

## **QY25K-II Truck Crane Highlights**

1. Specialized boom of Bi-hexagonal cross section has features of light deadweight, better strength and strong lifting capacity.
2. Advanced built-in boom head, strong structural members and lower sliders with larger area contribute to better stress-bearing capacity and more smooth telescoping movement, and efficiently prevent boom torsion after side loading.
3. Telescoping mechanism is designed reliably. In the telescoping mechanism, both rotation-resistant rope used for thick cable and guide pulley bearing are imported parts and have reliable performance.
4. Excellent welding technology for structural members. Welding robot with advance process used for key welding make reliable quality products.
5. Ferrule-type compression joints are used for pipeline, have features of reliable connection, better tightness and less leakage.

## QY25K-II Truck Crane Technical Specifications

Telescoping truck crane model: **QY25K-II**

Maximum rated lifting capacity: 25t

### **I . Instruction**

#### **1. Carrier**

Designed and manufactured by XCMG, with a full-dimension 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.

#### **1.2 Carrier engine**

Manufacturer: Shangchai

Model: SC8DK280Q3

Type: six-cylinder, in line, water cooled, supercharging intercooler, 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, 6-speed transmission, controls rear axle driving.

##### **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, plate spring and push rod for guiding.

## **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: 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.

## **1.8 Driver's cab**

New "luxurious" full-dimension cab, equipped with CD player, adjustable seats, adjustable steering wheel, large-view rear mirrors, and electrically operated washer and lift of door window. Heater and air conditioner are standard.

## **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.

The 5Th jack: located in front of the frame. 360° operation of boom is available.

## **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**

In the hydraulic pilot control multi-way change valve system, the main control valve is load sensitive proportional multi-way change valve, which there is an anti-shock valve in each change valve, and there is anti-air corrosion valve in valves for main and auxiliary winch.

The imported proportional pressure relief valve is adopted as pilot valve. The moving angle of the pilot valve handle is directly proportional to the output pressure of the pilot valve, and the valve spindle displacement of main control valve is directly proportional to the output pressure of the pilot valve too. Thus fine inching control is available in the whole machine. Meanwhile, the load sensitive valve makes the speed of actuator have no relationship with load, so it is easy for operator to operate.

Winch system has features of high speed with light load and low speed with heavy load.

Free fall is adopted in elevating system, energy saving.

Fine inching control and smooth operation are available in the swing system.

Oil tank capacity: about: 483L

### **2.3.1 Hydraulic oil radiator**

Connected with hydraulic system in series, with larger power, can efficiently reduce the oil temperature in the hydraulic system

## **2.4 Control**

Hydraulic pilot control system with features of easy operation and high sensitivity, and infinite speed regulation is available.

## **2.5 Main/auxiliary hoist system**

Driven by hydraulic motor, with planetary gear reducer, normally closed brake and rotation resistant rope equipped. Main and auxiliary hoist systems can be operated separately.

Main winch: single line pull is 40KN, diameter of wire rope is 14mm, length 155m;

Auxiliary winch: single line pull is 40KN, diameter of wire rope is 14mm, length 90m.

## **2.6 Elevating system**

One cylinder with counterbalance valve equipped. Elevating angle:  $-2^{\circ} \sim 80^{\circ}$

## **2.7 Slewing system**

Driven by hydraulic motor, with built-in planetary gear reducer and normally closed brake.

Free-sliding function is available. Stepless slewing speed regulation is available.

## **2.8 Main boom**

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

## 2.9 Operator's cab

Ergonomically designed streamlined cab, safe and comfortable, with safety glass, sun screen and protective rails equipped. Outward open door and adjustable seat are available. Controllers and indicators are arranged ergonomically, with wide field of vision.

Heater and air conditioner are standard.

## 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 Load moment limiter system employs advanced micro-processing technology, has features of less power consumption, powerful function, high sensitivity and easy operation. LCD with large screen will show the lifting operation data, such as moment percentage, actual lifting capacity, rated lifting capacity, working radius, boom length, boom angle, max. lifting height, working condition code, parts of line, limited angle, information code, etc. by means of Chinese and graphical symbol. It has complete forewarning and overloading cutout function, as well as overloading memory (black box) and fault self-diagnosis function.

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: 5390kg

## 2.12 Jib

Made of high strength steel, lattice structure, its length is 8.15m.  $0^\circ$ ,  $15^\circ$  and  $30^\circ$  of offset angle are available.

It can be taken with while fixed on the side of the boom during the vehicle is driving on a road.

## 2.13 Hook block

No.	Lifting capacity (t)	Sheave block	Weight (kg)	Quantity	Remark
1	25	5	250	1	Single hook
2	2.8	0	55	1	Single hook

## 3. Colour

The colour of carrier is black.

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

**II. QY25K-II Truck Crane Main Parts List**

(Take real parts as standard)

No.	Name	Suppliers
1	Engine	Shangchai
2	Transmission	Qijiang Gear Transmission Co., Ltd. (6-speed)
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, Hefei Changyuan, Huaian Haida
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	Guizhou Fengyang 183 Factory, Zhejiang Shengbang Machinery Co., Ltd.
10	Main/auxiliary winch motor	Beijing Huade, Guizhou Liyuan
11	Main/auxiliary winch reducer	Bosch Rexroth (Beijing), Qingdao Hailida, Xuzhou Deli, Taian Taishan Fushen
12	Main/auxiliary winch rope	Jiangsu Saifutian Wire Rope Co., Ltd. Jiangsu Langshan Rope Co., Ltd.
13	Slewing motor	Beijing Huade, Guizhou Liyuan
14	Slewing reducer	Bosch Rexroth (Beijing), Qingdao Hailida, Wuxi Jinhui, Xuzhou Shengbang
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	Pilot lever	OIL CONTRAL Italy
19	Pipe connection	Imported from Germany or America
20	Boom steel plate	Shanghai Baoshan Steel Co., Ltd.

### III. QY25K-II Truck Crane Technical Specifications

#### 1. Main Technical Data Table in Travel configuration

(Subject to improvement)

Category	Item		Unit	Parameter
Outline Dimensions	Overall length		mm	12650
	Overall width		mm	2500
	Overall height		mm	3380
	Wheel base		mm	4425+1350
	Track		mm	2074/1834/1834
Weight	Total vehicle mass in travel configuration		kg	29400
	Axle load	Front axle	kg	6200
		Rear axle	kg	23200
Power	Model			SC8DK280Q3
	Engine rated power		kw/(r/min)	206/2200
	Engine rated torque		N.m/(r/min)	1112/1400
Travel Performance	Max. travel speed		km/h	75
	Min. turning diameter		m	21.5
	Min. ground clearance		mm	275
	Max. grade ability		%	30
	Approach angle		°	16
	Departure angle		°	13
	Braking distance (at 30 km/h, full load )		m	≤ 10
	Oil consumption per 100km		L	≤ 37
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	25
	Min. rated working radius			m	3
	Turning radius at turntable tail			mm	3065
	Max. load moment	Base boom		KN.m	1010
		Fully-extended boom		KN.m	560
		Fully-extended boom + Jib		KN.m	376
	Outrigger span	Longitudinal		m	5.14
		Lateral		m	6.0
	Hoist height	Base boom		m	10.7
		Fully-extended boom		m	34.19
		Fully-extended boom + Jib		m	42.3
	Boom length	Base boom		m	10.7
		Fully-extended boom		m	34.19
		Fully-extended boom + Jib		m	42.3
Jib offset angle			°	0, 15, 30	
Working Speed Parameter	Time for boom raising			s	75
	Time for boom lowering			s	45
	Time for boom extending fully			s	100
	Time for boom retracting fully			s	60
	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)	Main winch	Full load	m/min	85
			No load	m/min	120
		Auxiliary winch	Full load	m/min	85
			No load	m/min	120
Noise	Exterior noise level			dB (A)	≤ 122
	Noise level at seated position			dB (A)	≤ 90



### 3. QY25K-II Truck Crane Lifting Load Tables

#### 3.1 QY25K-II Truck Crane Lifting Load Table for Boom

Unit: kg

Working radius (m)	With fully extended outriggers, without 5th jack, boom over side or over rear; with 5th jack, 360° operation of boom					
	Boom length					
	10.60 m	15.08 m	19.56 m	24.04 m	28.52m	33.00 m
3	25000					
3.5	25000	17000				
4	24000	17000	16000			
4.5	22000	17000	16000	11000		
5	20000	17000	16000	10800		
5.5	18000	17000	15200	10500	8000	
6	16100	16300	14100	10200	8000	
6.5	14000	14100	13200	9800	8000	7000
7	12300	12400	12300	9300	8000	7000
8	9700	9900	9900	8500	7400	6500
9	7900	8100	8100	7800	6800	6000
10		6700	6800	7200	6300	5500
12		4900	4900	5400	5400	4600
14			3700	4200	4100	4000
16			2800	3300	3300	3100
18				2600	2600	2500
20				2100	2100	2000
22				1700	1600	1600
24					1300	1200
26					1000	900
28						700
30						500
Parts of line	10	7	6	4	3	3
Weight of hook block	250kg					
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.						
4. When operate main boom with jib attached, 900kg must be deducted from the rated lifting load.						

**3.2 QY25K-II Truck Crane Lifting Load Table for Jib****Unit: kg**

Main boom angle (°)	32m Main boom +8.15m Jib		
	Boom over side or over rear		
	Jib offset angle		
	0°	15°	30°
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	1400	1300	1230
50	1000	900	900
40	500	400	400
Parts of line	1		
Weight of hook block	55kg		

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.

**3.3 QY25K-II Truck Crane Lifting Load Table for Single top**

Truck Crane Lifting Load Table for Single top (with fully extended outriggers)						
Boom length (m)	10.6	15.08	19.56	24.04	28.52	33
Lifting load (kg)	2800	2800	2800	2800 kg at 4.5~16m radius; others are the same as those with 24.04 m of boom length at 18~22m radius.	2800 kg at 5.5~16m radius, others are the same as those with 28.52 m of boom length at 18~26m radius.	2800 kg at 6.5~16m radius, others are the same as those with 33 m of boom length at 18~30m radius.

#### 4. Lifting Height Chart

