

ZOOMLION ROUGH TERRAIN CRANE ZRT400V432



ZOOMLION

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The product is now under prototype status, the design and parameters of finalized version may subject to change without immediate notice.

website:en.zoomlion.com 2024.03.14

ZOOMLION

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HIGHLIGHTS

1.Strong lifting performance

- 33m main boom, super large U-shaped section, maximum rated lifting capacity 40t, 4.5t counterweight; Super strong outrigger + driving operation capacity with load, leading the industry in comprehensive lifting performance;
- Four-wheel multi-mode steering, the maximum driving speed can reach to 38 km/h, and the maximum gradeability is 55%.

2.Stable and reliable

- The main components are selected from international well-known brands, DF Cummins engine + DANA gearbox + MEICHI bridge. The whole machine has passed the strict operation and driving reliability test.
- Mature modular design of crane.

3.Comfortable and durable

- The new generation panoramic cab is equipped with front sliding window and panoramic skylight to make the vision more unobstructed and effectively reduce work fatigue.
- 10 inch large display screen, force limiter display screen and body display screen are integrated, and the space layout of man-machine effect control room is convenient and comfortable.



LIFTING CAPACITY TABLES

RATED LOAD ON OUTRIGGERS FULLY EXTENDED (BOOM + 8.2 M JIB)




Boom angle (°)	Outriggers fully extended 50% extended 4.5t counterweight		
	0°	15°	30°
80	4500	3000	2400
78	4200	2800	2300
76	4000	2700	2200
74	3600	2500	2100
72	3300	2400	2000
70	3000	2200	1900
68	2800	2100	1800
66	2600	2000	1700
64	2300	1900	1550
62	2100	1700	1400
60	1800	1500	1300
58	1600	1400	1200
56	1500	1200	1100
54	1300	1100	1000
52	1100	1000	900
50	1000	900	800
48	900	800	700
46	700	600	550
Line part	1		
Hook	4,5 t		

RATED LOAD ON OUTRIGGERS FULLY EXTENDED (BOOM + 14 M JIB)



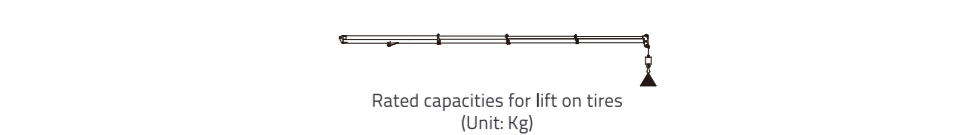
Boom angle (°)	Outriggers fully extended, with 4.5t counterweight		
	0°	15°	30°
80	2500	1800	1200
78	2400	1700	1200
76	2200	1550	1100
74	2000	1400	1100
72	1800	1350	1100
70	1700	1300	1000
68	1500	1200	1000
66	1400	1100	950
64	1300	1000	900
62	1200	900	850
60	1100	850	800
58	1000	800	800
56	950	750	750
54	850	700	700
52	800	600	550
50	700		
Line part	1		
Hook	4,5 t		

NOTES

- a)Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.
- b)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.
- c)CRANE LOAD RATINGS MUST NOT BE EXCEEDED. DO NOT ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
- d)Lift the load vertically. Do not pull the load at an angle.
- e)When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
- f)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.
- g)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.
- h)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.
- i)Consult appropriate section of the Operator's Manual for more exact description of hoist line reeving.
- j)Properly maintained wire rope is essential for safe crane operation. Consult the Operator's Manual and Maintenance Manual for proper maintenance and inspection requirements.
- k)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.
- l)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.
- m)Load ratings are dependent upon the crane being maintained according to the Operator's Manual and Maintenance Manual.

LIFTING CAPACITY TABLES

RATED LOAD WITH BOOM FOR LIFT ON TIRES



Working radius (m)	Lift on tires standing still, over 360-degree working area, with 4.5t counterweight			
	10.2	14.7	19.2	23.7
3	10000	9500		
3,5	8600	8600	8000	
4	7200	7400	7200	7500
4,5	6600	6500	6000	6000
5	5600	5400	5500	5200
5,5	4800	4800	4800	4600
6	4200	4300	4000	4000
7	3500	3600	3200	3400
8		2600	2500	2600
9		2100	2100	2200
10		1600	1700	1600
11			1300	1300
12			1100	1100
14				900
16				
18				
l (m)	0	4.5	9	13.5
Line part	8	6	6	4
Hook	40t			

LIFTING CAPACITY TABLES

RATED LOAD WITH BOOM FOR LIFT ON TIRES



Rated capacities for lift on tires
(Unit: Kg)

Working radius (m)	Pick and carry the load, with 4.5t counterweight			
	10.2	14.7	19.2	23.7
3	14000	12000		
3.5	12000	10800	10000	
4	10000	10000	9600	9000
4.5	8800	8500	8400	8200
5	7600	7500	7500	7600
5.5	7000	7000	6800	7000
6	6400	6500	6400	6500
7	5500	5600	5500	5500
8		4800	4800	4600
9		4000	4200	4200
10		3400	3600	3600
11			3000	3000
12			2600	2500
14				2000
16				1500
18				
l (m)	0	4.5	9	13.5
Line part	8	6	6	4
Hook	40t			

NOTES


a)Crane load ratings are based on the crane being leveled and standing on a firm and uniform supporting surface.

b)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.

c)CRANE LOAD RATINGS MUST NOT BE EXCEEDED. DO NOT ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.

d)Lift the load vertically. Do not pull the load at an angle.

e)When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.

f)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.

g)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.

h) 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.

i)Consult appropriate section of the Operator's Manual for more exact description of hoist line part.

j)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. Refer to Table 1.1.

k)Properly maintained wire rope is essential for safe crane operation. Consult the Operator's Manual and Maintenance Manual for proper maintenance and inspection requirements.

l)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.

m)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.

n)Load ratings are dependent upon the crane being maintained according to the Operator's Manual and Maintenance Manual.

TECHNICAL DESCRIPTION



Engine

Engine type---- DF Cummins QSB 6.7

Rated power--- 129KW/2200RPM

Oil tank capacity-----250L

Exhaust emissions: Non-road Emission Standard III



MAIN HOOK

Rotatable main hook: 40 t, with 4 sheaves and hook latch, secured at the chassis frame in front of the slewing table.

Rotatable auxiliary hook: 4.5 ton, with hook latch, used with the rooster sheave and jib, secured at the auxiliary hook holder on the chassis frame.



JIB

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 sheave is assembled at the jib head.

Offset: 0°, 15° and 30°

Jib length: 8.2m, 14 m



MAIN AND AUXILIARY WINCHES

The main and auxiliary winches are equipped with the same spare parts.

Max. hoist rope tensile force:5130kg.

Max. hoist rope speed:130m/min (At the 4th layer).

Rope diameter:Φ17 mm.

Main winch rope length:185 m.

Auxiliary winch rope length:110 m.



MAIN BOOM

The box-shaped main boom consists of 4 U-type boom sections made of high-strength steel.

The main boom head is equipped with 6 sheaves, which is convenient for changing reeving factors without removing the wedges. The rooster sheave and a dismantable pulley block are included in the standard configuration.

Min. main boom length (with telescopic sections completely retracted): 10200 mm

Max. main boom length (with telescopic sections completely extended): 33000 mm

Min. telescoping out time: about 50 s



SLEWING MACHENISM

It consists of a hydraulic motor, planetary gear reducer, a pinion gear and a slewing bearing, etc. Via the planetary gear reducer, the hydraulic motor drives the pinion gear to rotate and makes the slewing bearing outer ring rotate around its inner toothed ring fixed on chassis frame, providing superstructure with 360° unlimited slewing.

Hydraulically controlled usually-closed brake, capable of free slewing function, and installed with a slewing lockout device.



HYDRAULIC SYSTEM

The dual variable plunger pumps supply oil to the telescoping, derricking and hoist mechanisms.

A gear pump supplies oil to the outrigger, braking system, oil radiator of the torque converter and air conditioner.

Another gear pump mounted on the engine supplies oil to the slewing, steering system.

Hydraulic oil tank capacity-----580 L

TECHNICAL DESCRIPTION



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. The left / right control box can be pulled up. 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: 910 ± 5 mm

Height: 1710 ± 5 mm



OUTRIGGER SYSTEM

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, intermediately extended or completely retracted for different crane operations.

Outrigger spread (L): 6500 mm

Outrigger spread (W): 6400 mm (fully extended)

4500 mm (half extended)

2500 mm (fully retracted)



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



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.



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.



ELECTRIC SYSTEM

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



SAFETY DEVICE

Rated capacity indicator (RCI)

Hydraulic safety valve

Rotating beacon and horn

Swing brake

Hoisting limit switch

Swing lockout device

Lower limit switch

Boom angle indicator

Balance valve

Outrigger beam retaining pin

Hydraulic lock

Emergency stop button



SUSPENSION SYSTEM

Front axle: rigidly mounted to the chassis frame

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



COUNTERWEIGHT

Counterweights: 4500kg (17196lbs)

Length.....2680mm

Width.....1240mm

Height..... 370mm

TECHNICAL PARAMETERS

Type	Item	Value	
Working performance	Max. rated lifting capacity × working radius	kg.m	40000×2.5
	Max.load moment of basic boom	kN.m	1305
	Max.load moment of main boom(fully extended)	kN.m	792
	Max. lifting height of main boom (fully extended)	m	33.9
	Max. lifting height of jib	m	47.8
Dimensions	Overall dimensions (L × W × H)	mm	12360×2690×3650
	Outrigger spread(Height × Width)	mm	6500×6400
	Main boom length	mm	10200~33000
	Jib length	mm	8200~14000
	Boom angle	°	-2~80
	Slewing range		360°
Working speeds	Max. hoist rope speed (Main winch)	m/min	130
	Min. boom telescoping out time	s	50
	Min. boom telescoping in time	s	45
	Min. boom derricking up time	s	45
	Min. boom derricking down time	s	120
	Slewing speed	r/min	0~2.8
Hydraulic system	Rated working pressure	MPa	25
	tank capacity	L	580
Gross vehicle mass	Gross weight	kg	31000
Driving	Highest driving speed (forward/backward)	km/h	38/38
	Wheelbase	mm	3880
	Treads(Front / Rear)	mm	2170
	Max. gradeability	%	55