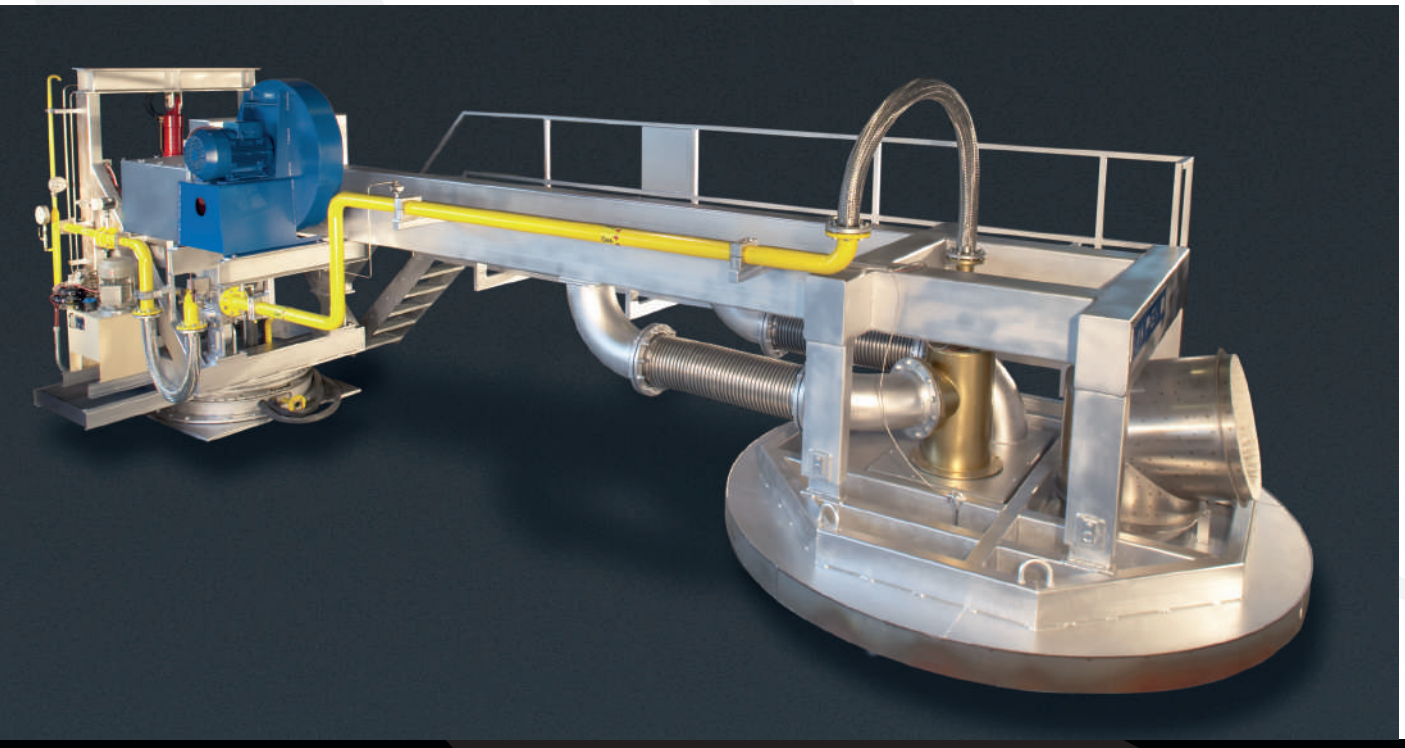
Vertical ladle heaters
Vertikale Pfannenfeuer

For maximum energy savings the cardanically suspended heat shield guarantees a tight sealing of the ladle.

With MAPEKO's soft drying system FOEHN© very slow heating rates (<10° C/h) can be attained – ideal for monolithic linings.

MAPEKO heaters with additional oxygen system can achieve complete combustion with lower emissions of hazardous fumes (this is typically used with Dolomite bricks and pitch bonded linings).

For further environmental impact reduction MAPEKO offers secondary off-gas extraction at the ladle rim and post-combustion systems.

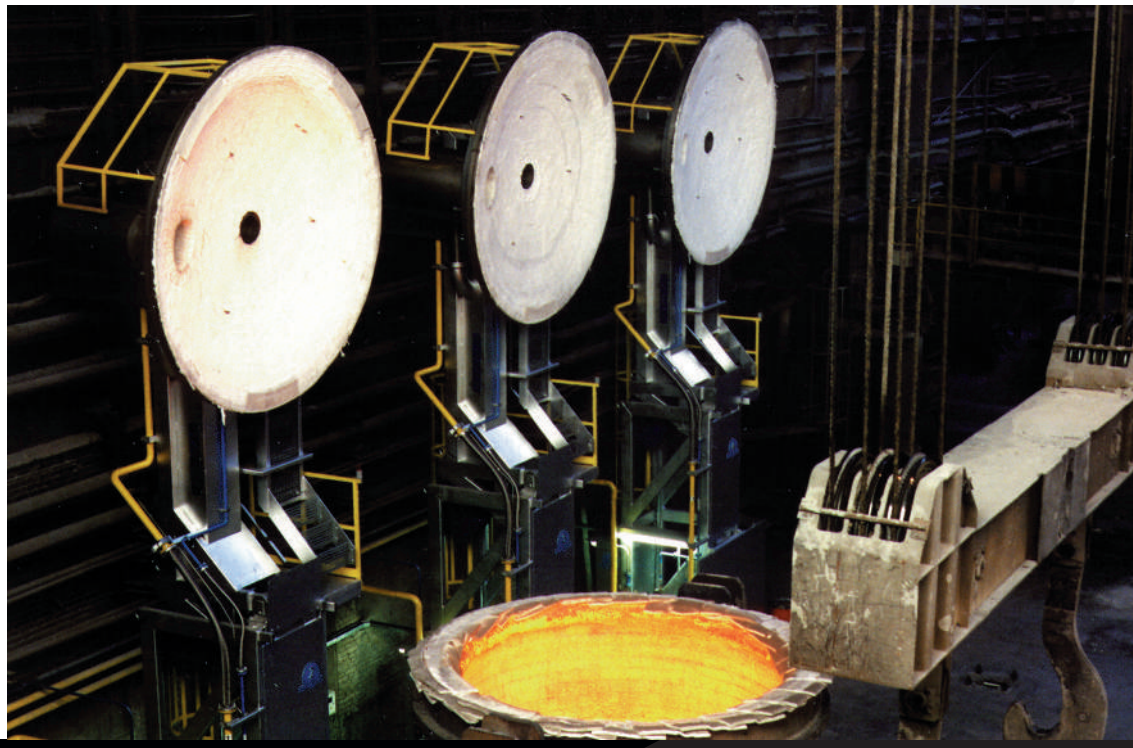


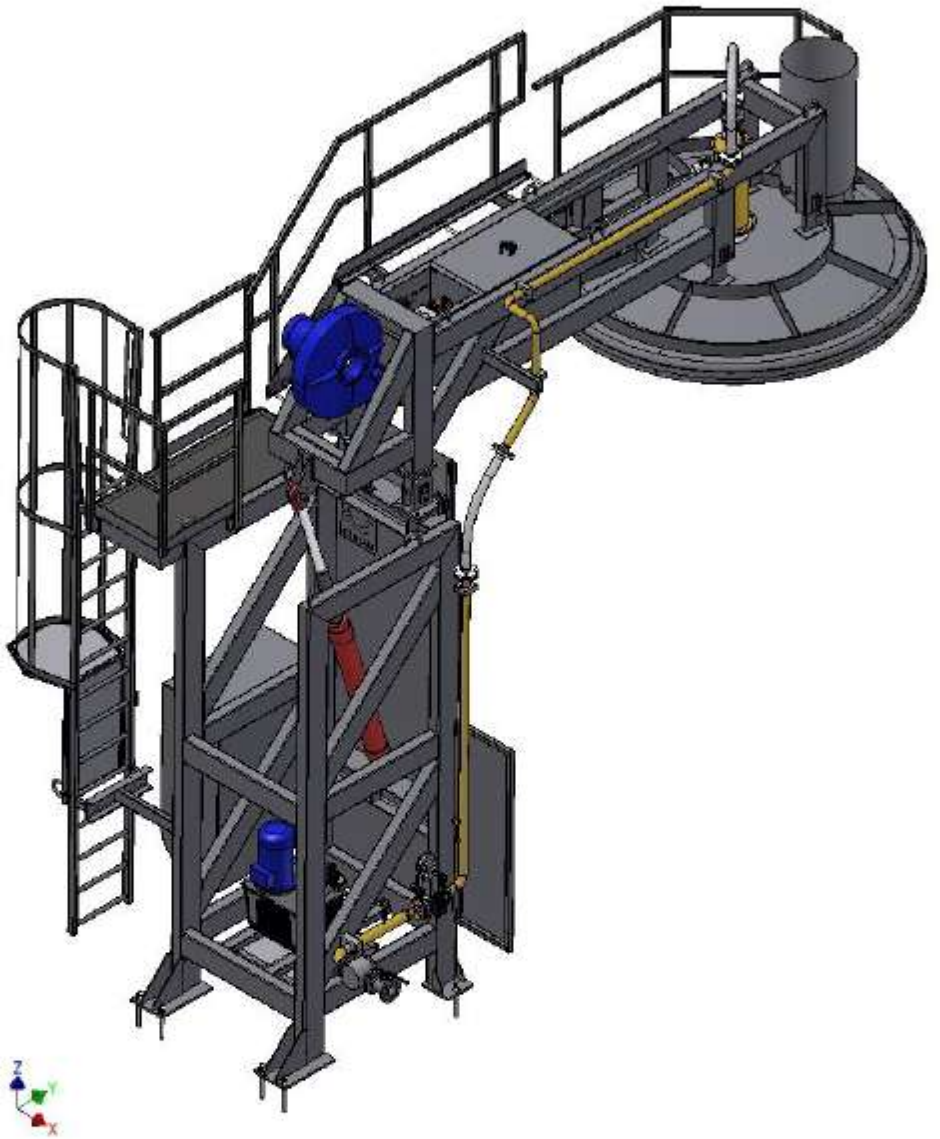
Für maximale Energieeinsparungen sorgt die kardanische Deckelaufhängung, die eine bestmögliche Abdichtung der Pfanne gewährleistet.

In Kombination mit dem soft drying system FOEHN© werden extrem langsame Temperaturanstiege (<10° C/h) erreicht. Z. B. für das Trocknen monolithischer Zustellungen.

MAPEKO Feuer mit Zusatz-Sauerstoff-System erreichen niedrigste Emissionswerte durch nahezu vollständige Verbrennung aller ausgasenden Schadstoffe.
Diese Feuer sind insbesondere geeignet für Pfannen mit Dolomit-Auskleidung und/oder pechgebundener Zustellung.

Für noch sauberere Abgase können MAPEKO-Feuer mit Randabsaugung und einem Nachverbrennungssystem ausgerüstet werden.





Example picture
Required heater with ladder on side direction!

MAPEKO
economical preheating

Scope of delivery

3.1 1 pc. vertical last minute burner

3.1.1 1 pc. MAPEKO high performance burner, type MGE 3 – 1.500 kW

~ 80 kg

Burner head completely made of heat- and temperature-change-resistant stainless steel cast.
Incl. ignition electrode, ignition transformer and UV cell for flame supervision.

3.1.2 Energy control line, NG, p_e = 100 mbar

~ 140 kg

All elements are assembled and wired acc. to DIN EN 746-2, 2011!
Checked by DIN/DVGW.
Unit is shop-tested due to complete installation and testing at our works prior to delivery.

3.1.3 Control line - COMBUSTION AIR

~ 300 kg

All elements are assembled and wired. Unit is shop-tested due to complete installation and testing at our works prior to delivery.

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3.1.4 Ladle cover, ceramic fibre insulation - ø 2.700 mm

~ 1.200 kg

Reinforced steel structure with cardanic suspension and exhaust gas pipe.

Insulation: 150 mm thick, vertically arranged and highly compressed ceramic fibre, t_{max} = 1.200°C, gravity = 300 kg/m³; rim insulated with segments of concrete, already dried at our works and thereby ready for immediate use.

Cardanic suspension at the cantilever arm guarantees optimum sealing of the ladle, able to compensate variations in heights from one side to the other side.

All parts coming into contact with flame or exhaust gas are made of heat- and temperature-change resistant stainless steel.

Corrosion protection:
Steel parts de-rusted and double coated with heat resistant paint (250°C). Coating according to RAL 9006 (white aluminium, silver aluminium) with layer thickness of approx. 80µ. The paint fulfils DIN-EN-ISO 12944-6 for all 6 corrosive categories.

3.1.5 90°-Swivel drive

~ 360 kg

1 pcs. hydraulic aggregate MH-Rexroth with hydraulic cylinder HOERBIGER

All elements are preassembled and wired. Unit is shop-tested due to complete installation and tested at our works prior to delivery.

3.1.6 Steel construction

~ 2.600 kg

Machine frame, cantilever arm, gangway for access to ladle cover, railing on ladle cover for maintenance, heat protection.
Ladder on side direction.

Corrosion protection:
Steel parts de-rusted and double coated with heat resistant paint (250°C). Coating according to RAL 9006 (white aluminium, silver aluminium) with layer thickness of approx. 80µ. The paint fulfils DIN-EN-ISO 12944-6 for all 6 corrosive categories.

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3.2 Operation of vertical last minute burner LMB

The offered unit is to heat up empty ladles in vertical position. The operation is simple and clear. The operator chooses the required program number at the **external program selector** and -if necessary- modifies the FINAL-temperature.

By pressing the button BURNER ON the selected program is released. All other functions proceed automatically:

- The combustion-air blower starts running
- The cantilever arm with ladle cover and burner moves vertically downwards onto the ladle by means of a hydraulic cylinder. The last part of swivel movement is done by the ladle cover's own weight for tight sealing of the ladle. Ladle is completely covered – no gap between.
- After a pre-ventilation start is released by burner control device and the flame is ignited directly by high voltage - no manually ignition, no ignition burner!
- Then the ladle is heated up according to the selected heating program - no manually adjustment, no survey by eyes!
- After the program has ended, the final temperature is held until the ladle is to be used and the operator presses the button BURNER OFF: The energy supply is cut and the cantilever arm moves vertically upwards.

During the entire heating process the burner is monitored by a UV cell. In case of a flame disruption the energy supply is cut.

After each heating cycle the tightness of the main valves is checked automatically with the tightness control device. In case of a failure the unit cannot be started again unless the failure has been cleared.

In case of any failure shut-off and following re-start the unit continues at that certain step of program where it stopped (as long there was no power failure).