

Company profile



Company vision

Your partner
**for best drive
solutions**



Headquater of Podkrižnik group

Research and Development center of
Podkrižnik group

Manufacture of drive systems and
modules, metal and plastic technical
products



Manufacture of **hydraulic** valves,
modules and components

Manufacture of high precision **geared
parts and modules**

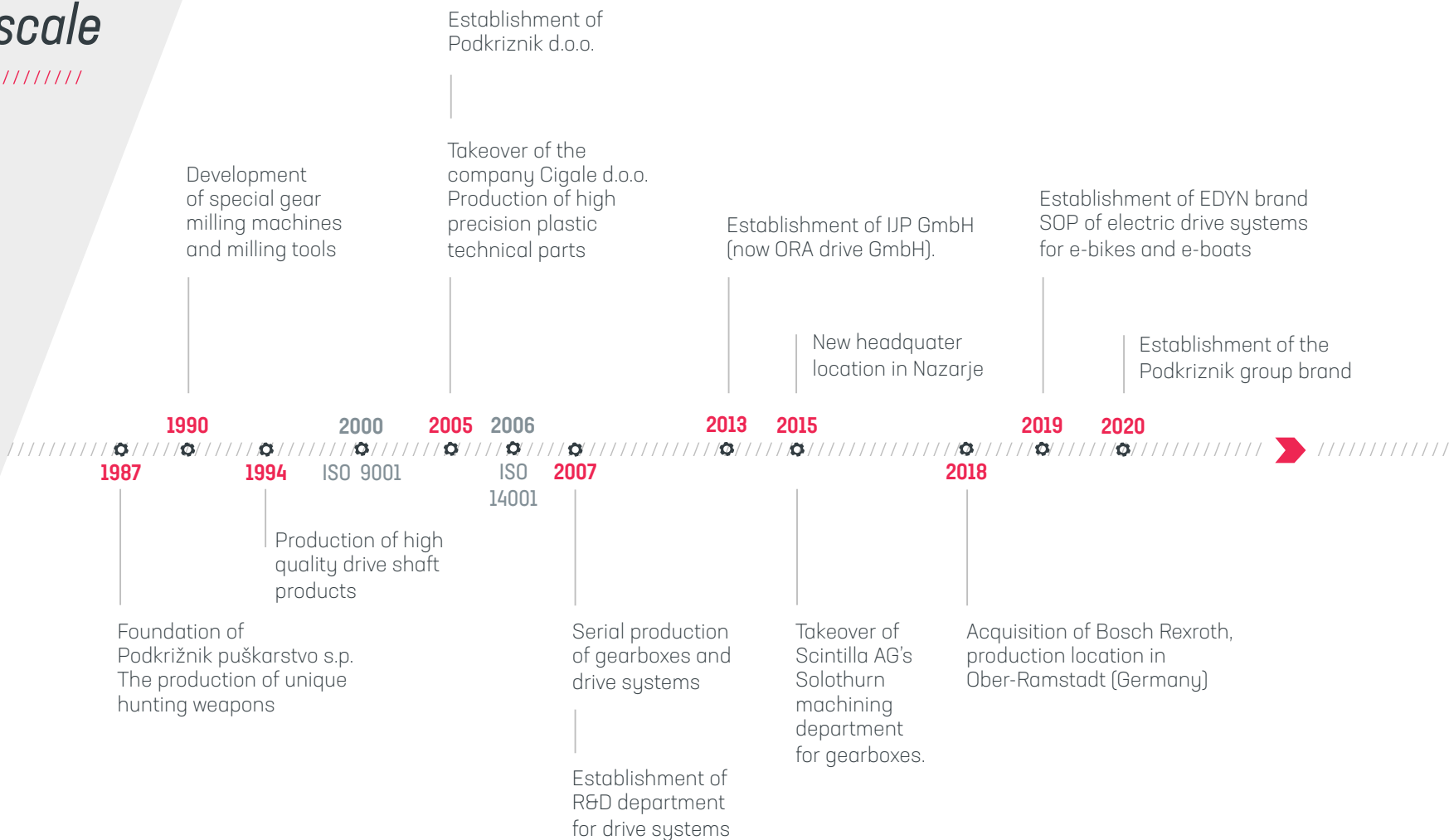


Marine division of Podkrižnik group
- electric propulsion systems

Company on the map



Company Timescale



Product groups

System and
development partner
**for best drive
solutions**



**DRIVE SYSTEMS
AND END PRODUCTS**



**HYDRAULIC VALVES
AND MODULES**

COMPONENTS



METAL PRODUCTS
shafts, gears,
hydraulic components
(piston, cubic components),
other complex parts



PLASTIC TECHNICAL PRODUCTS
gears, housings,
other complex products

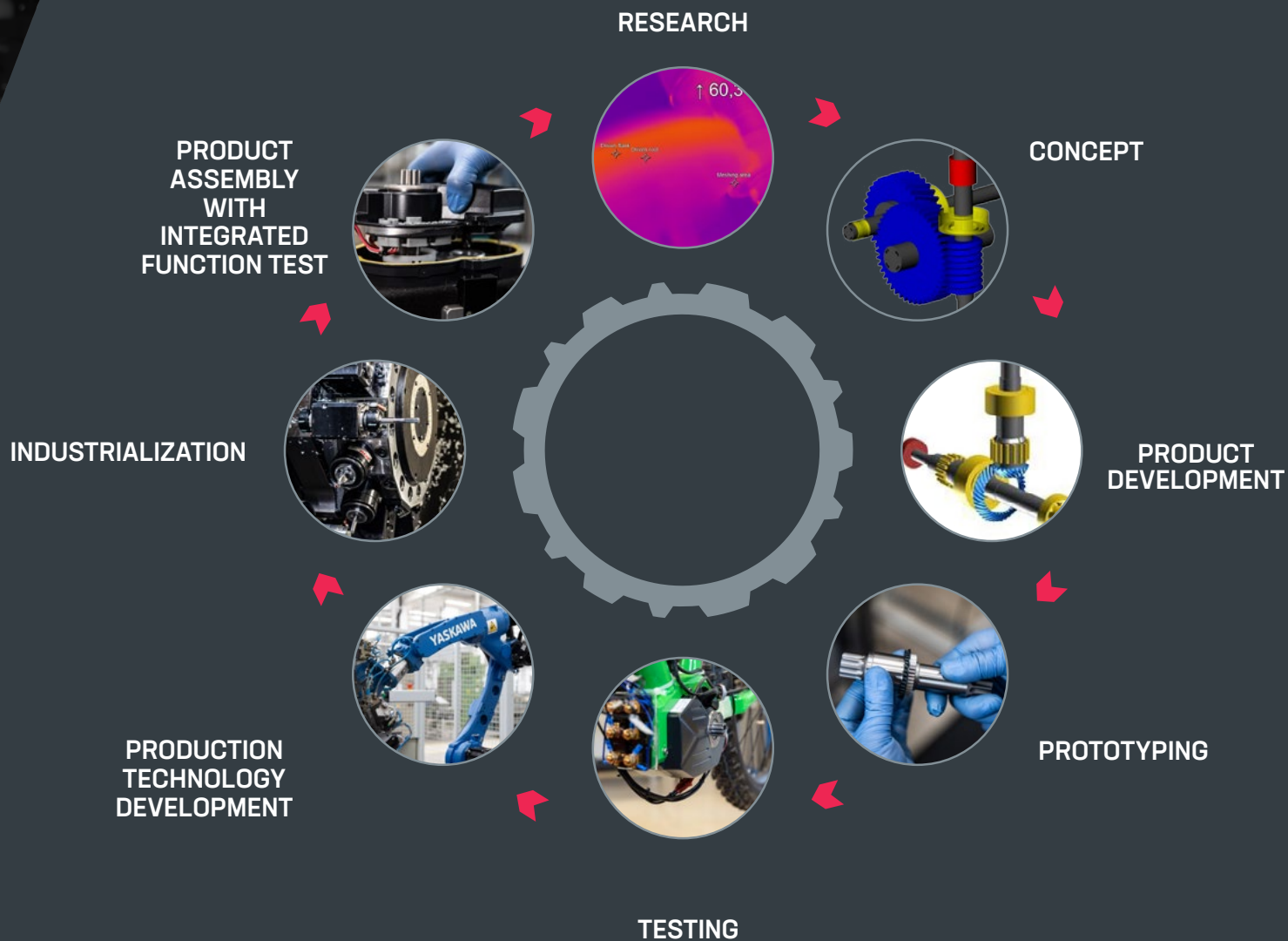


HYBRID PRODUCTS & SUBASSEMBLIES
plastic gearbox with shafts,
drive components, brooms,
rotors for electric motors,
high precision shafts with plastic gear



System Supplier

*Certified ACC. ISO 9001,
ISO 14001.*

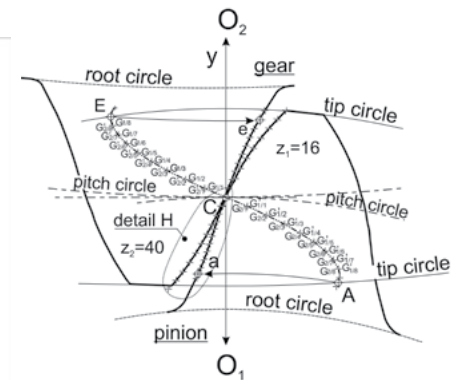
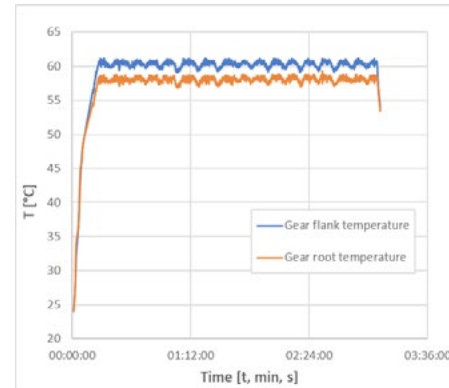
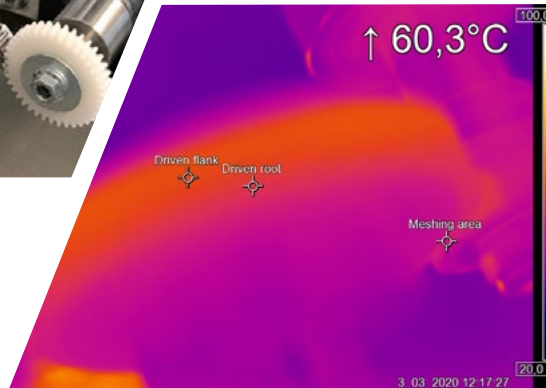


Research

*Research technical
polymer materials and
new gearing shapes
for best performing
gear system
designs.*

Fundamental researches on advanced polymer materials for gears on the own-built testbenches with aim to characterize suitability of lightweight materials and different tooth shape profiles for selected applications which is quality guideline for advanced development of power transmission systems.

- Lifetime testing of polymer gears with different tooth shape profiles (Involute our own gear shapes (S-gears)).
- Lifetime testing of polymer gears according guideline VDI2736 (near time monitoring temperature spot flank/root measurements).
- Characterization of gear wear.
- Processing results in KISSsoft (Plastics Manager) and obtain Wohler Curves.
- Close collaboration with research partners in the field of materials, technologies, testing, simulations, ...



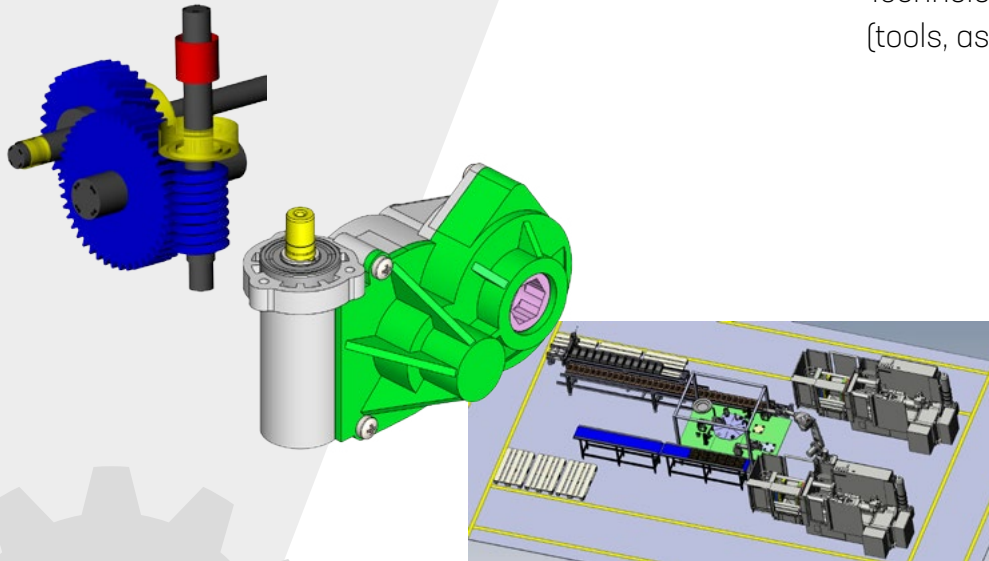
Development #1

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Your development partner for best performing drive systems.

Your development partner for mechatronic drive solutions (from the concept phase till the serial production).

- Concept development
- Engineering and designing
- Prototyping and testing
- Technology development for serial production (tools, assembly lines, test stands)

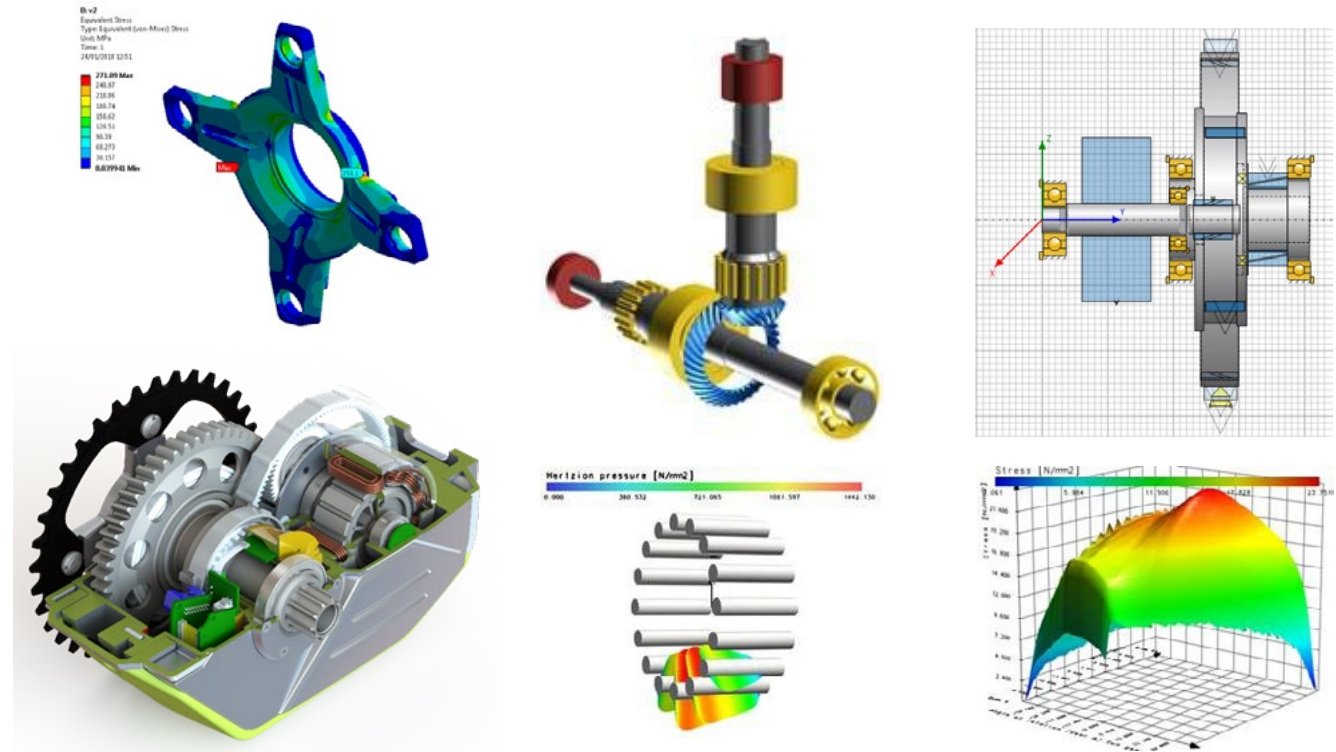


Development #2

Calculations, virtualizations and simulations as a base for advanced concepts and designing of best performing intelligent drive systems.

Knowledge for modeling, simulations, gear system calculations and mechatronics

- 3D modeling (Solidworks)
- Gear, bearing and shaft analysis (KISSsoft and KISSsys)
- FEM structural and thermal analysis
- Mechatronical system development (internal development including close collaboration with partners with specific know-how for sensors, electronics, el-motors, etc.)



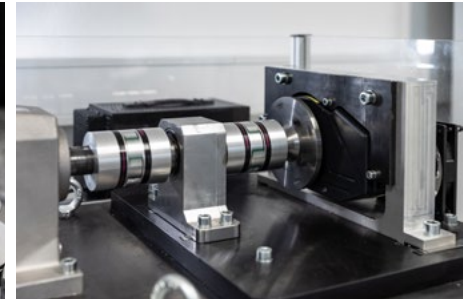
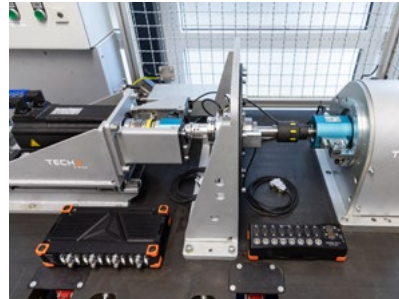
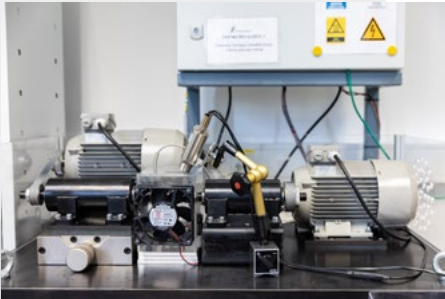
Laboratory for Research, Measurements and Testing

Research and build
knowledge for:

- Best performing polymer gear system designs
- Best performing mechatronical/drive system (precision, durability, soft run, etc).

Professional laboratory and measurement equipment for best drive systems quality.

- State of the Art Gear Wheel, Gearbox, mechatronical drive system and Marine Test Stands
- We can measure:
 - Rotations (absolute and incremental)
 - Moments
 - Vibrations
 - Noise
 - Temperature
 - Deformations
 - Flow and pressure
 - Microscopic images
 - Dimensions (3D, scan)
 - Surfaces (az, Ma)
 - Hardness (Hv, Ab, Hrc)
 - Shapes (3D)
 - Gearing dimensions (3D, double flank)
 - Electric characteristics (V, A, ...)



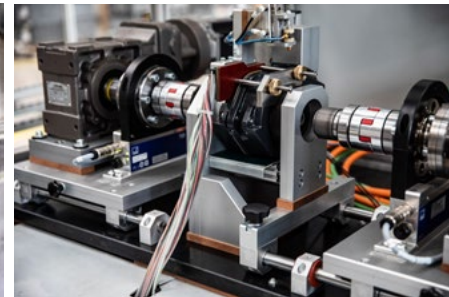
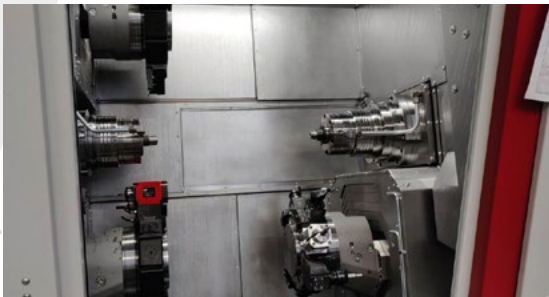
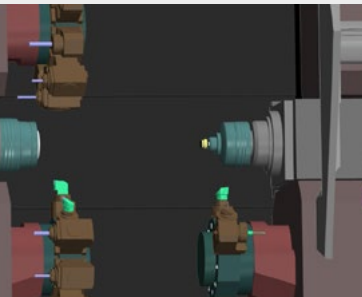
Production technology development

- *Production process development
(intight cooperation with
product development)*
- *Selection of most suitable
production processes (incl.
automatization of the
process and cad-cam)*
- *Development of
assembly lines
and test serial
assembly
process.*

DEVELOPMENT OF TECHNOLOGY, ASSEMBLY LINES, TEST STANDS AND AUTOMATIZATION

For each product most suitable technology is selected and developed in order to perform highest quality for the best price:

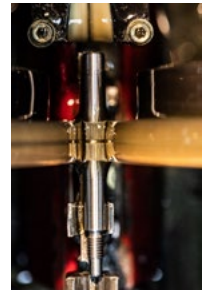
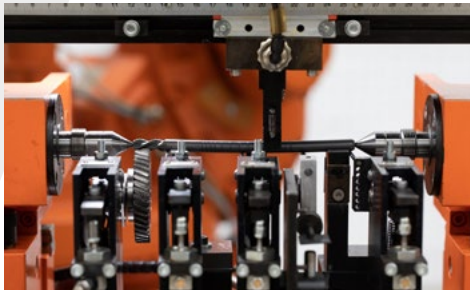
- implemented CAD/CAM process
- in-house development of the complete technology process for a high complex precision parts
- custom developed assembly lines and test stands
- process automatization



In-House Production Technologies

*Precision
metal machining*

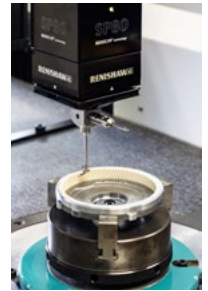
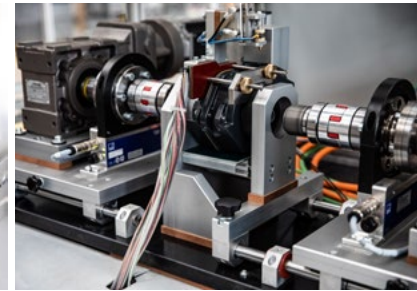
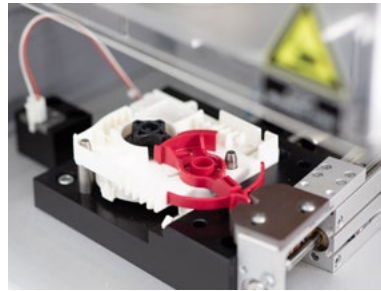
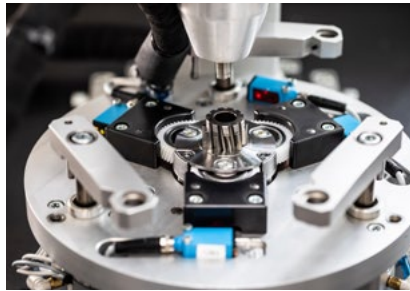
- TURNING
- MILLING
- GEAR HOBBING
- POWERSKIVING
- BROACHING
- KNURLING
- DEBURRING
- FORGING
- HEAT TREATING
- GEAR SHOT PEENING
- HARD TURNING
- GRINDING
- HONING
- STRAIGHTENING



In-House Production Technologies

Precision **plastic**,
Hybrid injection moulding,
Product **assembly**

- PLASTIC INJECTION MOULDING
- PLASTIC INJECTION MOULDING ON METAL
- WELDING (MI6, ULTRASONIC)
- PAINTING
- ASSEMBLING
- 100% FUNCTION TESTING
- MEASUREMENT LABORATORY



Product application: *House appliances*

- Drive systems
- Gearboxes
- Assembly modules
- Drive shafts
- Gears
- Tools for food preparation



Product application: Professional Power Tools

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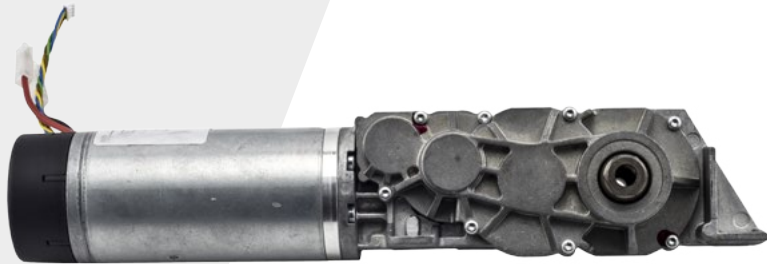
- Drive shafts
- Gears



Product application: *Smart buildings*

Actuators for:

- Automatic door, window, blinds opening/closing
- Air regulation/ventilation systems

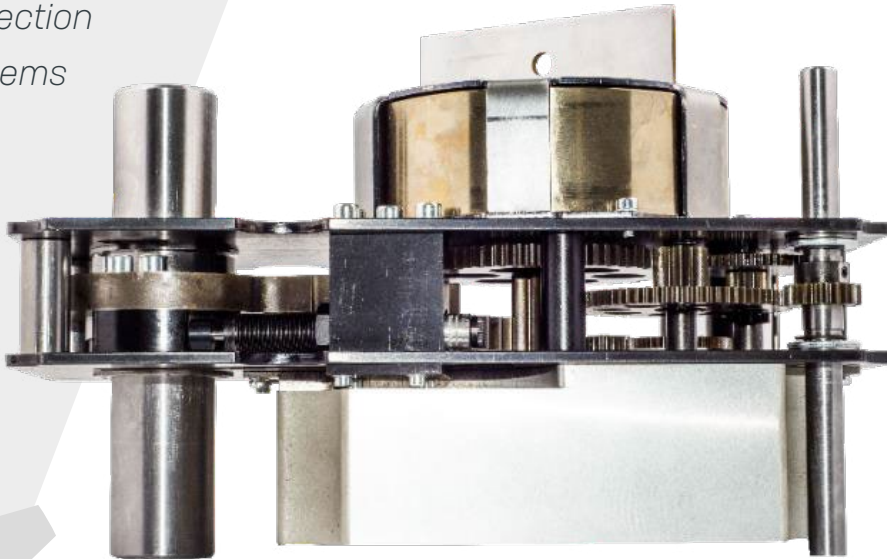


Product application: ***Safety systems***

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Actuators for:

- Fire
- Smoke
- Explosion protection systems



Product application: **Automotive**

- Geared sets and components



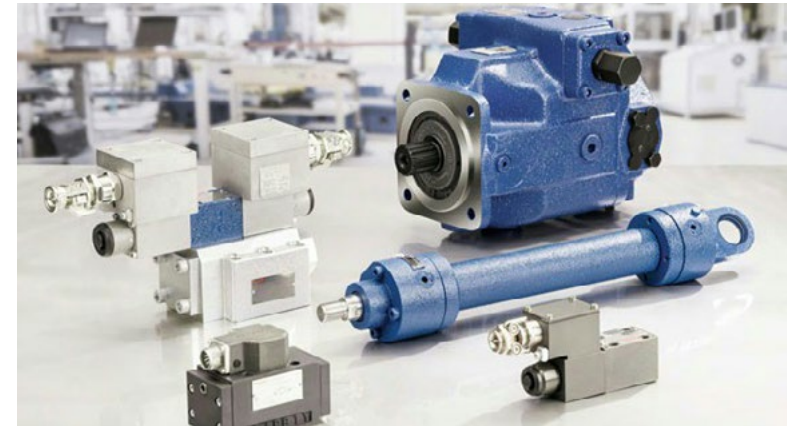
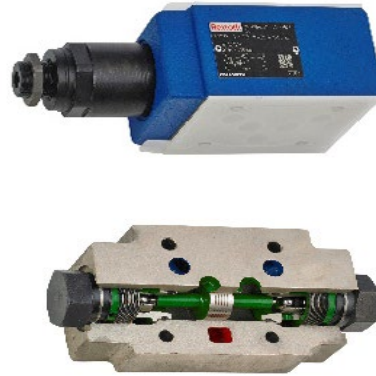
Product application: **Medicine**

- *Bone cutting tools
for automated
operations*



Product application: *Hydraulics*

- Pressure valves
- Control covers
- Logic inserts
- Intermediate plate valves



Product application: *E-mobility*

- Drive systems e-bikes



Product application: *E-mobility*

- Drive systems for e-boats



Product application: Robotics, other precision applications

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- *High gear-ratio
gearboxes for robotics
and positioning
systems*
- *Intelligent robotic
drive modules
for Industry 4.0*



Our main partners



B/S/H/



SIEGENIA



ebmpapst



DOMEL

SUSPA



SIEMENS



VALMET AUTOMOTIVE

rexroth

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