



# PLANT AND MACHINES

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## Single sided grinding machines

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GRUPPE

## Single sided grinding machines

Grinding machines for block, wedge and plate formats, each with one, two or three grinding units from one side.

Depending on the material, the machines can be designed for dry or wet operation.

### Extensions, options:

- automatic loading and unloading systems, as well as integration into a complete plant
- Robotics
- Quality assurance
- Measurement
- Labelling, marking
- Extraction, water treatment
- Manual or automatic adjustment

### DESIGN ACCORDING TO CUSTOMER REQUIREMENTS

All plants and machines are designed and manufactured according to the specified requirements of the customer and the product.



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## Surface grinding machine PSM-06-K 1-, 2- oder 3-stage with throughfeed

With the PSM-06-K machine, refractory bricks are machined on a plane surface in throughfeed.

For machining the wedge surfaces, the grinding unit is swivel-mounted.

Machining can be done dry or with water cooling, depending on the material.

The transport unit consists of a horizontal and a vertical unit, the elements of which are coated with a highly abrasion-resistant plastic coating.

The workpieces rest on the horizontal transport and are clamped laterally by the vertical transport elements.

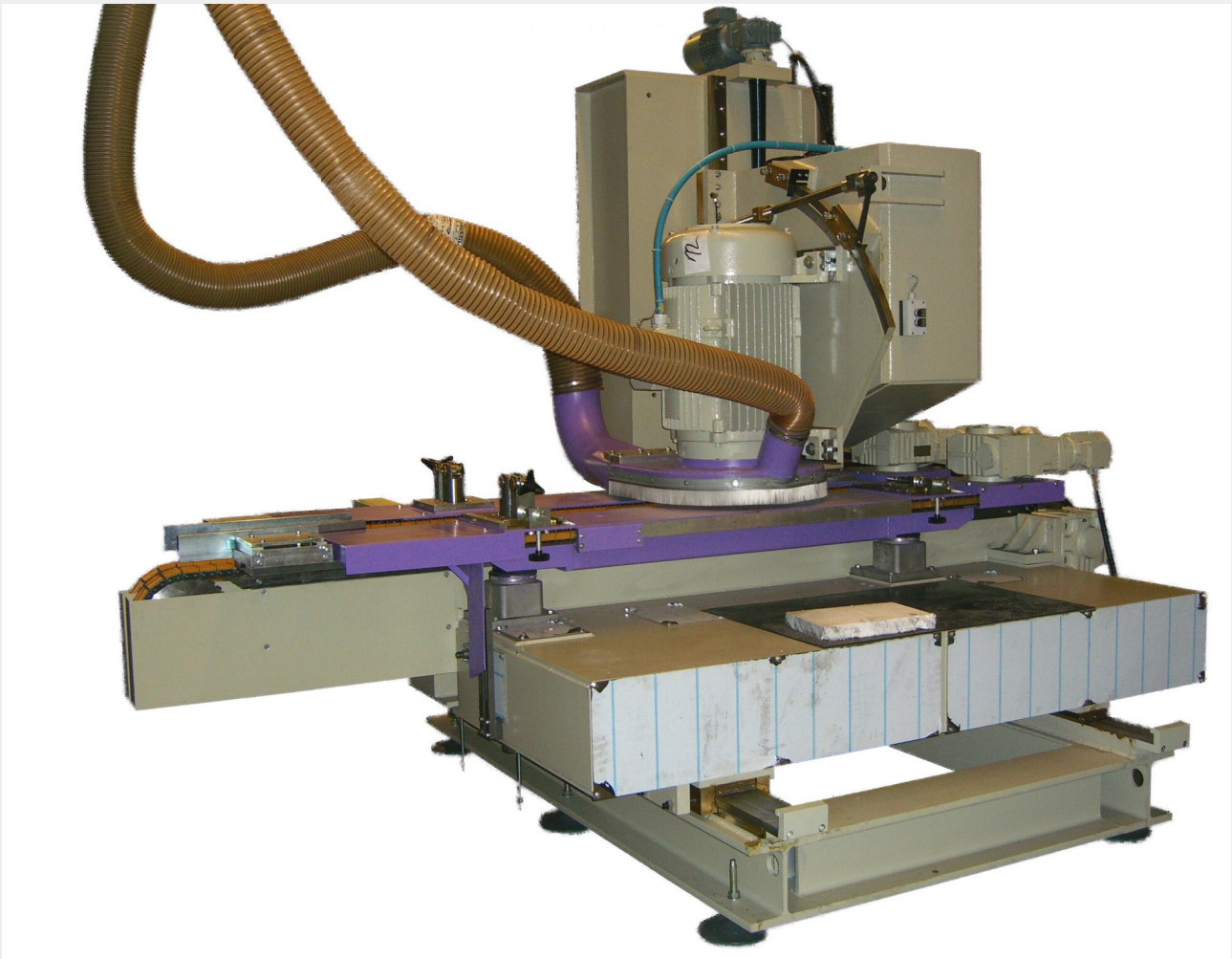
The transport system is continuously adjustable in width and height via threaded spindles for all desired formats.

Any tolerances are compensated by a spring-loaded bearing.

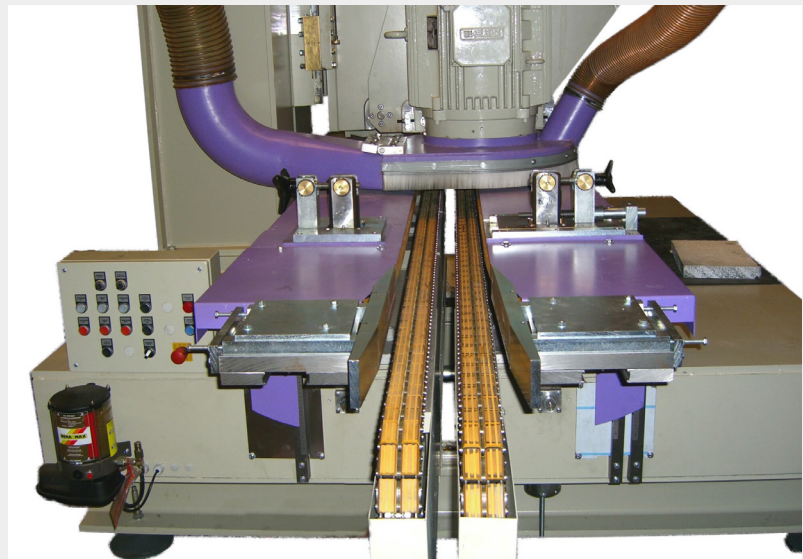
The machine is equipped with two grinding units mounted on the machine stand. Due to the two-stage grinding, both higher stock removal and faster feed rates are possible. In addition, a better finish can be achieved. The units are height-adjustable and can be swivelled

- One-sided grinding horizontal
- Plane-parallel and wedge formats
- Automatic or manual width adjustment
- Automatic or manual height adjustment
- Two feed chains with special coating
- Two lateral pressure units, one side spring-loaded
- Swivelling range 0 - 30° / automatic
- Grinding tolerance  $\pm 0,25$  mm
- Dry or wet processing
- Infinitely adjustable feed
- Infinitely variable speed
- Control system SPS





## Machine examples PSM-06-K





## Surface grinding machine Mini PSM-06-K-R-600

The surface grinding machine consists of a solid machine stand, a horizontal grinding unit and a machining table. The machine operates in reversing mode and is designed in this version for dry grinding of magnesite products. The horizontal grinding unit is manually adjusted in height and has a swivel range for wedge-shaped formats.

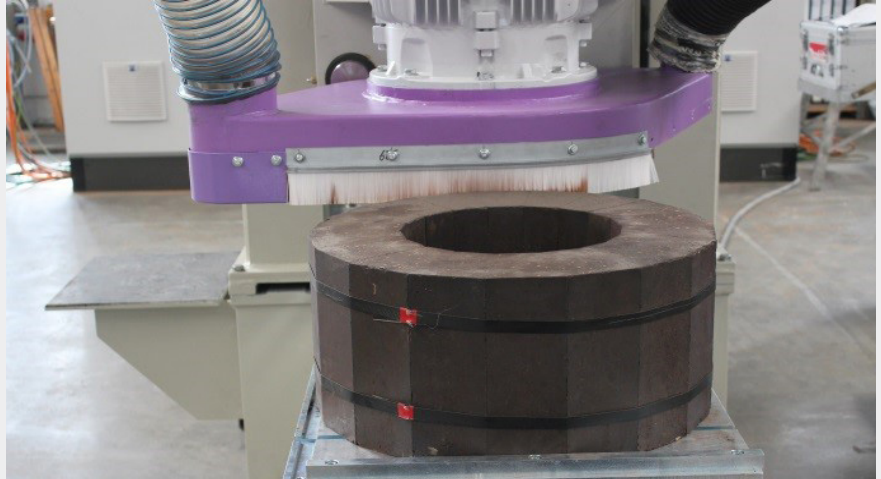
Various options are available depending on requirements:

- Various table sizes and designs
- Clamping devices
- Manually or automatically adjusted
- Manual or automatic loading and unloading
- Integration into a complete line
- Motor power 15 - 30kW
- Extraction
- Water treatment



## Application examples Mini PSM-06-K-R-600

Wedge bricks, converter bricks, slider plates, plate materials (foam ceramics, SIC, magnesite, insulating bricks, cement-bonded bricks, etc.)



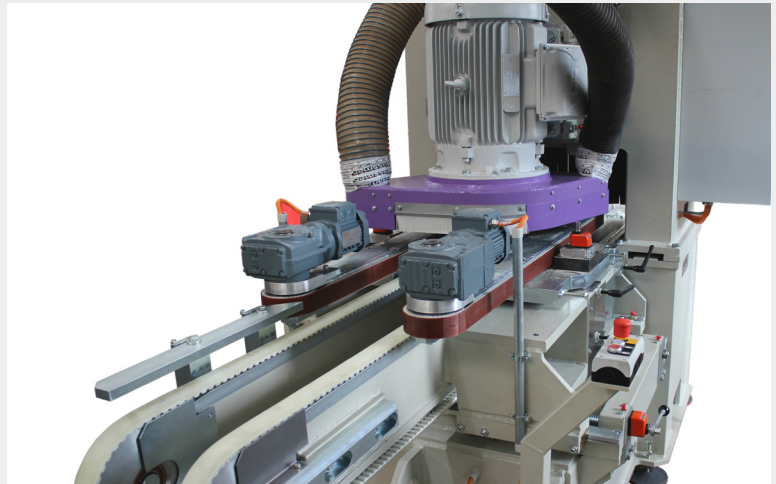
## Surface grinder Mini PSM continuous feed

This grinding machine was developed for manufacturers of concrete masonry units who want to grind on one side.

The basis of the machine is a robust welded machine stand. The feed, the pressure units and the grinding unit are mounted on this machine stand. The feed is effected via transport belts.

The lateral pressure units hold the concrete blocks in position during the grinding process. The machine is loaded and unloaded manually. The sturdy construction and simple, manual operation ensure safe operation and durability.

The machine can be expanded to a two-sided grinding system with a turner and a return or a second machine.





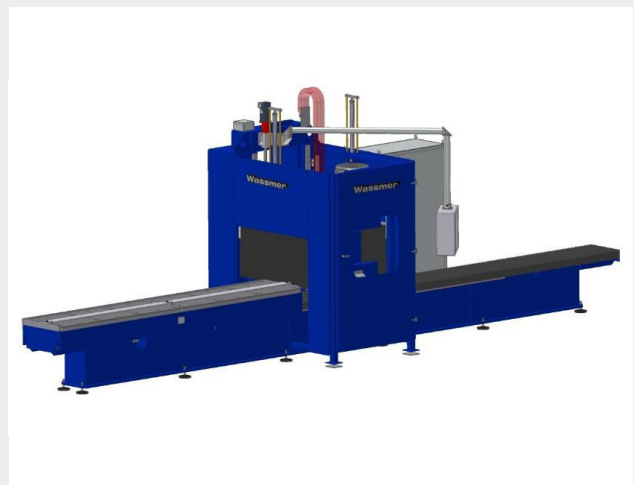
# Surface grinding machine PSM-06K-T

The grinding machine consists of a solid machine stand, a processing table and a horizontal grinding unit.

The stones to be grinded are placed side by side on a processing table against a fixed stop and manually clamped from the opposite side. The infinitely variable feed unit moves the processing table backlash-free on linear guides to the grinding unit. The clamped parts are grinded with the preset feed rate.

After the grinding process, the machining table remains in the end position for the unloading process until all parts have been unloaded and a release is given manually so that the machining table moves back to its starting position. During loading and unloading, the protective cabin around the grinding unit is automatically closed.

The height and angle of the grinding unit are adjusted by motor via the input on the control panel.





## Surface grinding machine PSM-06-RS-K

The grinding machine is equipped with a horizontal grinding unit. The work carriage has been specially designed for converter stones. The carriage can be swivelled manually along the longitudinal axis. Parallel formats can also be ground.

The desired wedge angle of the converter stone is set via a hand wheel on the carriage in the range of 0 - 7°. While the operator removes the finished converter stones and places new stones, the rubber curtain in front of the milling unit lowers as protection. When the next grinding process is started via the two-hand control, it is automatically raised again. This machine is designed for dry grinding of magnesite converter stones. Suction nozzles are already fitted at the appropriate points. A version for wet grinding is also available on request.

- One-sided grinding horizontal
- Plane-parallel and wedge formats
- Work table can be swivelled manually lengthwise 0 - 7°.
- Grinding tolerance  $\pm 0,15$  mm
- Dry or wet processing
- Feed via ball screw or toothed rack
- Infinitely adjustable feed
- Speed infinitely variable
- Control system SPS

# Surface grinding machine PSM-06-SP with clamping device

With this grinding machine, slide plates can be grinded parallel or one-sided. The machine is equipped with a horizontal grinding unit and works in reversing mode.

A flexible clamping device is mounted on the work carriage, which can clamp all common slider plates. A total of four plates are clamped and grinded per pass. The grinding tool is water-cooled.

Three different grinding programmes are available:

1. Grinding with one infeed, lift off the tool and return in rapid traverse.
2. Grinding with one infeed, in return without infeed at the same speed for smoothing the surface.
3. Grinding with multiple infeeds for large allowances

- One-sided grinding horizontal
- Sliding plates
- Automatic programme cycle
- Planicity  $\pm 0.02$
- Wet processing
- Infinitely variable feed
- Infinitely variable speed
- Control system SPS



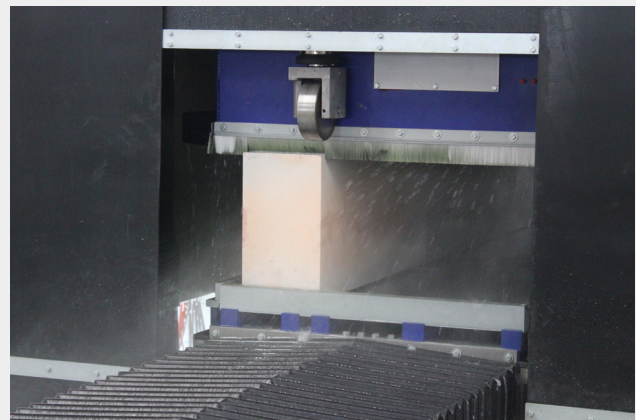
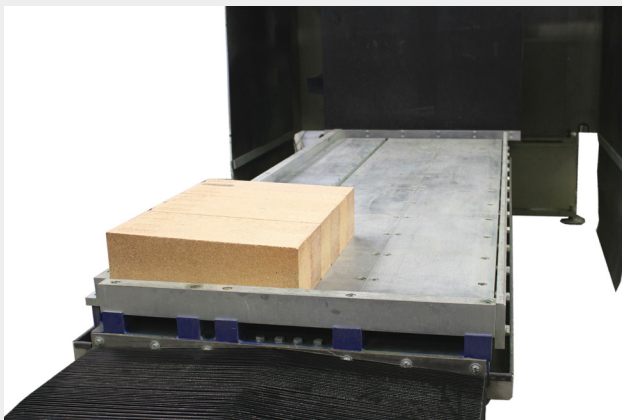
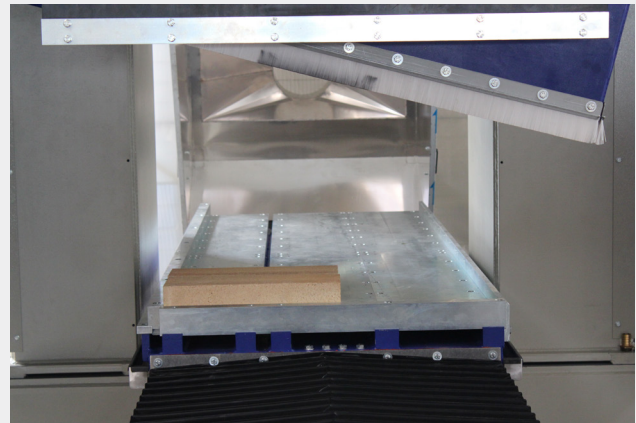
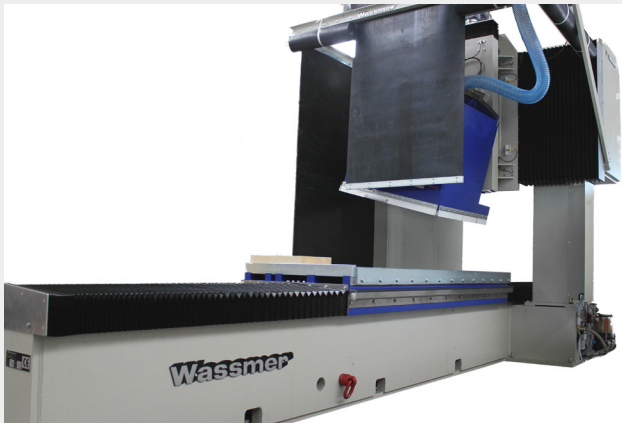


## Surface grinding machine PSM-06-RS-K with extended carriage

The grinding machine is equipped with a horizontal grinding unit. The work carriage is specially designed for clamping large blocks or several small formats. Parallel and wedge formats can be grinded. The desired wedge angle is automatically set via the grinding unit.

While the operator removes the ground formats and places new blocks, the rubber curtain in front of the milling unit lowers as protection. It is automatically raised again when the next grinding process is started via the two-hand control.

- One-sided grinding horizontal
- Plane-parallel and wedge formats
- Grinding unit automatically swivels 0 - 15°.
- Grinding tolerance  $\pm 0,15\text{mm}$
- Dry or wet processing
- Feed via ball screw or toothed rack
- Infinitely adjustable feed
- Speed infinitely variable
- Protection device
- Control system SPS



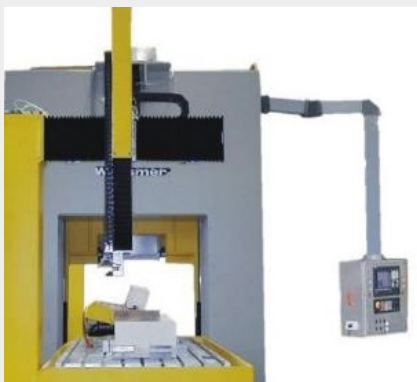
# Surface grinding machine PSM-06-W-K with two carriages and grinding roller

Grinding machine for glass tank blocks for horizontal grinding of a surface as well as the profile of the inside of glass tank blocks. The machine is equipped with a roller grinding unit with CNC contour control, 2 laser measuring bridges and 2 work carriages.

The machine consists of a machine bed with 2 work carriages and the machine bridge on which the vertical slide is mounted. The workpieces are clamped on the T-slot tables of the work carriages.

The work tables can be swivelled manually up to an angle of 30 °. The adjustable angle accuracy is < 0.1 mm. A laser measuring system is mounted above both loading positions of the work carriages. This system scans and measures the surface of the workpiece. The recorded surface profile is transferred to the machine via the computer and the working carriage or the vertical carriage is adjusted accordingly.

- 1-sided horizontal parallel, angular and form grinding of blocks
- 2 Work carriage with T-slot table
- Manual angle adjustment 0 - 30°.
- 2 measuring stations on each work wagon
- Wet processing
- CNC-controlled grinding roller
- Feed drive with ball screw or toothed rack
- Safety device
- Grinding tolerance  $\pm 0.1\text{mm}$
- Infinitely adjustable feed
- Speed infinitely variable
- Control system CNC



## Format grinding machine DFS-02 0°- 45°

This grinding machine can be used to grind blocks parallel or angular on one side. The machine is equipped with a vertical grinding unit. An additional swivel fence is manually adjusted in width and angle via 2 adjustment spindles.

The block is placed on the worktable and struck against the swivel stop. The Block is placed against the fence transversely to the feed direction. The Block can also be aligned with a line laser. The worktable is stationary and the grinding unit moves in the feed direction.

- One-sided grinding vertical
- Plane-parallel and angular formats
- Work table with manually adjustable angular fence 0 – 45
- Grinding tolerance +/- 0.2mm
- Dry or wet processing
- Unit feed via toothed rack
- Infinitely adjustable feed
- Speed infinitely variable
- Control system SPS





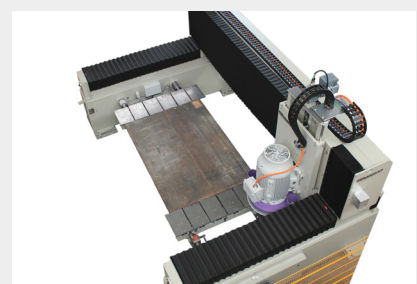
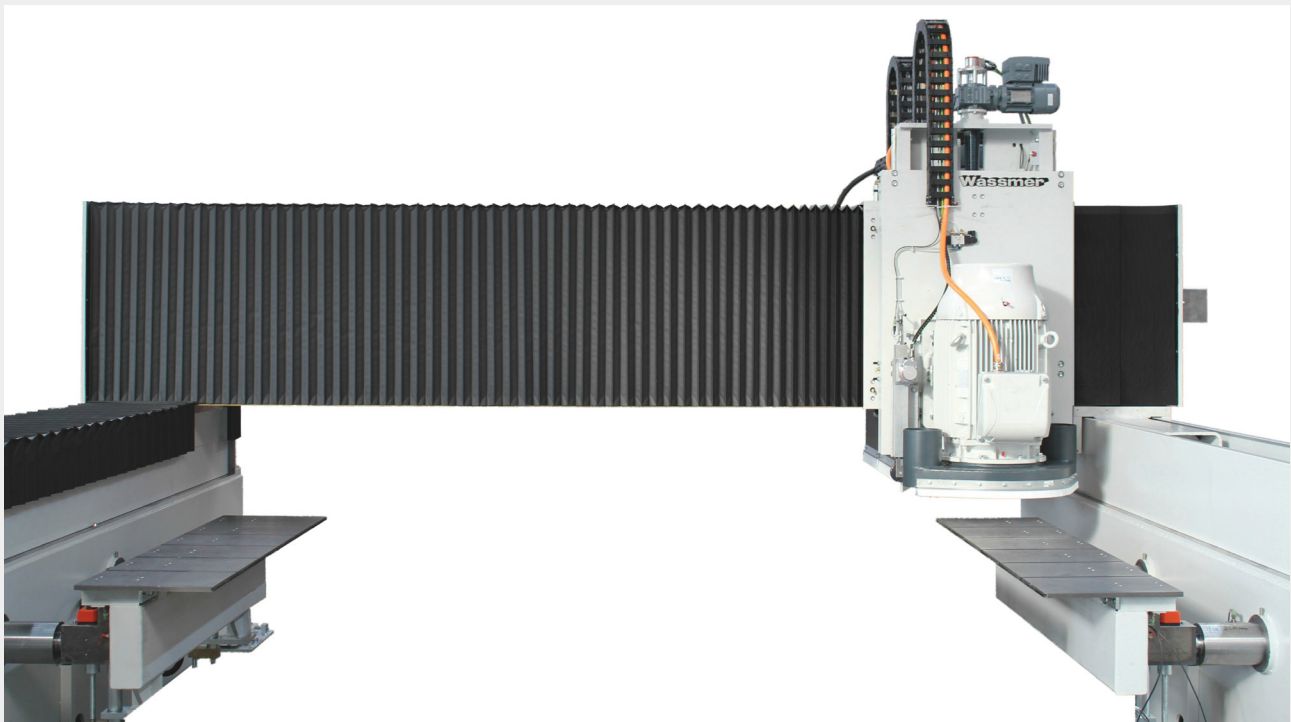
# Grinding machine for kiln cars BWS-06

This machine cleans, measures and grinds kiln car surfaces. The machine is placed over the existing tracks and the wagons run into the machine to a stop and are clamped from the other side.

The surface is cleaned with two counter-rotating brushes and vacuumed accordingly. The measurement starts automatically and the wagon is measured on several lines. The measured flatness is transmitted to the control system and, depending on the specification of a tolerance to be maintained, the carriage is grinded or transported further out of the machine. During the grinding process, the upper layer is clamped laterally over the entire width

As a complete system, the transfer tables, chain pushers and extraction systems are also integrated.

- One-sided grinding horizontal
- For all sizes of kiln cars
- Lateral tension with compensation
- Automatic cleaning, measuring, grinding
- Feed drives with servo and ball screw
- Grinding tolerance  $\pm 0.4\text{mm}$
- Dry processing
- Infinitely adjustable feed
- Speed infinitely variable
- Control system SPS





## Overview of info material:

- ➡ **Single sided grinding machines**
- ➡ Two-sided and three-sided grinding machines
- ➡ CNC-controlled machines
- ➡ Sawing machines
- ➡ Drilling machines
- ➡ Complete refractory systems, technical ceramics
- ➡ Complete systems for graphite machining
- ➡ Plants for building materials and ceramics
- ➡ Lamination machines

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