



Product Summary

EMAG Group



Machines and manufacturing systems for the batch production of precision metal components

Contents

Manufacturing systems for chucked components	Page
EMAG VL 3/VL 5	3
EMAG VSC 7	3
EMAG VSC 200/250/315/400/500/630	3
EMAG VSC 250/400 DUO	3
EMAG VSC 160/200/250 TWIN	3
EMAG VSC 200 TRIO	3
REINECKER VSC 400 DS/DDS	4
REINECKER VG 110	4
KOPP SK 25	4
KOPP SK 204	5
EMAG VLC 500/630/800/1200	5
EMAG VLC 400 MT	5
Manufacturing systems for shaft-type components	
EMAG VTC 250/250 DUO/250 TRIO/VTC 315/315 DUO	6
EMAG HSC 250 DS	6
KOPP SN 310/320/330	6
KOPP SN 204/208	6
NAXOS-UNION P/R/PMB 204	7
NAXOS-UNION P/R/PMD 310/320	7
NAXOS-UNION P/R 400	7
NAXOS-UNION RMBO/KBO	7
NAXOS-UNION HSC 1000/1500	7
KARSTENS HG 310/320/330	7
KARSTENS HG 204/208	7
Manufacturing systems for cubic components	
SW BA W04/W06	8
SW BA 400	8
SW BA 600	8
SW BA S03	9
SW BM 1250	9
Manufacturing systems for gear profiles	
KOEPFER Gear Hobbing Center 160	10
KOEPFER Gear Hobbing Center 200	10
KOEPFER Gear Hobbing Center 300	10
KOEPFER VSC 400 DUO WF	11
KOEPFER VSC 400 PH	11
KOEPFER Gear Hob Sharpener KFS 100	11
Laser welding systems	
LASER TEC ELC 160	12
LASER TEC ELC 250 DUO	12
LASER TEC ELC 200 H	12



EMAG VL 3 / VL 5

The standard vertical turning machine for chucked components: turning + automation on a single machine with the smallest possible footprint.

What distinguishes the VL series of machines are high productivity levels, extremely high and constantly maintained precision, exceptional process integrity and a high degree of operator friendliness. The pick-up spindle forms part of the overhead slide and serves as a workhandling unit that collects the raw-part and deposits the finished component on the conveyor belt. Short traverses and the machine's compact design offer exceptionally short loading and cycle times.

CAPACITY		VL 3	VL 5
Chuck dia.	mm	160	250
Swing dia.	mm	210	260
Traverse X/Z	mm	400 / 200	570 / 200



EMAG VSC 7

Another standard vertical turning machine for chucked components: turning + automation on a single machine.

What distinguishes the VSC series of machines are high productivity levels, extremely high and constantly maintained precision, exceptional process integrity and a high degree of operator friendliness.

CAPACITY		VSC 7
Chuck dia.	mm	400
Swing dia.	mm	420
Workpiece dia. (nominal)	mm	340
Traverse X/Z	mm	850 / 315



EMAG VSC 200/250/315/400/500/630 EMAG VSC 200/250/400 DUO

Every machine is a manufacturing cell that employs the integrated pick-up spindle to load and unload itself. Turning, drilling, milling, laser applications and other processes offer a large number of machining solutions. A machine that is equally reliable for soft, hard or dry machining, interrupted cuts, etc. Workpiece gauging with measuring probe or plug gauge is accurate, fast and achieved – without detours – in a single setup.

The DUO two-spindle machines are very economical and offer the ideal solution where components require a second operation.

CAPACITY		VSC		DUO 250	DUO 400
Chuck dia.	mm	160 / 200	to 500 / 630	200 / 250	315 / 400
Swing dia.	mm	200	to 680	260	420
Workpiece dia. (nominal)	mm	130	to 550	200	340
Traverse X/Z	mm	650 / 160	to 1150 / 500	850 / 200	850 / 315





EMAG VSC 160/200/250 TWIN EMAG VSC 200 TRIO

These are high-performance, high-precision machines for mass production – vertical multi-spindle automatics for the simultaneous machining of two or three workpieces.

CAPACITY				
Chuck dia.	mm	130/160	to	200/250
Swing dia.	mm	210	to	260
Workpiece dia., nominal	mm	130	to	200
Traverse X/Z	mm	850/160	to	850/200



REINECKER VSC 400 DS/DDS

These turning and grinding centers combine the advantages of vertical hard turning with those of grinding. They hard pre-turn, grind internally and externally and load and unload workpiece-specific and with great flexibility.

CAPACITY		400 DS/DDS
Chuck dia.	mm	to 400
Swing dia.	mm	to 420
Machining dia., max.	mm	320
Workpiece dia., nominal	mm	to 400
X-traverse	mm	850
Z-traverse	mm	315
Y-traverse (DDS)	mm	315

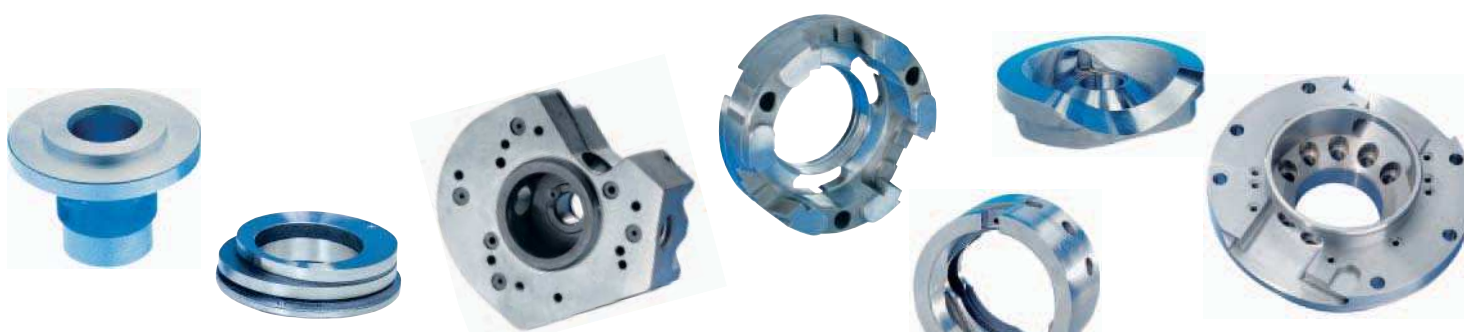


REINECKER VG 110

This vertical automatic for small and smallest chucked components allows you to hard pre-turn, grind internally and externally and load and unload workpiece-specific and with great flexibility on a single machine. The component is pre-turned and then internally and externally finish-ground in a single set-up, using one or two spindles.

CAPACITY		VG 110
Chuck dia.	mm	100 to 190
Swing dia.	mm	125
Machining dia., max.	mm	40
Workpiece dia., nominal	mm	100
X-traverse	mm	460
Z-traverse	mm	225





KOPP SK 204

The SK series are multi-talented grinders with up to 5 axes. They will machine round and out-of-round workpieces as well as free-form surfaces and are used for: out-of-round grinding, cylindrical grinding (internal and external), surface grinding, slot grinding and burnishing.

CAPACITY		SK 204
Workpiece dia., max.	mm	250
Workpiece slide X-axis	mm	1000
Tool slide Z-axis	mm	380



EMAG VLC 500/630/800/1200

These heavy-duty multi-tasking production centers in gantry design have a high chip capacity and are ideal for the complete machining of large workpieces. Their operational range includes soft and hard machining, interrupted cuts, turning, drilling, milling, grinding, ...

CAPACITY		
Chuck dia.	mm	400 to 1200
Swing dia.	mm	1200
X-traverse	mm	2340
Z-traverse	mm	500

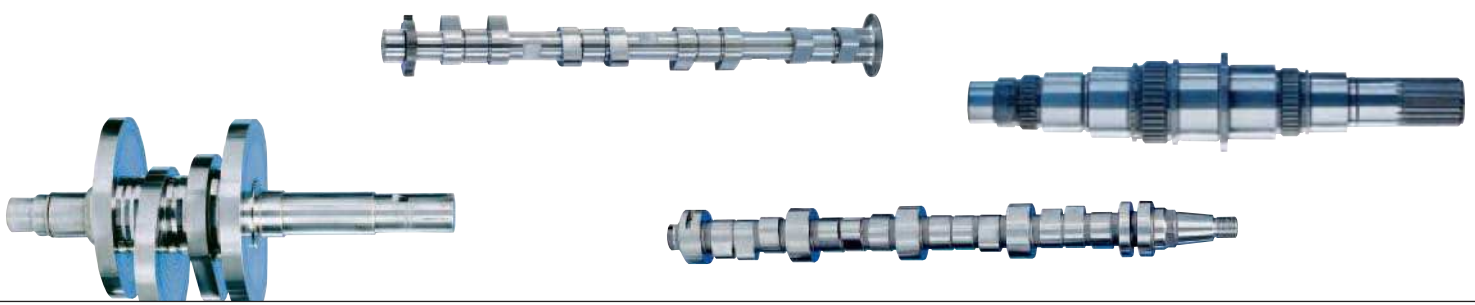


EMAG VLC 400 MT

This 5-axis manufacturing system loads itself and represents the ideal solution for the machining of round and not so round components. The VLC 400 MT meets every demand made on the complete machining of complex workpieces in small, medium and large batches. Its operational range includes soft and hard machining, interrupted cuts, turning, drilling and milling.

CAPACITY		
Chuck dia.	mm	315/400
Swing dia.	mm	420
X-traverse	mm	2100
Y-traverse	mm	495
Z-traverse	mm	600
Tool magazine	No. of stations	26 + 1





EMAG VTC 250 / VTC 250 DUO / VTC 250 TRIO EMAG VTC 315 / VTC 315 DUO

The VTC series of machines is designed to vertically machine shafts of up to 1000 mm length. EMAG turrets not only allow for the 4-axis machining of shaft-type components, they also simultaneously load and unload the workpieces.

CAPACITY		VTC 250	VTC 315
Chuck dia.	mm	250	315
Workpiece dia., max.	mm	140	250
Workpiece length, max.	mm	1000	630
X-traverse max.	mm	340	390
Z-traverse max.	mm	740 / 1100	740



EMAG HSC 250 DS

This manufacturing cell for the machining of demanding shaft-type components employs the pick-up spindle principle to load itself. Whether turning, drilling, milling, grinding or turn-grinding, the HSC offers all the variants of process integration that can be applied to shaft-type components.

CAPACITY				
Chuck dia.	mm	250		
Center height	mm	510	to	710
Workpiece dia., max.	mm	180		
X-traverse	mm	420		
Z-traverse	mm	1250-1775	to	1775-2300

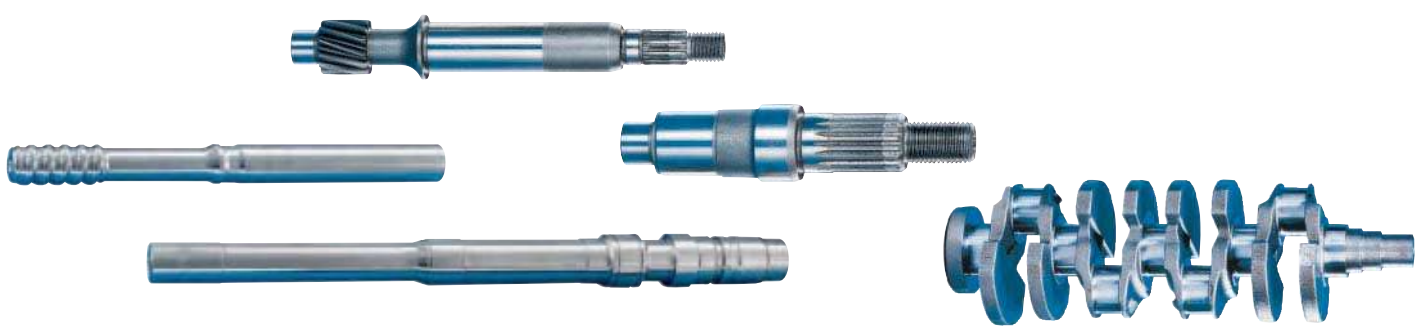


KOPP SN 310/320/330 KOPP SN 204/208

This is the camshaft grinder for prototype and batch production. A choice of different frame sizes provides – for each application – the most advantageous option to suit individual workpiece geometries.

CAPACITY		SN 204	SN 208	SN 310/320/330
Workpiece dia., max.	mm	380	380	360 / 640
Workpiece length, max.	mm	650	950	3000
X-traverse	mm	380	380	500 / 500 / 500
Z-traverse	mm	1000	1600	1700 / 2700 / 3700





NAXOS-UNION P / R / PMB 204 NAXOS-UNION P / R / PMD 310/320 NAXOS-UNION P / R 400 NAXOS-UNION RMBO / KBO

This crankshaft grinder is offered with conventional grinding wheel or CBN technology, in a single-wheel configuration with one spindle, or equipped with two wheel heads and two spindles, or as a multi-wheel machine with a single spindle supported on both sides.

SERIES		P/R/PMB 204	P/R/PMD 310	P/R/PMD 320	P/R 400	RMBO KBO
CAPACITY						
Workpiece length	mm	500	750	1500	6000	750
Wheel dia.	mm	550	650	650 / 700	950 / 1400	1100



NAXOS-UNION HSC 1000/1500

As the machine designed to drill oil holes in crankshafts, it employs the pick-up spindle principle to load itself and offers to drill pilots and oil holes, deburr, chamfer and carry out measuring cycles, all in a single set-up.

CAPACITY		HSC 1000	HSC 1500
Workpiece dia., max.			
Single spindle	mm	—	330
Twin-spindle	mm	290	—
3-spindle	mm	200	—
Workpiece length, max.			
Single spindle	mm	—	1500
Twin-spindle	mm	1000	—
3-spindle	mm	750	—



KARSTENS HG 310/320/330 KARSTENS HG 204/208

The modular machine series for shaft grinding.
This series of grinding machines is designed to deal with all external cylindrical grinding requirements. An optional center drive makes it possible to machine shafts and hollow shafts simultaneously.

CAPACITY		HG 204/208	HG 310/320/330
Workpiece dia., max.	mm	100 / 200	360 / 640
Workpiece length, max.	mm	400 / 600	600 / 3000
X-traverse	mm	380	500
Z-traverse	mm	1000 / 600	1700 / 2700 / 3700





SW BA W04 / W06

Horizontal machining center with one or two motor spindles for – in particular – the 4- and 5-axis machining of light alloy components and for machining cycles with high idle time content. Simultaneous loading of the fixture plates, using double-swivel trunnions with integrated direct-drive rotary axes.

CAPACITY		BA W04-22 twin-spindle	BA W06-12 single spindle	BA W06-22 twin-spindle
X-traverse	mm	400	1150	600
Y-traverse	mm	500 (775*)	600 (875*)	600 (875*)
Z-traverse	mm	425	500	500
Distance between spindles	mm	400	–	600

(*Alternative)



SW BA 400

Horizontal machining center with two or four synchronous, fluid-cooled motor spindles. Main spindle bearing in hybrid technology. Simultaneous workpiece load/unload, three NC linear axes and up to four NC rotary axes.

CAPACITY		BA 400-2 twin-spindle	BA 400-4 4-spindle
X-traverse	mm	400	200
Y-traverse	mm	450 (700*)	450 (700*)
Z-traverse	mm	400	400
Distance between spindles	mm	400	200

(*Alternative)



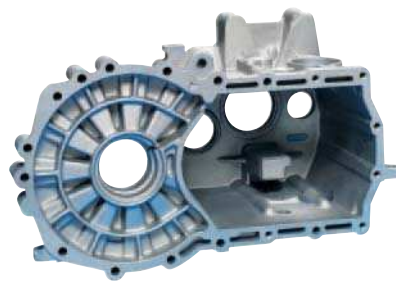
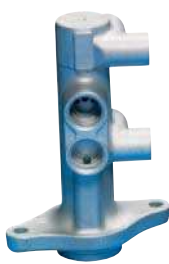
SW BA 600

Horizontal machining center with two or four synchronous, fluid-cooled motor spindles. Main spindle bearing in hybrid technology. Simultaneous workpiece load/unload, three NC linear axes and up to four NC rotary axes. 5-sided machining in a single set-up. The machine is ideally suited for automatic loading.

CAPACITY		BA 600-2 twin-spindle	BA 600-2G twin-spindle	BA 600-4 4-spindle
X-traverse	mm	600	600	300
Y-traverse	mm	600 (975*)	550 (975*)	600 (975*)
Z-traverse	mm	500	360	500
Distance between spindles	mm	600	600	300

(*Alternative)





SW BA S03

Vertical machining center with one or two motor spindles.
Simultaneous loading of the fixture plates, using double-swivel trunnions.
With integral A-axis for the twin-table version and direct-driven rotary tables designed to accommodate single or multiple clamping fixtures.
Well suited for dry machining.

CAPACITY		BA S03-11	BA S03-12	BA S03-21	BA S03-22
		single spindle	single spindle	twin-spindle	twin-spindle
X-traverse	mm	600	600	300	300
Y-traverse	mm	400 (650*)	400 (650*)	400 (650*)	400 (650*)
Z-traverse	mm	400	400	400	400
Distance between spindles	mm	—	—	300	300

(*Alternative)



SW BM 1250

Reconfigurable multi-spindle drill-head center, on which the workpiece carries out all traverse movements while the horizontally mounted drilling heads remain stationary. A 3-axis workholding unit employs the pick-up principle to collect the workpieces from the loading position and convey them from one multi-spindle drilling or milling head to the next.
The monobloc design offers optimal rigidity, whilst the stationary drilling and milling units guarantee outstanding component quality, even where high feed forces are involved.

CAPACITY		BM 1250
X-traverse	mm	1900
Y-traverse	mm	1250
Z-traverse	mm	500
Rapid traverse up to	m/min	60
Axis acceleration up to	m/s ²	10
Feed force up to	kN	28





KOEPFER Gear Hobbing Center 160

This latest generation gear hobbing center is equipped with 8-axis NC control and offers high main and tool spindle speeds, which – in conjunction with a fast loading device – ensure that even shafts and pinions with a minimum number of teeth can be machined at high cutting speeds and correspondingly short cycle times.

CAPACITY		KOEPFER 160
Module, max.	mm	2,5
Workpiece dia., max.	mm	60 / 90 / 140
Milling hob length, max.	mm	200 / 480
Workpiece length, max.	mm	300 / 600
Milling hob width, max.	mm	130 / 250
Shift travel	mm	100 / 160
Main spindle speed	min ⁻¹	1000
Tool spindle speed	min ⁻¹	5000



KOEPFER Gear Hobbing Center 200

The type 200 combines cutting edge technology with the highest degree of universality and flexibility in both machining and automation. It machines an extensive range of diameters and modules of pinions, gears, worms and worm gears. The KOEPFER 200 can also be equipped with a grinding head for CBN tools, for the grinding of gear profiles.

CAPACITY		KOEPFER 200
Module, max.	mm	3
Workpiece dia., max.	mm	120 / 180
Milling hob length, max.	mm	200
Workpiece length, max.	mm	300
Milling hob width, max.	mm	130 / 100 / 63
Shift travel	mm	100 / 70 / 40
Main spindle speed	min ⁻¹	270 / 450 / 1000
Tool spindle speed	min ⁻¹	2000 / 3000 / 5000



KOEPFER Gear Hobbing Center 300

The fully automated Type 300 Gear Hobbing Center features 9 activated axes and can machine gears up to module 4 with great flexibility. Its combination of slant bed design and closed-loop framework construction offers the highest degree of stability for both dry and wet machining.

CAPACITY		KOEPFER 300
Module, max.	mm	4
Workpiece dia., max.	mm	140 / 195
Milling hob length, max.	mm	300
Workpiece length, max.	mm	300 / 500
Milling hob width, max.	mm	200
Shift travel	mm	160
Main spindle speed	min ⁻¹	800
Tool spindle speed	min ⁻¹	2000 / 4000





KOEPFER VSC 400 DUO WF

This gear profiling center – its design is based on the VSC series – soft finish-machines the gear profile complete, employing turning, hobbing and deburring operations.

CAPACITY		VSC 400 DUO WF	
		L	R
Module, max.	mm	3	
Chuck dia., max.	mm	400	400
Workpiece dia., max.	mm	240	240
Milling hob length, max.	mm	215	
X-traverse	mm	930	850
Y-traverse	mm	315	
Z-traverse	mm	315	315



KOEPFER VSC 400 PH

This machine is designed for the precision hard-machining of gear profiles, whereby pre-milled, hardened gears of 20 to 160 mm diameter are being finish-honed. The use of tried and tested modules for hard-machining, in conjunction with the newly developed twin-axis honing unit with its highly dynamic drives, produces workpieces of the highest quality.

CAPACITY		VSC 400 PH
Module, min.	mm	1
Module, max.	mm	3
Workpiece dia., max.	mm	160
Workpiece width, max.	mm	45
Tool swivel axis	°	± 35

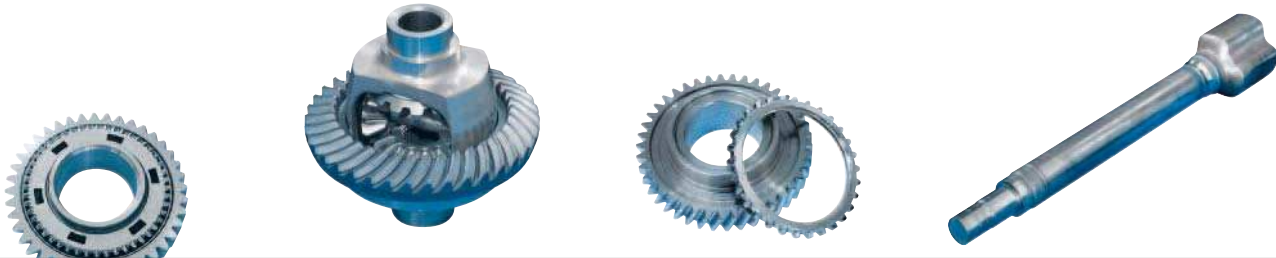


KOEPFER Gear Hob Sharpener KFS 100

The KFS 100 is designed to sharpen straight and helix fluted gear hobs in high-speed steel or carbide.

CAPACITY		KFS 100
Milling hob dia., max.	mm	110
Milling hob length, max.	mm	200
Grinding wheel dia., min.	mm	50
Grinding wheel dia., max.	mm	100





LASER TEC ELC 160

Integrated handling and laser-welding reduces the number of machining operations in the manufacturing process. Modern laser beam sources and optimal clamping technology ensure minimum welding distortion. The space-saving, compact design increases the integrity of the process capability and the flexibility of the machine.

CAPACITY

Workpiece dimensions

O/D	mm	160
Workpiece height	mm	60



LASER TEC ELC 250 DUO

The extraordinarily sturdy twin-spindle laser-welding machine offers simultaneous loading and unloading of the work spindles. The clamped/compressed component can be welded axially and radially. An integrated compression unit ensures that welding distortion is reduced to a minimum. The ELC 250 DUO features a fixed beam-focusing unit. All optical components remain stationary throughout the machining process.

CAPACITY

Workpiece dimensions

O/D	mm	250
Workpiece height	mm	500



LASER TEC ELC 200 H

The laser-welding machine with horizontal workpiece positioning is designed to weld shaft-type components.

Highly demanding material pairings are safely welded by using filler material. A seam tracer ensures that all quality requirements are adhered to, in particular where safety-defining components are involved.

CAPACITY

Workpiece dimensions

O/D	mm	200
Workpiece length	mm	1000

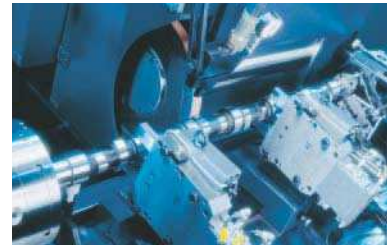


Manufacturing systems for the batch production of precision metal components



VL Series
Machining chucked components

SN Series
Grinding a camshaft



VSC TWIN Series
Simultaneous machining
of 2 chucked components

P 320 Grinder
Grinding a crankshaft



VSC TRIO
Simultaneous machining
of 3 chucked components

BA 400-2
Horizontal Machining Center



VSC DS Series
Turning + grinding of
chucked components

BA S03
Vertical Machining Center



VTC Series
Vertical 4-axis machining of shafts

VSC DUO WF
Turning + hobbing of gears



HSC DS Series
Turning + grinding of shafts

ELC Series
Laser-welding





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