

## MACHINERY AND MEASURING INSTRUMENTS CAPAUL

### ● INVESTMENTS 2019

Machine type	Stroke (mm)	Spindle (tr/min)	High speed course (m/min)	Number of tools	Remarks
MAZAK VCN-530C – SmoothG	X=1050 Y=530 Z=5310	12.000	42	30	Vertical machining center
MAZAK Integrex I-630V SmoothX (2019)	X=1450 Y=1050 Z=1050	Max. 10.000	60	240	Turning and milling center 5-axis-simultaneous Table Ø1050 Drive max. 500 rpm Milling spindle, HSK100, 240 positions Drive max. 10.000 rpm FMS with 12 pallets
MAZAK Integrex I-400ST	Ø 600x1500	Milling: 12.000 Turning: 3300	52	72	5 axis turning and milling center 6 side machining Max. bar diameter 102mm
MAZAK VARIAXIS I-600 – SmoothX	Ø 650x450	Milling: 12.000	5260	120	5 axis simultaneous

### ● HARD-BEARING BALANCING MACHINE

Machine type	Length (mm)	Weight range up to (kg)	Max. load per pedestral (kg):	Rotor diameter max (mm)
SCHENK RoTec HL50U	5250	2500	1400	2500

### ● 5 AXIS MACHINING CENTER (PRECISION: 0,01 MM)

Machine type	Stroke (mm)	Spindle (tr/min)	High speed course (m/min)	Number of tools	Remarks
DMG DMU 80FD	X=800 Y=800 Z=800	max. 12.000	60	40	Turning and milling center 5-axis-simultaneous Table Ø800, Spindle max. 800 rpm Milling spindle HSK 63, 40 positions 12.000 rpm
MAZAK Integrex I-630V SmoothX (2018)	X=1450 Y=1050 Z=1050	max. 10.000	60	240	Turning and milling center 5-axis-simultaneous Table Ø1050 Drive max. 500 rpm Milling spindle, HSK100, 240 positions Drive max. 10.000 rpm FMS with 12 pallets
DMG DMC 125FD (2008) Turning and milling	X=125	max. 10.000	60	120	5 axis simultaneous table ø 1250 mm 2 tables
DMG DMC 125FD (2007) Turning and milling	X=1250 Y=1000 Z=1000	max. 10.000	60	120	5 axis simultaneous table ø 1250 mm 2 tables

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### ● 5 AXIS MACHINING CENTER (PRECISION: 0,01 MM)

Machine type	Stroke (mm)	Spindle (tr/min)	High speed course (m/min)	Number of tools	Remarks
DMG DMC 125U (2002)	X=1250 Y=880 Z=800	min. 20 max. 12.000	40	120	5 axis simultaneous 2 tables
DMG DMC 125U (2004)	X=1250 Y=880 Z=800	min. 20 max. 12.000	40	120	5 axis simultaneous 2 tables
DMG DMC 80FD (2005) Turning and milling	X=800 Y=800 Z=800	max. 10.000	60	60	5 axis simultaneous Table Ø 800mm 2 tables
DMG DMU 80P HI-DYN (2002)	X=800 Y=700 Z=600	min. 20 max. 12.000	40	30	5 axis simultaneous
DMG DMU 60P (1998)	X=600 Y=700 Z=550	min. 20 max. 12.000	24	30	5 axis simultaneous
HERMLE C600 (2004)	X=600 Y=450 Z=450	min. 20 max. 10.000	35	30	5 axis simultaneous

### ● CNC LATHES (PRECISION : 0,01 MM)

Machine type	Max lathe ø mm	Max lathe length mm	Between centers mm	Spindle passage (mm)	Remarks
MAZAK NEXUS 250-II MSY (2009)	280	300	-	ø 68	Rod supply hopper LNS Quick Load Servo 3, automatically rod running, motorized tools
MAZAK QUICK TURN NEXUS 450 (2007)	845	2000	2000	ø 160	with steady rest ø 200 with motorized tools
MAZAK QUICK TURN NEXUS 450 (2011)	845	2000	2000	ø 160	-
MAZAK QUICK TURN NEXUS 350 (2004)	420	1173	2000	ø 70	-
MAZAK QUICK TURN NEXUS 150 (2003)	330	550	550	ø 51	-
MAZAK QUICK TURN 30N (1998)	400	956	1070	ø 70	-

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### ● CNC LATHES (PRECISION : 0,01 MM)

Machine type	Max lathe ø mm	Max lathe length mm	Between centers (mm)	Spindle passage (mm)	Remarks
MAZAK QUICK TURN 40N (1997)	510	1562	1562	ø 72	-
MAZAK MULTIPLEX (1989)	300	365	150	ø 42	Two spindles

### ● CNC LATHES 5 AXIS (PRECISION : 0,01 MM)

Machine type	Max lathe ø mm	Max lathe length mm	Between centers (mm)	Spindle passage (mm)	Remarks
MAZAK INTEGREGX 400 SY (2001) mit 2 Spindeln	610	1018	-	-	15 kW 40 tools turning + milling
MAZAK INTEGREGX 400Y (2000)	610	1018	1020	ø 88	15 kW 40 tools turning + milling
MAZAK I100S	Ø 500x800mm	max. 6000	60	ø 72	Turning and milling center 5-axis simultaneous Spindle Ø500 Drive max. 6000 rpm Milling spindle, Capto C6, 72 positions Drive max. 12.000 rpm

### ● ULTRA PRECISION HYDROSTATIC CNC HARDTURNING (PRECISION: +/- 0.001 MM)

Machine type	Max lathe ø mm	Max lathe length mm	Between centers (mm)	Spindle passage (mm)	Remarks
HEMBRUG MIKROTURN 100 CNC (2003)	420	350	350	no	-

### ● MILLING MACHINES (PRECISION : 0,01 MM)

Machine type	X (mm)	Y (mm)	Z (mm)	Remarks
MAZAK QUICK TURN NEXUS 450 (2011)	560	500	400	-

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### ● MACHINING CENTER 4 AXIS (HORIZONTAL)

Machine type	Stroke (mm)	Spindle (tr/min)	High speed course (m/min)	Number of tools	Remarks
DMG DMC 100H	X=1000 Y=1000 Z=1000	12.000	60	120	2 pallets
DMG DMC 80H (2008)	X=800 Y=800 Z=800	8000	60	120	2 pallets Spindle with gear
<b>HORIZONTAL:</b>					
MAZAK FH-4800 (2003)	560	610	560	120	6 pallets
MAZAK FH-4800 (2001)	560	610	560	120	6 pallets
MAZAK HCN4000	X=560 Y=640 Z=640	max. 14.000	60	160	Horizontal machining center 4-axis simultaneous Milling spindle, SK40 Big-Plus, 160 positions, 14.000 rpm FMS with 12 pallets Ø630x900mm

### ● MACHINING CENTER 3 AXIS (PRECISION: 0,01 MM)

Machine type	X (mm)	Y (mm)	Z (mm)	Number of tools	Remarks
<b>VERTIKAL:</b>					
HAAS Mini Mill CNC (2002)	406	305	254	10	-
MAZAK VTC200C (2000)	1660	510	510	30	-
MAZAK VTC 20B CNC (1997)	1120	510	510	24	-
MAZAK AJV - 35/60 CNC (1991)	1500	800	700	60	2 pallets

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### MEASURING

Quant.	Quality Control	Capacity	Precision
1	AIR CONDITIONED MEASURING ROOM	Integrated in airconditioned hal 1500m <sup>2</sup>	-
1	TRIDIMENSIONAL MEASUREMENT MACHINE LEITZ PMM-F 30.20.10	3000x2000x1000 mm	E= 1.7 + L/4 00 µm
1	TRIDIMENSIONAL MEASUREMENT MACHINE DEA MISTRAL 100707 SP (1996)	1000x660x660 mm	U3 = 3,5 + 4L/1000 µm Repeatability : 0,002 mm
1	TRIDIMENSIONAL MEASUREMENT MACHINE BROWN SHARP Mistral 775 (2001)	666x660x500 mm	U3 = 3 + 4L/1000 µm
1	TRIDIMENSIONAL MEASUREMENT MACHINE DEA GLOBAL GLOB 000506 (2005)	700x1000x660 mm	E= 2,3 +3,3 .L/1000 µm
1	TRIDIMENSIONAL MEASURING ARM FARO GAGE PLUS	max. Amplitude = 1,2m	E = 5+8L/1000 µm
1	HARDNESS TESTER AFFRI 270 VRSD (2002)	Vickers, Rockwell, Brinell	-
1	CONTUROGRAPH MAHR CV200	Measured section 1,5 – 200mm Tread depth max. 50mm	till +/- 12mm < 0,4% over +/- 12mm < 0,8% of diagramm amplitude
1	PROFILPROJEKTOR BATY SHADOMASTER R11 x L	156x100 mm	Resolution = 0,001 mm
1	SURFACE MEASURING MACHINE MITUTOYO SURFTTEST 301	Ra Rz Rmax Ra Rq R3z Rt Ry Rz Rp mr Pc	-
1	SURFACE MEASURING MACHINE MAHR - PRK	Rt Rz Ra Rq Rp Rpc R3t RSm Rpk Rk Rvk Rv Mr2	-
1	SURFACE MEASURING MACHINE HOMMEL TESTER T500	Rt Rz Ra Rq Rp Rpc R3t RSm Rpk Rk Rvk Rv Mr2	-
4	GRANITE MARBLES	1000x630x100 mm	DIN 876 / 00
1	SET OF PARALLEL ENDMEASUREMENT	2,5-5,1-7,7-10,3-12,9-15 17,5-20,2-22,8-25,0-100-200	DIN 861 / 0
2	SET OF PARALLEL ENDMEASUREMENT	1 - 100 mm	DIN 861/2
50	EXTERIOR MICROMETERS	0 - 700 mm	DIN 863 / 1 Resolution : 0,01
20	3 KEYS EXTERIOR MICROMETERS	6 - 20 mm - (6 - 8 bis 16 - 20) 20 - 200 mm (20 - 25 bis 175 - 200)	Resolution : 0,001 Resolution : 0,005
50	CALLIPER RULES	0 - 150 0 - 150 0 - 750 (0-300;0-500;0-750) 0 - 1000	Resolution : 0,01 Resolution : 0,02 Resolution : 0,05

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### ● ELECTRO-EROSION (PRECISION : 0,01 MM)

Machine type	X (mm)	Y (mm)	Z (mm)	Remarks
WIRE-EROSION MITSUBISHI RA90	320	250	160	-
WIRE-EROSION MITSUBISHI	300	250	160	-

### ● CONVENTIONAL LATHES (PRECISION : 0,05 MM)

Machine type	Max lathe ø mm	Max lathe length mm	Between centers (mm)	Headstock-carriage dist.
QUANTUM D360x1000E	360	1000	1000	ø 200
SCHAUBLIN 125	270	500	500	ø 120
16K20	500	1500	1500	ø 280

### ● SAWS

Machine type	ø max. mm	Flat material	Remarks
BANDSAW BEHRINGER	360	-	-
BANDSAW KOLLE ST80	-	X	-
BANDSAW DOALL	200	-	-

### ● WELDING

Machine type	Procedure	Remarks
WELDING DEVICE 1	TIG	450 A
WELDING DEVICE 2	MIG/MAG	400 A
WELDING DEVICE 3	MIG/MAG	400 A
ROTATING WELDING TABLE		
TURNING PLATE		

### ● OTHERS

Machine type	Remarks	Machine type	Remarks
GROOVING MACHINE	from 4 to 16 mm	MARKING MACHINE WITH MICRO- PERCUSSION TECHNOLOGY PROPEN	-
MARKING MACHINE DATALOGIC AREX 20W	20W 100x100mm up to 4 mechanic axis	PRESSURE BLASTING CABINETS LABOREX	-