

KPSM – CONTOUR PRECISION GRINDING MACHINE

KPSM Type 2200 - 4200

For grinding of longitudinal profile up to 70 x 70 mm
Flat grinding up to 600 mm width



HABRAMA



KPSM-SERIES

Product description

The principle: KPSM – contour precision grinding machine

The KPSM is versatile. From precise flat grinding up to the grinding of complex profiles. With the help of our special clamping devices it is also possible to grind racks up to a cross-section of 70 x 70 mm and a length of up to 4000 mm on both sides, angularly and torsion-free. The dressing unit is freely programmable.

Standard features include:

- // Full encapsulation
- // Direct measuring of the axes Y, Z, V, and W
- // Emulsions mist filtration system

The basic machine

The machine bed of the KPSM is a ribbed welded construction. The generously sized, high-precision linear guide ways are centrally lubricated.

Benefits

Highly rigid construction

The rigid construction guarantees a long lifespan combined with highest precision.

Highest dynamic

State-of-the-art linear drive technology ensures increased productivity.

Production Non-Stop

Fully automatic single flank.

Easy-to-use

With the sophisticated operating concept ergonomic handling and short training units are possible.

- + Special operating concept for tooth grinding without NC programming.

Innovative details

flat grinding and profile grinding on one machine.



Coolant system

Dressing system
with diamond wheel

Grinding head

User Interface

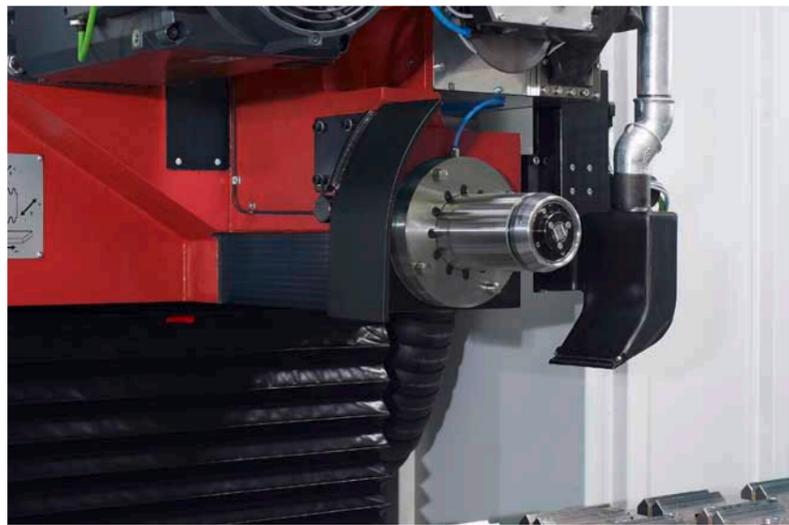
Cylindrical grinding
disk holders

Torsion free clamping device
(Option)

DETAILS AND OPTIONAL EQUIPMENT

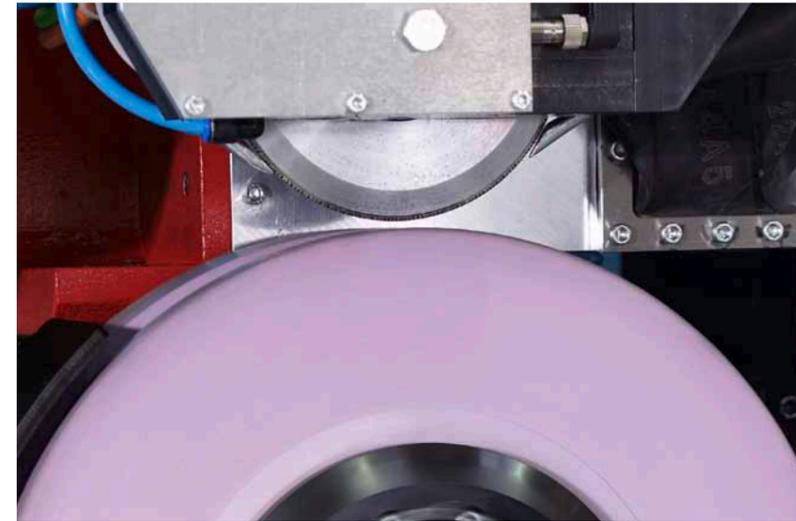
Grinding head with balancing system as standard

Fully automatic balancing system which recognizes and removes unbalances at a very early stage. This guarantees a high quality of the workpiece surfaces and a long tool life of the spindle.



Coolant system

Coolant system with integrated fine filter system, optional with 16 kW cooling unit.



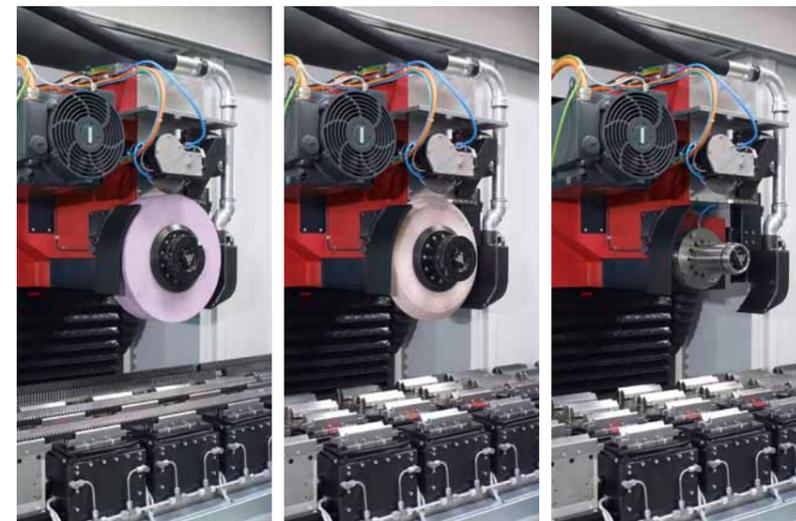
Dressing during production time by a dressing system with diamond wheel

The grinding disk will be dressed during production with a 2-axis CNC controlled diamond wheel which enables a consistently high quality and less downtime. The contours are freely programmable.



Generously dimensioned sliding doors

Optional also with automatic door drive for comfortable and safe working.



Grinding disk change

The cylindrical grinding spindle allows easy disc changing.

DETAILS AND OPTIONAL EQUIPMENT

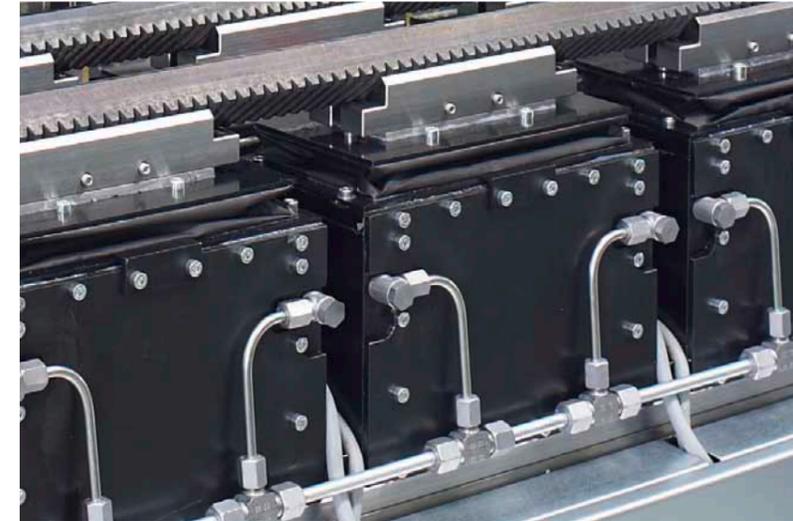
Control / User Interface

Siemens 840D sl with Sinamics-drives in an air-conditioned cabinet. Equipped for teleservice.



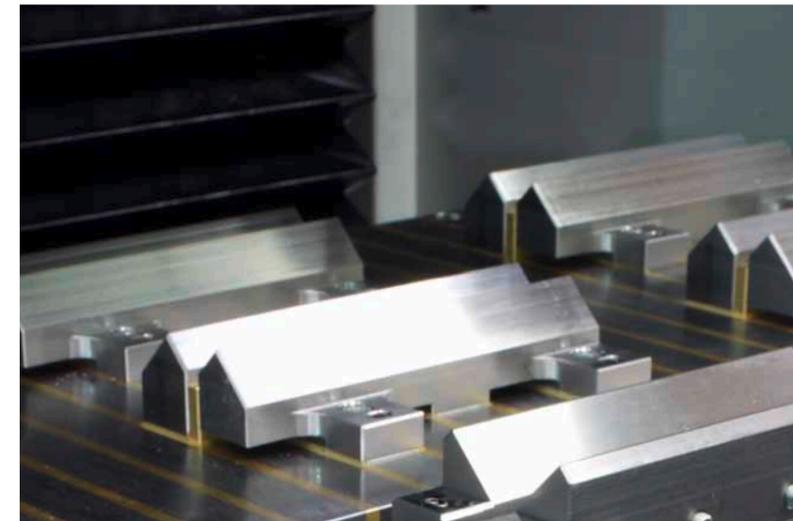
Automatic adjustment of cooling agent supply (Option)

The nozzle compensates abrasion on the grinding disk automatically.



Special magnetic clamping device with additional hydraulic locking mechanism for torsion free clamping (Option)

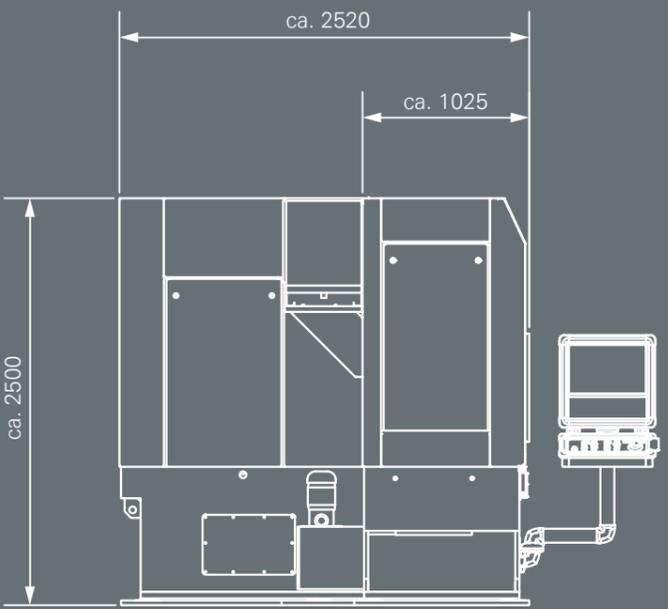
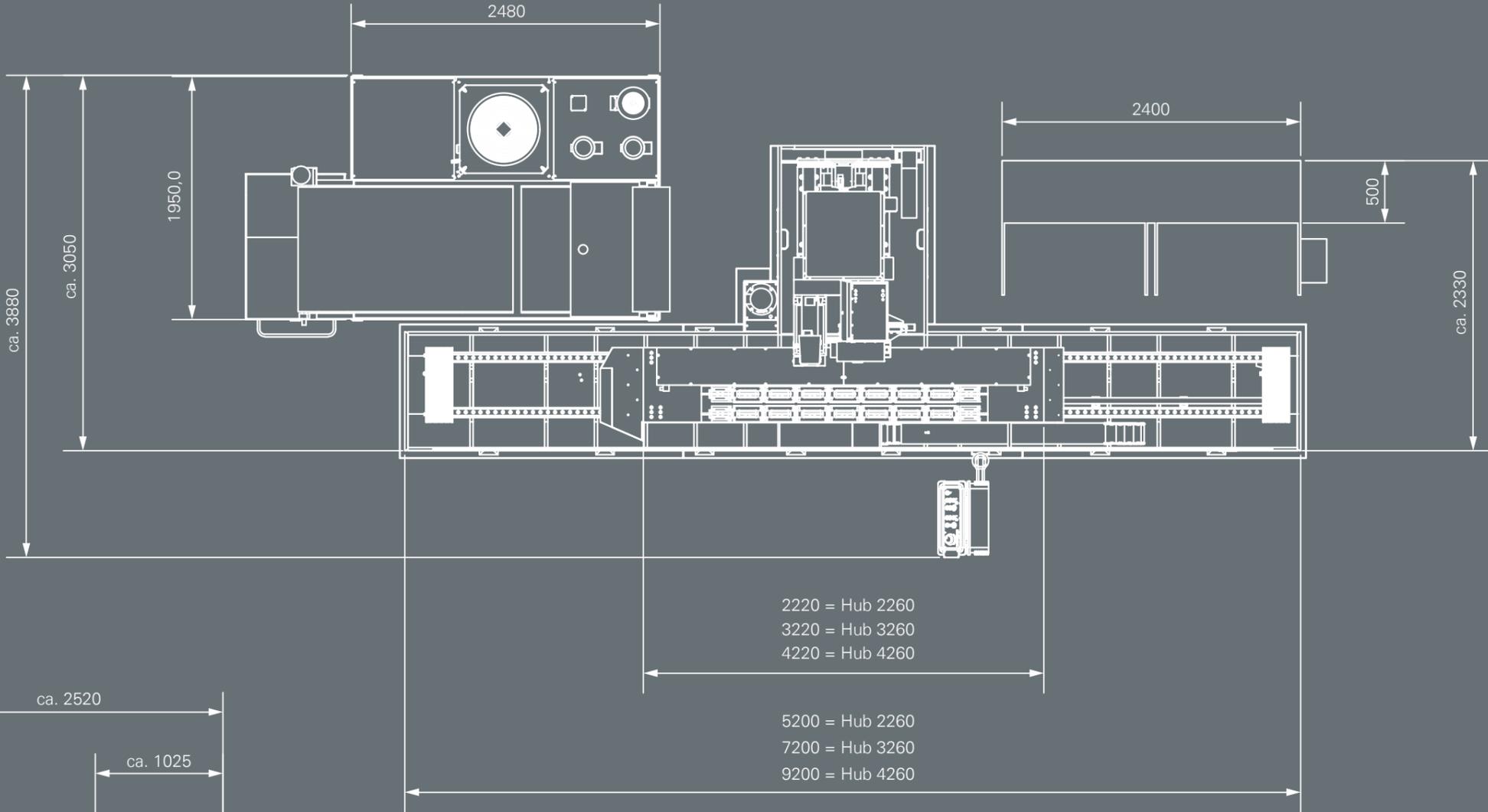
Magnet will pull the working piece into ideal position and clamps it afterwards.



Special clamping device magnet plate with exchangeable prisms for torsion free clamping and grinding of rack and profiles in small series (Option)

The basic clamping device consist a magnetic plate. The additional prisms can be quickly installed and dismantled for small batches of racks. Without prisms, the machine can be used for flat grinding.

TECHNICAL DRAWINGS



Side view (left) and top view (top)

TECHNICAL DATA

	KPSM 2200	KPSM 3200	KPSM 4200
Working Area			
X - Axis lengthwise	2.260 mm	3.260 mm	4.260 mm
Y - Axis crosswise	560 mm		
Z - Axis vertical	500 mm		
V - Axis	105 mm		
W - Axis	120 mm		

Machine Table

	KPSM 2200	KPSM 3200	KPSM 4200
Dimensions correspond with clamping surface	472 x 2.220 mm	472 x 3.220 mm	472 x 4.220 mm
Max. load	3.000 kg	4.000 kg	5.000 kg

X - Axis lengthwise

Speed	40 m/min
Incremental length measuring system (Option)	Direct positioning accuracy $\pm 0,002$ mm

Y - Axis crosswise

Speed	10 m/min
Incremental length measuring system	Direct positioning accuracy $\pm 0,002$ mm

Z - Axis vertical

Speed	6 m/min
Incremental length measuring system	Direct positioning accuracy $\pm 0,002$ mm

Grinding head

	KPSM 2200	KPSM 3200	KPSM 4200
Power consumption	30 kW (S6 at 40%)		
Speed range	max. 4000 1/min.		
Grinding wheel adapter	100 mm H5		
Cutting speed, programmable	constant 10-80 m/s		
Grinding wheel	kvitrified or resin-bonded grinding wheel		
Grinding wheel width	max. 101 mm		
Grinding wheel \emptyset	min. 210 mm - max. 400 mm		
Hole diameter of grinding wheel	152,4 mm (6 inch)		
Grinding area	flat grinding up to 600 mm width / profile grinding up to 70 x 70 mm		

Cooling unit

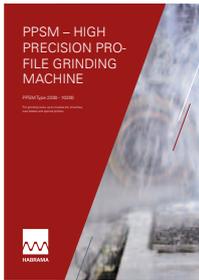
Cooling unit	approx. 3.000 Ltr. with integrated deep-bed filter
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Machine

Extraction of emulsion mist	1.800 m ³ /h		
NC-control	Siemens 840D sl		
Drives	Siemens		
Total connected load	80 kVA		
Weight	15.000 kg	16.000 kg	17.000 kg

Options

- // Special magnetic clamping device with additional hydraulic locking mechanism for torsion free clamping
- // Special clamping device Magnet plate with exchangeable prisms for torsion free clamping and grinding of rack and profiles in small series
- // Automatic sliding doors
- // 16 kW cooling unit for a constant lubrication temperature
- // Fleece separator
- // Automatic adjustment of cooling agent supply
- // CO₂-extinguishing system
- // Hydraulic clamping nut
- // Oil collection pans made of steel
- // Chipping case 400 ltr.



HABRAMA PPSM - SERIES

High Precision Profile Grinding Machine

PPSM Type 2200 - 10200

For grinding racks up to module 22,
broaches, saw blades and special profiles



HABRAMA ZSM compact - SERIES

Rack Grinding Machine

ZSM compact Type 2200 - 3200

For grinding racks up to module 22



HABRAMA PPFM - SERIES

High Precision Milling Machine

PPFM Type 2200 - 10200

For milling racks up to modul 36,
broaches, saw blades and special profiles



HABRAMA ZFM compact - SERIES

Rack Milling Machine

ZFM compact Type 2200 - 3200

For milling racks up to modul 36



HABRAMA UVF - SERIES

Universal Gear Milling Center

UVF-Center II - III

For gear cutting of gear wheels, worms,
worm wheels, spline shafts, trapezoidal
thread spindles and timing belt pulleys



HABRAMA ZEM - SERIES

Rack Deburring Machine

ZEM Type 1000 - 2000

Deburring of rack teeth up to
a cross-section 100 x 100 mm



HABRAMA

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and Milling Machines

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