

# ZRT850



**ZOOMLION**

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Max. capacity



Max. boom length



Max. tip height



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## Highlights

The ZRT850 features a 5-section, U-shaped, 47m telescopic boom. Its telescoping system consists of a two-stage hydraulic cylinder with a rope extension mechanism.

Its innovative new boom head and end structure, with optimized boom connections provide with stronger load-bearing capacities.

2<sup>nd</sup> generation of arbitrary telescoping technology enables more stable telescoping and greatly enhances its anti-rollover performance.

We chose the AXLE-TECH brand axle because it offers the most reliable product on the market, all wheel and crab steering ensure easy handling and high manoeuvrability in constricted conditions.

Full-vision operator cab is designed for maximum comfort and ease of operation.







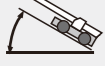



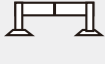








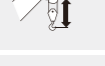




A 6-speed powershift transmission from DANA offers the latest technology for the diverse needs of off-road cranes.

The ZRT cranes from ZOOMLION are powered by US-CUMMINS diesel engine which meets Tire-III emissions regulations. The engine develops 194kw and supplies a maximum torque of 990N.

The crane's work is secured by the HIRSCHMANN HC4900LMI (Load Moment limiter), delivers the industry's most reliable electronic monitoring system available.



## KEY/SYMBOLS

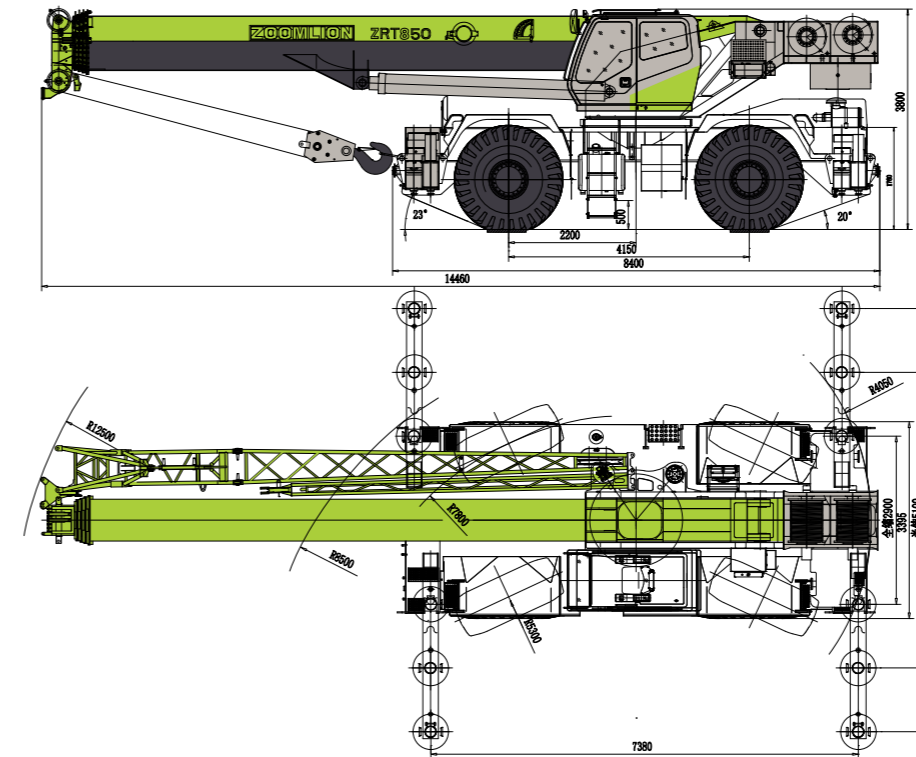
	Engine		Transmission
	Axles		Cameras
	Steering		Brakes
	Gradeability		Main boom
	Tires and wheels		Hook ball
	Outrigger system (100%, 50%, 0% extended)		Hook block
	Swing		Main and auxiliary winches
	Hydraulic system		Crane with counterweight
	Counterweight		Side-stowed jib
	Operator cab		Distance from the hook to the head
	Max. boom length with jib ext.		Tip height
	Load Moment Indicator(LMI)		Working radius

## STANDARD EQUIPMENT


- Formed boom
- Offsettable jib 0° -15° -30°
- Cameras
- Auxiliary lifting sheave
- 70ton hook block, with 6 sheaves and hook latch
- 6.5t ton hook ball ,with hook latch
- Rotation-resistant wire rope
- Deluxe tiltable seat
- Air conditioner/Heater
- Work light package : boom, cab and suprestructure
- Revolving amber light
- AM/FM radio
- Battery disconnect switch
- Front and rear lift lugs

## ANSI & CE Standard

## CRANE DIMENSIONS



## CRANE AND COMPONENT WEIGHTS

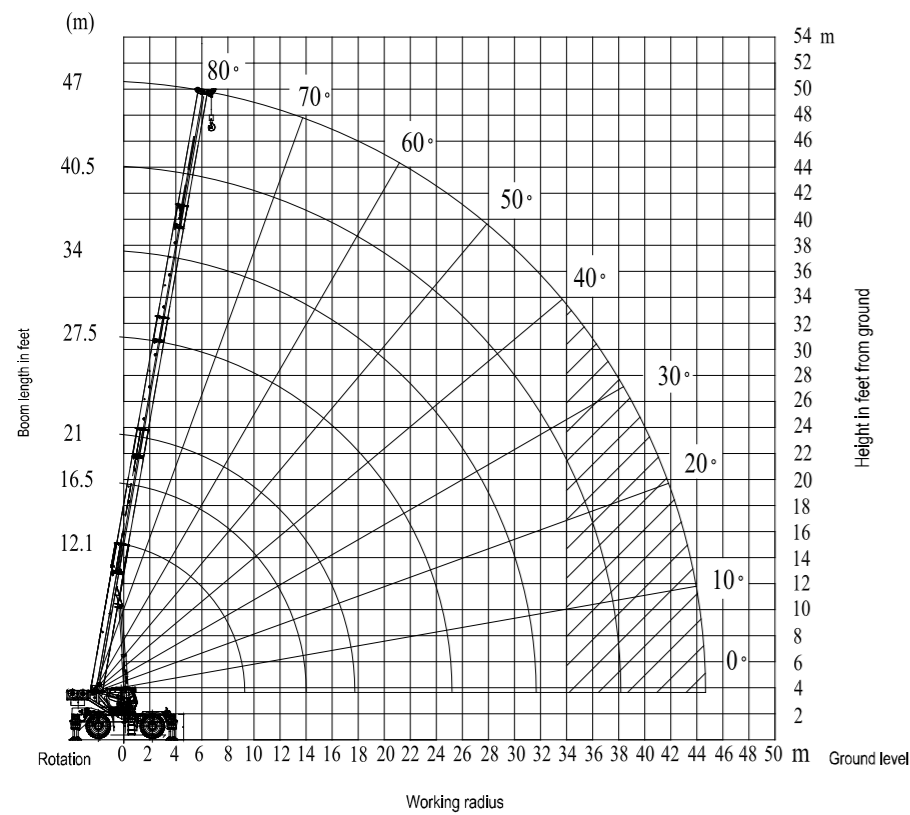
CRANE OPERATING WEIGHTS			
	GROSS Vehicle Weight	Front Axle Load	Rear Axle Load
	Kg	Kg	Kg
CRANE WITH CTWT.	52800	27000	25800

DEDUCTIONS FOR LOAD HANDLING				
	JIB STOWED	AXUE LARY HEAD	6 Sheave 70-ton hook block	6.5-ton ball hook
Kg	840	41.59	589	150

Front WHEEL(4x2)STEERING	METRIC
WALL TO WALL OVER CARRIER	12.6m
ALL WHEEL(4x4)STEERING	METRIC
WALL TO WALL OVER CARRIER	7.8m
TAIL SWING	METRIC
WALL TO WALL OVER BOOM ATTACHED	4.2m



## LIFTING HEIGHT CURVE



## LIFTING CAPACITY TABLES



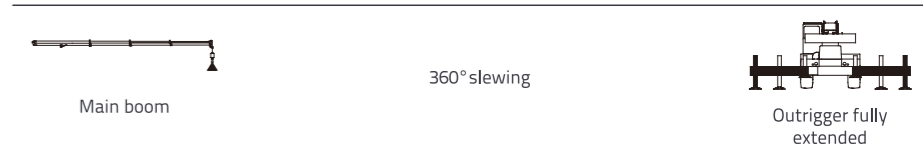
Working radius (m)	cylinder I fully extended, outrigger fully extended, 10.5t counterweight						
	12,1	16,5	21,0	27,5	34,0	40,5	47,0
3.0	85000*	55000					
3.5	70000	53000	43500				
4.0	61500	52000	43500				
4.5	55000	49000	42000	31000			
5.0	51000	46000	41000	30000			
5.5	48000	44500	39000	29000			
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



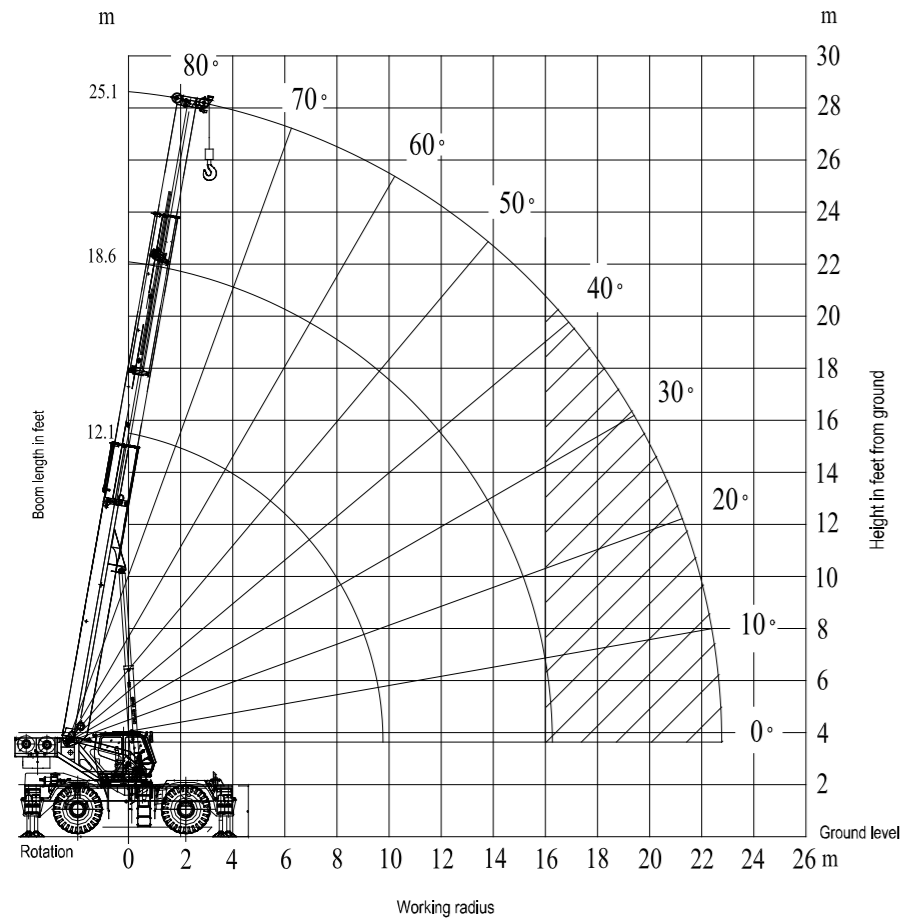
Working radius (m)	cylinder I extended to 50%, outrigger fully extended, 10.5t counterweight					
	12,1	16,5	23,0	29,5	36,0	42,5
3.0	85000*	55000				
3.5	70000	53000	31000			
4.0	61500	52000	31000			
4.5	55000	49000	31000			
5.0	51000	46000	31000	23000		
5.5	48000	44500	30000	23000		
6.0	45000	41000	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

## LIFTING CAPACITY TABLES



Working radius (m)	cylinder I extended to 0%, outrigger fully extended, 10.5t 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



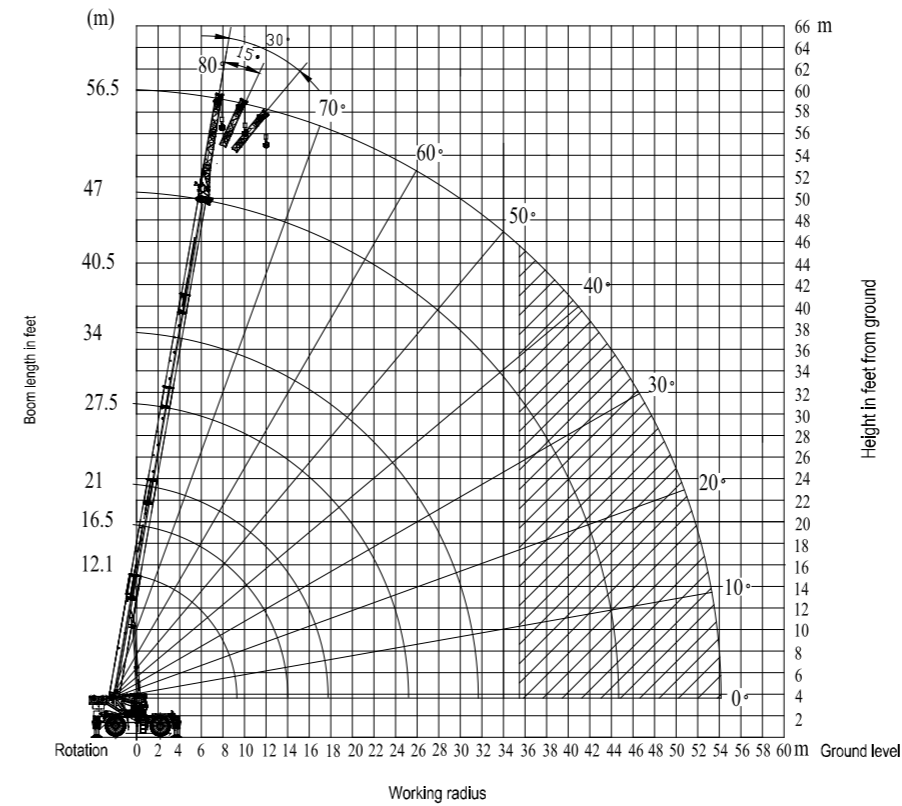
## LIFTING CAPACITY TABLES

Unit: kg

Main boom (m)	12.1			18.6			25.1		
	360°	Front operation	Pick& carry	360°	Front operation	Pick& carry	360°	Front operation	Pick& carry
3.0	20000	29500	18500	19300	27000	18000			
3.5	17100	26000	16000	16800	25500	16000			
4.0	15000	23300	14500	14500	22900	14000	14000	21500	14200
4.5	12300	20700	13000	12600	20400	12400	12000	20000	12800
5.0	10400	19300	11500	11000	18600	11100	11200	18600	11200
5.5	9100	17200	10300	9700	17000	10000	10500	16800	10000
6	8200	15800	9400	8800	14600	9100	9300	15400	8800
7	5800	11000	7700	6600	12500	7300	7600	13000	7700
8	3700	8600	6200	5300	9300	5700	5800	10100	5900
9	2600	5500	4300	4100	8000	4500	4500	8700	4600
10				3000	6200	3900	3500	6900	4100
11				2100	4900	3100	2600	5600	3400
12				1600	3800	2500	2200	4400	2600
14					2200	1400	1000	2800	1700
16								1600	1000
I		0			0			0	
II		0			6.5			13	
Reeving		12			10			8	
Hook					70t				

Note: 360° and front operation in the table are static operation conditions of crane

## LIFTING HEIGHT CURVE



## LIFTING CAPACITY TABLES

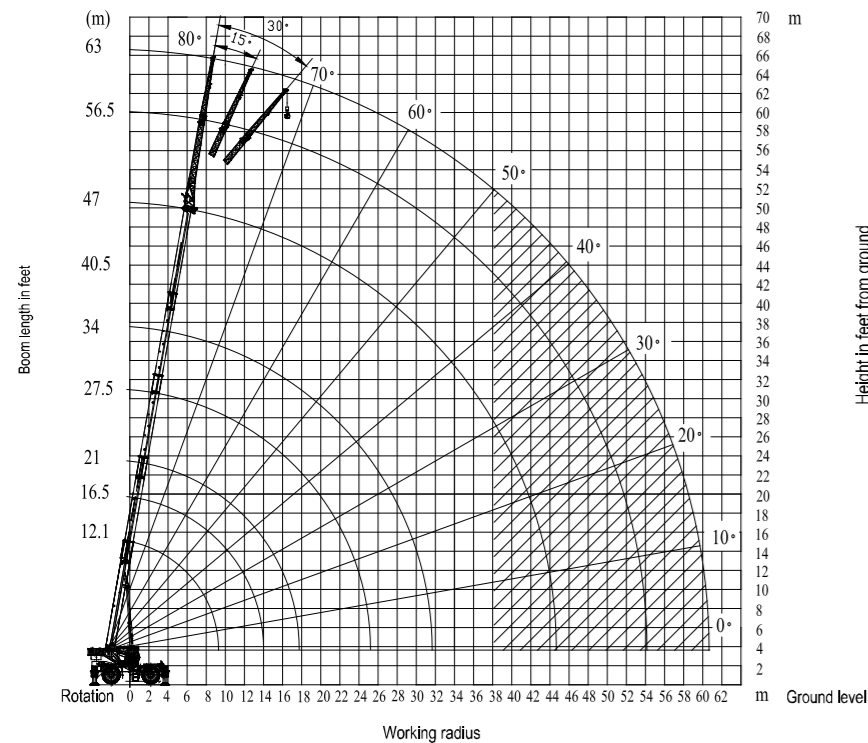
360° slewing

Main boom + jib 9.5m

Outrigger fully extended

Main boom angle (°)	outrigger fully extended, 10.5t counterweight					
	0°		15°		30°	
	Radius(m)	Lifting capacity	Radius(m)	Lifting capacity	Radius(m)	Lifting capacity
80	11.7	5500	13.2	3500	14.7	3000
78	13.8	5000	15.3	3500	16.7	3000
76	15.8	5000	17.3	3300	18.7	2800
74	17.7	4800	19.3	3300	20.6	2800
72	19.7	4300	21.2	3100	22.5	2800
70	21.6	4000	23.0	3000	24.4	2700
68	23.4	3800	24.9	3000	26.1	2600
66	25.2	3600	26.7	2900	27.8	2500
64	27.0	3300	28.4	2700	29.5	2400
62	28.5	2900	30.1	2500	31.2	2300
60	30.0	2500	31.7	2300	32.8	2100
58	31.5	2200	33.1	2100	34.2	1900
56	33.0	1900	34.5	1800	35.5	1700
54	34.4	1600	35.9	1500	36.8	1400
52	35.8	1300	37.2	1200	38.1	1100
50	37.1	1100	38.5	1000	39.3	950
48	38.5	1000				
Reeving				1		
Hook				6.5t		

## LIFTING HEIGHT CURVE



## LIFTING CAPACITY TABLES



Main boom angle (°)	outrigger fully extended ,10.5t counterweight					
	0°		15°		30°	
	Radius(m)	Lifting capacity	Radius(m)	Lifting capacity	Radius(m)	Lifting capacity
80	13.0	3500	16.3	2200	19.2	1500
78	15.4	3500	18.5	2000	21.4	1500
76	17.6	3200	20.7	2000	23.5	1500
74	19.9	2800	22.9	2000	25.5	1500
72	22.1	2800	25.0	1800	27.6	1400
70	24.2	2600	27.1	1600	29.5	1400
68	26.2	2400	29.1	1600	31.5	1400
66	28.3	2100	31.1	1500	33.3	1400
64	30.3	2000	33.0	1500	35.2	1300
62	32.2	1900	34.9	1500	36.9	1300
60	34.1	1800	36.7	1400	38.5	1300
58	35.9	1700	38.4	1400	40.2	1200
56	37.5	1500	40.1	1300	41.8	1200
54	39.1	1200	41.6	1100	43.2	1000
52	40.5	1000	43.0	950	44.5	900
50	42.0	900				
48						
Reeving	1					
Hook	6.5t					

## NOTES

a)For the working conditions marked with asterisk, when the crane is working in a full-range working area, an 85 t hook should be used; when the load exceeds 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

CUMMINS QSB6.7.....Inline 6 cylinder intercooled turbo diesel.  
 Kilowatts KW.....194 @ 2400 rpm.  
 Peak torque Nm.....990@1500rpm.

300 liter fuel tank capacity  
 USA Federal EPA / California ARB / European EU / Tier III emission rating.



### AXLES

AXLE-TECH front and rear steering axles with planetary reduction.  
 Front - Rigid mount.  
 Rear - Full-floating rear axle. Automatic rear axle oscillating lock occurs when superstructure.  
 is swung 10° from centerline in either direction.



### STEERING

Power steering with four independent modes:  
 Front Wheel  
 Rear-Wheel  
 All-Wheel  
 Crab



### GRADEABILITY

75% max.gradeability.



### TIRES AND WHEELS

29.5-25-34PR rating, earthmoving-style tires, Steel disc wheel.



### OUTRIGGER SYSTEM

Four independent horizontal beams and vertical jacks with integral holding valves, each independently controlled from the operator cab.

Outrigger spread (L).....7380mm  
 Outrigger spread (M).....7300mm (fully extended)  
 5100mm (fully extended)  
 2900mm (fully extended)

## TECHNICAL DESCRIPTION



### SWING

Bi-directional hydraulic swing drive with multi-disc wet brake and planetary reduction gearbox.  
 Spring-applied hydraulically released swing brake and 360° pneumatic positive swing lock.  
 Max. swing speed: .....2rpm.



### HYDRAULIC SYSTEM

Gear pump for main and auxiliary winches, boom hoist and telescope cylinders.  
 Gear pump for steering.  
 Gear pump for outriggers and slewing.  
 1000 liter hydraulic reservoir with external sight and temperature gauge.

Easily accessible (10 micron) cartridge-style full-flow filters with bypass protection.  
 Max. operating pressure: .....31.5 Mpa.



### COUNTERWEIGHT

Single 10500kg fixed counterweight.  
 Length .....3200mm  
 Width .....1328mm  
 Height .....560mm



### OPERATOR CAB

full-vision operator cab designed for maximum comfort. All steel fabrication with acoustical lining and safety glass throughout. The cab has a sliding door on the left and a sliding window on the right with a swing-up skylight with retractable shade and wiper motor. Fully adjustable deluxe seat with tilt.Foot controls for boom telescope, service brake and engine throttle, Tilt steering.

Temperature control is provided by a hydraulically driven air conditioning unit. Easy view dashboard with gauges for all engine sensors and rocker switch outrigger controls. Standard amenities also include bubble level, dome light, left-side rearview mirror, seat belt, trave swing lock and signal horn.



### MAX. BOOM LENGTH WITH JIB EXTENSION

2 stage swing around boom extension swing around type with triple offset (tilt type).  
 Single sheave at jib head.  
 Stows alongside base boom section.  
 Length ..... 9.5m, 16 m  
 Offset..... 0°, 15°, 30°  
 Max.tip height with 9.5m+6.5m fixed jib is 65.7m.



### LOAD MOMENT INDICATOR (LMI)

HIRSCHMANN HC4900 LMI control system.Microguard graphic display load moment and anti-two block system with audiovisual warning and function limiter.

System displays the following information: crane configuration, boom length, boom angle, load radius, allowed capacity, actual load, and load percentage of allowed capacity.

System includes settable work parameters: min./max. boom length, min./max. boom angle, defined swing area.

## TECHNICAL DESCRIPTION



### TRANSMISSION

Dana powershift transmission - 6 speeds forward and 6 speeds reverse.  
 Front axle disconnection offering both 4x4 and 4x2 operation.  
 Max. speed .....36km/hr .



### CAMERAS

The crane comes equipped with two cameras—a winch camera for viewing hoist operation and a rear camera for viewing the rear of the crane. The monitor is located in the cab and one can easily toggle between both camera views.



### MAIN BOOM

5 section U-shape full power partially synchronized telescoping boom of round box construction with 6 sheaves at boom head. The synchronization system consists of 2 telescope cylinder, extension cables and retraction cables. Hydraulic cylinder fitted with holding valve. 2 easily removable wire rope guards, rope dead end provided on both sides of boom head.

Full extended boom length .....47m  
 Full retracted boom length .....12.1m  
 Max. tip height, main boom .....49.8m  
 Boom angle range(min. / max.).....1° / 80°  
 Boom raising/lowering time.....46sec / 105sec  
 Boom extension/retraction time.....120s / 135s



### 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.



### HOOK BLOCK AND HOOK BALL

85 ton, 6 sheave(steel).....optional  
 Hook block weight.....620kg  
 70 ton, 6 sheave(steel).....standard  
 Hook block weight.....580kg  
 35 ton, 3 sheave(steel).....optional  
 Hook block weight.....380kg  
 6.5 ton ball hook.....standard  
 Ball hook weight.....150kg



### MAIN AND AUXILIARY WINCHES

Standard two speed main and auxiliary hoists, each with planetary reduction and spring applied multi-disc wet brake.  
 Each hoist features  
 Grooved drum lagging.  
 Hoist drum cable followers.  
 Max. permissible line pull: .....6500kg.  
 Winch speed: .....0-130m/min .  
 Power up / power down  
 Electronic drum rotation indicators.

Rope construction: ..... 20mm rotation-resistant compacted strand.