

ZOOMLION ROUGH TERRAIN CRANE ZRT851



ZOOMLION

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ZOOMLION

4.0
PRODUCTS



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HIGHLIGHTS

1. Powerful performances

- 47m main boom, super large U-shaped section and maximum rated lifting capacity 85t, 10.5t counterweight and upgrade lifting performance; super outrigger + load driving ability, comprehensive lifting performance leading industry products of the same level;
- Four-wheel drive and multi-mode steering, maximum driving speed up to 36 km / h, maximum gradeability up to 75%.

2. High cost effective

- The optimized layout of the transmission system improves the cost performance of the crane.

3. Reliable and durable

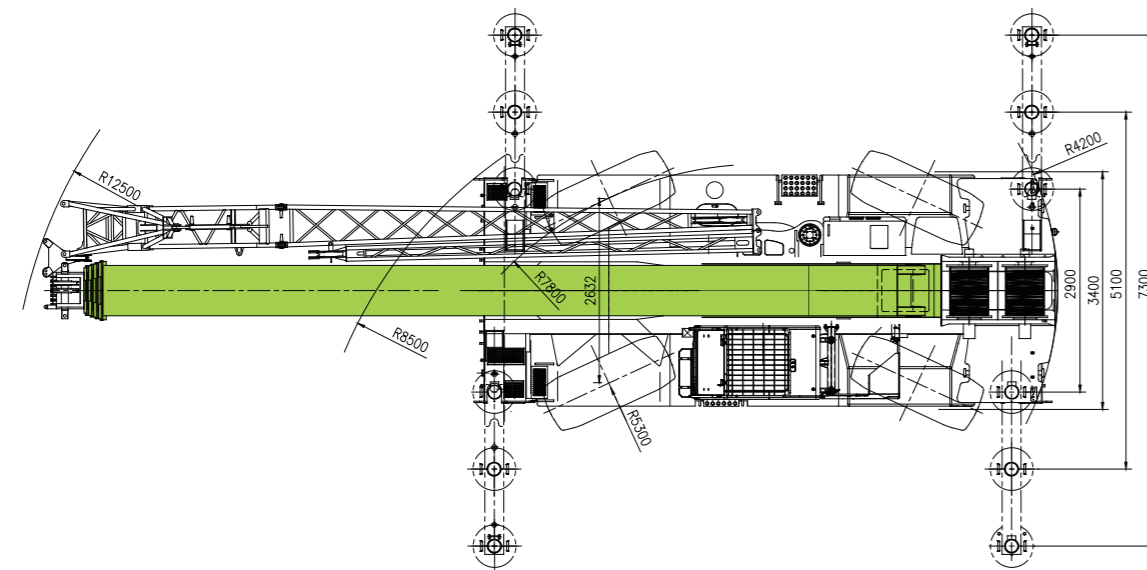
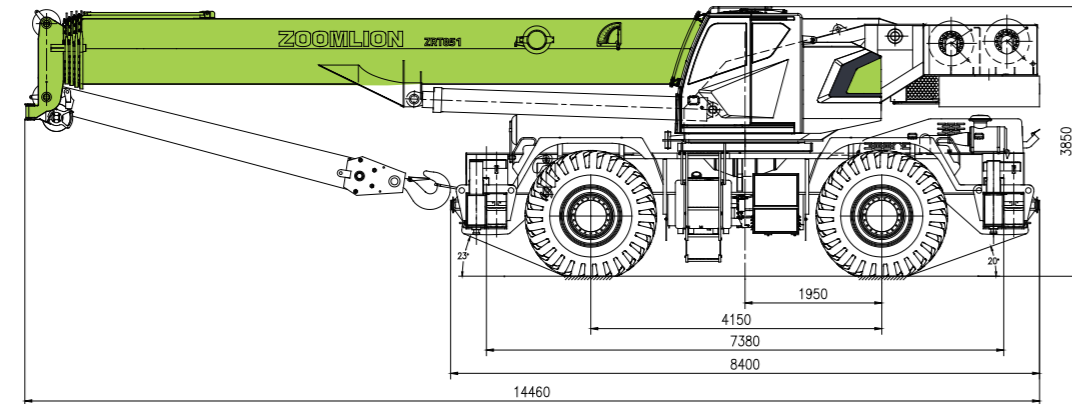
- Passed the strict test of international authoritative certification body and met the requirements of ANSI, CE and other standards;
- The integrated hydraulic valve is adopted to optimize the main valve layout, which makes the hydraulic pipeline simpler and easier to maintain;
- Mature crane modular design, stable and reliable products.

4. Comfortable and durable

- The new generation panoramic cab is equipped with front push window and panoramic skylight, which makes the field of vision more unobstructed and the cab pitch, effectively reducing work fatigue.



DEMENSIONS



WEIGHTS

Hook block and hook ball

| Rated load/t | Number of sheave | Reeving | weight/kg | Standard/Optional |
|--------------|------------------|---------|-----------|-------------------|
| 70T | 6 | 12 | 580 | Standard |
| 6.5T | - | 1 | 150 | Standard |
| 85T | 6 | 13 | 620 | option |
| 35T | 3 | 6 | 380 | option |

Axle load

| Shaft | Front axle | Rear axle | Total weight |
|-------------|-------------------------------|-----------|----------------------------|
| Axle load/T | 27 | 25.8 | 52.8 |
| | 26.9 | 26.8 | 53.7(with auxiliary winch) |
| Note | With main and auxiliary hooks | | |

Working speeds

| | km/h min. MIN. | km/h max. MAX. | % | |
|--------------|----------------|----------------|----|------|
| 29.5-25-34PR | 0-1.6 | 36 | 75 | 6/R6 |

| | Operation Speed | Rope diameter/length | Max. single line pull |
|-----|---|----------------------|-----------------------|
| 1 | 130m/min | Φ 20mm/260m | 6500Kg |
| 2 | 130m/min | Φ 20mm/140m | 6500Kg |
| 360 | 0~2r/min | | |
| | Min.boom derricking up time 46s Min.boom derricking down time 105s | | |
| | Telescoping out/in time 120/135s | | |

LIFTING CAPACITY TABLES

Rated Load on Outriggers Fully Extended



| LOAD RADIUS (M) | Outriggers and telescoping cylinder I fully extended, 10.5 t counterweight | | | | | | |
|-----------------|--|-------|-------|-------|-------|-------|-------|
| | 12.1 | 16.5 | 21.0 | 27.5 | 34.0 | 40.5 | 47.0 |
| 3.0 | 85000* | 55000 | | | | | |
| 3.5 | 70000 | 53000 | 43500 | | | | |
| 4.0 | 61500 | 52000 | 43500 | | | | |
| 4.5 | 55000 | 49000 | 42000 | 31000 | | | |
| 5.0 | 51000 | 46000 | 41000 | 30000 | | | |
| 5.5 | 48000 | 44500 | 39000 | 29000 | | | |
| 6.0 | 45000 | 41000 | 37000 | 27000 | 23000 | | |
| 7.0 | 38000 | 37000 | 33000 | 24500 | 22000 | | |
| 8.0 | 33200 | 30500 | 28000 | 22000 | 20000 | 16500 | |
| 9.0 | 25500 | 24000 | 24000 | 19500 | 19000 | 15500 | |
| 10.0 | | 20200 | 20000 | 17500 | 17200 | 14500 | 11500 |
| 11.0 | | 16700 | 17000 | 15800 | 16000 | 13500 | 11000 |
| 12.0 | | 14200 | 14000 | 11500 | 14800 | 12500 | 10000 |
| 14.0 | | | 10200 | 9000 | 11500 | 10600 | 9300 |
| 16.0 | | | | 7000 | 9500 | 8400 | 8600 |
| 18.0 | | | | 5500 | 7500 | 7500 | 7500 |
| 20.0 | | | | 4600 | 6100 | 6200 | 6200 |
| 22.0 | | | | 3500 | 4600 | 5200 | 5300 |
| 24.0 | | | | | 3800 | 4600 | 4400 |
| 26.0 | | | | | 3000 | 3500 | 3700 |
| 28.0 | | | | | 2500 | 2800 | 3100 |
| 30.0 | | | | | 1900 | 2200 | 2500 |
| 32.0 | | | | | | 1800 | 2000 |
| 34.0 | | | | | | | 1600 |
| I | 0 | 4.4 | 8.9 | 8.9 | 8.9 | 8.9 | 8.9 |
| II | 0 | 0 | 0 | 6.5 | 13 | 19.5 | 26 |
| Reeving | 12 | 10 | 8 | 6 | 5 | 4 | 3 |
| Hook | 70t | | | | | | |

LIFTING CAPACITY TABLES

Rated Load on Outriggers Fully Extended



| LOAD RADIUS (M) | Outriggers fully extended and telescoping cylinder I intermediately extended, 10.5 t counterweight | | | | | |
|-----------------|--|-------|-------|-------|-------|-------|
| | 12.1 | 16.5 | 23.0 | 29.5 | 36.0 | 42.5 |
| 3.0 | 85000* | 55000 | | | | |
| 3.5 | 70000 | 53000 | 31000 | | | |
| 4.0 | 61500 | 52000 | 31000 | | | |
| 4.5 | 55000 | 49000 | 31000 | | | |
| 5.0 | 51000 | 46000 | 31000 | 23000 | | |
| 5.5 | 48000 | 44500 | 30000 | 23000 | | |
| 6.0 | 45000 | 41000 | 29000 | 23000 | | |
| 7.0 | 38000 | 37000 | 28000 | 22000 | 16500 | |
| 8.0 | 33200 | 30500 | 26500 | 21000 | 16500 | 12000 |
| 9.0 | 25500 | 24000 | 24800 | 20000 | 15500 | 12000 |
| 10.0 | | 20200 | 21000 | 19000 | 14500 | 11500 |
| 11.0 | | 16700 | 17600 | 17800 | 13500 | 11000 |
| 12.0 | | 14200 | 15000 | 15500 | 12500 | 10500 |
| 14.0 | | | 11200 | 11800 | 10600 | 9300 |
| 16.0 | | | 8500 | 9500 | 9500 | 8100 |
| 18.0 | | | 6600 | 7500 | 7500 | 7300 |
| 20.0 | | | | 6000 | 6200 | 6300 |
| 22.0 | | | | 5000 | 5200 | 5500 |
| 24.0 | | | | 4000 | 4200 | 4600 |
| 26.0 | | | | | 3500 | 3800 |
| 28.0 | | | | | 2800 | 3200 |
| 30.0 | | | | | 2300 | 2700 |
| 32.0 | | | | | | 2300 |
| 34.0 | | | | | | 1800 |
| I | 0 | 4,4 | 4,4 | 4,4 | 4,4 | 4,4 |
| II | 0 | 0 | 6,5 | 13 | 19,5 | 26 |
| Reeving | 12 | 10 | 6 | 6 | 4 | 4 |
| Hook | 70t | | | | | |

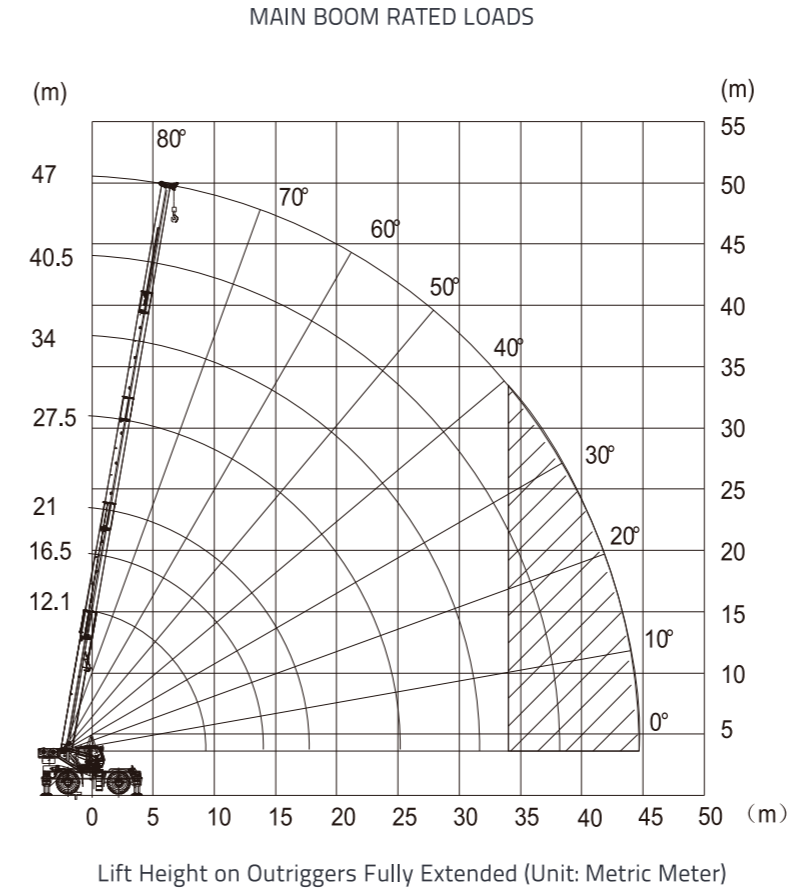
Rated Load on Outriggers Fully Extended



| LOAD RADIUS (M) | Outriggers fully extended and telescoping cylinder I fully retracted, 10.5 t counterweight | | | | |
|-----------------|--|-------|-------|-------|-------|
| | 12.1 | 18.6 | 25.1 | 31.6 | 38.1 |
| 3 | 85000* | 31000 | | | |
| 3.5 | 70000 | 31000 | | | |
| 4.0 | 61500 | 31000 | 23000 | | |
| 4.5 | 55000 | 31000 | 23000 | | |
| 5.0 | 51000 | 31000 | 23000 | | |
| 5.5 | 48000 | 30000 | 23000 | 16500 | |
| 6.0 | 45000 | 29000 | 23000 | 16500 | |
| 7.0 | 38000 | 27000 | 22000 | 16000 | 12500 |
| 8.0 | 33200 | 26000 | 21000 | 14500 | 12500 |
| 9.0 | 25500 | 25000 | 19500 | 13500 | 11500 |
| 10.0 | | 21000 | 18000 | 12500 | 11500 |
| 11.0 | | 17500 | 17100 | 11500 | 10500 |
| 12.0 | | 15000 | 15200 | 10800 | 9700 |
| 14.0 | | 11500 | 12000 | 9400 | 8400 |
| 16.0 | | | 9500 | 8200 | 7300 |
| 18.0 | | | 7800 | 7300 | 6400 |
| 20.0 | | | 6300 | 6500 | 5800 |
| 22.0 | | | | 5500 | 5200 |
| 24.0 | | | | 4600 | 4600 |
| 26.0 | | | | 3800 | 4100 |
| 28.0 | | | | | 3500 |
| 30.0 | | | | | 3000 |
| 32.0 | | | | | 2600 |
| I | 0 | 0 | 0 | 0 | 0 |
| II | 0 | 6,5 | 13 | 19,5 | 26 |
| Reeving | 12 | 10 | 8 | 4 | 3 |
| Hook | 70t | | | | |

LIFTING HEIGHT CURVE

LIFTS WITH OUTRIGGER BEAMS FULLY EXTENDED



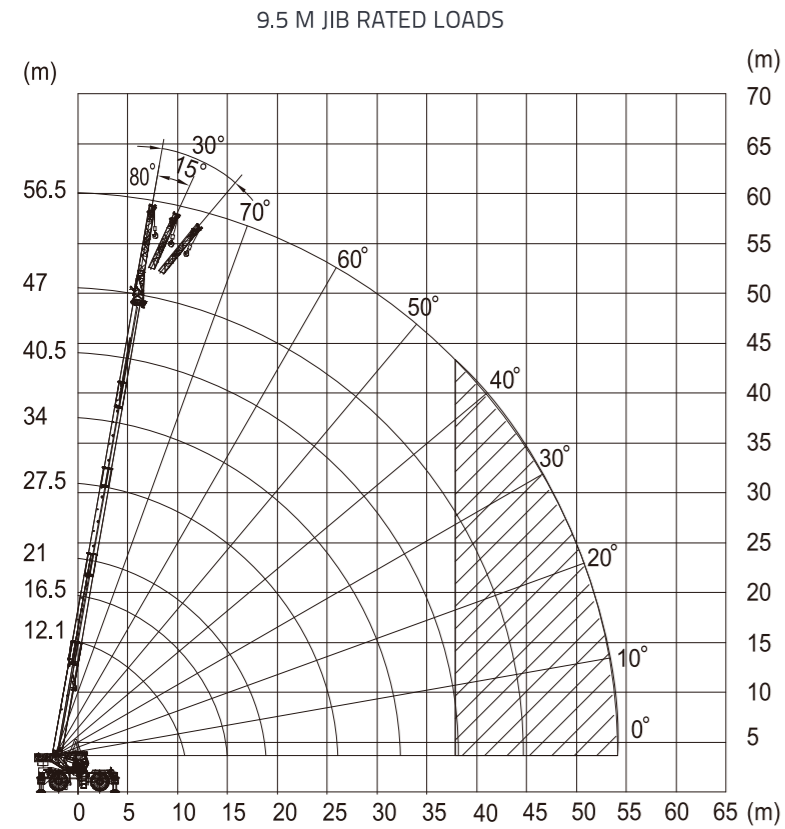
LIFTING CAPACITY TABLES

Rated Load on Outriggers Fully Extended



| Boom angle (°) | Outriggers fully extended, 10.5 t counterweight | | |
|----------------|---|------|------|
| | 0° | 15° | 30° |
| 80 | 5500 | 3500 | 3000 |
| 78 | 5000 | 3500 | 3000 |
| 76 | 5000 | 3300 | 2800 |
| 74 | 4800 | 3300 | 2800 |
| 72 | 4300 | 3100 | 2800 |
| 70 | 4000 | 3000 | 2700 |
| 68 | 3800 | 3000 | 2600 |
| 66 | 3600 | 2900 | 2500 |
| 64 | 3300 | 2700 | 2400 |
| 62 | 2900 | 2500 | 2300 |
| 60 | 2500 | 2300 | 2100 |
| 58 | 2200 | 2100 | 1900 |
| 56 | 1900 | 1800 | 1700 |
| 54 | 1600 | 1500 | 1400 |
| 52 | 1300 | 1200 | 1100 |
| 50 | 1100 | 1000 | 950 |
| 48 | 1000 | | |
| Reeving | 1 | | |
| Hook | 6,5t | | |

LIFTING HEIGHT CURVE



Lift Height on Outriggers Fully Extended (Unit: Metric Meter)

LIFTING CAPACITY TABLES

Rated Load on Outriggers Fully Extended

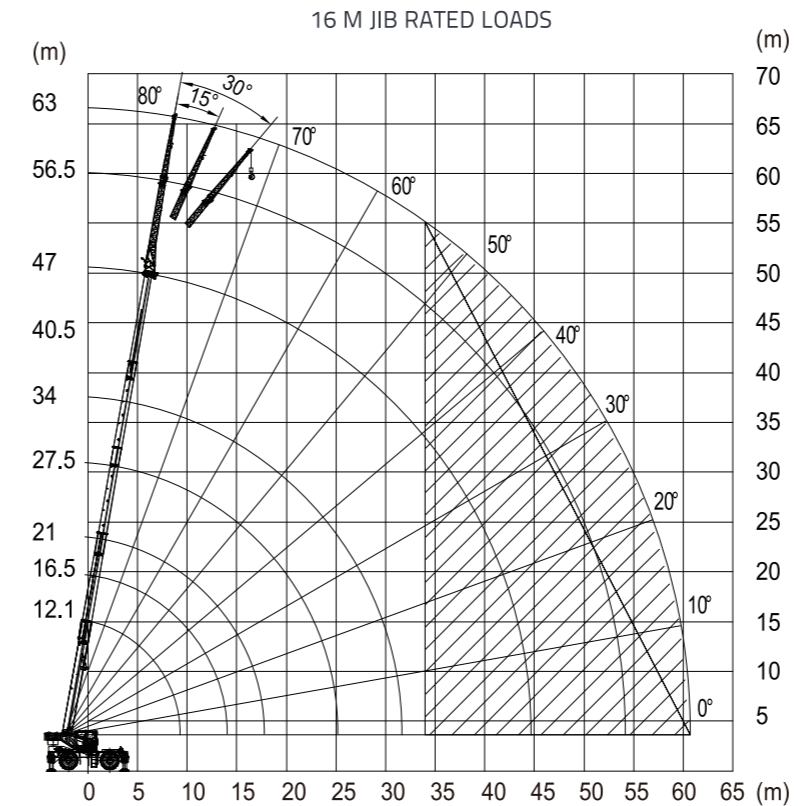
360°
(UNIT: KG)

MAIN BOOM + 16 M JIB

OUTRIGGERS FULLY EXTENDED

| Boom angle (°) | Outriggers fully extended, 10,5 t counterweight | | |
|----------------|---|------|------|
| | 0° | 15° | 30° |
| 80 | 3500 | 2200 | 1500 |
| 78 | 3500 | 2000 | 1500 |
| 76 | 3200 | 2000 | 1500 |
| 74 | 2800 | 2000 | 1500 |
| 72 | 2800 | 1800 | 1400 |
| 70 | 2600 | 1600 | 1400 |
| 68 | 2400 | 1600 | 1400 |
| 66 | 2100 | 1500 | 1400 |
| 64 | 2000 | 1500 | 1300 |
| 62 | 1900 | 1500 | 1300 |
| 60 | 1800 | 1400 | 1300 |
| 58 | 1700 | 1400 | 1200 |
| 56 | 1500 | 1300 | 1200 |
| 54 | 1200 | 1100 | 1000 |
| 52 | 1000 | 950 | 900 |
| 50 | 900 | | |
| Reeving | | | |
| Hook | 1 | | |
| | 6,5t | | |

LIFTING HEIGHT CURVE



Lift Height on Outriggers Fully Extended (Unit: Metric Meter)

NOTES

- a) For the working conditions marked with asterisk over sides and rear, the crane must use 85 t hook; when the load is more than 70 t and the reeving is 13, a special device shall be installed.
- b) Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
- c) Crane load ratings on outriggers are based on all outrigger beams being positioned according to the applicable lift chart and the tires raised free of the supporting surface.
- d) CRANE LOAD RATINGS MUST NOT BE EXCEEDED. DO NOT ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
- e) Lift the load vertically. Do not pull the load at an angle.
- f) When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
- g) Do not operate at longer radii than those listed on the applicable lift chart (cross hatched areas shown on range diagrams) as tipping can occur without a load on the hook.
- h) The boom angles shown on the lift charts give an approximation of the operating radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection.
- i) Rated loads include the weight of hook block, slings, and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted.
- j) Consult appropriate section of the Operator's Manual for more exact description of hoist line reeving.
- k) The use of more parts of line than required by the load may result in having insufficient rope to allow the hook block to reach the ground. Choose the correct line parts to get a rope in the proper length.
- l) Properly maintained wire rope is essential for safe crane operation. Consult the Operator's Manual and Maintenance Manual for proper maintenance and inspection requirements.
- m) When the rotation-resistant wire rope is used, the allowable rope loading shall be the breaking strength divided by five (5), unless otherwise specified by the wire rope manufacturer.
- n) The user shall operate at reduced ratings to allow for adverse job conditions, such as: soft or uneven ground, out of level conditions, high winds, side loads, pendulum action, jerking or sudden stopping off loads, hazardous conditions, experience of personnel, two-machine lifts, traveling with loads, electric wires, etc. (side pull on boom or jib is hazardous). If the wind speed is higher than the maximum permissible value (45 ft/s (13.8 m/s), grade 6) or it is fulminous during crane operation, stop the work, fully retract the boom and correctly stow the boom.
- o) Load ratings are dependent upon the crane being maintained according to the Operator's Manual and Maintenance Manual.

TECHNICAL DESCRIPTION



Engine

Engine type----- CUMMINS QSB6.7
Rated power----- 194 KW / 2200 RPM
Oil tank capacity-----300L
Exhaust emissions: Non-road Emission Standard III



MAIN BOOM

The main boom consists of 5 U-type boom sections made of high-strength steel, two oil cylinders and two sets of wire rope synchronous telescopic mechanism
The main boom head is equipped with 6 sheaves, which is convenient for changing reeving factors without removing the wedges. The head is equipped with boom end pulley and movable pulley block as optional.
Min. main boom length (with telescopic sections completely retracted): 12100 mm
Max. main boom length (with telescopic sections completely extended): 47000 mm
Min. telescoping out time: about 120 s
Derrick angle and speed: -1° - 80° / 46 s



MAX. BOOM LENGTH WITH JIB EXTENSION

It consists of two jib sections of lattice structure. The jib section II is secured into the jib section I, and can be extended outward from one side of the section I. The whole jib is side stowed with the main boom via moveable pins during driving.
A pulley is assembled at the jib head.
Offset: 0° , 15° and 30°
Jib length: 9.5m , 16 m



MAIN AND AUXILIARY WINCHES

The main winch is driven by variable axial piston hydraulic motor through planetary reducer to achieve lifting and lowering of heavy objects.
Auxiliary winch optional.
Max. hoist rope strength: 6500 kg
Max. hoist rope speed: 130 m/min (At the 4th layer)
Rope diameter: Φ 20 mm
Main winch rope length: 260 m
Auxiliary winch rope length: 140 m

TECHNICAL DESCRIPTION



MAIN AND AUXILIARY WINCHES

Main hook: 70 t, with 6 pulleys and hook latch, secured at the chassis frame in front of the slewing table.
Auxiliary hook: 6.5 ton, With rotating hook and hook latch. In the secondary hook cylinder on the frame.
Rotatable hook: 85 t (optional), with 6 pulleys, rotating hook and hook latch, secured at the chassis frame in front of the slewing table.



SWING

It consists of a hydraulic motor, one planetary gear reducer, a pinion gear and a swing bearing, etc. Via the planetary gear reducer, the hydraulic motor drives the pinion gear to rotate and makes the swing bearing outer ring rotate around its inner toothed ring fixed on chassis frame, providing superstructure with 360° unlimited swing.
Hydraulically controlled usually-closed brake with controllable sliding control
Swing speed: 0 – 2 r/min.



HYDRAULIC SYSTEM

The dual variable pump achieve telescoping, luffing and lifting action, and provides oil.
The gear pump connected in series behind the variable displacement pump is responsible for the outrigger, braking, torque converter oil dispersion and air conditioning.
The gear pump installed in the engine is responsible for rotation and steering.
Hydraulic oil tank capacity : 1000 L



OPERATOR CAB

The cab is side-mounted and adopts left-hand drive. A single seat is installed inside the cab.
There are two control boxes on the both sides of operator's seat and the left one can be turned over. The controls of the superstructure are arranged according to the requirements of ASME B30.5-2007 standard and comply with ISO (International Organization for Standardization) standard.
Length: 1810 ± 5 mm
Width: 1050 ± 5 mm
Height: 1710 ± 5 mm

TECHNICAL DESCRIPTION

OUTRIGGER SYSTEM

4 H-type outriggers, hydraulically controlled, can be operated in the cab simultaneously or independently.

Each vertical jack cylinder is equipped with a two-way hydraulic lock to ensure that outriggers are secured reliably during working or driving.

Outrigger boxes are directly welded onto the chassis frame.

The outriggers can be completely extended, half extended or completely retracted for different crane operations.

Outrigger spread (Height): 7380 mm

Outrigger spread (Width): 7300 mm (fully extended)

5100 mm (half extended)

2900 mm (fully retracted)

AXLES

Front axle :A rigidly connected steering and driving axle, installed with a planetary reducer and a brake.

Rear axle:A full-floating steering and driving axle, installed with a planetary reducer and a brake.

STEERING

Fully-hydraulic power steering gear The cylinder of steering and driving axle is controlled by the steering wheel to realize crane steering.

4 steering modes:

2-wheel steering – front wheel steering

2-wheel steering – rear wheel steering

4-wheel steering – all-wheel steering

4-wheel steering – crab steering

BRAKES

Service brake: Hydraulically controlled disc brake on 4 wheels

Parking brake: Hydraulically released parking brake, under the action of the spring mounted on the input shaft of front axle.

TECHNICAL DESCRIPTION

ELECTRIC SYSTEM

24 Volt DC

2 batteries with 12 V rated voltage and 120 Ah rated current

SAFETY DEVICE

Rated capacity indicator (RCI)

Rotating beacon and horn

Hoisting limit switch

Lower limit switch

Balance valve

Hydraulic lock

Hydraulic safety valve

Swing brake

Swing lockout device

Boom angle indicator

Outrigger beam retaining pin

Emergency stop button

SUSPENSION SYSTEM

Front axle: rigidly mounted to the chassis frame

Rear axle: oscillation axle, connecting to chassis frame via a hydraulic suspension cylinder

COUNTERWEIGHT

Counterweight: 10500kg

Length.....3200mm

width.....1328mm

Height.....560mm

TECHNICAL PARAMETERS

| Type | Item | Value |
|---------------------|---|--|
| Working performance | Max. rated lifting capacity x working radius | kg.m 85000×3 |
| | Max. load moment of main boom | kN.m 2700 |
| | Max. lifting height of main boom (fully extended) | m 49.8 47.3(boom sheave to the hook head 2.5m) |
| | Max. lifting height of jib | m 65.7 63.4(boom sheave to the hook head 2.3m) |
| Dimensions | Overall dimensions (L x W x H) | mm 14460×3400×3850 |
| | Outrigger spread(Height x Width) | mm 7380×7300 |
| | Main boom length | mm 12100-47000 |
| | Jib length | mm 9500,16000 |
| | Boom angle | ° -1-80 |
| | Swing range | 360° unlimited swing (Full range) |
| Working speeds | Max. hoist rope speed (Main winch) | m/min 130(at 4 th layer) |
| | Min. boom telescoping out time | s 120 |
| | Min. boom telescoping in time | s 135 |
| | Min. boom derricking up time | s 46 |
| | Min. boom derricking down time | s 105 |
| | Swing speed | r/min 0-2 |
| Hydraulic system | Hydraulic oil tank capacity | L 1000 |
| Gross vehicle mass | Gross weight | kg 52800 |
| | Front weight | kg 27000 |
| | Rear weight | kg 25800 |
| Driving | Highest driving speed (forward/backward) | km/h 36/36 |
| | Wheelbase | mm 4150 |
| | Treads(Front / Rear) | mm 2632 |
| | Max. gradeability | % 75 |