



## MACHINERY FOR SHEET METAL PROCESSING

### PUNCHING / LASERING

Quantity	Equipment type	Description
4	TruPunch 5000 FMC	with automatic loading and unloading
5	TruPunch 5000	punching/nibbling machines
1	TruLaser 3030	with 10 kW fiber laser, up to 30 mm in steel plate
1	TruLaser 2030 Fiber	with 4 kW fiber laser, up to 25 mm in steel plate
1	TruLaser 2530	with 4 kW laser power up to 20 mm in steel plate
1	TruLaser 5030	with 6 KW laser power up to 25 mm in steel plate
1	TruMatic TC 7000 L	combined machine, up to 3.2 KW laser power

### DEBURRING / LEVELLING

Quantity	Equipment type	Description
1	Deburring machine Weber NLC-1P	wet grinding machine, working width: 1,400 mm
1	Deburring machine Weber PT-1350	dry grinding machine, working width: 1,350 mm
3	Deburring machines Rasamax	dry grinding machine for deburring of small parts
3	Rösler vibratory grinders	tub vibrator R 360 / 870 TE15, rotary vibrator R 420 EC, rotary vibrator R125 EC
1	Rösler rotary dryer	rotary dryer RT250 EURO
1	Roller levelling machine Hämmerle TRM 50 / 1250 GF	working range: 1,250 x 3,000 mm
1	Roller levelling machine Arku Flatmaster 80	working range: 2,000 x 3,000 mm, max. sheet thickness: 23 mm

### EDGING

Quantity	Equipment type	Description
1	Salvagnini bending centre P4Xe-2516	up to 2,500 mm edge length and 160 kN pressing force
14	Press brakes	up to 3,000 mm edge length and 2,300 kN pressing force
2	TruBend Cell 7036	up to 500 mm edge length and 360 kN pressing force
1	TruBend Cell 5000	up to 3,000 mm edge length and 2,300 kN pressing force

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## PRESSING

Quantity	Equipment type	Description
4	Hydraulic deep-drawing presses	with a total pressing force up to 650 t
5	Eccentric presses	50 bis 125 t pressing force
2	Drawing cushion presses	up to 250 t pressing force
2	Hydraulic presses	up to 160 t pressing force
1	Servo press mpressed	up to 400 t pressing force
1	Coil press Schuler	up to 400 t pressing force, max. belt speed: 40 m/min
1	Coil press Bruderer	up to 160 t pressing force, max. belt speed: 20 m/min
3	TOX column presses	up to 13 t pressing force
5	Beading machines	up to 3.0 mm material thickness

## FORMING

Quantity	Equipment type	Description
1	Two-roll round bending machine	max. bending length: 1,000 mm
3	Three-roll round bending machines	max. bending length: 2,000 mm
4	Four-roll bending machines	max. bending length: 2,000 mm, min. diameter 204 mm, NC-controlled
2	Flange rolling machines Nodi	for internal pipe diameters of 350 mm to 3,200 mm
4	Forming machines Kurth + Heuser	for internal pipe diameters of 180 mm to 1,250 mm, Flexformer
1	ACF Corner former	for corner radii with 6 mm (optionally expandable)

## WELDING / SPOTTING

Quantity	Equipment type	Description
1	Cloos welding robot	welding processes: MIG / MAG / TIG, with 2 welding stations and turn / tilt positioners, for large parts up to max. 2,000 x 2,000 x 2,000 mm
5	Cloos welding robots	welding processes: MIG / MAG / TIG, rotation changer with two turn / tilt tables
1	Cloos flex cell	welding processes: MIG / MAG, 9 welding robots, max. component size: Ø 1,000 mm
1	Cobot system	collaborative robot, welding processes: MIG / MAG, 6 axes welding robot
3	CO <sub>2</sub> laser welding systems	laser power: 6 kW
1	3D laser machining centre	solid-state laser with 4 kW for cutting and welding
1	Laser welding robot	solid-state laser with 4 kW for welding
1	2D laser welding system	solid-state-laser with 4 kW for welding
1	Hand-held laser welding system	laser power: 150 W
5	Spot-welding machines	power: 40 to 80 kVA
1	Projection welding machine	max. sheet thickness: 10 mm
1	Stud-welding machine	NC-controlled; working range: 1,000 x 2,000 mm
2	Longitudinal seam welding machines	welding processes: Plasma / TIG / MAG, working range: s=1.0 - 8.0 mm, length: up to 2,200 mm
11	Manual welding stations	welding processes: MIG / MAG / TIG, with dust extraction
3	Large welding cabins	welding processes: MIG / MAG / TIG, especially for large parts, with gantry crane
9	Manual grinding stations	
1	Large grinding cabin	esp. for large parts, with overhead crane & sound insulation

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## SURFACE AND CLEANING

Quantity	Equipment type	Description
1	Powder coating system	for component sizes: - 2,800 (L) x 400 (W) x 1,200 (H) mm - 2,000 (L) x 800 (W) x 1,200 (H) mm
1	Powder coating system	for component sizes: 750 (L) x 1,650 (W) x 2,500 (H) mm
1	KTL-coating system	for component sizes: 750 (L) x 1,650 (W) x 2,500 (H) mm, with ZN-phosphating
2	Cleaning systems Zippel	usable space: 800 x 800 mm

## QUALITY ASSURANCE

Quantity	Equipment type	Description
1	3D arm measuring machine, LK-Metris, HC90	measuring range: X=3,500 / Y=1,600 / Z=2,000 mm Software: Camio, Version V85.0.0.26974
1	3D arm measuring machine, Zett-Mess	measuring range: X=1,600 / Y=1,000 / Z=1,000 mm
2	3D measuring arms Faro Prime	radius = 1,200 mm
1	3D measuring arm Faro Quantum S	incl. Faro Laser Line test
4	2D altimeters, Tesa Micro Hite	height = 900 mm
1	2D altimeter, Etalon, Capax2000	height = 800 mm
1	2D altimeter, Tesa-Hite Plus M400	height = 400 mm
1	2D altimeter, Tesa-Hite 400	height = 400 mm
1	Mobile 3D coordinate measuring machine, Keyene WM3000	max. measuring range: 10,000 x 3,500 x 5,000 mm
1	Optical 2D measuring machine, Amada VQC	measuring range: 3,000 x 1,250 mm
1	3D portal measuring machine, Zeiss Accura II	measuring range: X=2,000 / Y=4,200 / Z=1,450 mm Software: Calypso 2015, Version 6.0.04
1	Laboratory	for metallurgical laboratory investigations

## OTHER MACHINES

Quantity	Equipment type	Description
11	Press-in machines	partially with automated feeding
1	Automatic press-in machine	with KUKA-robot, for pre-punching and pressing of nuts
1	TruMark Station	laser marking device up to 40 W
1	Balancing machine KV 100	max. diameter 900 mm, max. weight 100 kg
4	Column drilling machines	
1	Radial drilling machine	working range: 1,000 mm
1	Thread cutting machine	
2	QuickBoy	for cutting and forming threads
3	Turn / tilt positioners DK 2.5 H-P1.200	max. clamping area: 2,200 mm, swivel range of tabletop up to 135°, max. lifting up to 1,796 mm
11	Assembly workstations	for small parts
6	Assembly workstations	for large parts
1	Wallraven coil turning unit	max. loading 10 t



## MACHINERY FOR MACHINING MANUFACTURING

### MILLING MACHINES

Quantity	Equipment type	Description
1	Hermle C 600	5 axes, working range: 600 x 450 x 450 mm
1	Hermle U 630	3 axes, working range: 630 x 500 x 500 mm
1	Hermle C30 U	5 axes, working range: 650 x 600 x 500 mm
1	Hermle C 30 UP	5 axes, working range: 650 x 600 x 500 mm, with pallet changer
1	Hermle C 40 UP	5 axes, working range: 850 x 700 x 500 mm, with pallet changer
1	Deckel FP2	working range: 300 x 300 x 400 mm
1	Deckel FP3	working range: 300 x 500 x 380 mm
1	Deckel FP4 AT	working range: 560 x 500 x 450 mm
1	Deckel DMC 35 M	working range: 350 x 250 x 240 mm
1	Deckel DMC 160 U	5 axes, working range: 1,600 x 1,250 x 1,000 mm, load capacity: 3,000 kg, with pallet changer
1	Deckel DMC 200 U	5 axes, working range: 1,800 x 2,000 x 1,000 mm, load capacity: 3,000 kg, with pallet changer
1	Hüller Hille NBH 290	4 axes, working range: 1,800 x 1,250 x 1,200 mm, load capacity: 2,500 kg, with pallet changer
1	Unisign Uniport 7000	5 axes, working range: 6,000 x 3,500 x 1,600 mm, load capacity: 10,000 kg, carousel rotary unit with flat plate diameter of 2,500 mm
1	DMG DMF 260-7	5 axes, with 2 integrated rotary tables, working range: 2,600 x 700 x 700 mm, load capacity: 2,150 kg
1	DMG DMF 360 - 11 FD	5 axes, with 2 integrated rotary tables, working range: 3,600 x 1,100 x 900 mm, load capacity: 5,000 kg
1	AXA VSC-3	3 axes, working range: 2,600 x 900 x 950 mm, with pallet changer
1	AXA DBZ	3 axes, 2 working ranges: 750 x 550 x 600 mm, load capacity: 800 kg
1	AXA VPC 2800U	5 axes, working range: 3,900 x 2,940 x 1,300 mm, load capacity: 15,000 kg

### ERODING MACHINES

Quantity	Equipment type	Description
1	Wire eroding machine Cut E 600	eroding path: 1,030 x 800 x 345 mm

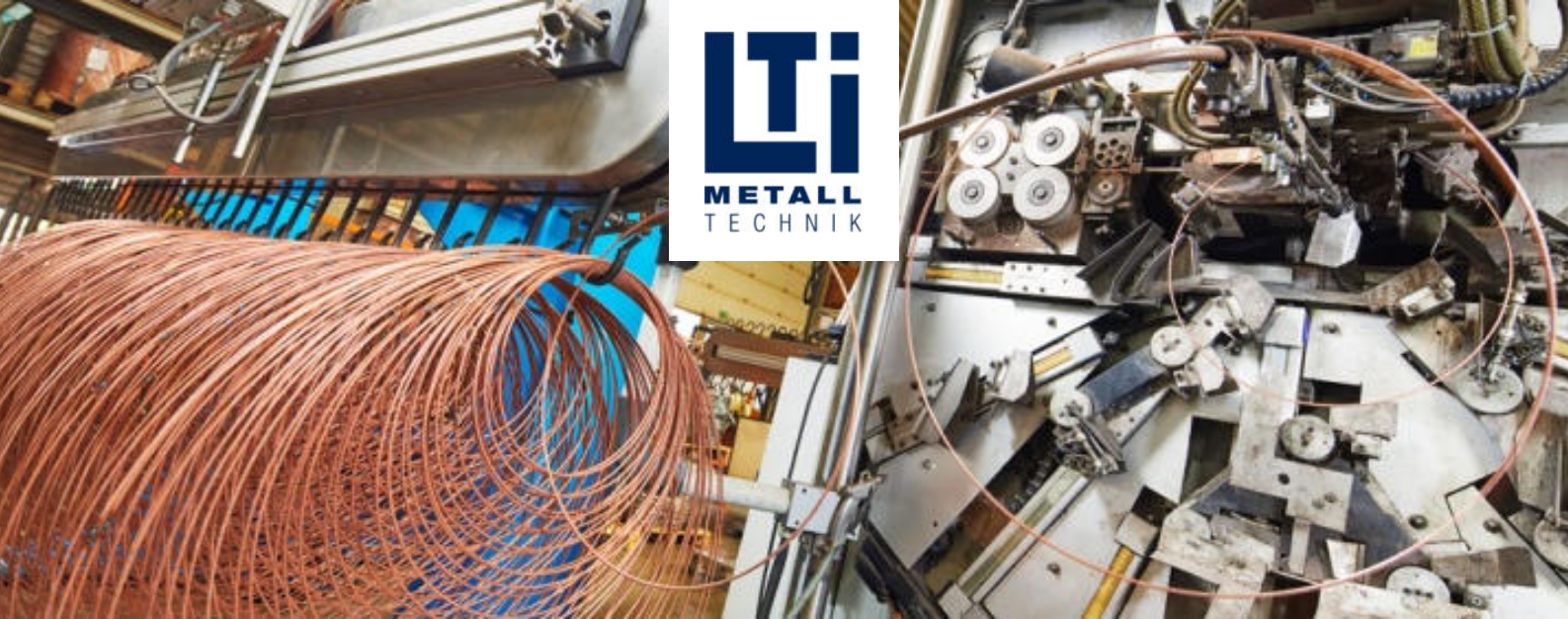
# MACHINERY FOR MACHINING MANUFACTURING

## GRINDING MACHINES

Quantity	Equipment type	Description
1	Jung JF 415	working range: 400 x 130 x 200 mm
1	Zirsch ZT 510	working range: 1,000 x 550 x 400 mm

## ROTATING MACHINES

Quantity	Equipment type	Description
1	Boehringler 800 DUS	max. workpiece diameter: 820 mm, turning length: 2,000 mm
1	Boehringler 560 DUS	max. workpiece diameter: 570 mm, turning length: 1,000 mm
1	GDW LW 360S	max. workpiece diameter: 355 mm, turning length: 750 mm
1	CTV 250	max. workpiece diameter: 250 mm
3	CTV 315	max. workpiece diameter: 315 mm
1	CTV 400	max. workpiece diameter: 400 mm



## MACHINERY FOR WIRE PROCESSING

### WELDING

Quantity	Equipment type	Description
6	KES-welding systems (Schlemmer)	capacitor discharge welding, max. working range: 1,008 x 500 x 420 mm
4	Spot welders Nimak	laser power: 6 kW
2	CO <sub>2</sub> laser welding systems	welding process: MAG, rotation changer with two turn / tilt tables
6	Cloos welding robots	welding processes: MIG / MAG / TIG
5	Manual welding stations	
2	Flange systems	

### WIRE PROCESSING MACHINES

Quantity	Equipment type	Description
7	Wire bending machines Wafios	max. material thickness: 30 x 10 mm max. diameter with round wire: 18 mm
7	Ring set machines Wafios	max. diameter: 5 mm

### OTHER MACHINES

Quantity	Equipment type	Description
1	Hydraulic press	up to 100 t pressing force