# QY25K5-Ⅰ Truck Crane Highlights

1. Specialized boom of octagonal 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.

# QY25K5-Ⅰ Truck Crane Technical Specifications

Telescoping truck crane model: **QY25K5-Ⅰ**

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.

Full covered walking surface.

### 1.2 Carrier engine

Manufacturer: Shanghai Diesel Engine Co., Ltd.

Model: SC8DK280Q3 (Dongfeng-branded)

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 or 8-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: 468L

**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, realized by 2 joysticks each with four-direction located on armrest. All motions of crane may be controlled by hydraulic pump and proportional valve, with features of easy operation and fine inching control, 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 180m;

Auxiliary winch: single line pull is 40KN, diameter of wire rope is 14mm, length 105m.

**2.6 Elevating system**

One cylinder with counterbalance valve equipped. Elevating angle: -2°～80°

**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 four-telescoping section, torsion-resistant design, made of high strength structural steel, with octagonal 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: 5960kg

**2.12 Jib**

Made of high strength steel, lattice structure, its length is 8.3m. 0°, 15° and 30° 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.

## Ⅲ. QY25K5-Ⅰ Truck Crane Technical Specifications

### 1. Main Technical Data Table in Travel configuration (Subject to improvement)

| Category | Item | | Unit | Parameter |
|---|---|---|---|---|
| Outline Dimensions | Overall length | | mm | 12300 |
| | Overall width | | mm | 2500 |
| | Overall height | | mm | 3350 |
| | Wheel base | | mm | 4425+1350 |
| | Track | | mm | 2074/1834/1834 |
| Weight | Total vehicle mass in travel configuration | | kg | 31750 |
| | Axle load | Front axle | kg | 6550 |
| | | Rear axle | kg | 25200 |
| 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 | 80 |
| | Min. turning diameter | | m | 22 |
| | Min. ground clearance | | mm | 275 |
| | Max. grade ability | | % | 40 |
| | 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) | 88 |
| | 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 | 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 Parameter | Time for boom raising | | | s | 68 |
| | Time for boom extending fully | | | 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) | Main winch | Full load | m/min | 75 |
| | | | No load | m/min | 125 |
| | | Auxiliary winch | Full load | m/min | 75 |
| | | | No load | m/min | 125 |
| Noise | Exterior noise level | | | dB (A) | ≤122 |
| | Noise level at seated position | | | dB (A) | ≤90 |

## 3. QY25K5-Ⅰ Truck Crane Lifting Load Tables

### 3.1 QY25K5-Ⅰ 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 | | | | | | |
| | 10.4m | 14.04m | 17.68m | 23.14m | 28.59m | 34.05m | 39.5m |
| 3 | 25000 | 22000 | | | | | |
| 3.5 | 25000 | 21500 | | | | | |
| 4 | 24200 | 21000 | 18000 | 12000 | | | |
| 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 | 250kg | | | | | | |

**3.2 QY25K5-Ⅰ Truck Crane Lifting Load Table for Jib** **Unit: kg**

| With fully extended outriggers, without 5th jack, boom over side or over rear; with 5th jack, 360° operation of boom | | | |
|---|---|---|---|
| 39.5m Main boom +8.3m Jib | | | |
| Main boom angle (°) | 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 | 1200 | 1140 | 1050 |
| 50 | 800 | 750 | 700 |
| 40 | 280 | 260 | 250 |
| 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. The working radius in the table is the actual value including loaded boom deflection.
4. Boom angle shown in the table is only for reference, the working radius should be taken into consideration as standard during operation.

## 4. Lifting Height Chart