

OUTOKUMPU



The Outokumpu Anode Casting system is a flexible, modular solution to your production needs. It increases the profitability of the smelter and produces a high return on capital investment. The high-quality end products, cast anodes, meet the requirements of modern tankhouse processes.

Anode casting technology

Outokumpu Technology

Increased profitability



The Outokumpu partnership

As one of the world's leading developers and suppliers of technology, Outokumpu Technology designs and delivers plants, processes and equipment tailored to each customer's needs. We provide engineering, project and support services for the minerals processing and metallurgical industries globally.

Our technology has been proven in over 200 weighing and casting units operating in smelters around the world. For this reason, the anode casting equipment designed, manufactured and delivered by Outokumpu represents a reliable choice.

Continuous improvement

We are committed to continuous development that focuses on anode quality and increased automation. Last-minute plant modifications and production shut-downs can be avoided by utilizing our vast knowledge and experience.

Smooth production

The Outokumpu Anode Casting system can be installed quickly and once installed, production runs smoothly, without bottlenecks. This in turn increases the profitability of the whole smelting operation.

A modular concept

In addition to designing and building new anode casting shops, Outokumpu has solid experience in the modernization of existing facilities. The design of our Anode Casting system is modular and an existing plant is therefore easy to upgrade or expand in order to meet higher production requirements.

Features of our Anode Casting:

- Tailor-made designs based on standard units
- Accurate and reliable self-adjusting operation
- Fast and flexible material-handling chain
- Safe operation due to easy monitoring

An accurate and reliable casting system

A tailored flat-wheel design

The Outokumpu Anode Casting systems meet capacity ranges from 20 to 120 tons/hour. Our flat-wheel design serves as a platform for easy mold servicing. It allows unobstructed visual monitoring of the casting equipment to ensure safe working conditions. Wheel speed is accurately adjusted to the optimum speed profile, ensuring smooth acceleration and deceleration of the molds. This results in the production of high-quality anodes with minimal fin or cup formation.

To meet different capacities and requirements, the casting wheel layout can be delivered with the exact number of molds that best suits given production needs. A twin-wheel system is available for larger capacity requirements.

Intelligent weighing and casting

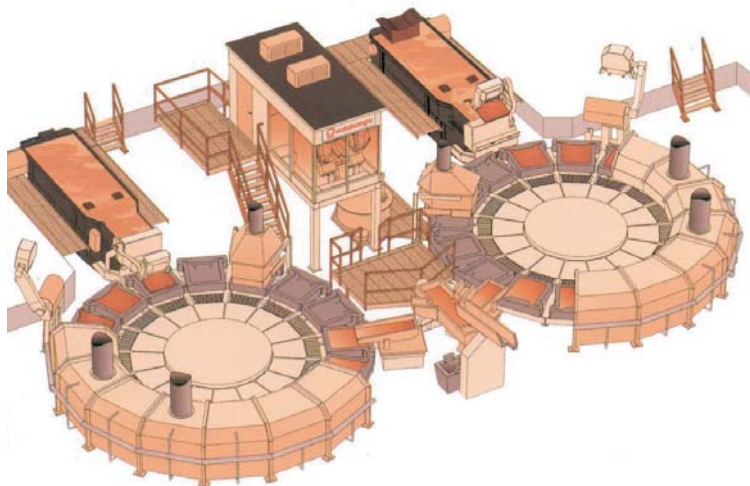
Outokumpu's weighing and casting unit uses intelligent control programs. Metal flow from the casting ladle to the mold is controlled with a pre-selected optimum flowrate. Errors caused by changes in casting conditions, e.g. copper temperature or the weight of the casting ladle, are virtually non-existent.

Fast and flexible material handling

The control of material handling functions during take-off and cooling is fully automatic. The take-offs lift the cast and

cooled anodes into the cooling tank to prevent excess oxidation and to ensure thorough washing. The cast anodes are counted and arranged in bundles of a predetermined size or spaced at the required distances for the tankhouse. Unloading from the bosh tank is performed either by a fork-lift truck or by an anode-lifting bail.

Because of its modular nature, additional collection and handling units can be easily added to the Outokumpu Anode Casting system. The ideal number of these units depends on the size of the casting wheel, desired production capacity and the possible need for the simultaneous casting of anodes of different sizes.



Typical wheel dimensions

Type	Molds	Casting ladles	Take-offs	Max. capacity metric tons (short tons)	Diameter m/(ft)
Twin M-20	2 x 20	2	2 - 4	120 (134)	2 x 11 (36.1)
Twin M-18	2 x 18	2	2 - 4	110 (123)	2 x 10 (32.8)
Twin M-16	2 x 16	2	2	100 (110)	2 x 8.8 (28.9)
M-26	26	2	2 - 3	80 (88)	14.2 (46.6)
M-24	24	1 - 2	1 - 3	65 (72)	12.8 (42.0)
M-16	16	1	1 - 2	45 (50)	9.4 (30.8)

Advantages of a synchronized twin-wheel system:

- Increased reliability due to smaller moving parts and simpler construction.
- Improved anode quality, with even lug thickness and fewer bulges caused by wheel movement, compared to one large casting wheel.
- Greater flexibility in the optimum production rate.
- Continued operation with one wheel e.g. during mold maintenance on the second wheel while casting. Continued one-wheel operation also allows the continuous flow of hot copper from the furnace and reduces the cooling of launders and ladles.
- Simultaneous casting of several different types of anodes.
- Compact design: a twin-wheel system occupies a smaller area than a one-wheel system with the same number of molds.

Outokumpu is a dynamic metals and technology group. Customers in a wide range of industries use our metal products, technology and services worldwide. We help our customers to gain competitive advantage by enhancing their performance. This promise we call the Outokumpu factor.

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