Casting, transport and treatment ladles

Our product portfolio includes casting, transport and treatment ladles with dimensions to suit the particular requirements of our customers. Gearboxes MX-1 up to MX-5 from our MARX gearbox series are available in different dimensions which match the respective ladle sizes.

The current regulations of DIN EN 1247 and the DGUV (Deutsche Gesetzliche Unfallversicherung - German Social Accident Insurance) are an integral part of the design, manufacture and inspection of casting, transport and treatment ladles.

In our Iserlohn and Hennigsdorf sites, we have the option of manufacturing the steel-construction components for our projects ourselves in accordance with DIN EN 3834-2.

As your partner in security issues, we conduct annual inspections in your premises. The main inspections are carried out according to the customer’s wish, either at our factory or on site by one of our specialists.
Crane foundry ladles

45t Crane foundry ladle
Capacity: 45t (GG)
Dimensions: 174"x161" (WxH); 4,430x4,090mm
Weight: 11t (without lining)
Gear unit: Planetary oil bath gearbox PL100mB224V with intermediate gear unit incl. combined tilt drive for manual operation or pneumatic tilting, switchable via a claw clutch

20t Treatment ladle
with pneumatic drive
Capacity: 20t (GG)
Dimensions: 117"x195" (WxH); 2,975x4,955mm
Weight: 6.2t (without lining)
Gear unit: Planetary oil bath gearbox PL100mB224V with pneumatic drive

12t Crane foundry ladle
Capacity: 12t (GG)
Dimensions: 98"x117" (WxH); 2,500x4,090mm
Weight: 2.7t (without lining)
Gear unit: PL63mB144V

3t Crane foundry ladle
Capacity: 3t (Cu)
Dimensions: 71"x80" (WxH); 1,800x2,030mm
Weight: 510kg (without lining)
Gear unit: MX-2 80V
Special foundry ladles

C-suspension with a foundry cauldron as change-over ladle

- Capacity: 2,5t to 3t (GG)
- Dimensions: 83”x100” (WxH); 2,100x2,540mm
- Weight of ladle: 1.3t (without lining)
- Weight of traverse: 1.2t
- Payload: 5t

Tilt drive operated via electrical chain hoist, incl. transport frame

1.2t Drum ladle with electric drive

- Capacity: 1.2t (GG)
- Dimensions: 74”x62” (WxH); 1,870x1,575mm
- Weight: approx. 520kg (without lining)
- Gear unit: SEW helical-bevel gearmotor

Crane-suspension with changeable vessel

- Capacity: 15t, 16t, 18t, 21t or 40t (GG)
- Dimensions: 72”x82” (WxH); 1,830x2,080mm
- Weight: 3t (at 18t-vessel without lining)
- Gear unit: SEW helical-bevel gearmotor

15t changeable vessel for treating and inoculating cast iron. Remote-controlled transport over crane-suspension with electric motor.

18t Changeable vessel

In the background: MARX wire-treatment plant, designed for the aforementioned changeable vessel with crane-suspension. Force transmission from the suspension to the vessel by V-block supports.
Special foundry ladles

6t Bottom pouring ladle
- Capacity: 6t (GG)
- Dimensions: 92''x93'' (WxH); 2,340x2,360mm
- Weight: 2.3t (without lining)
- Gear unit: PL63mB144V
- Additional device: two stopper lifters

6t Lead-Crane foundry ladle
- Capacity: 6t (Pb)
- Dimensions: 101''x71'' (WxH); 2,560x1,810mm
- Weight: 3.7t (without lining)
- Gear unit: SEW helical-bevel gearmotor

3.5t Treatment ladle (Tundish-ladle)
- Capacity: 3.5t (GG)
- Dimensions closed: 85''x142'' (WxH); 2,160x3,595mm
- Dimensions opened: 85''x157'' (WxH); 2,160x3,975mm
- Weight: 3.2t (without lining)
- Gear unit: PL63mB144V

300kg Automate ladle
- Capacity: 300kg (GG)
- Dimensions: 27''x22'' (WxH); 675x570mm
- Weight: 74kg (without lining)
MARX standard ladles

MARX offers you a selection of standard ladles. There is a selection of a total of five different sizes, from 1t to 10t capacity. They are driven by our proven MX ladle gearboxes for smooth and safe handling of the ladles.

With the MARX standard ladles, we are able to offer pre-configured foundry ladles at especially reasonable prices.

The design we selected based on a modular design principle allows a reduction of the procurement costs while maintaining our high quality standards.

Our production facilities within the MARX Group allow us to offer complete foundry ladle production from a single source. In this way we guarantee the highest quality through reliable processing for a long service life –

A price/performance ratio that speaks for itself.
MARX standard ladles

1t Standard ladle
Capacity: 1t (GG)
Dimensions: 55"x61" (WxH);
1,400x1,550mm
Weight: 350kg
(without lining)
Gear unit: MX-1 60V
Lining (side/floor): 60/80mm
Freeboard: 90mm

2t Standard ladle
Capacity: 2t (GG)
Dimensions: 63"x73" (WxH);
1,600x1,850mm
Weight: 580kg
(without lining)
Gear unit: MX-1 60V
Lining (side/floor): 70/100mm
Freeboard: 90mm

5t Standard ladle
Capacity: 5t (GG)
Dimensions: 83"x93" (WxH);
2,100x2,350mm
Weight: 1.3t
(without lining)
Gear unit: MX-2 80V
Lining (side/floor): 100/140mm
Freeboard: 170mm

7t Standard ladle
Capacity: 7t (GG)
Dimensions: 93"x108" (WxH);
2,350x2,750mm
Weight: 2.2t (without lining)
Gear unit: MX-3 110V
Lining (side/floor): 100/150mm
Freeboard: 200mm

10t Standard ladle
Capacity: 10t (GG)
Dimensions: 100"x118" (WxH);
2,550x3,000mm
Weight: 2.6t (without lining)
Gear unit: MX-3 110V
Lining (side/floor): 120/195mm
Freeboard: 260mm
MARX Gearbox series
MX-1 to MX-5

Our gearboxes of the MX series are characterised by their particularly sturdy design. Certified by Germanischer Lloyd, they offer maximum safety.

All gearboxes are fitted with a brake that operates automatically in both tilting directions and that holds the ladle at any desired tilt angle, thereby ensuring the necessary self-locking effect.

During the development of the specially fitted gearboxes, particular importance was given to components and services from regional suppliers, such as the cast parts of the gearboxes or the machining operations.

Gearbox technology
**Marx Gearbox Series**

**MX-1 60V**
- Planetary oil bath gearbox for ladles of up to 2t content
- Splined shaft: N60x2x28x9H
- Transmission: I = 52
- Output Torque: Mn = 750Nm
- Support arm (connection dimensions): 100mm

**MX-2 80V**
- Planetary oil bath gearbox for ladles of up to 5t content
- Splined shaft: N80x3x30x25x9H
- Transmission: I = 51
- Output Torque: Mn = 2,400Nm
- Support arm (connection dimensions): 150mm

**MX-3 110V**
- Planetary oil bath gearbox for ladles of up to 12t content
- Splined shaft: N110x3x30x35x9H
- Transmission: I = 149
- Output Torque: Mn = 10,400Nm
- Support arm (connection dimensions): 180mm

**MX-4 140V**
- Planetary oil bath gearbox for ladles of up to 25t content
- Splined shaft: N140x4x30x34x9H
- Transmission: I = 221
- Output Torque: Mn = 20,000Nm
- Support arm (connection dimensions): 200mm
Pneumatic drive

The new gearbox series on a modular basis, allow a quick and easy upgrade of a pneumatic tilt drive instead of the hand-wheel. For this, only an assembly part of the respective gearbox has to be replaced and the pneumatic device mounted.

The control can be optionally conducted over a hand lever on the pneumatic motor or a remote control valve.

Electric drive

In special cases the application may require an electrically-driven ladle. MARX sources the necessary electric geared motors exclusively from reputable suppliers. Depending on the customer’s preference, the system is controlled either at the crane control panel or alternatively via a control unit attached to the support arm.
Mobile gearbox test rigs

Since the introduction of the updated DIN EN 1247 in December 2010, a review of the output as well as the brake torque is required every two years.

With our specially developed gearbox test rigs, we are able to measure and document the exact moments of force.

The portable design of the test rigs allows us to conduct these measurements within the company MARX, as well as on site within your premises.

Special gearboxes

The deployment of a ladle with a capacity that is above 50t requires in addition to the use of a planetary oil bath gearbox, the mounting of a shift gearbox for optimal transmission of the power and operation of the ladle.

These special gearboxes are used in the case of ladles between 50t and 100t capacity. They are manufactured and adapted according to the ladle size as well as individual specifications.

Spare parts

Based on our experience over many years, we are in a position to offer a comprehensive range of spare parts and maintenance services for all the popular planetary oil bath gearboxes and eccentric gears.

Gearbox technology

Special gearboxes

Spare parts

Mobile gearbox test rigs
Wire-treatment plants (DIM)

The MARX DIM plants are specially designed for the treatment and inoculation of grey cast iron. The treatment process is precisely attuned to the individual melting treatments, and can be initiated fully automatically.

The treatment cabins can be fitted with special, designated treatment ladles and can also be adapted to the customer’s existing ladles.

The ladles are positioned in the cabin with a carriage car or directly with the forklift. Depending on the selection, the cabin is closed either with the carriage car or, alternatively, with a bulkhead. To ensure complete exhaust of emissions, they are extracted from both the ladle cover and the cabin.
Visualization and control

The installation can be operated with a touch-panel in the control cabinet, for example. From here you can program the parameters for the automatic processing cycles and determine the length of wire to be introduced. The set values and the actual quantities are shown and stored in the visualization system.

Wire treatment machine

The treatment stations can be equipped with multiple wire feeding machines that operate simultaneously. The treatment wire is drawn from the coil by a pull-off wheel system and is fed into the melt that is to be treated. In order to ensure a constant wire transport speed, the upper pull-off wheels on the machine are fitted with pneumatic pressure adjustment that ensures optimum contact pressure at all times.

Wire-treatment plants

**MX-DIM-3-W 18t**
DIM-plant for gray iron  
Ladle capacity: 18t, 21t and 40t  
Speed of injection: up to 60m/min  
Wire diameter: 5mm to 20mm

**MX-DIM-4-S 2.6–3.5t**
DIM-plant for gray iron  
Ladle capacity: 2.6 to 3.5t  
Speed of injection: up to 60m/min  
Wire diameter: 5mm to 20mm
Service and maintenance

Customer service is of top priority for us. In the casting sector in particular, fast response times and flexibility are of crucial importance. That’s why we make it possible for you to contact us at any time on our 24h emergency number. With a total of three production and service sites in Germany, we are able to reach and support our customers all over Europe as quickly as possible. Our assembly personnel also have years of experience, enabling them to provide solutions competently, reliably and quickly.

Training sessions

The provision of training for our customers is part of our daily business activities. Our service and sales employees are available to provide you with on-site support at any time. We also provide regular training sessions on the safe handling, servicing and maintenance about our product range. On customer request, we can also create individual training plans that are specially tailored to the customer’s specific situation and requirements. The training sessions can be held either at your premises or in our training rooms. Just get in touch with us!
Reparation, modification and maintenance of ladles and gearboxes

When you need quick and reliable repairs or servicing of your foundry ladles and gearboxes, then MARX is the right partner for you. Thanks to the in-house manufacturing capabilities at all of our German sites, we are able to provide quick and flexible solutions to make your range of ladles available for production again as quickly as possible.

Gearbox conversions and ladle modifications

» Worm gear transmission to planetary oil bath gearbox
» Conversion to pneumatic drive
» Conversion to electric drive
» Conversion from key-way connection to splined shaft
» Volume increase
» Plug lifting devices
» Modification of the crane adapter
» Sealed ladle gate technology

Foundry ladle inspections

We will test and maintain your foundry ladles in accordance with the current regulations of DIN EN 1247 and the DGUV (Deutsche Gesetzliche Unfallversicherung - German Social Accident Insurance). Depending on customer requirements, the main tests are carried out at our production plant or directly on-site by one of our specialists.

Training

Together with the TÜV Rheinland, we offer training seminars on the topic »Testing of foundry ladles«. After a successful completion of the training »Competency for the Inspection of Casting Ladles«, every participant receives a TÜV certificate. (*German technical inspection authority). These seminars are offered in regular intervals at the three locations of the MARX group.

For the current training schedule, see www.marx-gmbh.de.