

WE INCLUDE PROGRESS



» LADLE TECHNOLOGY

» CASTING, TRANSPORT
AND TREATMENT LADLES

» MARX GEARBOX TECHNOLOGY

» MOBILE GEARBOX TEST RIGS

» WIRE-TREATMENT PLANTS

» CONVERSION & MAINTENANCE

» APR INSPECTIONS ACCORDING DIN EN 1247

» CERTIFIED WELDING COMPANY (EN 3834-2)

PERSUASIVE TECHNOLOGY

LADLE TECHNOLOGY



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-I 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"×161" (W×H); 4,430×4,090mm
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"×195" (W×H); 2,975×4,955mm
Weight: 6.2t (without lining)
Gear unit: Planetary oil bath gearbox PL100mB224V with pneumatic drive



12t Crane foundry ladle

Capacity: 12t (GG)
Dimensions: 98"×117" (W×H); 2,500×2,975mm
Weight: 2.7t (without lining)
Gear unit: PL63mB144V



3t Crane foundry ladle

Capacity: 3t (Cu)
Dimensions: 71"×80" (W×H); 1,800×2,030mm
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 18t-vessel:	72" x 82" (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: MX-3 110V
 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: PL63mBI44V



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 gear-boxes 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**.

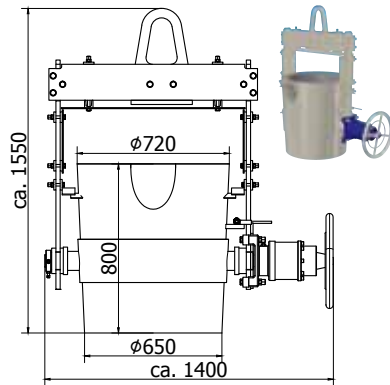
The design we selected based on a modular design principle allows a reduction of the procurement costs while maintaining our high quality standards.

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.

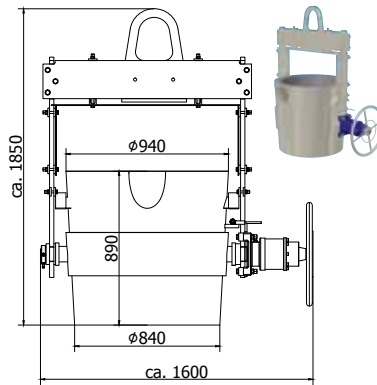


MARX standard ladles



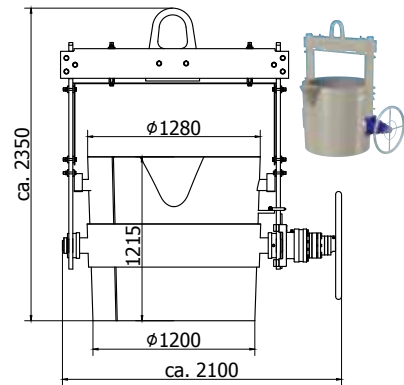
1t Standard ladle

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



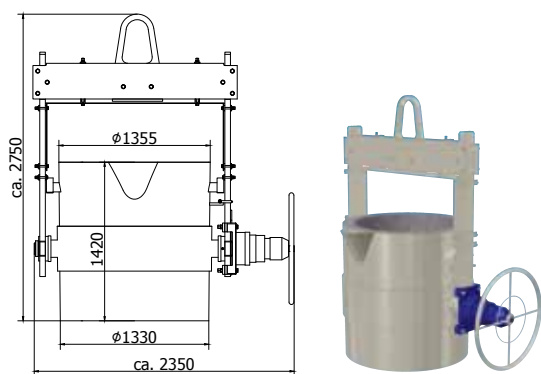
2t Standard ladle

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



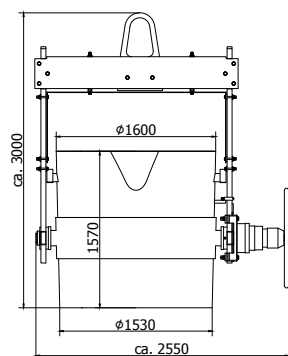
5t Standard ladle

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



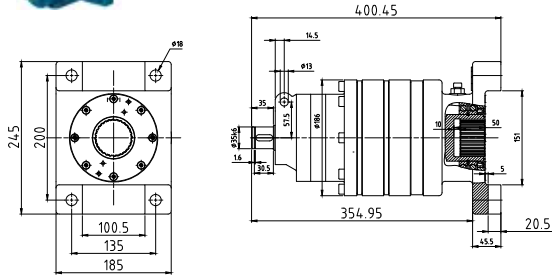
Gearbox technology

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.

MARX Gearbox series



MX-1 60V

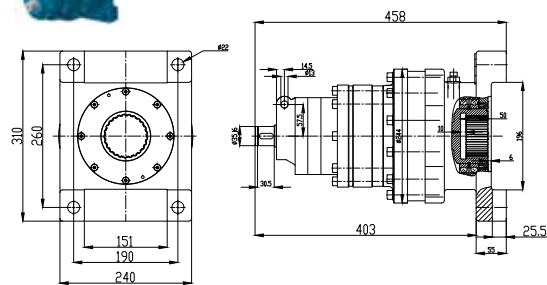
Planetary oil bath gearbox for ladles of up to 2t content

Splined shaft: N60x2x28x9H

Transmission: $i = 52$

Output Torque: $M_N = 750\text{Nm}$

Support arm (connection dimensions): 100mm



MX-2 80V

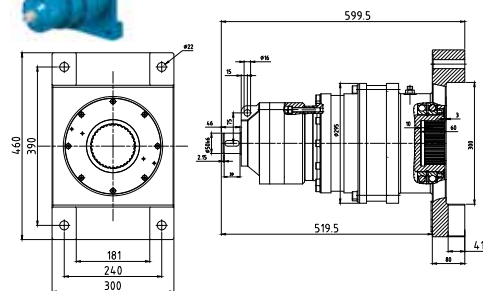
Planetary oil bath gearbox for ladles of up to 5t content

Splined shaft: N80x3x30x25x9H

Transmission: $i = 51$

Output Torque: $M_N = 2,400\text{Nm}$

Support arm (connection dimensions): 150mm



MX-3 110V

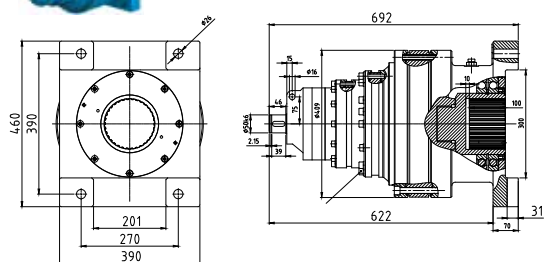
Planetary oil bath gearbox for ladles of up to 12t content

Splined shaft: N110x3x30x35x9H

Transmission: $i = 149$

Output Torque: $M_N = 10,400\text{Nm}$

Support arm (connection dimensions): 180mm



MX-4 140V

Planetary oil bath gearbox for ladles of up to 25t content

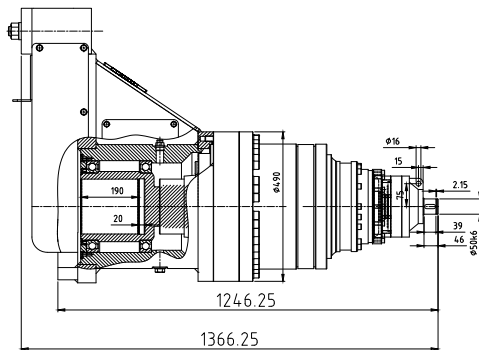
Splined shaft: N140x4x30x34x9H

Transmission: $i = 221$

Output Torque: $M_N = 20,000\text{Nm}$

Support arm (connection dimensions): 200mm

MARX Gearbox series



MX-5 180V

Planetary oil bath gearbox for ladles of up to 50t content

Splined shaft: N180x4x30x44x8H

Transmission: I = 625

Output Torque: $M_N = 60,000\text{Nm}$

Advantages of the MX-5 gearbox

Our MX-5 gearbox can be used on ladles with a capacity up to 50t without mounting a shift gearbox. Only above this capacity is a shift gearbox required.

This market innovation has several advantages:

- » Fast and easy mounting
- » Low maintenance costs
- » Fewer wear parts
- » Easy access to the hand wheel at the height of the rotation axis
- » Fast availability of spare parts
- » Weight reduction
- » Up to 30% cost savings



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.



Gearbox technology



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.



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.





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.

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



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.



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!



Service, maintenance and training sessions



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 keyway 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.





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