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**6<sup>th</sup> International Ankiros Foundry Congress**  
**6. Uluslararası Ankiros Döküm Kongresi**



**Bu bildiri 6. Uluslararası Ankiros Döküm  
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**ANKIROS 2012**

## **Innovations in StrikoWestofen**

**StrikoMelter<sup>®</sup>**  
**Westomat<sup>®</sup>**

**PurEfficiency<sup>®</sup>**  
**Rim cleaning jet for riser tube**

# StrikoMelter®

The **StrikoMelter**® - setting new standards in its class.

Almost complete metal yield while at the same time providing the most efficient use of energy and maximum longevity:

The **StrikoMelter**® is in many ways a unique product and offers foundries of all sizes particular efficient production conditions.





**7.300**

**Extremely long-lasting.**

Even 20 years is not unusual: The impressive long-life cycle is one of the outstanding features of the **StrikoMelter**®.

This makes it the most robust furnace in its class.

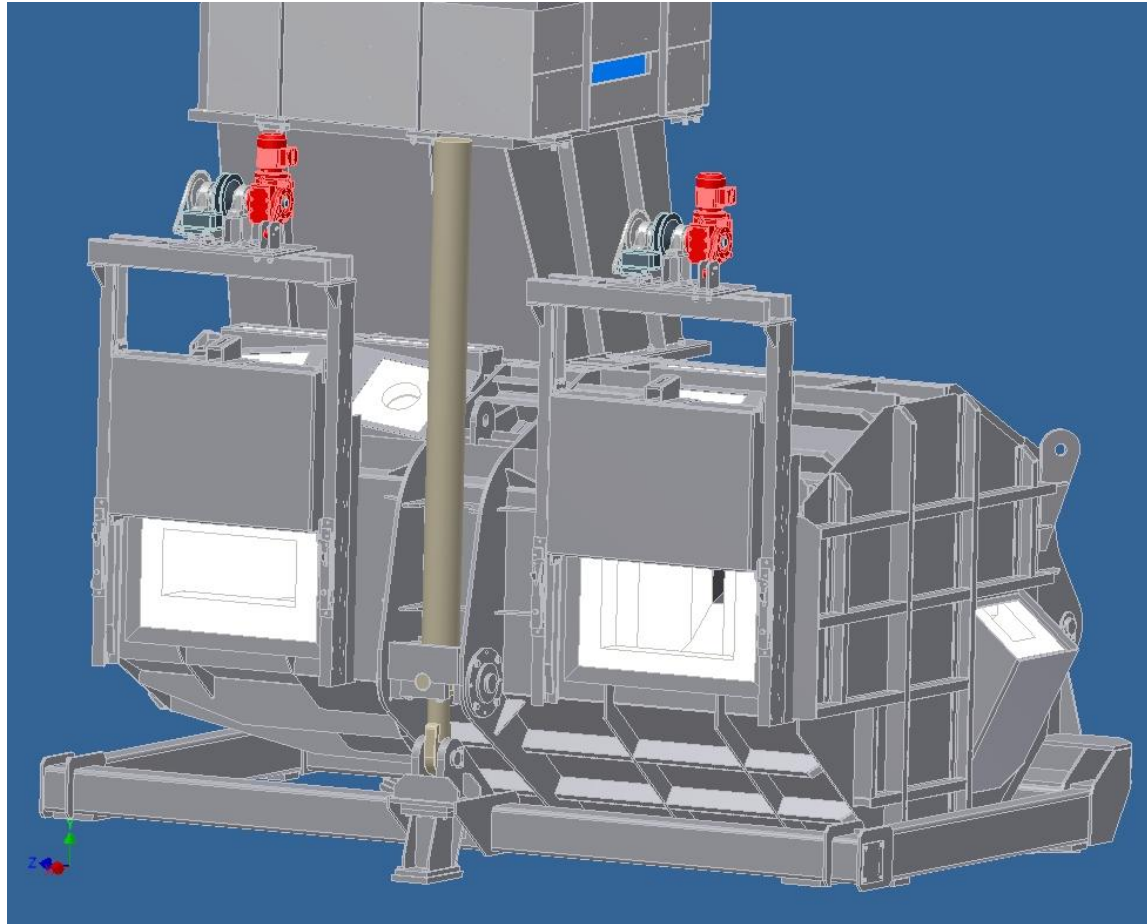


**7.000**

**Impressive melting capacity.**

Up to 7,000 kg of raw material per hour can be melted in the largest **StrikoMelter**®. The integrated heating of the material being melted significantly accelerates processes. Thanks to the recuperation principle, no other mechanical components are required. Energy that is generated is used immediately. From the largest to our smallest furnace. The well-conceived graduated series of designs offers the right furnace for every need. All the way down to 350 kg/h melting capacity.

# STRIKOMELTER® - PUREFFICIENCY.



## Goal: Energy Saving



- **Maximum energy efficiency**  
**525 kW/t**

An energy consumption of 525 kWh/t was measured in **benchmark testing** under **real operating conditions in foundries** (720°C bath-temperature).



- **25.000 tons kept melt at constant heat in holding area**

The 2-chamber principle ensures be used without further treatment in the casting process.



- **99,7 % Maximum material recovery**

With a metal yield of up to 99.7%, the **StrikoMelter<sup>®</sup>** performs on highest level and amortizes the project within a year.

## **Energy savings**

achieved by the following working-out potentials with right analysis of modifications:

### ➤ **Furnace Geometry / Steel construction**

- reinforced ribs
- enlarged melting chamber and shaft
- improved roof construction of holding chamber for
- high stability and maximum strength with minimum use of material

### ➤ **Refractory contour in stable and durable design**

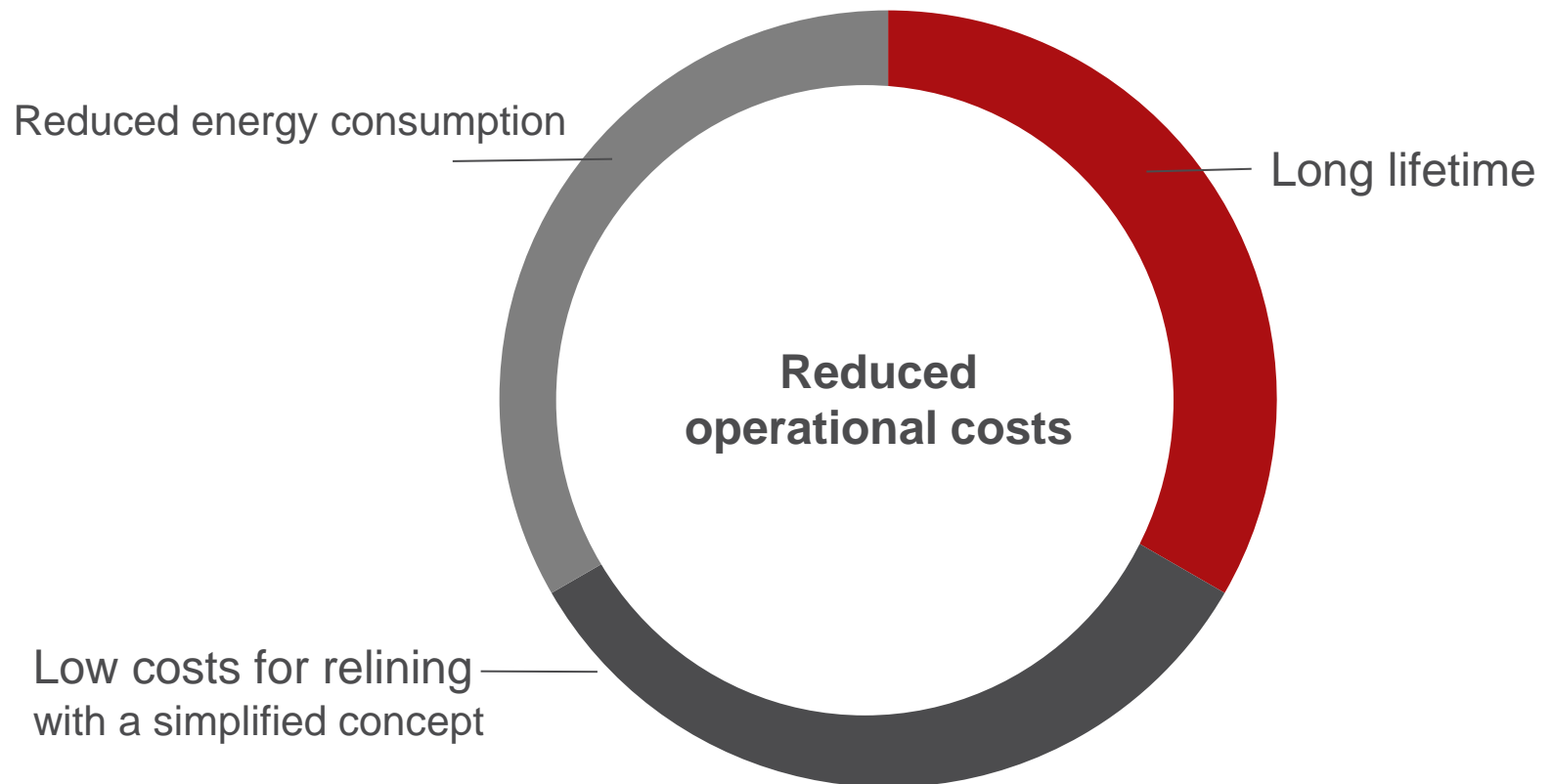
- new refractory materials in the shaft to reduce diversity of materials and erosion
- improved heat resistance for longer life times
- 120 – 160 mm of insulation layers all around the furnace
- high resistant refractory for areas with high mechanical stress (shaft, doors)

### ➤ **Burner design**

- calculations of burner assemblies and -control for optimized burner performance and thermal radiation: Gas-flow, heat transfer and heat conduction

## **Customer benefits.**

STRIKOMELTER® - PurEfficiency.





# STRIKOMELTER®-PUREFFICIENCY

## Available Furnace Sizes in tilting and non-tilting version

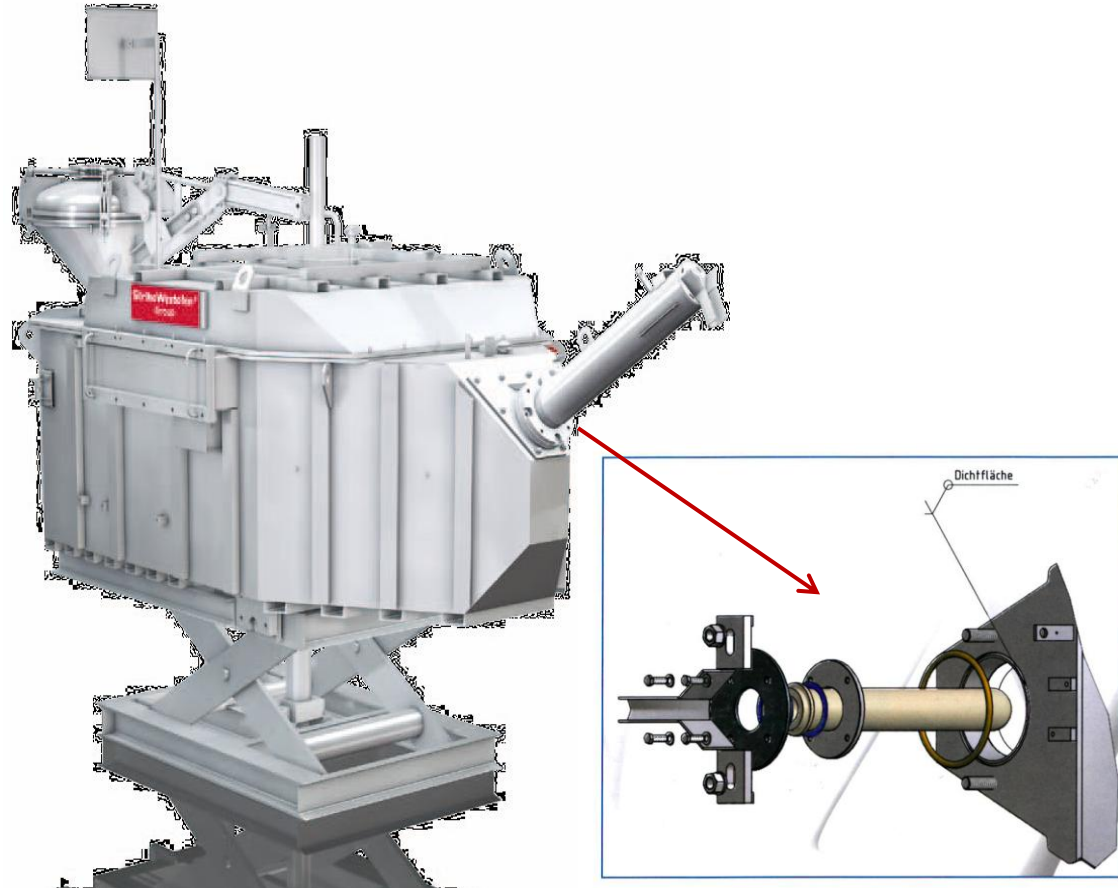
- **MH II-T/N 3.000/1.500**  
3.000 kg bath capacity  
1.500 kg/h melting capacity
- **MH II-T/N 4.000/2.500**  
4.000 kg bath capacity  
2.500 kg/h melting capacity
- **MH II-T/N 6.000/3.500**  
6.000 kg bath capacity  
1.500 kg/h melting capacity

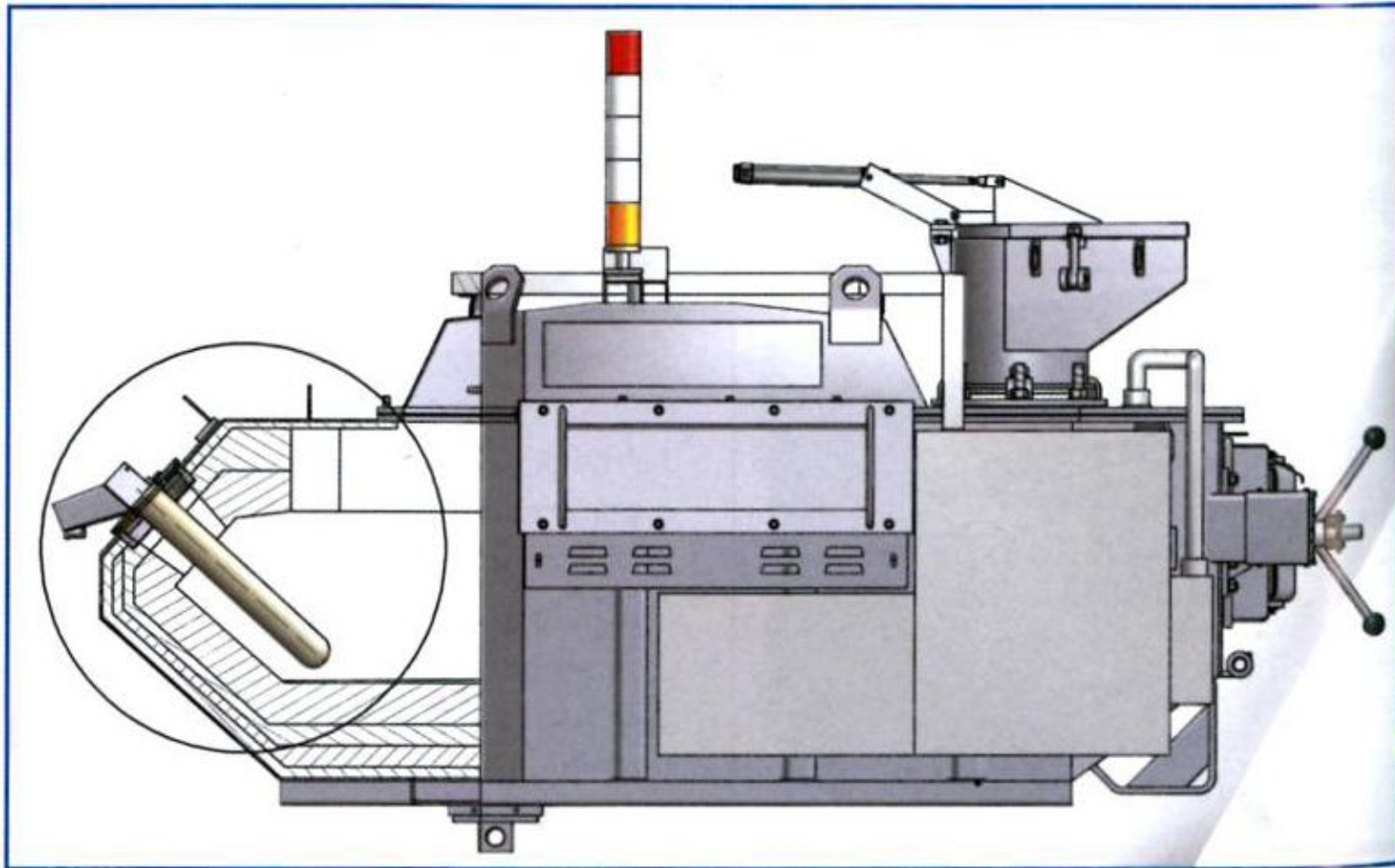
# **WESTOMAT®**

## **The StrikoWestofen dosing furnace**

### **Requirements:**

- **improvement of dosing accuracy**
- **high productivity**
- **reduction of energy consumption**
- **optimization of handling, easy installation and maintenance**
- **Riser tube**





## Technical Features:

- **PneuCo®**  
Superb dosing precision
- **Porous plugs**  
high metallurgical quality of the melt
- **Elongated riser tube**
- **Electrically heated launder**
- **Energy management**  
with optimized temperature consistency
- **Profibus connection,**  
high tech interface,  
process visualization



**Porous plug technology** for molten metal processing in the dosing furnace.

**Extended, heated riser tube** for precision casting and the casting of thin-walled structural elements. Thanks to the closed fill tube which extends right up to the casting chamber, even less oxides are produced during dosing.

**PneuCo®**, the electro-pneumatic metal level detecting method.

A small volume of air is blown through a nozzle just below the upper edge of the dosing tube. As soon as the rising molten metal reaches this hole, the control interrupts the pressure build-up. The lack of mechanical components means a further improvement in production security.

**Biscuit correction:** Due to the feedback data signal from die-casting machine to Westomat®, the out-of-tolerance rate of the biscuit is permanently self-optimized. This results in improved dosing accuracy and significantly reduces the scrap rate.

**Riser tube:** Rim cleaning jet: A short pressure surge prevents the formation of solidified molten metal threads at the transition between riser tube and casting channel. Manual cleaning becomes obsolete and the dosing accuracy remains constant.

**High-performance insulation** – leads to a further 10% reduction of energy consumption. The investment pays for itself - often after just one year.

Cast iron fill funnel without refractory lining: Thanks to reduced wear-and-tear, longer operating lives are achieved compared with lined fill funnels.

**Launder heating:** Optimal melting temperature right up to the point of transfer at low bath temperatures or for long casting channels.

Subframe in various designs: manual, motorized, hydraulically movable or with rotating assembly for the three-dimensional positioning of the Westomat®.

**Pneumatic feed appliance:** The closed ladle system meets the highest demands in terms of health & safety and in terms of maintaining melt quality.



## Further developments **WESTOMAT®**

### Rim cleaning jet

blasts-off of the outlet rim by short compressed air stream (0,1 – 0,2 s), approx. 1 s after finish of the dosing process via two nozzles



## **Functionality**

of the Rim cleaning jet

- › **The discharge rim of the riser tube is kept free from metal deposit.**
- › **The casting flash is split by a short compressed air blast. One part is blown into the feeding launder and stays there. The other one remains inside the riser tube.**
- › **No built-up of deposits on the rim which have to be removed.**
- › **Improvement of dosing accuracy by the constant height of the discharge rim.**

## **Customer benefits**

of the rim cleaning jet

- › Decreased maintenance efforts at the riser tube as outlet rim stays clear of accumulations - no manual cleaning
- › Increased dosing accuracy by constant level of leak edge respectively stabilizing the metal amount
- › No errors at dosing parameter
- › Can be retrofitted to all WESTOMAT® - automatic dosing furnaces





## Practical example (prototype).

Rim cleaning jet.

blown-away  
casting flash



Rim is free  
from deposit.

## **Fastener for nozzles** of the Rim cleaning jet.



Nozzles –  
fastener for easy  
installation and  
adjustment.

## **Scope of supply**

Of the Rim cleaning jet

- › As retro-fit kit or as an optional part of the scope of supply.
- › Automatic control of air jet.
- › Pneumatic components integrated into the standard pneumatic cabinet of the WESTOMAT<sup>®</sup>.  
8 mm tube (copper) from pneumatic cabinet to riser tube.
- › 2 nozzles with fasteners to be fixed at the riser tube steel insert.





## Pneumatic cabinet WESTOMAT®

Rim cleaning jet.



Pneumatic cabinet of  
**WESTOMAT® 1200 SL**

Added accessory block for rim-injection system:

- ball tap
- pressure reducer
- magnetic valve

Compressed air taken from the valve block

Accessory bloc

Thank you for your time!

[www.strikowestofen.com](http://www.strikowestofen.com)

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