MPS Presentation

Bienne, June 28th 2018

A young company with a long experience

RMB
Family founded

Bonfol plant opening

smoovy

mps founded and joined
FAULHABER GROUP

New Building 14'400 m2

Bonfol

1936   1948   1967   1973   1999   2001   2003   2008   2012   2014   2015

4 point contact bearing concept developed by mps

microsphere

microlinea

myonic
New corporate name

mps DÉCOLLETAGE SA

mps PRECIMED

MPS Décolletage New Building

MPS Group Organisation

MPS Group

MPS Watch
- 130 employees
- Location: Bonfol
- Watch bearings and gear wheels

MPS Microsystems
- 180 employees
- Location: Bienne
- Microsystems, ball screws, linear bearings

MPS Precimed
- 40 employees
- Location: Bienne
- Orthopedic instruments

MPS Décolletage
- 30 employees
- Location: Court
- Precision decolletage parts

MPS as part of the FAULHABER GROUP

- Headquartered in Schönaich, Germany
- International R&D and Production Locations:
  - 4 R&D Centers
  - 5 Production Centers
- International Sales & Service Locations:
  - 7 Sales & Service Locations
  - 24 Sales and Distribution Partners

- 17 Subsidiaries and Partnerships
- 1,600 Employees
- US$ 240 Mio Revenue

MPS Microsystems – Introduction
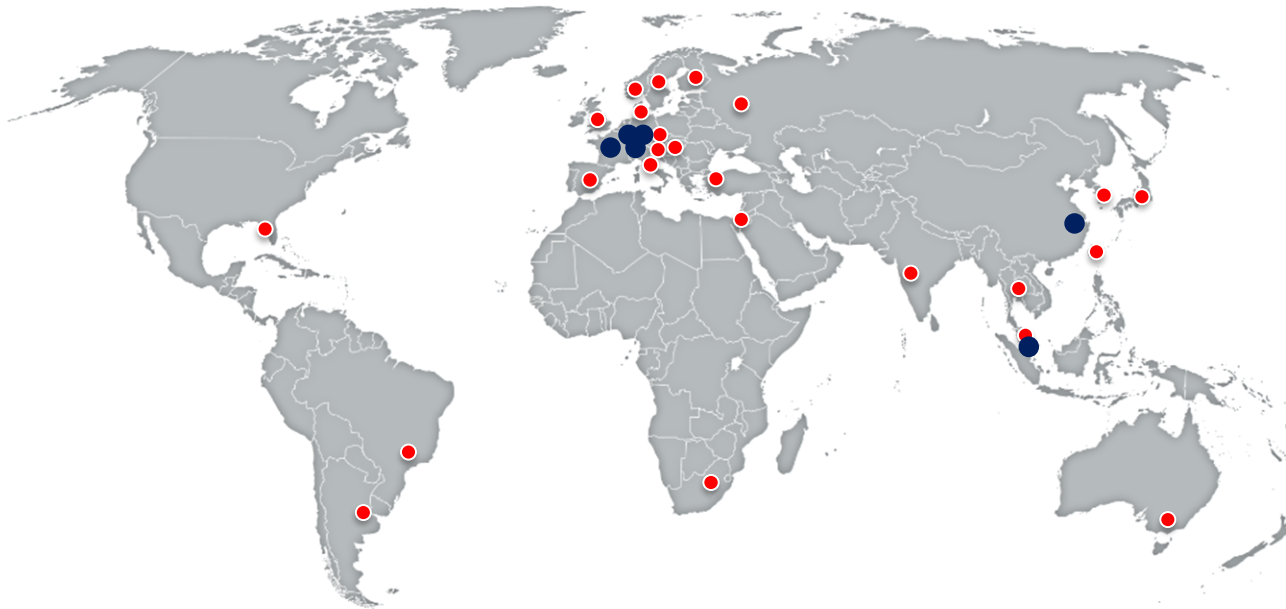
Located in Biel/Bienne, Switzerland
14'400 m2 built in 2008
180 employees
ISO 9001 – ISO 14001 - ISO 13485

- Research & Development

- Industrialization

- Parts manufacturing :
    - turning, milling, EDM, grinding,
    - miniature balls manufacturing,
    - thermal and surface treatment.

- Microsystems assembly (clean room)

- Purchasing and logistic

- Quality assurance and Quality control

MPS Microsystems – Markets

MPS Microsystems – Product lines

Components (Microlinea)	Engineered solutions (examples)
• Ball screws	• Active implants
• Linear bearings (L-Line)	• Medical robotics
• Linear bearings (DBL lines)	• Pick & place Head
	• Focus mechanism
	• Tactile probe
	• Fin actuator

A dynamic and innovative R&D organisation

RESEARCH & DEVELOPMENT

- 6 development engineers + 2 lab engineers
- CAD "Solidworks"
- FEM simulations
- PDM "Teamcenter"

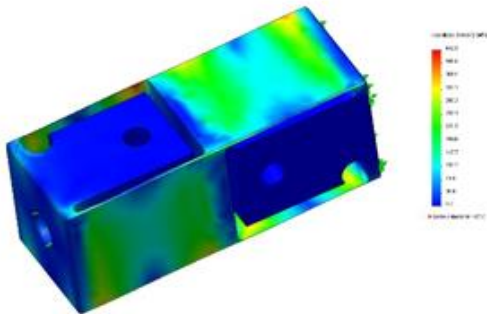## PROTOTYPING

- Turning: Ø 0.5 -300mm
- Milling: 4 axis CNC
- Flat grinding
- EDM / Wire EDM

TESTING

- Torque testing: 1µNm – Nm
- Axial Force: < 2500N
- Noise measurement
- Lifetime test
- Development of test device for production

Components manufacturing for high requirements

TURNING, MILLING & EDM

- Rod size from Ø2 to Ø42 mm   ± 3µ

GRINDING

- Inner- / Outer grinding   ± 0.5µ
- Thread and form grinding
- Centerless grinding
- Lapping/Polishing   < 10 nm (roughness)

BALLS MANUFACTURING

- Ø 0.130 - 1.588 mm (ISO Grade 3)
- Sphericity 0.08µm - Surface roughness max 0.01µm
- Stainless steel and Zirconium oxide

PARTS CLEANING & HEAT TREATMENT

- Tumbling and cleaning
- Quenching/ Precipitation hardening, Cryogenics, Tempering
- Deburring

Turning capabilities

TORNOS Deco and EvoDeco 10, 13, 16

- Rod size from Ø 2 to Ø 16 mm   ± 3μm
- 45'000 h/yr

SCHAUBLIN 220 CNC and 110 CNC

- Rod size from Ø 2 to Ø 32 mm   ± 5μm
- 10'000 h/yr

INDEX C100

- Rod size from Ø 2 to Ø 42 mm   ± 5μm
- 3'200 h/yr

MAZAK Integrex 200 IV S

- Rod size from Ø 2 to Ø 65 mm   ± 5μm
- 1'600 h/yr
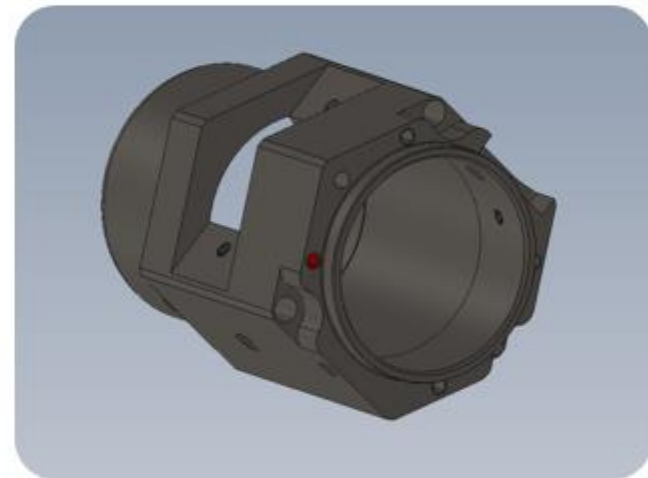
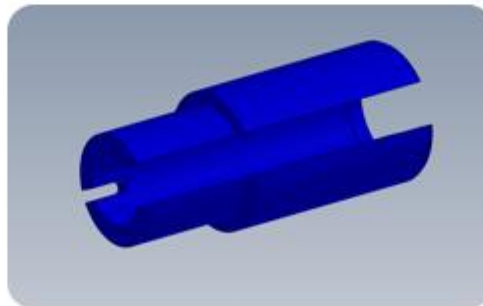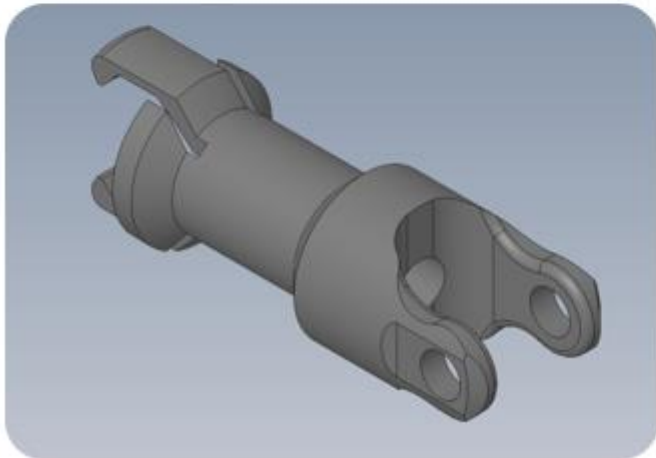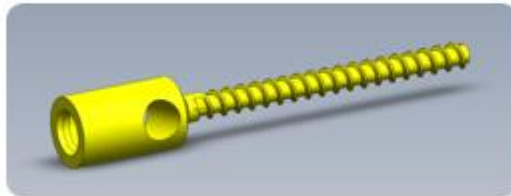### NEW EQUIPMENTS COMING SOON…

Accuracies depending on material

Turning capabilities
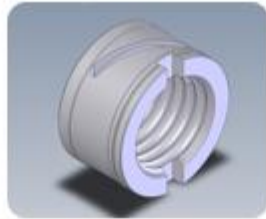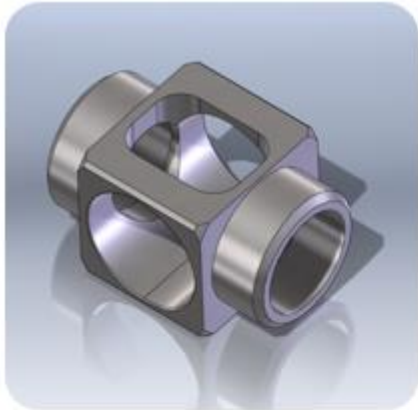
MATERIALS

- Steel
- Titanium
- Brass

- Bronze
- Aluminium
- Polymer

Microsystems assembly dedicated to precision

ASSEMBLY AREA

- Dust free area (1000m2)
- Clean room class ISO 7 (200m2)
- Product dedicated assembly lines

TECHNOLOGIES

- Cleaning
- Pairing in ¼ micron
- Riveting
- Press fit
- Gluing (UV, anaerobic)
- Precision Lubrication
- Laser welding
- Balancing
- Specific measurement
- Visual inspection
- Assembly under laminar flow boxes – ISO 6

A team of quality experts to support the organisation

EQUIPMENT

▪ Circularity measurement	Talyrond
▪ Surface measurement	Talysurf
▪ 3D touch & vision measurement	Werth 3D
▪ Scan profile of components after turning	Hommel
▪ Profile measurement	Optacom Contour
▪ Project specific measuring and testing equipment	

ENVIRONMENT

▪ Air-conditioned environment, temperature & humidity controlled

EMPLOYEES

▪ 15 employees (QM-Management, Metrology, Q-Planning, Incoming inspection, Production control, Supplier quality)

THANK YOU