

Demag hot metal ladle cranes

Two-girder and four-girder process cranes for the ferrous and non-ferrous industry



Demag process cranes – providing performance in the ferrous and non-ferrous industry



Demag Cranes & Components provides crane solutions for the entire value creation process, both in the metal-production and the metal-processing industry and in the metal trade. For example, in the steel sector ranging from production to applications in the automotive industry.

Demag Cranes & Components provides complete handling solutions as a strong partner for the ferrous and non-ferrous industry as well as downstream of the ladle.

For applications in the ferrous and non-ferrous industry that are dominated by punishing operating conditions, our regional subsidiaries design and engineer customised state-of-the-art heavy-duty process cranes

in the emerging markets for applications such as:

- pouring
 - charging and
 - pelletising
- a variety of metals and alloys including:
- steel
 - cast iron
 - copper
 - ferrochrome
 - manganese

Designed for the purpose

Depending on the application and specific process requirements, Demag Cranes & Components supplies appropriately configured

- double-girder overhead travelling cranes and
- four-girder overhead travelling cranes

in crane classifications A6/M6 to A8/M8 with innovative crab designs for overhead transport tasks and process-specific handling of ladles with molten materials.



Functional safety and reliability

The operating conditions in which molten materials are handled under extremely high or fluctuating ambient temperatures place severe demands on the various components used in our process cranes and their functional reliability and availability. Demag Cranes & Components provide cranes that have to perform consistently in around-the-clock operation.

Ferrous and non-ferrous ladle cranes to suit any application

	Steel	Copper	Ferrochrome	Manganese	Alloys
Charging	■	■	■	■	■
Teeming	■				
Casting	■		■	■	■
Pouring	■	■	■	■	■
Bumping		■			
Pelletising			■		

Fe-C

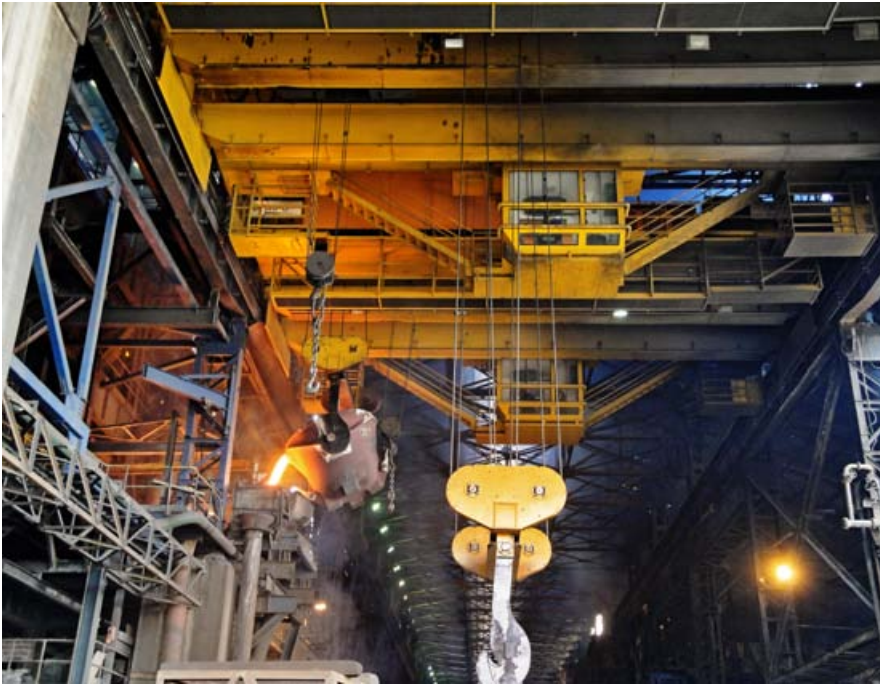
$Fe^{2+}Cr_2O_4$

Cu

Mn

Alloys

Demag four-girder overhead travelling cranes – process cranes for particularly versatile applications in the metal industry



The main crab, travelling on the outer girders, lifts the ladle via a reeved-in ladle beam and transports it to the pouring position.

The auxiliary crab:

- runs on the two inner girders and tilts the ladle
- travels underneath the main crab and can access either side of the ladle
- allows the user the flexibility of pouring in either direction
- has a smaller approach dimension than the main crab, allowing it to perform lifting and transport duties close to the edge of the bay

55/25-t four-girder overhead travelling crane for Mopani Copper, Zambia, span 18 m (photograph above, 3D illustration below and right)

Companies in the steel, ferrous and non-ferrous industry and their foundries rely on Demag process cranes all over the world. Demag Cranes & Components can supply the right solution to meet all requirements. For example, for the safe and efficient handling of ladles to serve continuous casting lines and for ingot-casting applications.

Four-girder overhead travelling crane for Mopani Copper

One example is the facility at Mopani Copper in Kitwe, Zambia, where Demag Cranes & Components configured a four-girder overhead travelling crane, which included:

- a main crab with a 55-t hoist unit and
- an auxiliary crab with a 25-t hoist unit.



Running on the two inner girders of the four-girder crane, the auxiliary crab allows the ladle to be tilted in either direction



Wheel blowers

- To clean rails and reduce general wheel wear



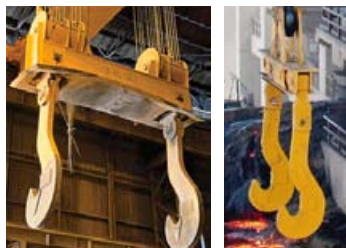
Standard Demag geared motor and wheel sets

- Integrated mounting with torque stay
- Quick geared motor replacement
- Eccentric cartridges for alignment possible
- Custom design also possible



Multiple wheel bogies

- Load equalising arrangement
- Standard Demag wheels or special design (tyred)
- Designed to suit maximum loads and spacing
- Line bored to allow quick wheel replacement without realignment
- Eccentric cartridges to assist in wheel alignment



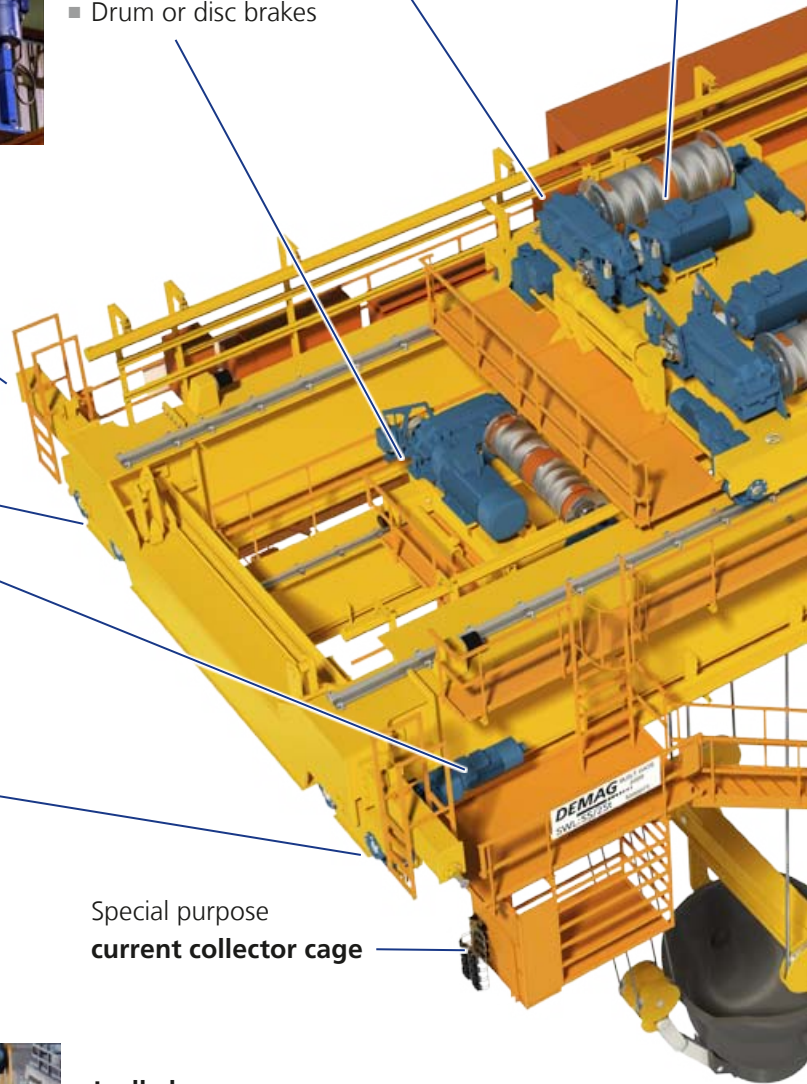
Emergency brakes

- Rope drum brake
- Fail to safe (spring applied and hydraulically released)
- Category 3 design
- Manual lowering via hand pump



Fail to safe brakes

- Dual system
- Drum or disc brakes



Special purpose current collector cage

Ladle beam

- Reeved-in or bridle type
- Variable hook centres possible
- Laminated plate hooks to DIN
- Safety reeving
- Load measuring in beam

Integrated specific purpose MPW

- Disc or drum brake
- Demag gearbox helical and/or planetary

Heavy duty festoon system

- Shielded from heat
- Energy chain also possible



Kinematic chain configuration

- Category 3 design

Provision for crane **transpositioning system** to client specification

Easy access via ladders, platforms and stairways

Panoramic cabin

- Special glazing
- Air conditioned
- Fixed or rotating chair and/or consoles
- Heat protection
- Purpose design possible



Electrical house on girder

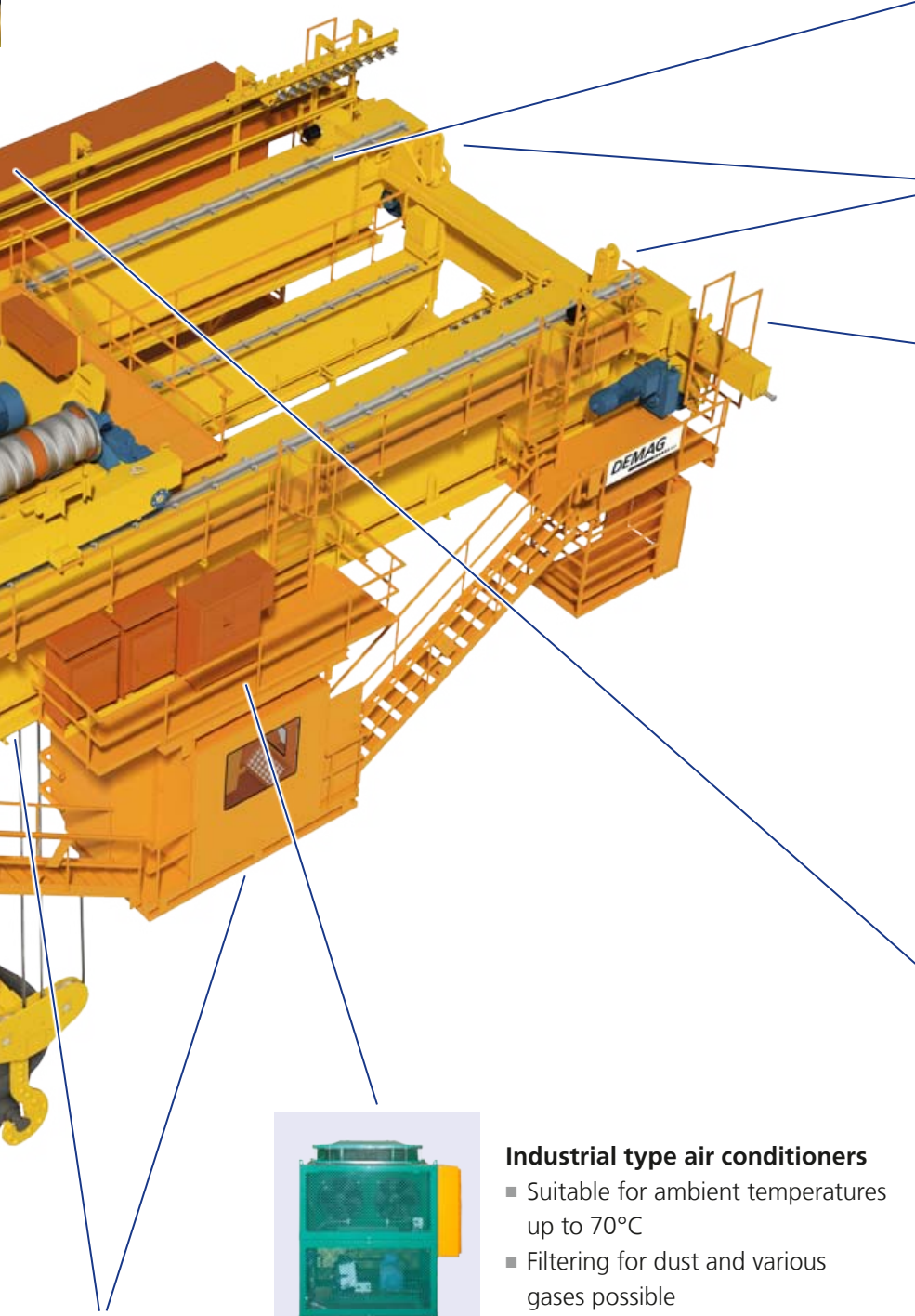
- Air conditioned and thermally insulated
- IP55 pressurised with dust and gas filtration option
- Modular equipment layout for easy maintenance
- Fire extinguishing option available

Industrial type air conditioners

- Suitable for ambient temperatures up to 70°C
- Filtering for dust and various gases possible
- Stainless steel option



Heat shields



More process crane applications in steel production and foundries

Demag Cranes & Components offers many two-girder overhead travelling cranes for the steel-making industry and foundries with individually designed types of crabs and winches for a wide range of load capacities and speeds. In the transport of molten masses, safety has always been given top priority by Demag Cranes & Components – in the interest of both people and processes.



Two 50/8-t two-girder overhead travelling cranes for transport of ladles and flasks in Germany, span 17 m



150/50-t two-girder overhead travelling crane for transport of molten materials in a German stainless steel factory



150/50-t two-girder overhead travelling crane for Arcelor Mittal, South Africa, span 24 m



200/32/10-t two-girder overhead travelling crane for TISCOR, South Africa, span 22 m

Solutions for applications downstream of the ladle



32/6.3-t two-girder overhead travelling crane for roll-changing in a plant making sheet piling



Coil handling in a cold-rolling mill in Germany: 36-t process crane with an automated storage area and inventory management system

Demag cranes – all the way down the line

As well as state-of-the-art process cranes for handling hot materials in the metals industry, Demag Cranes & Components also provides process cranes for all downstream activities, such as:

- storage, transport and fitting of rollers in profile hot-rolling mills
- handling of coils and long materials with special load handling attachments
- management of storage spaces for hot and cold-rolled coils.

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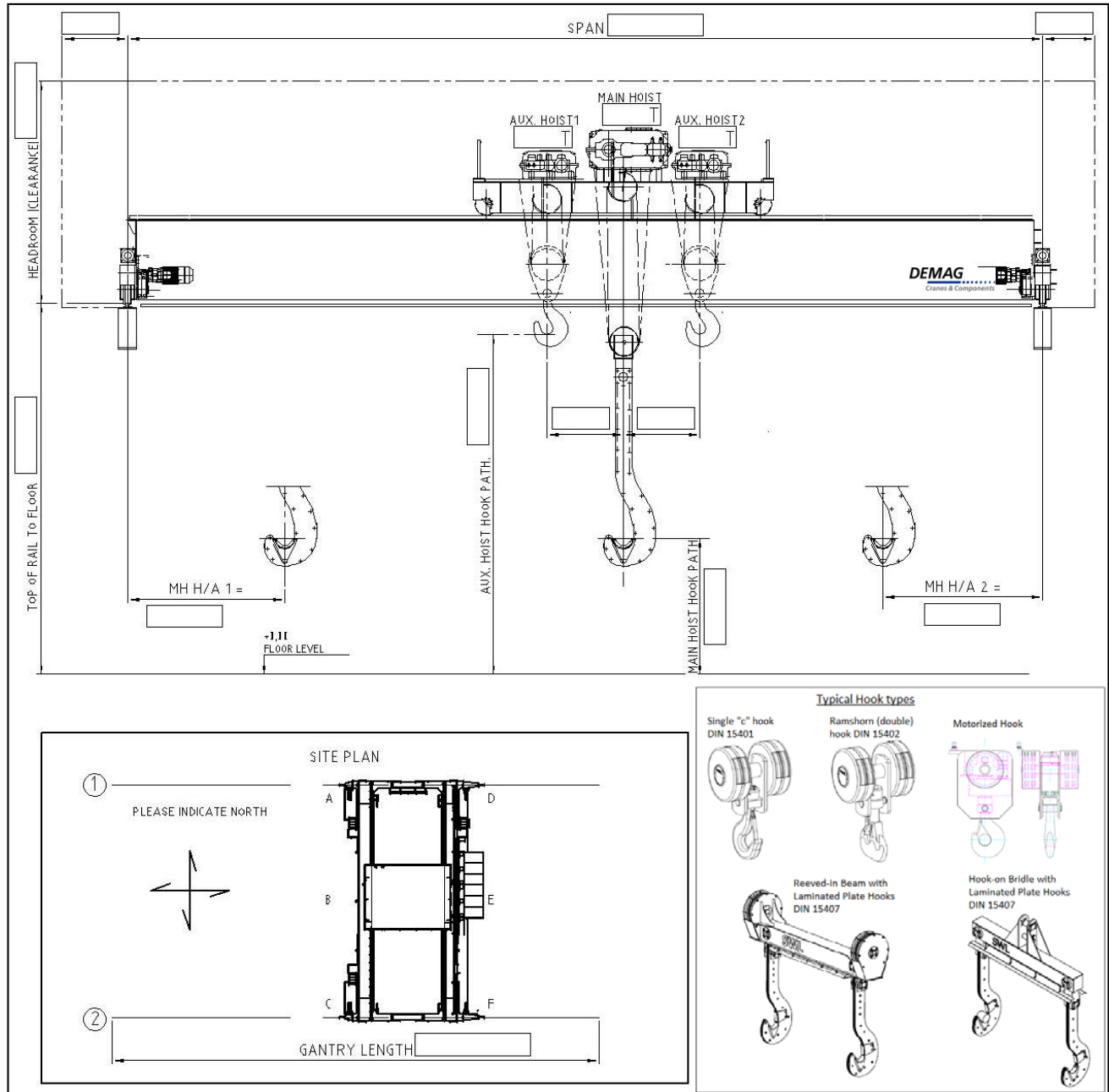
Email: info@demagcranes.com

www.demagcranes.com

Crane Description:

Customer Information:

RFQ no.:
 Customer: Contact person:
 Address:
 Tel. Fax E-mail



Capacity: SWL/MML (metric tonne)	Speeds: (m/min)	Hook Path (m)	Duty rating to FEM / BS	Hook Type: Single "c" / Ramshorn / Laminated plate	Preferred control: D.O.L / Inverter / Thyristor
Main Hoist t					
Aux. Hoist 1 t					
Aux. Hoist 2 t					
Aux. Hoist 3 t					
Aux. Hoist 4 t					
Cross Travel 1		-		-	
Cross Travel 2		-		-	
Cross Travel 3		-		-	
Long Travel		-		-	
Bridge (SWL) t	-	-		-	-

Crane Description:.....

Electrical:

Control Method: Pendant Radio Cabin Automated

Cabin Position: (A/B/C/D/E/F) :

Panel Type: Panels E-house

Panel Position (A/B/C/D/E/F) :

Heat Sources (A/B/C/D/E/F) :

Supply voltage:V

Frequency : 50 / 60 Hz

Downshop/gantry length :.....m

Downshop side; 1 / 2

Downshop Power supply to be quoted: Y / N

Site Conditions:

Height above sea levelm

Ambient Temperature

Min.....°C

Max.....°C

Inland Coastal

Indoors Outdoors

Gasses present:

LT Rail Type:

Ladle Information:

Empty Ladle mass:kg

Trunnion centres:mm

Material mass:kg

Trunnion diameter:mm

Material to be handled

Temp. of molten material:°C

Duty Classification: (if not mentioned in table)

Number of full ladles handled per day:

Other operations:

Number of empty ladles handled per day:

Number of cycles per day.....

Mass to be handled.....kg

Number of production days per year:

Average hook path:.....m

Average CT distance:.....m

Average LT distance:.....m

Type of operation:

Charging

Pouring/Teeming

Tundish handling

Furnace shell handling

Ladle bumping

Features:

Floodlights qty.....

Fall protection life-line on bridge

Anti-collision on LT motion: one direction

Anti-collision on LT motion: both directions

Load weighing ⇒

Display on bridge

Display in Cabin/pendant

Display off crane

Load recording

EN14492-2 safety requirements

EN954-1 Control Category 3

Special Safety Requirements:

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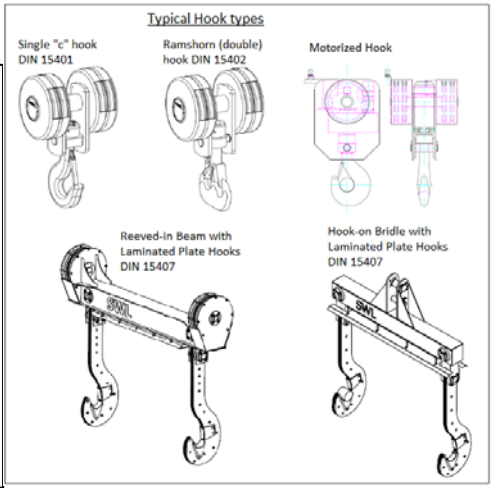
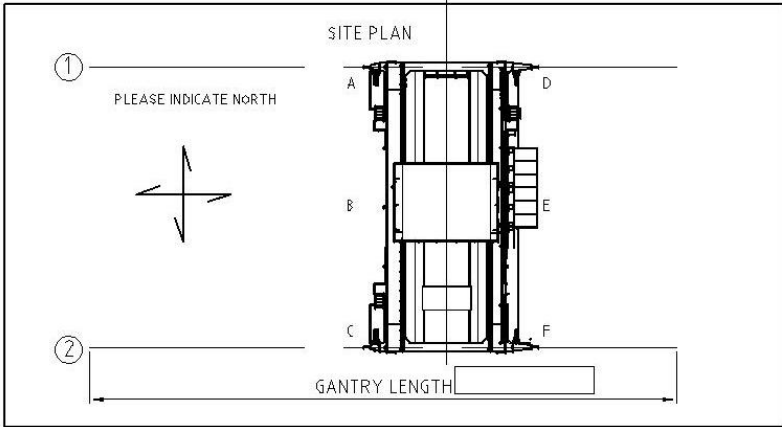
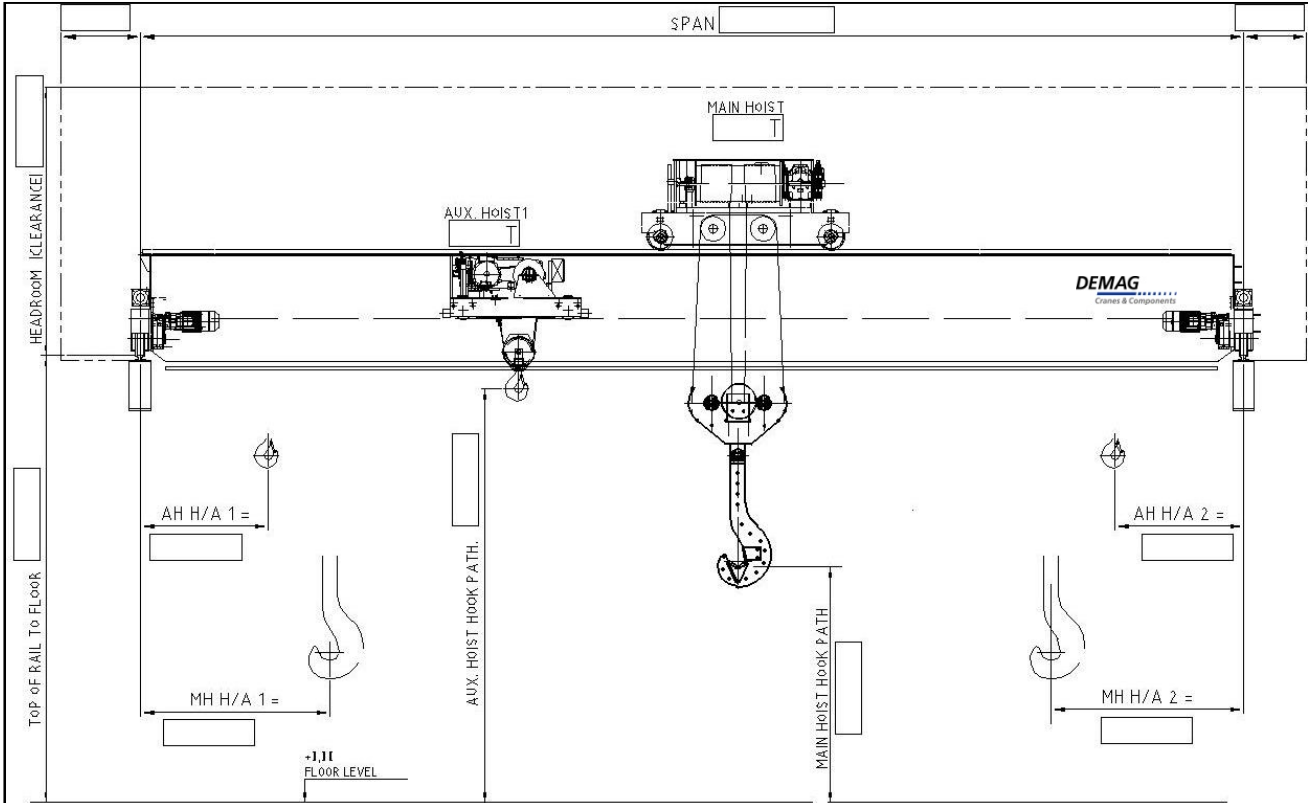
Other Requirements:

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Crane Description:.....

Customer Information:

Customer: RFQ no.:
 Address: Contact person:
 Tel. Fax E-mail



Capacity: SWL/MML (metric tonne)	Speeds: (m/min)	Hook Path (m)	Duty rating to FEM / BS	Hook Type: Single "c" / Ramshorn / Laminated plate	Preferred control: D.O.L / Inverter / Thyristor
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Cabin Position: (A/B/C/D/E/F) :

Panel Type: Panels E-house

Panel Position (A/B/C/D/E/F) :

Heat Sources (A/B/C/D/E/F) :

Supply voltage:V

Frequency : 50 / 60 Hz

Downshop/gantry length :.....m

Downshop side; 1 / 2

Downshop Power supply to be quoted: Y / N

Site Conditions:

Height above sea levelm

Inland Coastal

Gasses present:

Ambient Temperature Min.....°C

Max.....°C

Indoors Outdoors

LT Rail Type:

Ladle Information:

Empty Ladle mass:kg

Material mass:kg

Material to be handled

Trunnion centres:mm

Trunnion diameter:mm

Temp. of molten material:°C

Duty Classification: (if not mentioned in table)

Number of full ladles handled per day:

Number of empty ladles handled per day:

Number of production days per year:

Average hook path:.....m

Other operations:

Number of cycles per day..... Mass to be handled.....kg

Average CT distance:.....m

Average LT distance:.....m

Type of operation: Charging Pouring/Teeming Tundish handling Furnace shell handling Ladle bumping

Features:

Floodlights qty.... Fall protection life-line on bridge Anti-collision on LT motion: one direction
 Anti-collision on LT motion: both directions

Load weighing ⇌ Display on bridge Display in Cabin/pendant Display off crane Load recording

EN14492-2 safety requirements

EN954-1 Control Category 3

Special Safety Requirements:

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Other Requirements:

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