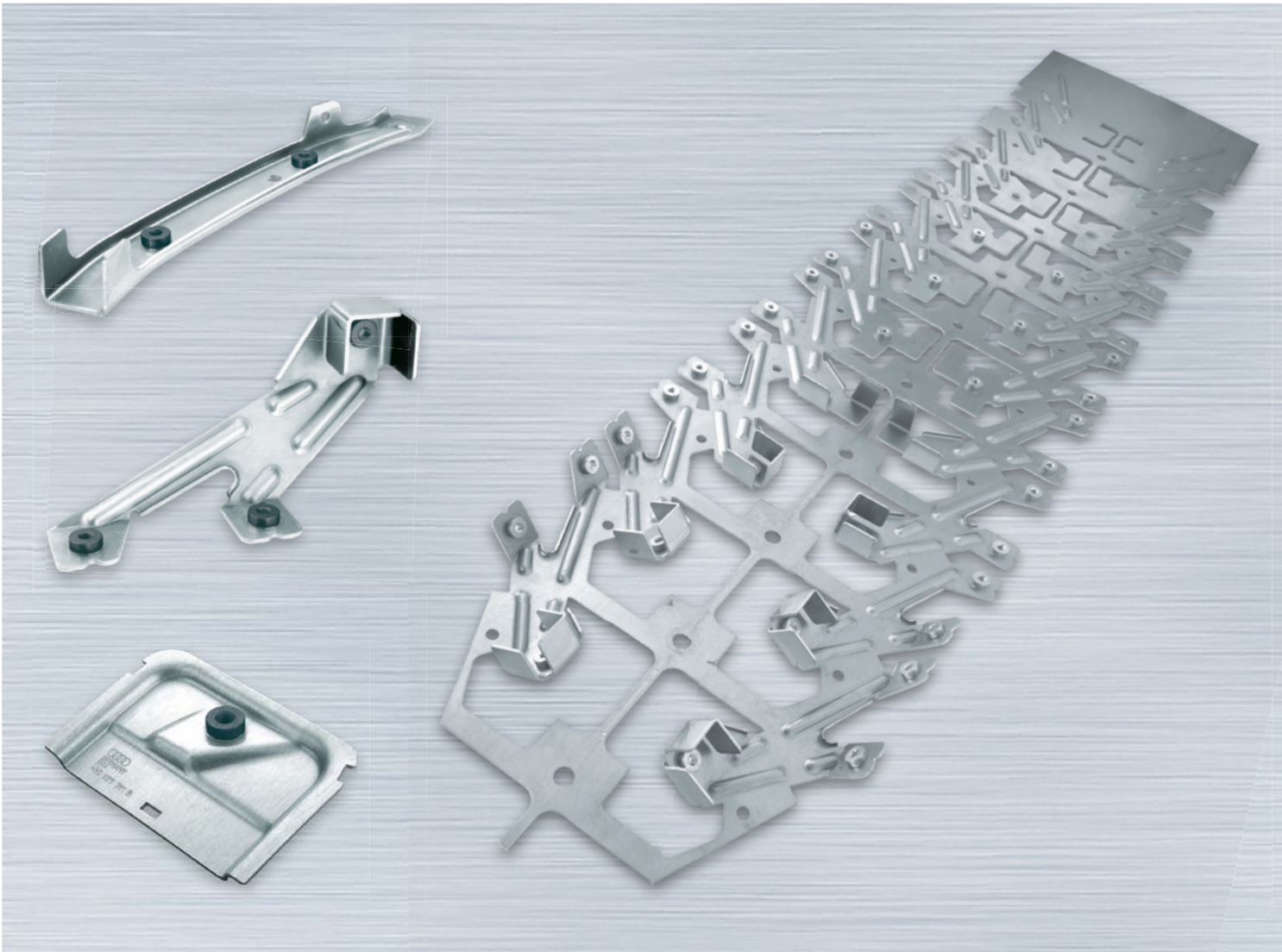


SEB/DBB pressing procedure  
with a flush-mounted staking bolt

## RIFAST® PRESSING PROCEDURE

The RIFAST® pressing procedure is used to press staking bolts (EPB) and flush-mount staking bolts (SEB) into pre-punched steel or light-metal sheets. This results in ready-to-use sheet metal components with integrated functional elements, meeting all requirements of assembly and operation.

- Staking bolts from M5 to M12
- Sheet metal thicknesses: bolts starting at 0.75 mm
- Independent of sheet metal material, can also be used with high-strength sheet metals
- Corrosion-resistant in accordance with customer requirements
- Very high positioning accuracy
- Protection of surface coating by pressing into pre-punched sheet metals
- Highest possible resistance against torsion and pushing-out
- Water-tight connection
- Highest possible cost-efficiency



Integrated benefits for various needs

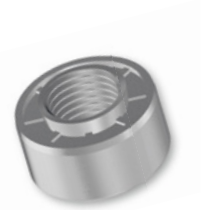
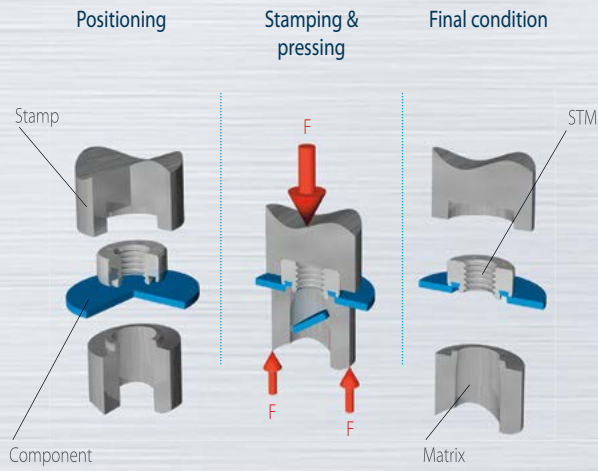
## FUNCTIONAL ELEMENTS AND PRESSING PROCEDURES

### RIFAST® STAMPING PROCEDURE

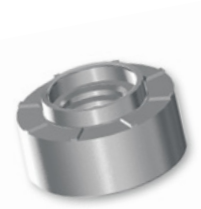
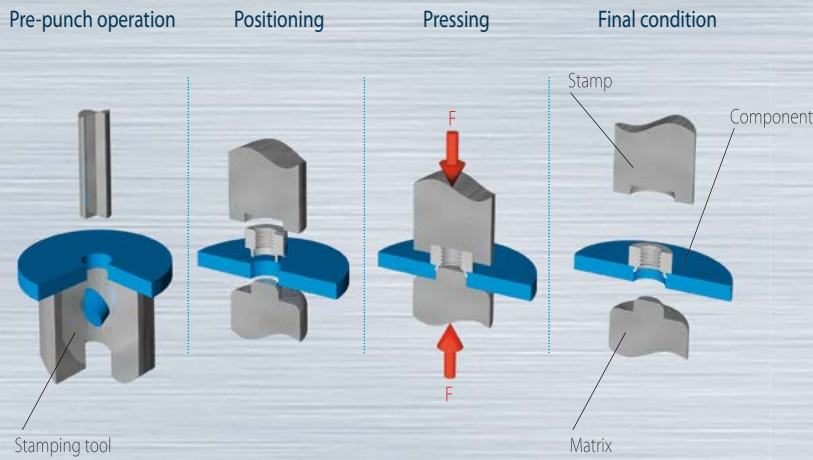
With the RIFAST® stamping procedure, the self-piercing nut (STM) is pressed into a non-punched sheet metal with one lift. This correspondingly punches a hole. The sheet metal material flows to the undercut areas. This creates a connection that is both resistant to pushing-out and torsion.

- Self-piercing nuts from M5 to M10
- Two dimensions for sheet metal thicknesses from 0.6 - 1.3 mm and from 1.4 - 2.0 mm
- Particularly high push-out and torsion forces due to plastic radial shaping of sheet metal into the inner contour of the self-piercing nut
- Lowest possible distortion of component in press area
- Very high positioning accuracy
- Water-tight connection
- Highest possible cost-efficiency thanks to reduction of tool stations





◀ STM pressing procedure with a self-piercing nut

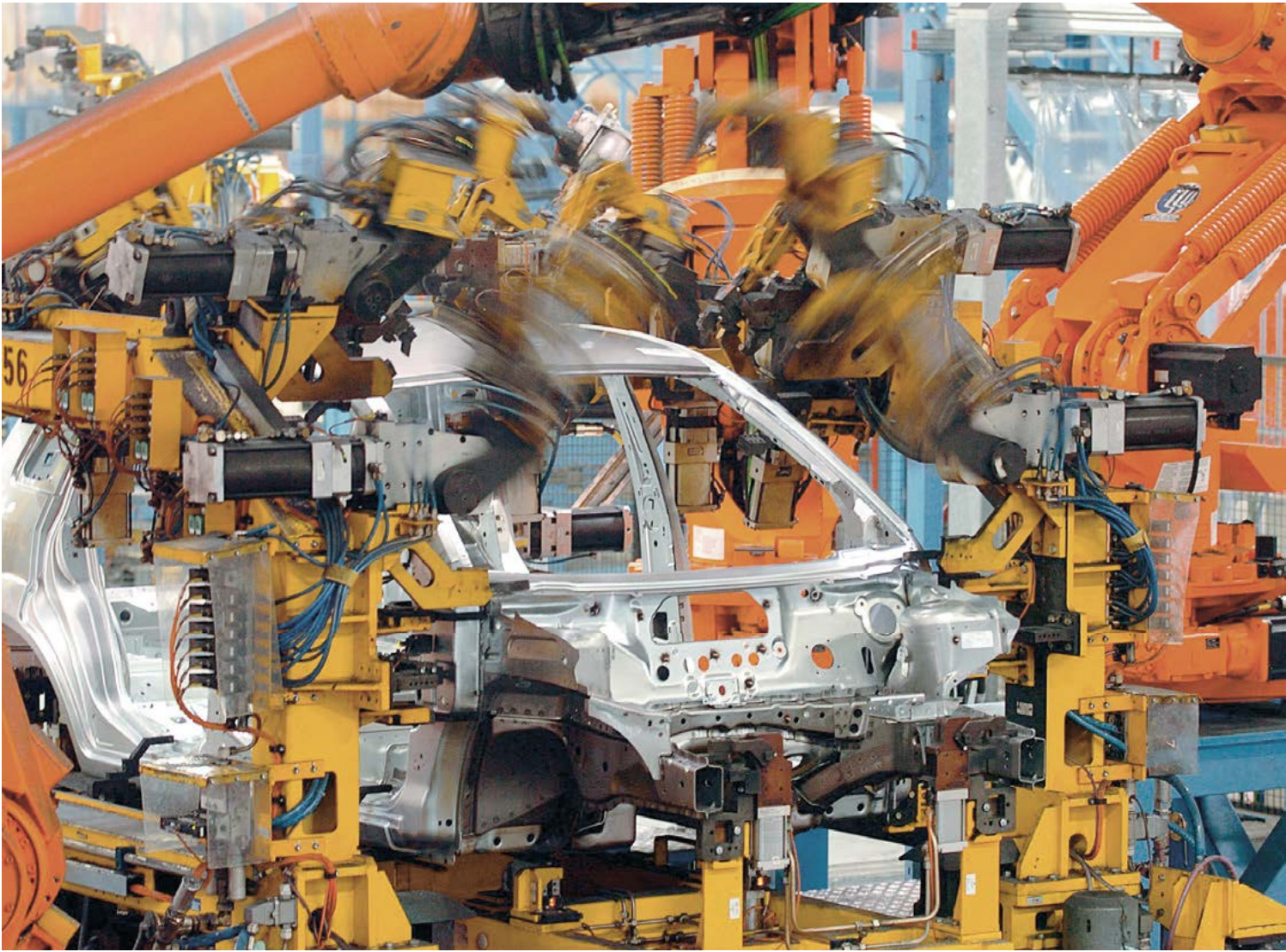


◀ DBM pressing procedure with a thick-sheet nut

### RIFAST® RIVETING PROCEDURE

With the RIFAST® riveting procedure, the thick-sheet nut (DBM) is inserted into pre-punched components with sheet metal thicknesses larger than 2.0 mm. The component itself is only subject to low load as the spreading collar of the nut is widened in the punched hole.

- Thick-sheet nuts from M5 to M12
- Plane component surface
- Independent of component thickness
- Can also be used with component materials with low forming capacity
- Highest possible load-bearing capacity with torsion and pushing-out
- Water-tight connection



RIFAST® processing technique – C-frame

## INNOVATION FOR STRUCTURAL WORK – C-FRAME

Cost-efficient, fast and highest possible positioning accuracy - if these attributes are required for integration of functional elements into structural work, the highly innovative RIFAST® C-frame technology will represent the best choice. Even with complex component structures that make pressing technically or economically impossible, RIFAST® C-frame will offer a customised solution.

How does it work? The stationary RIFAST® C-frames allow for cost-efficient and very accurate placement of functional elements even with complex components. Thus, the robot may pass the component alongside the C-frame during handling operation and equip it with functional elements.



Our modular system for the C-frame range ensures the optimal solution for many applications. If you have special requirements, our plant manufacturing department will find a customised and cost-efficient solution. We do not only provide of the know-how, but also of comprehensive practical experience in connection with a multitude of individual solutions for processing of RIFAST® elements.

### PERMANENT PRECISION

Being an experienced system provider, we aim at ensuring proper function of our elements and plants over the whole service life and under all conditions. For example, the drive unit of the stationary C-frame is intentionally decoupled from the punching/stamping head. This way, we can ensure centring of functional elements, component hole and matrix even under the most demanding conditions for the whole service life.



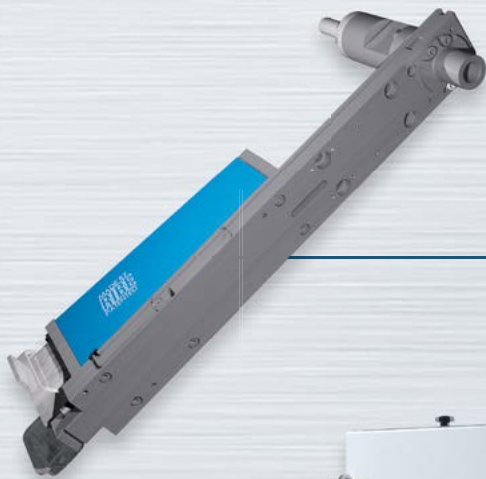
RIFAST® processing modules with feeder unit

## RIFAST® PROCESSING TECHNIQUE IN THE PRESS

The RIFAST® system also offers significant potential savings with the integration of the functional elements into the press. RIFAST® for presses consists of moveable feeder units (ZEM/ZES) and the processing modules (VMM/VMS). Together with the RIFAST® functional elements, we offer a complete system with full benefits to every detail.

### RIFAST® FEEDER UNITS

The RIFAST® feeder units are available with up to 8 tracks and can be quickly adapted to other bolt and nut sizes. They are characterised by high availability of the machine, high speeds and a low set-up time of the tools. The feeder units can be controlled by touch-screen or LED display independently from



◀ VMM/VMS  
Processing module


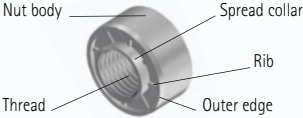
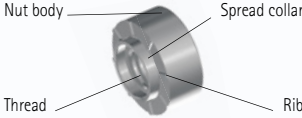
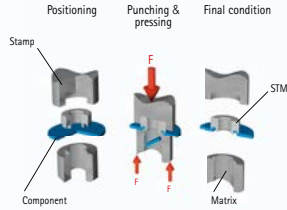
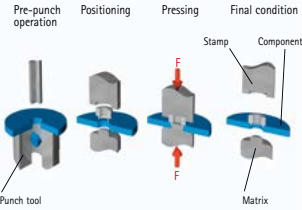
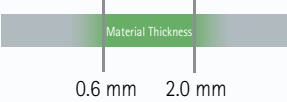
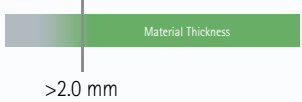
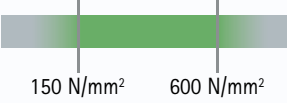
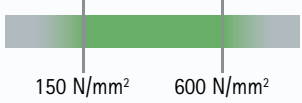





◀ ZEM/ZES  
Mobile feeder unit

the press and with programmable memory. Optionally, the control unit can also be equipped for remote diagnosis.

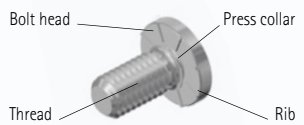
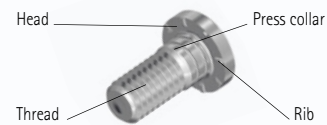
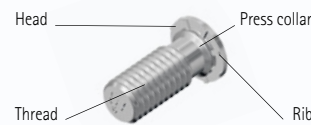
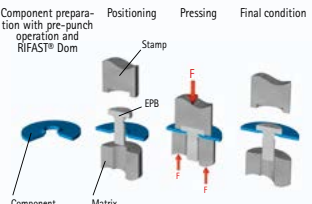
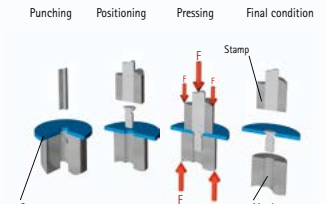
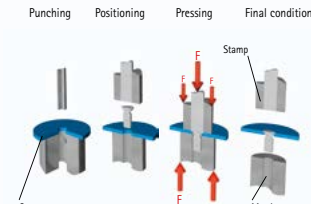
### THE RIFAST® PROCESSING MODULES

The RIFAST® processing modules are used in follow-on composite tools or transfer tools. However, they can also be added to present tools. Due to their divided compact design, the modules can be installed easily in a very space-saving manner in the upper and lower area of the press tool - with any possible angle. Easy assembly is also possible with tools already installed. The function of the processing modules is monitored electronically. This ensures reliable placement of the functional elements even with complex components.

	<p style="text-align: center;"><b>STM</b></p>	<p style="text-align: center;"><b>DBM</b></p>
<p style="text-align: center;">Element</p>		
<p style="text-align: center;">Description</p>	<p style="text-align: center;">Self-punching nut installed by forming</p>	<p style="text-align: center;">Nut for sheet metal thicknesses <math>\geq 2.0</math> installed by forming</p>
<p style="text-align: center;">Joining process</p>		
<p style="text-align: center;">Component thickness (t)</p>		
<p style="text-align: center;">Component strength (<math>R_m</math>)</p>		
<p style="text-align: center;">Accessibility</p>	<p style="text-align: center;">on both sides</p>	<p style="text-align: center;">on both sides</p>
<p style="text-align: center;">Processing technology</p>	<p style="text-align: center;">automated, partially automated and manual</p>	<p style="text-align: center;">automated, partially automated and manual</p>

	<p style="text-align: center;"><b>C-frame stationary</b></p>	<p style="text-align: center;"><b>ZEM + ZES</b></p>
<p style="text-align: center;">Processing devices</p>	 <p style="text-align: center;">robot-supported - fully automated</p>	 <p style="text-align: center;">for pressing</p>

◀ RIFAST® - Pressing & stamping elements  
Overview

EPB	DBB	SEB
		
<p>Universal bolt installed by forming</p>	<p>Bolt with flush head installed by forming</p>	<p>Bolt with flush head installed by forming</p>
<p>Component preparation with pre-punch operation and RIFAST® Dom</p> 		
<p>Material Thickness</p> <p>0.75 mm      2.5 mm</p>	<p>Material Thickness</p> <p>2.5 mm      9.0 mm</p>	<p>Material Thickness</p> <p>1.0 mm      2.5 mm</p>
<p>150 N/mm<sup>2</sup>      600 N/mm<sup>2</sup></p>	<p>150 N/mm<sup>2</sup>      600 N/mm<sup>2</sup></p>	<p>150 N/mm<sup>2</sup>      600 N/mm<sup>2</sup></p>
<p>on both sides</p>	<p>on both sides</p>	<p>on both sides</p>
<p>automated, partially automated and manual</p>	<p>automated, partially automated and manual</p>	<p>automated, partially automated and manual</p>

VMM + VMS



fully automated

◀ RIFAST® - Processing devices  
Overview

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WE CONNECT THE WORLD

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