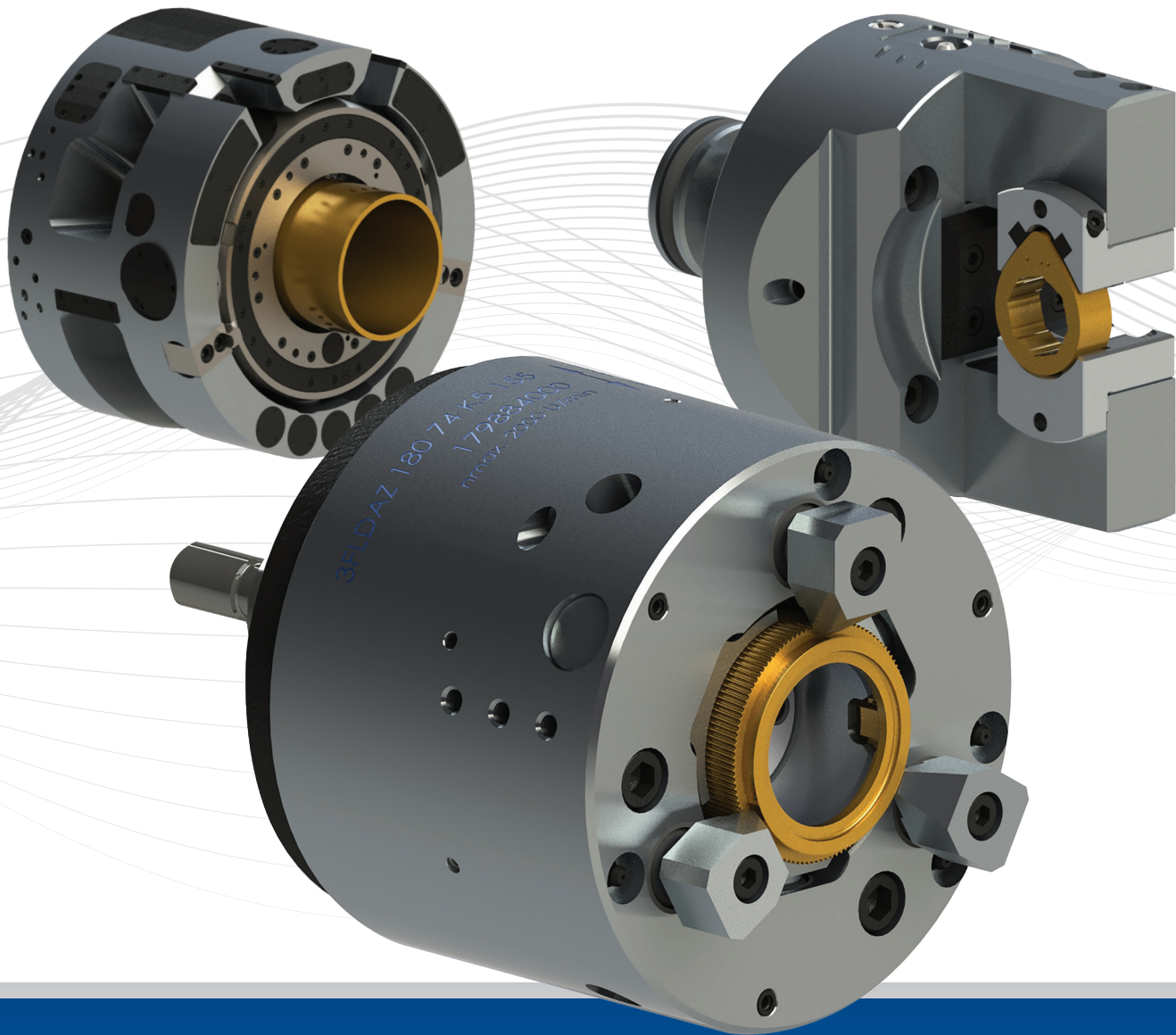




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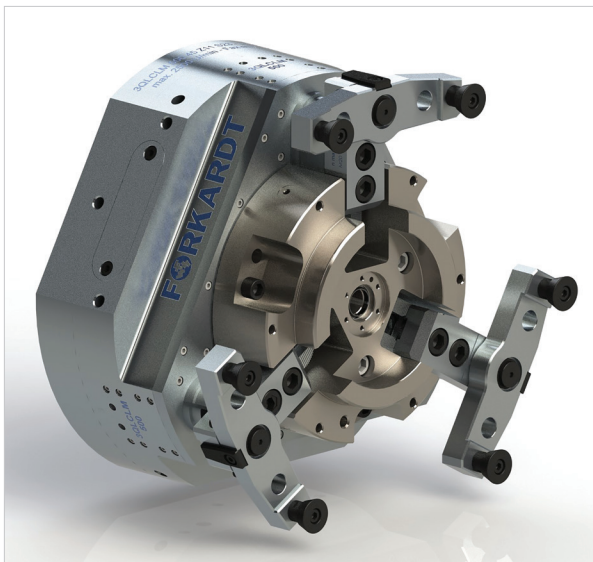
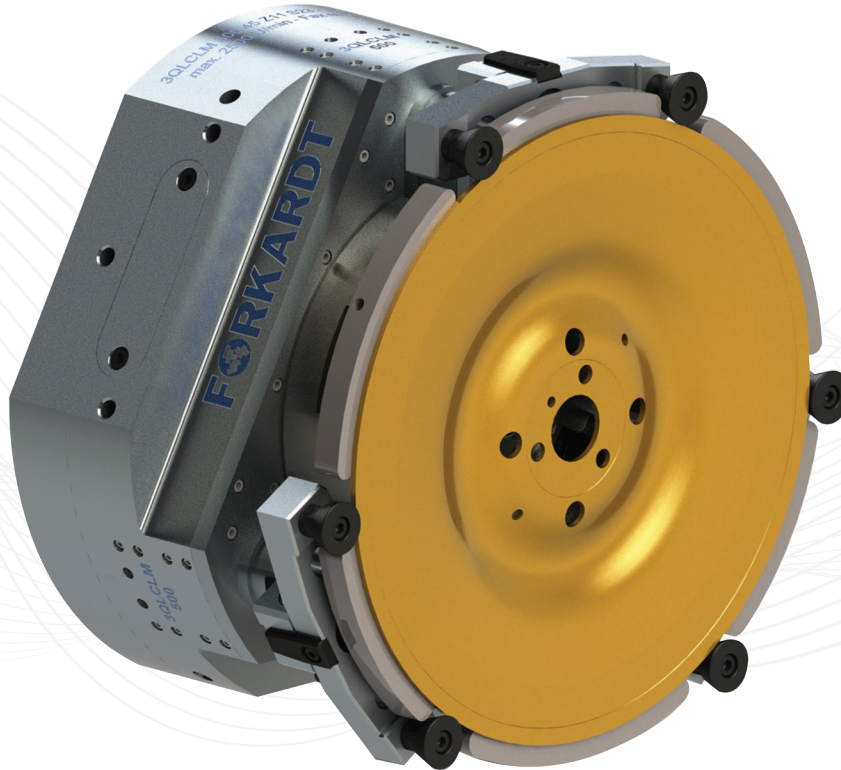
# SPECIAL CLAMPING EQUIPMENT

THE RIGHT CLAMPING DEVICE FOR EVERY MACHINING TASK

**FORKARDT® Special clamping equipment**

## **Lever chuck with QLC guide**

**3QLC-LM with stainless steel top tooling**



**Sample workpiece**



### **Description**

Special clamping equipment for processing of circular knives for cold cuts production in the food industry.

### **Application areas**

- Mass production
- Suitable for very flat workpieces for precision finish processing

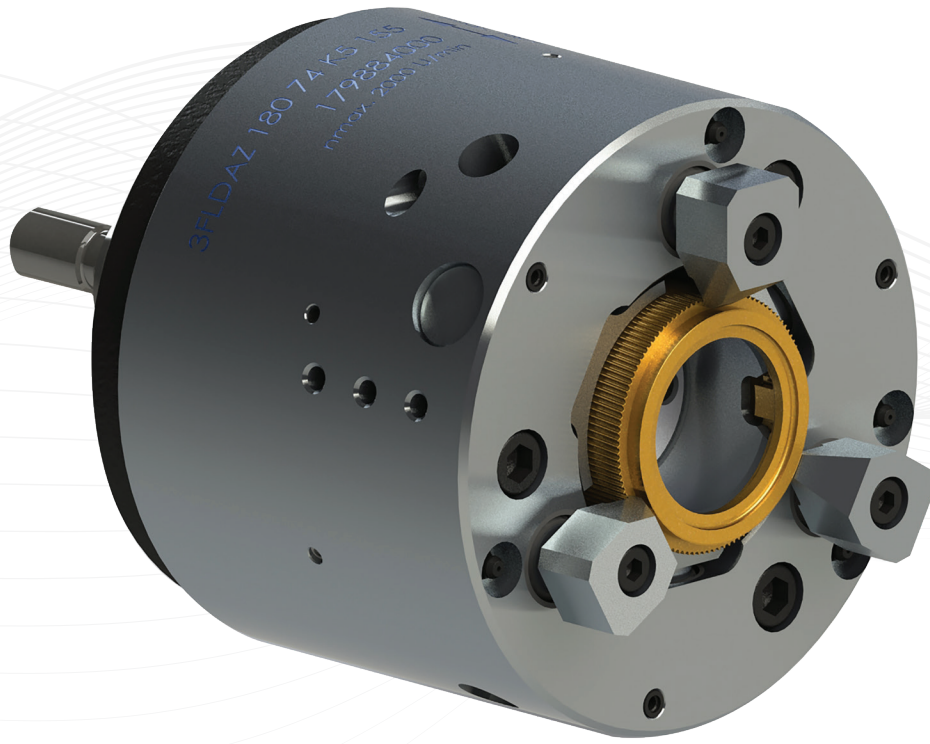
### **Advantages**

- Hydraulic positionable workpiece stop and damping
- Deformation-resistant clamping position
- Adjustable tension in the process
- Completely sealed and low maintenance

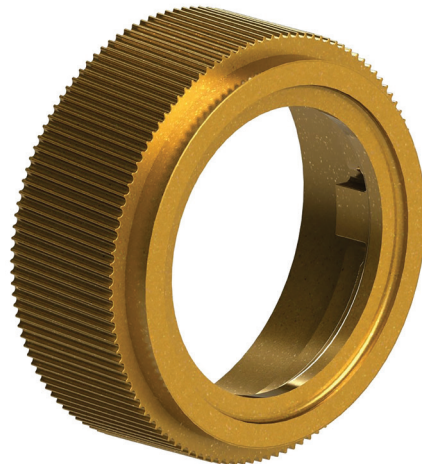
**FORKARDT® Special clamping equipment**

# Lever chuck with pre-centering

**3FLDAZ**



**Sample workpiece**



## Description

Special lever chuck for processing the inner bore of gear wheels.

## Application areas

- Medium-scale and mass production
- Finish processing of gear wheels

## Advantages

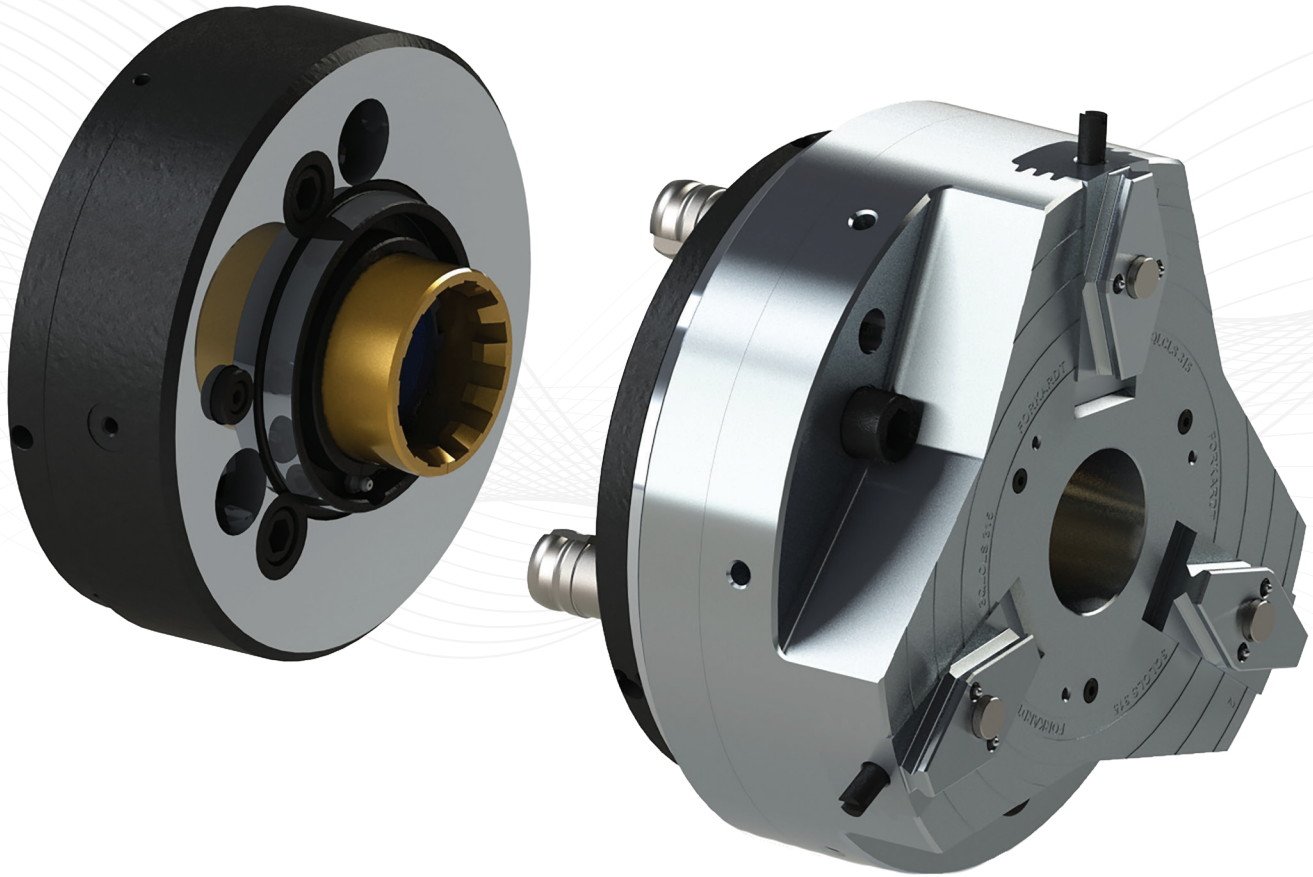
- Pull-down chuck
- High axial runout accuracy  $<0.01$  mm
- High rotational speed



**FORKARDT®** Special clamping equipment

# ForChange Clamping Device

3 QLCLS with MIR IA



## Description

Set-up time optimized clamping device for unmanned batch production with automated chuck change - our contribution to Industry 4.0.

## Application areas

- Small, medium and mass production
- Production in unmanned operation

## Advantages

- Set-up time and set-up cost optimized
- High changeover accuracy with chuck and top jaws
- Flexible use between OP 10 and OP 20

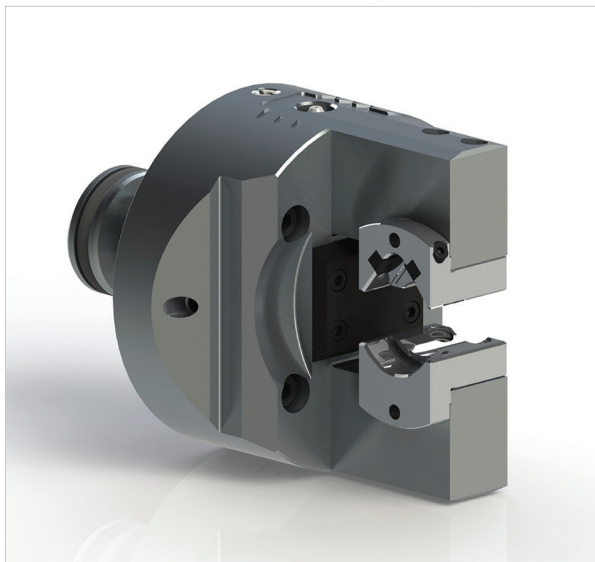
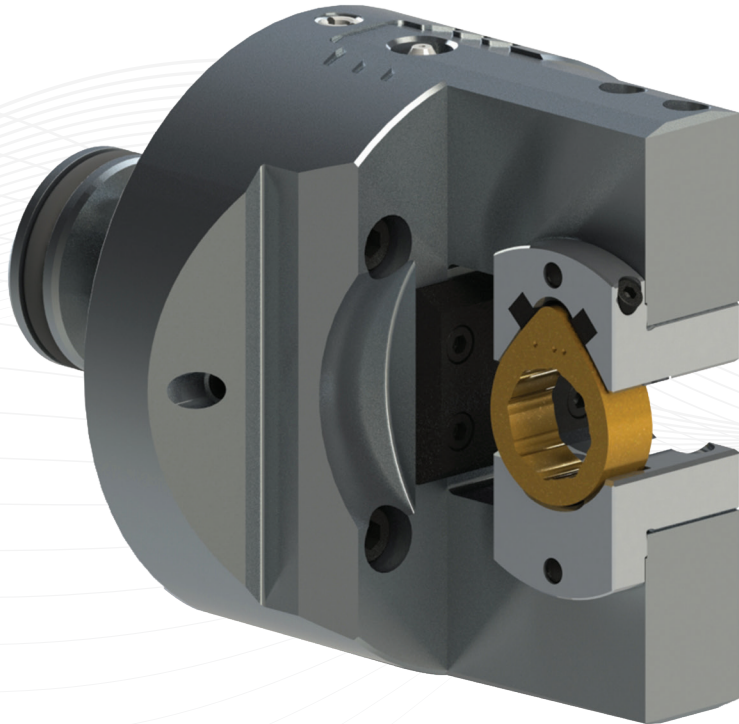




**FORKARDT® Special clamping equipment**

## **2 Jaw chuck with QLC guide**

**S2QLC**



**Sample workpiece**



### **Description**

Two-jaw QLC chuck with special top jaw for processing of cams on a rotary transfer machine.

### **Application areas**

- Mass production
- Production on rotary transfer machines

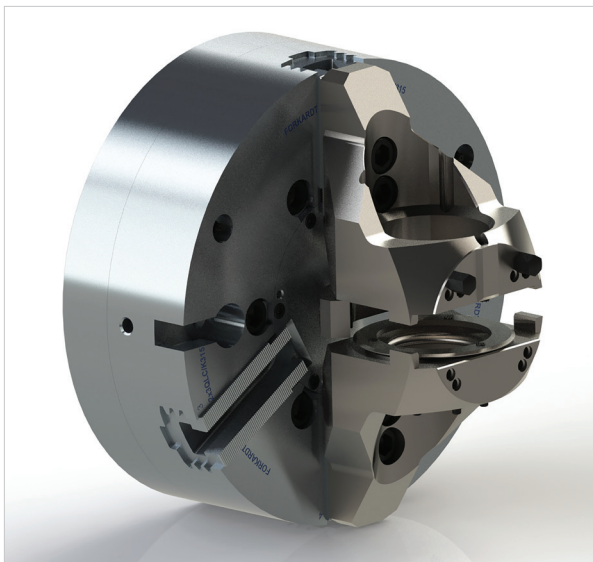
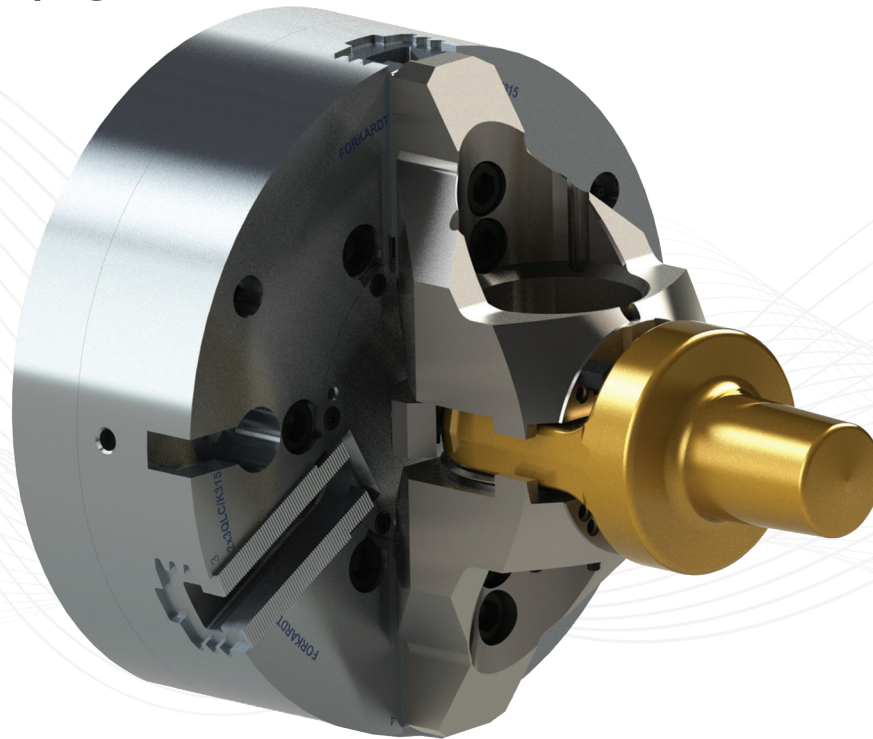
### **Advantages**

- High repetition accuracy < 0,015 mm
- Short cycle times
- Long life span
- Compact design

**FORKARDT® Special clamping equipment**

## **2/3 QLC jaw chuck with special top jaws**

**Universal clamping device for small batches**



**Sample workpiece**



### **Description**

Universal clamping device based on a 2/3 QLC 315.

The ideal clamping device for flexible small batch production.

### **Application areas**

- Small batch and individual part processing
- Wide range of workpieces - from round to rectangular

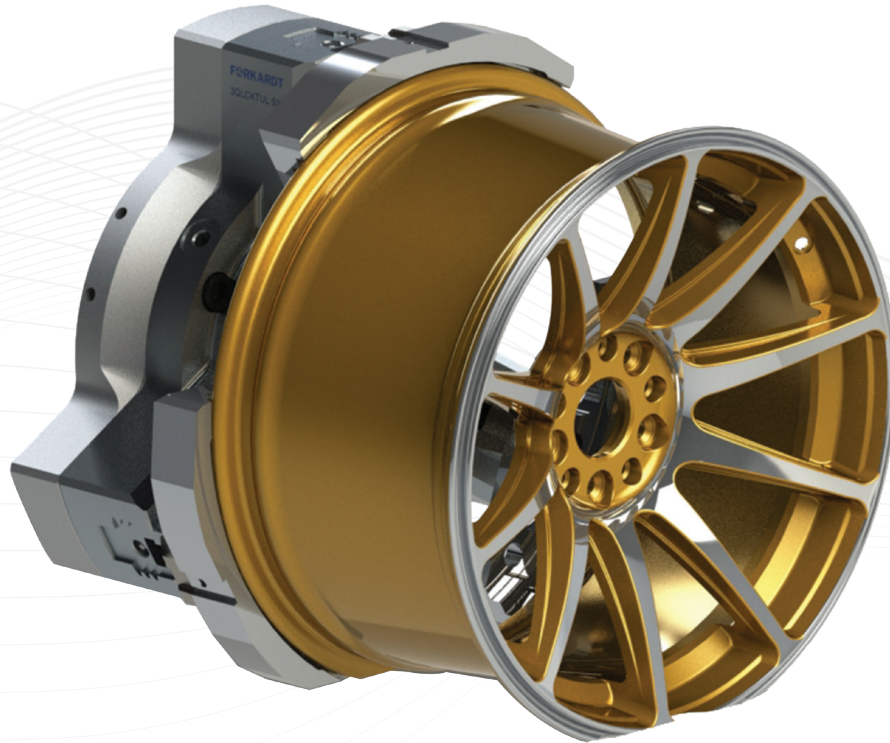
### **Advantages**

- 2 - and 3 - jaw chuck
- Universal applicability
- High precision

**FORKARDT® Special clamping equipment**

## **3 Jaw chuck with QLC guide**

**3 QLCKTUL**



**Sample workpiece**



### **Description**

Based on a 3 QLC 500 for the processing of aluminum rims, specially for the gloss turning.

### **Application areas**

- Medium-scale and mass production
- Processing of aluminum rims

### **Advantages**

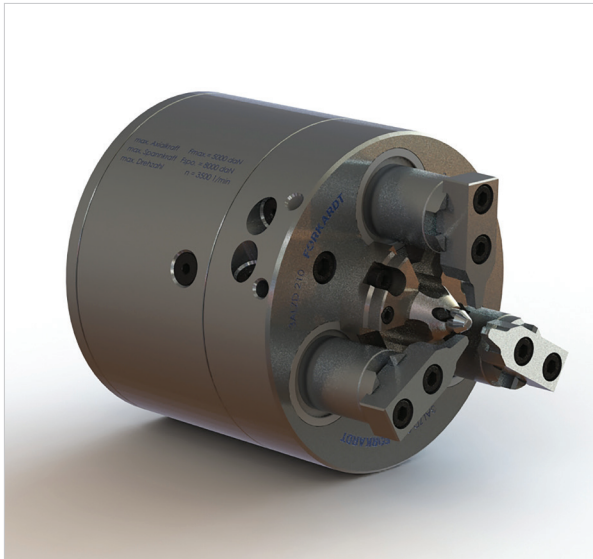
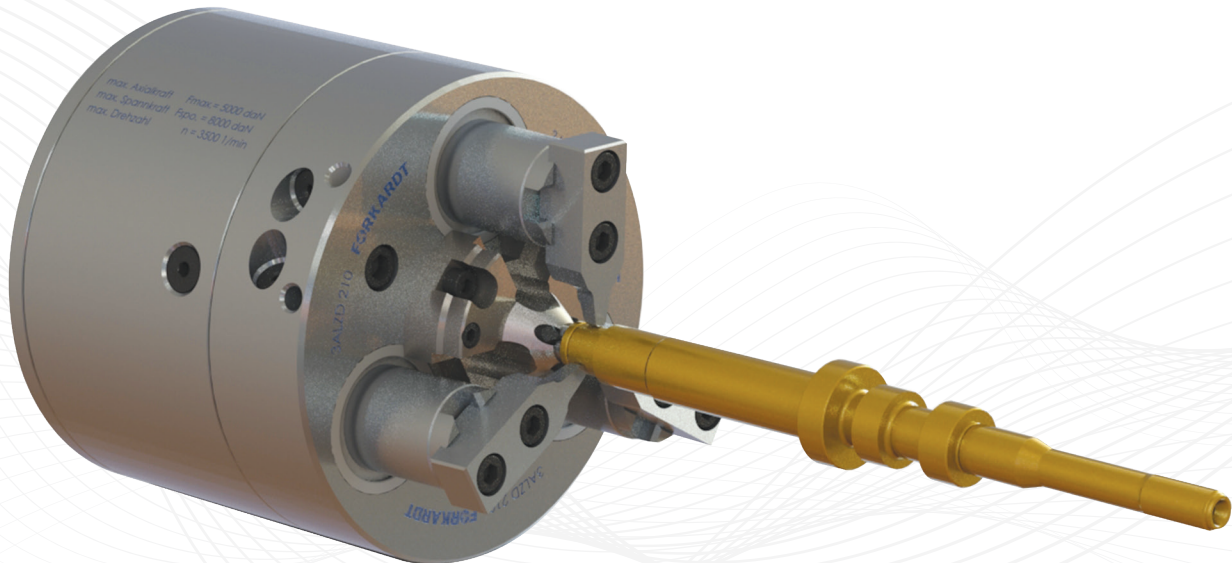
- Low deformation clamping
- High precision
- High rotational speed



**FORKARDT® Special clamping equipment**

## **3 Lever chuck with axial pull**

**3 ALZD, with face drivers and centering point**



**Sample workpiece**



### **Description**

Shaft chuck for batch production based on a 3 ALZD 210 lever chuck with axial pull. Equipped with special clamping inserts and adjustable face drivers.

### **Application areas**

- Medium-scale to mass production
- Shaft processing

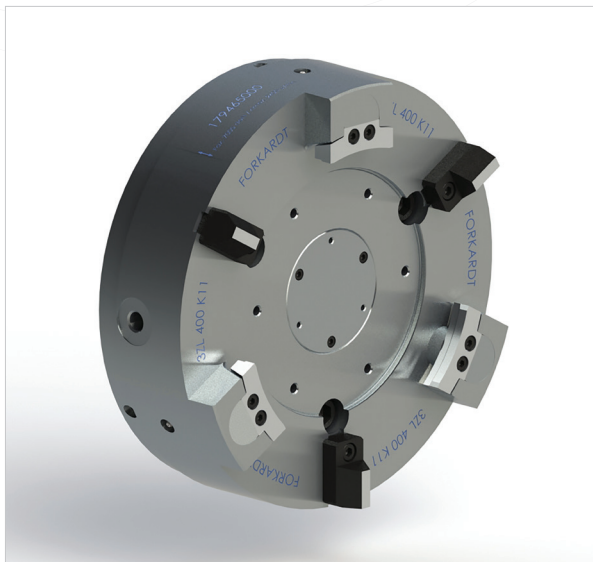
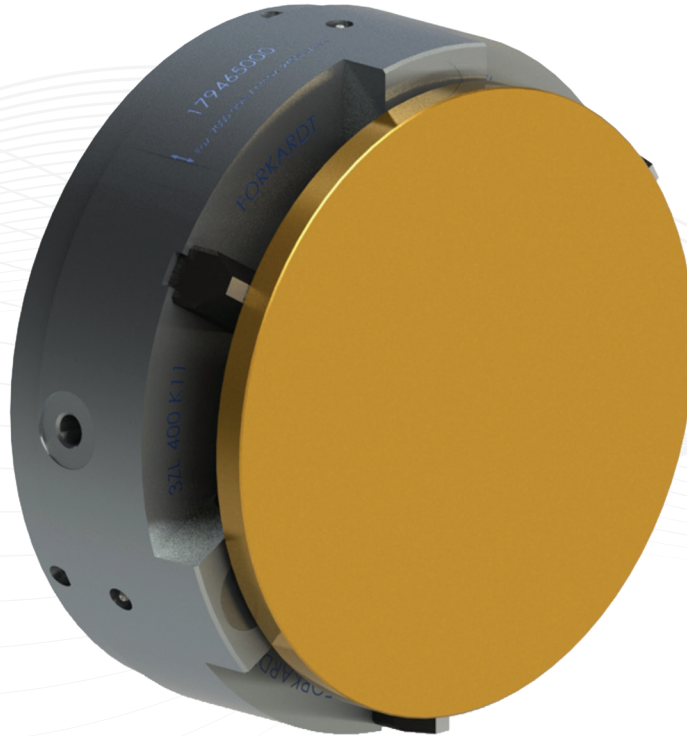
### **Advantages**

- Axial pull
- Complete shaft processing
- High rotational speed
- High axial and radial runout accuracy  
<0.015 mm

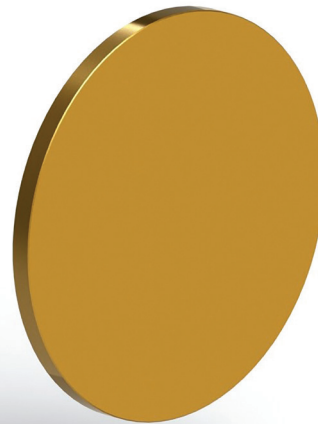
**FORKARDT® Special clamping equipment**

## **Bolt chuck**

**3 ZL**



**Sample workpiece**



### **Description**

Universal 3 ZL 400 collet or bolt chuck with axial stops and workpiece monitoring for interior processing of ball bearing rings.

### **Application areas**

- Medium-scale and mass production
- Axial and radial runout

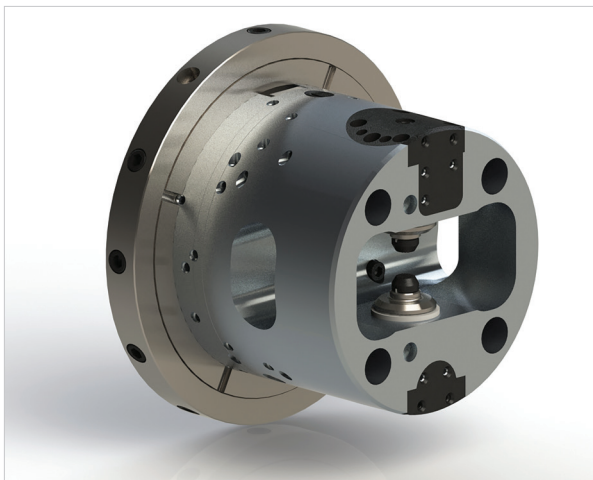
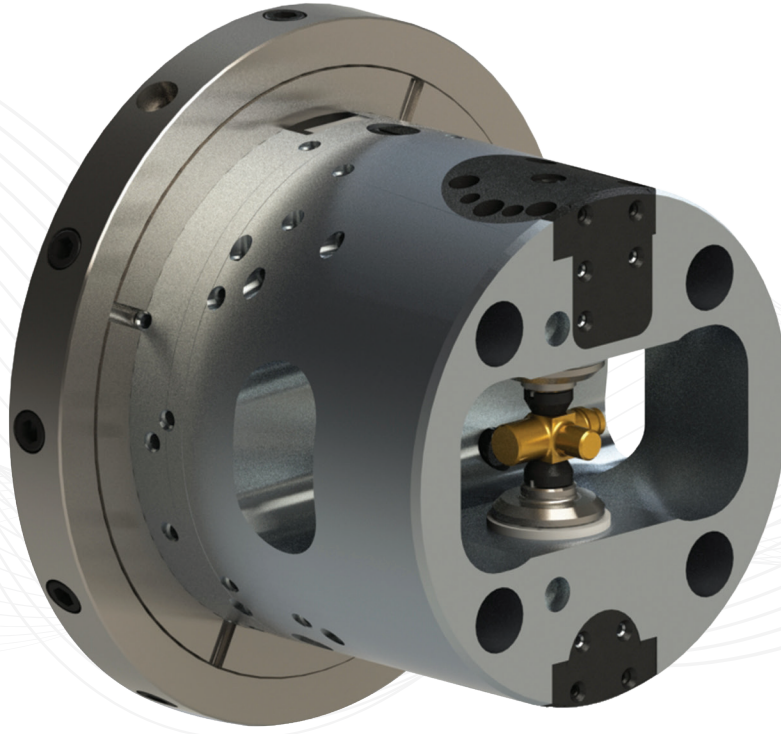
### **Advantages**

- High axial and radial runout accuracy <0.015 mm
- High repeatability <0.015 mm
- Short cycle times

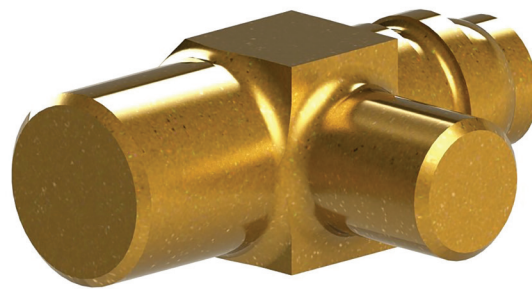
**FORKARDT® Special clamping equipment**

# Centric clamping indexing chuck

**ZHSRJF**



**Sample workpiece**



## Description

The chucks from the ZHSR/HSR series are used for the batch production of hydraulic fittings, fitting parts, journal cross, tripods, pump or valve housings. With this, in one clamping position, processes at  $2 \times 180^\circ$ ,  $3 \times 120^\circ$ ,  $4 \times 90^\circ$  oder  $8 \times 45^\circ$  can be applied by the swiveling process in the swivel axis.

## Application areas

- Medium-scale and mass production
- Multiple processing of one assembly part in one tension position
- Hydraulic fittings, fitting parts journal cross, tripods, pump or valve housings

## Advantages

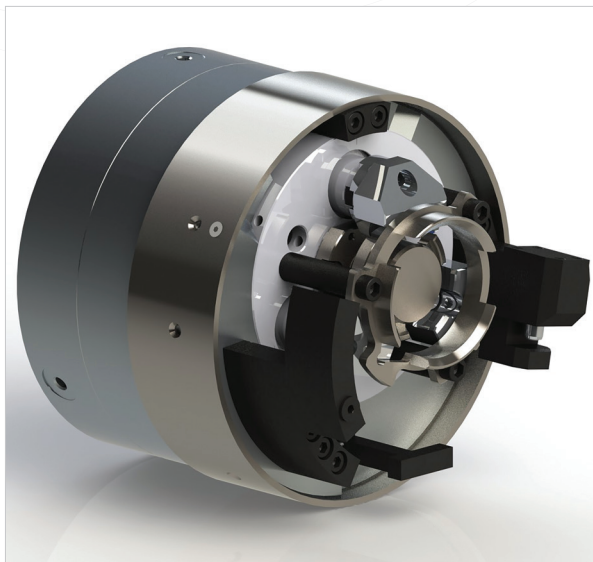
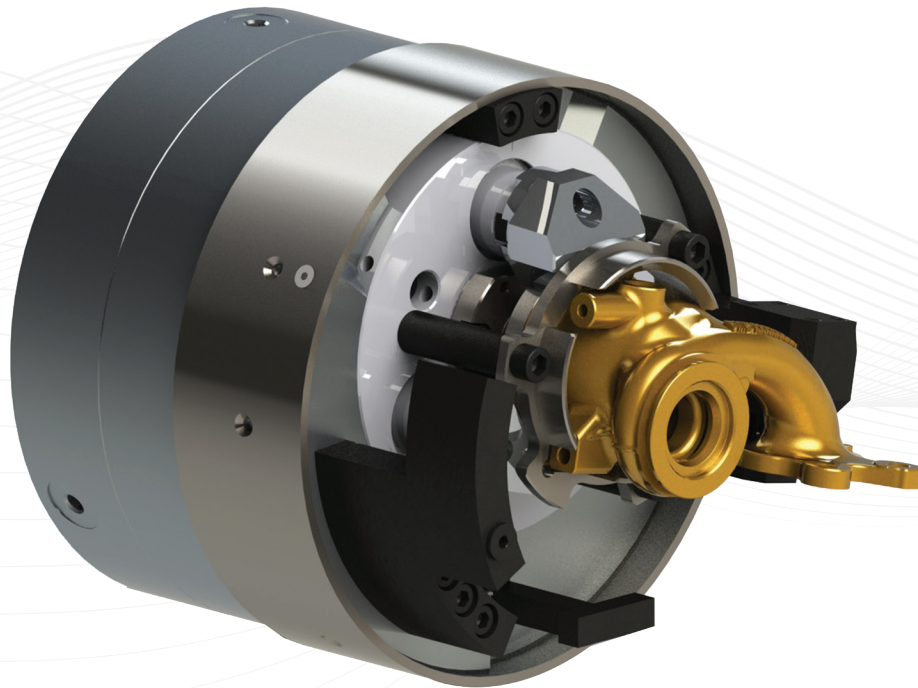
- Processing of several workpiece positions while observing the possible angle position (turned position), in one clamping position
- Index positions  $2 \times 180^\circ$ ,  $3 \times 120^\circ$ ,  $4 \times 90^\circ$  or  $8 \times 45^\circ$  possible
- Positioning accuracy  $<0.04 \text{ mm}$



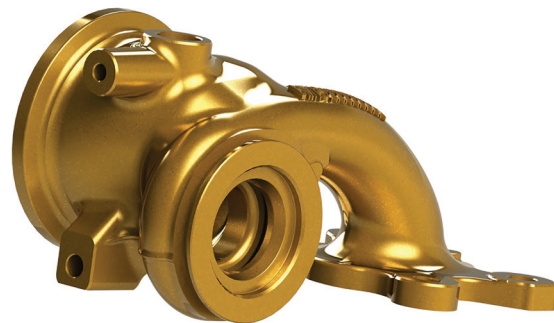
**FORKARDT® Special clamping equipment**

## **3 Jaw lever chuck with positionable stops**

**3 ALDE**



**Sample workpiece**



### **Description**

Special chuck based on a 3 ALD 210 lever chuck with axial pull. Used here with off-center positioning for processing a turbo loader housing with centric turning process. Pre-tooled with positioning aids for the workpiece and balanced with counterweights.

### **Application areas**

- Medium-scale and mass production
- Workpiece with eccentricity between clamping and processing position

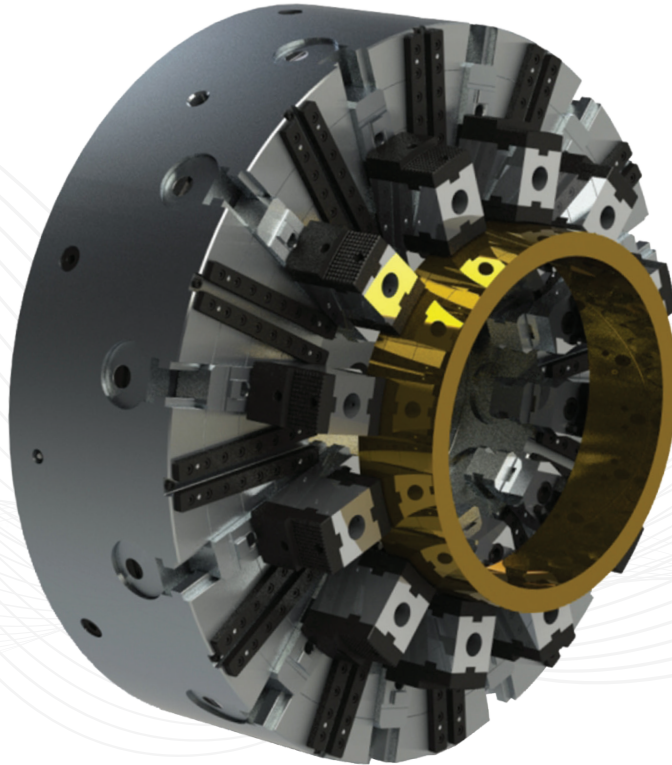
### **Advantages**

- Pull-down chuck
- High rotational speed with off-center workpiece requirements

**FORKARDT® Special clamping equipment**

# **12 Jaw compensating chuck**

**12 KSA**



**Sample workpiece**



## **Description**

Special chuck for ball bearing production. The 12 KSA 800 chuck is used here for very deformation-sensitive ball bearing cage processing.

## **Application areas**

- Small batch and medium sized production
- Workpiece with high deformation sensitivity

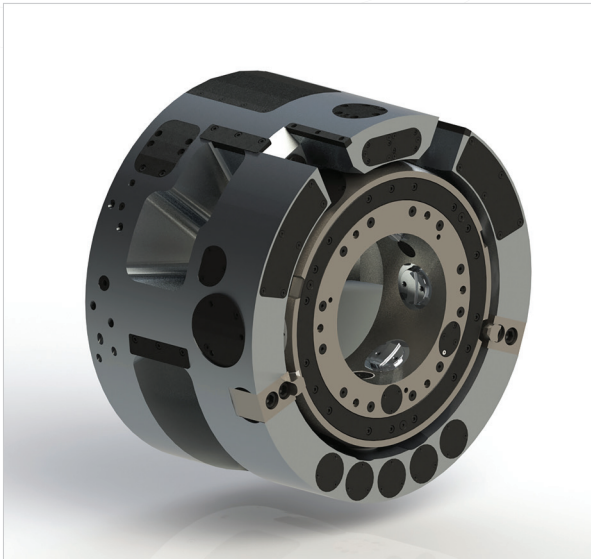
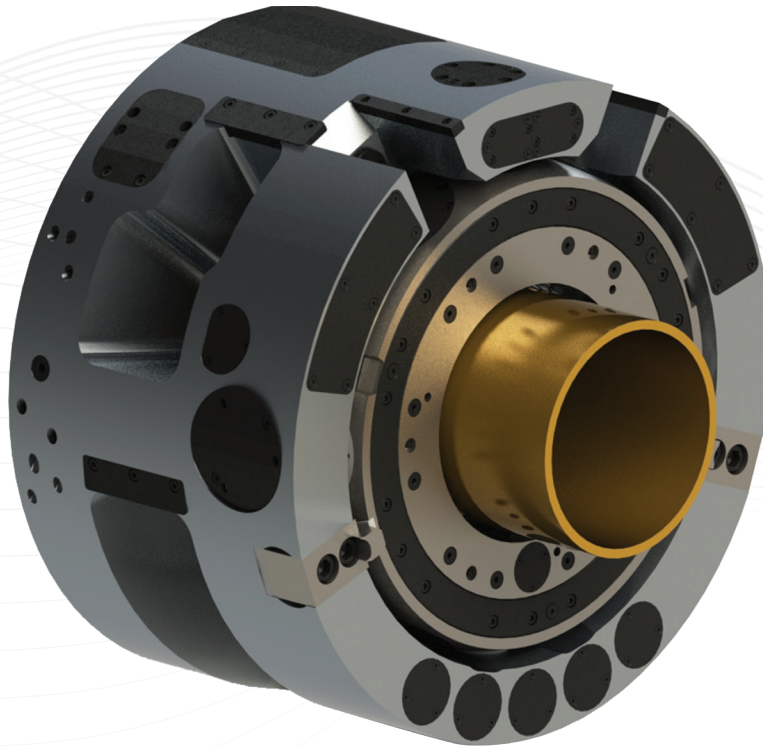
## **Advantages**

- Low deformation clamping
- Compensating and centric clamping
- Short set-up times with the FNC quick change jaw system

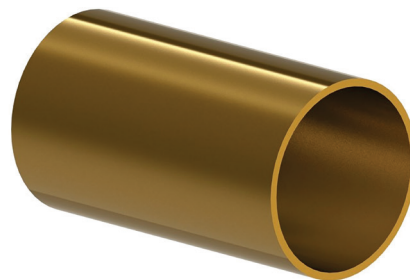
**FORKARDT® Special clamping equipment**

## **2 x 3 Jaw centric and compensating clamping indexing chuck**

**ZS**



**Sample workpiece**



### **Description**

Special clamping equipment for processing of threaded sockets. Thread connections positioned at 180° are processed in a clamping operation after swiveling procedure with the clamped workpiece.

### **Application areas**

- Batch and mass production
- Threaded sockets and connectors for oil and gas industry

### **Advantages**

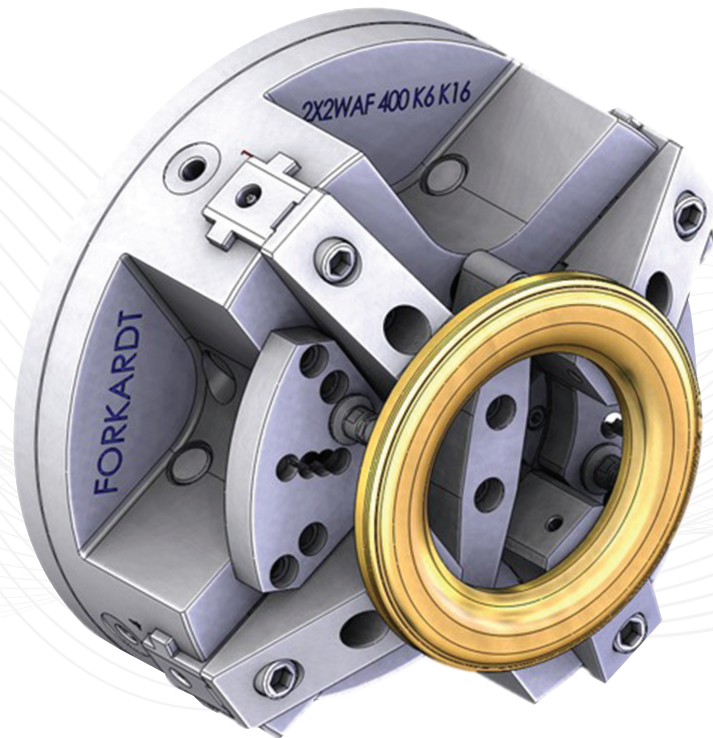
- Complete processing of the thread sockets 2 x 180°
- Compensating and centric clamping
- Low deformation clamping



**FORKARDT® Special clamping equipment**

# **2 x 2 jaw lever-balancing chuck with cardanic workpiece support**

**2 x 2WAF**



**Sample workpiece**



## **Description**

The 2 x 2 WAF 400, a centric and compensating clamping chuck with a cardanic workpiece stop for processing of forged workpieces.

## **Application areas**

- Batch production
- Forged workpieces with relative contour inaccuracy

## **Advantages**

- Point clamping



## Clamping mandrel for large scale components

**An advance into new dimensions.**

When processing tasks anywhere in the world of technology require individual solutions with a high degree of precision and dependability, then FORKARDT is the specialist for custom solutions in clamping technology.

A distinctive result of this type of project, FORKARDT clamping mandrels are used for the production of thin-walled booster housing segments in the European Ariane 5 rockets.

These superior clamping mandrels with absolutely unusual dimensions and functions have over 24 individual and synchronously controllable chuck jaws.

Particularly in aero technology, the success is dependent upon the perfect functioning of individual components.

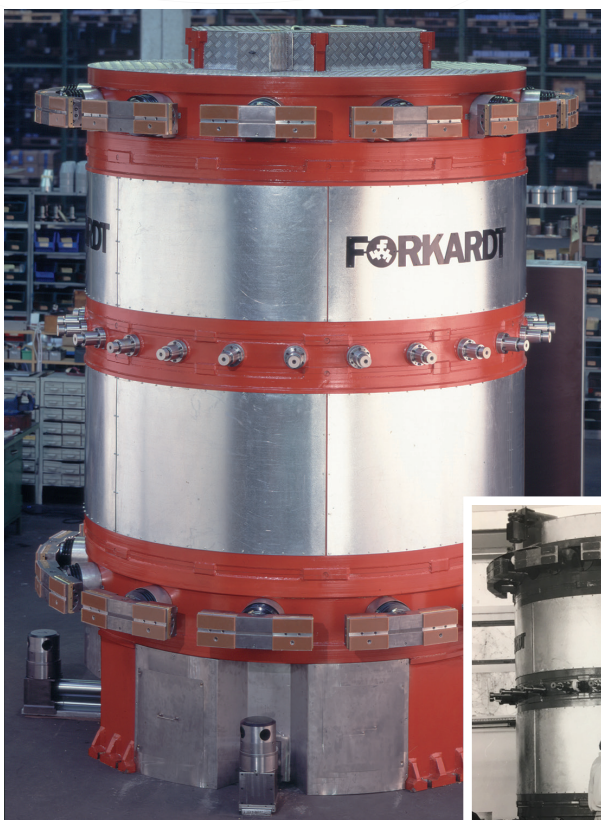
Any reworking is therefore impossible.

Manufacturing risks must then be excluded right from the start.

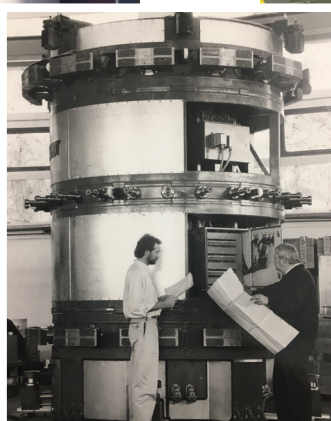
FORKARDT helps to make the processing of large scale components secure with the development of future-oriented technology.

### Highlights of the FORKARDT technology:

- Clamping diameter 3 meters, height 3.8 meters
- Chucking: Centrally true-to-form, programmed-controlled adjustable to centrally circular
- 24 hydraulically activate clamping jaws
- 24 vibration dampers
- 4 retractable hydrostatically compensating support units



The clamping unit in 1993 being put into service



The clamping unit in 2018 after 25 years of reliable operating time

Proof of quality from Forkardt!



# CLAMPING TECHNOLOGY WORLDWIDE



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