

Crankshaft grinders

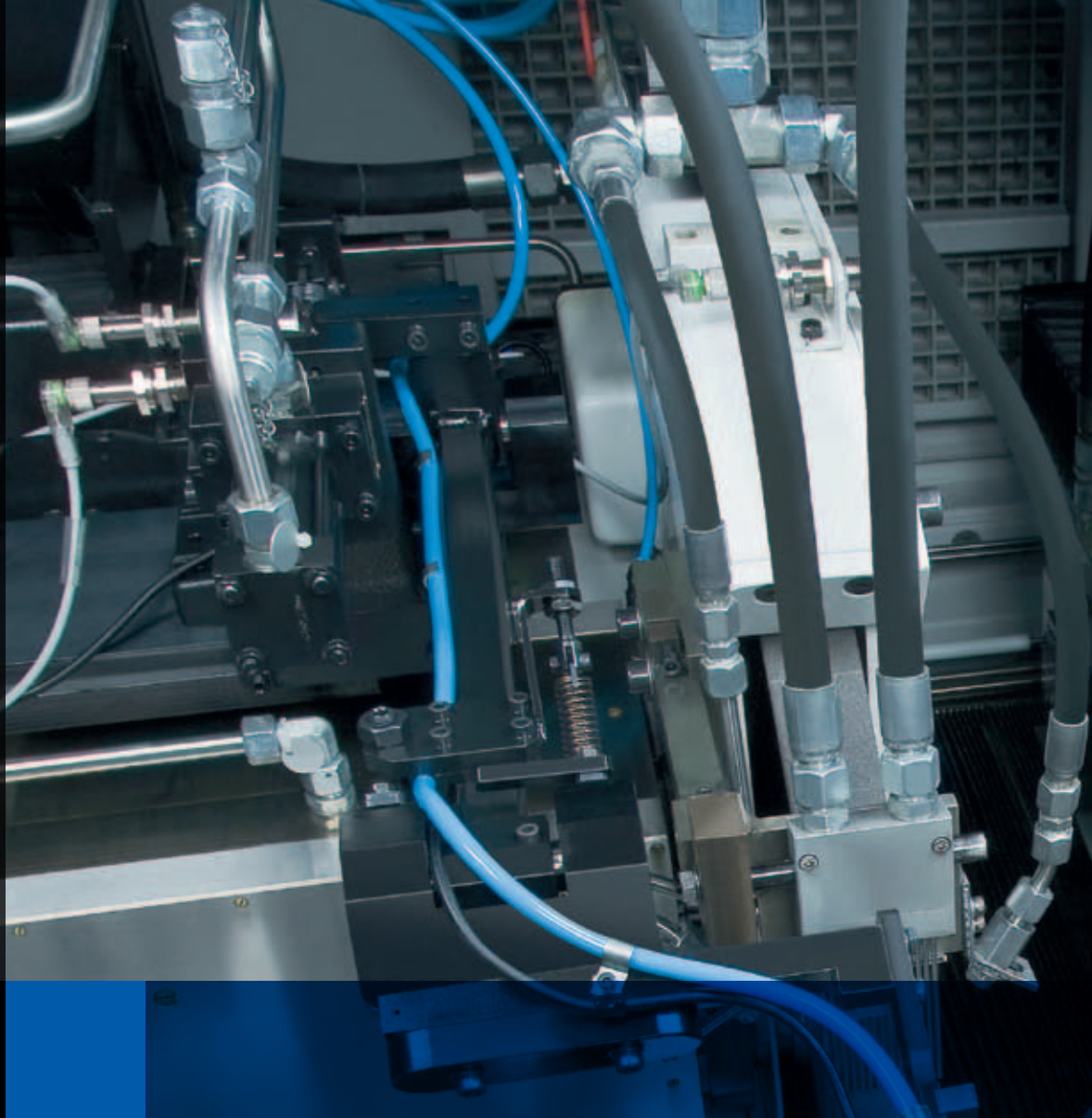
PM 310

PM 320

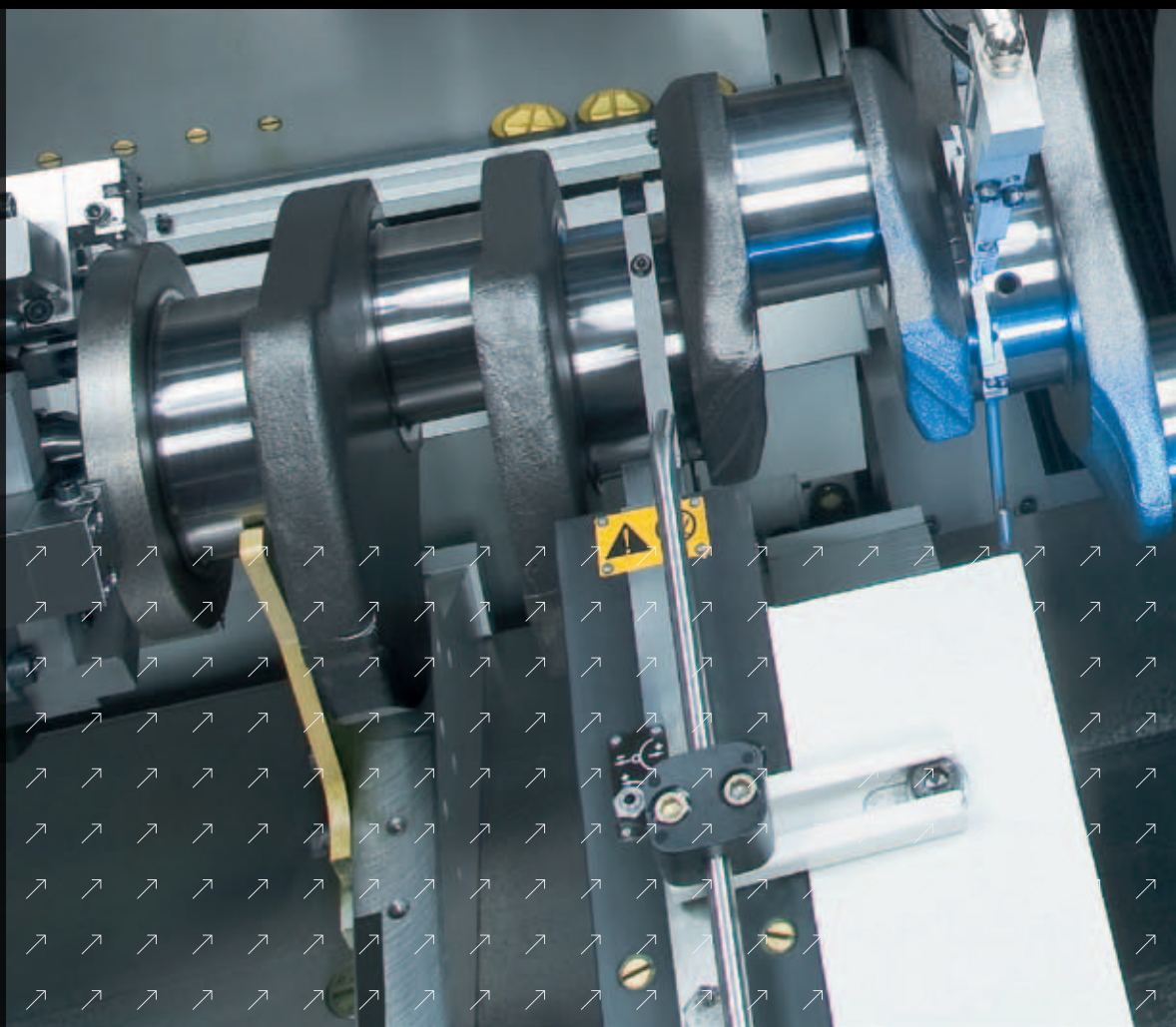


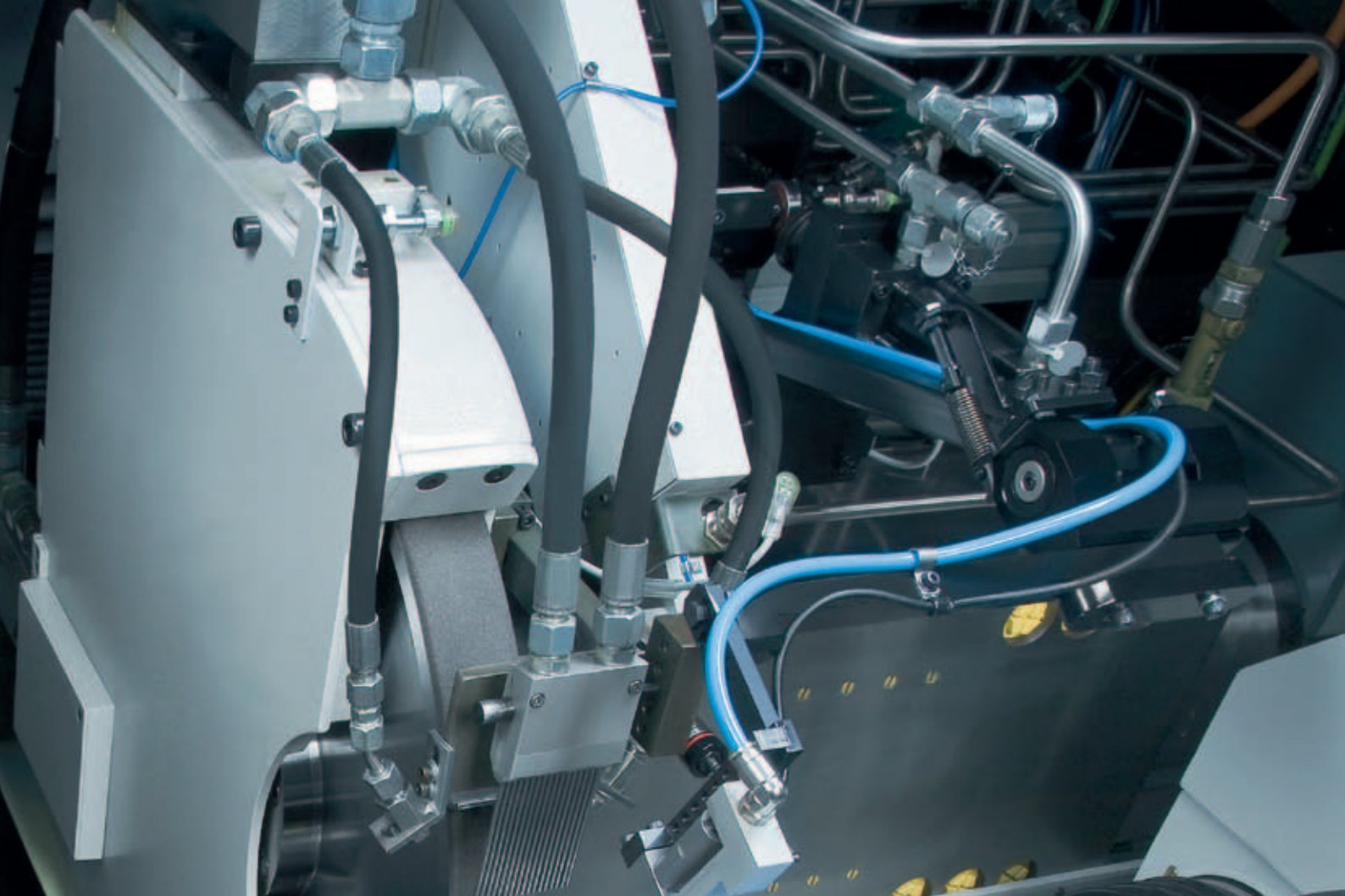
NAXOS-UNION

For decades NAXOS-
UNION crankshaft
grinders held a prominent
place in the worldwide
manufacture of engine
components for
passenger and
commercial vehicles.
By now their combination
of CBN technology and
the pin chasing process
has become the
accepted industry
standard. NAXOS-UNION
was the first to apply
linear motor technology
to the process and now
offers highly dynamic
drive systems to satisfy
production requirements.



P M 3 1 0
P M 3 2 0





CRANKSHAFT GRINDER

Series PM 310 / 320.

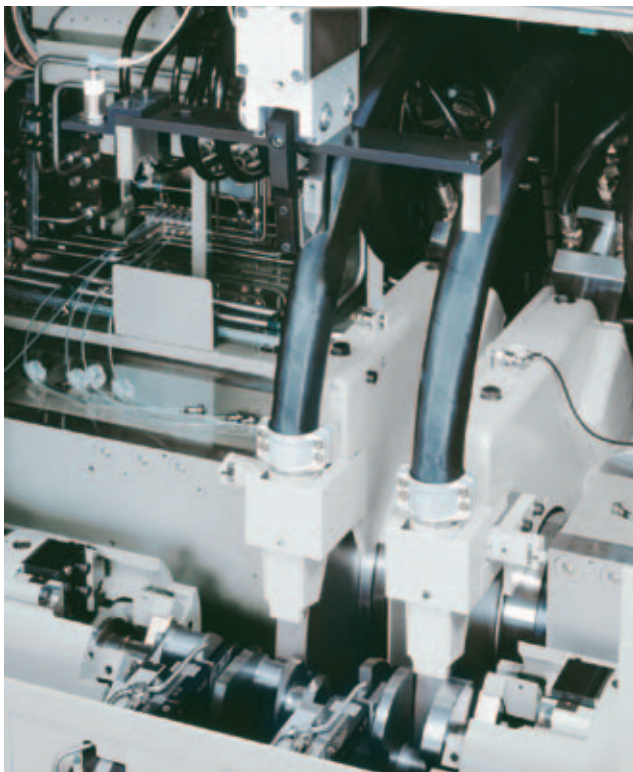
The machine design meets the modern production environment's increased demands for a high degree of availability, a small footprint, simple and time-saving installation and commissioning and easy servicing.

Special features:

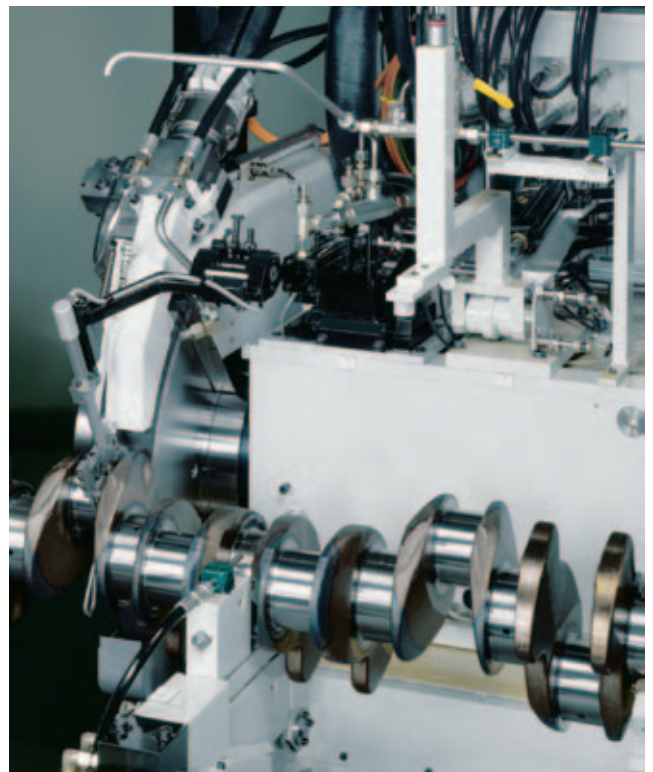
- CBN technology also for the grinding of radii and shoulders
- Pin chasing of the bearings, with the workpiece centrally clamped
- The twin-head version offers the highest productivity levels through simultaneous machining with independently working grinding units
- X-axis drive system with antibacklash linear motor
- Work head with torque motor
- Hydro-static guideways (X- and Z-axis)
- Adaptive in-process gauging system
- Grinding spindle with direct drive (55 kW / 97 kW)
- Machine enclosure detached from machine
- Compact design
- Integrated roundness monitoring and error correction

P M 3 1 0
P M 3 2 0

Twin-head pin grinder for pre-grinding into solid material using an electro-plated CBN wheel.

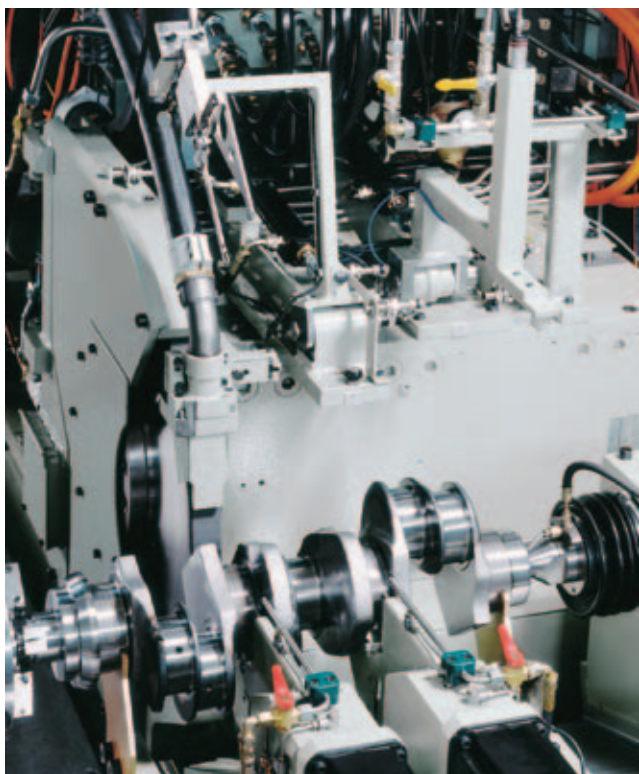


Grinding the pin bearings on a heavy truck crankshaft.





CBN main bearing grinder.



Flexible CBN grinder with B-axis.



Machine variants and grinding technologies.

The modular system allows the configuration of a multitude of machine variants. The main and pin bearings can be machined in a single setup on the same grinder or on two different

machines, following the traditional concept, the decision depends on production requirements.

Single, straight wheel head:

Two straight wheel heads:

Pivoting wheel head:

Angular wheel head:

Available grinding technologies:

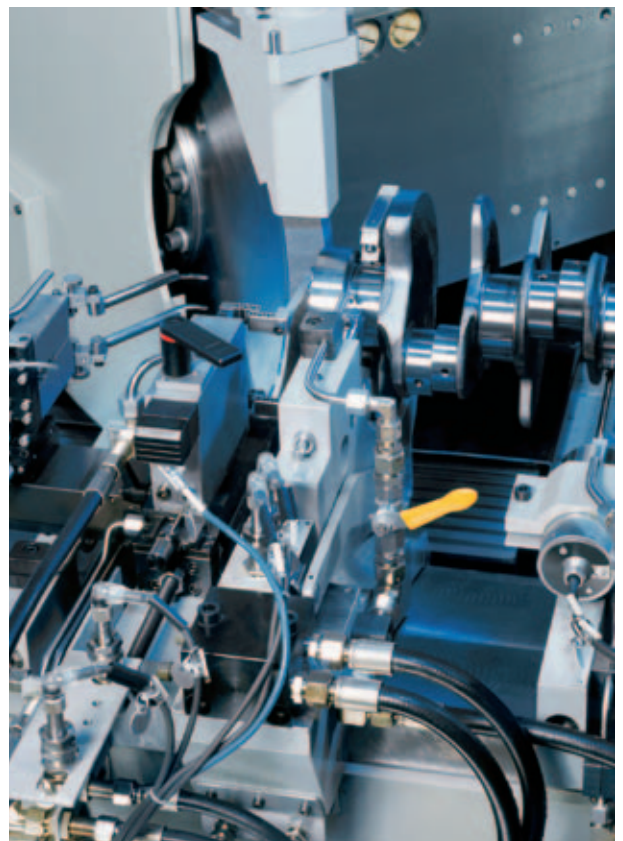
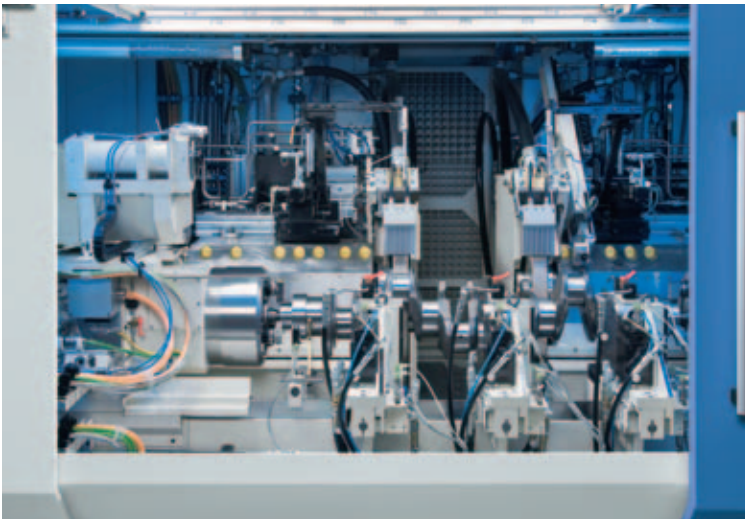
grinding the main and/or pin bearings
simultaneous grinding of the main and/or pin bearings
combined processes, grinding consecutively
grinding the high and low ends

pre-grinding with electro-plated and finish-grinding with vitrified-bonded CBN grinding wheels; straight plunge grinding of bearing seats with/without shoulders and radii; multiple plunge grinding (bearing width > wheel width); diagonal and kiss grinding; flexible grinding (wheel edge radius < bearing radius); angular plunge grinding with CBN or corundum wheels.

P M 3 1 0
P M 3 2 0

RF angular plunge cut.

PMD 320 twin-head machine
for simultaneous grinding.



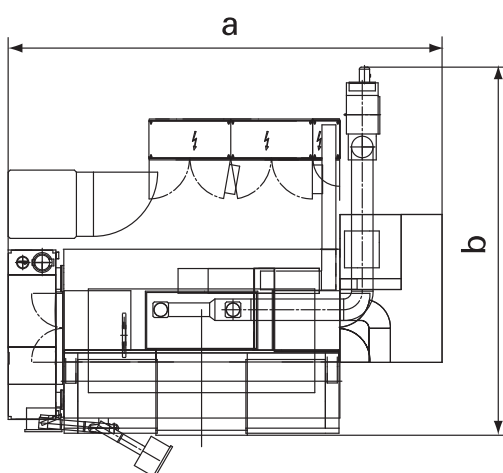
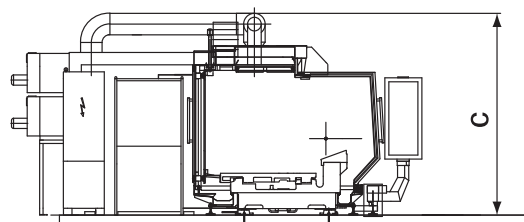
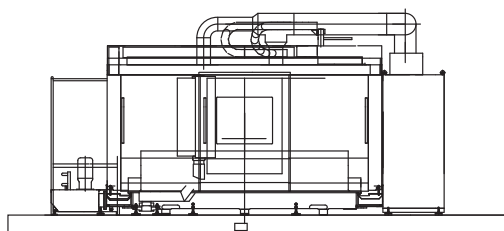


Technical Data.

Capacity		PM 310	PM 320
Workpiece length, max.	mm in	1,000 39.5	1,800 71
Workpiece weight, max.	kg lb	80 176	250 550
Swing diameter, max.*	mm in	300 12	320 12
Stroke radius, max.*	mm in	110 4.5	110 / 140 4.5 / 5.5
Grinding center above the bottom edge of machine	mm in	1,100 43.5	1,300 51
Grinding wheels			
Wheel diameter*	mm in	650 25.5	650 25.5
Max. wheel width*	mm in	50 2.0	50 / 60 2.0 / 2.5
Cutting speed, max.	m/s	125 (200)	125 (200)
Coolant		emulsion or grinding oil	
Drives			
X-axis		SIEMENS linear motor	
Feed force X	Nm ft-lb	5,100 3,762	5,100 3,762
Rapid-traverse rate X / Z	m/min ipm	25 / 20 984 / 787	25 / 25 984 / 984
Control system			
SIEMENS SINUMERIK 840 D solution line			
Dimensions and weights			
Length a	mm in	5,800 228.5	7,300 287.4
Width b	mm in	3,800 149.5	4,140 163
Height c	mm in	2,810 110.5	3,010 118.5
Weight of single-wheel machine	kg lb	17,000 37,479	21,000 46,297
Weight of twin-head machine	kg lb	20,500 45,195	25,500 56,218

* It is also necessary to have individual checks, taking account of workpiece geometry and aspects of back rest and oscillation

Floor plan PM 310 / 320



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