GROVE®
by Manitowoc

GRT880
Product guide

Metric 85%

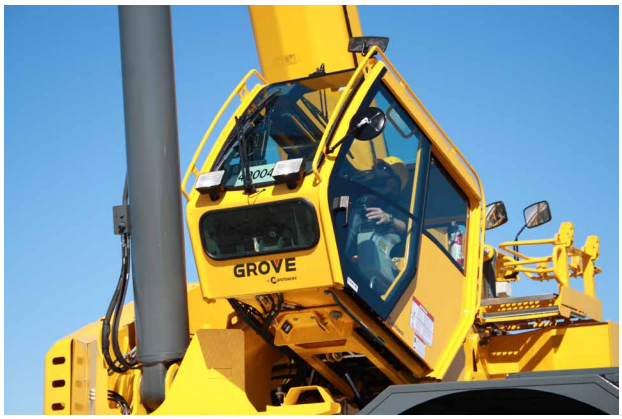
Features

- 80 t capacity
- 12,6 m – 41,1 m four-section full-power boom
- 10,1 m – 17,1 m manual offsettable bi-fold lattice swingaway extension
- 9979 kg standard counterweight hydraulically installed and removed
- Intuitive, user friendly controls with electronic joysticks and operator customizable function speeds
- Full vision cab with 20° tilt feature

GROVE GRT880

The GRT880 was designed after gathering feedback from crane owners and operators to ensure that it is loaded with the features and reliability you demand.

Features

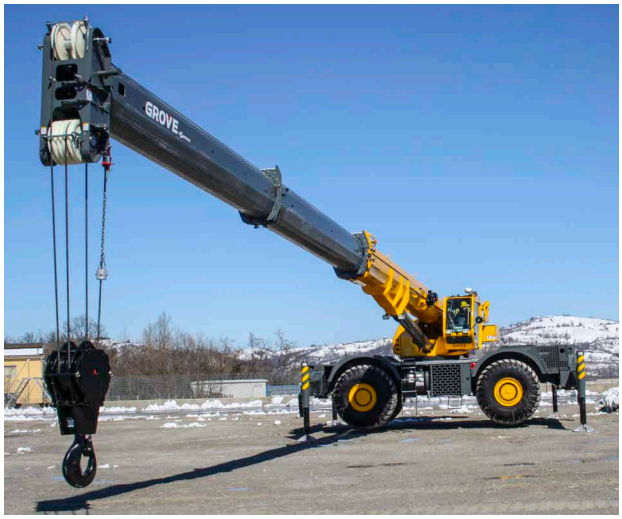


Cab

The cab is designed with operator comfort and productivity in mind with full-vision design and 20° tilt for improved viewing at high boom angles. The tilt/telescoping steering wheel can be positioned for optimum use.

Control system

The new Crane Control System (CCS) offers a user-friendly interface, two full graphic displays mounted vertically for easier viewing and a jog dial for easier navigation and data input. The system allows the electronic controllers to be reprogrammed by the operator for specific speed and reaction. Parts commonality across Grove, Manitowoc and Potain product lines enhances operator familiarization and serviceability.



Boom

Lifting performance is enhanced by the 12,6 m – 41,1 m four-section, full-power boom with sequenced, synchronized extension capability.

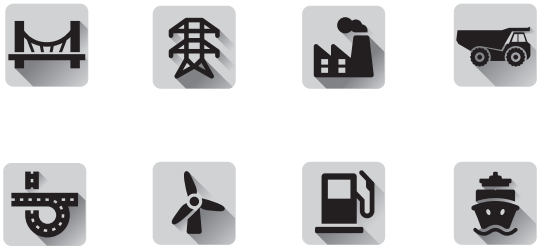
CraneSTAR®

CraneSTAR is an exclusive and innovative crane asset management system

that helps improve your profitability and reduce costs by remotely monitoring critical crane data.
Visit www.cranestar.com for more information.

GRT880 benefits

- Higher nominal capacity and stronger load charts ensure higher rental rates.
- Outstanding height and reach provide higher utilization and greater versatility.
- The GRT880 transports to the jobsite quickly and efficiently with a weight under 41,1 t after removal of counterweight and boom extension.
- Counterweight is hydraulically self-removable and installed by the crane.
- ECO mode for intelligent power management and decreased fuel consumption.



Manitowoc Crane Care™

Manitowoc Crane Care when you need it.
The assurance of the world's most advanced crane service and support to get you back to work fast.

Manitowoc Finance™

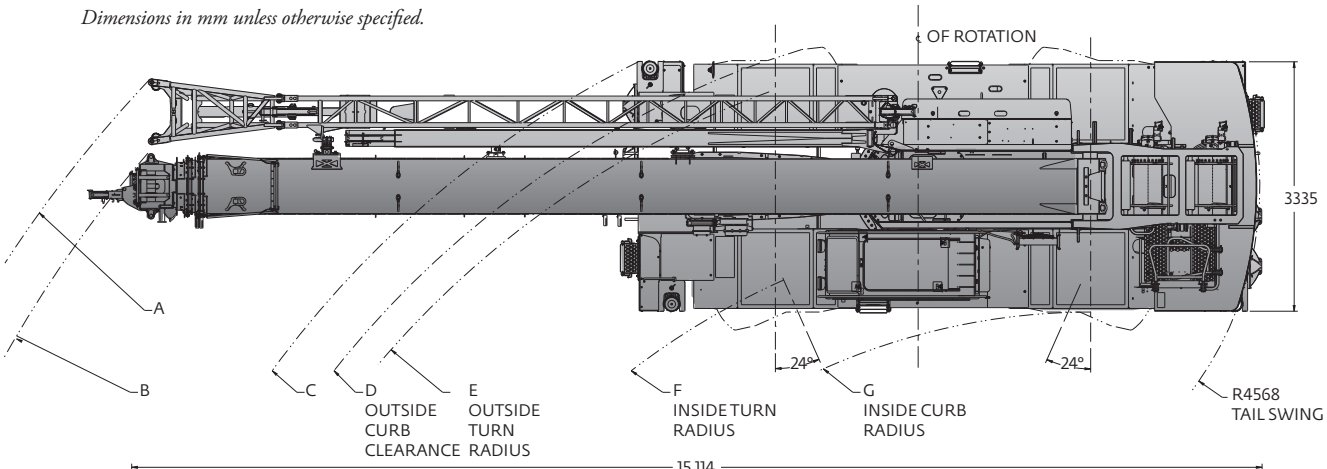
Manitowoc Finance helps you get right to work generating profits for your business.
Financial tools that help you capitalize on opportunity with solutions that fit your needs.

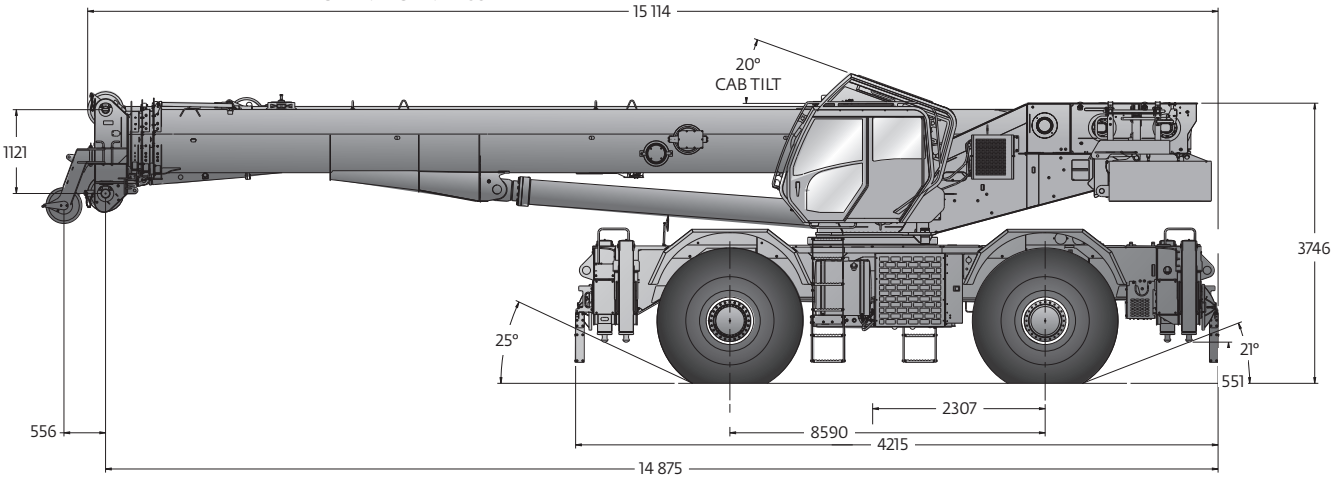
Contents

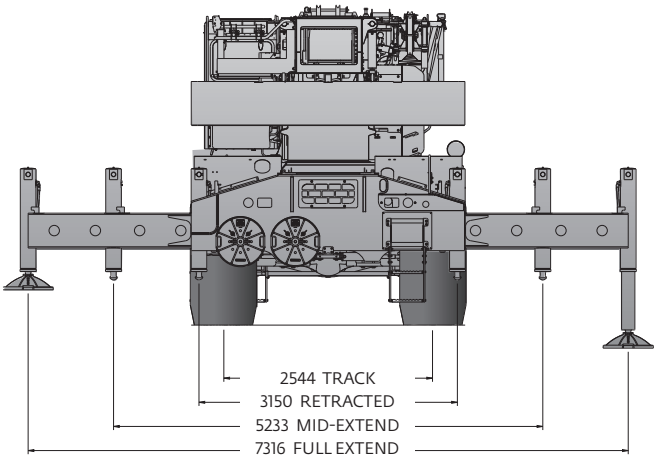
Dimensions

Tire Size: 29.5 x 25													
A	B	C	D	E	F	G	A	B	C	D	E	F	G
17,4 m	16,7 m	13,6 m	12,9 m	12,5 m	10,1 m	8,8 m	13,2 m	12,5 m	8,4 m	7,7 m	7,3 m	4,9 m	4,6 m
Two-Wheel Steer							Four -Wheel Steer						

Dimensions in mm unless otherwise specified.



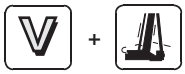




Weights

Weights			
	kg	**kg**	**kg**
Basic Machine (T4F): including 41,1 m main boom, main hoist with 213,9 m of wire rope, 10 t full counterweight, 75 t hookblock, 11,0 t headache ball, auxiliary boom nose, and air conditioning	50 500	24 626	25 875
Add: auxiliary hoist	488	157	-605
crane weight	50 948	24 469	26 480
Add: manual offsettable bui-fold swingaway and brackets	1502	2797	-1295
crane weight	52 451	27 266	25 184
Remove: counterweight	-10 000	3735	-13 735
crane weight	42 459	31 001	11 449
Remove: manual bi-fold extension	-1324	-2508	1184
crane weight	41 127	28 493	12 633

Lifting Capacity	Sheaves	Parts of line	Total weight
91 t	6	2 to 12	672 kg
81,5 t	5	2 to 10	602 kg
60 t	5	2 to 10	580 kg
45 t	3	2 to 6	455 kg
22,5 t	1	2	300 kg
10,9 t	H/B (swivel)	1	255 kg



	Infinitely variable		Rope	Permissible line pull max.	Nominal cable length
	0 - 148 m/min	single line	19 mm (35x7 WSC)	7620 kg	214 m
	0 - 148 m/min	single line	19 mm (35x7 WSC)	7620 kg	214 m
	0 - 2,0		—	—	—
	20° 70°	approx.45 s	—	—	—
	11,8 to 46,9 m	approx. 160 s	—	—	—

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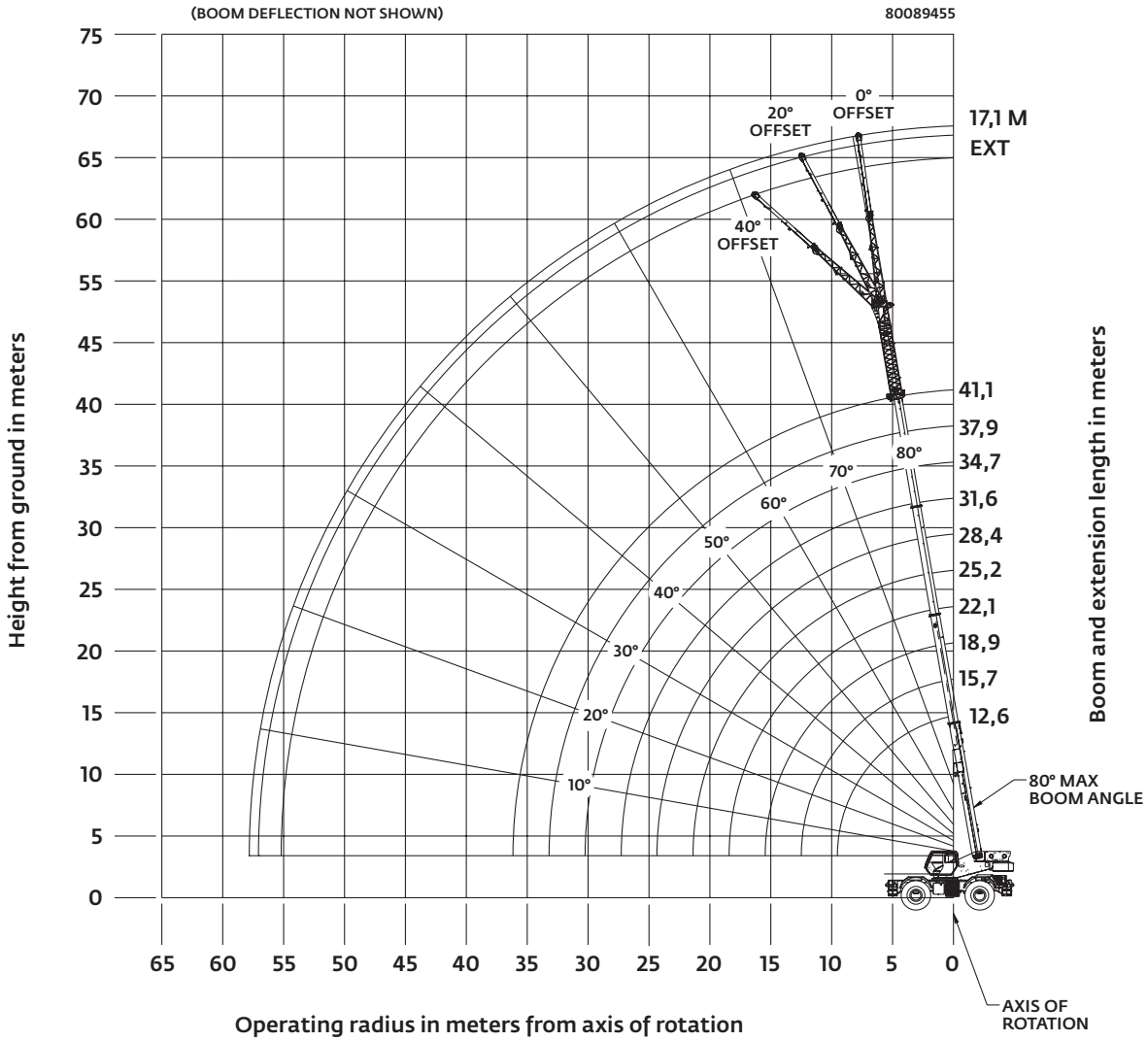
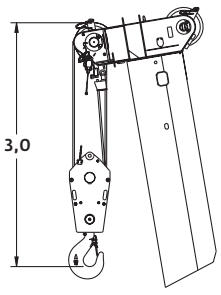
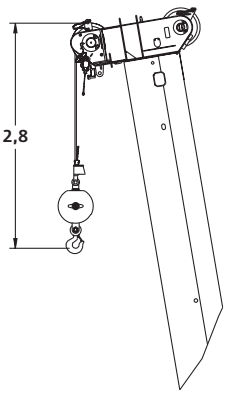
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane

Working range

Working range diagram with bi-fold extension and insert







Dimensions are for the largest grove furnished hook block and overhaul ball, with anti-two block activated.

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Load chart


12,6 m – 41,1 m


9979 kg


100%


360°


Metric Tons (t) — **85%**

Radius in Meters	Main Boom Length in Meters										Radius in Meters
	12,6	15,7	18,9	22,1	25,2	28,4	31,6	34,7	37,9	41,1	
2,5	80,000	—	—	—	—	—	—	—	—	—	2,5
3	73,000	49,425	48,975	*31,450	—	—	—	—	—	—	3
3,5	69,200	49,425	48,975	31,450	*19,150	—	—	—	—	—	3,5
4	65,825	49,425	48,975	31,450	19,150	—	—	—	—	—	4
4,5	62,600	49,425	48,975	31,450	19,150	*19,150	—	—	—	—	4,5
5	57,775	48,800	46,625	31,450	19,150	19,150	*19,100	—	—	—	5
6	48,150	47,300	41,100	31,450	19,150	19,150	19,100	*18,375	—	—	6
7	41,150	40,925	36,775	29,200	19,150	19,150	19,100	18,375	*14,925	—	7
8	35,075	34,875	32,975	26,675	19,150	19,150	18,825	17,925	14,775	10,425	8
9	28,350	29,400	27,525	24,050	19,150	19,150	18,125	16,750	14,400	10,425	9
10	16,600	23,950	23,750	21,900	19,150	18,225	16,875	15,550	13,625	10,425	10
12	—	16,825	16,025	16,550	17,175	15,850	14,500	13,425	12,050	10,425	12
14	—	—	11,900	12,275	12,850	13,425	12,600	11,700	10,750	9,425	14
16	—	—	9,075	9,355	9,955	10,475	10,700	10,275	9,640	8,460	16
18	—	—	—	7,210	7,565	8,355	8,605	8,835	8,560	7,640	18
20	—	—	—	—	6,000	6,715	7,005	7,250	7,545	6,925	20
22	—	—	—	—	4,760	5,415	5,745	6,005	6,270	6,335	22
24	—	—	—	—	—	4,370	4,715	5,005	5,250	5,450	24
26	—	—	—	—	—	3,510	3,715	4,160	4,405	4,600	26
28	—	—	—	—	—	—	3,020	3,445	3,675	3,880	28
30	—	—	—	—	—	—	—	2,825	3,050	3,260	30
32	—	—	—	—	—	—	—	2,295	2,405	2,725	32
34	—	—	—	—	—	—	—	—	1,960	2,260	34
36	—	—	—	—	—	—	—	—	—	1,855	36
38	—	—	—	—	—	—	—	—	—	1,495	38

*This capacity is based on maximum boom angle.

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Load chart


41,1 m


10,1 m – 17,1 m


9979 kg


100%


360°

Metric Tons (t) — **85%**

Radius in Meters	10,1 m Length			17,1 m Length			Radius in Meters
	0° Offset	20° Offset	40° Offset	0° Offset	20° Offset	40° Offset	
10	6,645	—	—	*3,760	—	—	10
12	6,225	*5,170	—	3,760	—	—	12
14	5,615	4,885	—	3,760	—	—	14
16	5,020	4,515	3,465	3,760	—	—	16
18	4,550	4,130	3,365	3,565	2,850	—	18
20	4,190	3,775	3,280	3,255	2,715	*2,175	20
22	3,815	3,525	3,195	2,980	2,585	2,135	22
24	3,545	3,260	3,120	2,750	2,435	2,135	24
26	3,285	3,035	2,945	2,540	2,275	2,095	26
28	3,045	2,840	2,770	2,325	2,120	2,015	28
30	2,825	2,670	2,605	2,150	1,970	1,875	30
32	2,640	2,495	2,450	2,005	1,835	1,775	32
34	2,350	2,365	2,340	1,850	1,715	1,665	34
36	1,980	2,140	2,215	1,715	1,615	1,570	36
38	1,650	1,785	1,990	1,615	1,515	1,470	38
40	1,360	1,475	1,690	1,495	1,420	1,395	40
42	1,095	1,190	—	1,290	1,335	1,325	42
44	0,860	0,935	—	1,055	1,260	1,255	44
46	0,645	0,695	—	0,845	1,035	—	46
48	—	—	—	0,650	0,820	—	48
50	—	—	—	—	0,625	—	50

*This capacity is based on maximum boom angle.

1. 10,1 m and 17,1 m folding boom extension lengths may be used for single line lifting service only.
2. For main boom lengths less than 41,1 m with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use rating of the next lower boom angle.
3. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set only.
6. When lifting over the main boom nose with the 10,1 m or 17,1 m extension erected, the outriggers must be fully extended.

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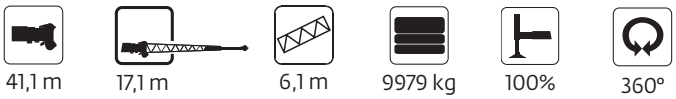
Load chart



Radius in Meters	23,2 m Length			Radius in Meters
	0° Offset	20° Offset	40° Offset	
14	2,985	—	—	14
16	2,985	—	—	16
18	2,915	*2,195	—	18
20	2,635	2,105	—	20
22	2,365	2,015	*1,530	22
24	2,175	1,930	1,490	24
26	1,980	1,835	1,455	26
28	1,805	1,685	1,425	28
30	1,650	1,550	1,395	30
32	1,510	1,425	1,370	32
34	1,385	1,320	1,305	34
36	1,255	1,225	1,205	36
38	1,160	1,120	1,120	38
40	1,060	1,035	1,030	40
42	0,975	0,955	0,960	42
44	0,885	0,880	0,885	44
46	0,825	0,805	0,815	46
48	0,705	0,740	0,750	48
50	0,550	0,680	0,690	50

*This capacity is based on maximum boom angle.

1. The 17,1 m folding boom extension lengths may be used for single line lifting service only.
2. For main boom lengths less than 41,1 m with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use rating of the next lower boom angle.
3. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set only.
6. When lifting over the main boom nose with the 17,1 m extension erected and 6,1 m insert, the outriggers must be fully extended.

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Load chart


12,6 m – 22,1 m


9979 kg


Stationary


Metric Tons (t) **85%**

Radius in Meters	Main Boom Length in Meters				Radius in Meters
	12,6	15,7	18,9	22,1	
4,5	17,900	16,775	—	—	4,5
5	16,150	15,550	—	—	5
6	12,100	11,600	10,975	11,100	6
7	9,375	8,870	8,390	8,610	7
8	7,425	6,870	6,525	6,735	8
9	5,960	5,340	5,115	5,285	9
10	4,810	4,140	4,005	4,130	10
12	—	2,360	2,385	2,400	12
14	—	—	1,255	1,170	14

1. Capacities are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J765.
2. Capacities are applicable to machines equipped with General/Titan 29.5 x 25 (34 ply) bias ply tires, at 76 psi cold inflation pressure.
3. Capacities are applicable only with machine on firm level surface
4. On rubber lifting with boom extension not permitted
5. For pick and carry operation, boom must be centered over front of machine, mechanical swing lock engaged and load restrained from swinging.
6. Axle lockouts must be functioning when lifting on rubber.
7. All lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. See lifting capacity chart for tire used. Damaged tires are hazardous to safe operation of crane.
8. Creep - not over 60,96 m of movement in any 30 minute period and not exceeding 1,6 kph.

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Load chart


12,6 m – 22,1 m


9979 kg


Pick and carry up to 1,6 kph


Over front


Metric Tons (t) **85%**

Radius in Meters	Main Boom Length in Meters				Radius in Meters
	12,6	15,7	18,9	22,1	
3,5	24,375	20,450	—	—	3,5
4	22,850	20,250	—	—	4
4,5	20,625	19,950	—	—	4,5
5	18,725	18,525	—	—	5
6	15,600	15,425	14,100	11,100	6
7	13,325	13,200	12,850	10,925	7
8	11,275	11,200	11,375	10,475	8
9	9,625	9,580	9,700	9,525	9
10	8,255	8,270	8,345	8,305	10
12	—	5,995	5,995	6,000	12
14	—	—	4,090	4,130	14
16	—	—	2,725	2,795	16
18	—	—	—	1,790	18

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Specifications

Superstructure

Boom
12,6 m – 41,1 m four-section full-power boom, sequenced synchronized extension and retraction. Maximum tip height: 44,6 m

*Optional manual bi-fold swingaway extension
10,1 m - 17,1 m bi-fold lattice swingaway extension. Offsettable at 0°, 20°, and 40°. Stows alongside base boom section. Electric motor assist for pin alignment and stowing. Maximum tip height: 61,9 m

*Optional lattice extension insert
(1) x 6,1 m lattice extension insert. Installs between boom nose and either optional extension. Maximum tip height: 68,0 m

Boom nose
Five nylatron sheaves mounted on heavy-duty tapered roller bearings with removable pin-type guards. Quick-reeve type boom nose. Removable single sheave auxiliary boom nose with removable pin type rope guard.

Boom elevation
One double–acting hydraulic cylinder with integral holding valve provides elevation from -3° to +80°.

Crane Control System (CCS)
“Graphic Display” RCL load moment and anti-two block system with audio-visual warning and control lever lockout. This system provides electronic display of boom angle, boom length, load radius, boom tip height, maximum permissible load, actual load, and warning of impending two-block condition. The work area definition system allows the operator to pre-select and define safe working areas. If the crane approaches the pre-set limits, audio-visual warnings aid the operator in avoiding jobsite obstructions.

Counterweight
Standard 9979 kg. Hydraulically installed and removed. Controls located on superstructure.

Cab
Operator-controlled 20° hydraulic tilt, full vision, all steel fabricated with acoustical lining and tinted safety glass throughout. Deluxe seat with headrest incorporates armrest-mounted electronic programmable single-axis or dual axis controllers and a jog dial for easier data input. Tilt/telescoping steering wheel with various controls incorporated into the steering column. Other standard features include hot water heater, cab circulating air fan, sliding side and opening rear window, sliding skylight with electric wiper and sunscreen, electric windshield wash/wipe, fire extinguisher, seat belt, air conditioning, and dual cab mounted work lights.

Swing
Variable speed, planetary swing drive with foot applied multi-disc proportional wet brake. Spring applied, hydraulically released swing brake. Two position mechanical swing lock pin, operated from cab.

Maximum swing speed: 2.0 r.p.m.

Hoist (main and auxiliary hoist)
Planetary reduction driven by axial piston motor. Grooved drum with automatic spring applied multi-disk wet brake. Electronic hoist drum rotation indicator, and hoist drum cable follower. Third wrap indictor with hoist function cut-out standard.

Maximum hoist single line pull:
1st layer: 10 645 kg
3rd layer: 9038 kg
6th layer: 7371 kg

Maximum permissible single line pull: 7620 kg with 35 x 7 class rope

Maximum hoist single line speed (no load): 148 m/min

Rope construction: 35 x 7 rotation–resistant

Rope diameter: 19mm

Rope length: Main hoist: 214 m
Auxiliary hoist: 214 m

Maximum usable rope: 241 m 6 layers

** Denotes optional equipment*

Carrier

Chassis
Parallel box section fabricated from high-strength, low-alloy steel with integral outrigger boxes, front and rear lift, tie-down, and towing lugs.

Outrigger system
Four hydraulic telescoping single stage double box beam outriggers with inverted jack cylinders and integral jack holding valves. Three position settings, 0%, 50%, and fully extended. Aluminum fabricated outrigger floats 609,6 mm (24 in) diameter. Outrigger monitoring system with outrigger beam position display on R.C.L. screen. Maximum outrigger pad load: 57 244 kg

Outrigger controls
Controls and crane leveling indicator located in cab. Extension and retraction are through the CCS system.

Hydraulic system
Two main pumps [2] variable displacement piston and [1] gear with a combined output capacity of 496 L/min (131 gal/min).
Maximum operating pressure: 276 bar (4000 psi)
Return line in-tank filter with full flow by-pass protection and service indicator. Replaceable cartridge with 4 micron filtration rating per ISO cleanliness level of 17/15/12. Carrier mounted oil cooler with thermostatically controlled hydraulic motor driven fan / air to oil. System pressure test ports.

Engine (Tier 4F)
Cummins QSB 6.7 L diesel, six cylinder, turbo-charged with Cummins Compact Catalyst (CCC) and Selective Catalytic Reduction (SCR) combo muffler, using diesel exhaust fluid (DEF) injection. Meets emissions per US EPA Tier 4 final and European Union Stage 4.
205 kW at 2500 rpm, Maximum torque: 990 Nm at 1500 rpm. Fuel requirements: Maximum of 15 ppm ultra-low sulfur diesel fuel + diesel exhaust fluid (DEF).
NOTE: Required for sale in North America and European Union.

Engine (Tier 3)
Cummins QSB 6.7 L diesel, six cylinder, turbo-charged with 205 kW at 2500 rpm, Maximum torque: 978 Nm at 1500 rpm. Fuel requirements: Maximum of 5000 ppm. Sulfur diesel fuel.
NOTE: Required for sale outside of North America and European Union.

Fuel tank capacity
312 L

Transmission
Rangeshift with six forward and six reverse speeds.
(Three speeds high and three speeds low). Front axle disconnect for 4 x 2 drive.

Axles
FRONT: Drive / steer with differential and planetary reduction hubs rigid mounted to frame.
REAR: Drive / steer with differential and planetary reduction hubs pivot mounted to frame. Automatic full hydraulic lockouts on rear axle permits 254 mm (10 in) of oscillation only with boom centered over the front.

Brakes
Full hydraulic split (dual) circuit dry disc operating on all wheels with dual calipers. Parking brake is spring applied / hydraulically released on the front axle input shaft.

Steering
Fully independent power steering.
Front: Fully hydraulic steering wheel controlled.
Rear: Fully hydraulic via separate momentary switch provides 4 steering modes, front only, rear only, coordinated and crab.
Rear steer not aligned indicator.
Outside 4WS coordinated steer radius: 7,3 m
Inside 4WS coordinated steer radius: 4,9 m

Tires
29.5 x 25 – 34 bias ply rating

Electrical system
Two 12 V maintenance-free batteries with disconnect.
24 V system / 24 V lighting

Lighting
Full lighting including turn indicators, head, tail, brake, and hazard warning, and two work lights mounted on cab front.

Maximum Drive Speed
24.1 km/h with counterweight installed

Gradeability (theoretical)
70% to drive train stall based on 52 450 kg GVW with 29.5 x 25 tires, standard counterweight, auxiliary hoist and manual bi-fold extension.

Miscellaneous standard equipment
Full length steel fenders with full aluminum decking, dual rear view mirrors, hook block tie-down, electronic back-up alarm, front stowage tray, hot water cab heater / defroster, cab air conditioner, hoist mirrors, A/V warning system, combination lift/tie-down/towing lugs, coolant sight level indicator, hoist access platform.

*Optional equipment
• Auxiliary hoist package: includes MTW 19-241 hoist with electronic hoist drum rotation indicator, hoist drum cable follower, third wrap indicator with hoist function cut-out, 214 m of 19 mm of 35 x 7 class rotation resistant wire rope.
• Auxiliary lighting and convenience package: includes superstructure mounted amber flashing light, dual base boom mounted floodlights, in-cab, R.C.L., light bar and rubber mat for storage trough.

- 360° positive mechanical swing lock
- Rear pintle hitch
- Cab-controlled cross axle differential locks (front and rear)
- Wireless wind speed indicator
- Vertical external mounted L.M.I. light tower
- -29C cold weather package
- -40C arctic weather package
- Electric drive line retarder
- Emergency stop buttons on each side of carrier
- Second beacon light
- Refinery package (certified spark arrestor + engine air shutdown) (T3 engine only)
- C.E. certificate package
- Russian certificate package
- Synthetic rope for main and / or auxiliary hoist
- Boom position indicator light
- Crane STAR asset management system

** Denotes optional equipment*

Symbols Glossary


Axles


Crane control system


Heavy duty jib


Outriggers


Boom


Drive


Height (no max)


Radius


Boom elevation


Electrical system


Hoist


Rotation

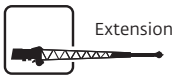

Boom extension


Engine


Hook block


Speed


Boom length


Extension


Hydraulic system


Steering


Boom nose


Frame


Insert


Suspension


Brakes


Fuel tank capacity


Lights


Swing


Cab


Gear


Oil


Tires


Counterweight


Grade


Outrigger controls


Transmission

Notes

Notes

Notes

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