

MANUFACTURING TECHNOLOGY

# CLAMPING DEVICES

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Our manufacturing technology range consists of our load-bearing equipment, hydraulic clamping devices, assembly devices and assembly systems. However, not only do we develop them, we also offer you an entire range of products and services including development and design, manufacturing, CE-compliant documentation and all the support you need throughout the entire product life cycle.

## Your partner for manufacturing technology

Our highly experienced staff can implement your requirements in specific concepts. Our first priority is to combine our ideas, developments and products to create reliable processes that are ergonomic to operate and economical to use. We work with two principles that determine our approach:

- ✓ *As simple as possible*
- ✓ *As safe as necessary*

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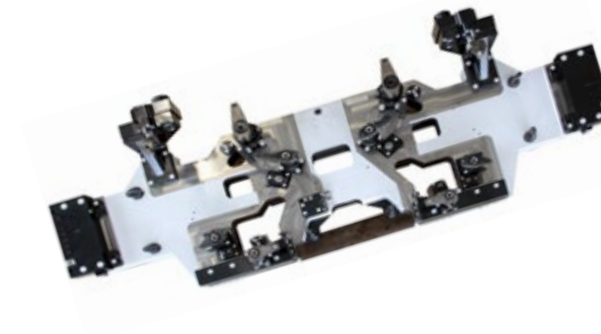
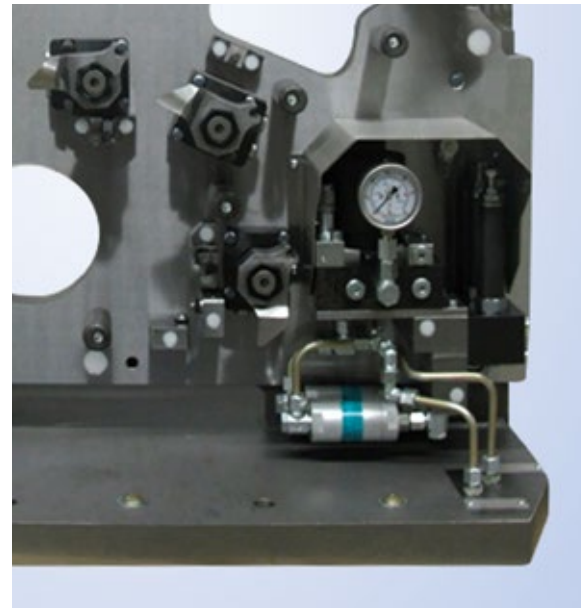
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# WE CAN CLAMP ANY COMPONENT FOR YOU

Clamping is a highly specialised field. Above all, clamping devices need to be designed for outstanding stability and precision. KTW combines know-how built up over decades in the fields of design and manufacturing. Working together with our "Gripping technology" department, we can optimally design your clamping devices for automatic loading and unloading.

## KTW adheres to the following principles:

- high availability
- reliable adjusting and clamping processes
- short auxiliary process times
- avoidance of chip deposits
- simple Poka Yoke operation



## Structural parts – Clamping without delay

**Suspension strut mount** – Media transfer via pallet cones, media supply via bores, hydraulic sequence control on the device in three steps with component query, 5-axis machining in MC Deckel-Maho

**Cross-member** – Weighing subplate mounting A-axis, media bores deep-hole drilled 2,200 mm, hydraulic pre-centring and alignment, surface and system, control using air sensors with 5-axis machining in MC CHIRON

**Side member** – Weighing subplate mounting A-axis, media bores deep-hole drilled 2,200 mm, hydraulic alignment, surface and system, control using air sensors with 5-axis machining in MC CHIRON

## Gearbox parts – Machining in one clamping process

**Gearbox housing** – Clamping angle for two component sizes, front and rear machining, hydraulic sequence control on the device in two steps, alignment and clamping, 4-axis machining in MC GROB

**E-motor gearbox** – Clamping angle, 4x manual clamping device, 4-axis machining in MC Heller

**Gearbox cover** – Clamping angle, front and rear machining with three clamping nests, 2x media supply, 1x via pallet cones and 1x external supply with pressure accumulator, media bores deep-hole drilled, 1,000 mm, 4-axis machining in MC GROB and Heller



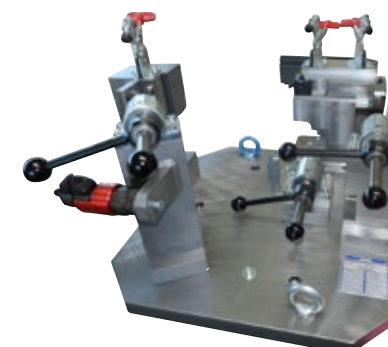
## Die-casting parts – Tubing no longer required

**Casting parts** – clamping angle, hydraulic alignment, surface and system control via air sensor media transfer using pallet cones, media supply deep-hole drilled, 4 devices on A-axis with 4 B-axes, 5-axis machining in MC LICON (double spindle)



## Manual clamping systems – Simple and economical

- for prototypes
- for pre-production
- for small series



## We offer you:

- ✓ *Clamping devices designed specifically for your component*
- ✓ *Hydraulic – mechanical – pneumatic*
- ✓ *From the clamping concept to manufacturing, including tool testing*
- ✓ *Coordination of the support and alignment points, including measurement report*
- ✓ *In-house hydraulic testing, including clamping report (250 bar / five clamping circuits A-B adjustable / 24-hr endurance test)*
- ✓ *Pure design services possible*



For further information please go to:  
[ktw-friedrichshafen.de/en/clamping-devices.html](http://ktw-friedrichshafen.de/en/clamping-devices.html)