

1. Automated 5-axis CNC Milling		
# Machine	Working Range	Remarks
2 Hermle C32 U	650X650X500	5-axis machine, control: Heidenhain TNC 640, 18.000 RPM, tool magazine 228 pockets, Automatic machine loading/unloading with BMO Ti180 (38 pallets and material handling)
1 Willemin Macodel 508MT	450x200x425	8-axis machine with CNC turning and milling capability's. Control: Fanuc 31iB5. 30.000 RPM, tool magazine 72 pockets. Automatic machine loading with Bar-feeder IRCO ILS-MUK-7012
1 DMU - 100U duoBlock	1.000x1.000x1.000	5-axis machining, control: Heidenhain iTNC 530. 12.000 RPM, tool magazine 120 pockets. Automatic machine loading/unloading with: Fastems FPC1150 (10 pallets)
1 DMU – 80 eVo	800x650x550	5-axis machining, control: Heidenhain iTNC 530. 18.000 RPM, tool magazine with 120 pockets. Automatic machine loading/unloading with: Cellro Round 2000-165 Advanced (61 pallets)
1 Mikron HPM1150U	1.150x1.000x895	5-axis machining, control: Heidenhain iTNC530, 24000 RPM, tool magazine with 120 pockets. Automatic machine loading/unloading with:
max. dimensions for automation:	700x480	System 3R WorkMaster robot (15 pallets).
1 Hermle C40U	850x700x500	5-axis machining, control: Heidenhain iTNC 530, 28000 RPM, tool magazine with 125 pockets. Automatic machine loading/unloading with: System 3R WorkMaster robot (44 pallets).
2. Direct CNC supporting software		
# Software		Remarks
1 SolidEdge		CAD software.
2 EdgeCAM		CAM software.
1 Vericut		CAM/Optimization software.
3. Milling (CNC & conventional)		
All CNC machines are equipped with: STARK ZERO POINT MOUNTING SYSTEM		
# Machine	Working Range	Remarks
1 DMG MORI CMX 1100V	1100x560x510	3-axis machining, 12000 RPM, Heidenhain TNC 620. 60 pockets. Automatic machine loading/unloading with BMO Pt24
1 DMG-DMC 65V	650x500x500	18000 RPM, rapid traverse 60m/min, Heidenhain TNC 430. 30 pockets.
1 Hermle C600U	600x450x450	5-axis machining, control: Heidenhain TNC 430. 30 pockets.
1 Leadwell MV50-i	1270x635x610	3-axis machining, control: Fanuc Oi-MC. 24 pockets
1 Deckel FP4CC	600x500x500	High-frequency milling (24000 RPM), control: Grundig Dialog 11.
1 Deckel FP1	350x150x200	Conventional milling.
4. Turning (CNC & conventional)		
# Machine	Working Range	Remarks
1 Nakamura WT150 II	Ø190x515	With 2 spindles, 2 turrets, 12 positions per turret, upper turret with y axis. Bar capacity ø65mm. Automated product handling with UR10.
1 Gildemeister CTX 400 / S2	Ø305x600	With driven tools, no Y-axis. Bar capacity ø 65mm. Bar loader: LNS Quick-Servo II; ø6-ø120. Length 130-1600mm.
1 Schaublin 110 CNC-R	Ø25x200	With driven tools.
1 Schaublin 125	Ø240x500	
1 Ursus 225	Ø270x1500	
5. Jig boring / milling / tapping (CNC & conventional)		
# Machine	Working Range	Remarks
1 Brother TC 324	420x300x250	CNC with 2 pallets.
1 Fehlman P18		

## 6. Surface grinding / lapping / honing (conventional)

#	Machine	Working Range	Remarks
1	Jung F50-2632	500x200	
1	Kemet LA230 F	Ø230	Lapping.
1	Sunnen BC 1804G		Honing.

## 7. Measuring

#	Machine	Working Range	Remarks
1	Mitutoyo Crysta Apex C9166	1600x900x600	CNC measuring with Renishaw CNC probe system.
1	Mitutoyo Crysta Apex S9106	900x1000x800	CNC measuring with Renishaw CNC probe system.
1	Mitutoyo Cosmos		CMM software.
1	Mitutoyo CAT 1000S		CMM software.
2	Metrolog XG		CMM software.
1	Trimos 600	600mm	Digital height gauge.
1	Trimos 600+	600mm	Digital height gauge.
1	Mitutoyo surftest 201		Surface roughness measuring gauge.
1	Zeiss handsurf E35A		Surface roughness measuring gauge.
1	Minitest 3001		Micro processor coating thickness gauge.
1	Saroy		Rockwell hardness testing gauge.
1	Mitutoyo PJ 300	50x50	Profile Projector.
1	Trimos calibrating gauge with Silvac-reading		Accuracy 1µm (reading 0,1 µm).
1	Penetrant inspection		Red/white and fluorescent.
	Miscellaneous gauges		Plug, snap, ring and screw gauges, gauge blocks, precision pins. Carbide and/or ceramic.
	Miscellaneous inside- outside micrometers		Two-point and three-point.

All equipment stored/positioned in a climatized measuring room (20°C) with Thermo-hygrograph registration.

## 8. Miscellaneous

#	Machine	Working Range	Remarks
1	Hurth KF32A		Splineshaft milling
1	JTC VT6 1350		Broaching
1	Ravensburg S250		Slotting
1	Amada CNC HFA 250 W	Ø250	NC controlled automatic bandsaw.
1	Bewo 315	Ø150	Circular saw.
1	Bauer 400V		Vertical bandsaw.
1	Zoller Redomatic 600		CNC controlled presetting and measuring device.
1	Zoller Bravo 2		Presetting device
1	Laborex	300x400x400	Blasting cabinet (glass beads).
1	Walter Trowal CVE 125		Circular vibrating machine (surface finish).
1	Walter Trowal TFM 120/91		Through vibrating machine (surface finish).
1	Micro-tap 9011-G5	M1 - M6	Micro processor controlled tapping device.
1	Micro-tap II-G8	M2,5 - M12	Micro processor controlled tapping device.
1	APM		Production Management Software.
1	MKG		ERP software.

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