

CENTRIFUGAL CASTING

Machines and Process Technology



High Material Efficiency

Superior Metallurgy

High Output

Excellent Mold Filling

KÜTTNER

GOOD REASONS FOR CENTRIFUGAL CASTING



Suitable Process to many alloys

- ➔ Steel, Iron & Non-Ferrous

Very good mold filling

- ➔ higher yield
- ➔ less porosity

Close to net shape parts

- ➔ lower machine allowances
- ➔ less and faster machining

No risers and feeders

- ➔ less cleaning time
- ➔ lower return rates
- ➔ lower melting costs

Metallurgical improvements

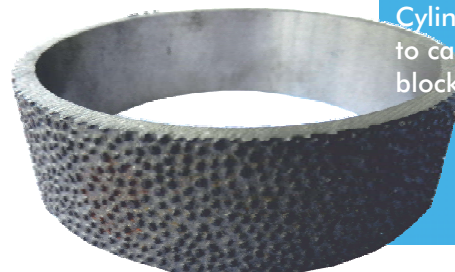
- ➔ fine, dense structures (g-force)
- ➔ increased strength
- ➔ bi-metallic castings possible



Free Shaping

Centrifugal castings are not limited to cylindrical parts. Centrifugal Sand Casting uses sand packages inside a centrifugal casting machine.

Advantages out of two casting processes can be combined. The good molding properties of sand combined with the high G-force mold filling and feeding of the centrifugal casting process.



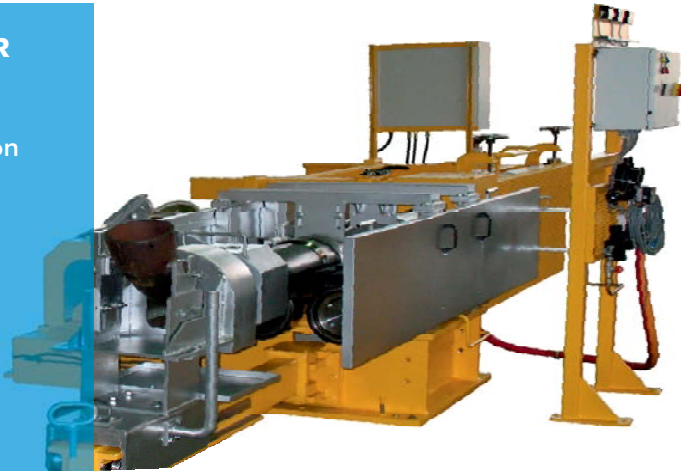
Spiny Lock / Rough Surface

Cylinder liners ready to cast in aluminum blocks

Horizontal Single Station Machines - from Simple to Complex

SAMSUN,TR

Horizontal
Single Station
Machine,
manual
pouring and
casting
extraction



Hot Mold Process

Suitable process for most centrifugal castings. Metal is poured into a preheated, spinning mold. Basic machine provides a reliable spinning station and a semi-automated coating/spraying equipment. Pouring and extracting is conducted manually. The machines are available in light and heavy duty versions, for numerous dimensions.

Outer diameter: from 80 mm to 800 mm
Inner diameter: from 50 mm to 750 mm
Casting length: from 500 mm to 6,000 mm

Automatic
transport ladle
pouring
system/module

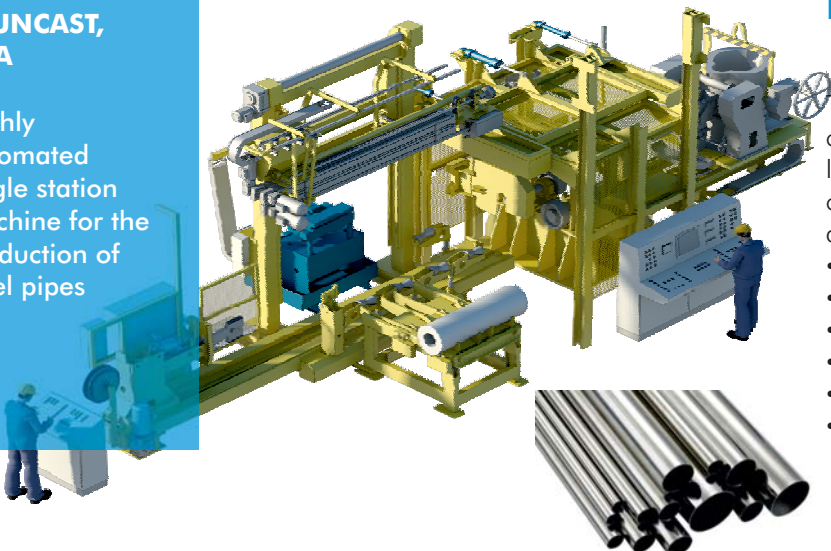


Modular Machine Design

The modular machine design allows you to add automated modules like extracting or pouring. A wide choice of options and accessories convert a basic machine to a highly automated machine, which ensures a reliable casting process. Regardless the use of standardized modules, KÜTTNER also designs tailor-made solutions for your application.

SPUNCAST, USA

Highly
automated
single station
machine for the
production of
steel pipes



Horizontal Single Station Machine

The horizontal single station machine is characterized by its high flexibility and variability. In the high end version, the machine is capable of casting up to 25 castings per hour of consistent quality, due to automated process steps like:

- automatic end plate handling and treatment
- automatic mold brushing
- automatic mold coating / spraying
- automatic pouring
- automatic cooling control and adjustment
- automatic extraction



TAILOR-MADE Solutions for Serial Production

Large Volume Production

Fully automated hot mold centrifugal casting machine.
All process steps are conducted simultaneously.
The molds are revolved clockwise
inside the machine to each
process step.

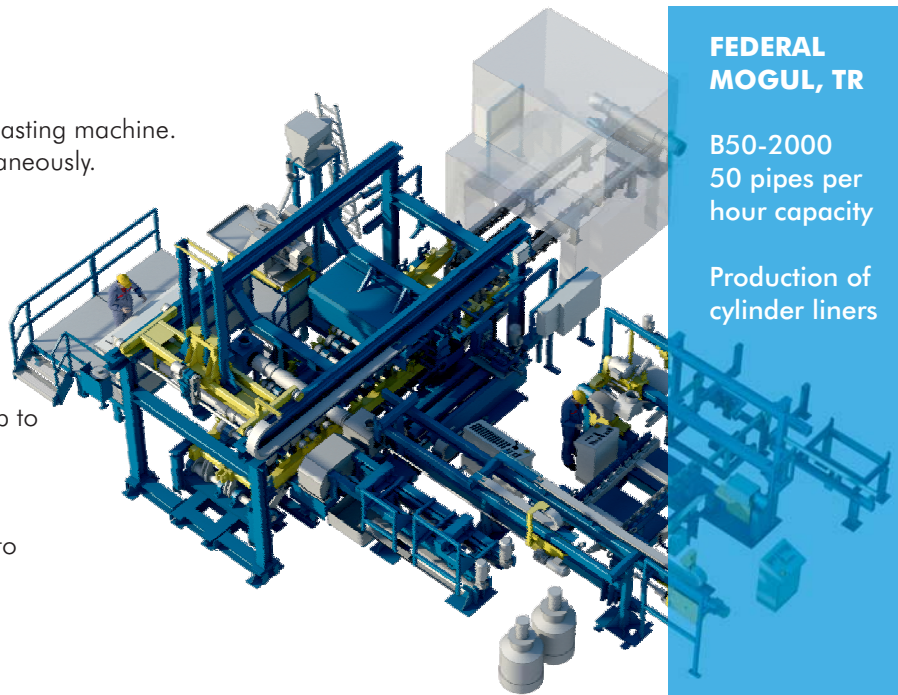
Examples:



cylinder liners up to
90 pipes/h, comes up to
appr. 1,000 liners



soil / drain pipes up to
280 pcs/h
of DN100/3.000,
acc. to DIN EN 877



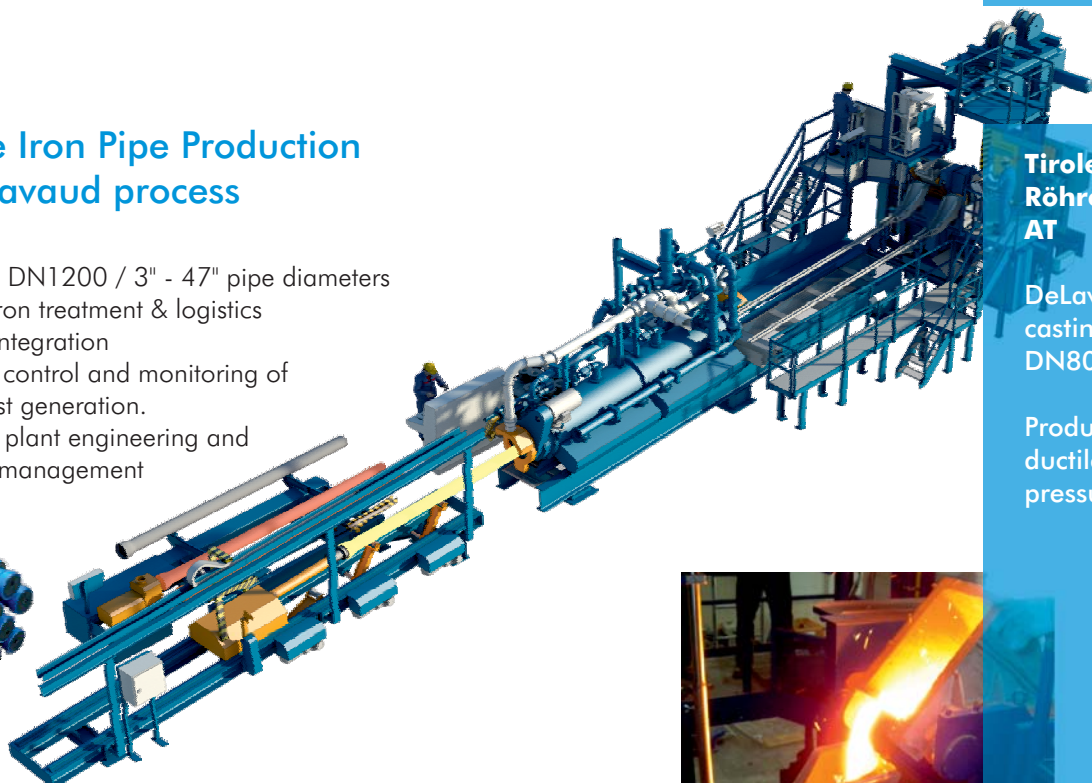
**FEDERAL
MOGUL, TR**

B50-2000
50 pipes per
hour capacity

Production of
cylinder liners

Ductile Iron Pipe Production in DeLavaud process

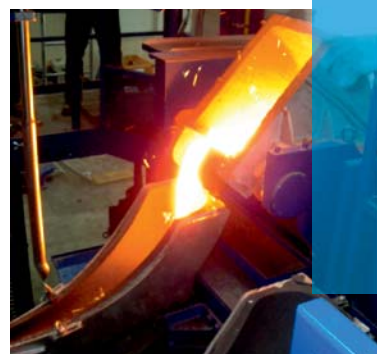
- DN80 - DN1200 / 3" - 47" pipe diameters
- Liquid iron treatment & logistics
- In-line integration
- Process control and monitoring of the latest generation.
- Turnkey plant engineering and project management



**Tiroler
Röhrenwerke,
AT**

DeLavaud
casting machine
DN80 - 200

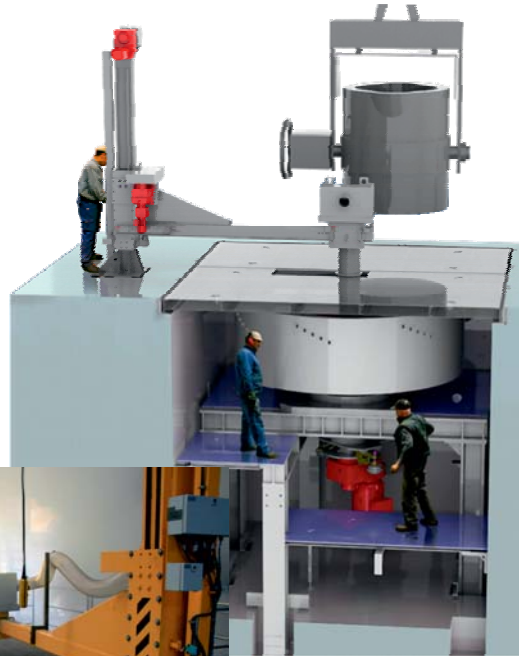
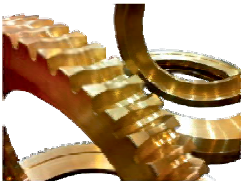
Production of
ductile iron
pressure pipes



Flange Drives - Short in Length, High in Output

Vertical Flange Drive Machine

Ideal solution for heavy parts with a large diameter / length ratio.
Diameters up to 3,000 mm and casting weights up to 16 t are possible.
Parabolic inside shape is obtainable for specific castings.
Parts like rolling mills, gear rims, or bushings are cast with different alloys, from aluminum, copper-alloys, iron, and steel.



**Hundt&Weber
GER**

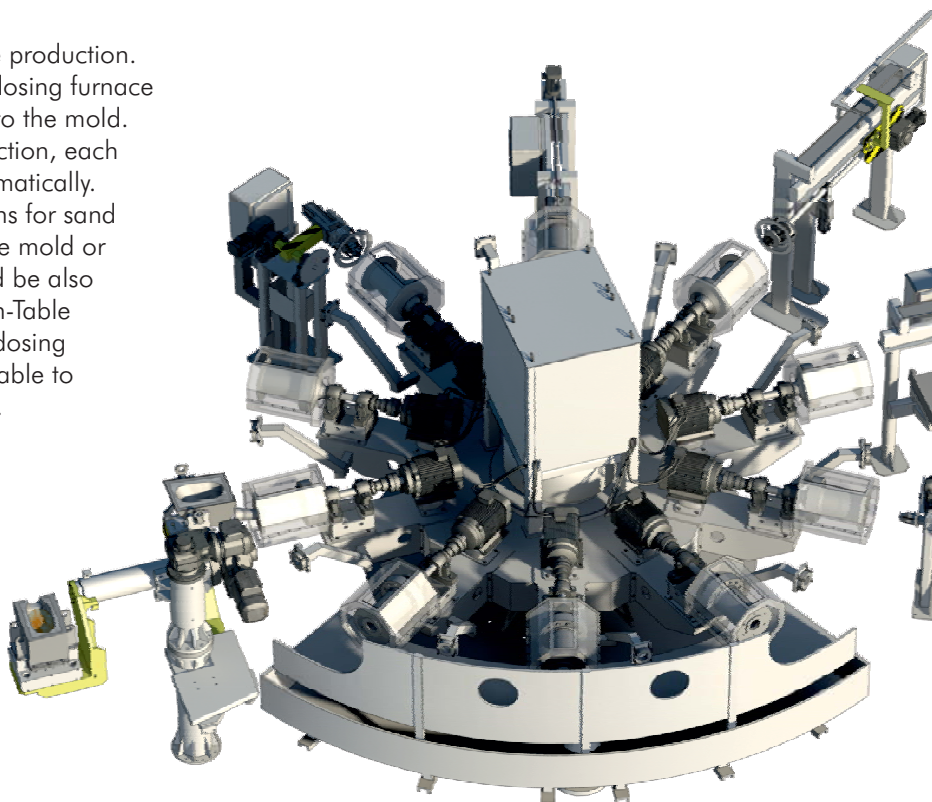
Vertical
Centrifugal
Casting
Machine

Mold diameter
3,000 mm

Production of
gear rims for
wind power
plants

Turn Table Casting Machine

Continuous large scale production.
Metal is poured via a dosing furnace
in the exact quantity into the mold.
Up to the casting extraction, each
process step runs automatically.
Industrial robot solutions for sand
package setting into the mold or
casting handling, could be also
implemented. Twin-Turn-Table
machines with shared dosing
furnaces are also available to
double the productivity.



**MINSK
MOTOR
PLANT, BY**

10 Head
Turn Table
Machine

Production of
heavy duty
cylinder liners
with flange

KÜTTNER GMBH & CO. KG

Originally an engineering company, founded in 1949 by Dr. Carl Küttner, KÜTTNER has evolved into a worldwide group of companies working in plant engineering and construction.

The company supplies and erects turnkey installations for a wide range of process technologies; including melting and material handling in the iron, steel, and foundry industries.

In 2014 KÜTTNER incorporated Küttner Centrifugal Casting GmbH & Co. KG, which was a joint venture with DÜKER.

Centrifugal casting machines with DÜKER Technology have been in operation all over the world for more than 60 years.

The services provided include development of new technologies, engineering and design, supply, installation, and start-up of plants complete with controls and data processing systems.

The KÜTTNER-Group works worldwide and is represented in the international markets through a network of agents and affiliated companies.

