



YUANTAI CRANE

Ladle Crane Specification



- Used in steel plant for special craft
- Very reliable, stable travelling, convenient maintenance
- Good in usability, long service life
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Part 1 Introduction

◆ Overall Features

- (1) Used in steel plant for special craft
- (2) Very reliable, stable travelling, convenient maintenance
- (3) Good in usability, long service life
- (4) High loading ability, high working class



◆ Supply Scope

Our company mainly manufactures ladle cranes with lifting capacity of 5~550t, span of 10.5m~31.5m, lifting height of 1m-30m, working class (A7), also can design and manufacture according to requirements.

◆ Applications

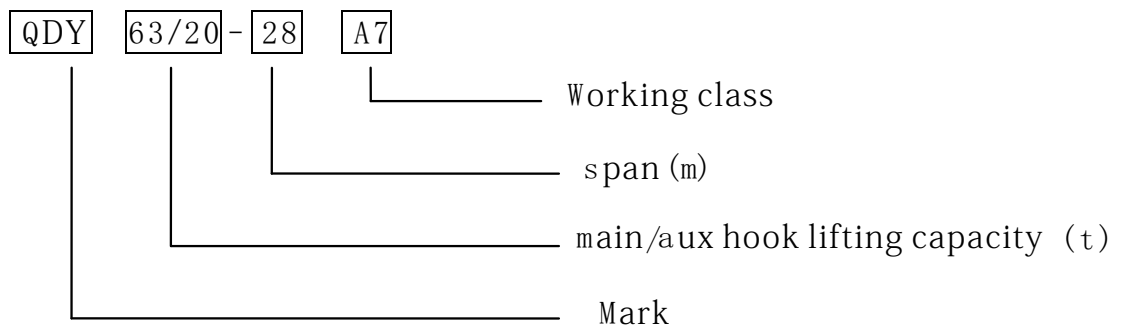
- (1) It is designed based on the QD type overhead crane.
- (2) Mainly used for transporting, pouring, and charging liquid metal during the smelting process.
- (3) Crane assembly and test accord with No. 375, 2007 document issued by AQSIQ.

◆ Conditions

It is applicable in the temperature of $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$, Humidity $\leq 85\%$; if the temperature is below $+60^{\circ}\text{C}$, humidity $\leq 50\%$. Altitude below 1000m, Power is 3-phase 380v 50HZ (also can be customized according to customer's requirements).

◆ Specification and Description

Mark: for example, ladle crane with lifting capacity of 20/5t, span of 10.5m, it is QDY20/5t-10.5m.



Note: If some items are without marks, such as lifting height, type of cabin and entry direction, rail type, crane conductor, Mechanism working class, air conditioner etc. it should instruct in the contract or product technical drawing.

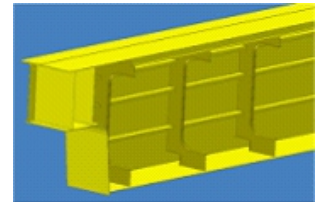
◆ Structure and Characteristics

Mainly composed of bridge frame, trolley, traveling mechanism and electrical equipments.

Note: The main hook is used for lifting steel ladle, the aux. hook is used for lifting other goods; It is not allowed for Main and AUX. hooks to lift two different goods at the same time. When separate working, it is not allowed to exceed the rated lifting capacity of main and aux. Hook. Working at the same time, it is not allowed to exceed the rated lifting capacity of main hook.

■ Bridge Frame

1. Double girders, welding box beam, camber meets the national standard.
2. Steel quality is Q235B or Q345B (international Fe37 or Fe52) .
3. The main girder adapts box beam structure.
4. Main girder section is designed by computer, to make sure the main girder with strength and stiffness, light weight.
5. The electrical equipments are inside the main girder.
6. The end truck is divided into rigid beam and hinged beam.
7. Rigid beam is connected by bolt, hinged beam is connected by pin shaft.
8. Rigid beam have "Ingot" type and level straight type.

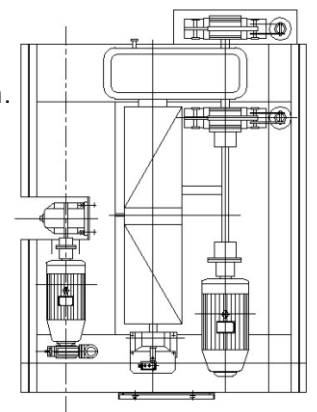


■ Parts

1. Walking board, platform, railing, ladder etc. are designed and manufactured according to national safe standards.
2. There is safe board with height not less than 90mm , around the walking board and platform, the height of railing is not less than 1050mm.
3. In order to avoid molten steel radiation to reduce the service life of main girder, there is thermal protective plate below the main girder. (it is made of rock wool and steel plate) .
4. The conductor of trolley is I-beam, safe and reliable, easy maintenance.
5. With crane conductive line cage and block frame.

▣ Trolley

1. It is composed of motor, reducer, brake, coupling, wheel and wire drum.
2. Equipped with special motor for metallurgy, insulation class is H.
3. Matched with two sets brakes (double braking)
4. Trolley has double-drive mechanism, reducer's gear is driven on hard-toothed surface.
5. Adapt 6W (19) high strength, line contact metal core wire rope, security coefficient ≥ 6



▣ Crane traveling mechanism

1. It consists of drive device and wheel device.
2. The drive device consists of motor, brake, reducer etc.
3. The wheel device consists of initiative wheel device, slave wheel device.

Drive devices are equipped on pedestal, which is in main girder's four corners, the initiative wheel make the crane travel, it is called "four corner's drive"

▣ Electrical parts

- 1.The electrical room of main girder adopts rock wool to prevent heat and keep warm, with air cooler.
- 2.Electrical devices are sealed for dustproof, heat insulation and cooling
- 3.The power supply of trolley moving adapts thermostability cable.

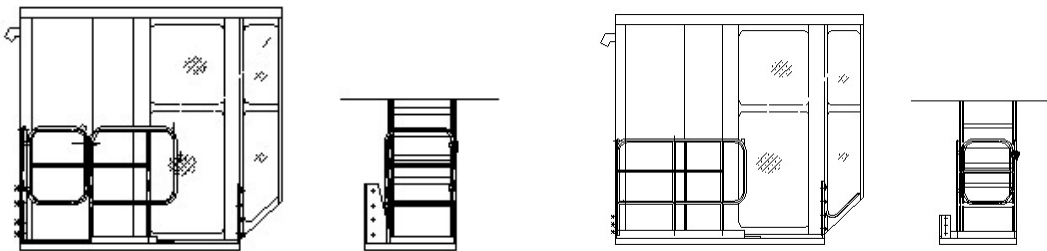
■ Protection

- 1.Crane is equipped with overhead limiter or electric scale for protecting and weighing.
- 2.With anti-collision device and audible, visual alarm devices.
- 3.Over-speed switch is fixed on main lifting motor shaft.
- 4.Lifting mechanism have both of positive contactor and reverse contactor failure protection function.
- 5.Both crane and trolley use spring buffer.
- 6.Other safe protection functions

Under-voltage protection、 ground fault protection、short-circuit protection、 over-heating protection、 overload protection、 position limit protection、 over-current protection、 power-off protection etc.

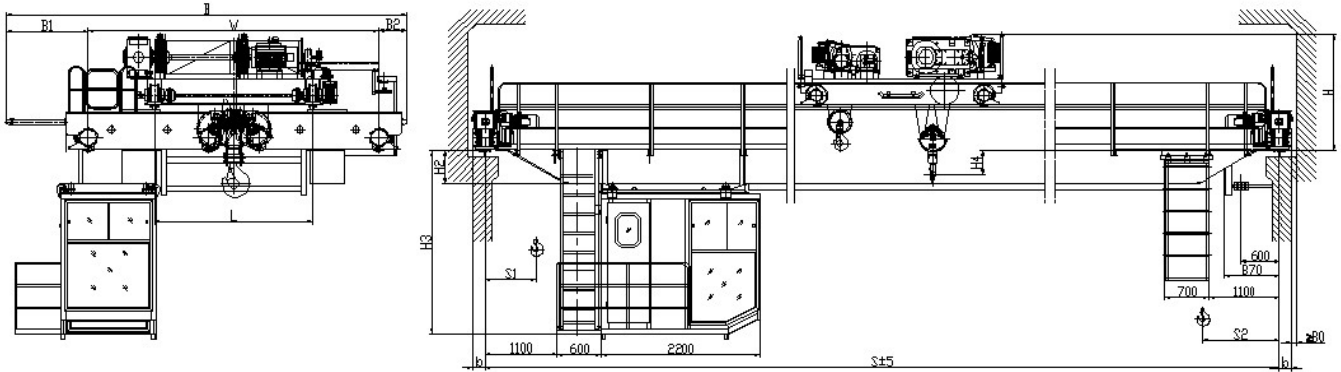
■ Control ways

- 1.Closed warming cabin control, remote control.
- 2.Windows in the cabin use double-layer tempered glass.
- 3.Inside the cabin equipped with air conditioner or industrial cooler.
- 4.The installation of cabin can be divided into two ways of left or right.
- 5.The open direction of cabin door has side open, end open and top open, below are side open and end open.



Part 2 Drawing

General structure



Part 3 Parameters

QDY Overhead Crane with Hook Foundry 5t

Span	S (m)	10.5	13.5	16.5	19.5	22.5	25.5	28.5	31.5
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Lifting height	m	16	16	16	16	16	16	16	16
Lifting speed	m/min	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Trolley speed	m/min	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5
Crane speed	m/min	118.6	118.6	118.6	118.6	118.6	119.3	119.3	119.3
Lifting motor	kw	13	13	13	13	13	13	13	13
Trolley motor	kw	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Total weight	kg	14960	17140	18785	22060	24780	30830	34900	38720
Max Wheel Load	KN	80	87	92	102	107	123	135	143
Track		P43	P43	P43	P43	P43	P43	P43	P43

Main dimension	mm	10.5	13.5	16.5	19.5	22.5	25.5	28.5	31.5
Rail top to main top	H1	1763	1763	1763	1763	1763	1763	1763	1763
Rail top to hook centre	H2	71	71	71	71	71	71	71	71
Wheel base	W	3400	3400	3400	3550	3550	5000	5000	5000
Crane width	B	5150	5150	5150	5300	5300	6020	6020	6020
Hook left limitation	S1	1600	1600	1600	1600	1600	1600	1600	1600
Hook right limitation	S2	1250	1250	1250	1250	1250	1250	1250	1250
Trolley gauge	K	1400	1400	1400	1400	1400	1400	1400	1400

QDY Overhead Crane with Hook Foundry 10t									
Span	S (m)	10.5	13.5	16.5	19.5	22.5	25.5	28.5	31.5

Lifting height	m	20	20	20	20	20	20	20	20
Lifting speed	m/min	13	13	13	13	13	13	13	13
Trolley speed	m/min	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9
Crane speed	m/min	118.6	118.6	118.6	119.3	119.3	114.9	114.9	114.9
Lifting motor	kw	26	26	26	26	26	26	26	26
Trolley motor	kw	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

Total weight	kg	17480	19680	22200	25800	28570	33750	37910	41780
Max Wheel Load	KN	112	120	130	138	145	160	171	180
Track		P43	P43	P43	P43	P43	P43	P43	P43

Main dimension	mm	10.5	13.5	16.5	19.5	22.5	25.5	28.5	31.5
Rail top to main top	H1	1876	1876	1876	1876	1876	1926	1926	1926
Rail top to hook centre	H2	602	602	602	602	602	552	552	552
Wheel base	W	4050	4050	4050	4050	4050	5000	5000	5000
Crane width	B	5800	5800	5800	5940	5940	6380	6380	6380
Hook left limitation	S1	1600	1600	1600	1600	1600	1600	1600	1600
Hook right limitation	S2	1300	1300	1300	1300	1300	1300	1300	1300
Trolley gauge	K	2000	2000	2000	2000	2000	2000	2000	2000

Note: Control mode for cab operation

Part 4 Crane design , manufacture and related standard

- 1.GB3811-2008 《Crane design standard》
- 2.GB6067-85 《Crane safety standard》
- 3.JB/T7688.15 《Ladle crane technical conditions》
- 4.GB5950 《Crane test standards》
- 5.GB4315 《Crane electrical equipments standards》
- 6.GB8918 《High quality wire rope》
- 7.GB699 《High quality carbon structural technology》
- 8.GB700 《carbon structural steel》
- 9.GB50256-96 《Crane electrical equipments check standards》
- 10.GB1479-85 《Low voltage electrical basic standards》
- 11.JB7688-95 《Metallurgy crane technical provisions and general requirements》
- 12.ZBK26008 《YZR Metallurgical uses rotor winding three-phase asynchronous electric technology》
- 13.ZBJ19010 《Crane reducer》
- 14.JBZQ4000.1-86 《Crane inspection general technical conditions》
15. JB1152-81 《The boiler and steel pressure vessel butt weld ultrasonic flaw detection》
16. GB6333 《The electro-hydraulic double-shoe brakes》
17. GB9286-88 《Paint and varnish film stroke test case》
18. GBL0051.1-5-88 《Crane hook》
19. GB5905-86 《Crane test specification and procedures》
20. GB50257-98 《ifting equipment installation project and the acceptance standard》



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Tips:

You can use the phone dimensional code recognition software to scan the right side of the two-dimensional code, to quickly and easily access our web site for more information.