UNIVERSAL CRANES

## CRANE SPECIFICATION

# GROVE
# RT9130E

### COMPREHENSIVE LIFTING SOLUTIONS

We look forward to providing a full heavy lift engineering and crane solution for your next project. Our heavy lift engineers and on site personnel are experienced in managing and organising highly de-manding lift requirements.

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# Grove RT9130E

## Product Guide


### Features

- 120 t (130 USt) capacity
- 12,8 m - 48,8 m (42 ft - 160 ft) five-section, full power boom
- 11 m -18 m (36 ft - 59 ft) offsettable bi-fold swingaway extension
- 8 m (26 ft) extension inserts
- Grove MEGAFORM™ boom
- Cummins 224 kW (300 hp) Tier III, diesel engine
- Grove "E" series cab

# Features

## Extensions

A 18 m (59 ft) offsettable bi-fold lattice swingaway extension and two 8 m (26 ft) inserts give the RT9130E a maximum tip height of 85 m (279 ft). A hydraulically offsettable bi-fold lattice swingaway is also available, and conveniently offsets from 0˚ to 40˚ from the operator's cab.


## Cab

The "E" Series cab on the RT9130E tilts up to 20˚ providing the operator additional comfort when working at long boom and extension lengths.

## Removable outrigger boxes

Removable front and rear outrigger boxes provide up to 8788 kg (19,374 lb) of weight reduction for easier transport. Include the removable 18 100 kg (40,000 lb) of counterweight, auxiliary hoist and rope, and the RT9130E can easily self-remove close to 29 000 kg (64,000 lb).



## Boom

The 48,8 m (160 ft) five-section Full Power boom incorporates the "U" shaped MEGAFORM™ design, which eliminates stiffeners, thus reducing weight and increasing capacity.

# Contents

# Specifications

## Superstructure

### Boom

12,8 m - 48,8 m (42 ft - 160 ft) five-section, sequenced synchronized full power boom.
Maximum tip height: 51,5 m (169 ft)

### Lattice extension

11 m - 18 m (36 ft - 59 ft) offsettable bifold lattice swingaway extension. Offsets 0°, 20° and 40°. Stows alongside base boom section.
Maximum tip height: 69,2 m (227 ft)

### * Optional lattice extension

11 m - 18 m (36 ft - 59 ft) hydraulically offsettable bifold lattice swingaway extension. Offsets from 0° to 40°. Stows alongside base boom section.
Maximum tip height: 69,2 m (227 ft)

### * Optional lattice extension inserts

Two 8 m (26 ft) lattice extension inserts. Installs between the boom nose and bifold extension, nonstowable. Maximum tip height: 85 m (279 ft)

### Boom nose

Seven 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 and 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

20° tilt, full-vision, all-steel fabricated with acoustical lining and tinted safety glass throughout. 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, air conditioning sliding side and rear windows, sliding skylight with electric wiper and sunscreen, electric windshield wash/wipe, fire extinguisher and seat belt.

### Swing

Two speed, (2) planetary swing drives with foot applied multi-disc wet brakes. Spring applied, hydraulically released swing brakes. 360° positive swing lock and two-position mechanical house lock, both operated from cab. Maximum speed: 2.5 rpm

### Counterweight

18 144 kg (40,000 lb) of total counterweight. Hydraulically installed and removed.

### Hydraulic system

Six main pumps with a combined capacity of 776 LPM (205 GPM).
Maximum operating pressure: 331 bar (4800 psi).
Two individual post pressure compensated valve banks. Return line type filter with full flow by-pass protection and service indicator. Replaceable cartridge with micron filtration rating of 5/12/16.
1230 L (325 gal) reservoir. Remote mounted oil cooler with thermostatically controlled hydraulic driven motor, fan/air to oil. System pressure test ports.

### Hoist Specifications main and auxiliary hoist

Planetary reduction with automatic spring applied multi-disc brake. Grooved drum electronic hoist drum rotation indicator, and hoist drum cable followers.

Maximum single line pull:
1st layer - 9083 kg (20,024 lb)
3rd layer - 7724 kg (17,028 lb)
5th layer - 6718 kg (14,811 lb)

Maximum permissible line pull:
7620 kg (16,800 lb) with 6 x 37 class rope
7620 kg (16,800 lb) with 35 x 7 class rope

Maximum single line speed: 171 m/min (562 fpm)



**Denotes optional equipment*

# Specifications

## Superstructure continued

Rope class:
6 x 37 EIPS IWRC, Special Flexible
35 x 7 EIPS WSC, Rotation Resistant

Rope diameter: 19 mm (3/4 in)

Rope length:
Main hoist - 290 m (950 ft)
Auxiliary hoist - 213 m (700 ft)

Maximum rope stowage: 368 m (1206 ft)

## Carrier

### Chassis

Box section frame fabricated from high-strength, low alloy steel. Removable outrigger housings, 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 settings, 0%, 50% and fully extended. Outrigger boxes removable for ease of transportation. All steel fabricated, quick release type outrigger floats, 775 m (30.5 in) diameter.
Maximum outrigger pad load - 75 298 kg (166,000 lb)

### Outrigger controls

Controls and crane level indicator located in cab.

### Engine (Tier III)

Cummins QSC8.3L diesel, six cylinders, 224 kW (300 bhp) (Gross) at 2200 rpm.
Maximum torque: 1356 Nm (1000 ft lb) at 1600 rpm

### Fuel tank capacity

379 L (100 gal)

### Transmission

Full powershift with 6 forward and 3 reverse speeds.
Front axle disconnect for 4 x 2 travel.

### Electrical system

Two 12 V - maintenance free batteries.
12 V starting and lighting, circuit breakers.

### Drive

4 x 4

### Steering

Fully independent power steering:
Front: Full hydraulic steering wheel controlled.
Rear: Full hydraulic switch controlled.
Provides infinite variations of four main steering modes: front only, rear only, crab and coordinated.
Rear steer centered indicator light.

### 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 254 mm (10 in) oscillation with boom centered over the front.

### Brakes

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

### Tires

Standard 33.25 x 29 - 38 bias ply, Titan SL-100

### Lights

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



**Denotes optional equipment*

# Specifications

**Carrier continued**

## Maximum speed

24 km/h (15 mph)

## Gradeability (theoretical)

73% (Based on 81 647 kg [180,000 lb] GVW) 33.25 x 29 tires, pumps engaged, 48,8 m (160 ft) boom, plus 18 m (59 ft) swingaway, 18 144 kg (40,000 lb) counterweight, hookblock and headache ball.

## Miscellaneous standard equipment

Full width aluminum fenders, full length aluminum decking, dual rear view mirrors, hook-block tie down, electronic back-up alarm, light package, front stowage well, tachometer/hourmeter, immersion type block heater, rear wheel position indicator, 36,000 BTU hot water cab heater, hoist mirrors, engine distress A/V warning system, front/rear tie down and tow lugs, coolant sight level indicator, hydraulic pump disconnect, LMI light bar. Hydraulically activated boom removal pins, lift cylinder travel support, 80T hookblock, 10T top swivel ball.

## * Optional equipment

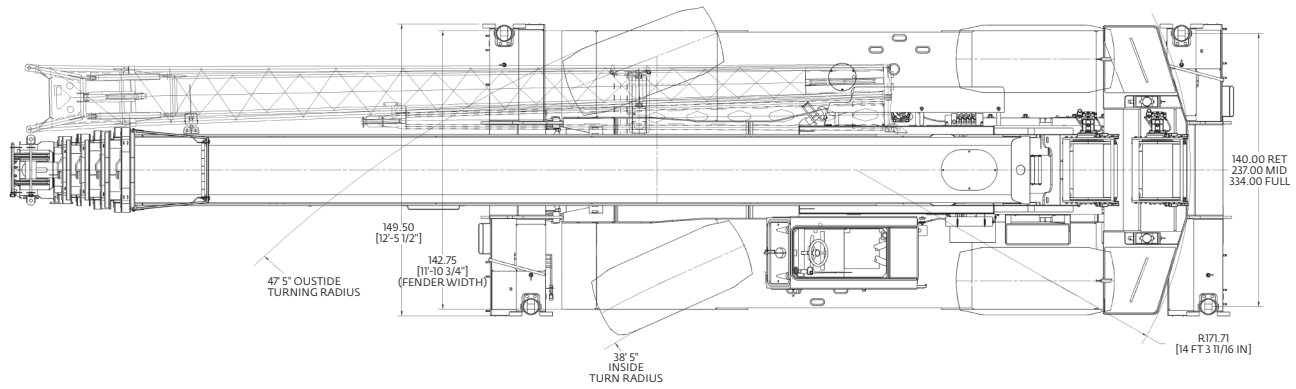
- AUXILIARY LIGHTING AND CONVENIENCE PACKAGE: Includes cab mounted amber flashing light, 360° rotation spotlight and dual base boom mounted floodlights, and rubber mat for stowage trough
- 130 USt hookblock
- Rear pintle hook
- Cab controlled cross axle differential locks, (front and rear)
- PAT event recorder down load kit
- Wind speed indicator (wireless)
- Third wrap indicator with hoist cut-out (main and auxiliary)

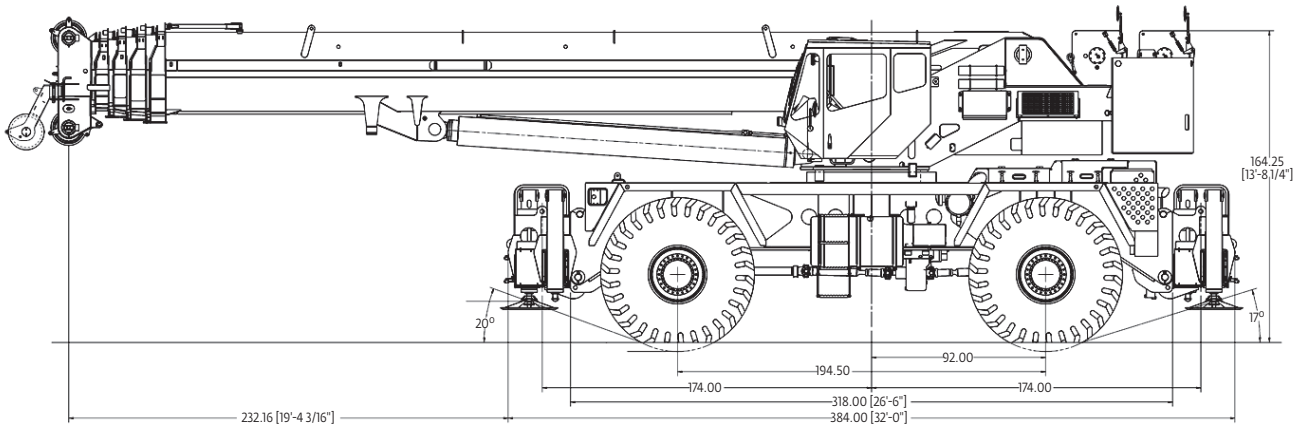


**Denotes optional equipment*

# Dimensions and weights

## Dimensions



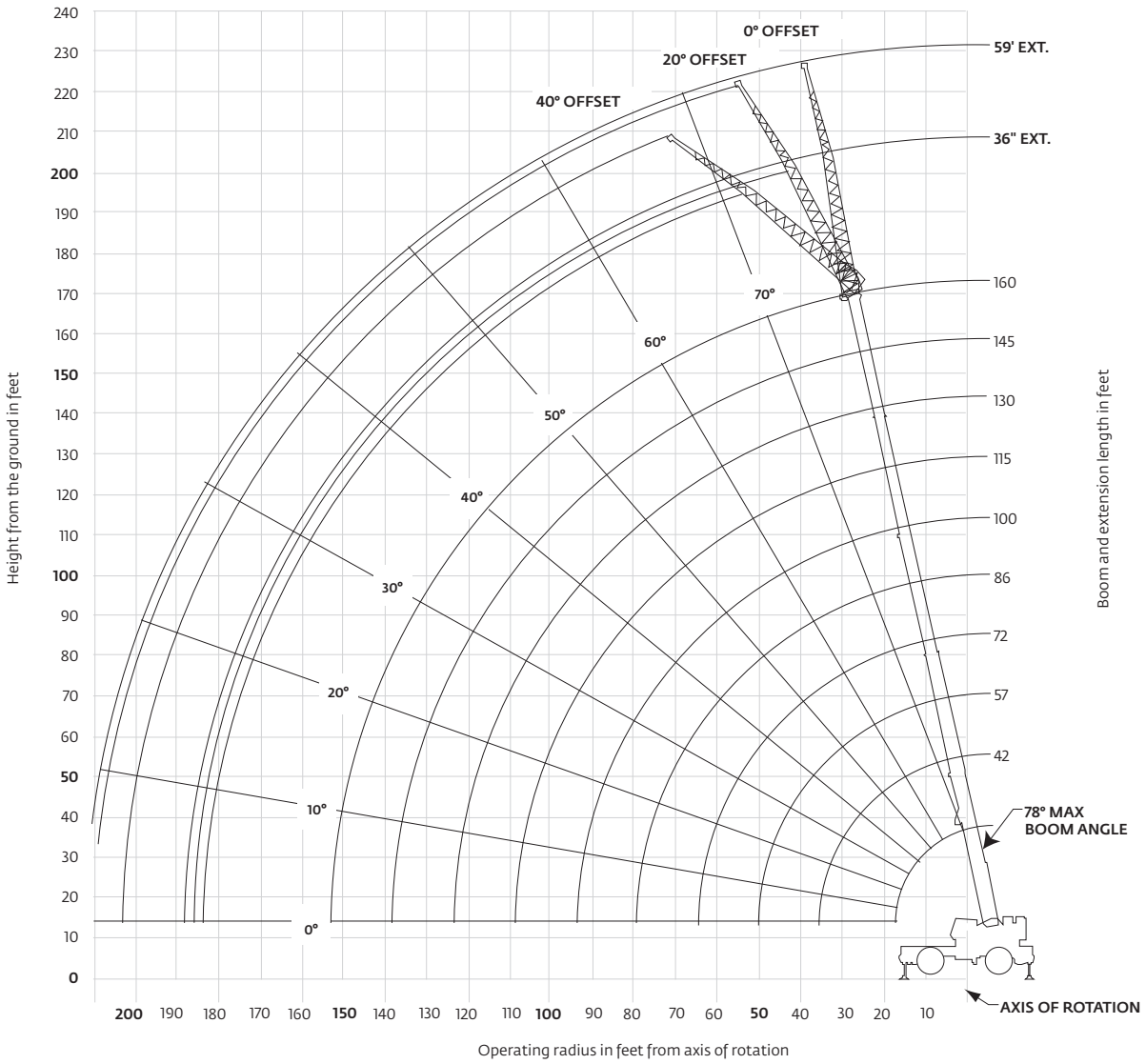

All dimensions are in inches (feet)

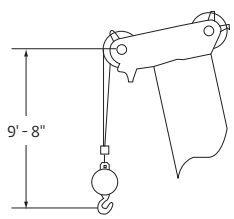
## Weights

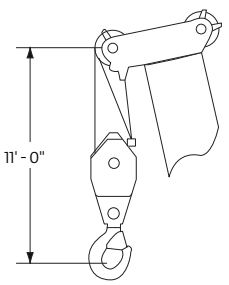
| | Gross kg (lb) | Front kg ( lb) | Rear kg (lb) | Weight of items removed |
|---|---|---|---|---|
| **Basic Machine:** Includes 160 ft main boom, main hoist with 950 ft of wire rope and auxiliary hoist with 700 ft of wire rope, manual offsettable bi-fold swingaway, full counterweight, 10 USt headache ball, and 80 USt hookblock | 78 946 (174,043) | 36 050 (79,475) | 42 896 (94,568) | |
| **Sub:** Hydraulic offsettable bi-fold swingaway | 79 222 (174,651) | 36 682 (80,868) | 42 540 (93,783) | |
| **Remove:** 40,000 lb counterweight, auxiliary hoist with rope, and manual offsettable swingaway | 57 539 (126,849) | 39 623 (87,353) | 17 915 (39,496) | 21 734 (47,194) |
| **Remove:** 40,000 lb counterweight, auxiliary hoist with rope, manual offsettable swingaway, 80 USt hookblock, 10 USt headache ball, and both outrigger boxes/beams | 47 952 (105,715) | 34 396 (75,829) | 13 556 (29,886) | 30 994 (68,328) |
| **Remove:** 40,000 lb counterweight, auxiliary hoist with rope, both outrigger boxes/beams, 80 USt hookblock, 10 USt headache ball, and boom assembly | 32 765 (72,233) | 14 051 (30,977) | 18 714 (41,256) | 46 181 (101,810) |
| **Remove:** 40,000 lb counterweight, auxiliary hoist with rope, both outrigger boxes/beams, 80 USt hookblock, 10 USt headache ball, boom assembly, and all tire/wheels | 28 447 (62,713) | 11 892 (26,217) | 16 555 (36,496) | 50 499 (111,330) |

# Working range

## 160 ft main boom + 36 ft - 59 ft fixed offset extension




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

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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*

# Load chart


42 ft - 160 ft


40,000 lb


100%
27 ft 10 in
spread


360°


Feet


Pounds

#0001

| | Main boom length in feet | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 42 | 57 | 72 | 86 | 100 | 115 | 130 | 145 | 160 |
| 10 | +260,000 (71.5) | 147,000 (76.5) | | | | | | | |
| 12 | 224,000 (68.5) | 147,000 (74.5) | *127,000 (78) | | | | | | |
| 15 | 176,000 (63.5) | 147,000 (71.5) | 127,000 (76) | *92,600 (78) | | | | | |
| 20 | 127,500 (55.5) | 125,500 (65.5) | 115,500 (71.5) | 86,550 (75.5) | *65,000 (78) | | | | |
| 25 | 97,300 (46) | 95,550 (60) | 95,300 (67) | 78,900 (72) | 62,650 (75) | 44,600 (78) | | | |
| 30 | 76,900 (34) | 75,250 (53.5) | 75,050 (62.5) | 68,500 (68.5) | 56,800 (72) | 44,600 (75.5) | 43,150 (78) | | |
| 35 | | 60,950 (46.5) | 60,750 (58) | 60,100 (64.5) | 50,050 (69) | 44,600 (73) | 42,200 (76) | 32,550 (78) | |
| 40 | | 50,300 (38.5) | 50,150 (52.5) | 50,550 (60.5) | 44,050 (66) | 41,400 (70) | 38,000 (73.5) | 32,550 (76) | 25,100 (78) |
| 45 | | 42,050 (28) | 41,950 (47) | 42,350 (56.5) | 38,950 (62.5) | 37,450 (67.5) | 34,150 (71) | 32,550 (74) | 24,800 (76.5) |
| 50 | | | 35,400 (41) | 35,850 (52.5) | 34,650 (59) | 33,450 (64.5) | 31,350 (68.5) | 29,550 (71.5) | 24,500 (74.5) |
| 55 | | | 30,050 (34) | 30,550 (47.5) | 30,050 (55.5) | 30,000 (61.5) | 29,200 (66) | 26,850 (69.5) | 24,000 (72.5) |
| 60 | | | 25,600 (24.5) | 26,100 (42.5) | 25,850 (52) | 26,950 (58.5) | 26,350 (63.5) | 24,700 (67.5) | 23,200 (70.5) |
| 65 | | | | 22,400 (37) | 22,150 (48) | 23,800 (55.5) | 23,850 (61) | 22,950 (65) | 21,100 (68.5) |
| 70 | | | | 19,200 (30.5) | 18,950 (44) | 20,800 (52.5) | 21,600 (58.5) | 20,850 (62.5) | 19,200 (66.5) |
| 75 | | | | 16,400 (22) | 16,200 (39) | 18,100 (49) | 19,250 (55.5) | 19,000 (60.5) | 17,500 (64.5) |
| 80 | | | | | 13,800 (34) | 15,700 (45.5) | 16,900 (52.5) | 17,100 (58) | 15,750 (62.5) |
| 85 | | | | | 11,650 (28) | 13,550 (41.5) | 15,000 (49.5) | 15,500 (55.5) | 14,300 (60) |
| 90 | | | | | 9770 (19.5) | 11,700 (37) | 13,100 (46.5) | 13,900 (53) | 13,100 (58) |
| 95 | | | | | | 10,000 (32) | 11,450 (43) | 12,250 (50) | 12,150 (55.5) |
| 100 | | | | | | 8490 (26.5) | 9940 (39.5) | 11,000 (47) | 11,400 (53) |
| 105 | | | | | | 5690 (18.5) | 8630 (35.5) | 9730 (44) | 10,200 (50.5) |
| 110 | | | | | | | 7320 (30.5) | 8460 (41) | 9020 (48) |
| 115 | | | | | | | 6220 (25) | 7370 (37.5) | 8100 (45.5) |
| 120 | | | | | | | 5120 (17.5) | 6280 (33.5) | 7190 (42.5) |
| 125 | | | | | | | | 5350 (29.5) | 6270 (39.5) |
| 130 | | | | | | | | 4430 (24) | 5350 (36) |
| 135 | | | | | | | | 2560 (16.5) | 4560 (32.5) |
| 140 | | | | | | | | | 3770 (28) |
| Minimum boom angle (°) for indicated length (no load) | | | | | | | | | 23 |
| Maximum boom length (ft) at 0° boom angle (no load) | | | | | | | | | 145 |

#LMI operating code. Refer to LMI manual for instructions.
*This capacity is based upon maximum obtainable boom angle.
+16 parts line required to lift this capacity (using aux. boom nose). Refer to Operator's and Safety Handbook for reeving diagram.
Note: ( ) Boom angles are in degrees.

| | Lifting capacities at zero degree boom angle | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Boom Angle | Main boom length in feet | | | | | | | | |
| | 42 | 57 | 72 | 86 | 100 | 115 | 130 | 145 | 160 |
| 0° | 41,400 (35.3) | 24,650 (50) | 15,350 (64.6) | 9700 (79.3) | 5250 (94) | 3650 (108.6) | 2450 (123.3) | 1450 (138) | |

Note: ( ) Reference radii in feet .

A6-829-103576



*THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.*
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# Load chart

| 100 ft | 36 ft - 59 ft | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|

Pounds

| Feet | 36 ft LENGTH | | | 59 ft LENGTH | | |
|---|---|---|---|---|---|---|
| | 0° OFFSET #0021 | 20° OFFSET #0022 | 40° OFFSET #0023 | 0° OFFSET #0041 | 20° OFFSET #0042 | 40° OFFSET #0043 |
| 25 | *33,600 (78) | | | | | |
| 30 | 33,600 (76.5) | | | *14,950 (78) | | |
| 35 | 32,950 (74.5) | *23,150 (78) | | 14,950 (77.5) | | |
| 40 | 31,050 (72) | 22,150 (76.5) | | 14,950 (76) | | |
| 45 | 29,250 (70) | 21,250 (74) | 17,250 (78) | 14,950 (74) | | |
| 50 | 27,600 (67.5) | 20,450 (72) | 16,850 (75.5) | 14,950 (72) | 12,350 (78) | |
| 55 | 26,150 (65) | 19,700 (69.5) | 16,500 (73) | 14,950 (70) | 11,900 (77) | |
| 60 | 24,750 (63) | 19,050 (67) | 16,150 (70.5) | 14,800 (68) | 11,500 (75) | |
| 65 | 23,550 (60.5) | 18,450 (65) | 15,900 (68) | 14,300 (66) | 11,100 (73) | 9210 (78) |
| 70 | 22,050 (58) | 17,850 (62) | 15,650 (65.5) | 13,650 (64) | 10,700 (71) | 9000 (76) |
| 75 | 20,100 (55.5) | 17,350 (59.5) | 15,450 (63) | 13,100 (62) | 10,400 (69) | 8820 (73.5) |
| 80 | 18,100 (52.5) | 16,900 (57) | 15,250 (60) | 12,550 (60) | 10,050 (66.5) | 8650 (71.5) |
| 85 | 16,000 (50) | 16,500 (54) | 15,150 (57) | 12,000 (58) | 9780 (64.5) | 8490 (69) |
| 90 | 14,150 (47) | 15,500 (51.5) | 15,050 (54) | 11,550 (55.5) | 9510 (62.5) | 8360 (66.5) |
| 95 | 12,500 (44) | 13,700 (48) | 14,000 (50.5) | 11,100 (53) | 9260 (60) | 8240 (64) |
| 100 | 11,050 (40.5) | 12,100 (45) | 12,750 (47) | 10,650 (51) | 9030 (57.5) | 8130 (61.5) |
| 105 | 9770 (37) | 10,650 (41.5) | | 10,250 (48.5) | 8820 (55) | 8050 (59) |
| 110 | 8490 (33.5) | 9270 (37.5) | | 9930 (46) | 8620 (52.5) | 7980 (56) |
| 115 | 7430 (29) | 8060 (33) | | 9040 (43) | 8450 (49.5) | 7950 (53) |
| 120 | 6370 (24) | 6850 (28) | | 8150 40(5) | 8280 (47) | 7920 (50) |
| 125 | | | | 7240 (37) | 7830 (43.5) | 7900 (46.5) |
| 130 | | | | 6340 (34) | 7380 (40.5) | 7890 (42.5) |
| 135 | | | | 5570 (30.5) | 6440 (36.5) | |
| 140 | | | | 4800 (26) | 5510 (32) | |
| 145 | | | | 4140 (21) | | |
| 150 | | | | 3480 (14) | | |
| Min. boom angle for indicated length (no load) | 0° | 20° | 40° | 0° | 20° | 40° |
| Max. boom length (ft) at 0° boom angle (no load) | 100ft | | | 100ft | | |

NOTE: () Boom angles are in degrees

A6-829-102109

#LMI operating code. Refer to LMI for operating instructions

*This capacity is based on maximum obtainable boom angle.

**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. 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
   **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, 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 configured. For boom angles not shown, use the rating of the next lower boom angle.
   **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.



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# Load chart

| 130 ft | 36 ft - 59 ft | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|

Pounds

| Feet | 36 ft LENGTH 0° OFFSET #0021 | 36 ft LENGTH 20° OFFSET #0022 | 36 ft LENGTH 40° OFFSET #0023 | 59 ft LENGTH 0° OFFSET #0041 | 59 ft LENGTH 20° OFFSET #0042 | 59 ft LENGTH 40° OFFSET #0043 |
|---|---|---|---|---|---|---|
| 35 | 23,350 (78) | | | | | |
| 40 | 23,350 (77) | | | 12,300 (78) | | |
| 45 | 23,350 (75) | *21,300 (78) | | 12,300 (77.5) | | |
| 50 | 23,350 (73.5) | 20,700 (76.5) | | 12,300 (76) | | |
| 55 | 23,350 (71.5) | 20,100 (75) | 16,600 (78) | 12,300 (74.5) | | |
| 60 | 23,350 (69.5) | 19,500 (73) | 16,350 (76) | 12,300 (73) | 11,600 (78) | |
| 65 | 22,300 (67.5) | 19,000 (71) | 16,100 (74) | 12,300 (71.5) | 11,300 (77) | |
| 70 | 20,350 (66) | 18,500 (69) | 15,850 (72) | 12,300 (69.5) | 10,950 (75) | |
| 75 | 18,350 (64) | 18,050 (67) | 15,650 (70) | 12,300 (68) | 10,700 (73.5) | 8940 (78) |
| 80 | 16,600 (62) | 17,100 (65) | 15,500 (68) | 12,300 (66.5) | 10,400 (72) | 8790 (76) |
| 85 | 15,050 (60) | 15,550 (63) | 15,300 (66) | 12,300 (64.5) | 10,150 (70) | 8650 (74.5) |
| 90 | 13,700 (57.5) | 14,150 (61) | 14,500 (63.5) | 12,300 (63) | 9910 (68.5) | 8520 (72.5) |
| 95 | 12,450 (55.5) | 12,900 (58.5) | 13,250 (61.5) | 11,900 (61) | 9680 (66.5) | 8410 (70.5) |
| 100 | 11,300 (53.5) | 11,750 (56.5) | 12,100 (59) | 11,450 (59) | 9460 (64.5) | 8300 (68.5) |
| 105 | 10,300 (51) | 10,750 (54) | 11,050 (56.5) | 10,500 (57.5) | 9260 (63) | 8210 (66.5) |
| 110 | 9390 (48.5) | 9810 (52) | 10,050 (54) | 9580 (55.5) | 9060 (61) | 8120 (64.5) |
| 115 | 8570 (46) | 8970 (49.5) | 9200 (51.5) | 8790 (53.5) | 8860 (59) | 8050 (62.5) |
| 120 | 7750 (43.5) | 8140 (46.5) | 8350 (48.5) | 8010 (51.5) | 8660 (57) | 7990 (60.5) |
| 125 | 6840 (41) | 7360 (44) | 7600 (45.5) | 7340 (49.5) | 7960 (54.5) | 7820 (58) |
| 130 | 5940 (38) | 6590 (41) | 6850 (42.5) | 6680 (47.5) | 7270 (52.5) | 7660 (55.5) |
| 135 | 5170 (34.5) | 5730 (37.5) | | 6100 (45) | 6660 (50.5) | 7010 (53.5) |
| 140 | 4400 (31) | 4880 (34) | | 5530 (42.5) | 6050 (48) | 6360 (50.5) |
| 145 | 3730 (27.5) | 4120 (30) | | 4890 (40) | 5510 (45.5) | 5770 (48) |
| 150 | 3070 (22.5) | 3360 (25.5) | | 4260 (37.5) | 4970 (42.5) | 5190 (45) |
| 155 | | | | 3670 (35) | 4360 (40) | |
| 160 | | | | 3090 (31.5) | 3750 (36.5) | |
| 165 | | | | 2570 (28.5) | 3120 (33) | |
| 170 | | | | 2060 (24.5) | 2490 (29) | |
| Min. boom angle for indicated length (no load) | 20° | 20° | 40° | 20° | 20° | 40° |
| Max. boom length (ft) at 0° boom angle (no load) | | 100 ft | | | 100 ft | |

A6-829-102127

NOTE: () Boom angles are in degrees

#LMI operating code. Refer to LMI for operating instructions

*This capacity is based on maximum obtainable boom angle.

**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. 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
   **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, 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 configured. For boom angles not shown, use the rating of the next lower boom angle.
   **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.

# Load chart

| 160 ft | 36 ft - 59 ft | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|

Pounds

| Feet | 36 ft LENGTH 0° OFFSET #0021 | 36 ft LENGTH 20° OFFSET #0022 | 36 ft LENGTH 40° OFFSET #0023 | 59 ft LENGTH 0° OFFSET #0041 | 59 ft LENGTH 20° OFFSET #0042 | 59 ft LENGTH 40° OFFSET #0043 |
|---|---|---|---|---|---|---|
| 45 | 16,000 (78) | | | | | |
| 50 | 16,000 (77.5) | | | | | |
| 55 | 15,900 (76) | | | 10,100 (78) | | |
| 60 | 15,850 (74) | 15,700 (77.5) | | 10,100 (77) | | |
| 65 | 15,800 (72.5) | 15,700 (76) | *15,200 (78) | 10,100 (75.5) | | |
| 70 | 15,750 (71) | 15,000 (74.5) | 14,750 (77) | 10,100 (74) | 10,050 (78) | |
| 75 | 14,950 (69.5) | 14,300 (73) | 14,100 (75.5) | 10,100 (73) | 10,050 (77.5) | |
| 80 | 14,200 (68) | 13,600 (71) | 13,450 (74) | 10,100 (71.5) | 10,050 (76) | |
| 85 | 13,450 (66) | 12,950 (69.5) | 12,850 (72) | 10,100 (70) | 10,050 (74.5) | 8600 (78) |
| 90 | 12,800 (64.5) | 12,350 (68) | 12,250 (70.5) | 10,100 (68.5) | 9870 (73) | 8500 (77.5) |
| 95 | 11,700 (63) | 11,750 (66) | 11,700 (68.5) | 10,100 (67) | 9680 (72) | 8400 (75.5) |
| 100 | 10,650 (61) | 11,200 (64.5) | 11,200 (67) | 9710 (65.5) | 9450 (70) | 8310 (74) |
| 105 | 9710 (59.5) | 10,250 (62.5) | 10,400 (65) | 9280 (64) | 9050 (68.5) | 8220 (72.5) |
| 110 | 8780 (57.5) | 9310 (61) | 9680 (63) | 8850 (62.5) | 8650 (67) | 8140 (71) |
| 115 | 7990 (55.5) | 8500 (59) | 8840 (61) | 8110 (61) | 8280 (65.5) | 7920 (69.5) |
| 120 | 7210 (53.5) | 7690 (57) | 8010 (59) | 7370 (59.5) | 7920 (64) | 7700 (67.5) |
| 125 | 6540 (52) | 7000 (55) | 7290 (57) | 6720 (57.5) | 7360 (62.5) | 7440 (66) |
| 130 | 5880 (49.5) | 6310 (53) | 6580 (55) | 6070 (56) | 6810 (60.5) | 7190 (64) |
| 135 | 5300 (47.5) | 5710 (51) | 5950 (53) | 5510 (54.5) | 6210 (59) | 6630 (62.5) |
| 140 | 4730 (45.5) | 5110 (49) | 5330 (50.5) | 4950 (52.5) | 5620 (57) | 6080 (60.5) |
| 145 | 4190 (43) | 4580 (46.5) | 4770 (48) | 4460 (50.5) | 5100 (55.5) | 5520 (58.5) |
| 150 | 3650 (41) | 4060 (44) | 4220 (45.5) | 3980 (49) | 4580 (53.5) | 4970 (56.5) |
| 155 | 3070 (38.5) | 3500 (41.5) | 3660 (43) | 3550 (47) | 4120 (51.5) | 4470 (54.5) |
| 160 | 2490 (35.5) | 2940 (38.5) | | 3130 (45) | 3660 (49.5) | 3970 (52) |
| 165 | 1970 (32.5) | 2370 (36) | | 2710 (43) | 3240 (47.5) | 3510 (50) |
| 170 | 1460 (29.5) | 1800 (32.5) | | 2300 (40.5) | 2830 (45) | 3060 (47.5) |
| 175 | | | | 1840 (38.5) | 2420 (43) | 2640 (45) |
| 180 | | | | 1390 (36) | 2010 (40) | 2220 (42) |
| 185 | | | | | 1530 (37.5) | |
| Min. boom angle for indicated length (no load) | 26 | 28 | 40 | 34 | 35 | 40 |
| Max. boom length (ft) at 0° boom angle (no load) | 100 | | | 100 | | |

NOTE: () Boom angles are in degrees

A6-829-101980A

#LMI operating code. Refer to LMI for operating instructions

*This capacity is based on maximum obtainable boom angle.

**NOTES:**

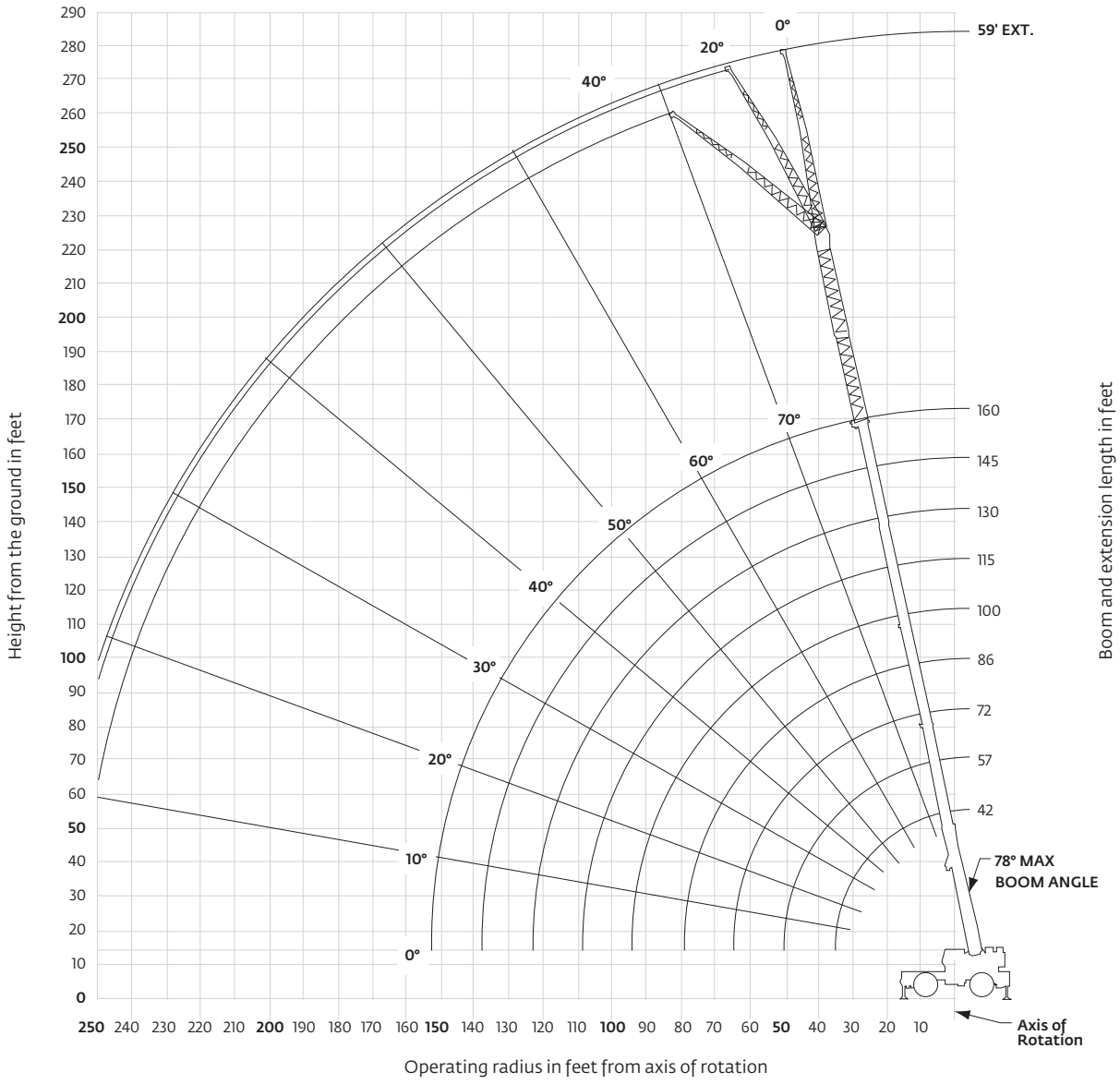
1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
   **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, 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 configured. For boom angles not shown, use the rating of the next lower boom angle.
   **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.

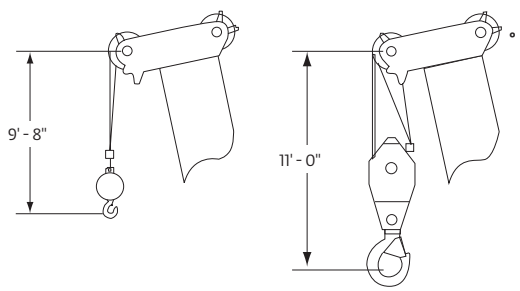


*THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.*
*The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.*

# Working range

**160 ft main boom + 2 inserts + 36 ft - 59 ft fixed offset extension**




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



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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.*

# Load chart

| 160 ft | 59 ft | 26 ft or 52 ft Insert | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|---|

Pounds

| Feet | 59 ft LENGTH WITH 26 ft INSERT | | | 59 ft LENGTH WITH 52 ft INSERT | | |
|---|---|---|---|---|---|---|
| | 0° OFFSET #0084 | 20° OFFSET #0085 | 40° OFFSET #0086 | 0° OFFSET #0084 | 20° OFFSET #0085 | 40° OFFSET #0086 |
| 60 | 7070 (78) | | | | | |
| 65 | 7070 (77.5) | | | | | |
| 70 | 7070 (76.5) | | | 4400 (78) | | |
| 75 | 7070 (75) | | | 4400 (77.5) | | |
| 80 | 7070 (74) | 6610 (78) | | 4400 (76.5) | | |
| 85 | 7070 (72.5) | 6610 (77.5) | | 4400 (75.5) | | |
| 90 | 7070 (71.5) | 6610 (76) | | 4400 (74.5) | 4230 (78) | |
| 95 | 7070 (70) | 6610 (75) | 6400 (78) | 4400 (73) | 4230 (77.5) | |
| 100 | 7070 (69) | 6610 (73.5) | 6400 (77) | 4400 (72) | 4230 (76.5) | |
| 105 | 7070 (67.5) | 6610 (72.5) | 6400 (76) | 4400 (71) | 4230 (75.5) | 4000 (78) |
| 110 | 7070 (66) | 6610 (71) | 6400 (74.5) | 4400 (69.5) | 4230 (74) | 4000 (77) |
| 115 | 6735 (65) | 6545 (69.5) | 6315 (73) | 4400 (68.5) | 4230 (73) | 4000 (75.5) |
| 120 | 6400 (63.5) | 6480 (68) | 6230 (71.5) | 4400 (67.5) | 4230 (72) | 4000 (74.5) |
| 125 | 5940 (62) | 6170 (67) | 5955 (70) | 4400 (66) | 4230 (70.5) | 4000 (73) |
| 130 | 5480 (60.5) | 5860 (65.5) | 5680 (68.5) | 4400 (65) | 4230 (69.5) | 4000 (72) |
| 135 | 4930 (59.5) | 5510 (64) | 5440 (67) | 4110 (63.5) | 4195 (68) | 4000 (70.5) |
| 140 | 4380 (58) | 5160 (62.5) | 5200 (65.5) | 3820 (62.5) | 4160 (67) | 4000 (69) |
| 145 | 3900 (56.5) | 4645 (61) | 4910 (64) | 3350 (61) | 3885 (65.5) | 3785 (68) |
| 150 | 3420 (55) | 4130 (59.5) | 4620 (62.5) | 2880 (60) | 3610 (64) | 3570 (66.5) |
| 155 | 3000 (53.5) | 3680 (58) | 4140 (60.5) | 2470 (58.5) | 3205 (63) | 3365 (65) |
| 160 | 2580 (51.5) | 3230 (56.5) | 3660 (59) | 2060 (57) | 2800 (61.5) | 3160 (63.5) |
| 165 | 2210 (50) | 2825 (54.5) | 3220 (57.5) | 1690 (56) | 2405 (60) | 2810 (62.5) |
| 170 | 1840 (48.5) | 2420 (53) | 2780 (55.5) | | 2010 (59) | 2460 (61) |
| 175 | 1515 (46.5) | 2060 (51) | 2385 (53.5) | | 1655 (57.5) | 2075 (59.5) |
| 180 | | 1700 (49.5) | 1990 (51.5) | | | 1690 (58) |
| 185 | | 1370 (47.5) | 1625 (49.5) | | | |
| Min. boom angle for indicated length (no load) | 45 | 46 | 48 | 54 | 56 | 56 |
| Max. boom length (ft) at 0° boom angle (no load) | | 57 | | | 57 | |

A6-829-101983A

NOTE: () Boom angles are in degrees

#LMI operating code. Refer to LMI for operating instructions

**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. 59 ft folding boom extension length may be used for single line lifting service only. Note: Lifting with the 36 ft extension base with either one or two 26 ft insert sections installed is not permitted.
3. For main boom lengths less than 160 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.



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# Load chart

| 42 ft - 86 ft | 40,000 lb | Pick & Carry up to 2.5 mph | Boom Centered over Front |
|---|---|---|---|

| | Pounds | | | |
|---|---|---|---|---|
| | #9006 | | | |
| | Main boom length in feet | | | |
| Feet | 42 | 57 | 72 | 86 |
| 10 | 61,750 (71.5) | | | |
| 12 | 61,750 (68.5) | | | |
| 15 | 49,000 (63.5) | 34,600 (71.5) | | |
| 20 | 34,750 (55.5) | 34,600 (65.5) | | |
| 25 | 34,750 (46) | 34,600 (60) | | |
| 30 | 29,250 (34) | 28,150 (53.5) | 28,300 (62.5) | |
| 35 | 23,400 (13) | 22,350 (46.5) | 22,500 (58) | 24,100 (64.5) |
| 40 | | 17,750 (38.5) | 17,800 (52.5) | 19,250 (60.5) |
| 45 | | 14,000 (28) | 13,950 (47) | 15,200 (56.5) |
| 50 | | 10,950 (7.5) | 10,800 (41) | 11,850 (52.5) |
| 55 | | | 8150 (34) | 9020 (47.5) |
| 60 | | | 5880 (24.5) | 6600 (42.5) |
| 65 | | | | 4520 (37) |
| 70 | | | | 2700 (30.5) |
| 75 | | | | 1110 (22) |
| Min. boom angle for indicated length (no load) | | | 0 | 20 |
| Max. boom length (ft) at 0° boom angle (no load) | | | 72 | |

NOTE: () Boom angles are in degrees

#LMI operating code. Refer to LMI for operating instructions

| Lifting capacities at zero degree boom angle | | |
|---|---|---|
| Boom angle | 42 | 57 |
| 0° | 23,000 (35.3) | 10,900 (50) |

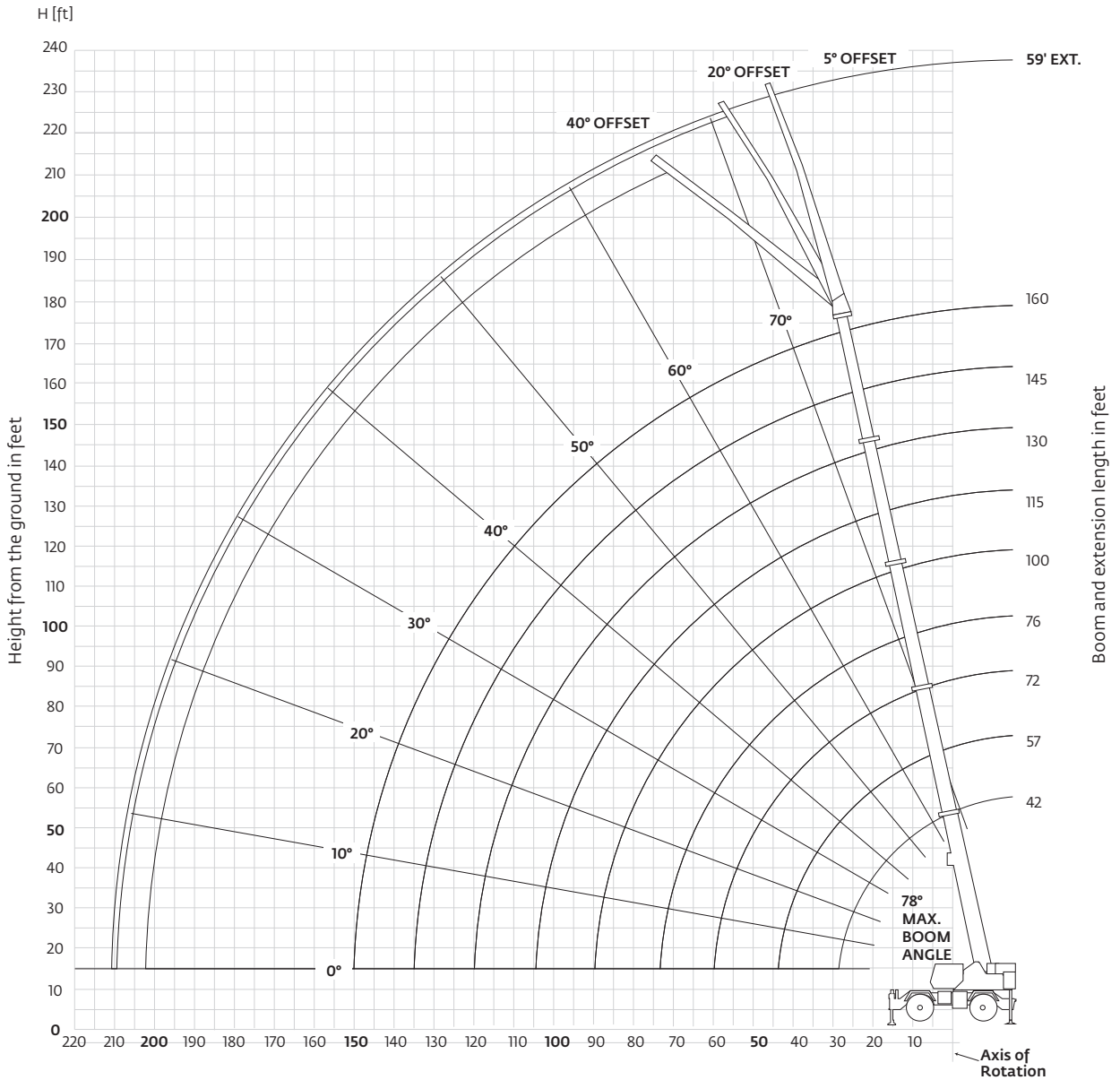
A6-829-102108A

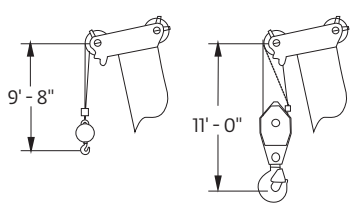
**NOTES:**

1. Capacities are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J-765.
2. Capacities are applicable to machines equipped with 33.25x29 (38 ply) bias ply tires, at 85 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 extension not permitted.
6. Axle lockouts must be functioning when lifting on rubber.
7. 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.
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.

# Working range

## 160 ft main boom + 36 ft - 59 ft luffing extension




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



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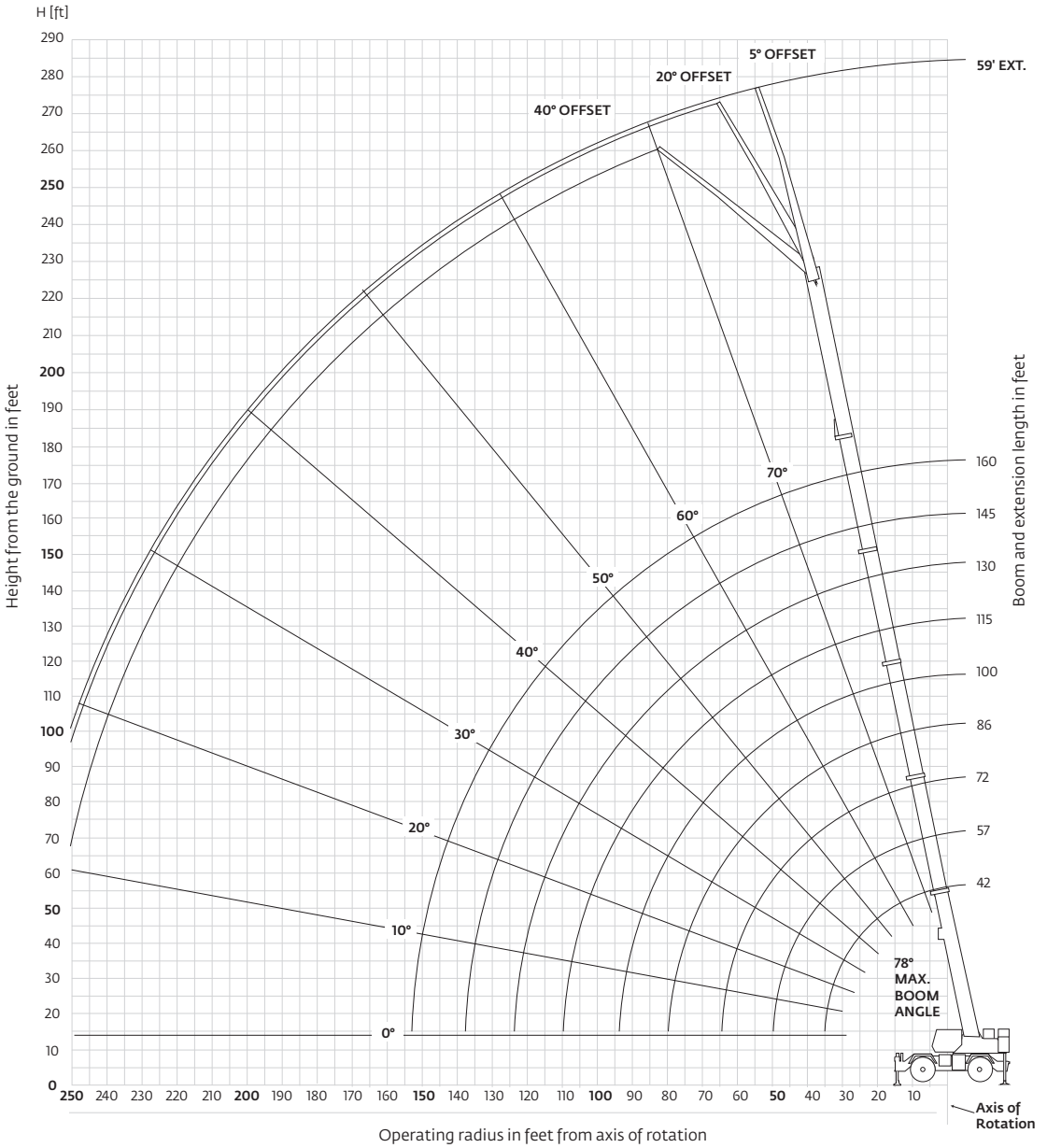
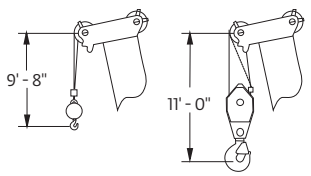
*The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.*

# Working range

## 160 ft main boom + 2 inserts + 36 ft - 59 ft luffing extension




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

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# Load chart

## 36 ft - 59 ft luffing folding boom extension (fixed angle) 100 ft main boom

| 100 ft | 36 ft - 59 ft | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|

Pounds

| Feet | 36 ft LENGTH 5° OFFSET | 20° OFFSET #0091 | 40° OFFSET | 59 ft LENGTH 5° OFFSET | 20° OFFSET #0092 | 40° OFFSET |
|---|---|---|---|---|---|---|
| 30 | 32,600 (78) | | | | | |
| 35 | 30,700 (76) | *23,150 (78) | | | | |
| 40 | 28,950 (74) | 22,150 (76.5) | | 14,950 (77.5) | | |
| 45 | 27,350 (71.5) | 21,250 (74) | 15,250 (78) | 14,950 (75.5) | | |
| 50 | 25,900 (69.5) | 20,450 (72) | 14,850 (75.5) | 14,950 (73.5) | 12,350 (78) | |
| 55 | 24,600 (67) | 19,700 (69.5) | 14,500 (73) | 14,550 (72) | 11,900 (77) | |
| 60 | 23,400 (64.5) | 19,050 (67) | 14,200 (70.5) | 14,150 (70) | 11,500 (75) | |
| 65 | 22,300 (62) | 18,450 (65) | 13,900 (68) | 13,750 (68) | 11,100 (73) | 8050 (78) |
| 70 | 21,300 (59.5) | 17,850 (62) | 13,650 (65.5) | 13,350 (66) | 10,700 (71) | 7850 (76) |
| 75 | 20,100 (57) | 17,350 (59.5) | 13,450 (63) | 13,000 (64) | 10,400 (69) | 7660 (73.5) |
| 80 | 18,100 (54.5) | 16,900 (57) | 13,300 (60) | 12,550 (61.5) | 10,050 (66.5) | 7490 (71.5) |
| 85 | 16,000 (51.5) | 16,500 (54) | 13,150 (57) | 12,000 (59.5) | 9780 (64.5) | 7340 (69) |
| 90 | 14,150 (49) | 15,400 (51.5) | 13,050 (54) | 11,550 (57.5) | 9510 (62.5) | 7210 (66.5) |
| 95 | 12,500 (46) | 13,700 (48) | 13,000 (50.5) | 11,100 (55) | 9,260 (60) | 7090 (64) |
| 100 | 11,050 (42.5) | 12,100 (45) | 12,750 (47) | 10,650 (52.5) | 9030 (57.5) | 6980 (61.5) |
| 105 | 9770 (39) | 10,650 (41.5) | | 10,250 (50) | 8820 (55) | 6900 (59) |
| 110 | 8490 (35.5) | 9270 (37.5) | | 9930 (47.5) | 8620 (52.5) | 6830 (56) |
| 115 | 7400 (31) | 8060 (33) | | 9040 (45) | 8440 (49.5) | 6790 (53) |
| 120 | 6320 (26) | 6850 (28) | | 8150 (42) | 8260 (47) | 6750 (50) |
| 125 | | | | 7240 (39) | 7820 (43.5) | |
| 130 | | | | 6340 (35.5) | 7380 (40.5) | |
| 135 | | | | 5570 (32) | 6440 (36.5) | |
| 140 | | | | 4800 (28) | 5510 (32) | |
| 145 | | | | 4100 (23) | | |
| 150 | | | | 3410 (16) | | |
| Min. boom angle for indicated length (no load) | 5° | 20° | 40° | 5° | 20° | 40° |
| Max. boom length (ft) at 5° boom angle (no load) | 100 ft | | | 100 ft | | |

NOTE: ( ) Boom angles are in degrees. A6-829-102550
#LMI operating code. Refer to LMI manual for operating instructions.
*This capacity is based on maximum obtainable boom angle.

**NOTES:**

1. All capacities above the bold line are based on structural strength of boom extension.
2. 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
   **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Radii listed are for a 100 ft boom with the boom extension erected. For main boom lengths less than 100 ft, 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 configured. For boom angles not shown, use the rating of the next lower boom angle.
   **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.



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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.*

# Load chart

## 36 ft - 59 ft luffing folding boom extension (fixed angle) 130 ft main boom

| 130 ft | 36 ft - 59 ft | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|

Pounds

| Feet | 36 ft LENGTH 5° OFFSET | 36 ft LENGTH 20° OFFSET #0091 | 36 ft LENGTH 40° OFFSET | 59 ft LENGTH 5° OFFSET | 59 ft LENGTH 20° OFFSET #0092 | 59 ft LENGTH 40° OFFSET |
|---|---|---|---|---|---|---|
| 40 | *23,350 (78) | | | | | |
| 45 | 23,350 (76) | *21,300 (78) | | *12,300 (78) | | |
| 50 | 23,350 (74) | 20,700 (76.5) | | 12,300 (77.5) | | |
| 55 | 23,350 (72.5) | 20,100 (75) | 14,850 (78) | 12,300 (76) | | |
| 60 | 23,350 (70.5) | 19,500 (73) | 14,550 (76) | 12,300 (74.5) | 11,600 (78) | |
| 65 | 22,300 (68.5) | 19,000 (71) | 14,300 (74) | 12,300 (73) | 11,300 (77) | |
| 70 | 20,350 (66.5) | 18,500 (69) | 14,050 (72) | 12,300 (71) | 10,950 (75) | |
| 75 | 18,350 (64.5) | 18,050 (67) | 13,850 (70) | 12,300 (69.5) | 10,700 (73.5) | 7850 (78) |
| 80 | 16,600 (62.5) | 17,000 (65) | 13,650 (68) | 12,300 (68) | 10,400 (72) | 7690 (76) |
| 85 | 15,050 (60.5) | 15,450 (63) | 13,450 (66) | 12,300 (66) | 10,150 (70) | 7550 (74.5) |
| 90 | 13,650 (58.5) | 14,050 (61) | 13,300 (63.5) | 12,250 (64.5) | 9910 (68.5) | 7420 (72.5) |
| 95 | 12,400 (56.5) | 12,800 (58.5) | 13,150 (61.5) | 11,900 (62.5) | 9680 (66.5) | 7300 (70.5) |
| 100 | 11,300 (54) | 11,650 (56.5) | 11,950 (59) | 11,450 (61) | 9460 (64.5) | 7190 (68.5) |
| 105 | 10,300 (52) | 10,650 (54) | 10,950 (56.5) | 10,500 (59) | 9,260 (63) | 7090 (66.5) |
| 110 | 9340 (49.5) | 9660 (52) | 9950 (54) | 9580 (57) | 9060 (61) | 7000 (64.5) |
| 115 | 8480 (47) | 8810 (49.5) | 9070 (51.5) | 8790 (55) | 8800 (59) | 6930 (62.5) |
| 120 | 7630 (44.5) | 7970 (46.5) | 8200 (48.5) | 8010 (53) | 8550 (57) | 6860 (60.5) |
| 125 | 6700 (41.5) | 7240 (44) | 7430 (45.5) | 7340 (51) | 7840 (54.5) | 6810 (58) |
| 130 | 5780 (39) | 6510 (41) | 6670 (42.5) | 6680 (49) | 7140 (52.5) | 6770 (55.5) |
| 135 | 4980 (35.5) | 5690 (37.5) | | 6100 (46.5) | 6520 (50.5) | 6500 (53.5) |
| 140 | 4190 (32) | 4880 (34) | | 5520 (44) | 5910 (48) | 6240 (50.5) |
| 145 | 3500 (28) | 4120 (30) | | 4860 (42) | 5360 (45.5) | 5640 (48) |
| 150 | 2820 (23.5) | 3360 (25.5) | | 4200 (39) | 4820 (42.5) | 5050 (45) |
| 155 | | | | 3580 (36.5) | 4280 (40) | |
| 160 | | | | 2970 (33.5) | 3750 (36.5) | |
| 165 | | | | 2430 (30) | 3120 (33) | |
| 170 | | | | 1890 (26) | 2490 (29) | |
| Min. boom angle for indicated length (no load) | 20° | 20° | 40° | 20° | 20° | 40° |
| Max. boom length (ft) at 5° boom angle (no load) | | 100 ft | | | 100 ft | |

NOTE: ( ) Boom angles are in degrees. A6-829-102554
#LMI operating code. Refer to LMI manual for operating instructions.
*This capacity is based on maximum obtainable boom angle.

**NOTES:**

1. All capacities above the bold line are based on structural strength of boom extension.
2. 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
   **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Radii listed are for a 130 ft boom with the boom extension erected. For main boom lengths less than 130 ft, 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 configured. For boom angles not shown, use the rating of the next lower boom angle.
   **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.

# Load chart

## 36 ft - 59 ft luffing folding boom extension (fixed angle) 160 ft main boom

| 160 ft | 36 ft - 59 ft | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|

Pounds

| Feet | 36 ft LENGTH 5° OFFSET | 36 ft LENGTH 20° OFFSET #0091 | 36 ft LENGTH 40° OFFSET | 59 ft LENGTH 5° OFFSET | 59 ft LENGTH 20° OFFSET #0092 | 59 ft LENGTH 40° OFFSET |
|---|---|---|---|---|---|---|
| 50 | 15,550 (77.5) | | | | | |
| 55 | 15,550 (76) | | | | | |
| 60 | 15,550 (74.5) | 14,950 (77.5) | | 9650 (78) | | |
| 65 | 15,550 (73) | 14,950 (76) | *14,400 (78) | 9650 (77) | | |
| 70 | 15,550 (71.5) | 14,950 (74.5) | 14,150 (77) | 9650 (75.5) | 9650 (78) | |
| 75 | 14,900 (70) | 14,250 (73) | 13,950 (75.5) | 9650 (74) | 9650 (77.5) | |
| 80 | 14,100 (68) | 13,550 (71) | 13,400 (74) | 9650 (72.5) | 9650 (76) | |
| 85 | 13,400 (66.5) | 12,900 (69.5) | 12,800 (72) | 9650 (71) | 9650 (74.5) | 7630 (78) |
| 90 | 12,700 (65) | 12,250 (68) | 12,200 (70.5) | 9650 (69.5) | 9650 (73) | 7510 (77.5) |
| 95 | 11,500 (63) | 11,700 (66) | 11,650 (68.5) | 9650 (68.5) | 9650 (72) | 7390 (75.5) |
| 100 | 10,400 (61.5) | 10,850 (64.5) | 11,100 (67) | 9570 (67) | 9420 (70) | 7290 (74) |
| 105 | 9480 (59.5) | 9910 (62.5) | 10,200 (65) | 9150 (65) | 9010 (68.5) | 7200 (72.5) |
| 110 | 8570 (58) | 8970 (61) | 9360 (63) | 8730 (63.5) | 8610 (67) | 7110 (71) |
| 115 | 7780 (56) | 8160 (59) | 8530 (61) | 8000 (62) | 8220 (65.5) | 7030 (69.5) |
| 120 | 6990 (54) | 7360 (57) | 7700 (59) | 7280 (60.5) | 7840 (64) | 6950 (67.5) |
| 125 | 6320 (52) | 6670 (55) | 6980 (57) | 6620 (59) | 7180 (62.5) | 6890 (66) |
| 130 | 5650 (50) | 5980 (53) | 6260 (55) | 5970 (57.5) | 6530 (60.5) | 6830 (64) |
| 135 | 5070 (48) | 5380 (51) | 5630 (53) | 5400 (55.5) | 5930 (59) | 6320 (62.5) |
| 140 | 4500 (46) | 4780 (49) | 5010 (50.5) | 4830 (54) | 5340 (57) | 5820 (60.5) |
| 145 | 3990 (43.5) | 4250 (46.5) | 4450 (48) | 4340 (52) | 4820 (55.5) | 5260 (58.5) |
| 150 | 3490 (41.5) | 3730 (44) | 3900 (45.5) | 3850 (50) | 4300 (53.5) | 4710 (56.5) |
| 155 | 2990 (38.5) | 3260 (41.5) | | 3410 (48) | 3840 (51.5) | 4210 (54.5) |
| 160 | 2490 (36) | 2800 (38.5) | | 2980 (46) | 3380 (49.5) | 3710 (52) |
| 165 | 1970 (33) | 2300 (36) | | 2590 (44) | 2960 (47.5) | 3250 (50) |
| 170 | 1450 (30) | 1800 (32.5) | | 2210 (42) | 2550 (45) | 2790 (47.5) |
| 175 | | | | 1800 (39.5) | 2170 (43) | |
| 180 | | | | 1390 (37.5) | 1800 (40) | |
| 185 | | | | | 1420 (37.5) | |
| Min. boom angle for indicated length (no load) | 26° | 29° | 40° | 34° | 36° | 40° |
| Max. boom length (ft) at 5° boom angle (no load) | | 100 ft | | | 100 ft | |

NOTE: ( ) Boom angles are in degrees. A6-829-102558
#LMI operating code. Refer to LMI manual for operating instructions.
*This capacity is based on maximum obtainable boom angle.

**NOTES:**

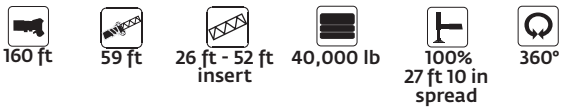
1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J765.
2. 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only. **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Radii listed are for a 160 ft boom with the boom extension erected. For main boom lengths less than 160 ft, 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 configured. For boom angles not shown, use the rating of the next lower boom angle. **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.



*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.*

# Load chart

## 59 ft luffing folding boom extension with 1 or 2 inserts (fixed angle) 160 ft main boom




Pounds

| Feet | 59 ft LENGTH WITH 26 ft INSERT 5° OFFSET | 20° OFFSET #0095 | 40° OFFSET | 59 ft LENGTH WITH 52 ft INSERT 5° OFFSET | 20° OFFSET #1095 | 40° OFFSET |
|---|---|---|---|---|---|---|
| 70 | 6830 (78) | | | | | |
| 75 | 6830 (77) | | | 4400 (78) | | |
| 80 | 6830 (75.5) | 6610 (78) | | 4400 (77.5) | | |
| 85 | 6830 (74.5) | 6610 (77.5) | | 4400 (76.5) | | |
| 90 | 6830 (73) | 6610 (76) | | 4400 (75.5) | 4230 (78) | |
| 95 | 6830 (72) | 6610 (75) | 6400 (78) | 4400 (74.5) | 4230 (77.5) | |
| 100 | 6830 (70.5) | 6610 (73.5) | 6400 (77) | 4400 (73) | 4230 (76.5) | |
| 105 | 6830 (69.5) | 6610 (72.5) | 6400 (76) | 4400 (72) | 4230 (75.5) | 4000 (78) |
| 110 | 6830 (68) | 6610 (71) | 6400 (74.5) | 4400 (71) | 4230 (74) | 4000 (77) |
| 115 | 6590 (66.5) | 6520 (69.5) | 6310 (73) | 4400 (69.5) | 4230 (73) | 4000 (75.5) |
| 120 | 6350 (65) | 6430 (68) | 6230 (71.5) | 4400 (68.5) | 4230 (72) | 4000 (74.5) |
| 125 | 5910 (64) | 6120 (67) | 5950 (70) | 4400 (67.5) | 4230 (70.5) | 4000 (73) |
| 130 | 5480 (62.5) | 5810 (65.5) | 5680 (68.5) | 4400 (66) | 4230 (69.5) | 4000 (72) |
| 135 | 4930 (61) | 5480 (64) | 5430 (67) | 4110 (65) | 4170 (68) | 4000 (70.5) |
| 140 | 4380 (59.5) | 5160 (62.5) | 5190 (65.5) | 3820 (63.5) | 4120 (67) | 4000 (69) |
| 145 | 3900 (58) | 4640 (61) | 4900 (64) | 3350 (62.5) | 3860 (65.5) | 3780 (68) |
| 150 | 3420 (56.5) | 4130 (59.5) | 4620 (62.5) | 2880 (61) | 3610 (64) | 3570 (66.5) |
| 155 | 3000 (55) | 3680 (58) | 4140 (60.5) | 2470 (59.5) | 3200 (63) | 3360 (65) |
| 160 | 2580 (53.5) | 3230 (56.5) | 3660 (59) | 2060 (58.5) | 2800 (61.5) | 3160 (63.5) |
| 165 | 2210 (52) | 2820 (54.5) | 3220 (57.5) | 1690 (57) | 2400 (60) | 2810 (62.5) |
| 170 | 1840 (50) | 2420 (53) | 2780 (55.5) | | 2010 (59) | 2460 (61) |
| 175 | 1510 (48.5) | 2060 (51) | 2380 (53.5) | | 1650 (57.5) | 2070 (59.5) |
| 180 | | 1700 (49.5) | 1990 (51.5) | | | 1690 (58) |
| Min. boom angle for indicated length (no load) | 46° | 46° | 48° | 55° | 56° | 56° |
| Max. boom length (ft) at 5° boom angle (no load) | | 57 ft | | | 57 ft | |

NOTE: ( ) Boom angles are in degrees.

A6-829-102562

#LMI operating code. Refer to LMI manual for operating instructions.

**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. 59 ft folding boom extension length may be used for single line lifting service only. NOTE: Lifting with the 36 ft extension base with either one or two 26 ft insert sections installed is not permitted.
3. For main boom lengths less than 160 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.

# Load chart

## 36 ft - 59 ft luffing folding boom extension 160 ft main boom (load luffing)

| 160 ft | 36 ft - 59 ft | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|

Pounds

| Feet | 36 ft LENGTH | | 59 ft LENGTH | |
|---|---|---|---|---|
| | 5° - 20° OFFSET #0091 | 20° - 40° OFFSET #0091 | 5° - 20° OFFSET #0092 | 20° - 40° OFFSET #0092 |
| 60 | 14,950 | | | |
| 65 | 14,950 | 10,250 | | |
| 70 | 14,950 | 10,050 | 9650 | |
| 75 | 14,250 | 9840 | 9320 | |
| 80 | 13,550 | 9640 | 8950 | |
| 85 | 12,900 | 9460 | 8600 | 5100 |
| 90 | 12,250 | 9280 | 8290 | 4980 |
| 95 | 11,500 | 9130 | 7990 | 4880 |
| 100 | 10,400 | 8980 | 7720 | 4780 |
| 105 | 9480 | 8850 | 7470 | 4690 |
| 110 | 8570 | 8720 | 7220 | 4600 |
| 115 | 7780 | 8160 | 7010 | 4520 |
| 120 | 6990 | 7360 | 6790 | 4440 |
| 125 | 6320 | 6670 | 6600 | 4370 |
| 130 | 5650 | 5980 | 5970 | 4310 |
| 135 | 5070 | 5380 | 5400 | 4250 |
| 140 | 4500 | 4780 | 4830 | 4200 |
| 145 | 3990 | 4250 | 4340 | 4160 |
| 150 | 3490 | 3730 | 3850 | 4120 |
| 155 | 2990 | | 3410 | 3840 |
| 160 | 2490 | | 2980 | 3380 |
| 165 | 1970 | | 2590 | 2960 |
| 170 | 1450 | | 2210 | 2550 |
| 175 | | | 1800 | |
| 180 | | | 1390 | |
| Min. boom angle for indicated length (no load) | 29° | 40° | 36° | 40° |
| Max. boom length (ft) at 5° boom angle (no load) | 100 ft | | 100 ft | |

A6-829-102575

#LMI operating code. Refer to LMI for operating instructions

**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. 36 ft boom extension length may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
   **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Capacities are applicable for a 160 ft main boom length only.
   **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. The loads for luffing depend on the angle of the main boom, angle of the boom extension and dynamic working pressure of the luffing cylinder for the boom extension.
5. Capacities listed are with outriggers properly extended and vertical jacks set only.



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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.*

# Load chart

## 59 ft luffing folding boom extension with 1 or 2 inserts 160 ft main boom (load luffing)

| 160 ft | 59 ft | 26 ft - 52 ft Insert | 40,000 lb | 100% 27 ft 10 in spread | 360° |
|---|---|---|---|---|---|

Pounds

| Feet | 59 ft LENGTH with 26 ft INSERT | | 59 ft LENGTH with 52 ft INSERT | |
|---|---|---|---|---|
| | 5° - 20° OFFSET | 20° - 40° OFFSET | 5° - 20° OFFSET | 20° - 40° OFFSET |
| | #0095 | | #1095 | |
| 80 | 6610 | | | |
| 85 | 6610 | | | |
| 90 | 6610 | | 4230 | |
| 95 | 6610 | 4420 | 4230 | |
| 100 | 6610 | 4330 | 4230 | |
| 105 | 6610 | 4250 | 4230 | 4000 |
| 110 | 6430 | 4180 | 4230 | 4000 |
| 115 | 6250 | 4100 | 4230 | 4000 |
| 120 | 6070 | 4020 | 4230 | 4000 |
| 125 | 5900 | 3970 | 4230 | 4000 |
| 130 | 5480 | 3920 | 4230 | 4000 |
| 135 | 4930 | 3870 | 4110 | 4000 |
| 140 | 4380 | 3810 | 3820 | 3960 |
| 145 | 3900 | 3770 | 3350 | 3780 |
| 150 | 3420 | 3730 | 2880 | 3570 |
| 155 | 3000 | 3680 | 2470 | 3200 |
| 160 | 2580 | 3230 | 2060 | 2800 |
| 165 | 2210 | 2820 | 1690 | 2400 |
| 170 | 1840 | 2420 | | 2010 |
| 175 | 1510 | 2060 | | 1650 |
| 180 | | 1700 | | |
| Min. boom angle for indicated length (no load) | 46° | 48° | 56° | 56° |
| Max. boom length (ft) at 5° boom angle (no load) | 57 ft | | 57 ft | |

#LMI operating code. Refer to LMI manual for operating instructions.

A6-829-102579

**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. 59 ft boom extension may be used for single line lifting service only.
   **WARNING:** Lifting with the 36 ft extension base, with either one or two 26 ft insert sections installed is not permitted.
3. Capacities are applicable for a 160 ft main boom length only.
   **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. The loads for luffing depend on the angle of the main boom, angle of the boom extension and dynamic working pressure of the luffing cylinder for the boom extension.
5. Capacities listed are with outriggers properly extended and vertical jacks set only.

# Load chart

**Installation and removal of counterweight and auxiliary hoist rated lifting capacities in pounds**

| On outriggers fully extended- 360° | |
|---|---|
| **Radius in feet** | **#0801 Main boom length 42 ft*** |
| 10 | 48,000 |
| 12 | 48,000 |
| 15 | 48,000 |
| 20 | 48,000 |
| 25 | 48,000 |
| 30 | 48,000 |

**Installation and removal of front and rear outrigger boxes rated lifting capacities in pounds without counterweight**

| On rubber (stationary) - 360° | |
|---|---|
| **Radius in feet** | **#9810 Main boom length 42 ft*** |
| 10 | 11,600 |
| 12 | 11,600 |
| 15 | 11,600 |
| 20 | 11,600 |

* The boom must be fully retracted.

**Notes for on rubber**

- Capacities are applicable to machines equipped with Titan 33.25 x 29 (38 ply) tires at 85 psi cold inflation pressure Capacities do not exceed 75% of tipping loads as determined by test in accordance with SAE J765.
- With no load, the boom angle must not be less than 35˚ when over sides of machine since loss of stability will occur causing a tipping condition. To lower boom below 35˚ boom angle, boom must be swung over front or rear and LMI bypass activated.
- Once one outrigger box is installed, do not swing load over that end of the machine while installing the other outrigger box.
- Each outrigger box assembly weighs 9373 lb including the outrigger beams and pads.
- May be used for single or double line lifting service.



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# Load handling

## Weight reductions for load handling devices

| 36 ft - 59 ft luffing folding boom extension | Pounds |
|---|---|
| *36 ft extension (erected) | 5260 |
| *59 ft extension (erected) | 9860 |
| **Luffing extension with 26 ft insert** | **Pounds** |
| *59 ft extension (erected) | 14,100 |
| **Luffing extension with 52 ft insert** | **Pounds** |
| *59 ft extension (erected) | 19,400 |

When lifting over boom nose with 36 ft or 59 ft extension erected, the outriggers must be fully extended or 50% extended (19 ft 9 in) spread.

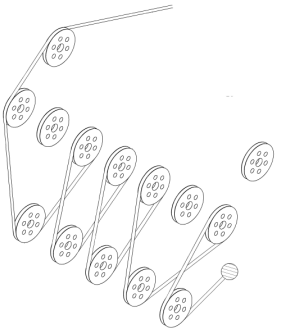
When lifing over main boom nose with 36 ft or 52 ft insert erected, the outriggers must be fully extended.

| Auxiliary boom nose | Pounds |
|---|---|
| | 120 |
| | |
| **Hookblocks and headache balls** | **Pounds** |
| 80 USt, 5-sheave | 1600+ |
| 130 USt, 8-sheave | 2400+ |
| 10 USt overhaul ball | 690+ |
| +Refer to rating plate for actual weight. | |

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.

**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.

## Reeving diagram



## Line pulls and reeving information

| Hoists | Cable specs | Permissable line pulls | Nominal cable length |
|---|---|---|---|
| Main Model 35 | 19 mm (3/4 in) 6 x 37 class, EIPS, IWRC Special Flexible Min. Breaking Str. 58,800 lb | 16,800 lb | 950 ft |
| Main Model 35 | 19 mm (3/4 in) Flex-X 35 Rotation resistant (non-rotating) Min. breaking Str. 85,500 lb | 16,800 lb | 950 ft |
| Auxiliary Model 35 | 19 mm (3/4 in) Flex-X 35 Rotation resistant (non-rotating) Min. breaking Str. 85,500 lb | 16,800 lb | 700 ft |

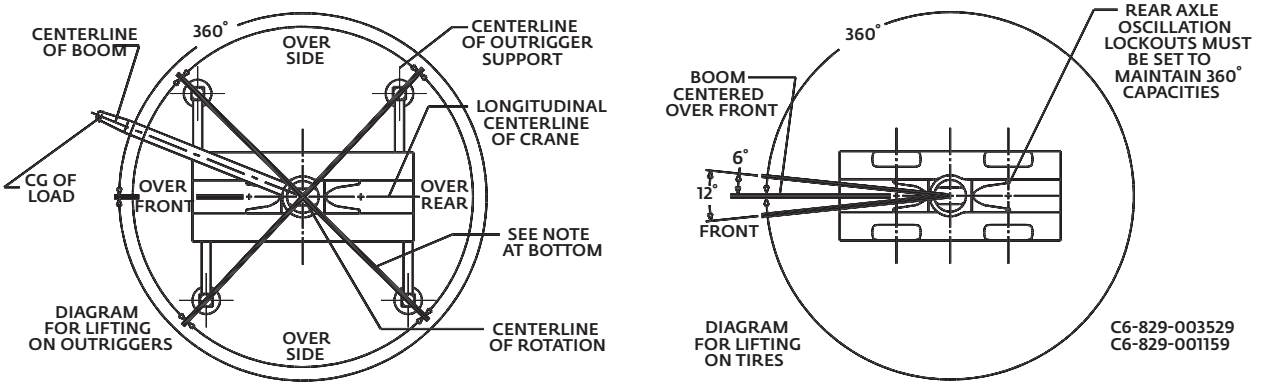
The approximate weight of 3/4 in wire rope is 1.5 lb/ft

## Hoist performance

| Wire rope layer | Hoist line pulls two-speed hoist | | Drum rope capacity (ft) | |
|---|---|---|---|---|
| | Low available lb* | High available lb* | Layer | Total |
| 1 | 20,024 | 12,496 | 140 | 140 |
| 2 | 18,405 | 11,485 | 152 | 293 |
| 3 | 17,028 | 10,626 | 165 | 458 |
| 4 | 15,842 | 9886 | 177 | 636 |
| 5 | 14,811 | 9243 | 190 | 826 |
| 6 | 13,906 | 8678 | 202 | 1028 |

* Max lifting capacity:
6 x 37 class or 35 x 7 class = 16,800 lb

## Working area diagram




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

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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*

# Notes

# Notes

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