



## Machinery list

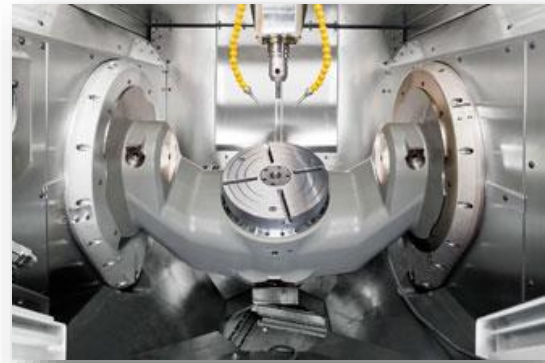


### CNC Turning

| Manufacturer | Type           | Main Spindle in mm. | Details  |
|--------------|----------------|---------------------|--|
| HARDINGE     | CONQUEST T42SP | 42                  | 4 axis, 12 tools, 6 driven.<br>Concentricity <1 Micron.  |
| HARDINGE     | Talent 8/52    | 52                  | 2 axis, 12vdi 30 tools.  |
| OKUMA        | LB200M         | 51                  | 3 axis, 12vdi driven.  |
| OKUMA        | LB3000 EX M    | 65                  | 3 axis, main spindle 22kw,<br>driven tools 7,1kw.  |
| CMZ          | TX52           | 52                  | 3 axis, 12 driven tools,   |
| BENZINGER    | TNI-B8         | 42                  | 7 axis, 2x12 driven tools.<br>Sub spindle pass 28mm. Concentricity <1<br>Micron.<br>Simag/Irco bar loader with storage length<br>to 3500mm.                      |
| BENZINGER    | TNE Variant 6  | 28                  | 9 axis, 2x12 driven tools, sub spindle pass<br>28mm.<br>Concentricity <1 Micron.<br>LNS ECO bar loader with storage length to<br>1200mm.                         |
| GILDEMEISTER | GDS-30 / 4a-42 | 42                  | 5 axis, 24 tools, 2x6 driven.<br>LNS bar loader with storage length to<br>3000mm.  |
| CITIZEN      | L20VII         | 20                  | 7 axis, 16 tools, 4 driven.<br>Sub spindle pass 20mm. Main- and sub<br>spindle cooling pump pressure 110Bar.<br>FMB bar loader with storage length to<br>3200mm. |
| CITIZEN      | L20E           | 20                  | 7 axis, 12 tools, 10 driven.   |



|          |          |    |  |
|----------|----------|----|--|
| TORNOS   | Deco 13a | 16 | Main spindle 140Bar cooling pump pressure, sub spindle 110Bar cooling pump pressure. IEMCA bar loader with storage length to 3200mm.   |
| TORNOS   | Nano     | 4  | 12 axis, 22 tools.<br>Sub spindle pass 16mm. High frequency spindle S40000, sub spindle. Cooling pump pressure 120Bar. Robobar SBF-216 bar loader with storage length to 3000mm. |
| TAKISAWA | EX-108   |    | 6 axis, 13 tools, 2 rotating driven tools<br>2 axis, chuck 200mm. 12 tools<br>Center "turning between center" 600mm.<br>Robotic arm LTVHF-2400                                   |



## CNC Machining

| Manufacturer | Type    | Range |     |     | Details  |
|--------------|---------|-------|-----|-----|--|
|              |         | X     | Y   | Z   |  |
| HERMLE       | C 800 U | 800   | 600 | 500 | 5 axis simultaneously driven.<br>30 tools SK40.  |
| HERMLE       | C 800 U | 800   | 600 | 500 | 5 axis simultaneously driven.<br>30 tools. Provided with a System 3R Work partner with 60 pallet places. |
| HERMLE       | C 800 U | 800   | 600 | 500 | 5 axis simultaneously driven.<br>30 tools SK40.  |
| HERMLE       | C 30 UP | 650   | 600 | 500 | 5 axis simultaneously driven.<br>119 tools HSK -A63 with breakage monitoring. Pallet changer 7 pallets.  |
| HERMLE       | C 40 U  | 850   | 700 | 500 | 5 axis simultaneously driven.<br>38 tools HSK -A63.  |
| HERMLE       | C 22 U  | 450   | 600 | 330 | 5 axis simultaneously driven.<br>60 tools Conditioned internal and external                              |



|            |          |      |     |     |  |
|------------|----------|------|-----|-----|--|
| BRIDGEPORT | VMC-1022 | 1000 | 410 | 480 | 3 axis. 22 tools SK40.                                   |
| BRIDGEPORT | 1020X    | 1000 | 410 | 480 | 3 axis. 20 tools SK40.                                   |
| BRIDGEPORT | 1020X    | 1000 | 410 | 480 | 4 axis. 20 tools SK40.<br>B-axis (4 <sup>th</sup> axis). |
| BRIDGEPORT | 800V     | 800  | 510 | 600 | 3 axis. 22 tools SK40.                                   |
| BRIDGEPORT | 560      | 457  | 305 | 127 | 3 axis, with B-axis connection.<br>22 tools SK40.        |

## Wire EDM Machine

|        |        |     |     |     |                            |
|--------|--------|-----|-----|-----|----------------------------|
| Sodick | SL600Q | 600 | 400 | 350 | Rigid Lineair Motor Driven |
|--------|--------|-----|-----|-----|----------------------------|



## CAD-CAM Cockpit

Hypermill CAD-CAM cockpit





## Honing

Precision honing machine "Pemamo" MDR 120 E for in- and external  $\varnothing 1,5\text{mm} - 40\text{mm}$ .



## Pre-setting

Zoller Pre-setting tool alignment



## Finishing

Finnsonic cleaning unit.



## Assembling, Test & Qualification Lab.

Standard clean room assembly space ca. 200m<sup>2</sup> (ISO 6)  
Grey Area room assembly ca. 30m<sup>2</sup>



## Measuring Machines

| Manufacturer | Type        | Range |      |     | Details  |
|--------------|-------------|-------|------|-----|--|
|              |             | X     | Y    | Z   |  |
| Zeiss        | Contura G2  | 700   | 1000 | 600 | Accuracy U1=(1,8 +L/300)µM.  |
| Numerex      | BT          | 350   | 400  | 250 | Accuracy U1=(2,5 +L/250)µM.  |
| Mitutoyo     | TM-50       | 50    | 50   | 50  | Accuracy U1=(5 +L/50)µM.   |
| Mitutoyo     | PJ-300      | 100   | 50   | 50  | Accuracy U1=(5 +L/50)µM.   |
| Olympus      | BHM         | 25    | 25   | 5   | Measuring microscope accuracy U1=2µM.<br>Magnification 100x up to and including 500x |
| Trimos       | THV         | 100   |      |     | Length measuring machine<br>accuracy U1=(0,5+L/1000)µM.                              |
| Mahr         | MMQ-10      |       |      |     | Roundness tester.<br>Range: D=250mm/ H=300 mm.<br>Accuracy:0,07 + 0.001/mm µm.       |
| Zeiss        | Surfcom130A |       |      |     | Roughness tester. accuracy: +/- 5%   |
| Sylvac       | Z-Cal.      |       |      |     | Altimeter. Accuracy:<=6µM.   |
| Wild         | M3Z         |       |      |     | Video measuring microscope.<br>Magnification: 5x-40x.                                |
| Nikon        | SMZ645      |       |      |     | Stereo measuring microscope.<br>Magnification: 5x-50x.                               |
| Leybold      |             |       |      |     | Helium leak tester.  |

