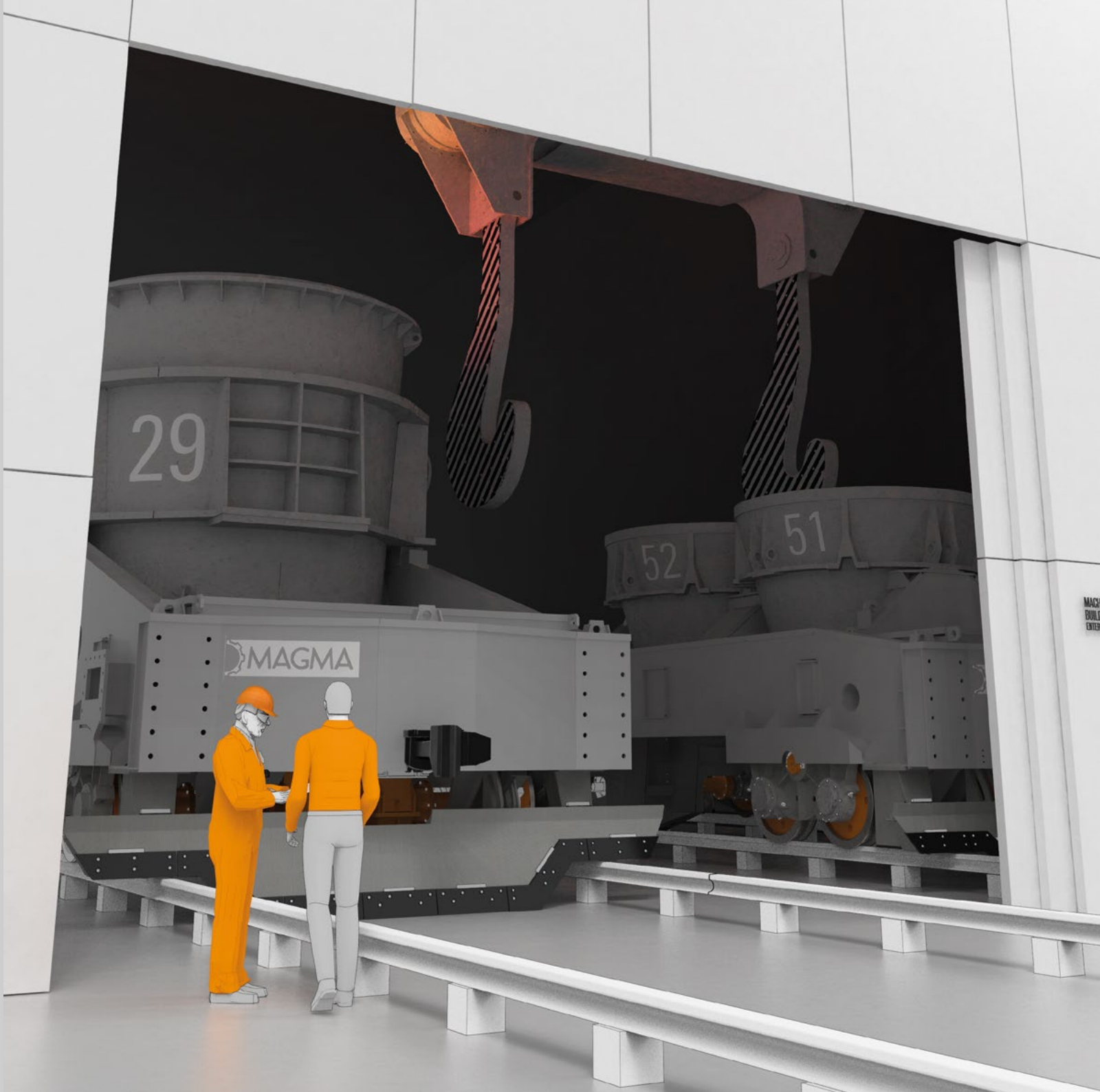
MAGMA

Recent projects



layout - Streltsov K.
Ukraine, 2019;
005-6

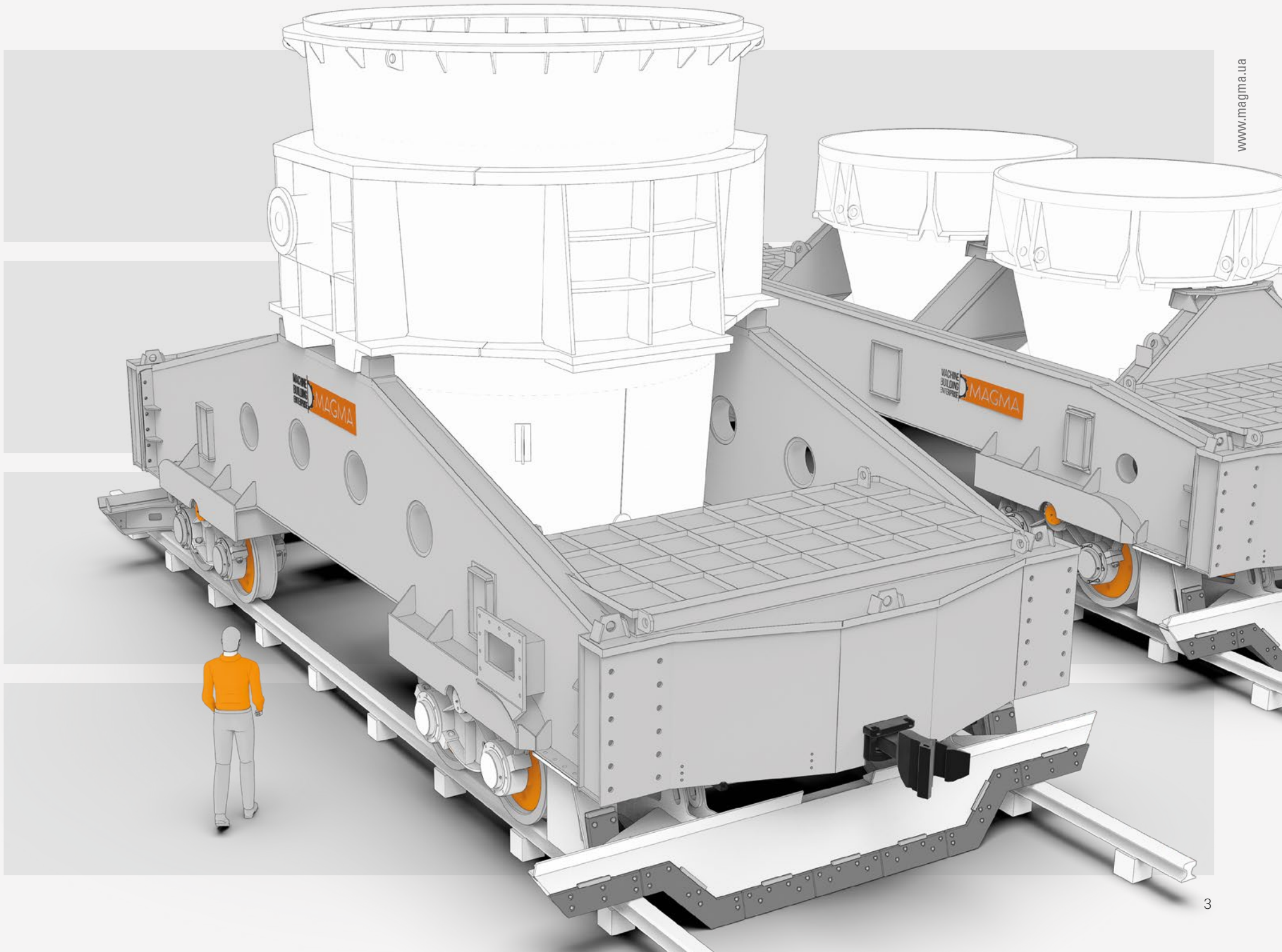
Contents

Intro

Company is specialized in engineering the industrial equipment and spare parts of iron and steel works, mining complexes, sea-and river ports.
We have a skilled and professional team of designing engineers and process engineers (about 60 people), which is able to develop a basic and detail engineering for manufacturing the industrial equipment and fulfilling turn-key projects. Our technical team is experienced in using up-to-date CAE, CAD, CAM, PLM software.

This brief brochure contains mainstream part of constantly growing product ranges and families.

Also MAGMA is a partner of KME group and co-owner of copper-plate service center KME-MAGMA Service Ukraine.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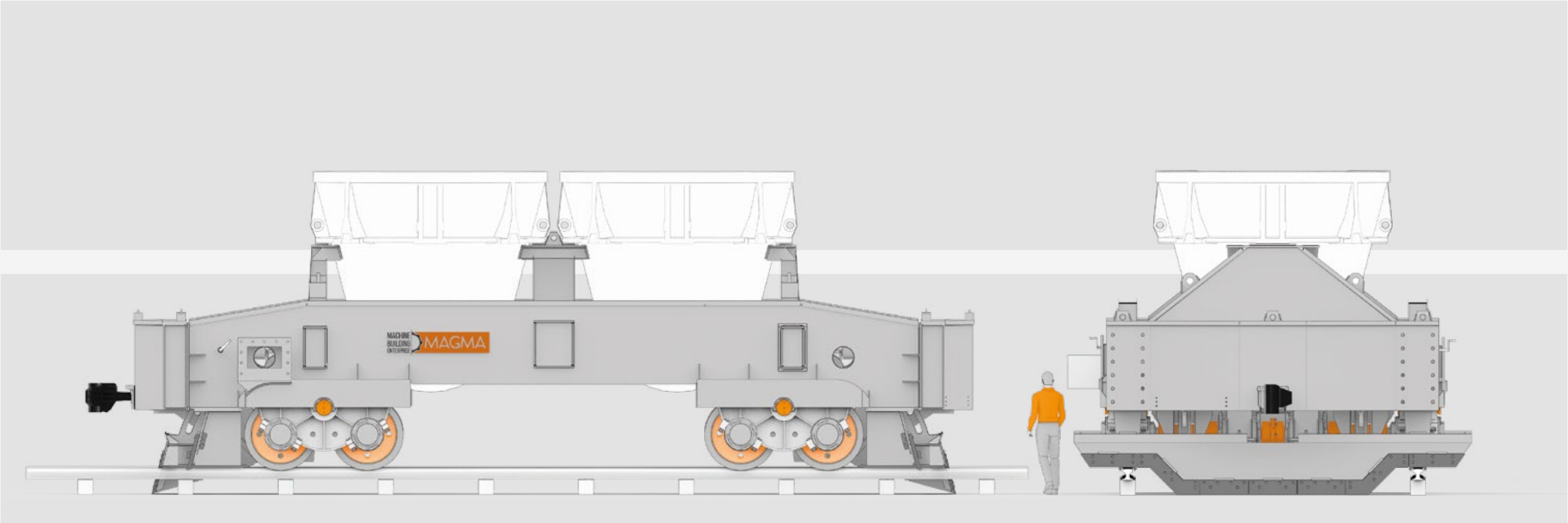
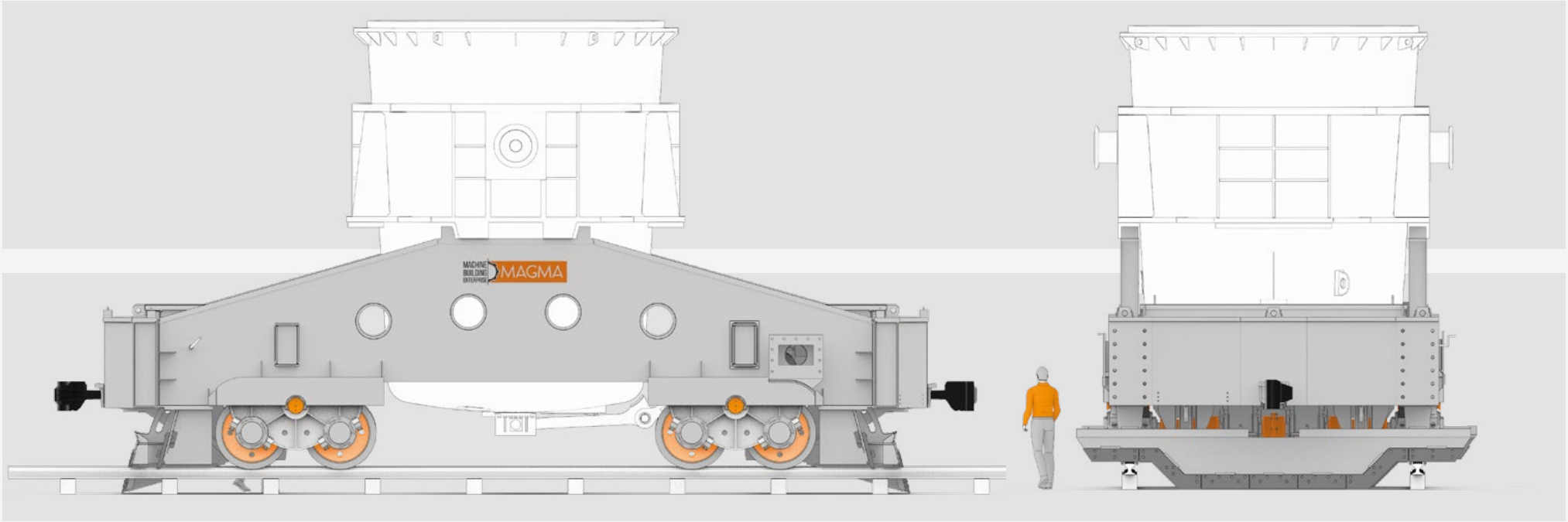


Slag pot car 320 t

A self-propelled slag pot car is designated for the transportation of the 2 slag pots with the slag from converter to slag bay and cleaning railway gauge.

Technical specification.

Pot capacity, m^3	2 x 16
Carrying capacity, t	320
Wheel gauge, mm	4350
Car base, mm	6890
Traveling speed max, km/h	4
Railway track	strait line
Wheel load, Max., kN	540
Drive power, kW	4 x 22
Gearbox	4 x VKU-950
Drum brake, (drum diameter, mm)	4 x 300
Wheel diameter, mm	1000
Total weight, kg	92 000



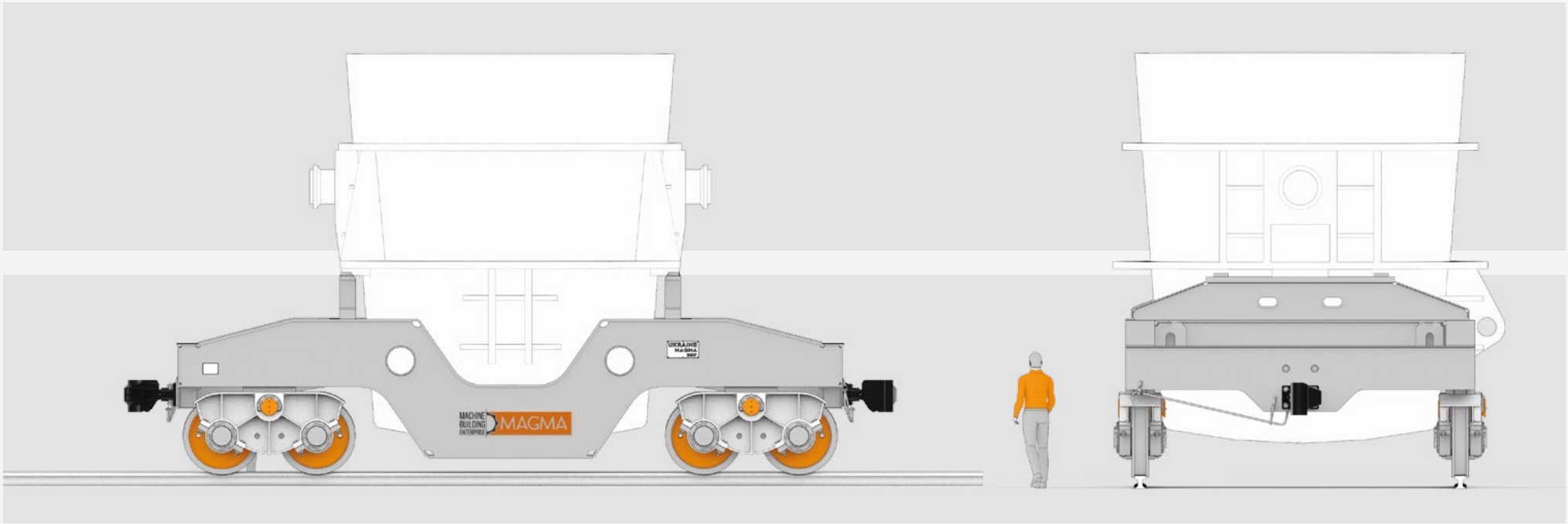
Steel ladle car 320 t

A self-propelled steel ladle car is designated for the transportation of the steel ladle with the liquid steel from the steel-making shop to the teeming bay and cleaning railway gauge.

Technical specification.

Ladle capacity, t	320
Carrying capacity, t	450
Wheel gauge, mm	4350
Car base, mm	6500

Traveling speed max, km/h	4
Railway track	strait line
Wheel load, Max, kN	750
Drive power, kW	4 x 22
Gearbox	4 x VKU-950
Drum brake, (drum diameter, mm)	4 x 300
Wheel diameter, mm	1000
Total weight, kg	90 000

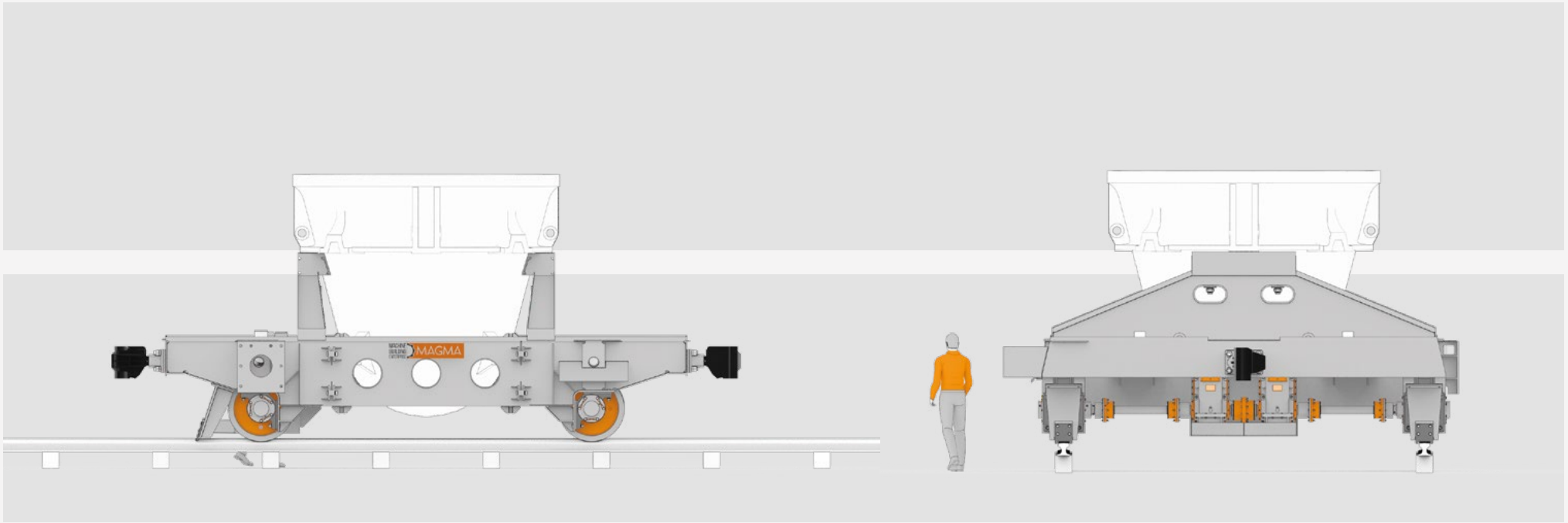


Hot metal ladle car 300 t

A non self-propelled ladle car is designated for the transportation of the hot metal ladle from mixer shop to the converter shop. The car is moved along the railway tracks by railway hauling equipment.

Technical specification.

Ladle capacity, t	300
Carrying capacity, t	400
Wheel gauge, mm	4350
Car base, mm	6600
Traveling speed max, km/h	4
Railway track	strait line
Wheel load, Max., kN	570
Wheel diameter, mm	1000
Total weight, kg	39 200



Slag pot car 100 t

A self-propelled slag ladle car is designated for the transportation of the slag ladle with the slag from converter to slag bay.

Technical specification.

Ladle capacity, m^3	16
Carrying capacity, t	100
Wheel gauge, mm	4800
Car base, mm	4500
Traveling speed max, m/min	48
Railway track	strait line
Wheel load, Max., kN	300
Drive power, kW	2 x 15
Gearbox	2 x VKU-750
Drum brake, (drum diameter, mm)	2 x 200
Wheel diameter, mm	840
Total weight, kg	27 300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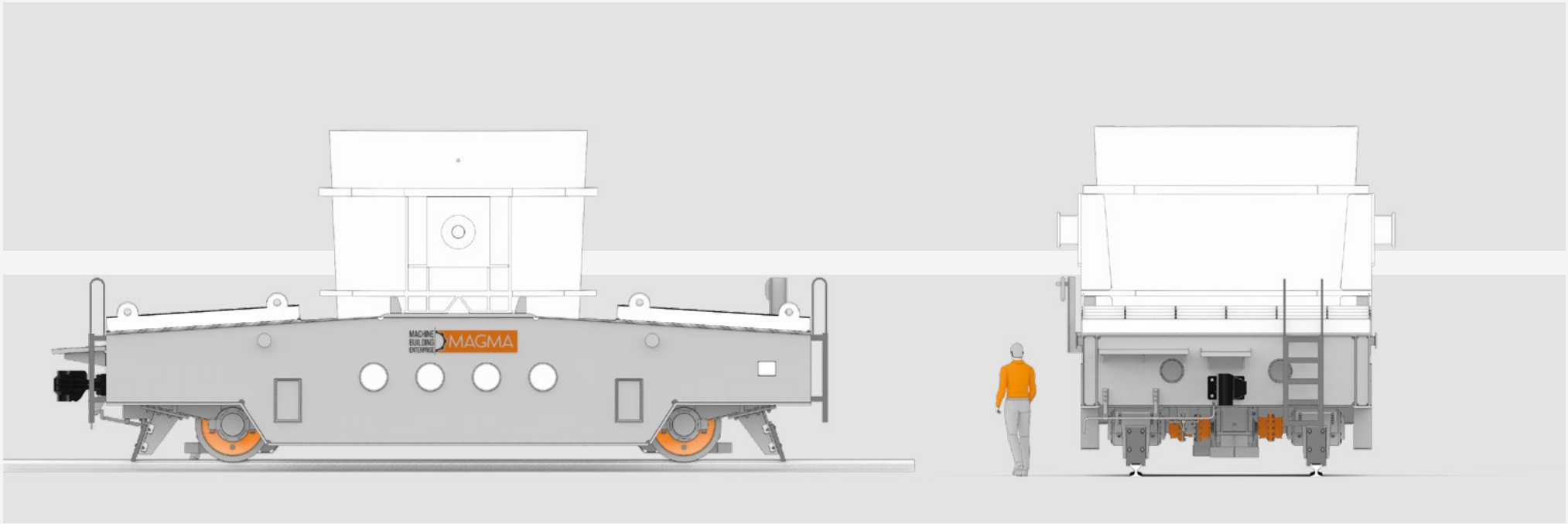


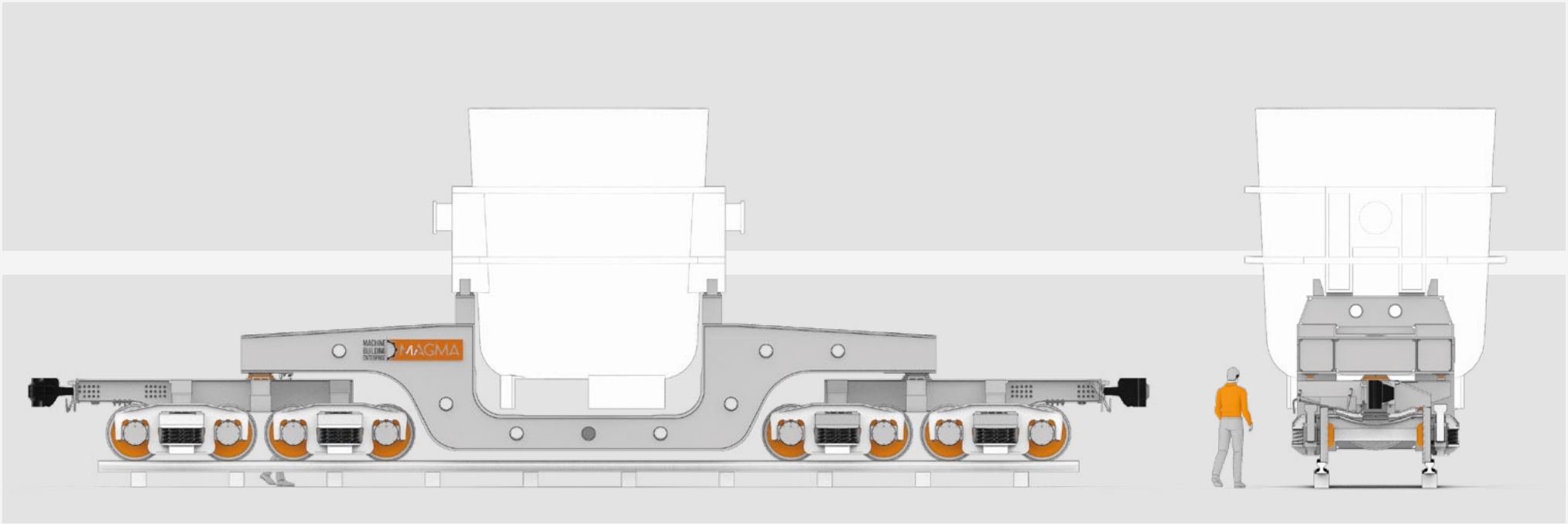
Steel pot car 220 t

A self-propelled steel ladle car is designated for the transportation of the steel ladle of capacity 160 t with the liquid steel from the steel-making shop to the teeming bay.

Technical specification.

Steel ladle capacity, t	160
Carrying capacity, t	220
Wheel gauge, mm	2500
Steel pot car base, mm	6400

Traveling speed max, m/min	43,1
Railway track	strait line
Wheel load, Max., kN	660
Drive power, kW	2 x 47
Gearbox	2 x VKU-950
Drum brake, (drum diameter, mm)	2 x 300
Wheel diameter, mm	1000
Total weight, kg	47 300



Steel pot car 250 t

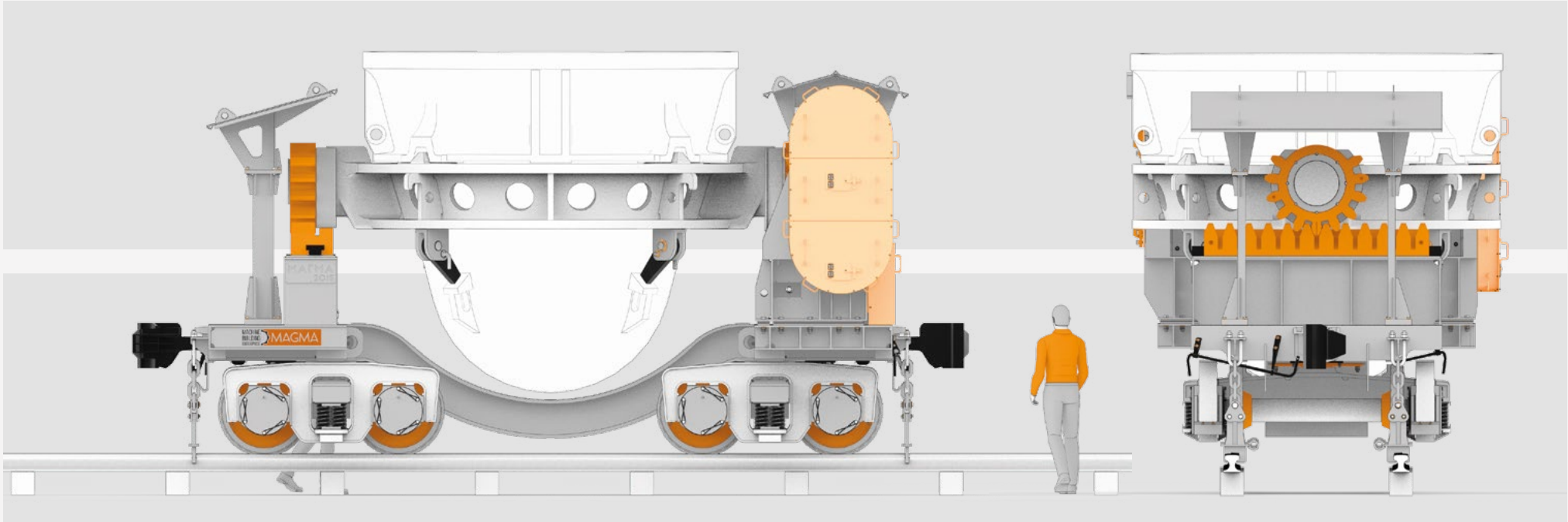
A non self-propelled steel ladle car is designated for the transportation of the steel ladle of capacity 160 t with the liquid steel from the steel-making shop to the teeming bay.

Technical specification.

Steel ladle capacity, t	160
Carrying capacity, t	250
Wheel gauge, mm	1435/1520*
Traveling speed max ,km/h	5

Radius of railway track curve, Min., m	75
Wheel load, Max., kN	400
Number of steel ladle cars in the set, Max.	3
Carriage base, mm	1420
Wheel diameter, mm	840
Total weight, kg	47 300

*gauge may be specified by the customer.



Tilting slag pot car (screw type)

Slag pot car is intended for receiving the molten slag from the blast furnace and conveying it to slag dump or to granulation plant. The slag pot car is moved along the railway tracks by railway hauling equipment.

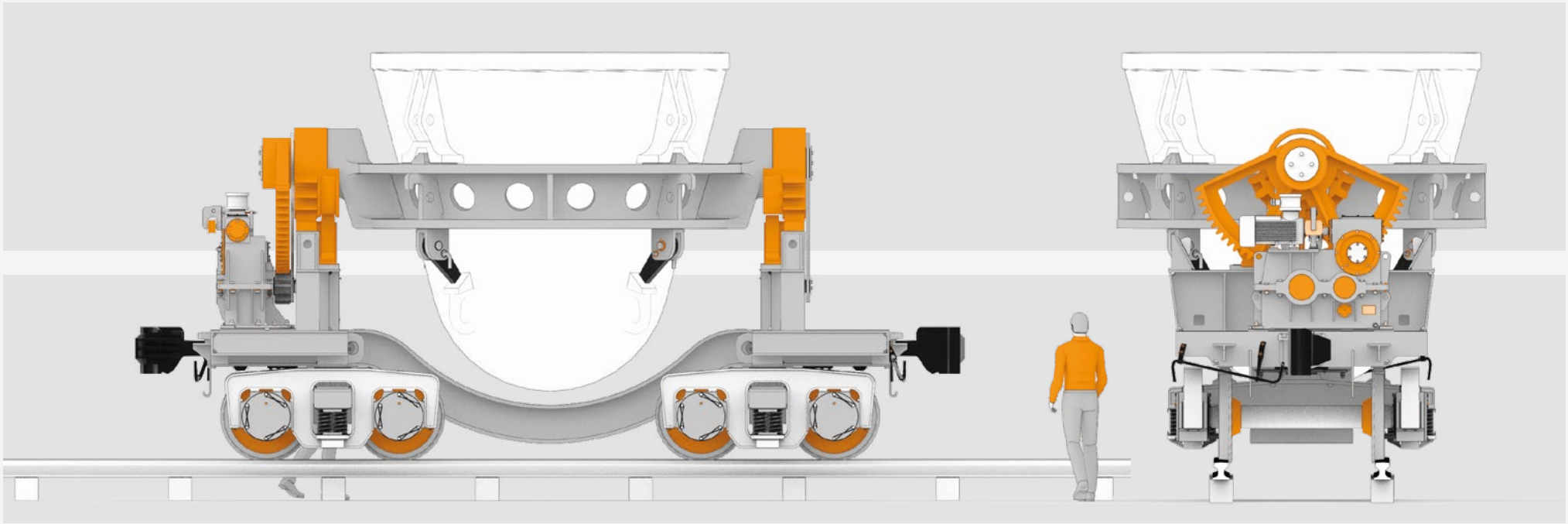
Technical specification.

Slag pot car base, mm	4250
Pot tilting angle, deg	118
Tilting time, sec	90

Tilting drive type	screw gear
Gearbox ratio	595
Tilting drive power, kW	22
Brake type	TK-200
Pot capacity, m^3	16
Carriage base, mm	1300
Wheel diameter, mm	840
Wheel gauge, mm	1435\1520*
Axle load, Max., kN	380

Traveling speed, km/h	15
Radius of railway track curve, Min., m	75
Tilting drive type	electro-mechanic
Total weight, kg	50 830

*gauge may be specified by the customer.



Tilting slag pot car (sector type)

Slag pot car is intended for receiving the molten slag from the blast furnace and conveying it to slag dump or to granulation plant. The slag pot car is moved along the railway tracks by railway hauling equipment.

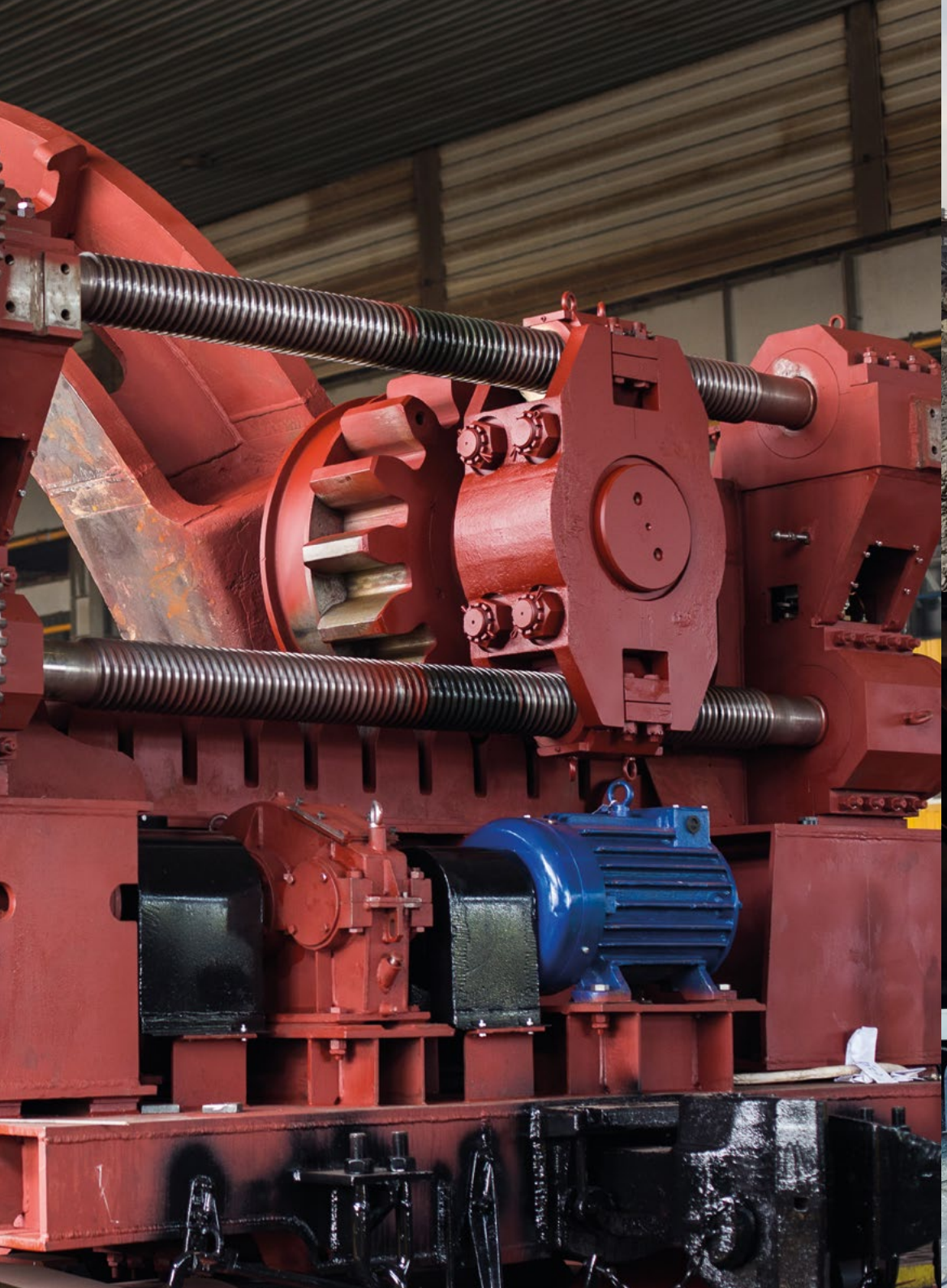
Technical specification.

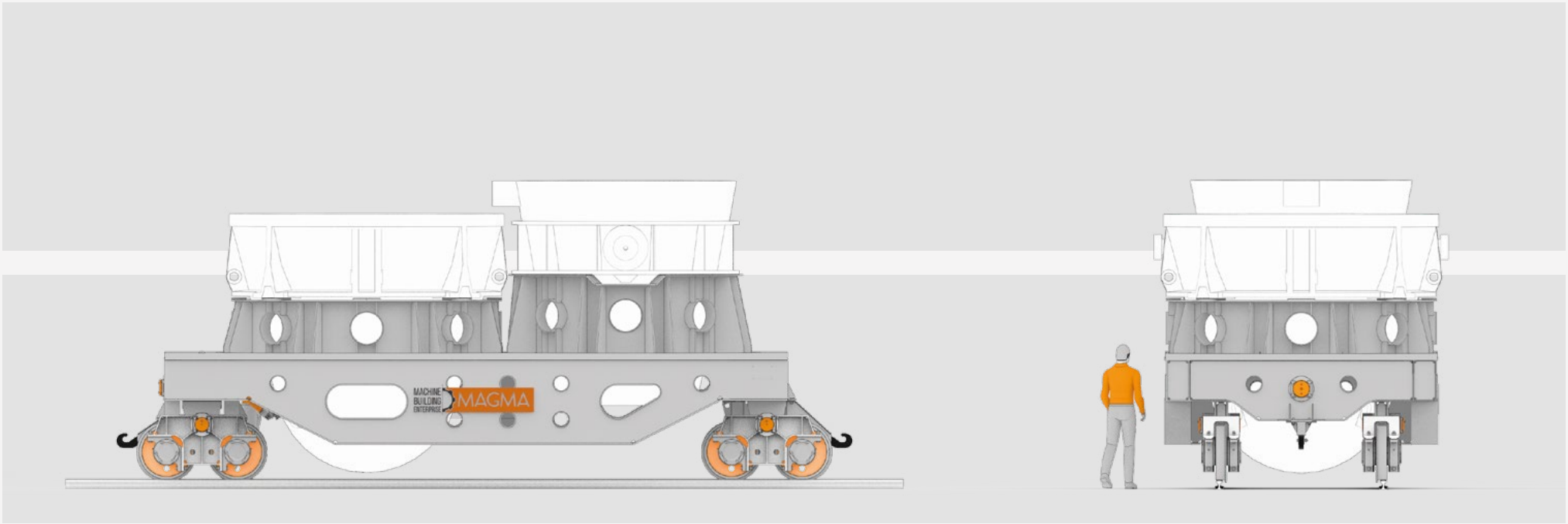
Slag pot car base, mm	4250
Pot tilting angle, deg	118
Tilting time, sec	92

Tilting drive type	cylindrical sector gear
Gearbox ratio	595
Total tilting mechanism ratio	4598
Tilting drive power, kW	15
Brake type	TK-200
Pot capacity, m^3	16
Carriage base, mm	1300
Wheel diameter, mm	840

Wheel gauge, mm	1435\1520*
Axle load, Max., kN	400
Traveling speed, km/h	15
Radius of railway track curve, Min., m	75
Tilting drive type	electro-mechanic
Total weight, kg	42 500

*gauge may be specified by the customer.





Ferroalloy car

A non self-propelled ferro-alloy car for slag pot & ferro-alloy ladle is designated for the transportation of the pot and the ladle from melting shop. The car is moved along the railway tracks by railway hauling equipment.

Technical specification.

Loaded ladle weight, t	50
Loaded pot weight, t	80

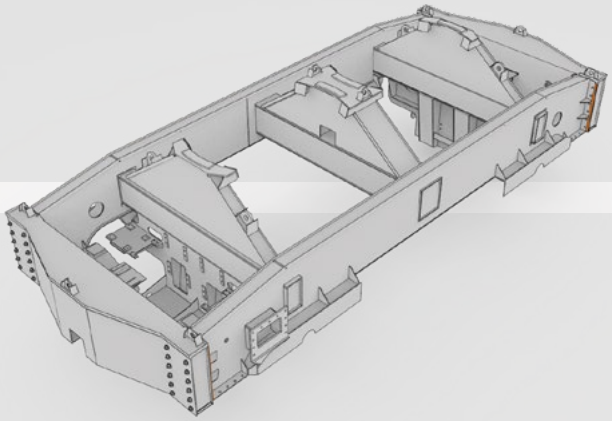
Carrying capacity, t	130
Wheel gauge, mm	1970
Car base, mm	7200
Traveling speed, Max., km/h	3
Railway track	strait line
Wheel load, Max., kN	200
Wheel diameter, mm	700
Total weight, kg	23 000

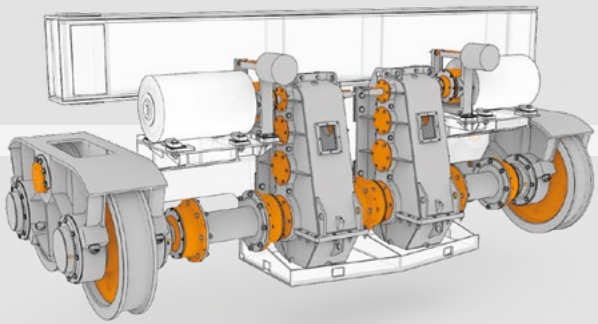
Platform

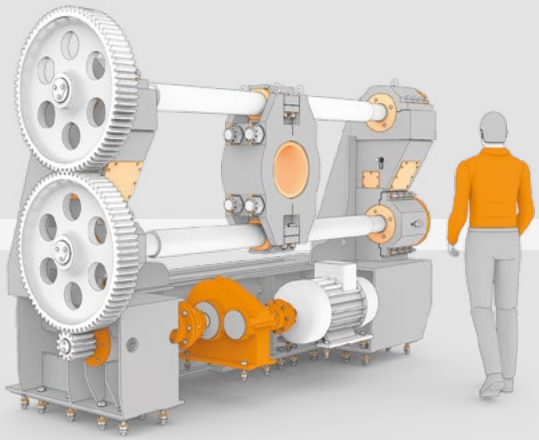
A non self-propelled platform is designated for the transportation of the casting forms from melting shop. The car is moved along the railway tracks by railway hauling equipment.

Technical specification.

Carrying capacity, t	250
Wheel gauge, mm	1520
Car base, mm	4800
Traveling speed, Max., km/h	15
Radius of railway track curve, Min., m	55
Max number of steel ladle cars in the set	10
Wheel diameter, mm	840
Total weight, kg	38 000

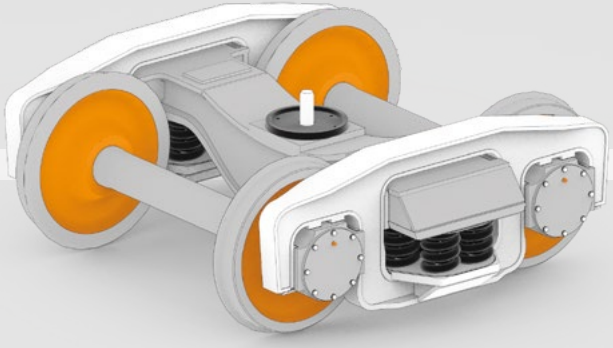


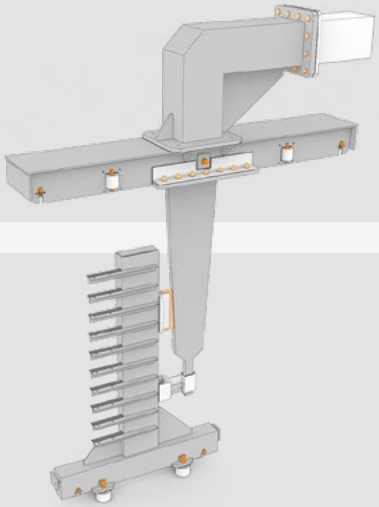


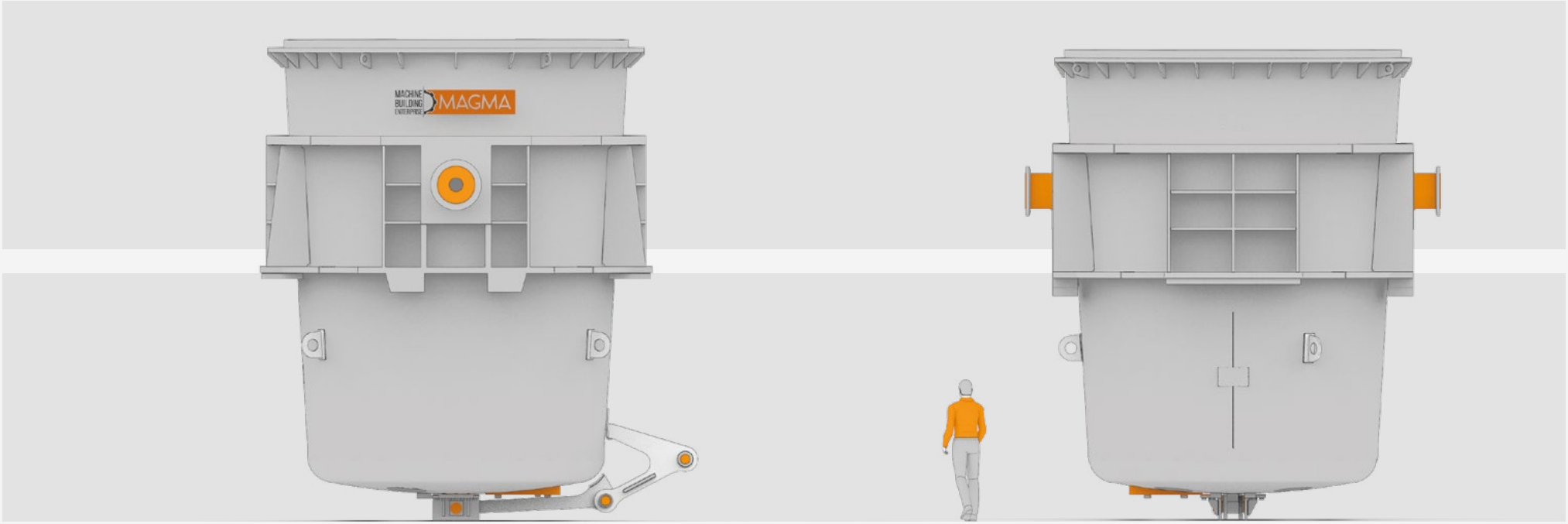


Spare parts for metallurgical cars

Alongside with turn-key projects MAGMA can provide deliveries of spare parts, such as steel frames, tilting drives, moving drives, electrical components, etc.





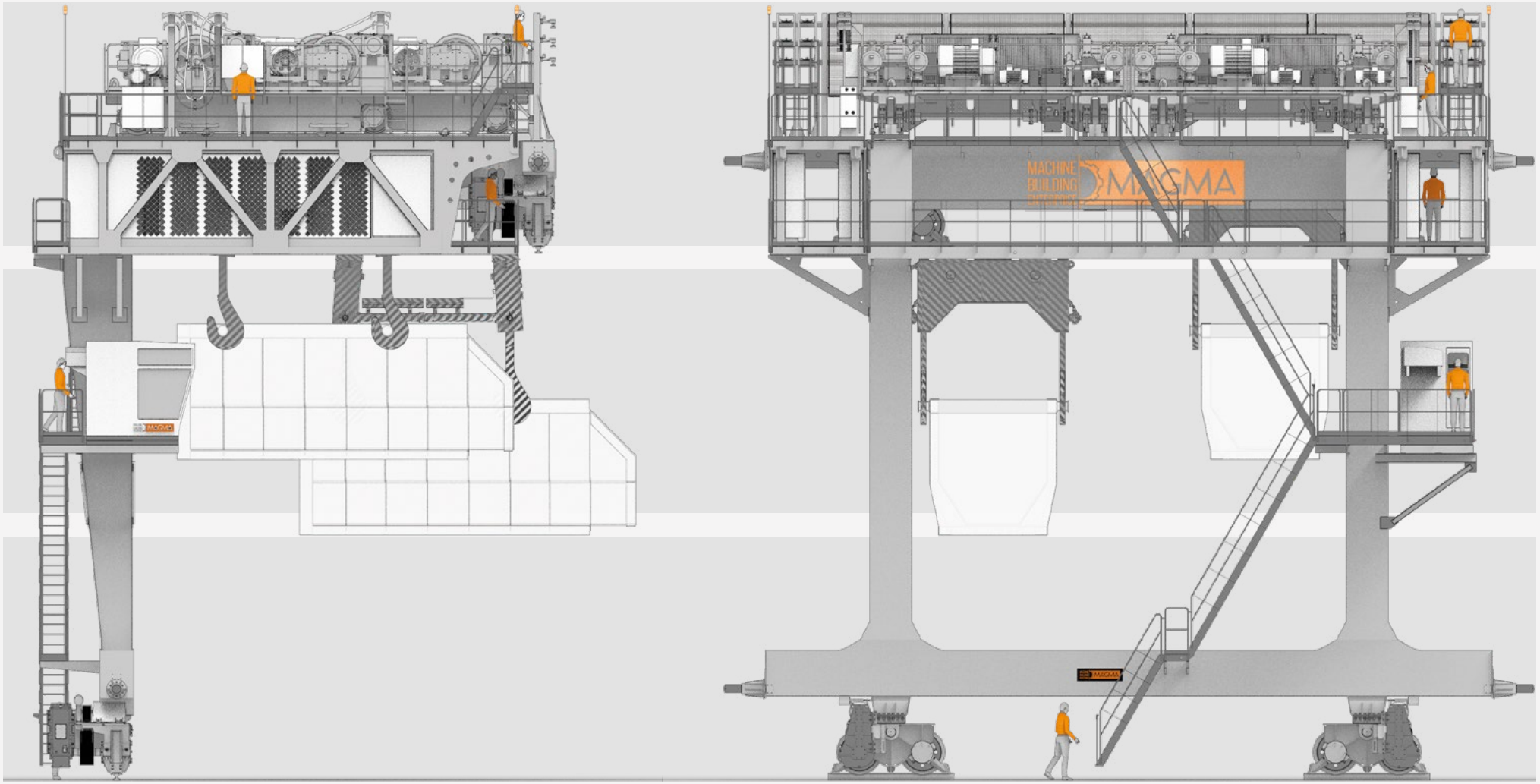


Steel ladle 300 t

A steel ladle is designated for the transportation of the liquid steel from melting shop.

Technical specification.

Ladle steel part weight, t	40
Refractory weight, t	53
Carrying capacity, t	300

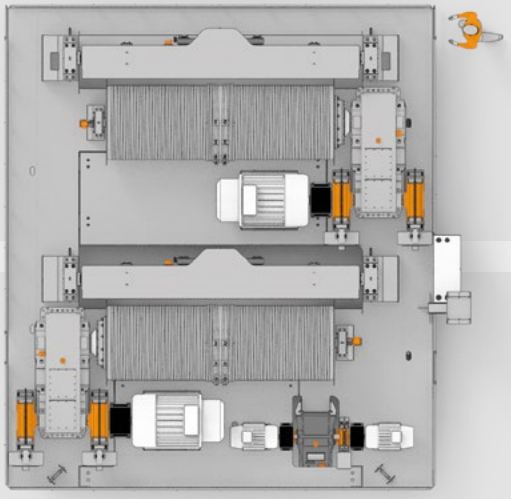


BOF. Scrap charging machine

For steel-making converter capacity 300 t. Charging machine with 2 scrap buckets is intended for charging scrap into converter vessel. Calculations, basic & detail engineering, production is made by MAGMA.

Technical specification

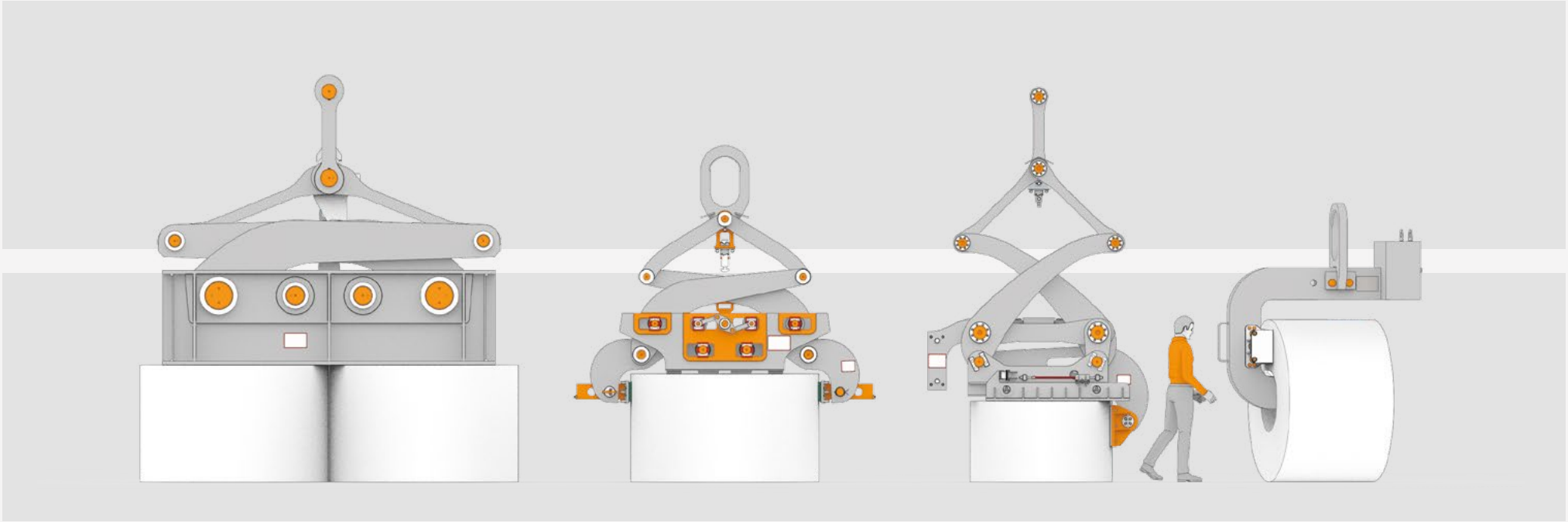
Load capacity, t	2x90
Hook lift height, m	24
Span, m	10
Base, m	11,3
Wheel diameter, mm	1000
The multiplicity of tackles	6
Total weight, kg	314 000



^ One of carriages. Top view.

< General view. Scrap charging machine

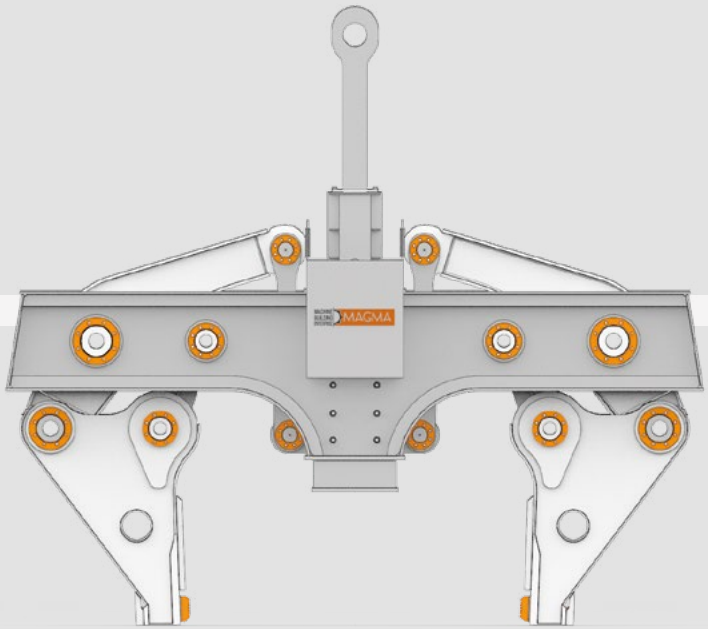

20 t
ŠKODA

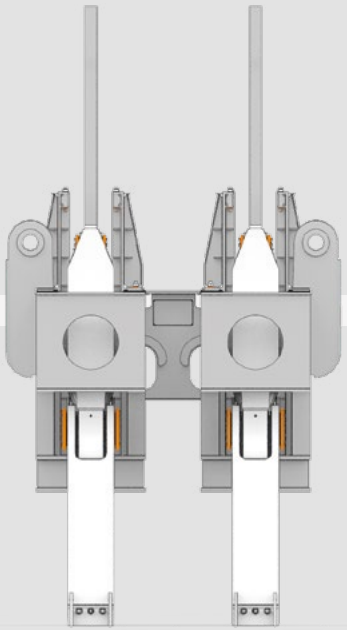


Coil tongs

Automatic tongs and C-hooks for different purposes. For 1 or 2 coils. Different clamping systems, vertical or horizontal coil axis position.

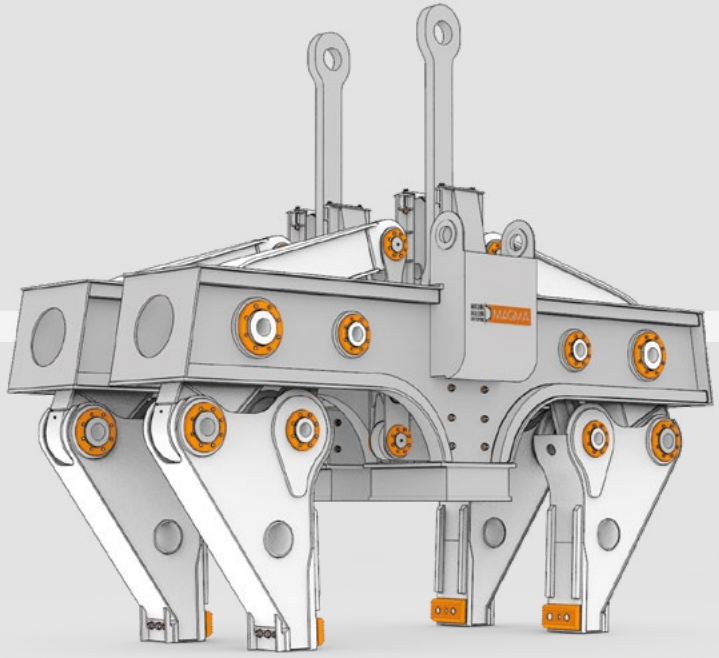
Capacity up to 110 t.

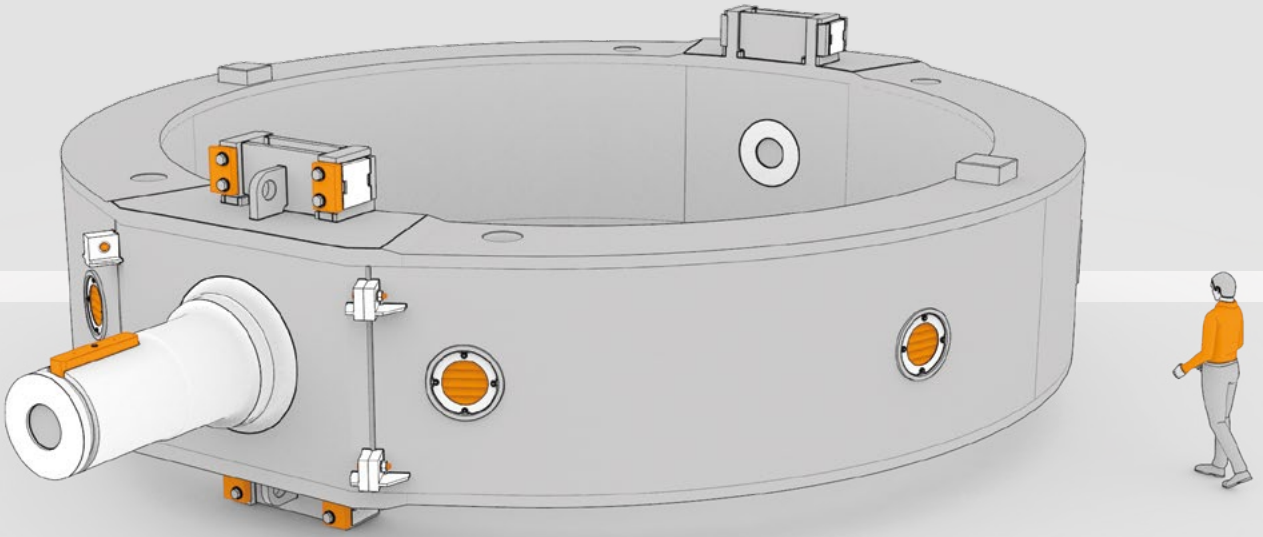




Slab tongs

Lifting capacity, t	46
Total weight, kg	13 200



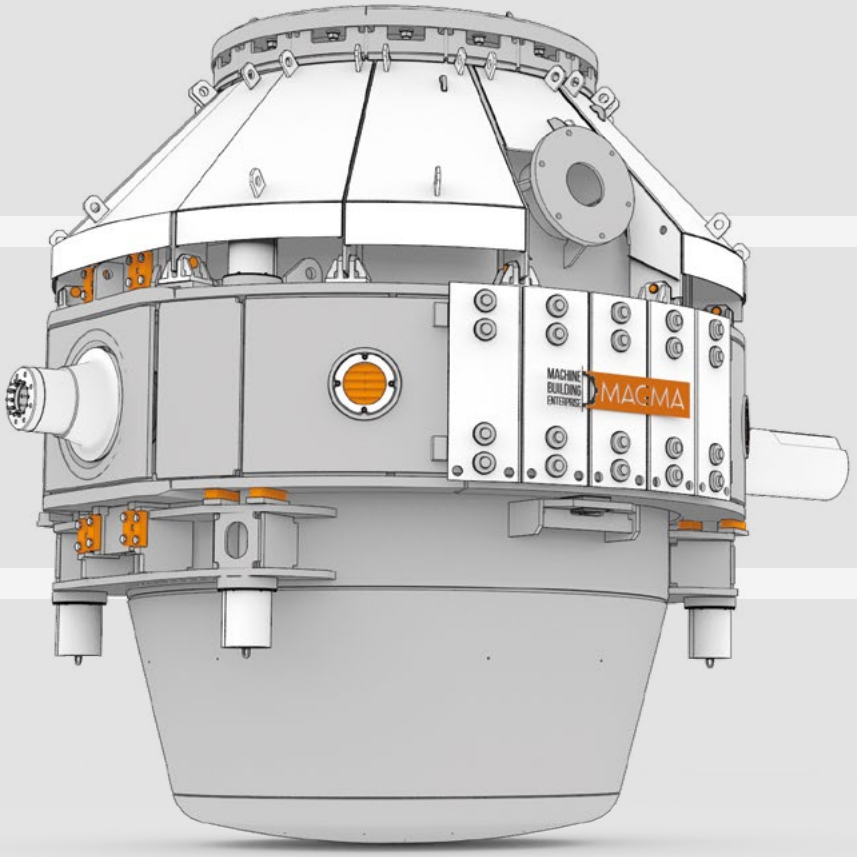


BOF. Converter trunnion ring

Converter capacity, t	160
Internal diameter, mm	7860

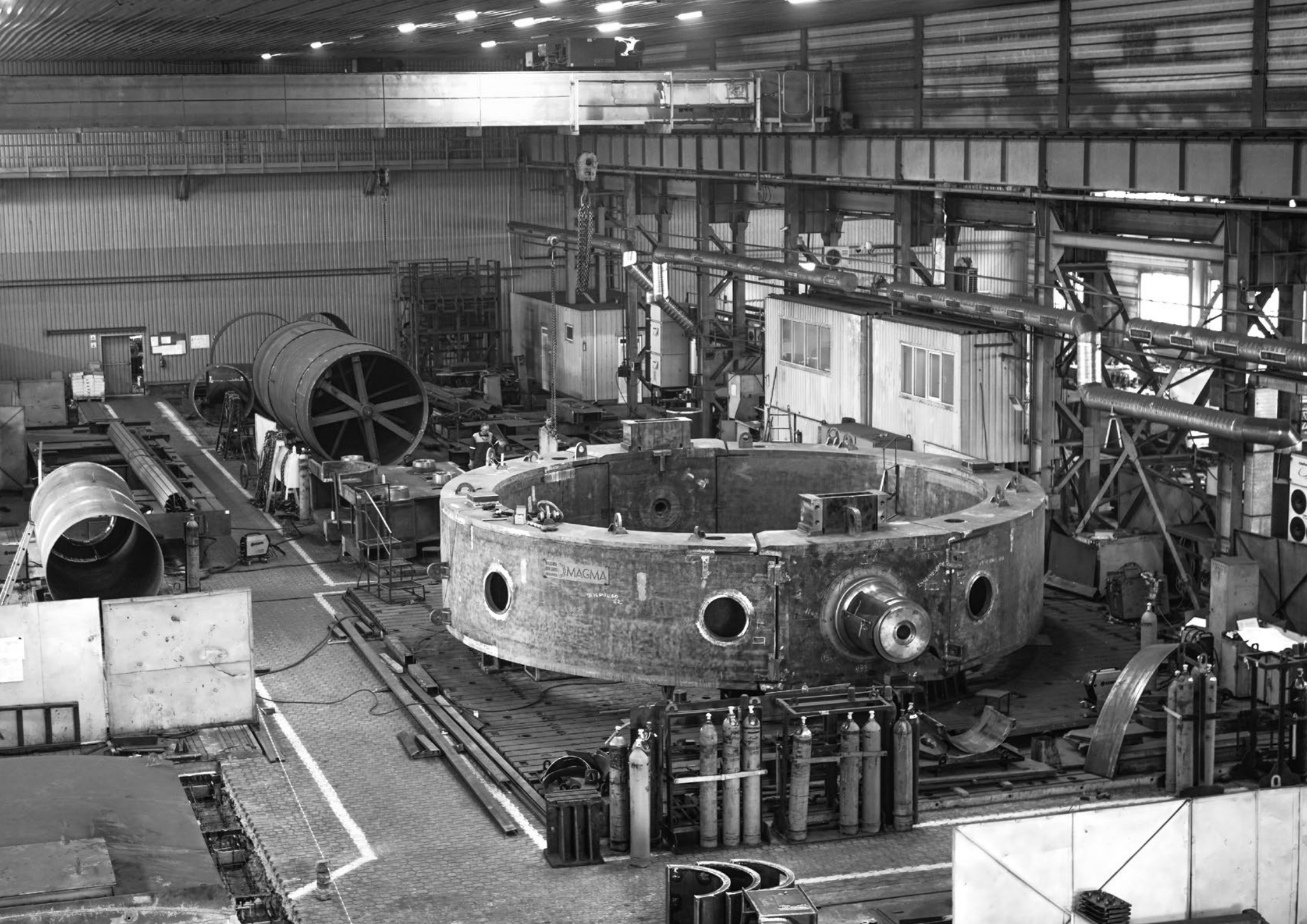
All calculations, including tilting forces, structure and thermal.
Basic & detail engineering and production is made by MAGMA.
Total weight 140 000 kg.

BOF. Converter



Converter capacity, t	80

All calculations, including tilting forces, structure and thermal.
Basic & detail engineering. Total weight 147 000 kg.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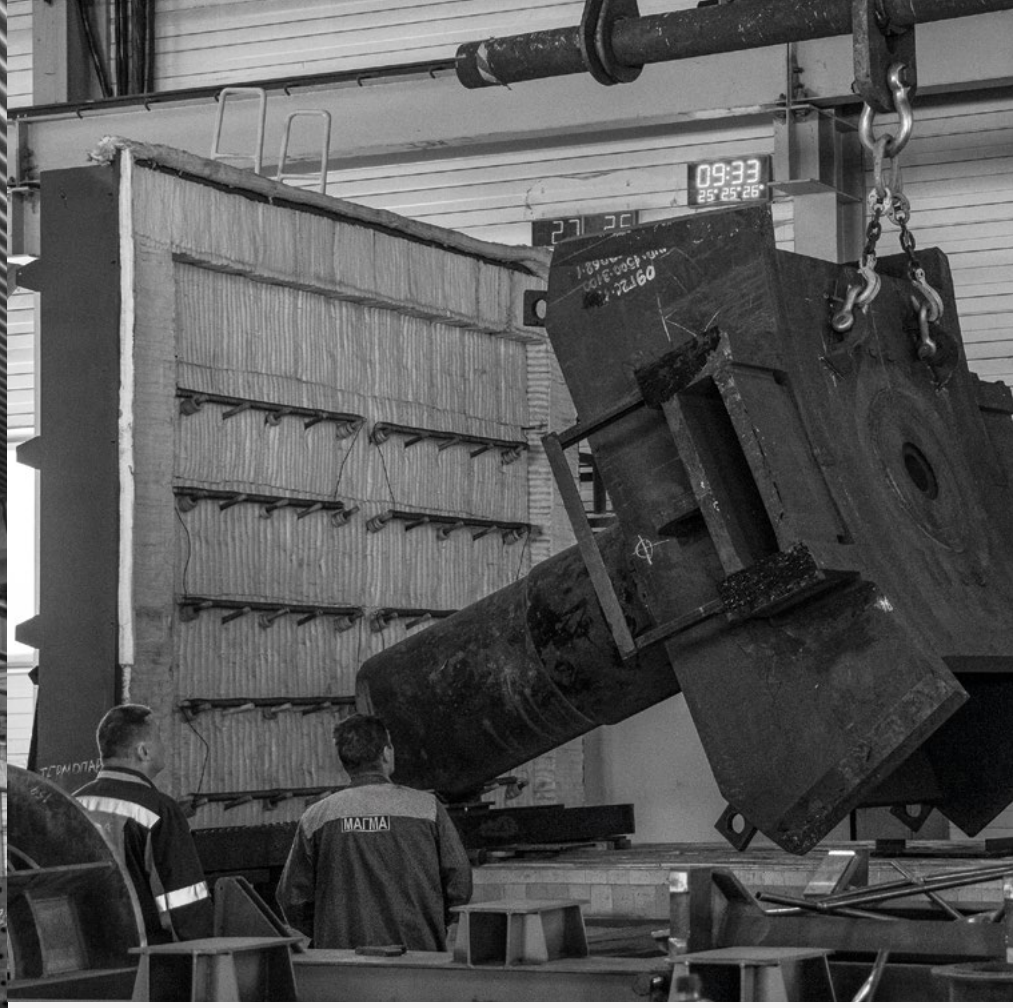
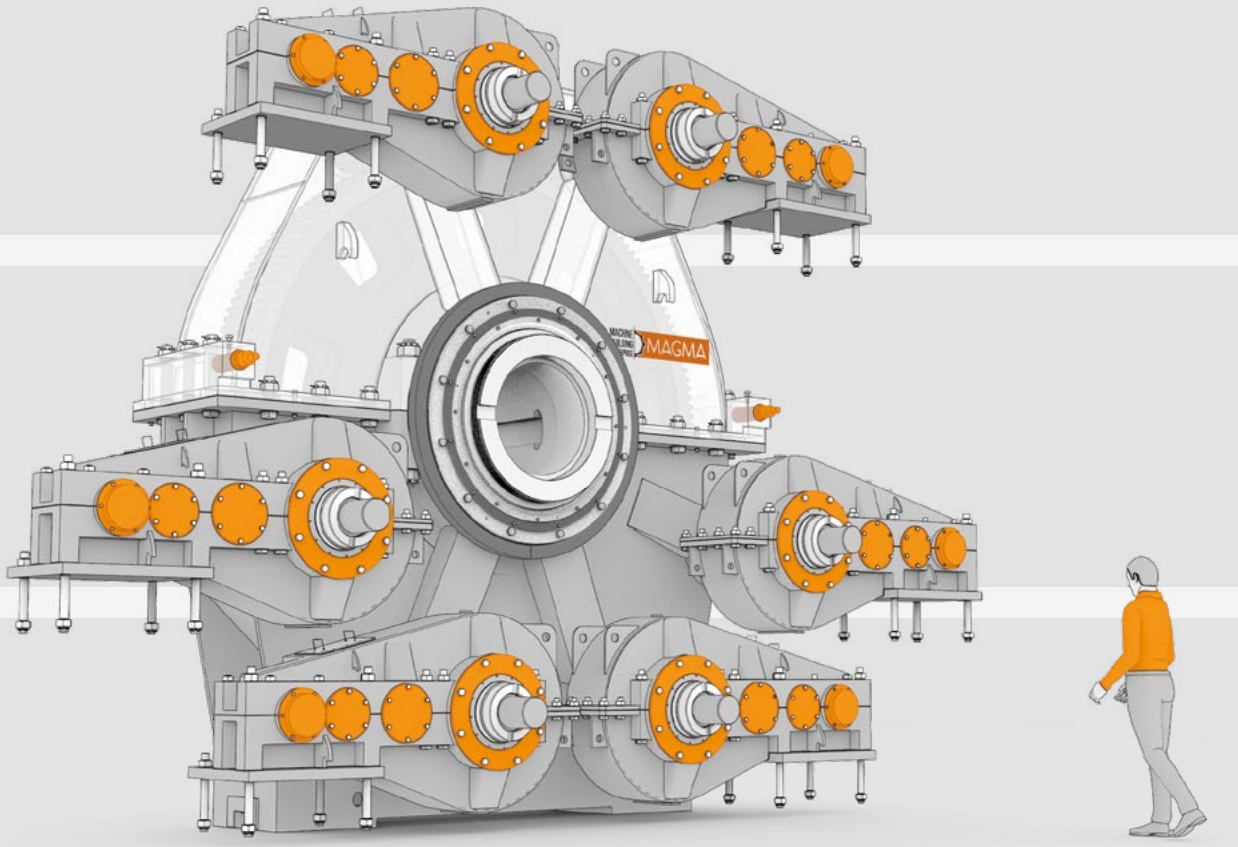


^ Part of trunnion ring with driven shaft. After annealing in furnace.

< Machining the key slot in the driven shaft of the trunnion ring .

<< Inspection assembly of the trunnion ring.

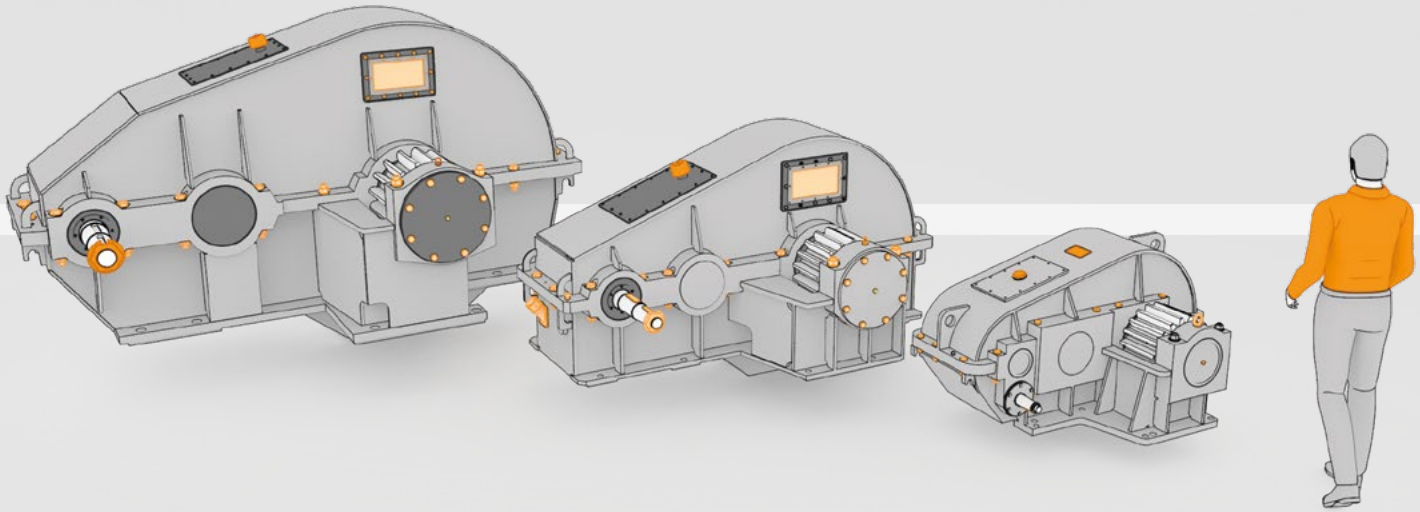


BOF. Converter tilting drive.

Tilting drive of steel-making converter capacity 350 t. Bull-gear. Calculations, Basic & detail engineering

Technical specification.

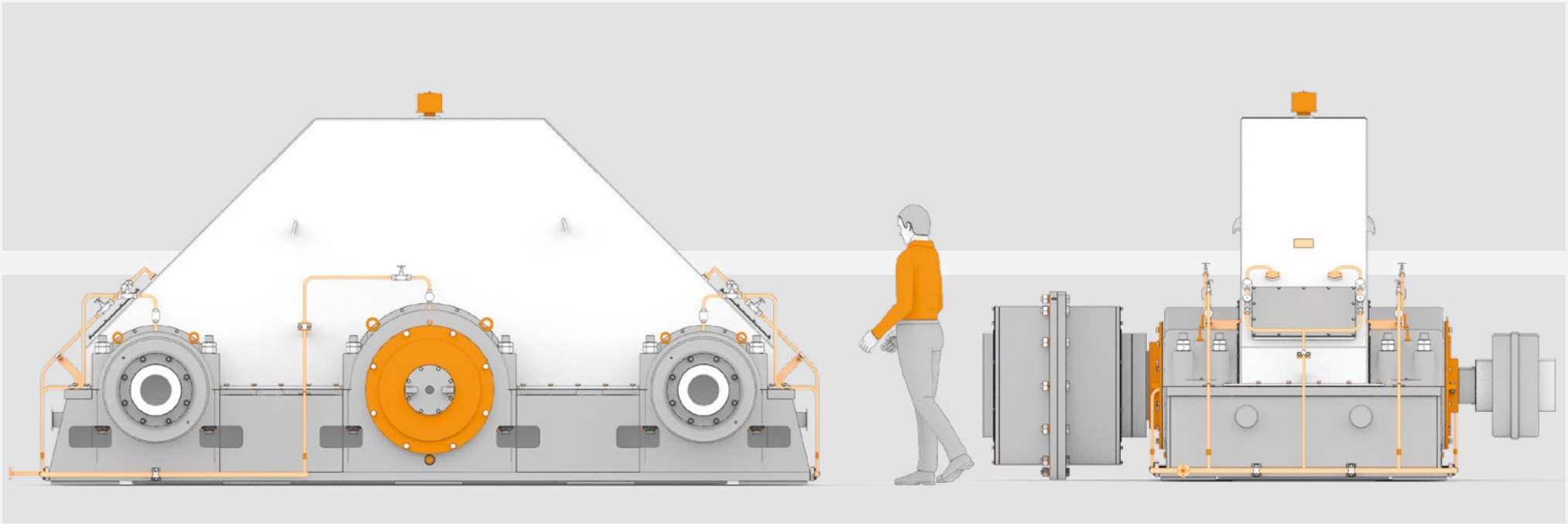
Drive power, kW	6 x 60
Bull-gear ratio	10
Bull-gear Tooth module	20
Nominal Tilting moment, kN*m	5600
Bearing type	roller bearings
Total weight, kg	73 200+6x4500



Heavy crane gearboxes

Gearboxes for main and secondary hoist mechanisms of different metallurgical cranes. Gearboxes can be manufactured in accordance with up to date standards or by Client's request.

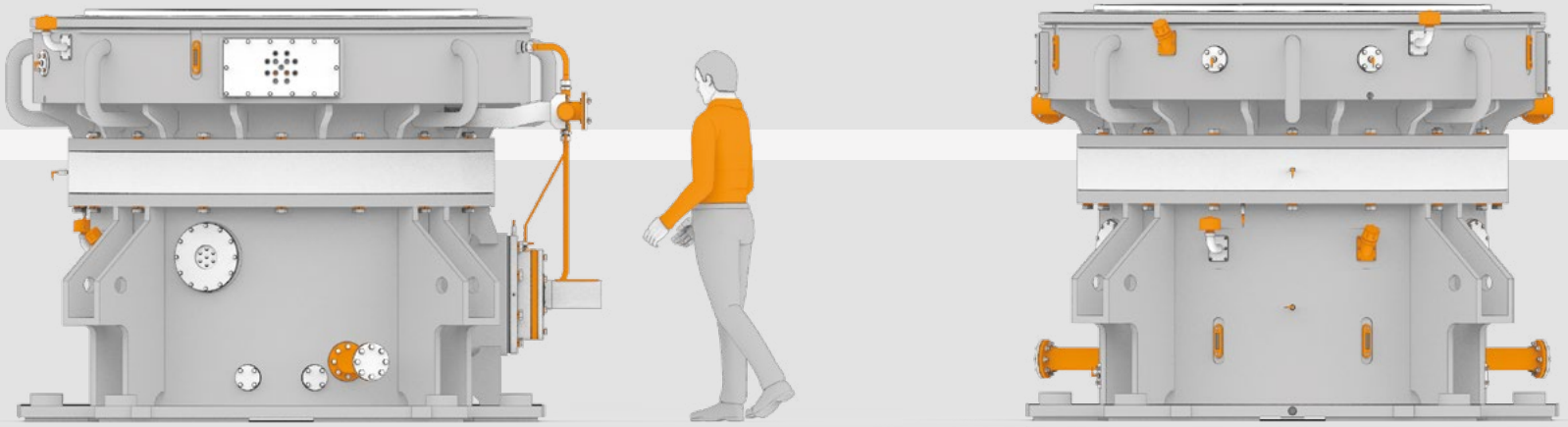
Gearboxes GK-1830, GK-1300, GK-1050 are shown on the picture above.



Mining Special gearbox

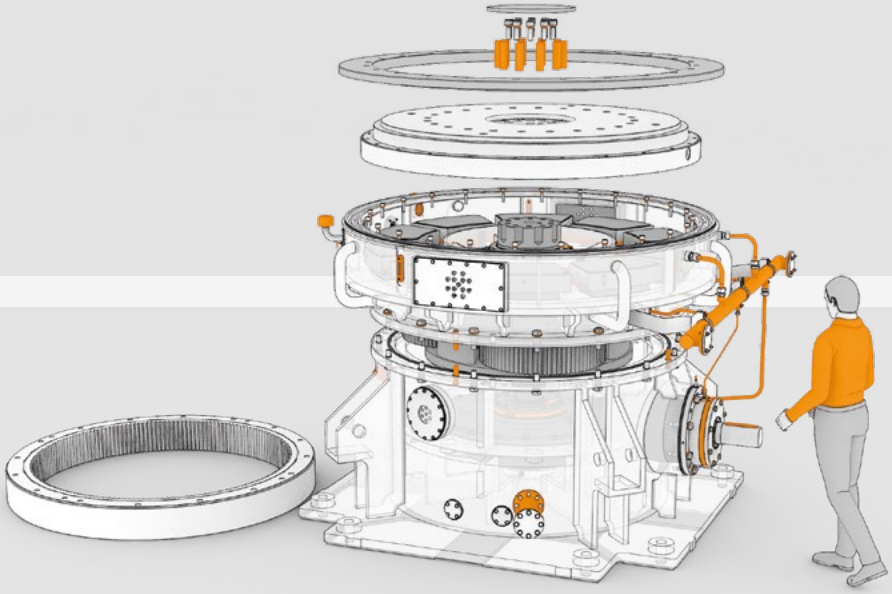
Gearbox CO-18, cylindrical, one-stage, with involute gearing, two driven shafts, are used for mining hoisting machines. MAGMA can manufacture any gearboxes by Client's request.

Technical specification.	
Drive power, kW	2 x 550
Drive speed, rpm	250...750
Gearbox ratio	10,5
Tooth module	10
Nominal moment, kN*m	294/588
Bearing type	roller bearings
Total weight, kg	38 700



Coal mill gearbox

Gearbox of coal mill for pulverized coal fuel pant. Milling table supported with hydrodynamic bearing.



Technical specification.

Drive power, kW	700
Drive speed, rpm	990
Gearbox ratio	39,65
Static table load, kN	2000
Dynamic table load, kN	8000
Total weight, kg	31 700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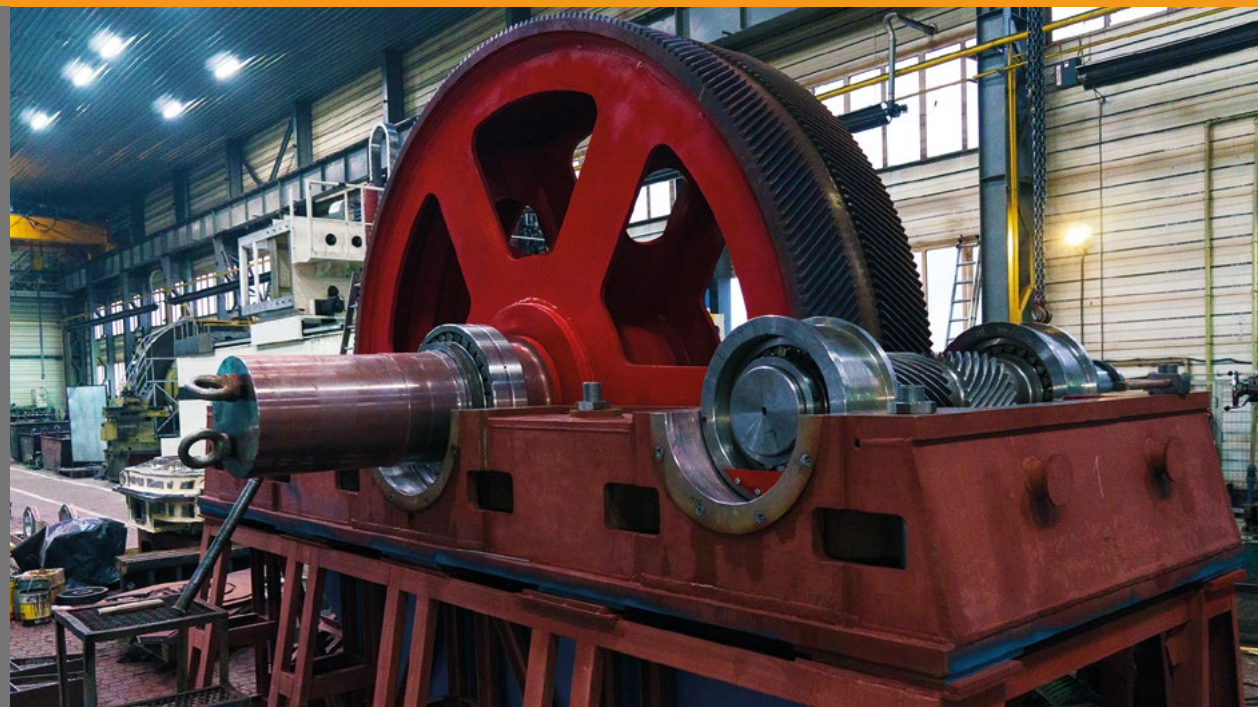
25 T
6000 KГ

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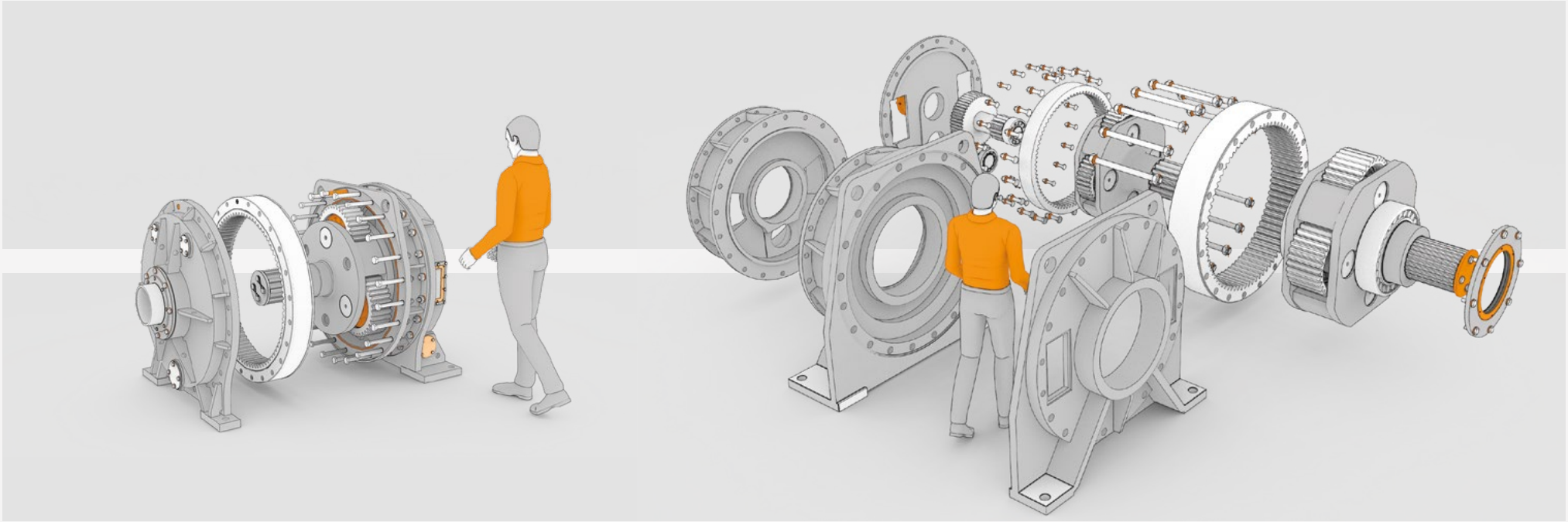
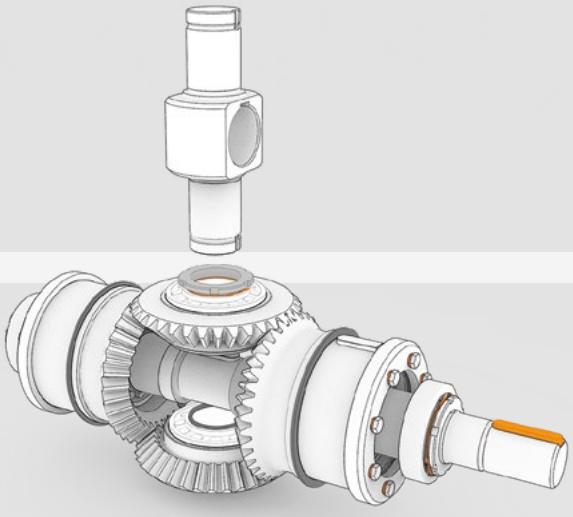


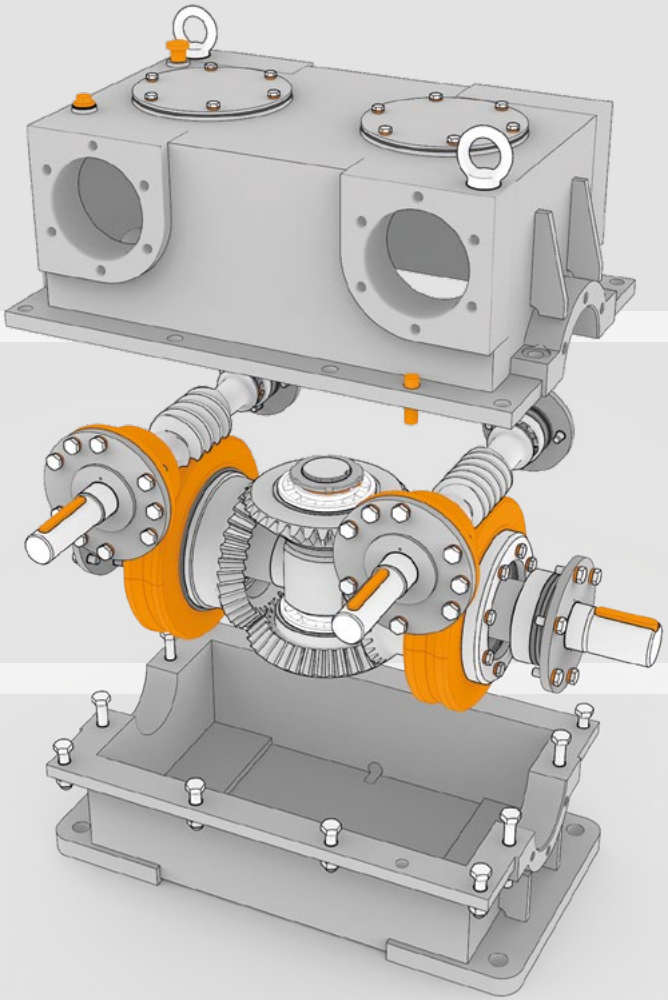
Gearboxes for rolling mills

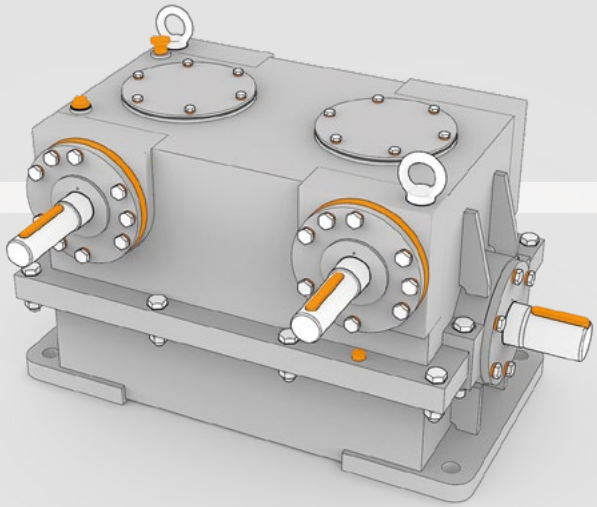
Planetary gearboxes are intended for using in rolling mills.

Technical specification.

Drive power, kW	600
Drive speed, rpm	1000
Gearbox ratio	63
Number of stages	3
Tooth module	10
Nominal moment, kN*m	300
Bearing type	roller bearings
Total weight, kg	14 500





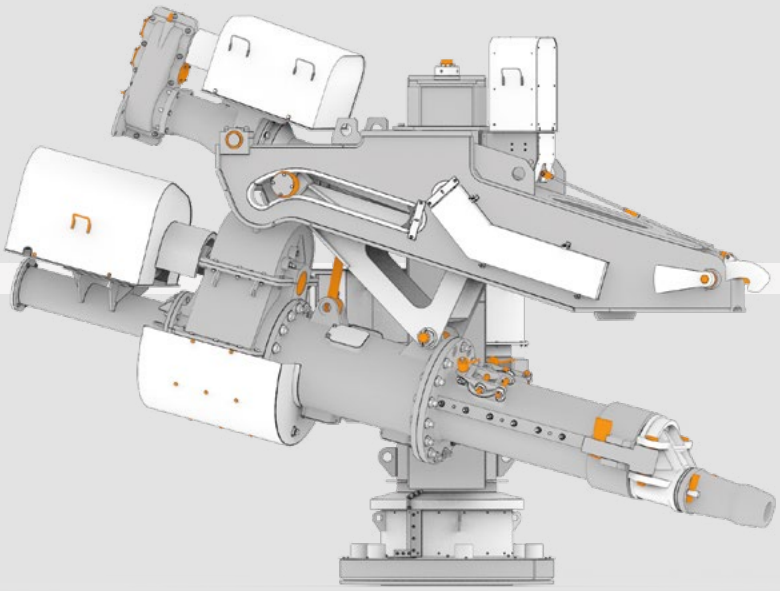


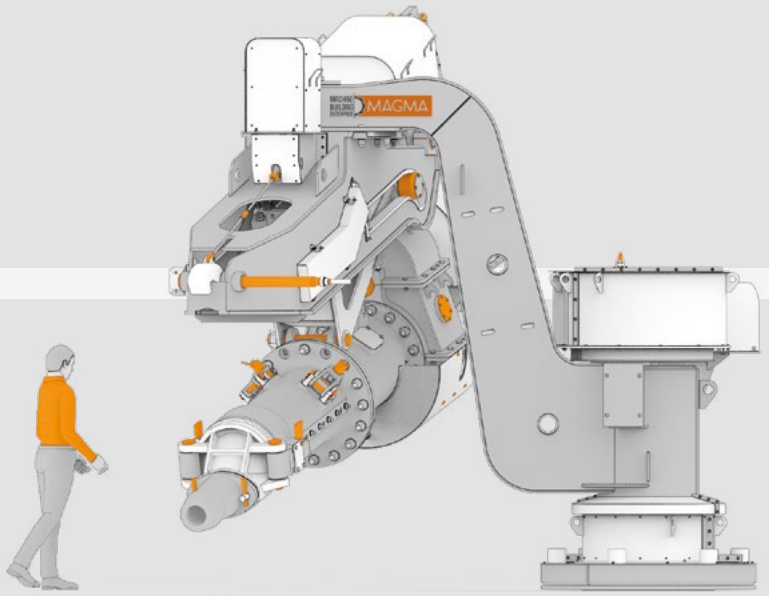
Differential Gearboxes

Differential gearbox for Blast furnace tap hole machine.

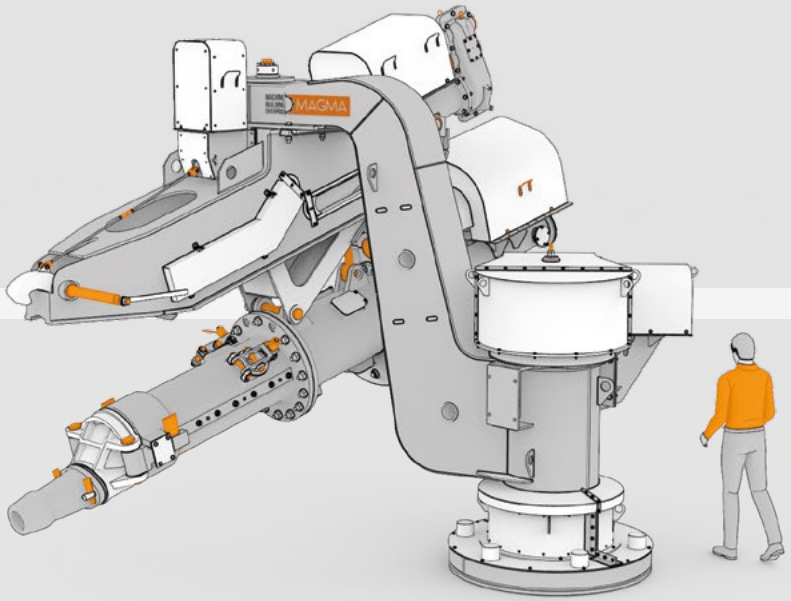
Technical specification.

Drive power, kW	2 x 15
Drive speed, rpm	1000
Gearbox ratio	18.35 / 125,1
Number of stages	2
Worm tooth module	6/8
Nominal moment, N*m	900
Bearing type	roller bearings
Total weight, kg	450





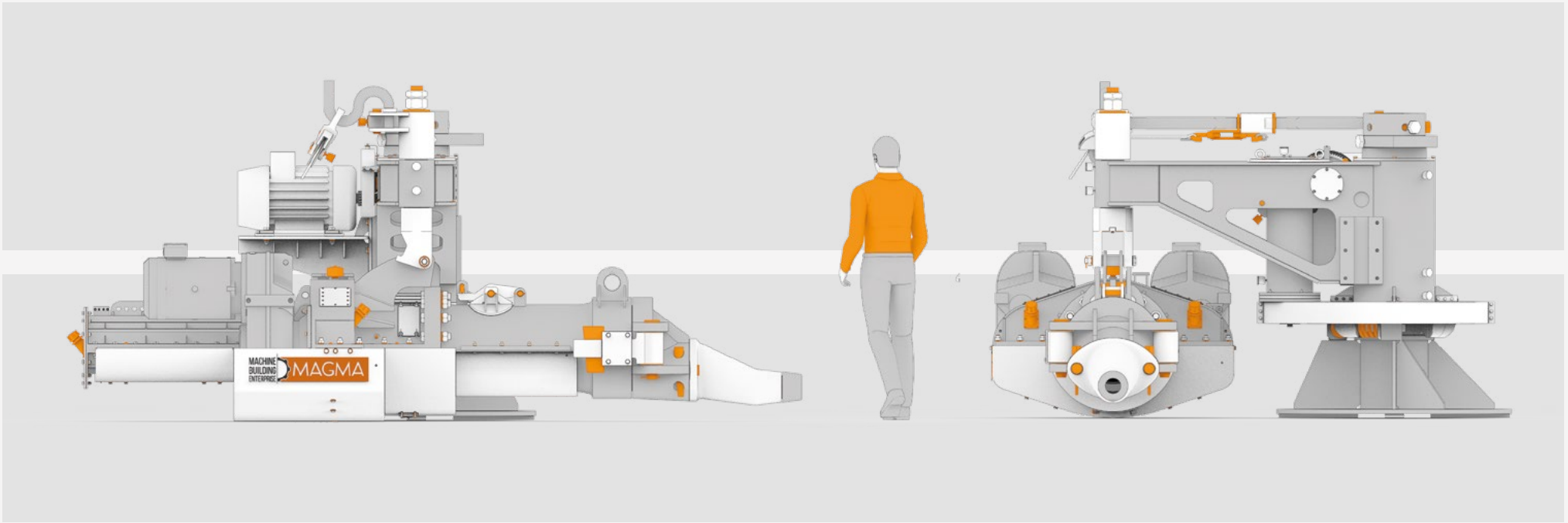
BF. Clay gun mechanical (МЗЧЛ-Э6-035)



Standard electromechanical clay gun for blast furnaces.

Technical specification.

Drive power, kW	52
Drive speed, rpm	1000
Piston diameter, mm	440/500/650
Piston stroke, mm	1475
Piston capacity, m^3	0.23/0.35/0.5
Nominal pressure, MPa	15/12/8
Bearing type	roller bearings
Total weight, kg	25 000

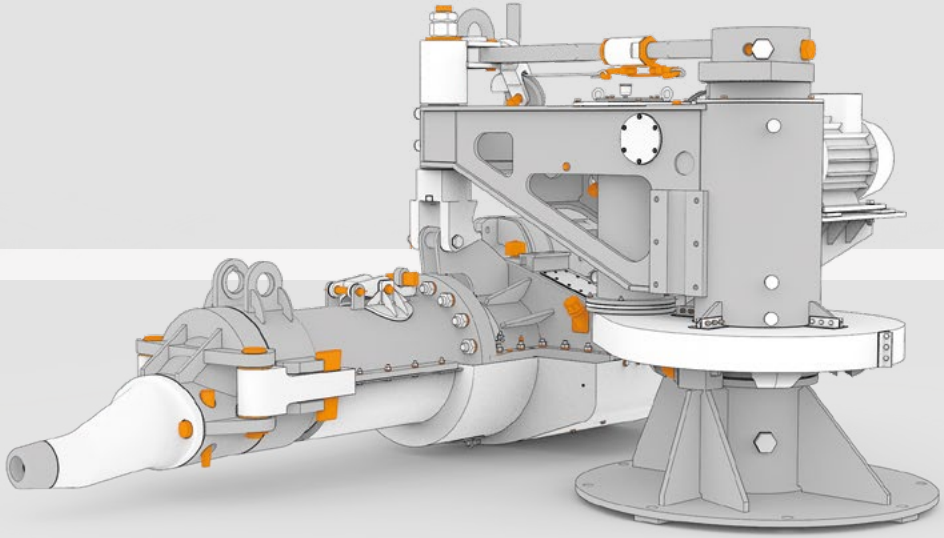


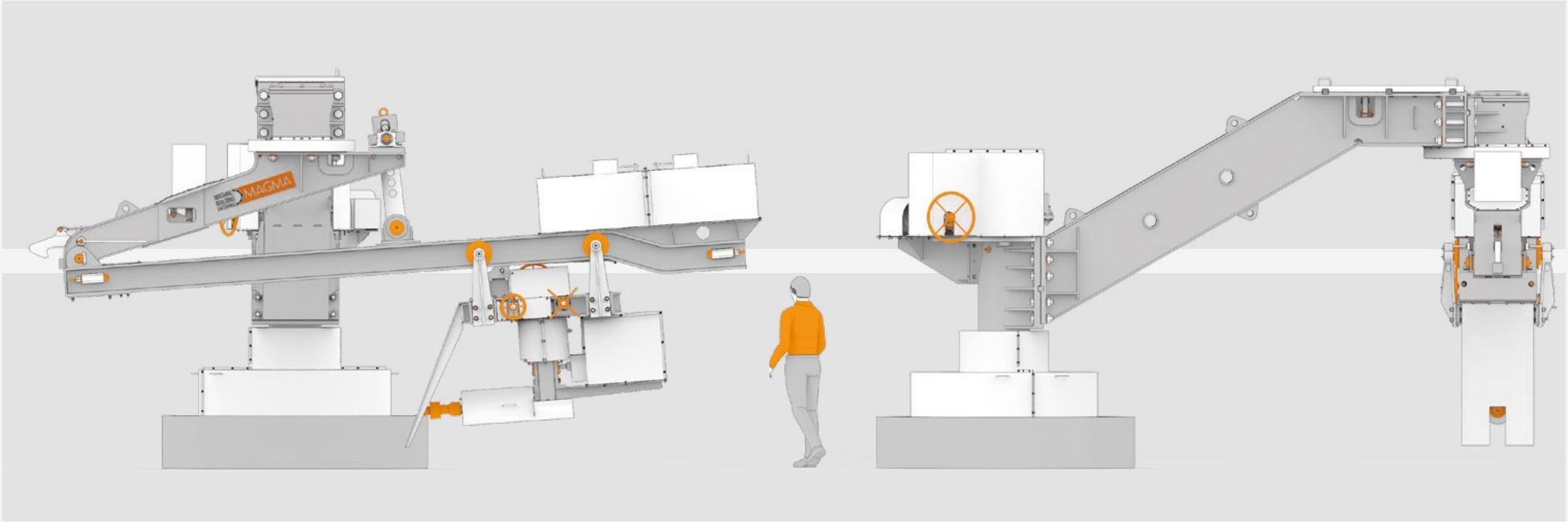
BF. Clay gun mechanical

Customized clay gun for small blast furnaces (up to 300 m^3).

Technical specification.

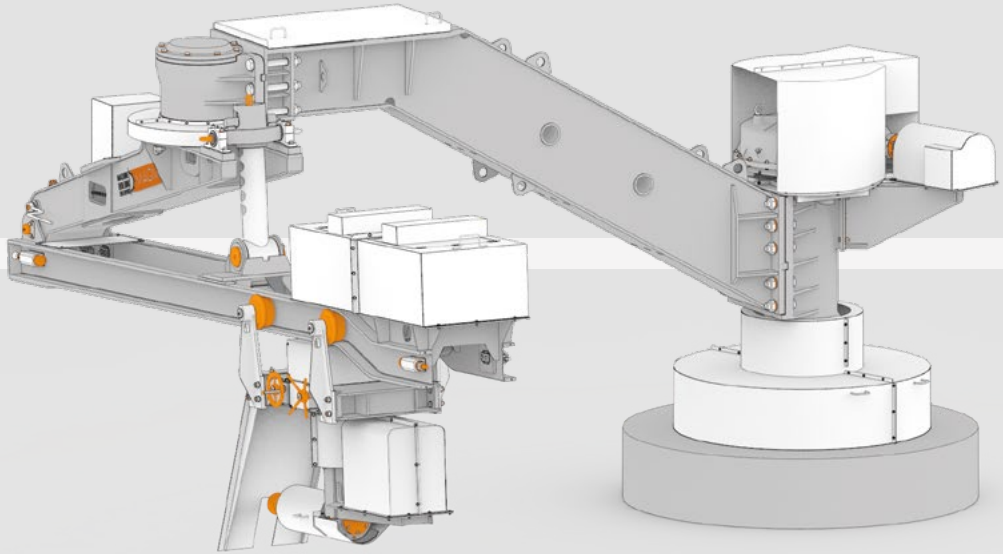
Drive power, kW	2 x 30
Drive speed, rpm	1000
Piston diameter, mm	480
Piston stroke, mm	1100
Nominal pressure, MPa	15
Bearing type	roller bearings
Clay gun weight, kg	6 500





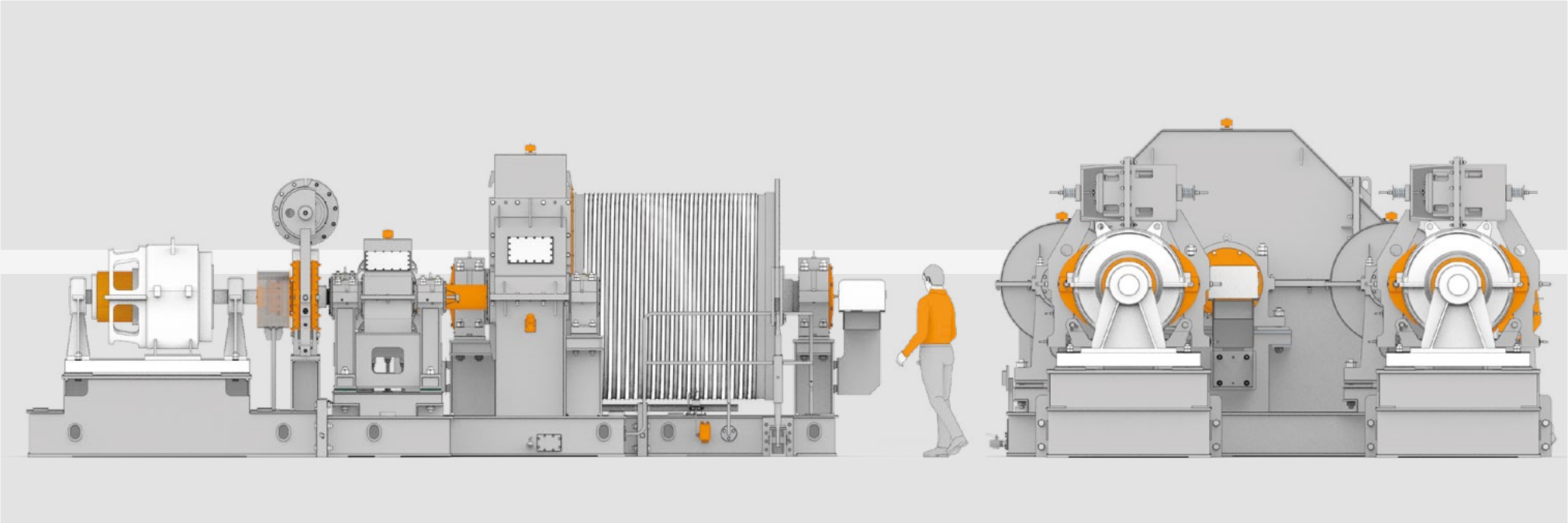
BF. Drilling machine

Standard electromechanical drilling machine for blast furnaces.



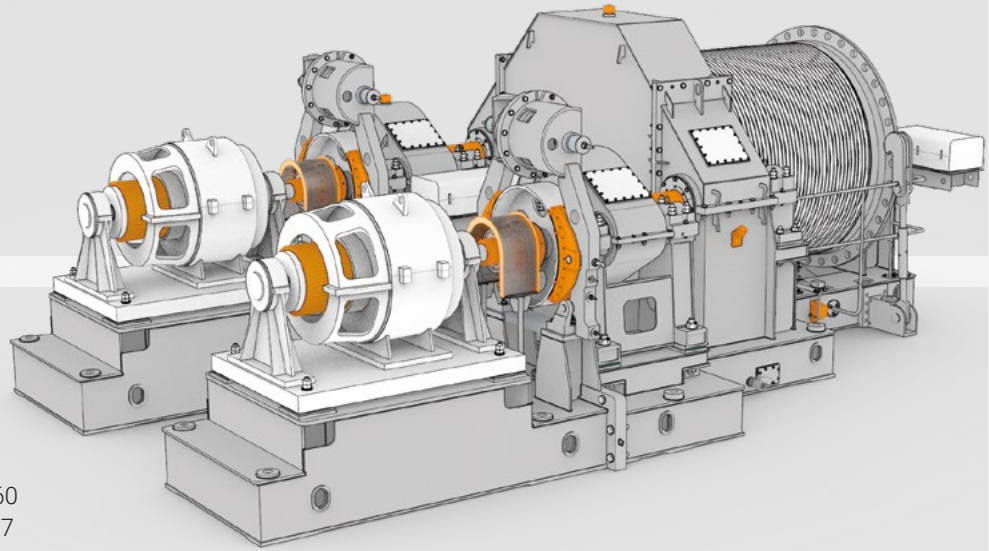
Technical specification.

Drilling drive power, kW	42
Drilling rotation speed, rpm	530
Drilling movement speed, m/min	3.23
Drilling force, N	18 000
Drilling movement gearbox type	differential
Drilling depth, mm	3 000
Total weight, kg	17 000

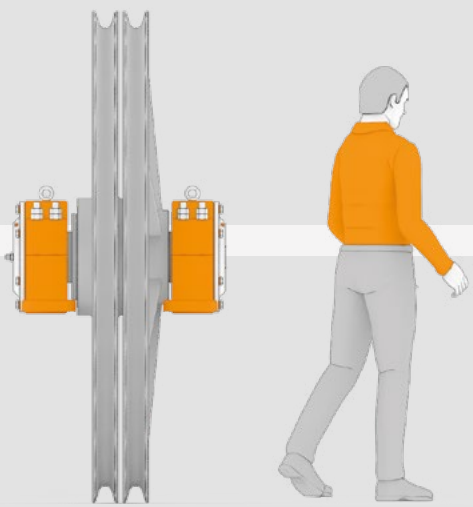


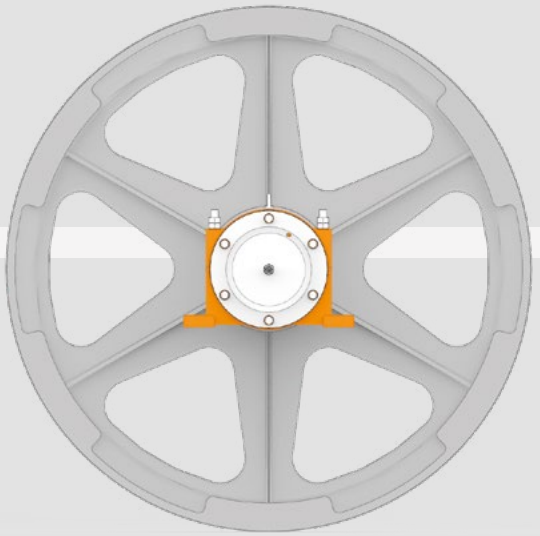
BF. Skip winch

Skip winch for charging blast furnace.

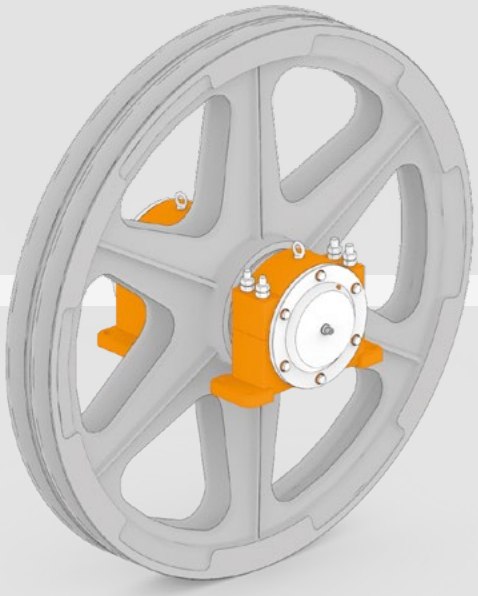


Technical specification	LS-15	LS-22.5	LS-29	LS-39
Rope drum diameter, mm	2000	2000	2000	2400
Rope drum capacity, m	88	95	95	110
Rope diameter, mm	39	43.5	47.5	52
Skip capacity, t	15	22.5	29	39
Gearbox ratio	22.43	18,59	23,03	30,38
Drive power, kW	2x190	2x260	2x480	2x550
Drive speed, rpm	620/920	500/700	685/800	750/960
Skip speed max, m/sec	2,89/4.29	2,82/3,94	3,11/3,64	3,1/3,97
Total weight, kg	61 000	79 000	89 000	125 000



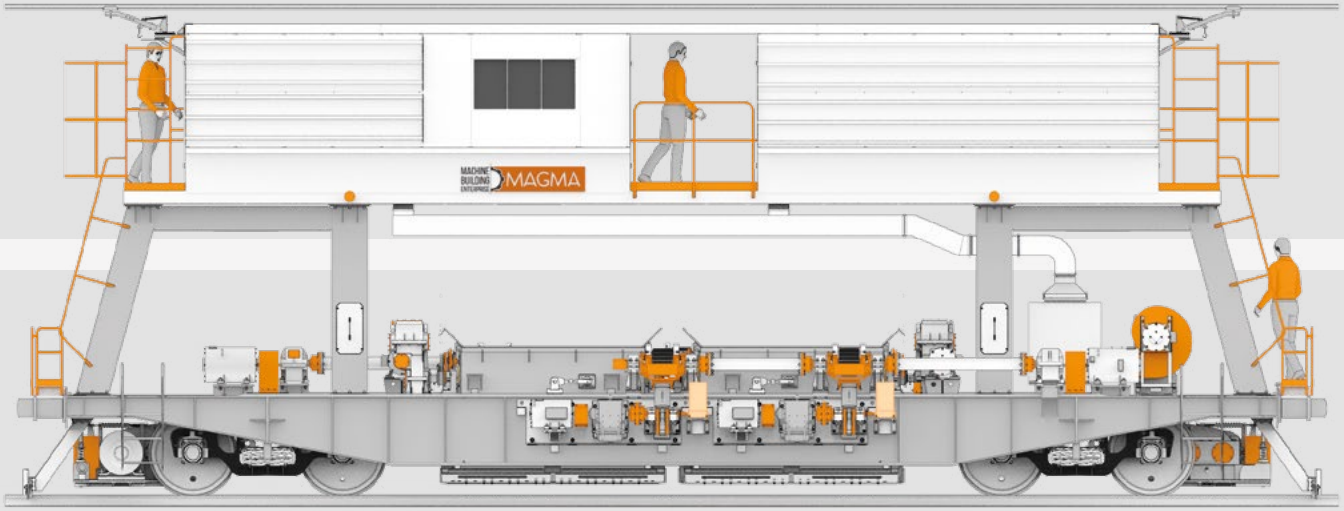


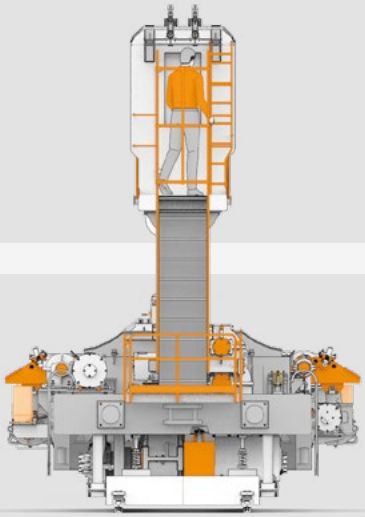
BF. Skip winch pulley



Technical specification.

Diameter, mm	2000
Rope diameter, mm	50
Rope spacing, mm	130
Bearing type	spherical roller bearings
Total weight, kg	2580





BF. Scale car

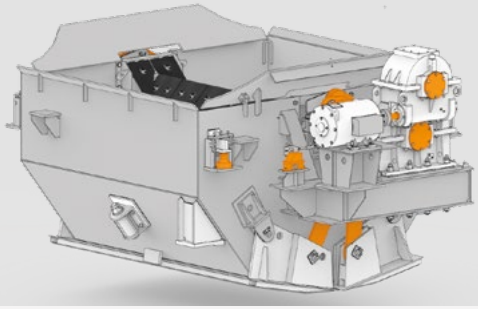
Scale car is intended to receive materials from storage hoppers, weigh those materials, and charge them into blast furnace skip cars.

Technical specification.

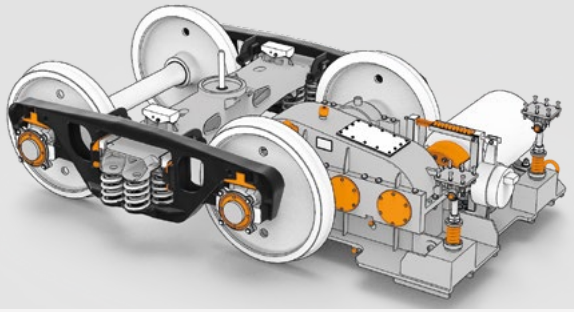
Wheel gauge, mm	1520	Scale system, type	4 load cells x 2	Current type	DC
Base, mm	10 000		Separate for each tank	Total drive power, kW	142
Carriage base, mm	1850			including:	
Capacity, t	40	Bottom scaling limit, kg	2 000	-Movement drive	2 x 37
Single tank capacity, t	20	Upper scaling limit, kg	20 000	-Charging drive	2 x 16
Number of tanks, pcs	2	Scaling accuracy, kg	20	-Swinging gearbox lifting drive	4 x 4,5
Tank volume, m^3				-Discharging drive	2 x 4,5
				Total weight, kg	73 000

^ General view.

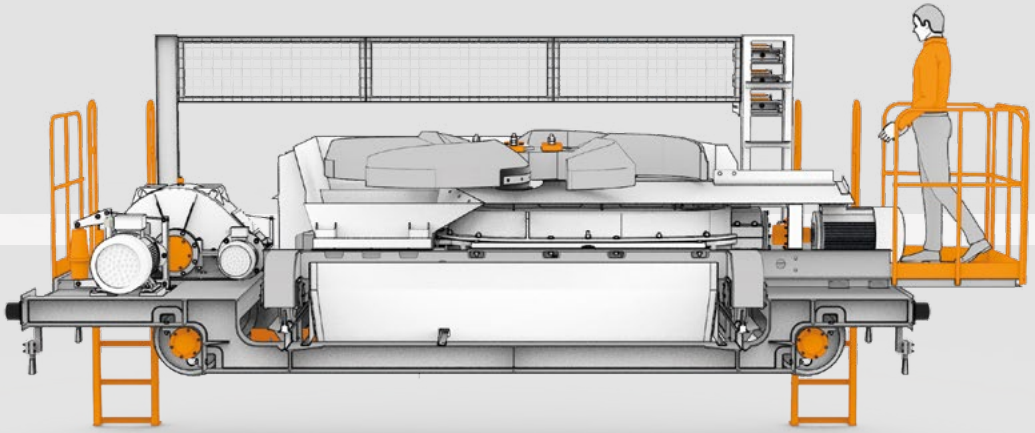
> Discharging device drive, bunker and parts of scaling system on it.



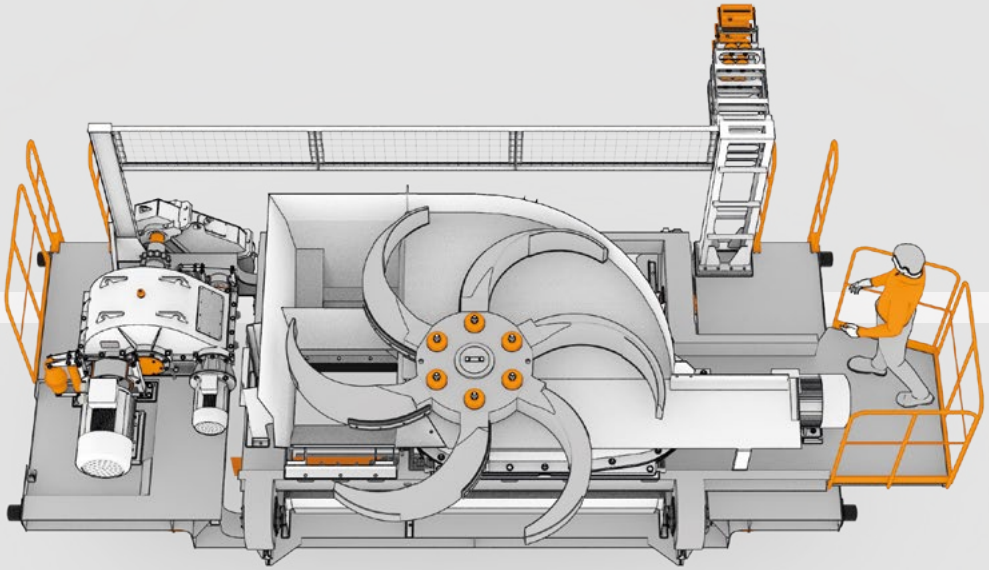
>> Trolley with gearbox and drive.

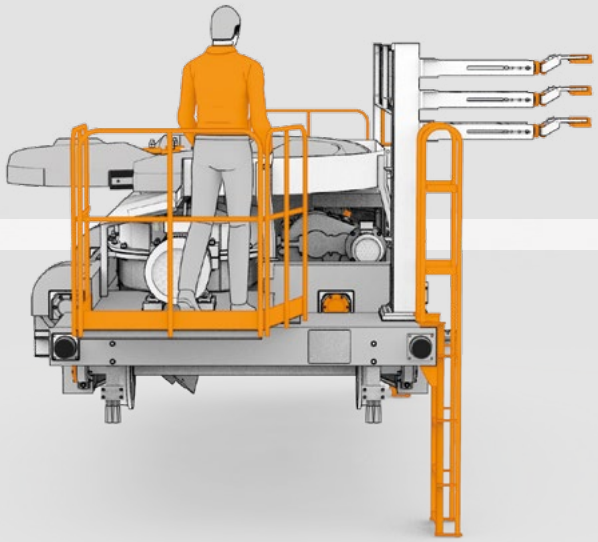


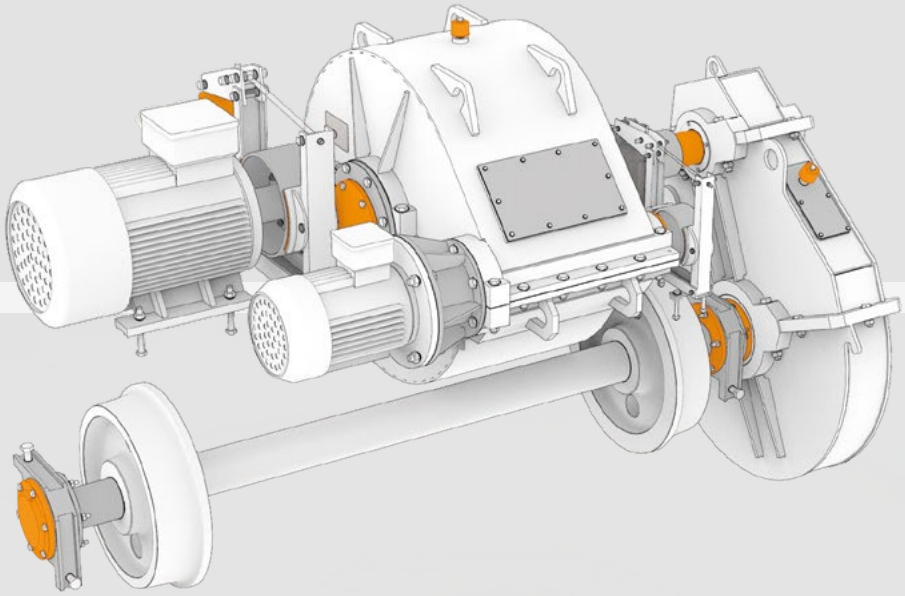
Sinter Plant. Blade Feeder



Blade feeder (self propelled) is intended for continuous supply of bulk materials to the belt conveyor of sinter plants. The material to be supplied are iron ore concentrate, iron ore, coke, limestone, dolomite.

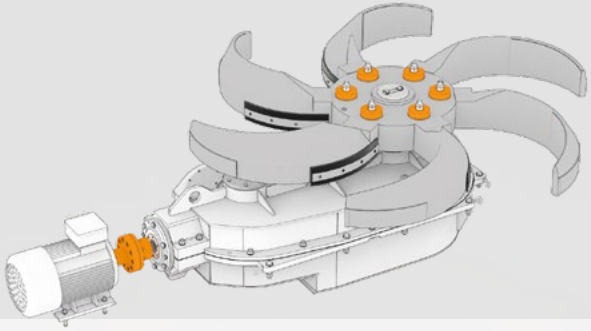






Technical specification.

Productivity, m^3/h	650
Wheel gauge, mm	1590
Base, mm	4200
Traveling speed on feed, m/min	1,86
Traveling speed without feed, m/min	88,2
Blade rotor diameter, m	2,7
Blade wheel drive power, kW	22
Blade wheel rotation speed, rpm	980

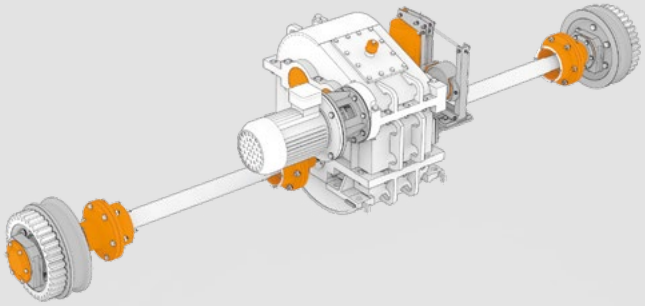


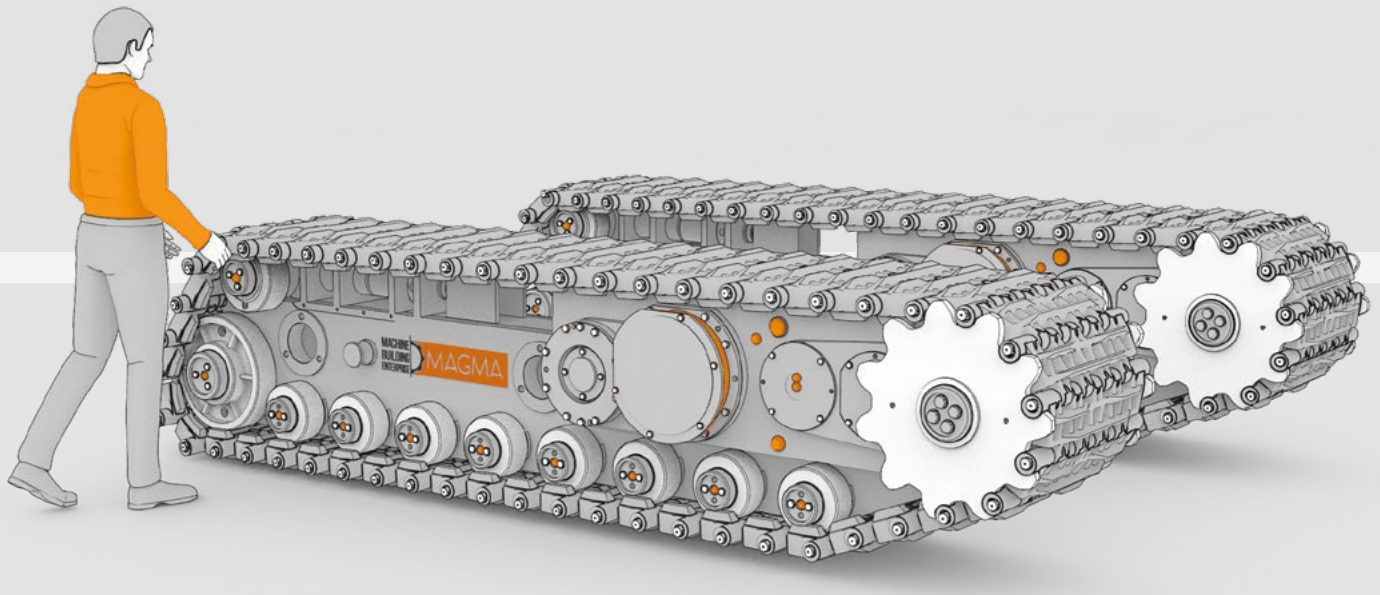
^ Differential two-motor drive of blade feeder movement.

< Blade rotor drive.

ᵛ Blade rotor trolley drive.

Current type	AC
Voltage, v	380
Total weight, kg	14 000



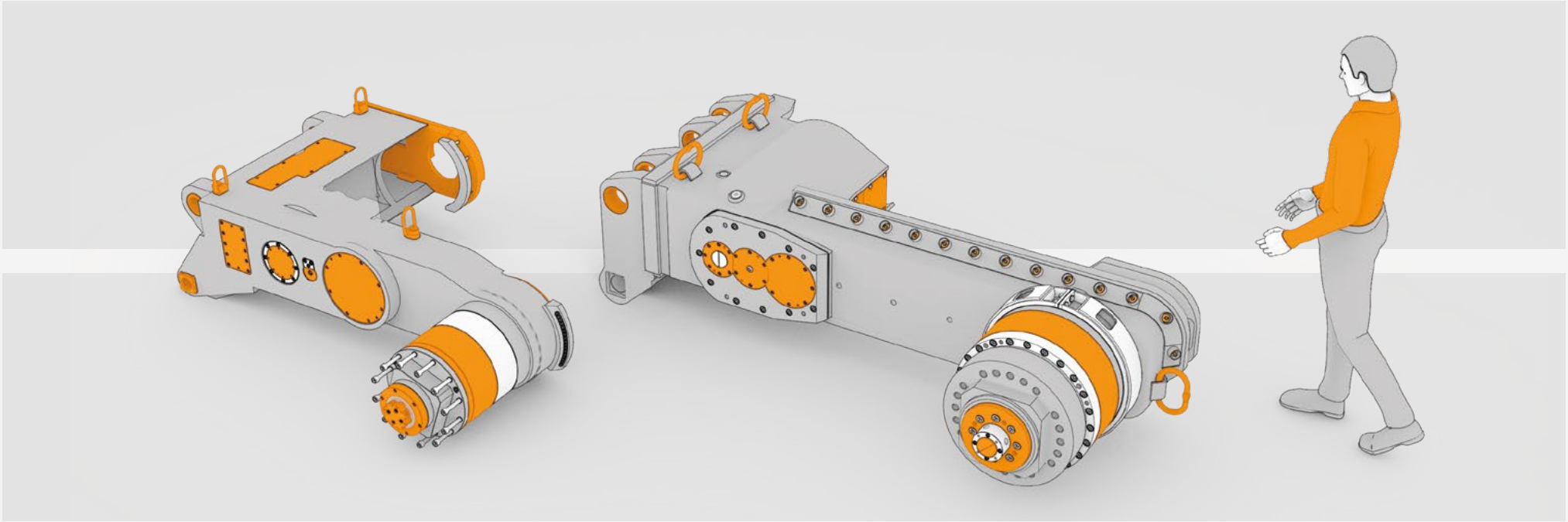


Caterpillar drive system of mining roadheader

Caterpillar carriages of the mining tunneling machine.

Technical specification.

Drive power, kW	2 x 190
Gearbox ratio	19
Moving force, kN	2 x 370
Total weight, kg	2 x 9 535



Ranging arms of mining longwall shearers

Repair drawings, reverse engineering, modernization of mining mechanical equipment.

Technical specification.

Drive power, kW	180 ... 285
Total weight, kg	2 370...5 160

Cooperation

Dear ladies and gentlemen,
We appreciate your interest in our company and your holding this brochure in your hands.
There are many machine building companies in the world, but only a few of them take care of their reputation and recognizable brand. Magma LLC is one of them. Having occupied our place in the industrial market we are using advanced industrial technologies in engineering and manufacturing of our product; we are constantly mastering and developing our product and processes, striving for sophistication.

In this view we can undoubtfully confirm our cooperation with you will be fruitful, effective, profitable and promising.

Looking forward to establishing our partnership

Sincerely yours,
Buli Sergii
CEO

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http://new.magma.ua/

Reference list. BOF Spares & BF Equipment

Year	Client	Description	Quantity	Country	Scope of supply
2010	Alchevsk Steel Plant	Swing Gear-Box of Slag Pot Car	3	Ukraine	Full manufacture
2010	Yenakievo Steel Plant	Gear-box of Slag Pot Tilting	5	Ukraine	Full manufacture
2010	JSC «Severstal»	Steel ladle car, CC-385-4800	1	Russia	Full manufacture
2010	JSC "ArcelorMittal Temirtau"	Carriage racks	3	Kazakhstan	Full manufacture
2010	Dneprovskyy Metallurgical Plant (DMK)	Tundish Ladle	3	Ukraine	Full manufacture
2011	JSC "ArcelorMittal Krivoy Rog"	Tapping Ladle Cradle	1	Ukraine	Full manufacture
2011	JSC "ArcelorMittal Krivoy Rog"	Stand for Tundish Maintenance	4	Ukraine	Full manufacture
2012	JSC «Severstal»	Slag pot car ШС-220-4800	1	Russia	Full manufacture
2012	JSC «Severstal»	Slag pot car ШСМ-16	2	Russia	Full manufacture
2012	Yenakievo Steel Plant	Swing Gear-box of Slag Pot Car	2	Ukraine	Full manufacture
2013	JSC «Severstal»	Suspended Gear-Box	4	Russia	Full manufacture
2013	Yenakievo Steel Plant	Swing Gear-box of Slag Pot Car	1	Ukraine	Full manufacture
2013	ZSMK	Suspended Gear-Box	1	Russia	Full manufacture
2014	Kazkhrome	Transfer Car l/c 130 t	1	Kazakhstan	Full manufacture
2014	Zaporizhstal	Gear-Box of Steel Ladle Car	1	Ukraine	Full manufacture
2014	JSC "ArcelorMittal Krivoy Rog"	Caisson Hauling Car	1	Ukraine	Full manufacture
2015	JSC "ArcelorMittal Temirtau"	Slag pot car	2	Kazakhstan	Full manufacture
2015	Azovstal Iron & Steel Works	Suspended Gear-Box	2	Ukraine	Full manufacture
2015	Azovstal Iron & Steel Works	BOF. Cross-Beam	2	Ukraine	Full manufacture
2016	JSC «MMK»	Slag pot car, ШС-100-4800	2	Russia	Full manufacture
2016	JSC «Severstal»	Steel ladle car, CC-385-4800	2	Russia	Full manufacture
2016	JSC "ArcelorMittal Temirtau"	BOF vessel mouth	2	Kazakhstan	Full manufacture
2016	JSC "ArcelorMittal Temirtau"	BOF shell parts	6	Kazakhstan	Full manufacture
2017	Azovstal Iron & Steel Works	Caisson Hauling Car	2	Ukraine	Full manufacture
2017	JSC "ArcelorMittal Krivoy Rog"	Caisson Hauling Car	1	Ukraine	Full manufacture
2017	Azovstal Iron & Steel Works	Caisson Hauling Car	2	Ukraine	Full manufacture
2017	Zaporizhstal	Gear-Box of Slag Pot Car	2	Ukraine	Full manufacture
2017	JSC «Severstal»	Steel ladle car, CC-385-4800	2	Russia	Full manufacture
2017	Esfahan Steel Co.	Slag pot car ШСМ-16	2	Islamic Republic of Iran	Full manufacture
2017	JSC "ArcelorMittal Temirtau"	Pig iron ladle Car ЧН-300-4350	1	Kazakhstan	Full manufacture
2017	JSC «Severstal»	Slag pot car	2	Russia	Full manufacture
2018	JSC "ArcelorMittal Temirtau"	BOF mouth	1	Kazakhstan	Full manufacture
2018	JSC "ArcelorMittal Temirtau"	BOF shell	1	Kazakhstan	Full manufacture
2018	JSC "ArcelorMittal Krivoy Rog"	Steel Ladle Car 250	8	Ukraine	Full manufacture
2018	JSC "ArcelorMittal Temirtau"	Steel Ladle KS-300	1	Kazakhstan	Full manufacture
2018	JSC "ArcelorMittal Temirtau"	BOF scrap charging machine	1	Kazakhstan	Full manufacture
2018	JSC "ArcelorMittal Temirtau"	Slag pot car ШС-320	2	Kazakhstan	Full manufacture
2018	"Sider El Hadjar"	60 t Converter	1	Algeria	Engineering
2019	JSC "ArcelorMittal Krivoy Rog"	160 t BOF Trunnion Ring	1	Ukraine	In progress
2019	Azovstal Iron & Steel Works	350 t BOF tilting drive	2	Ukraine	In progress