

# Riveting Machines Assembly Systems



**Riveting Technology Pioneers**

# ... for the automotive industry



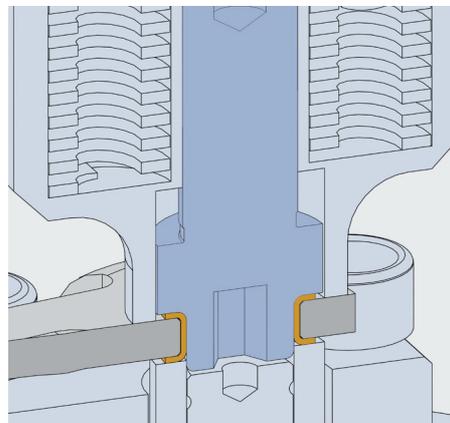
FMW Friedrich provides individual solutions for various industries and a variety of applications and requirements.

## Hood/door hinges

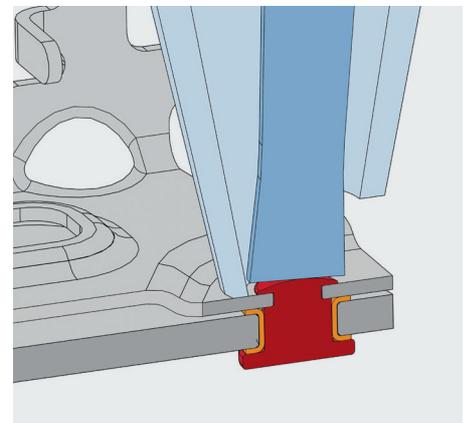
Articulated joints for hood or door hinges are made using plain bearing bushes and step rivets.



Bushings



Radial point rivets



## Other applications

Brake pad retaining clips • Drive kinematics for throttle valve • Seat belt

buckles • Windscreen wipers • Clutches  
• Ball bearings • Steering column

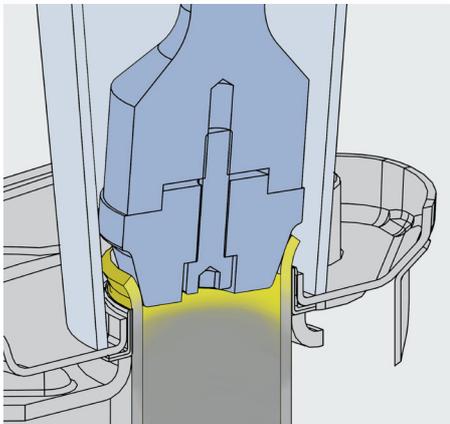


## Seat bases

To maintain the required stability, the side parts are connected by large-diameter tubes and reliably flared with GBA technology.



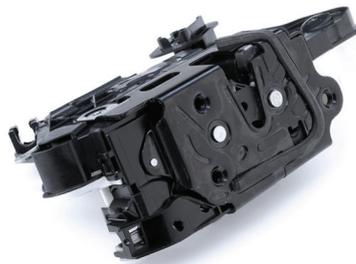
Flaring / orbital riveting (GBA)



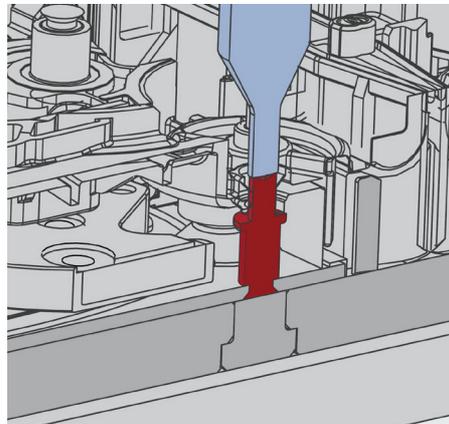
- Handbrake • Spoiler kinematics
- Gearbox components • Sunroof

## Door locks

A car door lock involves many different riveting tasks, which are perfectly solved with FMW's radial point riveting technology.



Radial point riveting



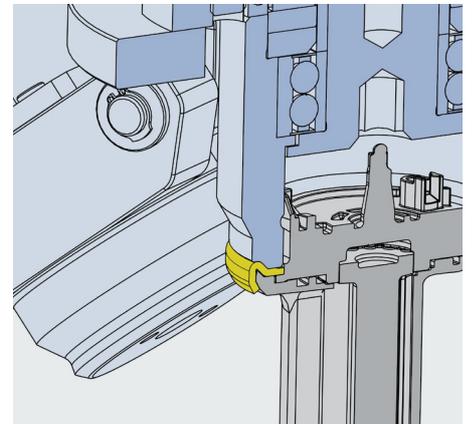
- guidance • Joints for folding tops of convertibles • Battery housing

## Seat belt tensioners

Safety-related components such as belt tensioner systems are reliably joined with customized roll-forming heads.



Roll-forming



- Workpiece
- FMW tool
- Rivet
- Bushing
- Deformation zone

# ... for toolmaking and mechanical engineering, for medical instruments

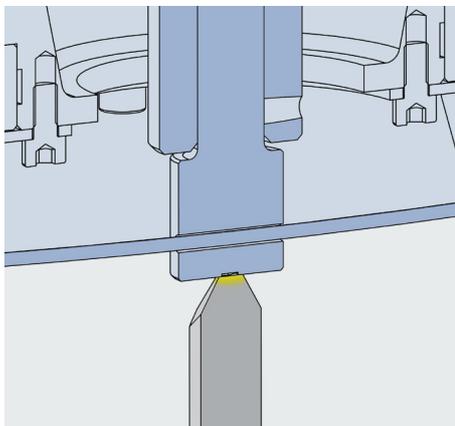


## Number punches

With FMW's radial riveting point technology, specialized riveting dies make it possible to emboss letters, numbers and logos.



Embossing with radial point

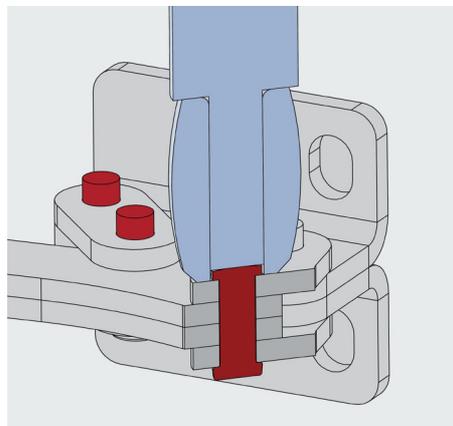


## Toggle clamps

In a multi-articulated joint, the precision of the riveted joint is extremely important to achieve a firm yet flexible result.



Radial point riveting

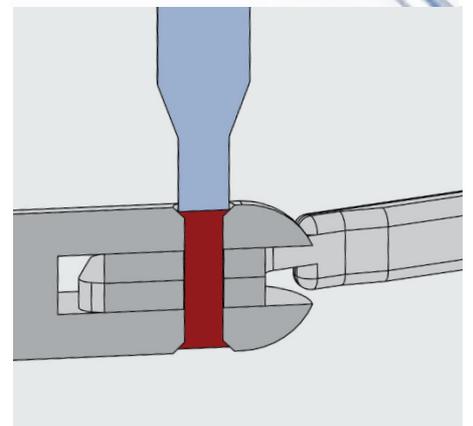


## Surgical instruments

With FMW riveting machines, rivets in the micrometer range for medical applications are a cinch.



Radial point riveting



## Other applications:

Tongs • Chainsaw chains • Heavy duty castors • Ball bearings

Pump flanges • Valves • Piston

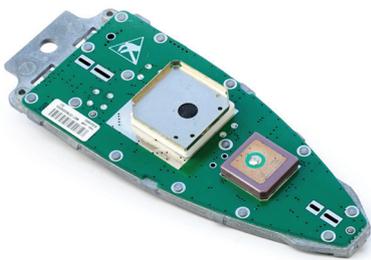
Sterile storage containers • rods  
Endoscopes • Biopsy forceps

# ... for the electrical and fittings industry

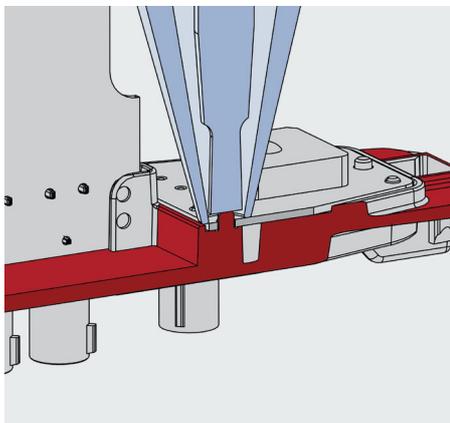


## Roof antenna

FMW machines combine a variety of materials, e.g. circuit boards and cast housings, without damaging sensitive printed circuit boards.



Radial point riveting



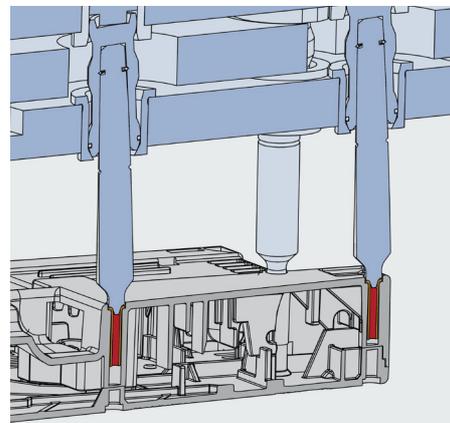
Threaded nuts for circuit board screw joints • Sockets • Plugs

## Automatic switches

With our individually developed multi-spindle rivet heads, multiple rivet points can be riveted at the same time.



GBA with multiple spindle head



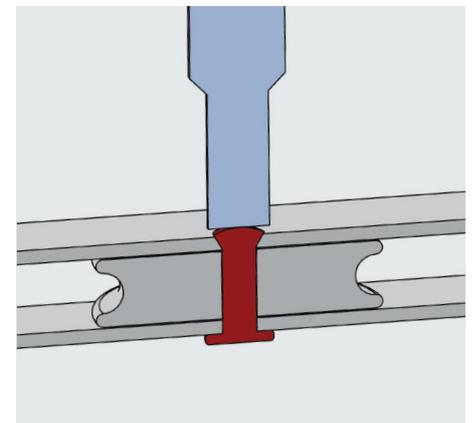
Coils • Radar sensors • Circuit breakers

## Guide carriages

Despite heavy-duty joints, FMW's radial point riveting technology ensures smooth movement for opening, closing, tilting or sliding.



Radial point riveting



Door locks • Door and window fittings • Hinges • Locking systems