Truck Crane
Model: QY25K5-I

Basic technical specification

Lifting capacity		
	Max. lifting load	25t
Dimension		
	Overall length	12300mm
	Overall width	2500mm
	Overall height	3380mm
Weight		
	Gross Vehicle Weight	31750Kg
	Front axle	6550Kg
	Rear axle	25200Kg
Performance		
	Max. travel speed	80Km/h
	Max. grade ability	40%
	Boom	5 sections, 10.4m～39.5m
	Length of boom + jib	47.8m
	Max. lifting height of boom	39.2m
	Max. lifting height of boom + jib	47.2m

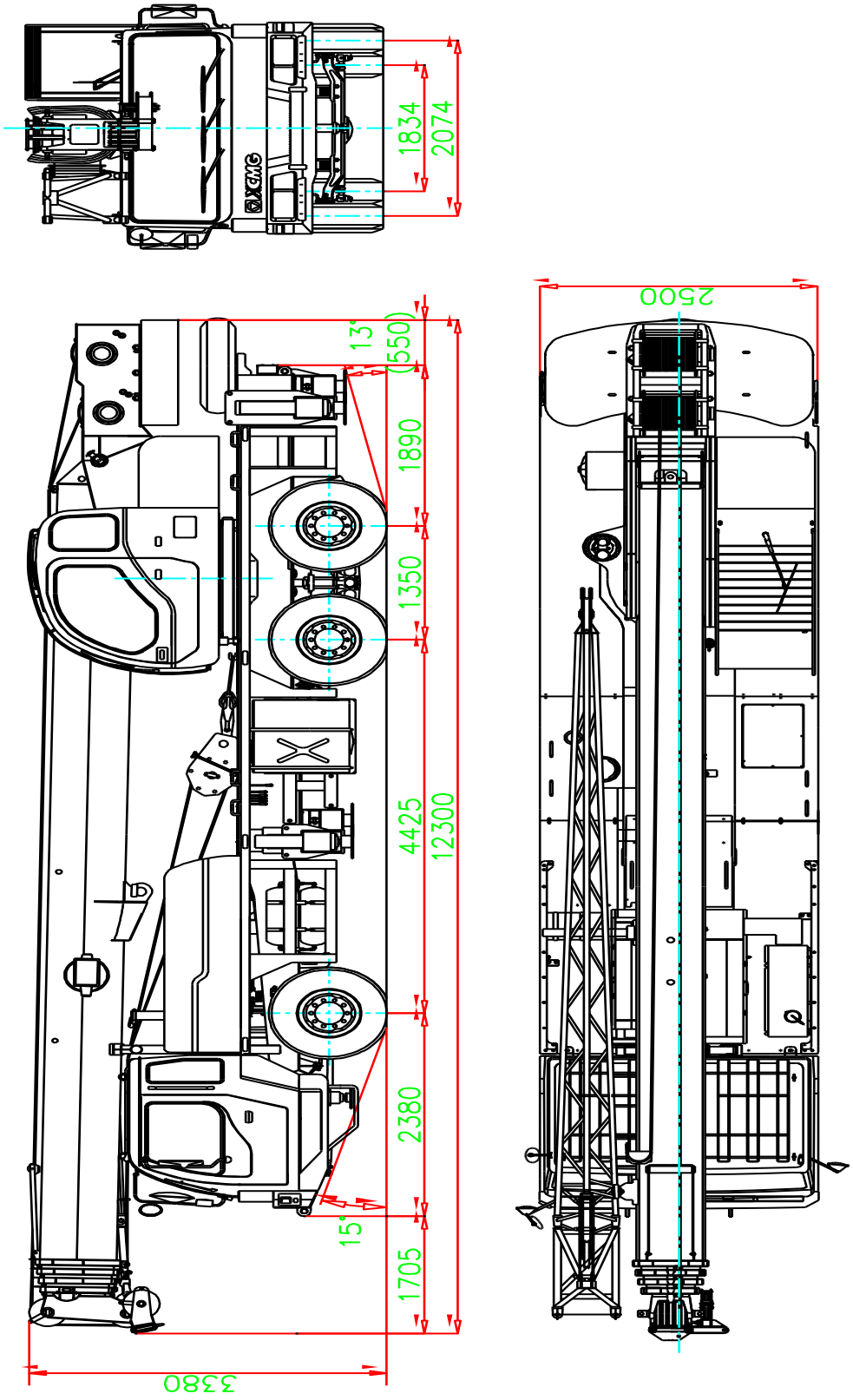
Xuzhou Heavy Machinery CO.,LTD

Features and advantages of QY25K5-1 Truck Crane

QY25K5-I truck crane is the product with high reliability and advanced technology. Special truck crane chassis is designed and manufactured by our company, all covered working surface and classic K-series appearance outline are equipped. The operations of crane are very simple, convenient and flexible. It is widely used for lifting operation and installation work in urban renewal, transportation, ports, bridges, oilfield, industrial and mining enterprises, etc.

1. Octagonal cross-section boom has small depth-width ratio, strong bearing capacity, small deformation, strong anti-bending and powerful lifting capacity. The main boom length is 10.4m to 39.5m. The performance of medium length boom and fully-extended boom is excellent..
2. Plug-in boom head effectively increases the boom connect length and reduces boom deformation. Embedded sliders are equipped, which enlarge the contact square and reduce the contact stress of boom.
3. 8-gear transmission is adopted. The travel performance is excellent, the grade ability is 40% and the max. travel speed is 80km/h.
4. Open fixed displacement pump and variable displacement motor system are adopted. Double pump confluence is used in main operation, which meets the requirements of speed and reduces the energy consumption and system heat effectively. The load sensitive system that researched and developed by ourselves contributes to smooth operation, high efficiency and energy saving. Particular slewing technology realizes smooth slewing and no jitter. Free fall is adopted in the elevating system, which effectively realizes energy-saving. The counterbalance valve adopts over-load compensation technology to ensure boom lowering smoothly. Large torque new hydraulic variable displacement motor ensures no sliding for the second lifting, which greatly improves the lifting efficiency.
5. The boom telescoping system of XCMG had obtained Chinese patent, effectively prevents occurrence of telescoping cylinder bending and boom breaking caused by mis-operation, and therefore operation safety is improved.
6. Double-mode of the engine working condition uses higher power during normal driving to ensure the driving performance of the vehicle, uses less power when working on the superstructure to reduce fuel consumption as much as possible.

Overall dimensions of crane in travel configuration



(Nanqi driver's cab)

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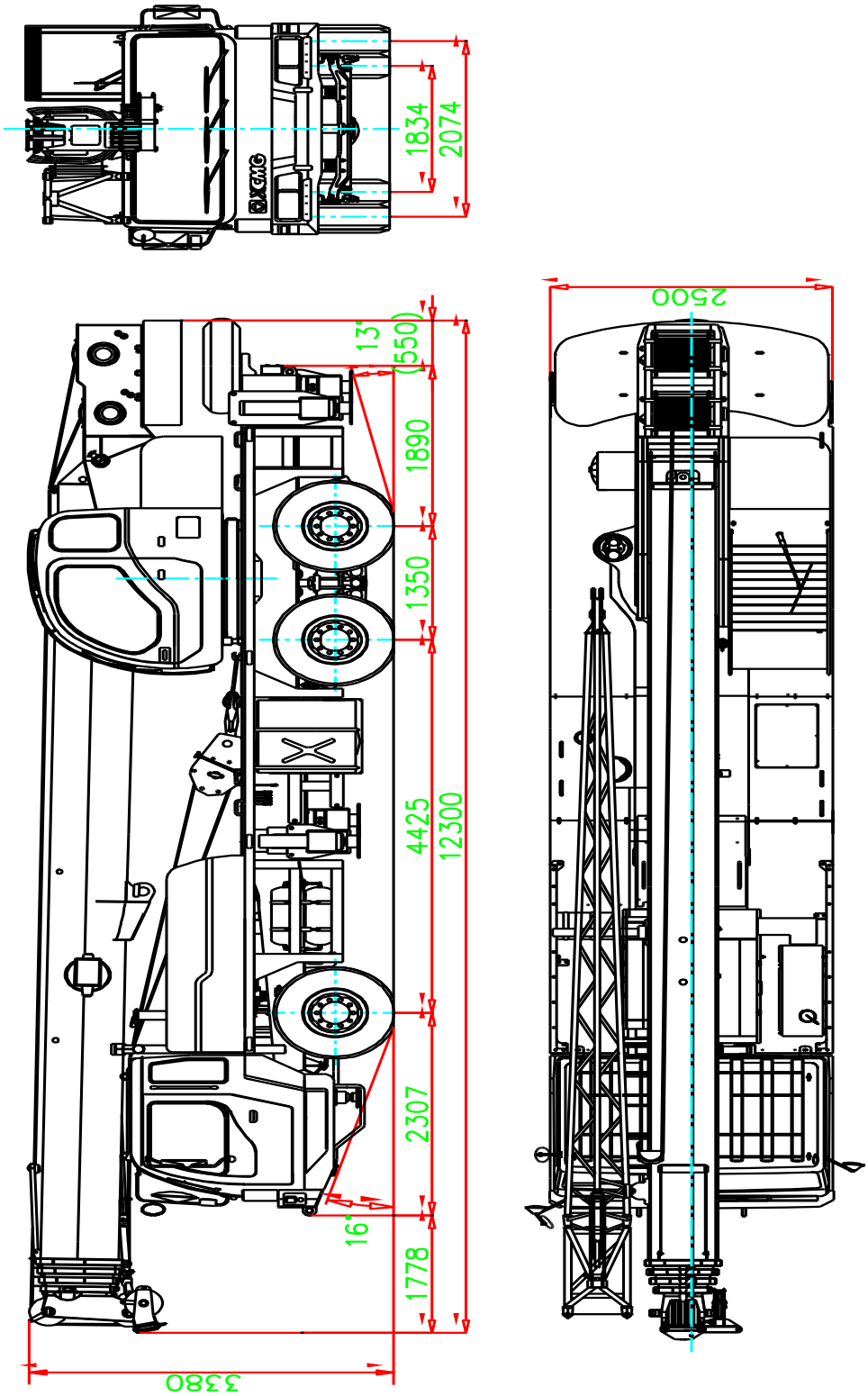
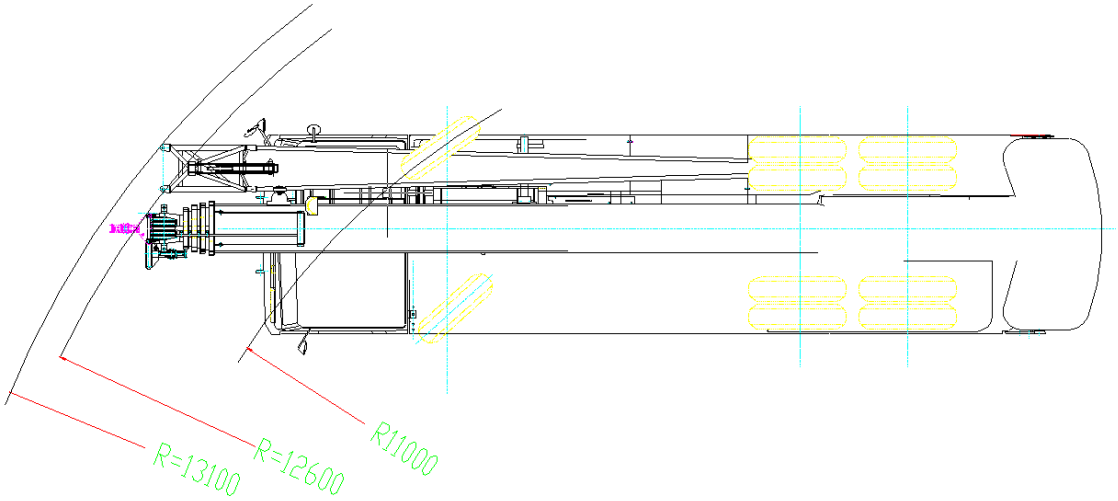


(Qixing driver's cab)

Turning track of crane in travel configuration



Technical specifications of superstructure

Model	QY25K5-I
Hydraulic system	Hydraulic pump……Quadruple pump is driven by chassis engine, fixed-displacement pump used for hoisting, elevating and telescoping system. Control valve……Pilot hydraulic oil control load-sensing proportional multi-way change valve is adopted; impact-resistant valve and anti-cavitation corrosion valve are equipped Oil circuit……air-cooled hydraulic oil cooler, which may effectively reduce the temperature of oil in the system Oil filters…… suction filter and return filter
Boom	5-section boom with an octagonal cross section and welding structure. Dual-cylinder plus rope telescoping system and synchronous telescopic boom are adopted. The system consists of two telescoping cylinders and wire rope, safety valves are equipped in each cylinder. There are two telescoping modes can be chosen. Main boom length……10.4m～39.5m Speed……less than 150s for boom fully extending to 39.5m
Jib	1-section, lattice welding structure jib stowed beside boom, 0 °, 15 °and 30 °offset angles are available. Jib length……8.3m
Single top (boom auxiliary pulley)	Single top is installed on the top of boom, for single wire rope hoisting. Its lifting performance is the same as that for jib (8.3m), with 0 °jib offset angle.
Elevating system	Single-supported double acting front-mounted hydraulic elevating cylinder, with balance valve equipped. Speed……68s for elevating operation from -2 °to +80 °
Main winch system	Hydraulic controlled speed regulation, groove drum is equipped, driven by hydraulic motor through planetary gear reducer, and built-in normally closed brake and counterbalance valve are available. Hoisting system has features of high speed with light load and

low speed with heavy load.
Main and auxiliary winch systems are operated separately.

Pulling force of single line……28KN
Single line speed (no load) ……125m/min
Dimension ×length……φ14mm×180m

Auxiliary winch system

Hydraulic controlled speed regulation, groove drum is equipped, driven by hydraulic motor through planetary gear reducer, and built-in normally closed brake and counterbalance valve are available.
Hoisting system has features of high speed with light load and low speed with heavy load.
Main and auxiliary winch systems are operated separately.

Pulling force of single line……28KN
Single line speed (no load) ……125m/min
Dimension ×length……φ14mm×105m

Hook block

There are 5 pulleys on the boom head tackle for standard configuration.

No.	Hook type	Lifting capacity (t)	Hook block	Weight (kg)	Qty.	Remark
1	Main hook	25	5	297	1	Single hook
2	Auxiliary hook	2.8	0	55	1	Single hook

Slewing system

Four-point contact ball type slewing ring.
Slewing system is driven by hydraulic motor, with planetary gear reducer, for 360°continuous slewing operation.
With power control and free sliding function, it makes stepless slewing speed regulation available.
Horn button is equipped on the control lever.
Slewing speed……0~2.5r/min

Parameters of slewing system:

Item	Parameter	Item	Parameter
Gear number	14	Transmission	79

		ratio	
Rated output torque	5000N.m	Max. output torque	6300N.m
Oil pump displacement	32 mL/r	Motor displacement	28 mL/r

Operating mode

Stepless speed adjustment. Pilot hydraulic-proportional operation is achieved through joysticks at both left and right sides. All the movements of crane are controlled by hydraulic pumps and proportional valves.

Operator's cab

Located at the left side of turntable, the cab has outward opening door, large arc windshield and protective railings. Devices in operator's cab are LMI, electric control box, electric fan, electric windshield wiper, engine accelerator pedal, starter switch, adjustable seat and heater and air conditioner.

Safety devices

Hydraulic balance valve;
Hydraulic relief valve;
Hydraulic double-way valve;
Load Moment Indicator(LMI);
Lever spring-back neutral position system;
Lowering limiter avoids wire rope over-releasing;
Anti-two block at boom head avoids wire rope over-winding;

LMI

The safety protection device is installed in operator's cab.
When actual moment approaches overload value, it may send out visual alarm, and automatically stop dangerous movements before overloading.
Overload memory function (black box) and fault self-diagnosis function are available.
The following items can be shown:
Moment percentage
Actual lifting load
Rated lifting load
Radius
Boom length
Angle
Lifting height

	Working condition code Parts of line Limit angle Information code
Outrigger	4 outriggers with longitudinal H-typed arrangement are hydraulically operated by control levers. They may be operated individually or simultaneously at either side of the chassis. A level gauge is also equipped. Check valve is fitted in each outrigger cylinder, and double-way valve is fitted in jack cylinder. Outrigger span: Longitudinal ×lateral (half-extended)……5.14m×4.34m Longitudinal ×lateral (fully-extended)……5.14m×6.0m Outrigger float dimension……φ400mm Max. outrigger reaction force……292.87KN
Fifth jack	It is located in front of chassis frame, enables the crane have the same lifting performance in 360° operation, hydraulic controlled check valve is equipped in hydraulic cylinder. Outrigger float dimension ……φ260mm
Counterweight	Counterweights are fixed at the turntable tail. Total weight is 5985kg.
Color	Chassis: black. Driver's cab and superstructure: engineering yellow.

Technical specification of chassis

Type

Left-hand drive steering wheel, drive/steering type is 6×4×2.

Frame

Designed and manufactured by XCMG, with all covered walking surface, optimal load-bearing structure and anti-torsion box structure design, made of high strength steel. Special boxes for stowing outriggers are located between 1st axle and 2nd axle, or at the tail of frame, equipped with front and rear towing hooks.

Engine

Model	SC8DK280Q3	WD615.329
Type	In-line, 6-cylinder, water cooled, supercharging intercooler, electronic control and high pressure common rail	
Manufacturer	Shanghai Diesel Engine Co., Ltd.	SINOTRUK Hangzhou Engine Co., Ltd.
Power/kw/rpm	206/2200	213/2200
Torque/N.m/rpm	1112/1400	1160/1100-1600
Displacement/ml	8270	9726
Fuel consumption rate/g/kw.h	220	190
Fuel tank capacity	260L	
Emission standard	China national Ⅲ	China national Ⅲ
Remark	Standard	Optional

Chassis hydraulic system

Fixed-displacement pump open type system;
fixed-displacement gear pump is connected to transmission via PTO, and control the movements of outriggers and steering.

Transmission

8JS125T：mechanical control, 8-speed, with synchronizer is equipped.
S6-120：mechanical control, 6-speed, with synchronizer is equipped.

Clutch	Dry and pull type without hydraulic torque converter.
Axle	High strength axle and easy maintenance. 1st axle: single tire, for steering 2nd axle: double tire, for driving 3rd axle: double tire, for driving
Steering	Mechanical steering system with hydraulic boosting device.
Suspension	Front axle: longitudinal leaf spring suspension with barrel shock absorber; Rear axle: longitudinal leaf spring suspension, double-axle balance, leaf spring and thrust rod are guiding.
Brake system	Double-circuit, air braking, drum brake. Service brake……foot pedal control, double-circuit air brake. The 1st circuit acts on the wheels of 1st axle, the 2nd circuit acts on the wheels of 2nd and 3rd axles. Parking brake……air-releasing brake, which acts on two rear axles, and gives effect by the spring-loaded air chamber on each axle. Auxiliary brake…… engine exhaust brake.
Electric system	DC 24V, two 12V battery group in series. Generator: 28.5±0.3V, 70 A.
Driver's cab	Full-dimension luxurious driver's cab with steel structure and two crews are allowable. Equipped with radio, adjustable seats, steering wheel, rearview mirror, manually operated door and window. Heater and air conditioner are available.
Tires	Front axle: 11.00-20, x2 (standard), 11.00R20, x2 (optional) Rear axle: 11.00-20, x8 (standard), 11.00R20, x8 (optional) Spare: 11.00-20, x1 (standard), 11.00R20, x1 (optional) Rim: 8.00V-20 (Ⅱ)

Tools	A set of service tool is supplied.

Main parts list

(Take real parts as standard)

No.	Name	Manufacturer
1	Chassis engine	Shanghai Diesel Engine Co., Ltd. SINOTRUK Hangzhou Engine Co., Ltd.
2	Transmission	Shanxi Fast Gear Co., Ltd. Qijiang Gear Factory
3	Steering gear	JiangmenXingjiang Steering Gear Co., Ltd. Nantong Huanqiu Steering Gear Co., Ltd.
4	Axle	Xuzhou Meritor Axle Co., Ltd. Chongqing Dajiang Xinda Vehicle Company Limited
5	Tire	Xuzhou XuLun Rubber Co., Ltd. Double Coin Holdings Ltd. Guizhou Tyre Co., Ltd. Triangle Tyre Co., Ltd.
6	Chassis hydraulic pump	Xuzhou Keyuan Hydraulic Co., Ltd. Jinan Hydraulic Pump Co., Ltd. PERMCO (Tianjin) Hydraulic INC., LTD
7	Superstructure hydraulic pump	Zhejiang Shengbang Science & Technology Co., Ltd. Zhejiang Fenghua Third Hydraulic Parts Factory
8	Outrigger control valve	Zhejiang Shengbang Science & Technology Co., Ltd. Zhejiang Fenghua Third Hydraulic Parts Factory
9	Superstructure multi-way valve	Zhejiang Shengbang Hydraulic Co., Ltd.
10	Slewing ring	Xuzhou Rothe Erde Slewing Bearing Co., Ltd. Ma'anshan Fangyuan
11	Slewing motor	Zhonghang Liyuan Hydraulic Co., Ltd. Beijing Huade Hydraulic Industry Group Co., Ltd. Zhejiang Shengbang Science & Technology Co., Ltd.
12	Slewing reducer	Qingdao Hailida, Wuxi Jinhui, Xuzhou Shengbang
13	Main winch/auxiliary winch motor	Zhonghang Liyuan Hydraulic Co., Ltd. Beijing Huade Hydraulic Industry Group Co., Ltd. Zhejiang Shengbang Science & Technology Co., Ltd.
14	Main winch/ auxiliary winch reducer	Qingdao Hailida, Xuzhou Shengbang, Tai'an Taishan Fushen
15	Main	China Juli Sling

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	winch/auxiliary winch wire rope	Jiangsu Langshan wire Rope Co., Ltd.
16	Elevating oil cylinder	Xuzhou Hydraulic Parts Co., Ltd. XCMG Chengdu Hydraulic Cylinder Co., Ltd. Zhangjiakou Changyu Construction Machinery Hydraulic Cylinder Co., Ltd.
17	Telescoping oil cylinder	Xuzhou Hydraulic Parts Co., Ltd. XCMG Chengdu Hydraulic Cylinder Co., Ltd. Zhangjiakou Changyu Construction Machinery Hydraulic Cylinder Co., Ltd.
18	Extension cylinder	Xuzhou Hydraulic Parts Co., Ltd. XCMG Zhangjiakou Changyu Construction Machinery Hydraulic Cylinder Co., Ltd.
19	Jack cylinder	Xuzhou Hydraulic Parts Co., Ltd. XCMG Zhangjiakou Changyu Construction Machinery Hydraulic Cylinder Co., Ltd.
20	LMI	Xuzhou Hirschmann Electronic Co. Ltd.
21	Pilot joystick	Italy HYDRAULIC CONTRAL(pilot operation)
22	Main plate material	Shanghai Baoshan Steel Co., Ltd.

Technical Specifications

Main Technical Data Table in Travel configuration

(Subject to technical improvement)

Category	Item		Unit	Parameter	
Dimensions	Overall length		mm	12300	
	Overall width		mm	2500	
	Overall height		mm	3380	
	Wheel base		mm	4425+1350	
	Track		mm	2074/1834/1834	
Weight	Total weight in travel configuration		kg	31750	
	Axle load	Front axle	kg	6550	
		Rear axle	kg	25200	
Power	Engine model			SC8DK280Q3	WD615.329
	Engine rated power		kw/(r/min)	206/2200	213/2200
	Engine rated torque		N.m/(r/min)	1112/1400	1160/1100-1600
Travel	Max. travel speed		km/h	80	
	Min. travel speed		m	22	
	Min. ground clearance		mm	275	
	Approach angle		°	16/15	
	Departure angle		°	13	
	Braking distance (at 30 km/h)		m	≤10	
	Max. grade ability		%	40	
	Fuel consumption per 100 km		L	≤37	
Noise	Exterior noise level		dB（A）	88	
	Noise level at seated position		dB（A）	90	

Main Technical Data Table for Lifting Operation

(Subject to technical improvement)

Category	Item			Unit	Parameter
Main performance	Max. total rated lifting capacity			t	25
	Min. rated working radius			m	3
	Turning radius at turntable tail			mm	3065
	Max. load moment	Base boom		kN.m	961
		Fully-extended boom		kN.m	533
		Fully-extended boom + Jib		kN.m	451
	Outrigger span	Longitudinal		m	5.14
		Lateral		m	6.0
	Hoist height	Base boom		m	10.5
		Fully-extended boom		m	39.2
		Fully-extended boom + Jib		m	47.2
	Boom length	Base boom		m	10.4
		Fully-extended boom		m	39.5
		Fully-extended boom + Jib		m	47.8
	Jib offset angle			°	0、15、30
Working speed	Elevating time	Boom up		s	68
	Telescoping time	Fully extended		s	150
	Max. slewing speed			r/min	2.5
	Outrigger extending and retracting time	Outrigger beam	Extending simultaneously	s	35
			Retracting simultaneously	s	30
		Outrigger jack	Extending simultaneously	s	40
			Retracting simultaneously	s	35
	Hoisting speed (single line, the 4th layer)	Main winch	No load	m/min	125
		Auxiliary winch	No load	m/min	125
	Exterior noise level			dB（A）	≤122
	Noise level at seated position			dB（A）	≤90

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Rated Lifting Load Table

(Lifting load is in Kg, boom length and radius are in m)

Rated lifting load table for boom when the outrigger span is 6m

Radius(m)	Without 5th jack, at over side and over rear; with 5th jack, 360 °operation						
	Boom length						
	10.4m	14.04m	17.68m	23.14m	28.59m	34.05m	39.5m
3	25000	22000					
3.5	25000	21500					
4	24200	21000	18000				
4.5	21800	20600	17100	12000			
5	19100	19200	15800	12000	10400		
5.5	17300	17800	14800	11700	9700		
6	15800	16100	14000	11000	9400		
6.5	13800	14100	13000	10800	8600	7200	
7	12200	12800	12200	10200	8350	7100	
8	11000	11000	10800	9200	7900	6500	
9		9080	8900	8400	7140	6050	5500
10		7430	7300	7560	6510	5550	5100
11		6220	6100	6700	5950	5150	4700
12			5100	5700	5500	4700	4350
13			4200	4900	5100	4410	4020
14			3550	4200	4600	4150	3800
15				3620	4000	3900	3510
16				3100	3500	3650	3400
18				2300	2700	2930	2880
20				1700	2080	2300	2400
22					1580	1800	1900
24					1180	1360	1500
26						980	1150
28						700	800
30							600
32							500
Parts of line	10	10	7	5	4	3	3
Weight of hook block	297kg						

Rated lifting load table for boom when the outrigger span is 4.34 m

Radius(m)	Without 5th jack, at over side and over rear; with 5th jack, 360 ℃operation						
	Boom length						
	10.4m	14.04m	17.68m	23.14m	28.59m	34.05m	39.5m
3	25000	22000					
3.5	25000	21500					
4	24200	21000	18000				
4.5	21800	20600	17100	12000			
5	18800	18600	15800	12000	10400		
5.5	15500	15300	14800	11700	9700		
6	13100	12900	12700	11000	9400		
6.5	11200	11100	10900	10800	8600	7200	
7	9700	9600	9400	10100	8350	7100	
8	7500	7400	7200	7900	7900	6500	
9		5800	5700	6300	6700	6050	5500
10		4700	4500	5100	5500	5550	5100
11		3800	3600	4200	4600	4800	4700
12			2900	3500	3800	4100	4200
13			2300	2900	3200	3500	3600
14			1800	2400	2700	3000	3100
15				2000	2300	2500	2700
16				1600	2000	2200	2300
18				1100	1400	1600	1700
20				600	900	1100	1300
22					600	800	900
24						500	600
26							400
Parts of line	10	10	7	5	4	3	3
Weight of hook block	297kg						

Rated lifting load table for jib when the outrigger span is 6m

Without 5th jack, at over side and over rear; with 5th jack, 360 °operation			
Boom 39.5m + jib 8.3m			
Boom angle(°)	0 °offset angle	15 °offset angle	30 °offset angle
78	2800	2500	1900
75	2800	2400	1750
72	2750	2200	1700
70	2650	2100	1600
65	2150	1800	1500
60	1800	1600	1400
55	1200	1140	1050
50	800	750	700
40	280	260	250
Weight of hook block: 55kg			

Notes:

1. Total rated load shown in the tables is the maximum lifting capacity when the crane is set up on firm and level ground.
2. The rated lifting load shown in tables includes the weight of hook block and slings.
3. The working radius shown in table is the radius when load is lifted off the ground, which is the actual value including loaded boom deflection.
4. Boom angles shown in the table are values for reference. Take the working radius as standard.

Rated lifting load table for jib when the outrigger span is 4.34m

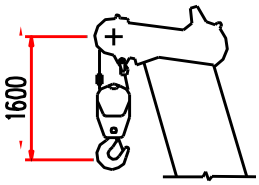
Without 5th jack, at over side and over rear; with 5th jack, 360 °operation			
Boom 39.5m + jib 8.3m			
Boom angle(°)	0 °offset angle	15 °offset angle	30 °offset angle
78	2800	2500	1900
75	2800	2400	1750
72	2750	2200	1700
70	2550	2100	1600
65	1470	1320	1220
60	790	730	680
55	350	320	300
Weight of hook block: 55kg			

Notes:

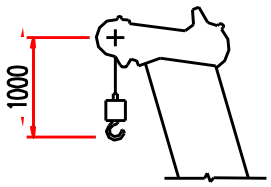
1. Total rated load shown in the tables is the maximum lifting capacity when the crane is set up on firm and level ground.
2. The rated lifting load shown in tables includes the weight of hook block and slings.
3. The working radius shown in table is the radius when load is lifted off the ground, which is the actual value including loaded boom deflection.
4. Boom angles shown in the table are values for reference. Take the working radius as standard.

Lifting height curves

Working range of crane (on fully-extended outriggers)



Min. distance between main hook block center and boom pulley center



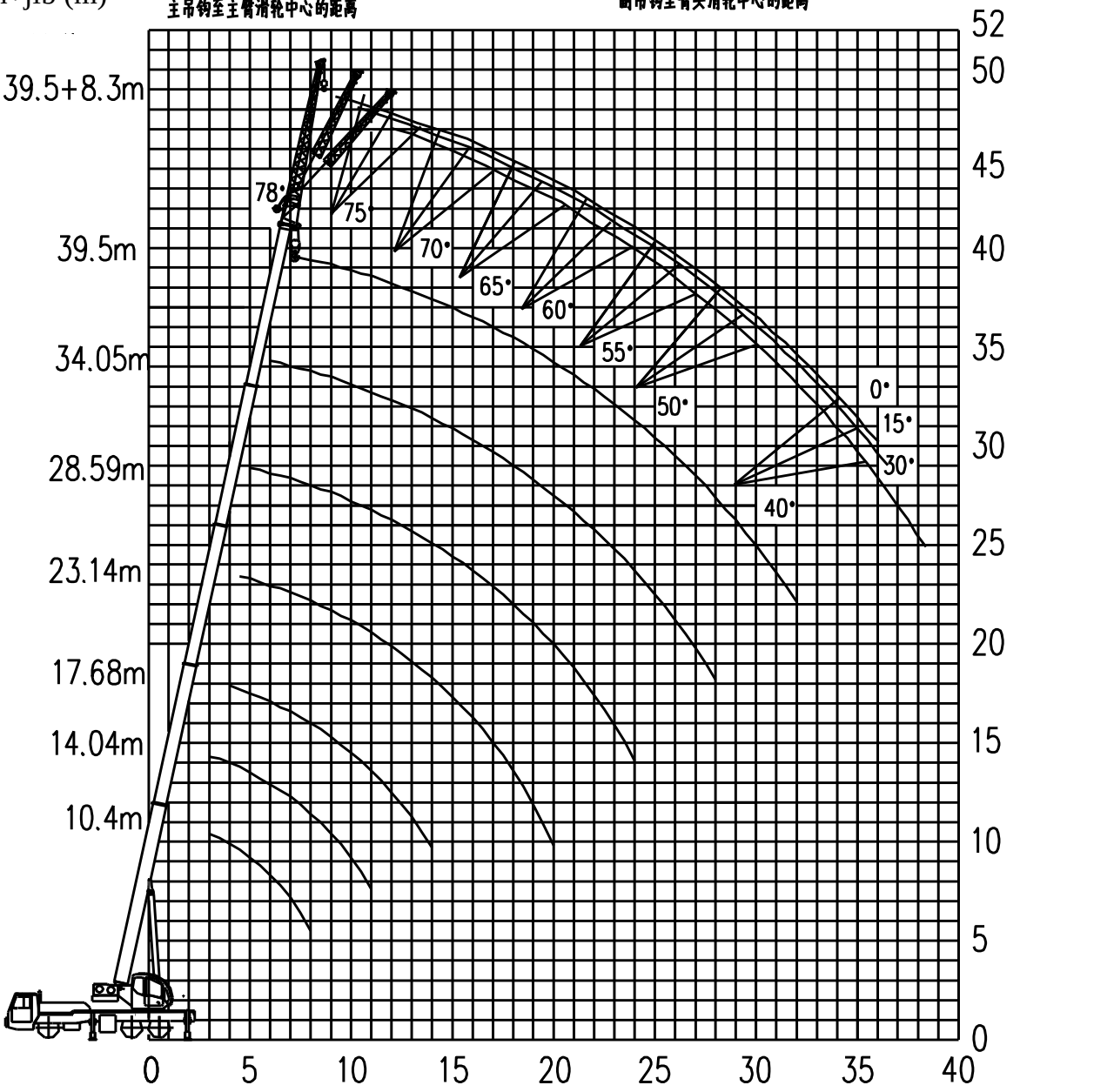
Min. distance between main hook block center and boom pulley center

Boom+jib (m)

Lifting height (m)

主吊钩至主臂滑轮中心的距离

副吊钩至臂头滑轮中心的距离



Working radius (m)

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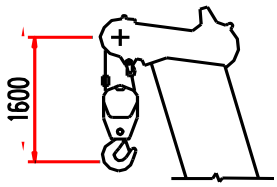
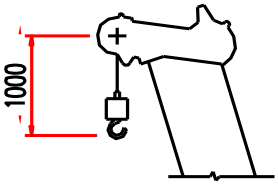
Working range of crane (on half-extended outriggers)



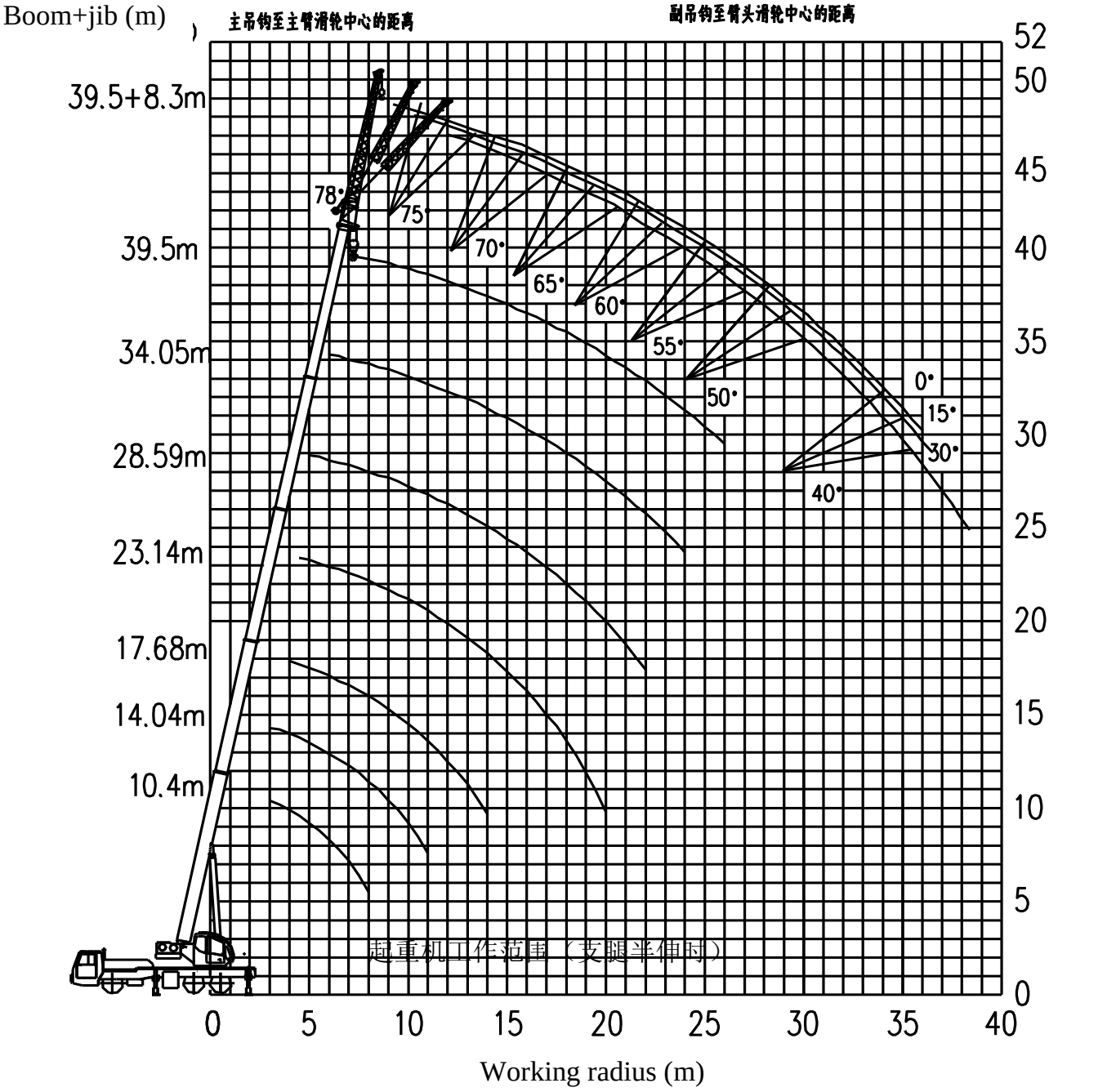
Min. distance between main hook block center and boom pulley center



Min. distance between main hook block center and boom pullev center

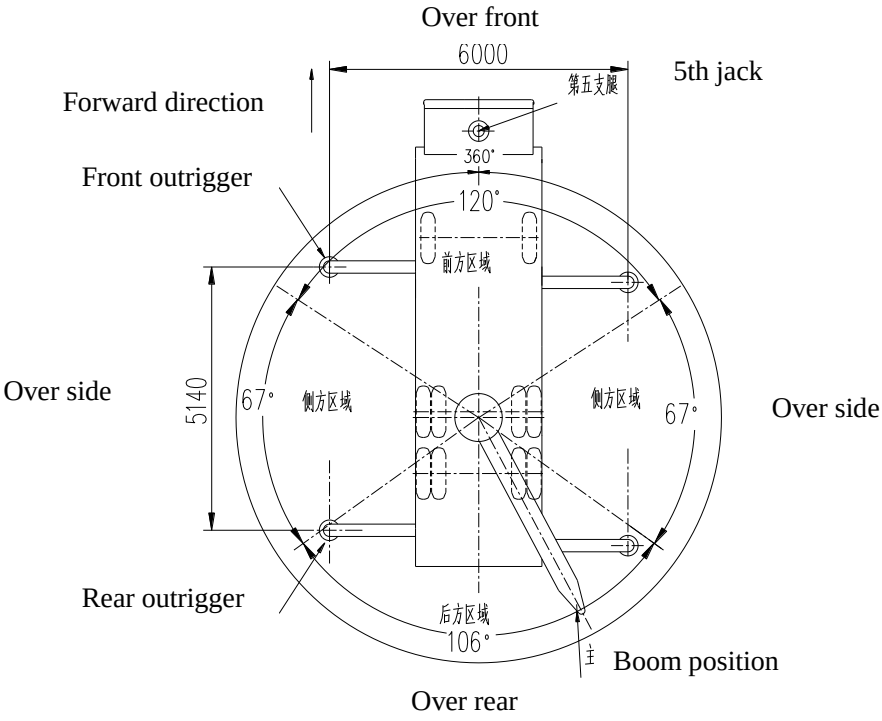
Lifting height (m)

Boom+jib (m)



Working radius (m)

Working Areas of Crane
(on fully-extended outriggers)



Working Areas of Crane
(on half-extended outriggers)