

KRONOS

The range for
centerless grinding

 **MIKROSA**
KÖRBER
SCHLEIFRING

centerless is more

KRONOS



KRONOS S 125 / S 250 – Precision for small workpieces

Offset of workpieces in the grinding gap and of grinding wheels as well as the slogan of multiple production are specialties of these machines. The KRONOS S 125 processes workpieces with a plunge cut length of up to 120 mm. The KRONOS S 250 can even process lengths up to 245 mm due to its wider design. The cross-slide systems for the grinding and regulating wheel side provide not only enormous flexibility for grinding, but they also enable the KRONOS S to have the full functionality of a 7-axis CNC machine. The axis resolution is a phenomenal 0.01 μm . This is another important prerequisite to be able to reliably finish workpieces with a tolerance field of $\pm 0.5 \mu\text{m}$ under production conditions. The KRONOS S is equipped with a hybrid bearing grinding spindle for circumferential speeds up to 120/50 m/s.

Possible technologies

- Throughfeed and plunge cut grinding
- 15°/6° inclined plunge cut grinding
- Plunge cut grinding in mass production
- Oscillation grinding
- Grinding of multiple operations in one cycle via offsetting the workpiece or the grinding spindle



KRONOS M 250 / KRONOS M 400 – modular and flexible

The modular construction of the KRONOS M 250/KRONOS M 400 with 6 (optionally 7) CNC axes enables optimum adaptation to the grinding project.

The high-precision grinding spindles with roller bearing reach normal grinding wheel circumferential speeds of 63 m/s. Grinding spindles with hybrid ceramic spindle bearings can reach grinding wheel circumferential speeds of 120 m/s and reduce the cycle time in connection with CBN high speed technology, resulting in considerably higher profitability.

The axes may be adjusted in increments of 0.1 μm .

Possible technologies

- Throughfeed grinding
- Plunge cut grinding
- Grinding from the complete range
- Plunge cut grinding in mass production
- Surface grinding or oscillation (KRONOS M 250, glide-bearing grinding spindle)



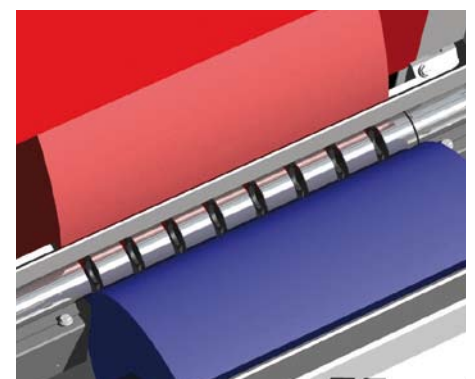
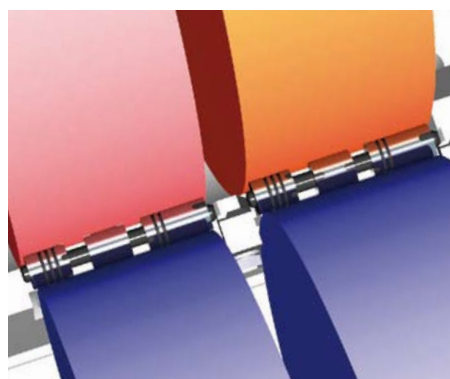
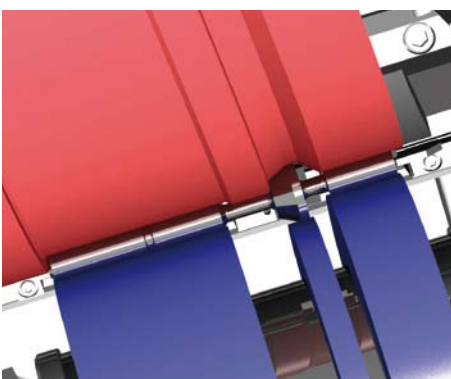
KRONOS L 660 – big performance for big workpieces

The KRONOS L 660 is suited for processing large workpieces. Specially designed and equipped for high performance and high volume, this machine boasts a number of technical enhancements. It brings immediate cost-cutting benefits for the production user, e.g. a higher removal performance and even further reduction of auxiliary processing and changeover times.

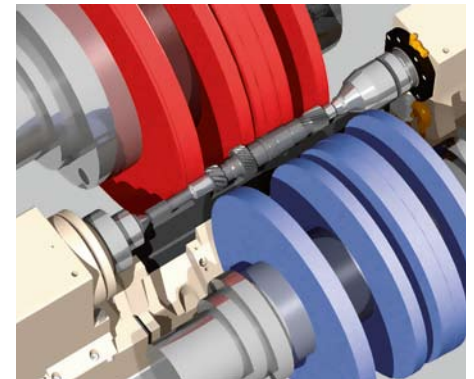
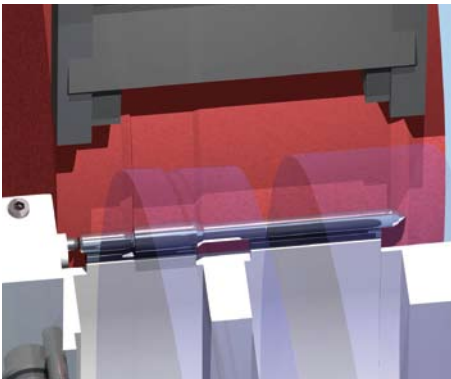
The infeed of both carriages takes place by means of a servo drive via a clearance-free pre-clamped recirculating ball spindle. Standard built-in linear measuring systems control the exact positioning of the infeed axes.

Possible technologies

- Throughfeed grinding
- Plunge cut grinding
- Plunge cut grinding in mass production



Special Machines



KRONOS speed – high speed for small workpieces

The KRONOS speed is based on the KRONOS S 125 and distinguishes itself through drastically reduced workpiece changeout times.

- Workpiece changeout times from under 1 second (depending on application)
- Integrated High Speed Centerless Loader (HSCL)
- Patented operating principle via fluid-based work piece lift-off from the workrest blade
- For single or double production or cycling during 2 operations
- Application of oil and emulsion possible
- Safe transport of the workpiece through compulsory guide
- Keyhole workpiece handling

KRONOS K – specialised machine for tapered pulleys

Based on the KRONOS M 400, the KRONOS K is a special machine for diameter grinding of taper rolls in throughfeed grinding. Instead of the regulating wheel, a transport worm is implemented, aligned with the dimensions of the tapered pulley.

- Grinding spindle has bearings on both sides
- Transport worm has bearings on both sides
- Simple correction possibility of the taper angle

KRONOS dual – between centers and centerless

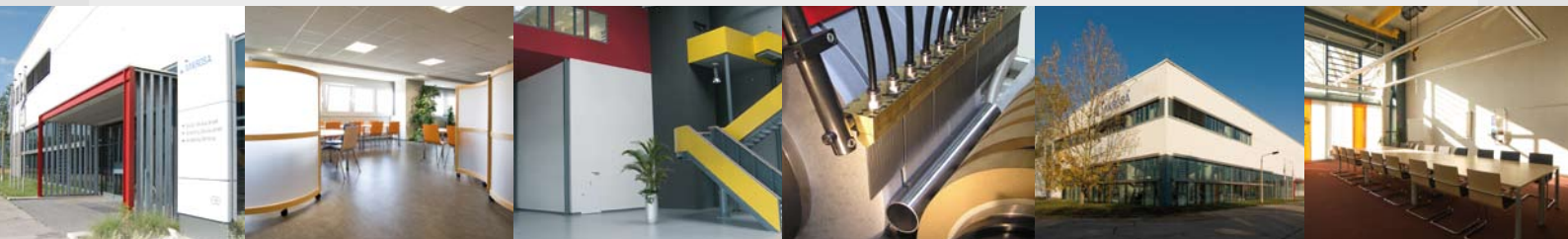
Thanks to the combination of centerless grinding and grinding between centers, the KRONOS dual provides the retention of the workpiece center in centerless grinding. Its field of application is to be seen whenever previous or successive work steps require processing from the centers.

The KRONOS dual guarantees shorter processing times through higher stock removal performance with the combination of grinding between centers and centerless grinding. By means of the innovative expansion to grinding between centers, a first-rate economical solution has been found, based on the machine concept of the tried and true KRONOS L 660, with all its benefits and features.

The Mikrosa Centerless Competence Center



Parameter	Unit	KRONOS S			KRONOS M			KRONOS L	
		KRONOS S 125	KRONOS S 250	KRONOS speed	KRONOS M 250	KRONOS M 400	KRONOS K	KRONOS L 660	KRONOS dual
Grinding area									
Grindable workpiece diameter, minimum	mm	0,5	1,5	2,5	1,5	1,5	4,5	5	15
Grindable workpiece diameter, maximum	mm	30	35	8	100	100	35	250	100
Grindable workpiece length, max.	mm	120	245	80	245	395	50	655	300...630
Grinding wheel									
Diameter, maximum	mm	400	450	400	610	610	610	660	660
Width, maximum	mm	125	250	125	250	400	400	660	660
Bore	mm	203,2	203,2	203,2	304,8	304,8	304,8	304,8	304,8
Regulating wheel									
Diameter, maximum	mm	250	250	250	350	350	310	400	400
Width, maximum	mm	125	250	125	250	400	420	660	660
Bore	mm	127	127	127	127/152	127/152	204,5	203,2	203,2
Grinding wheel drive									
Circumferential speed	constant	yes	yes	yes	yes	yes	yes	yes	yes
Circumferential speed	m/s	63	80	63	63	63	63	63	63
Option: CBN grinding circumferential speed	m/s	120	120/150	120	120	120	-	90/120	90/120
Drive output	kW	11/15	15	11/15	22	37/60	37	60/100	60/100
Regulating wheel drive									
Speed range, infinite	min ⁻¹	5-500	5-500	5-500	5-600	5-450	5-600	5...300	5...300
Dressing speed	min ⁻¹	1000	1000	1000	600	450	600	700	700
Drive output	kW	5	5	5	5,7	5,7	5,7	12	12
Dimensions									
Set-up area required, (foundation)	mm	3210 x 1600	3200 x 2000	3210 x 1600	2300 x 1100	2300 x 1100	2300 x 1100	3210 x 1460	3210 x 1460
Total area (including switch cabinet)	mm	5800 x 3400	5700 x 4000	5800 x 3400	5450 x 3050	5450 x 3050	5450 x 3050	6850 x 3300	6850 x 3300
Maximum height	mm	2100	2100	2100	2000	2000	2000	2320	2320
Machine weight									
	kg	6700	8000	6800	10500	11000	10000	18500	19000
Control SIEMENS Sinumeric 840D									
		yes	yes	yes	yes	yes	yes	yes	yes



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