

Microfinish-Technology for all Types of Shafts



CenterStar

Microfinish/Superfinish

modularly extensible / high precision / economical

CenterStar Cube



CenterStar 100



CenterStar 200



CenterStar 300

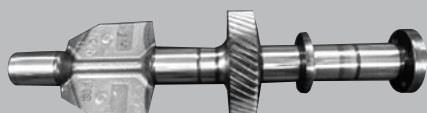
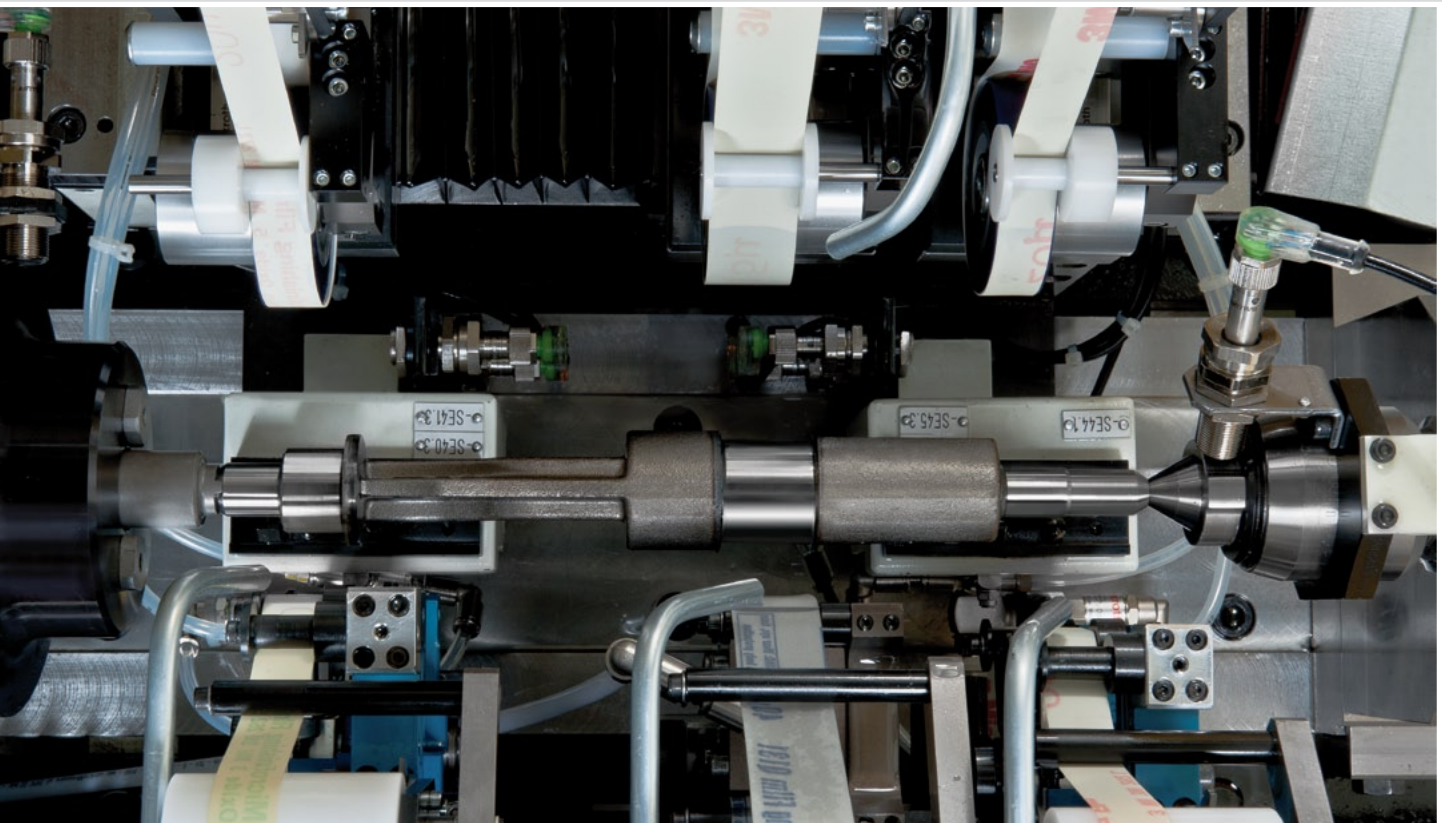


CenterStar Series – Flexible Machining of all Types of Shafts to Extreme Precision

- ▷ Modular machine concept – designed for extreme flexibility and best accessibility with a low footprint
- ▷ The low price per workpiece results from the high process stability and the short cycle time
- ▷ Various machining processes may be integrated into one machine, e.g. stone, tape, CAB, and flat finishing as well as brush deburring
- ▷ Workpieces made of different materials, e.g. steel, cast iron, hard metal, as well as glass and ceramics

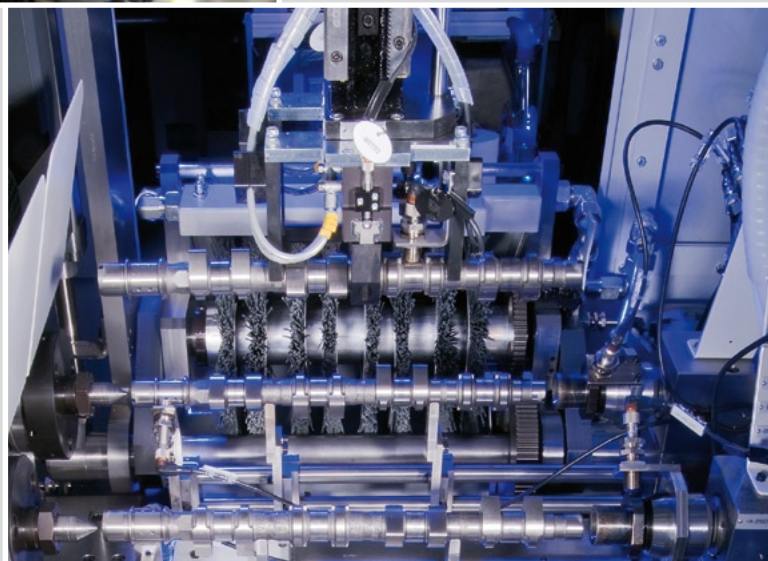
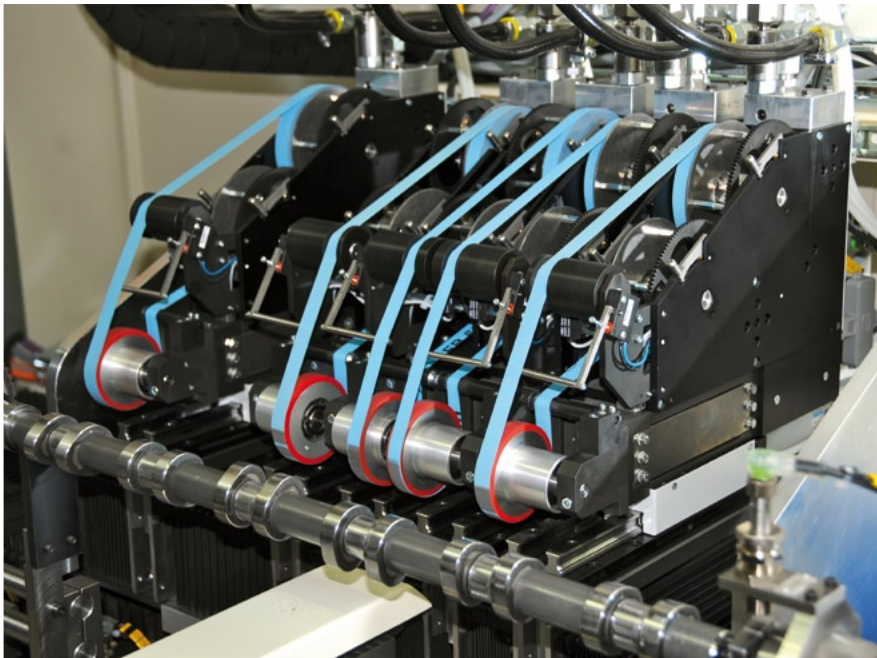
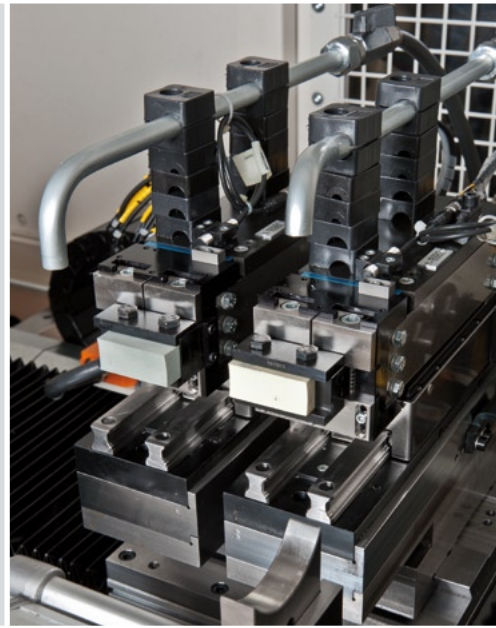
MODULARLY EXTENSIBLE/HIGH PRECISION/ECONOMICAL FOR

- ▷ Automotive
- ▷ Antifriction Bearings
- ▷ Medical Engineering
- ▷ Hydraulics and Pneumatics
- ▷ Camshafts, Balance Shafts, Drive Shafts, Crankshafts
- ▷ Pump Gears
- ▷ Tappets
- ▷ Tooth racks



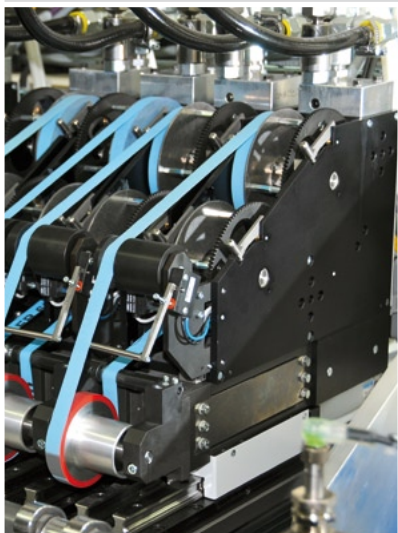
TECHNICAL DATA

Machining stations	1 – 2
Machining units	1 – 10
Workpiece length (mm)	800 – 1,300
Workpiece diameter (mm)	300
NC-axes (pcs)	0 – 7
Spindle speed (rpm)	max. 3,000
Footprint (mm)	2,300 x 1,300



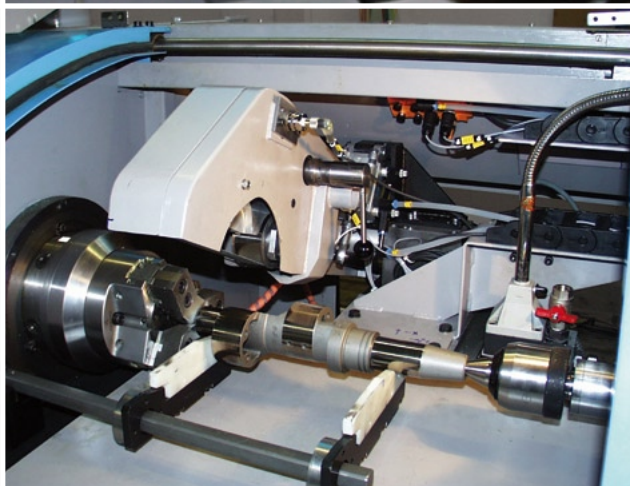
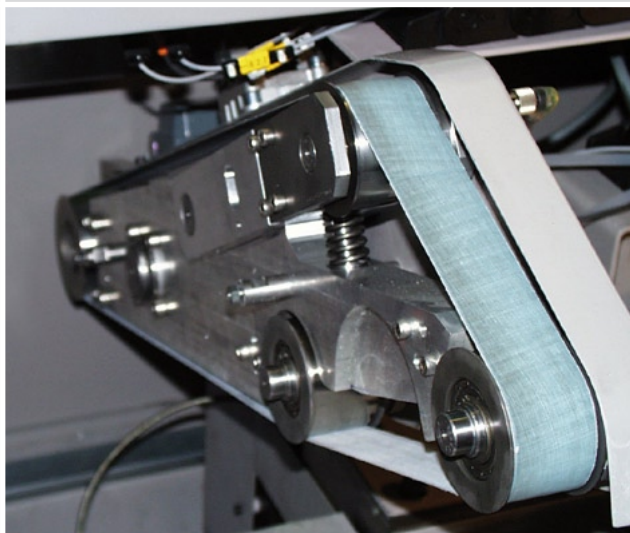
EXAMPLE PUMP SHAFT

- ▷ Continuous tape feed
- ▷ 4 tape finishing units



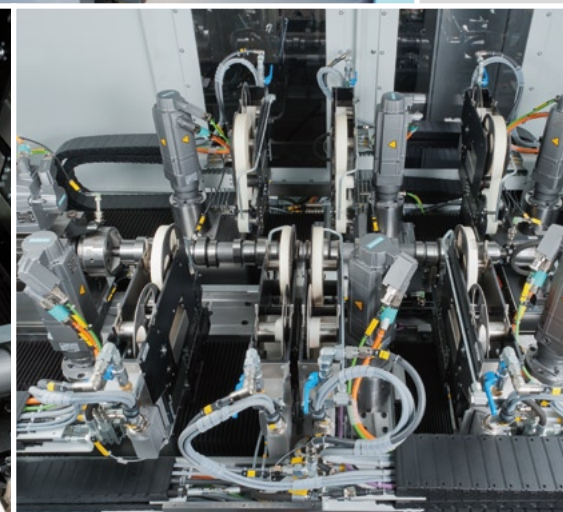
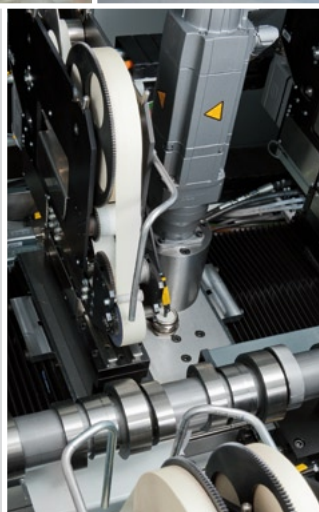
EXAMPLE CRANKSHAFT

- ▷ High cutting speed through endless belt
- ▷ 1 CAB finishing unit



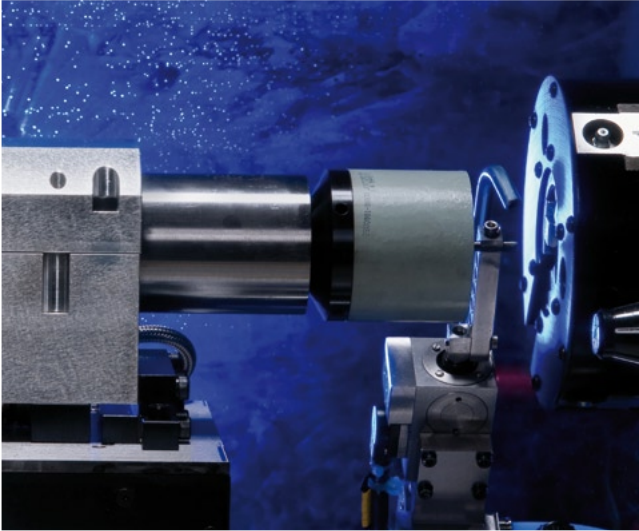
EXAMPLE TRUCK CAM SHAFT

- ▷ Up to 9 tape finishing units
- ▷ Automatically brush deburring



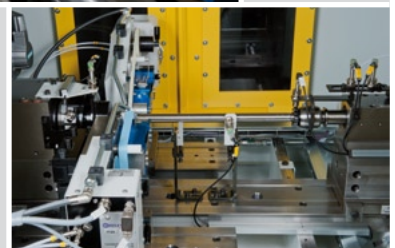
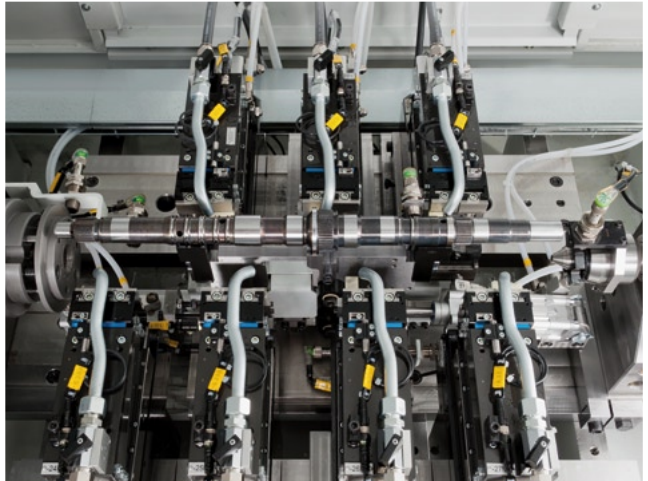
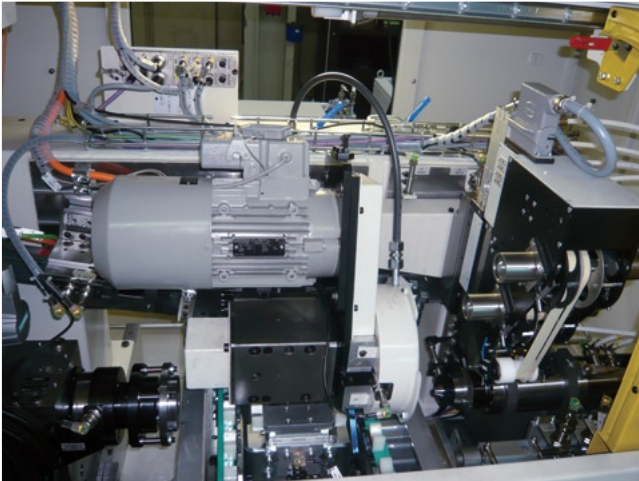
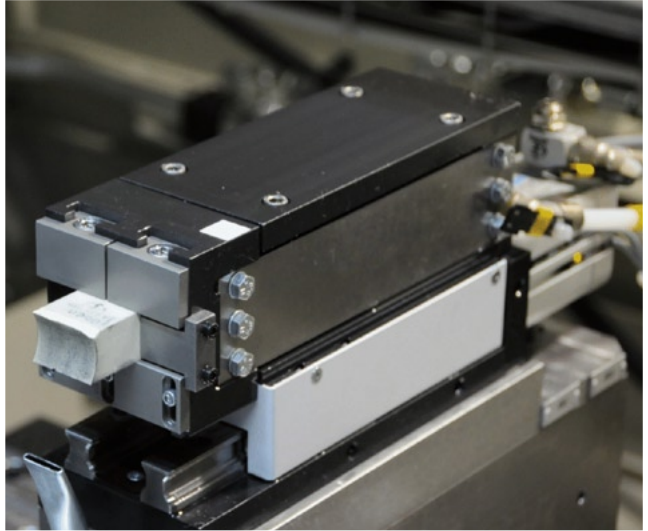
EXAMPLE COMPOSITE CAMSHAFT

- ▷ Process combination
- ▷ 1 flat finishing unit
- ▷ 1 tape finishing unit



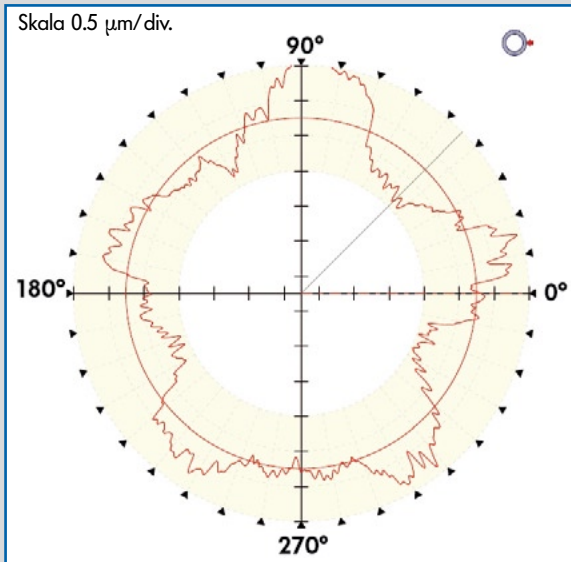
EXAMPLE GEAR SHAFT

- ▷ Optimum geometry (Fourier)
- ▷ Up to 10 stone finishing units

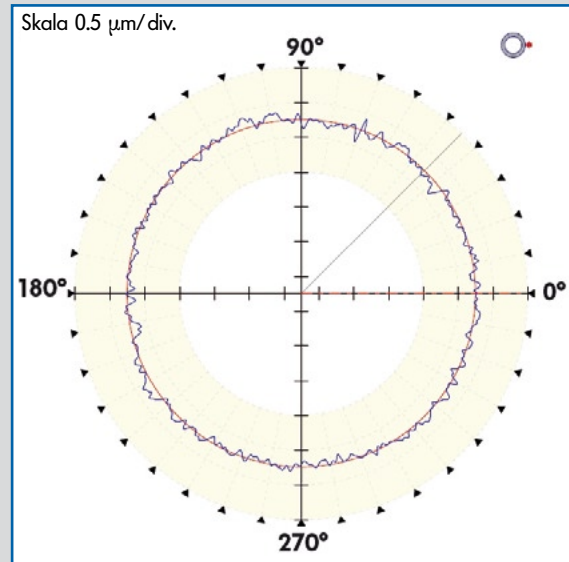


WORKPIECE GEOMETRY

- ▷ cylindrical
- ▷ conical
- ▷ crowned
- ▷ spherical



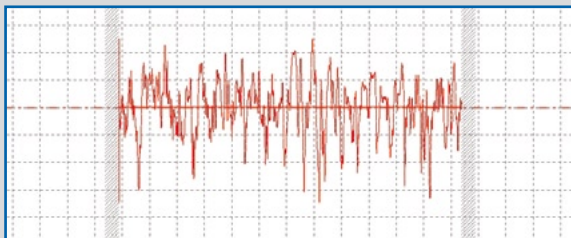
BEFORE MICROFINISH
RONt 1.8 μm



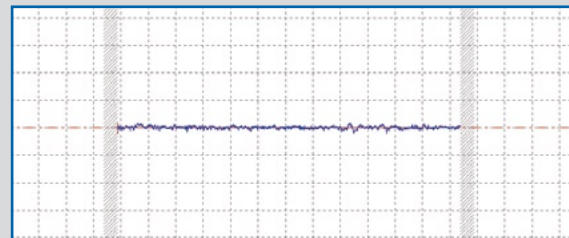
AFTER MICROFINISH
RONt 0.35 μm

SURFACE QUALITIES

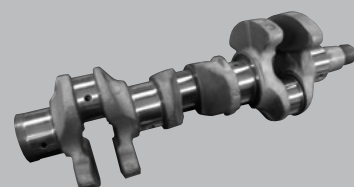
- ▷ Roundness
- ▷ Waviness
- ▷ Roughness
- ▷ Evenness
- ▷ Cylindricity
- ▷ Parallelism



BEFORE MICROFINISH
Rz ~2.0 μm
Tp < 20 % Cref = 5 %



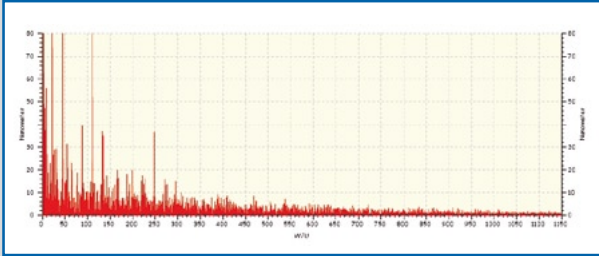
AFTER MICROFINISH
Rz 0.3 μm
Tp < 99 % Cref = 5 %



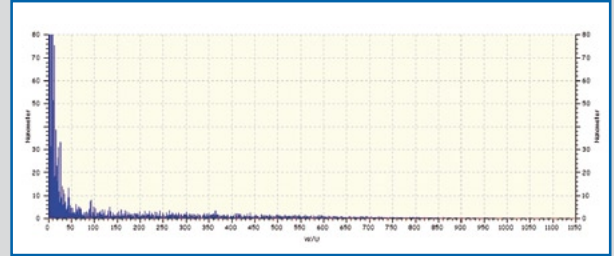
WAVINESS ANALYSIS (FOURIER)

▷ Needle bearing

▷ Sliding seat



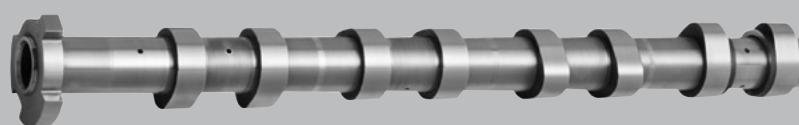
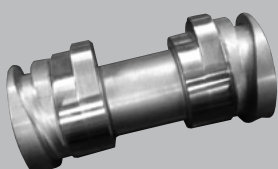
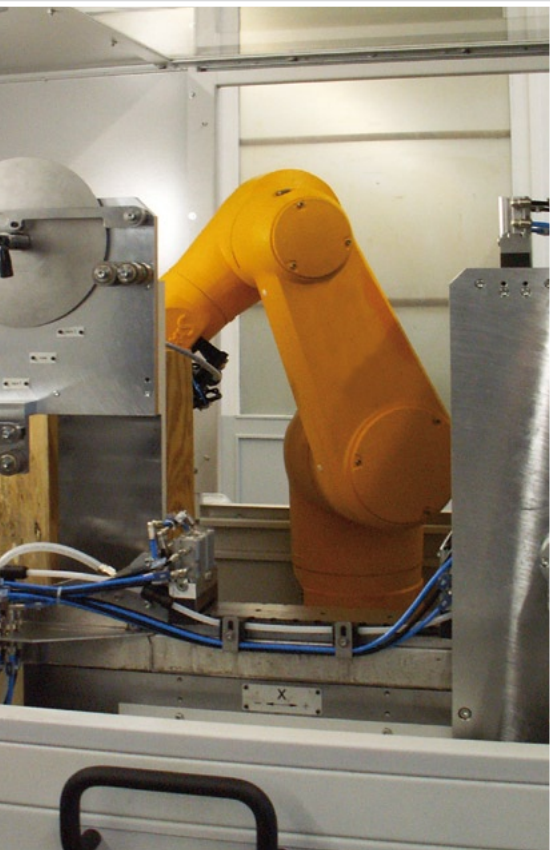
BEFORE MICROFINISH



AFTER MICROFINISH

AUTOMATION

The CenterStar series is designed for all kinds of loading and unloading concepts starting with manual feed via cycled belts and gantry loaders up to high-end robot cells.



Further High Precision Machining Solutions for



Finishing • Grinding • Honing



Flat and spherical surfaces



Antifriction bearings



Double disc grinding

Extreme Precision for a Sustainable World – Manufactured Around the World



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