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GROVE

RT880E

**product
guide**

features

- 80 ton (75 mt) capacity
- 41 ft-128 ft (12.6 m-39.0 m)
4 section, full power boom
- 33 ft-56 ft (10.0 m-17.0 m)
offsettable lattice
swingaway extension
- 20 ft (6.1 m) or 40 ft (12.2 m)
extension inserts
- Grove MEGAFORM™ boom
- 18,000 lb (8 165 kg)
hydraulic removable
counterweight
- 275 bhp (205 kW) Tier III
Cummins diesel engine



Rough Terrain Hydraulic Crane

www.manitowoccranegroup.com

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features

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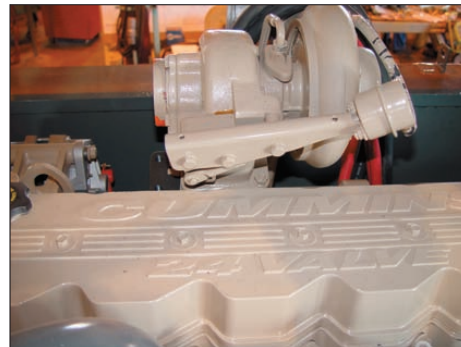
- The Grove MEGAFORM™ boom shape eliminates weight and increases capacity compared to conventional shapes.



- For improved operator comfort and visibility of the boom load the cab can be tilted up to 20°.



- Max. tip height of 232 ft (70.6 m) w/56 ft (17.0 m) bi-fold and (2) 20 ft (6.1 m) inserts.



- Electronically controlled Cummins diesel engine provides plenty of power at the jobsite.

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specifications

Superstructure

Boom

41 ft. - 128 ft. (12.6 m - 39.0 m) four-section, sequenced synchronized full power boom. Maximum tip height: 138 ft. (41.9 m).

Lattice Extension

33 ft.-56 ft. (10.0 m-17 m) offsettable bifold lattice swingaway extension. Offsets 0°, 20°, and 40°. Stows alongside base boom section. Maximum tip height: 192 ft. (58.6 m).

*Optional Lattice Extension Inserts

(2) x 20 ft. (6.1 m) lattice extension inserts. Installs between the boom nose and bifold extension, non-stowable. Maximum tip height: 232 ft. (70.6 m).

Boom Nose

Four nylatron sheaves mounted on heavy-duty tapered roller bearings with removable pin-type rope guards. Quick-reeving type boom nose. Removable 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 +78°.

Load Moment & Anti-Two Block System

Standard "Graphic Display" load moment and anti-two block system with audio-visual warning and control lever lockout. These systems provide electronic display of boom angle, length, radius, tip height, relative load moment, maximum permissible load, load indication and warning of impending two-block condition. The standard 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 job-site obstructions.

Cab

Full-vision, all-steel fabricated with acoustical lining and tinted safety glass throughout. Cab tilts to +20 degrees. Deluxe seat incorporates armrest-mounted hydraulic single-axis controllers. Dash panel incorporates gauges for all engine functions. Other standard features include: hot water heater, cab circulating air fan, sliding side and rear windows, sliding skylight with electric wiper and sunscreen, electric windshield wash/wipe, fire extinguisher and seat belt.

Swing

Two speed, planetary swing drive with foot-applied multi-disc wet brake. Spring applied, hydraulically-released swing brake. Single position mechanical house lock, operated from cab. Maximum speed: 2.0 RPM.

Counterweight

18,000 lbs. (8 165 kg). Hydraulically installed and removed.

Hydraulic System

Two main pumps ([1] piston and [1] gear) with a combined capacity of 133 GPM (503 LPM). Maximum operating pressure: 4000 psi (277.7 bar). Three section pressure compensated valve bank. Return line type filter with full flow by-pass protection and service indicator. Replaceable cartridge with micron filtration rating of 5/12/16. 263 gallon (995 L) hyd. reservoir. Carrier mounted oil cooler with thermostatically controlled hydraulic motor driven fan/air to oil. System pressure test ports.

Hoist Specifications (HP30-19G) Main and Auxiliary Hoist

Planetary reduction with automatic spring applied multi-disc wet brake. Electronic hoist drum rotation indicators and hoist drum cable followers.

Maximum Single Line Pull:

1st layers: 20,250 lb. (9 185 kg)

3rd layer: 17,010 lb. (7 715 kg)

5th layer: 14,660 lb. (6 650 kg)

Maximum Permissible Line Pull:

16,800 lb. (7 620 kg) with 6 x 37 class rope

16,800 lb. (7 620 kg) with 35 x 7 class rope

Maximum Single Line Speed: 514 FPM (156 m/min)

Rope Construction:

6 x 36 EIPS IWRC, Special Flexible

35 x 7 Flex-X, Rotation Resistant

Rope Diameter: 3/4" (19 mm)

Rope Length:

Main Hoist: 600 ft. (182.8 m)

Auxiliary Hoist: 600 ft. (182.8 m)

Maximum Rope Stowage: 841 ft. (256 m)

*Denotes optional equipment

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specifications

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Carrier



Chassis

Box section frame fabricated from high-strength, low alloy steel. Front/rear towing and tie down lugs.



Outrigger System

Four hydraulic telescoping single-stage double box beam outriggers with inverted jacks and integral holding valves. Three position setting, 0%, 50% and fully extended. All steel fabricated, quick-release type round outrigger floats, 30.5 in. (775 mm) diameter. Maximum outrigger pad load: 125,000 lb. (56 700 kg).



Outrigger Controls

Controls and crane level indicator located in cab.



Engine (Tier III)

Cummins QSB 6.7L diesel, six cylinders, 275 bhp (205 kW) (Gross) @ 2,500 rpm. Maximum torque: 728 ft. lbs. (987 Nm) @ 1,500 RPM.



Fuel Tank Capacity

72 gallons (273 L)



Transmission

Full rangeshift with 6 forward and 6 reverse speeds. Front axle disconnect for 4 x 2 travel.



Electrical System

Two 12-V maintenance free batteries. 12-V starting and lighting. Battery disconnect. CanBus Diagnostic system.



Drive

4 x 4



Steering

Fully independent power steering:

Front: Full hydraulic, steering wheel controlled.

Rear: Full hydraulic, switch controlled.

Provides infinite variations of 4 main steering modes: front only, rear only, crab and coordinated.

Rear steer indicator.

Turning radius - 25 ft.



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.



Oscillation Lockouts

Automatic full hydraulic lockouts on rear axle permits 10 in. (25.4 cm) oscillation only with boom centered over the front.



Brakes

Full hydraulic split circuit brakes operating on all wheels. Spring-applied, hydraulically released parking brake mounted on front axle.



Tires

Std. 29.5 x 25 - 34 bias ply, General.



Lights

Full lighting including turn indicators, head, tail, brake and hazard warning lights.



Maximum Speed

22 MPH (35 kph).



Gradeability (Theoretical)

75% (Based on 108,158 lb. [49 060 kg] GVW) 29.5 x 25 tires, 128 ft. (39.0 m) boom, plus 56 ft. (17.0 m) swingaway, 18,000 lb. (8 165 kg) counterweight, 75T hookblock and 10T headache ball).

Miscellaneous Standard Equipment

Full width steel fenders, full length aluminum decking, dual rear view mirrors, hookblock tiedown, electronic back-up alarm, light package, front stowage well, tachometer/hourmeter, rear wheel position indicator, 36,000 BTU hot water cab heater, hoist mirrors, engine distress A/V warning system, front/rear tie down and two lugs, coolant sight level indicator.

*Optional Equipment

*Auxiliary Lighting Package (includes cab mounted amber flashing light, hoist mounted work light, and dual base boom mounted floodlights.)

*LMI light bar (in cab)

*Air Conditioning (28,500 BTU)

*360 degree NYC style mechanical swinglock

*Rear Pintle hook

*Cab controlled cross axle differential locks, (front and rear)

*PAT data logger

*Rubber mat for stowage trough

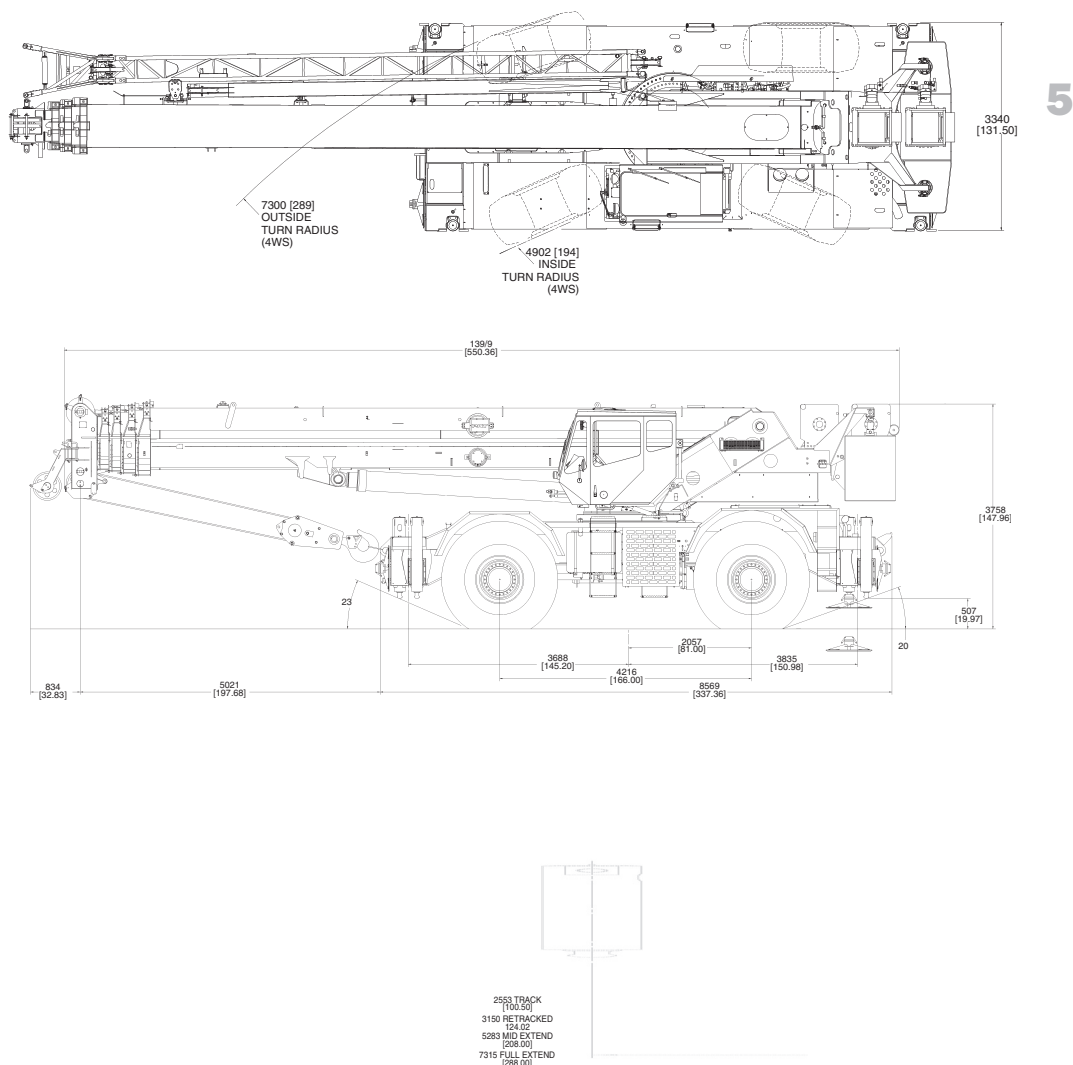
**Denotes optional equipment*

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dimensions



Note: Reference dimensions in mm [inches]

Weights

	GVW		Front		Rear	
	lb.	kg	lb.	kg	lb.	kg
RT880E Basic Machine						
Basic Machine including 128 ft main boom, main and aux. hoist with 600 ft of rope, 56' (17 m) bifold swingaway, full counterweight, 10T (9.1 mt) headache ball, and 80T (75 mt) hookblock:	108,158	49 060	53,888	24 444	54,270	24 617
Remove counterweight and aux. hoist. 56' (17 m) bifold.	87,917	39 879	63,520	28 813	24,397	11 066
Remove counterweight, aux. hoist, and 56' (17 m) bifold swingaway.	85,285	38 685	58,725	26 638	26,560	12 048

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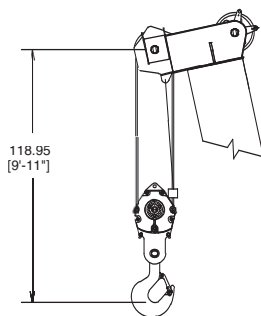
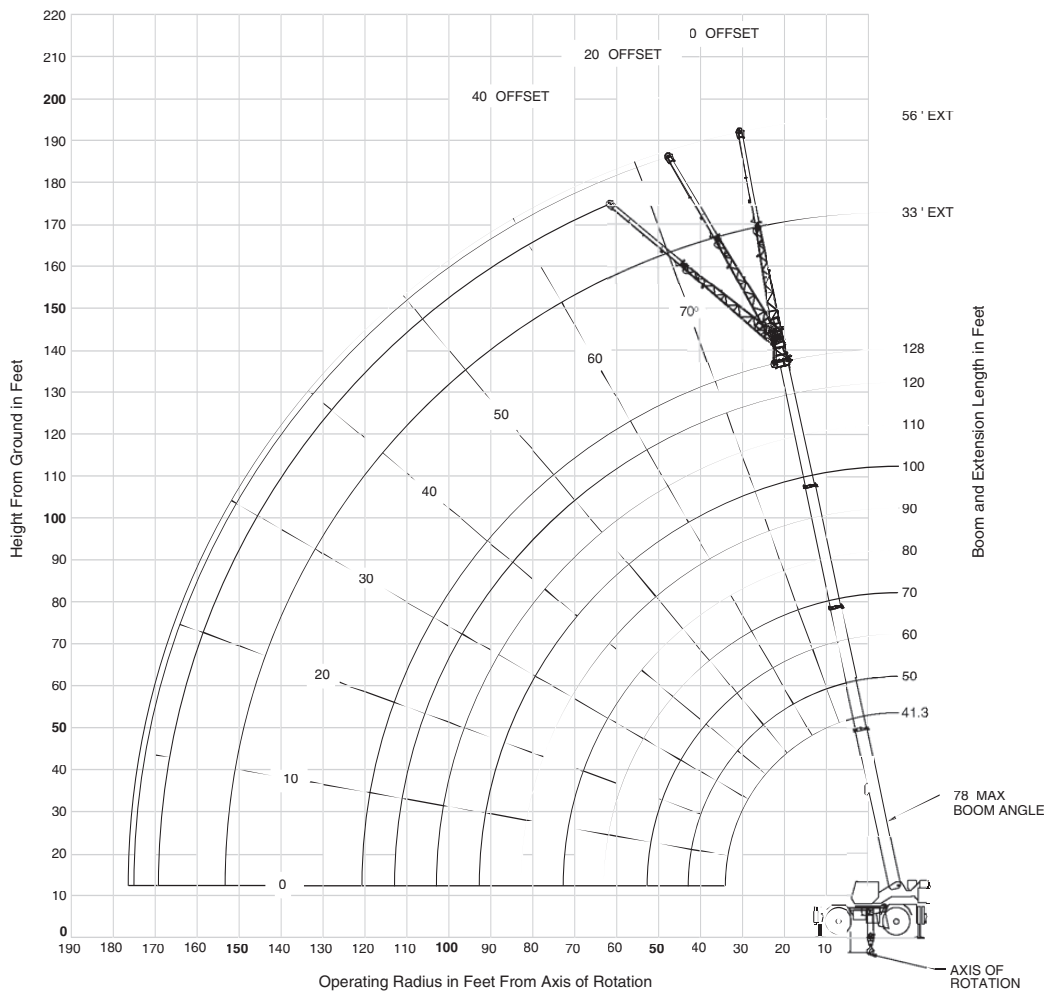
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working range

Working range diagram with bi-fold extension

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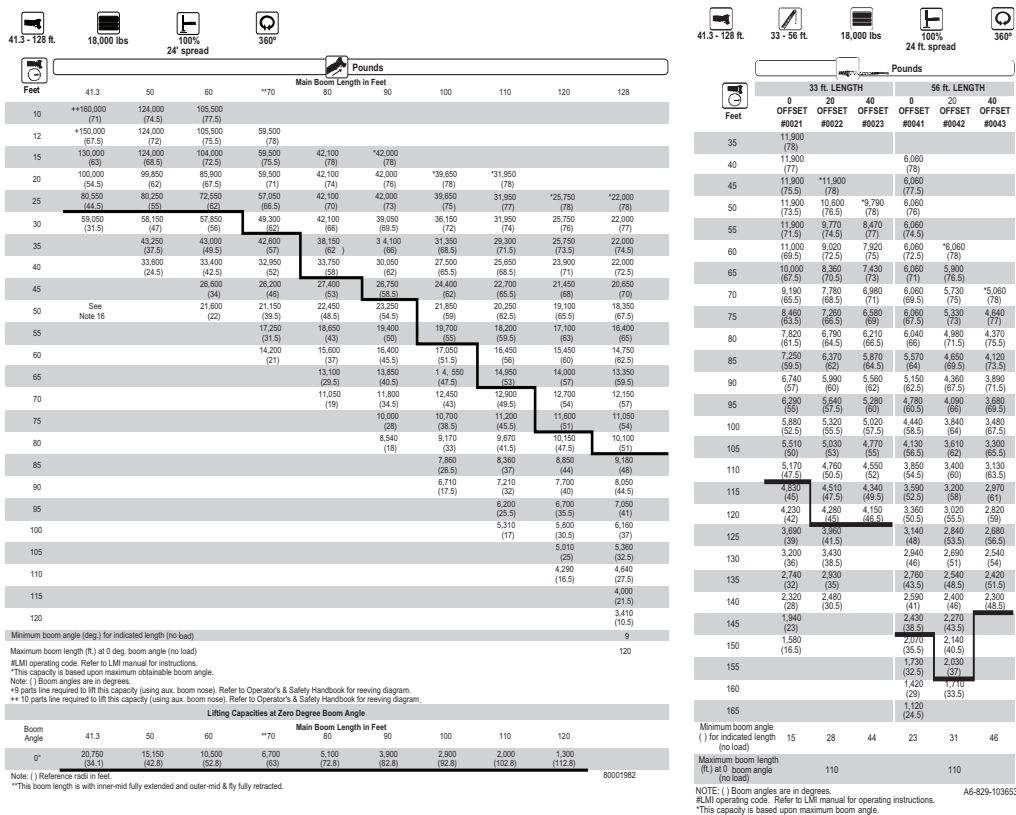
Dimensions are for largest Grove furnished hookblock and overhaul ball, with anti-two block activated.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE. The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

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RT880E load chart



NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. The 33 ft. extension length may be used with single or double part line lifting service. The 56 ft. extension length may be used for single line lifting service only.
3. For main boom lengths less than 128 ft. 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 the rating of the next lower boom angle.
4. **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.
5. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
6. Capacities listed are with outriggers properly extended and vertical jacks set only.
7. When lifting over the main boom nose with 33 ft. or 56 ft. extension erected, the outriggers must be fully extended or 50% extended (17 ft. 4 in. spread).

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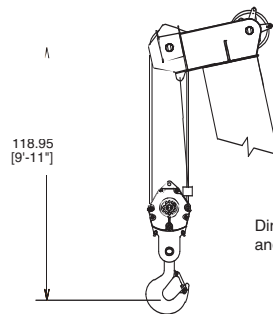
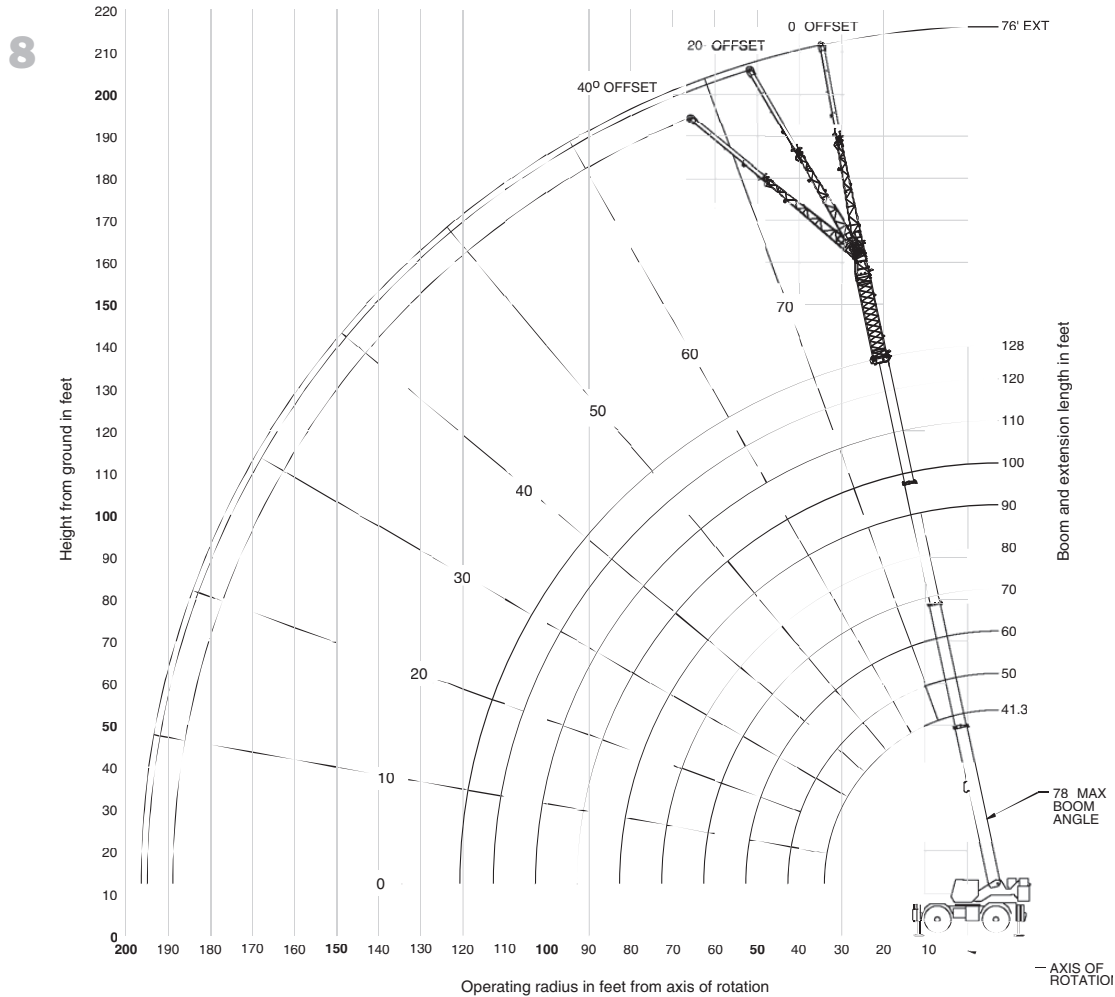
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working range

Working range diagram with bi-fold extension and one insert



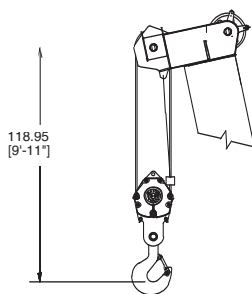
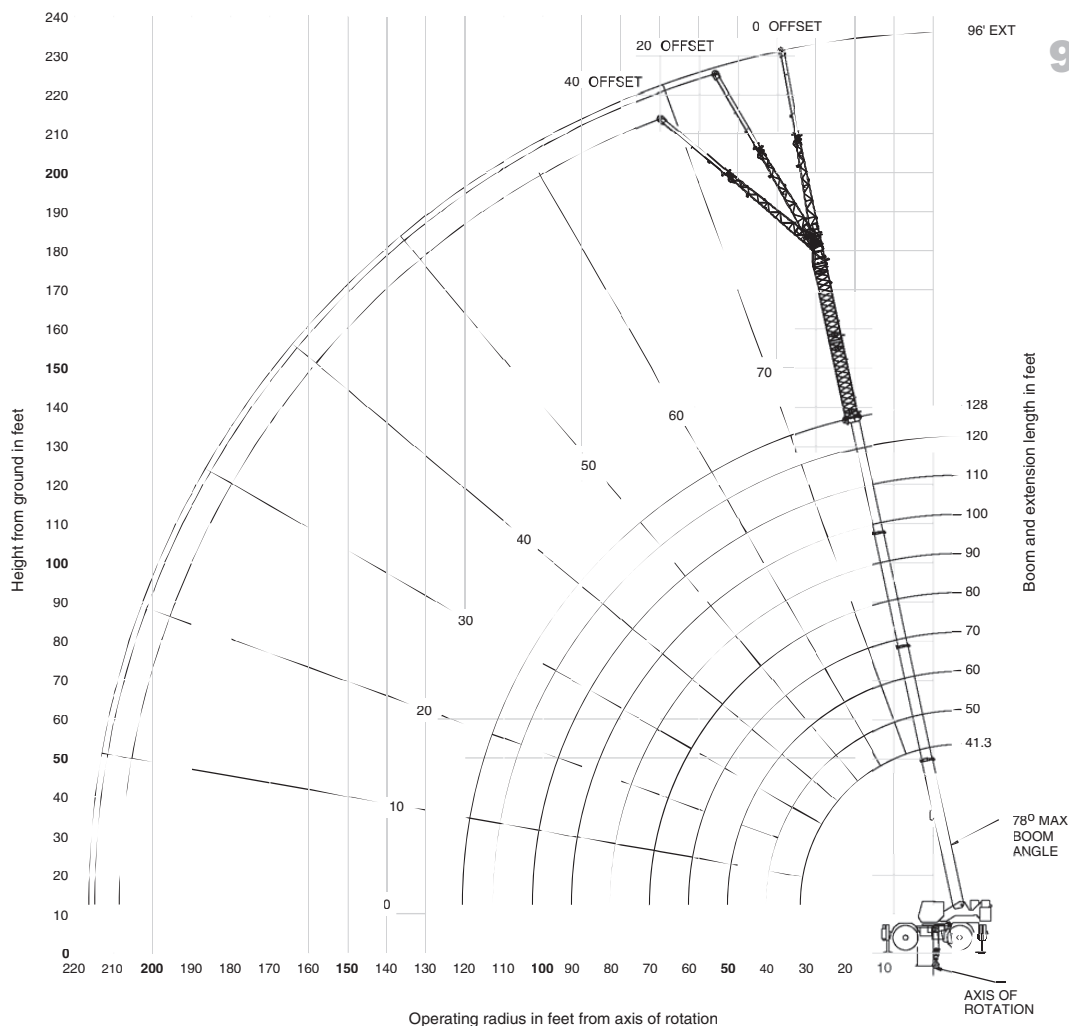
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working range

Working range diagram with bi-fold extension and two inserts



Dimensions are for largest Grove furnished hookblock and overhaul ball, with anti-two block activated.

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5533 (supersedes 5489)-0608-N6

218 HSL Link-Belt Cranes

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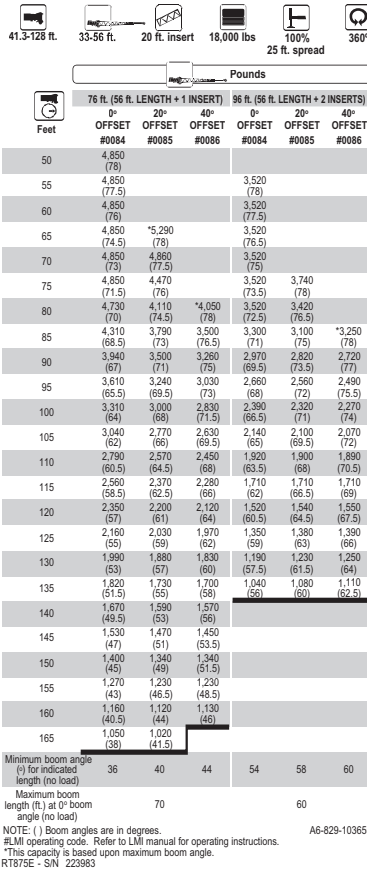
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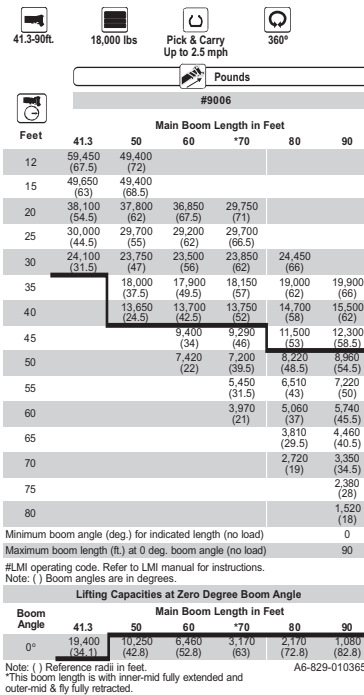
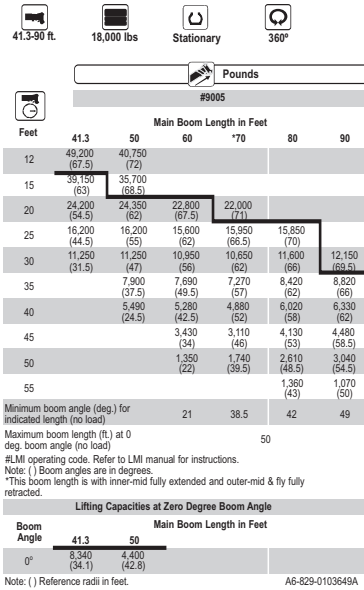
RT880E load chart

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NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J765.
2. The 56 ft. boom extension length may be used for single line lifting service only.
3. For main boom lengths less than 128 ft. 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.
4. **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.
5. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
6. When lifting over the main boom nose with 56 ft. extension erected and inserts, the outriggers must be fully extended and vertical jacks set.



NOTES:

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 29.5x25 (34 ply) General tires at 76 psi cold inflation pressure.
3. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
4. Capacities are applicable only with machine on firm level surface.
5. On rubber lifting with boom extensions not permitted.
6. For pick and carry operation, boom must be centered over front of machine, mechanical swing lock engaged and load restrained from swinging. When handling loads in the structural range with capacities close to maximum ratings, travel should be reduced to creep speeds.
7. Axle lockouts must be functioning when lifting on rubber.
8. 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.
9. Creep - Not over 200 ft. of movement in any 30 minute period and not exceeding 1 mph.

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load handling

Weight Reductions for Load Handling Devices

33 FT.-56 FT. FOLDING BOOM EXTENSION

*33 ft. Extension (Erected) -	3,700 lb.
*56 ft. Extension (Erected) -	7,830 lb.
*76 ft. (1 insert Erected) -	10,350 lb.
*96 ft. (2 inserts Erected) -	13,300 lb.

*Reduction of main boom capacities
(no deduct required for stowed boom extension)

When lifting over swingaway and/or jib combinations, deduct total weight of all load handling devices reeved over main boom nose directly from swingaway or jib capacity.

AUXILIARY BOOM NOSE 136 lb

HOOKBLOCK AND OVERHAUL BALL:

80 UST, 5 Sheave	1,319 lb +
40 UST, 3 Sheave	1,200 lb +
10 UST, Overhaul Ball	568 lb +

+ Refer to rating plate for actual weight.

NOTE: All load handling devices and boom attachments are considered part of the load and suitable allowances MUST BE MADE for their combined weights. Weights are for Grove furnished equipment.

Line Pulls and Reeving Information

Hoists	Cable Specs	Permissible Line Pulls	Nominal Cable Length
Main	3/4" (19 mm) 6x37 Class, EIPS, IWRC Special Flexible Min. Breaking Str. 58,800 lb.	16,800 lb.	600 ft.
Main & Aux.	3/4" (19 mm) Flex-X 35 Rotation Resistant (non-rotating) Min. Breaking Strength 85,800 lb.	16,800 lb.	607 ft.

The approximate weight of 3/4" wire rope is 1.5 lb./ft.

Boom Section vs. Section Extension Percentages

	Main Boom Length in Feet									
	41.3	50	60	70	80	90	100	110	120	128
Boom sections:	Percent Extension									
Inner-mid	0	30	65	100	100	100	100	100	100	100
Outer-mid	0	0	0	0	17	34	52	69	86	100
Fly	0	0	0	0	17	34	52	69	86	100



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Hoist Performance

Wire Rope Layer	Hoist Line Pulls Two Speed Hoist		Drum Rope Capacity (ft.) 15 in. Drum	
	Low Available lb.*	High Available lb.*	Layer	Total
1	20,250	9,610	101	101
2	18,490	8,770	110	211
3	17,010	8,070	120	331
4	15,750	7,470	129	460
5	14,660	6,960	139	599

*Max. lifting capacity: 6x37 or 35x7 class = 16,800 lb.

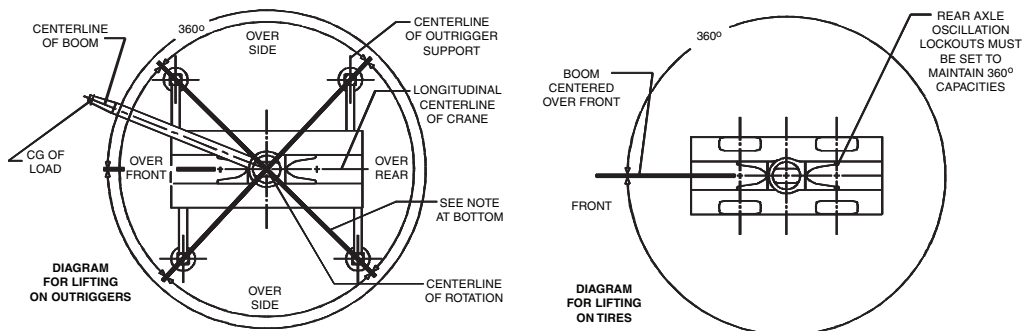
Installation and Removal of Counterweight and Auxiliary Hoist

Rated Lifting Capacities in Pounds on Outriggers Fully Extended - 360°

Radius in Feet	LMI Code #0801 Main Boom Length 41.3 ft.*
10	24,000
12	24,000
15	24,000
20	24,000
25	24,000
30	24,000

*The boom must be fully retracted.

Working Area Diagram



Bold lines determine the limiting position of any load for operation within working areas indicated.

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Regional Headquarters

Americas

Manitowoc, Wisconsin, USA

Tel: +1 920 684 6621

Fax: +1 920 683 6278

Shady Grove, Pennsylvania, USA

Tel: +1 717 597 8121

Fax: +1 717 597 4062

Regional Offices

Americas

Brazil

Alphaville

Tel: +55 11 3103 0200

Fax: +55 11 4688 2013

Mexico

Monterrey

Tel: +52 81 8124 0128

Fax: +52 81 8124 0129

Europe, Middle East, Africa

Algeria

Hydra

Tel: +21 3 21 48 1173

Fax: +21 3 21 48 1454

Czech Republic

Netvorice

Tel: +420 317 78 9313

Fax: +420 317 78 9314

France

Baudemont

Tel: +33 385 28 2589

Fax: +33 385 28 0430

Cergy

Tel: +33 130 31 3150

Fax: +33 130 38 6085

Decines

Tel: +33 472 81 5000

Fax: +33 472 81 5010

Germany

Langenfeld

Tel: +49 21 73 8909-0

Fax: +49 21 73 8909 30

Hungary

Budapest

Tel: +36 13 39 8622

Fax: +36 13 39 8622

Italy

Parabiago

Tel: +390 331 49 3311

Fax: +390 331 49 3330

Europe, Middle East, Africa

Ecully, France

Tel: +33 472 18 2020

Fax: +33 472 18 2000

Netherlands

Breda

Tel: +31 76 578 3999

Fax: +31 76 578 3978

Poland

Warsaw

Tel: +48 22 843 3824

Fax: +48 22 843 3471

Portugal

Alfena

Tel: +351 229 69 8840

Fax: +351 229 69 8848

Lisbon

Tel: +351 212 109 340

Fax: +351 212 109 349

Russia

Moscow

Tel: +7 495 641 2359

Fax: +7 495 641 2358

U.A.E.

Dubai

Tel: +971 4 3381 861

Fax: +971 4 3382 343

U. K.

Middlesex

Tel: +44 1 895 43 0053

Fax: +44 1 895 45 9500

Sunderland

Tel: +44 191 522 2000

Fax: +44 191 522 2052

Asia – Pacific

Australia

Melbourne

Tel: +61 3 9 336 1300

Fax: +61 3 9 336 1322

Sydney

Tel: +61 2 9 896 4433

Fax: +61 2 9 896 3122

Asia – Pacific

Shanghai, China

Tel: +86 21 51113579

Fax: +86 21 51113578

Singapore

Tel: +65 6264 1188

Fax: +65 6862 4142

China

Beijing

Tel: +86 10 58674761

Fax: +86 10 58674760

Xi'an

Tel: +86 29 87891465

Fax: +86 29 87884504

Korea

Seoul

Tel: +82 2 3439 0400

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