

# MACHINERY LIST

	TURN-MILLING		TRAVEL DISTANCE		
	Turning-Ø	Turning-Lenght	X	Y	Z
Index R 300 with automatic short bar loader, bar capacity D 100	400	600	580/780	140	610
Gildemeister CTX gamma 2000 TC	630	2.050	630	200	2.050
DMG CLX 450	300	800	276	+/- 60	755
Index G 420		2.300	800	340	2.300

	TURNING	TRAVEL DISTANCE	
	Turning-Ø	Turning-Lenght	
Gildemeister CTX 620 linear	800 ÜB / 600 ÜS	2.000	
Gildemeister CTX 510 eco V3 with automatic short bar loader, bar capacity D 75	680 ÜB/465 ÜS	1.050	
SAEILO CONTUR H-66 P-3000	660 üB/400 ÜS	3.000	
* Hyundai WIA LM 1800 TTSY with automatic short bar loader, bar capacity D76	210	673	

\* The Hyundai is equipped with a WORK-R robotic automation system from WASSERMANN TECHNOLOGIE. \* Both GROB machining centers G350 & G150 are each equipped with a WASSERMANN TOOL – TERMINAL and WORK-R including PROCAM control technology.

\* HEDELIUS BC 100/50 is fitted with TOOL-S / DMG MORI DMU 125 P is equipped with TOOL-D



MILLING	TRAVEL DISTANCE				
	Quantity	X	Y	Z	Chuck
* Grob G 350 5-axis-machining	1	600	855	755	HSK 63
* Grob G 150 5-axis-machining	1	450	670	665	HSK-63
UNISIGN-Uniport 600 5-axis-machining	1	5.000	3.000	1.000	HSK 100
DECKEL MAHO DMF 360-11	1	3600	1.100	900	HSK 100
DECKEL MAHO DMU 200 P 5-axis-machining	1	1.800	2.000	1.100	HSK 100
DECKEL MAHO DMC 160 U 5-axis-machining, with rotary table	1	1.600	1.250	1.000	HSK 100
* DECKEL MAHO DMU 125 P 5-axis-machining	2	1.250	800	800	SK 50
DECKEL MAHO DMC 100 U 5-axis-machining, with rotary table	1	1.000	1.250	1.000	HSK 100
* HEDELIUS BC 100/50	1	3.500	1.000	770	SK 50
EMCOMAT FB-600	1	600	400	400	SK 40

Production and order control is carried out with AIDA ORGA production control center. Tool Management with Zoller Tool Management Solutions.



#### DIGITALIZATION

We know what is running where and when in our production, because our production is fully transparent at all times thanks to state-of-the-art digitalization, with machine data analysis from 3d Signals. We have an overview of every machine and its availability in real time. We do downtime optimization and performance monitoring.

That's why we can plan precisely, promise our customers deadlines with certainty and manufacture challenging parts at attractive conditions.

GRINDING		TRAVEL DISTANCE			MACHINING-Ø
	X	Y	Z	max	Grinding depth
Kopp SK 22 CNC Cam Grinding Machine	650	250	300	900	
Kopp FSK 35 CNC Cam Grinding Machine	1.200	285	600	1.200	230
REFORM CNC Surface Grinding Machine	300	300	200		
MACO RT 400 Surface Grinding Machine	300	150	210		
REFORM CNC Circular Grinding Machine Type: RFV 1.000				1.100	
Studer S41 CNC Circular Grinding Machine	Distance Between Centers: 1.600		Centre height 275		
Studer S33 CNC Universal-Circular Grinding Machine	Distance Between centers: 1.000		Centre height: 175		

QUALITY MANAGEMENT		TRAVEL DISTANCE	
Coordinate Measurement machine	X	Y	Z
ZEISS PRISMO 16/30/10	1.600	3.000	1.000
MITUTOYO Crysta-Apex	900	1.600	800

#### OPTICAL MEASUREMENT

- Keyence XM-T1000, Measuring range 600 x 500 x 200
- MITUTOYO Profile Projector PV-5100 with data processor QM-Data 200

#### OTHER MEASURING AND TESTING EQUIPMENT

- MITUTOYO SJ-400 Surface Roughness Tester
- SurfTest Surface Tester MarSurf PS 10
- MITUTOYO Height measuring device LH 600 E 2x
- FaroArm Platinum Measuring Radius 1,85m
- Vacuum test equipment (10-8 Spray test, Integral-Test HV 1), Test equipment: Leybold Phoenix L300i / Pfeiffer Vacuum ASM 340
- UCI-Hardness tester alpaDUR mini

CLEANING	SPECIFICATIONS
ROLL Ultrasonic Cleaning System	700 x 600 x 350

CLEAN ROOM	DATA & FACTS
Clean room	dimensions 7m x 7m
Cleanroom	Class ISO 7
Laminal flow bench	dimensions 1990mm x 720mm
Laminal Flow Bank	Class ISO 6-5

TECHNICAL CLEANING		
Pre-cleaning	Equipment	Hints
Steam cleaning	Elmasteam 8 basic wet cleaning device	Steam cleaning particularly suitable for cleaning blind holes and for chip removal and pre-cleaning
Cleaning bath with deionized water		For rinsing off the cooling lubricant and maintaining quality in the ultrasonic cleaning bath
Ultrasonic cleaning bath with cleaning agent	Elmasonic Select 900	Cleaning bath with a capacity of 65 liters for component sizes up to 550x460mm. Cleaning agent used: Oschner Optimal 9.5
Cleaning bath with deionized water		For rinsing off the cleaning agent
Hot air drying	Elmadry TD 300	For drying components without leaving water residue or introducing foreign bodies and dirt
Final cleaning	Cleaning equipment	Instructions
Ultrasonic cleaning bath with cleaner	Elmasonic Select 900	Cleaning bath with a capacity of 65 liters for component sizes up to 550x460mm. Cleaning agent used: Oschner Optimal 9.5
Ultrasonic cleaning bath without cleaner	Elmasonic Select 900	Cleaning bath with a capacity of 65 liters for component sizes up to 550x460mm. For rinsing off the cleaning agent.
Hot air drying	Elmadry TD 300	For drying components without leaving water residue or introducing foreign bodies and dirt
UV and white light inspection		Final inspection for stains and organic or inorganic soiling. Facts and figures

HEAT TREATMENT	SPECIFICATIONS
Chamber furnace	Furnace Area 1000 x 1500 x 1000, max. 850°C

**STRESS REDUCTION VIA VIBRATION RELIEF**

VSR Vibmatic 6000

von 100 bis 200

ASSEMBLY	AREA
Flexible Project Areas	ca. 800 m <sup>2</sup>
Optimized Series Assembly	ca. 450 m <sup>2</sup>
Automation	ca. 900 m <sup>2</sup>
Service	ca. 250 m <sup>2</sup>

Our assembly is prepared for components with a maximum weight of 10 tons.