

# PAUL WURTH

SMS group

## Pig Casting Machines

Blast Furnace Plants



# Pig Casting Machines

## Leading the way in the next generation of Pig Casting

Paul Wurth offers modern Pig Casting Machines for the latest generation of casting, process control and monitoring. Our technology aims at decreasing maintenance and installation time as well as increasing production and control.

In an effort to meet the demand of the marketplace, several different designs of casters are available. They can be either a single strand or double strand machine, including several optional features. The size and ruggedness of the caster is primarily based on the tonnage per hour and the ladle size.

Another consideration in the design process is the method by which the material will be poured into the caster. Some common applications use a ladle tilter or a submarine ladle. Each of these pouring conditions is different and will require different design arrangements in the pouring area.

Paul Wurth is able to accommodate many different design considerations into the standard design along with a full automated control package.

All of our machines are built based on a modular construction type design which allows for accelerated erection times allowing the machine to be brought-up online quicker.

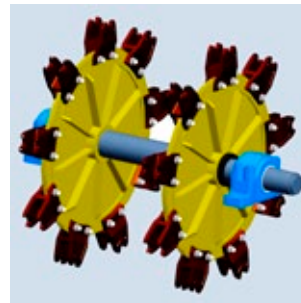
Although our standard machine is unique, it can come with many different options and is tailor-made by engineering each machine to the specific needs of the customer. For normal duty in moderate to short lengths, and for the severe duty of continuous operation with longer machines, we are able to fit the customer's needs.



Pig Casting Machine



Shop testing - Water cooling after casting



Sprockets



Stationary wheel

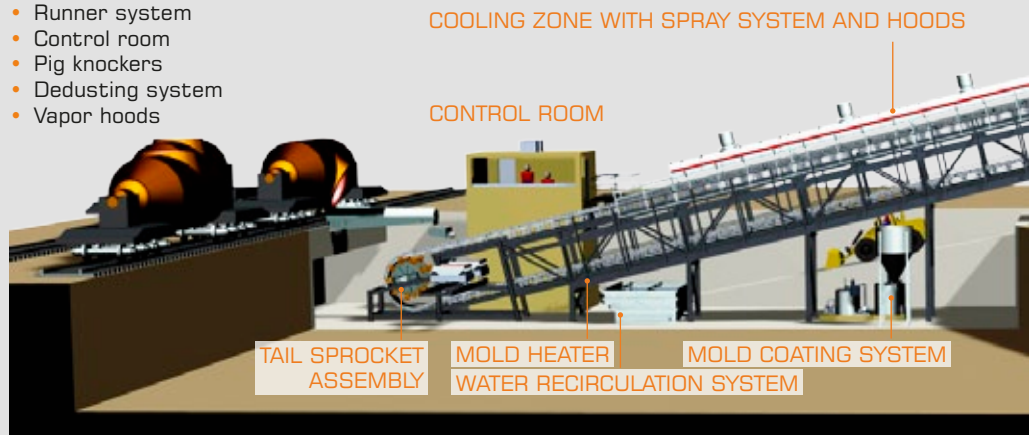
### Basic Arrangement

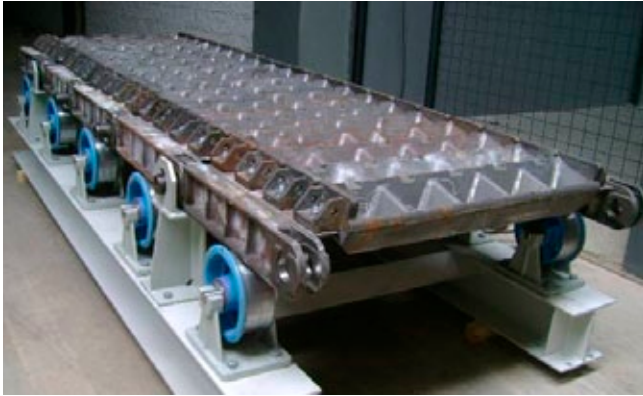
#### Standard features:

- Modern control system
- Mold heaters
- Mold coating system
- Shot box and removal system
- Take-up bearings – at tail sprocket
- Variable speed maintenance-free drive
- Pig mold with pig lifters and mold run-offs
- Walkways
- Water cooling spray
- Automatic operation mode
- Water recirculation system

#### Available optional features:

- Automatic lube system
- Independently driven double strand
- Runner system
- Control room
- Pig knockers
- Dedusting system
- Vapor hoods



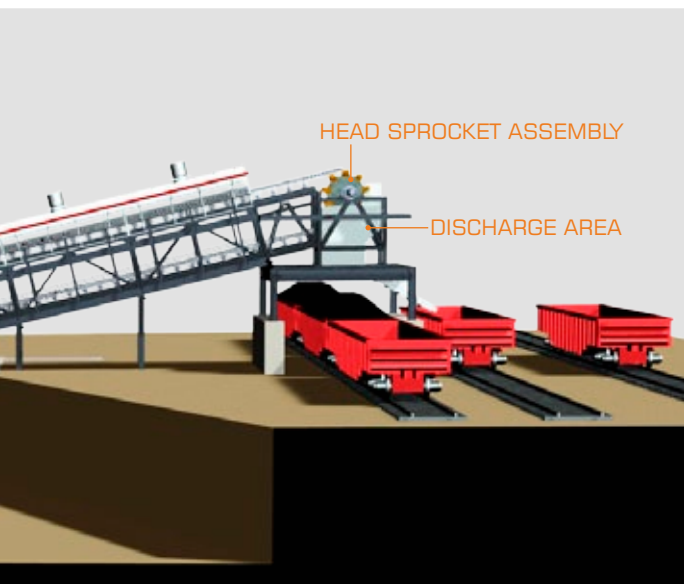


Modular element of pig casting machine



## Standard components allow for interchangeability and fast turnarounds

Our machines have universal components that may be easily interchanged. Lead times for replacements and spares are also shortened since most of the components will be off-the-shelf items. All of our components are designed for the harsh environment and for repeated operation, engineered for a maximum availability.



## Technological advancements

We have improved upon our multiple designs utilizing the latest technologies and tools.

We put forth an extensive amount of effort into the FEM analysis of the molds through repetitive thermal cycles. Through this analysis, we were able to determine the optimum mold to material ratio as well as fine tune the cooling spray system to protect the mold and reach a steady-state condition with acceptable temperature values. These improvements allowed us to achieve a pig discharge temperature well suited for handling.

Through our modeling and concept analysis we are able to visualize feasible options.

## Main advantages

- ▶ High machine availability and reduced maintenance requirements thanks to water spray systems and mold coating spray systems.
- ▶ Optimized water circuit using a direct feed for the hydraulic cooling nozzles and a recirculation system avoiding waste water.
- ▶ Compact drive system requiring little maintenance.
- ▶ Stationary wheel design requiring no lubrication and providing easy maintenance and longer life.
- ▶ Sprockets with removable teeth for ease of maintenance and increased longevity.
- ▶ Extensive temperature monitoring used to control and monitor the temperatures throughout the casting process.
- ▶ Fully automated machine operations including pouring, machine speed, water cooling spray, mold coating mixing and spray control.
- ▶ Advanced solutions to meet most stringent environmental constraints, i.e. fume caption at liquid pig iron pouring area and filter station, vapor captioning hoods, noise control at pouring area of pigs, water recirculation system.

## Design upgrades and reconditioning services

Paul Wurth can offer a complete product reconditioning service estimate. All reconditioning services are conducted in modern, fully equipped shops utilizing strict quality control methods. Equipment is completely disassembled, inspected and returned to its "as new" condition. In addition, all new updated features are available for incorporating into the reconditioning process to assure your equipment will withstand the more severe modern operating conditions. Our sales and engineering staff are at your disposal for recommending features that are most suitable for your application.



# Engineering & Technology worldwide

The Paul Wurth Group is today one of the world leaders in the design and supply of complete plants, systems and processes as well as specialised mechanical equipment for

## ■ the iron & steel industry:

Blast Furnaces & Auxiliary Plants  
Coke Making Plants  
Agglomeration Plants  
Direct Reduction Plants  
Environmental Protection, Recycling & Energy-Saving Technologies

## ■ other industries:

Systems & Equipment for Non-Ferrous Pyrometallurgy, Electrometallurgy & Residue Treatment  
Intralogistics Solutions for Heavy Loads  
Engineering & Project Management for Civil Construction and Infrastructure Projects

**Feasibility Studies – Conceptual, Basic and Detail Engineering – Project Management – Plant and Components Supply – Turnkey Projects – Assistance in Plant Assembly and Commissioning – Technology and Operations Consultancy – On-site and Remote Operational Assistance – After-sales Services**

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