

QY16B Truck Crane Highlights

1. Most popular 16t class Truck crane in China. This kind of crane ranks first in terms of sales and inventory in our country and even in the world.
2. Excellent welding technology for structural members. Welding robot with advance process used for key welding make reliable quality products.
3. Unique weight fall function, which makes empty hook free lower, high efficiency, energy saving and practical.
4. Ferrule-type compression joints are used for pipeline, have features of reliable connection, better tightness and less leakage.

QY16B Truck Crane Technical Specifications

Telescoping truck crane model: QY16B

Maximum rated lifting capacity: 16t

I . Instruction

1. Carrier

Designed and manufactured by XCMG, with a half-dimension left-hand cab, three axles, drive/steering type is 6×4×2.

1.1 Frame

Designed and manufactured by XCMG, with anti-torsion box structure, made of high strength steel.

Outrigger boxes are located between axles 1 and 2, and the rear end of frame. Front and rear towing hooks are available.

Full covered walking surface.

1.2 Carrier engine

Manufacturer: Shanghai Diesel Engine Co., Ltd.

Model: SC8DK230Q3 (Dongfeng-branded)

Type: six-cylinder, in line, water cooled, turbocharged, electric control diesel engine

Environmental protection compliance: compliant with Euro III standard

Fuel tank capacity: about 260L.

1.3 Drive line

1.3.1 Transmission

Manually mechanical control, 5-speed transmission, performance is stable and reliable.

1.3.2 Axle

High strength axle, easy maintenance

1st axle: single tire, for steering;

2nd axle: double tire, for driving.

3rd axle: double tire, for driving.

1.3.3 Drive shaft

Cross serrated flange is adopted for connection of drive shaft, force transmission is optimized, and transmission torque is enlarged.

1.4 Suspension

Front suspension: longitudinal plate spring, with barrel shock absorber;

Rear suspension: longitudinal plate spring, double-axle balance.

1.5 Steering

Mechanical steering system has hydraulic boosting devices.

1.6 Tire

Diagonal tire, 11.00-20, suitable for heavy truck, has good commonality. One spare tire is standard.

1.7 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 axle;

Parking brake: manual brake is used as emergency brake and parking brake, which works through the spring-loaded air cylinder on each axle;

Auxiliary brake: engine exhaust brake.

1.8 Driver's cab

Left-hand half-dimension cab, equipped with radio-cassette player, adjustable seats, adjustable steering wheel, large-view rear mirrors and manually operated lift of door window.

Heater is standard, air conditioner is optional.

1.9 Hydraulic system

Gear pump, connected with transmission through PTO, controls auxiliary steering and hydraulic outriggers, and supplies hydraulic power for lifting operation.

1.10 Hydraulic outriggers

H-type outriggers, four-point supporting, outrigger beams and jacks are controlled hydraulically. Joysticks are located on both sides of the carrier. Level gauge and accelerator control switch are equipped beside joysticks. Outrigger floats are articulated under jacks.

1.11 Electric equipments

24V DC, negative ground, 2 batteries. Illumination complies with Chinese Road Traffic Legislation, including head lamp, fog lamp and reversing lamp.

1.12 Tools

A set of service tool is supplied.

2. Superstructure

2.1 Slewing ring

Single row four-point contact ball internal tooth slewing ring, it can slew 360° continuously, roller raceway seal is water proof and dust proof.

2.2 Turntable

Welded by fine grained high strength steel, with anti-torsion frame structure, has strong load bearing capacity.

2.3 Hydraulic system

Superstructure hydraulic system is open system, which power is supplied by carrier gear pump. Lifting, telescoping, elevating and slewing motions are controlled by superstructure multi-way

valve.

Oil tank capacity: about: 423L

2.4 Control

Mechanical control, realized by 4 joysticks located in the front of seat. All motions and speeds of crane may be infinitely controlled by joysticks.

2.5 Main/auxiliary hoist system

Driven by axial plunger motor, with two-stage planetary gear reducer, externally acting brake/normally closed disc brake, fast separate mechanism and special drum equipped. Weight fall function is available.

Main winch: single line pull is 29KN, diameter of wire rope is 14mm, length 130m;

Auxiliary winch: single line pull is 29KN, diameter of wire rope is 14mm, length 65m.

2.6 Elevating system

Dual-cylinder for front support elevating. Elevating angle: $-2^{\circ} \sim 78^{\circ}$

2.7 Slewing system

Driven by hydraulic motor, with built-in planetary gear reducer and normally closed brake. Stepless slewing speed regulation is available.

2.8 Main boom

It consists of one base boom and two-telescoping section, torsion-resistant design, made of high strength structural steel, with hexagonal cross section. Good stability in lifting operation is available. Single-cylinder plus ropes telescoping mechanism is for synchronous telescoping. Three pulleys on boom head are standard.

2.9 Operator's cab

Ergonomically designed cab, safe and comfortable, with safety glass, sun screen and protective rails equipped. Outward open door and adjustable seat are available.

Heater and air conditioner are optional.

2.10 Safety devices

Hydraulic balance valve, hydraulic relief valve, double-way hydraulic valve, etc are fitted in the hydraulic system to ensure the system stable and safe.

Hirschmann Xuzhou load moment limiter consists of display, boom angle sensor and boom length sensor, pressure sensor and height limiter switch. It will supply information for operator such as boom length, boom angle, lifting height, working radius, rated load, and real load, etc.

Rope end limiter is equipped in winch to prevent rope over-releasing.

Height limiter is fitted on the boom head to prevent rope over-winding.

2.11 Counterweight

Counterweight is secured at the tail of turntable.

Weight: 2040kg

2.12 Jib

Made of high strength steel, its length is 7m.

It can be taken with while fixed below the boom during the vehicle is driving on a road. When erecting the jib is necessary, move it upwards.

2.13 Hook block

No.	Lifting capacity (t)	Sheave block	Weight (kg)	Quantity	Remark
1	16	3	216	1	Single hook
2	2	0	48	1	Single hook

3. Colour

The colour of carrier is black.

The colour of driver's cab and superstructure is yellow.

II. QY16B Truck Crane Main Parts List

(Take real parts as standard)

No.	Name	Suppliers
1	Engine	Shanghai diesel Engine Co., Ltd.
2	Transmission	SHAANXI FAST GEAR Co., Ltd. Xuzhou Liangyu Gear Machinery Co., Ltd.
3	Steering gear	Jiangmen Xingjiang, Nantong Huanqiu
4	Axle	Xuzhou Meritor Axle Co., Ltd.
5	Tire	Xuzhou XuLun Material Trading Co., Ltd.
6	Hydraulic pump	Xuzhou Keyuan, Huaian Haida, Hefei Changyan
7	Carrier multi-way valve	Zhejiang Shengbang Fenghua Third Hydraulic Parts Factory
8	Slewing ring	Xuzhou Rothe Erde Slewing Bearing Co., Ltd. Maanshan Fangyuan
9	Superstructure multi-way valve	Zhejiang Shengbang Mechinery Co., Ltd.
10	Winch motor (single)	Beijing Huade, Guizhou Liyuan, Zhejiang Shengbang
11	Winch reducer	Xuzhou Liangyu, Xuzhou Deli XCMG Xuzhou Truck-mounted Crane Co., Ltd.
12	Main/auxiliary winch rope	Jiangsu Saifutian Rope Co., Ltd.
13	Slewing motor	Jiangsu Qidong Lianyi, Shanghai Wanhui
14	Slewing reducer	Wuxi Jinhui
15	Elevating cylinder	Xuzhou Hydraulic Parts Co., Ltd. XCMG Chengdu Hydraulic Cylinder Co., Ltd. Zhangjiakou Changyu
16	Telescoping cylinder	Xuzhou Hydraulic Parts Co., Ltd. XCMG Chengdu Hydraulic Cylinder Co., Ltd. Zhangjiakou Changyu
17	Load moment limiter	Xuzhou Hirschmann Electronics Co., Ltd.
18	Boom steel plate	Shanghai Baoshan Steel Co., Ltd.

III. QY16B Truck Crane Technical Specifications

1. Main Technical Data Table in Travel configuration

(Subject to improvement)

Category	Item		Unit	Parameter
Outline Dimensions	Overall length		mm	11990
	Overall width		mm	2500
	Overall height		mm	3350
	Wheel base		mm	4025+1350
	Track		mm	2090/1834/1834
Weight	Total vehicle mass in travel configuration		kg	22900
	Axle load	Front axle	kg	5240
		Rear axle	kg	17660
Power	Model			SC8DK230Q3
	Engine rated power		kw/(r/min)	170/2200
	Engine rated torque		N.m/(r/min)	830/1400
Travel Performance	Max. travel speed		km/h	70
	Min. turning diameter		m	20
	Min. ground clearance		mm	270
	Max. grade ability		%	24
	Approach angle		°	21
	Departure angle		°	10
	Braking distance (at 30 km/h, full load)		m	9.5
	Oil consumption per 100km		L	35
Noise	Exterior noise level during acceleration traveling		dB (A)	84
	Noise level at seated position		dB (A)	90

2. Main Technical Data Table for Lifting Operation

Category	Item		Unit	Parameter	
Main Lifting Performance	Max. total rated lifting capacity		t	16	
	Min. rated working radius		m	3	
	Turning radius at turntable tail		mm	3120	
	Max. load moment	Base boom	KN.m	738(13.7t×5.5)	
		Fully-extended boom	KN.m	470	
	Outrigger span	Longitudinal	m	4.6	
		Lateral	m	5.4	
	Hoist height	Base boom	m	9.9	
		Fully-extended boom	m	23.6	
		Fully-extended boom + Jib	m	30.8	
	Boom length	Base boom	m	9.8	
		Fully-extended boom	m	24	
Fully-extended boom + Jib		m	24+7		
Working Speed Parameter	Time for boom raising		s	60	
	Time for boom extending fully		s	75	
	Max. slewing speed		r/min	2.5	
	Outrigger extending and retracting time	Outrigger beam	Extending Simultaneously	s	28
			Retracting Simultaneously	s	26
		Outrigger jack	Extending Simultaneously	s	32
			Retracting Simultaneously	s	30
	Hoisting speed (single line, 3rd layer)	Main winch	Full load	m/min	54
			No load	m/min	100
		Auxiliary winch	Full load	m/min	54
No load			m/min	100	
Noise	Exterior noise level		dB (A)	120	
	Noise level at seated position		dB (A)	90	

3. QY16C Truck Crane Lifting Load Table

Unit: kg

Working radius (m)	Boom length					
	With fully-extended outriggers, boom over side or over rear					
	9.8m	13.4m	16.9m	20.5m	24m	24m+7m
3.0	16000					
3.5	16000	13500				
4.0	16000	13500				
4.5	15500	13500	11900			
5.0	15000	12900	11100			
5.5	13700	12100	10500			
6.0	12100	11400	9800	8100		
7.0	9200	9500	8700	7300	6000	
8.0	7400	7700	7800	6700	5600	
9.0		6400	6500	6100	5200	2000
10.0		5300	5500	5500	4800	1900
11.0		4500	4700	4700	4200	1630
12.0			4000	4000	3700	1550
14.0			3000	3100	3200	1300
16.0				2400	2500	1060
18.0				1900	2000	830
20.0					1600	600
22.0						370
24.0						170
Parts of line	6	6	5	4	3	1
Weight of hook block	216kg			48		

Notes:

- 1) The total rated loads shown in the table are the maximum lifting capacity when the crane is set up on firm and level ground.
- 2) The rated lifting load shown in the table includes the weight of hook block and slings.
- 3) The working radius in the table is the actual value including loaded boom deflection. Lifting operation should be carried out according to the working radius.
- 4) When operate main boom with jib attached, at least 400kg must be deducted from the rated lifting load.
- 5) The lifting load of single top is the same as that for 24m boom extended fully, but the maximum value should not exceed 2000kg.

4. Lifting Height Chart

