features

- 33-105 ft. (10-32 m) 4-section full power boom
- 29-51 ft. (8.8-15.5 m) telescopic swingaway extension
- Max main boom tip height of 112 ft. (34 m)
- “E” Series cab
- Max overall tip height 162 ft. (49.3 m)
- 40/50 ton (40/45 mt) capacity
- One 2-stage double-acting telescoping cylinder
- 3 position outriggers, max spread 22.5 ft. (6.9 m)
- Cummins 6BT 5.9L diesel, 6 cyl., turbocharged engine
The superstructure features a full power four section boom with a four plate rectangular design that can reach to a max tip height of 112 ft. The sequence synchronized extension feature telescopes boom sections at the touch of the hand from an easy to use single lever joystick controller. Features common to the Grove “E” Series cab include:

- hot water heater/defroster
- single axis joystick controllers
- sliding skylight and adjustable sunscreen
- engine instrumentation
- full accoustical lining

The PAT iFlex 5 graphic display LMI includes a work area definition system which allows the operator to define a preferred working area.

Large open stowage compartment for tools and rigging accessories.

The RT600E uses a 11,250 lbs. pinned-on counterweight. Cable power is provided through Grove model HO30G-16G grooved drum hoists with 16,800 lbs. permissible line pull. Max line speed is 593 fpm. Both the main and optional auxiliary hoists have cable capacity up to 450 ft.

A telescopic swingaway lattice extension easily stows on the side of the base boom for easy transport. With a range of 29-51 ft. the max tip height reaches 162 ft. with a capacity of 6,000 lbs. An optional fixed lattice is also available, reaching a max height of 141 ft.

Optional full length aluminum decking is also available.

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- sliding skylight and adjustable sunscreen
- engine instrumentation
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Optional full length aluminum decking is also available.
**Superstructure**

**Boom**
33 ft. - 105 ft. (10.1 m - 32 m) four-section, full-power synchronized boom.
Maximum tip height: 112 ft. (34.1 m).

*Optional Fixed Swingaway Extension*
29 ft. (8.8 m) offsettable lattice swingaway extension. Offsettable at 0°, 25° and 45°. Stows alongside base boom section.
Maximum tip height: 141.5 ft. (43.1 m).

*Optional Telescopic Swingaway Extension*
29 ft. - 51 ft. (8.8 m - 15.5 m) telescoping lattice swingaway extension. Offsettable at 0°, 25° and 45°. Stows alongside base boom section. Maximum tip height: 162 ft. (49.3 m).

**Boom Nose**
Three nylon sheaves mounted on heavy-duty tapered roller bearings with removable pin-type rope guards. *(Four sheaves with optional 35 x 7 wire rope.)* Quick-reeve type boom nose. *Optional removable auxiliary boom nose with removable pin type rope guard.*

**Boom Elevation**
One double-acting hydraulic cylinder with integral holding valve provides elevation from -2° 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 system defaults to 360° on rubber chart. The standard Work Area Definition System allows the operator to pre-select and define 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. Deluxe seat incorporates armrest-mounted hydraulic single-axis controllers. Dash panel incorporates gauges for all engine functions. Other standard features include: hot water heater/defroster, cab circulating air fan, sliding side and rear windows, sliding skylight with electric wiper and sunscreen, electric windshield wash/wipe, fire extinguisher, seat belt and circuit breakers.

**Swing**
Planetary swing with foot-applied multi-disc brake. Spring applied, hydraulically-released swing brake and plunger-type, one position, mechanical house lock operated from cab. *Optional 360° mechanical swing lock. Maximum speed: 2.5 RPM.*

**Counterweight**
11,250 lbs. (5 103 kg) pinned to superstructure.

**Hydraulic System**
Three main gear pumps with combined capacity of 103 GPM (391 l/min), 135 GPM (511 l/min) with optional air conditioning. Maximum operating pressure: 3500 psi (26.2 MPa)

**Hoist Specifications**
**Main and Auxiliary Hoist: Grove Model HO30G-16G**
Maximum Single Line Pull: 18,180 lbs (8 246 kg)
Maximum Single Line Speed: 588 FPM (179 m/min)
Maximum Permissible Line Pull:
16,800 lbs. (7 620 kg) w/standard 6 x 37 class rope
16,800 lbs. (7 620 kg) w/optional 35 x 7 class rope
Rope Diameter: 3/4 in. (19 mm)
Rope Length: 450 ft. (137 m)
Rope Type: 6 x 37 Class EIPS IWRC
**Optional:** 35 x 7 class rotation resistant
Maximum Rope Stowage: 694 ft. (211 m)
**Carrier**

**Chassis**
Box section frame fabricated from high-strength, low alloy steel. Integral outrigger housings and 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. All steel fabricated, quick-release type round outrigger floats, 24 in. (610 mm) diameter. Maximum outrigger pad load: 69,100 lbs. (31 344 kg).

**Outrigger Controls**
Controls and crane level indicator located in cab.

**Engine**
Cummins 6BT 5.9L diesel, six cylinders, turbocharged, 173 bhp (129 kW) (Gross) @ 2,500 rpm. Maximum torque: 530 ft. lbs. (719 Nm) @ 1,500 RPM.

**Fuel Tank Capacity**
58 gallons (220 L)

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

**Electrical System**
Two 12-volt maintenance free batteries. 12-volt starting and lighting, circuit breakers. *Optional battery disconnect switch.

**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 centered” indicating light.
4 wheel turning radius - 21 ft. (6.4 m)

**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 permit oscillation only with boom centered over the front.

**Brakes**
Full hydraulic split circuit disc-type brakes operating on all wheels. Spring-applied, hydraulically released transmission-mounted parking brake.

**Tires**
*23.5 x 25 - 20PR bias earthmover type.
*23.5R25 radial earthmover type.

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

**Maximum Speed**
24 MPH (39 km/h).

**Gradeability (Theoretical)**
78% (Based on 75,000 lbs. [34 020 kg] GVW) 23.5 x 25 tires, pumps engaged, 105 ft. (32 m) boom, and tele-swingaway.

**Miscellaneous Standard Equipment**
Full width steel fenders, dual rear view mirrors, hookblock tiedown, electronic back-up alarm, light package, front stowage well, tachometer, rear wheel position indicator, 36,000 BTU hot water heater, hoist mirrors, engine distress A/V warning system. Auxiliary hoist control valve arrangement (less hoist). Ether injection cold start aid (less canister) and immersion type engine block heater, 120V 1500 watt.

**Optional Equipment**
*VALUE PACKAGE: includes 29-51 ft. (8.8-15.5 m) offsettable telescoping swingaway, 360° NYC style swing lock, and auxiliary hoist package.
*AUXILIARY HOIST PACKAGE (includes Model HO30G-16G auxiliary hoist with electronic hoist drum rotation indicator, hoist drum cable follower, 450 ft. (137m) of 3/4 in. (19mm) 35 X 7 class wire rope, auxiliary single sheave boom nose.)
*AUXILIARY LIGHTING PACKAGE (includes cab mounted, 360° rotation spotlight, cab mounted amber flashing light, and dual base boom mounted floodlights.)
*CONVENIENCE PACKAGE (includes in cab LMI light bar)
*Air Conditioning
*Full-length aluminum decking
*Pintle hook - rear
*360 degree positive swing lock
*Battery disconnect switch
*Cab-controlled cross axle differential lock (front and rear)
*Manual hydraulic pump disconnect
*PAT datalogger
*Rubber mat for stowage trough
*Mounting hardware for gooseneck/trailer attachment

*Denotes optional equipment
Weights

<table>
<thead>
<tr>
<th></th>
<th>GVW</th>
<th>Front</th>
<th>Rear</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb.</td>
<td>kg</td>
<td>lb.</td>
</tr>
<tr>
<td><strong>RT600E Basic Machine</strong></td>
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<tr>
<td></td>
<td>71,691</td>
<td>32,519</td>
<td>32,934</td>
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<td>ADD: 29 - 51 ft. tele swingaway</td>
<td>2,109</td>
<td>957</td>
<td>3,456</td>
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<tr>
<td>ADD: 29 ft. swingaway</td>
<td>1,493</td>
<td>677</td>
<td>2,506</td>
</tr>
<tr>
<td>ADD: Auxiliary hoist cable</td>
<td>563</td>
<td>255</td>
<td>-213</td>
</tr>
<tr>
<td>ADD: Auxiliary boom nose</td>
<td>131</td>
<td>59</td>
<td>358</td>
</tr>
<tr>
<td>ADD: 40 ton (35 mt) 3 sheave hookblock (stowed in trough)</td>
<td>800</td>
<td>363</td>
<td>822</td>
</tr>
<tr>
<td>ADD: 50 ton (45 mt) 3 sheave hookblock (stowed in trough)</td>
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<td>454</td>
<td>1,027</td>
</tr>
<tr>
<td>ADD: 8.3 ton (7.5 mt) headache ball (hanging from aux. nose)</td>
<td>370</td>
<td>168</td>
<td>643</td>
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<tr>
<td>Remove: Counterweight</td>
<td>-11,250</td>
<td>-5,103</td>
<td>4,570</td>
</tr>
</tbody>
</table>

Note: [   ] Reference dimensions in mm
working range

Working range – 105 ft. Main Boom

Dimensions are for Largest Grove furnished Hook Block and Headache 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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RT650E load chart

<table>
<thead>
<tr>
<th>Feet</th>
<th>33</th>
<th>34</th>
<th>35</th>
<th>36</th>
<th>37</th>
<th>38</th>
<th>39</th>
<th>40</th>
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<td>80,800</td>
<td>67,200</td>
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<tr>
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<td>78,150</td>
<td>70,200</td>
<td>64,200</td>
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<td>69,950</td>
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<td>66,950</td>
<td>61,800</td>
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<td>50,600</td>
<td>44,500</td>
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<td>34,450</td>
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<td>25</td>
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<td>39,350</td>
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<td>29,800</td>
<td>27,250</td>
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<td>See</td>
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</tr>
</tbody>
</table>

Minimum boom angle (°) for indicated length (no load)

0

Maximum boom length (ft) at 0° boom angle (no load)

105

Lifting Capacities at Zero Degree Boom Angle

<table>
<thead>
<tr>
<th>Boom Angle</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
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<tbody>
<tr>
<td>0°</td>
<td>16,250</td>
<td>12,500</td>
<td>8,780</td>
<td>6,280</td>
<td>4,510</td>
<td>3,160</td>
<td>2,110</td>
<td>1,260</td>
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</table>

Maximum boom length (ft) at 0° boom angle (no load)

105

NOTE: ( ) Boom angles are in degrees.

ALM operating code. Refer to LM manual for operating instructions.

* This capacity is based on minimum boom angle.
## RT640E load chart

<table>
<thead>
<tr>
<th>Feet</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>105</th>
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</table>

Minimum boom angle (°) for indicated length (no load) 0
Maximum boom length (ft) at 0° = boom angle (no load) 105

NOTE: () Boom angles are in degrees.
LM operating code. Refer to LM manual for operating instructions.
*This capacity is based on maximum boom angle.

### Lifting Capacities at Zero Degree Boom Angle
On Outriggers Fully Extended - 360°

<table>
<thead>
<tr>
<th>Boom Angle</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>105</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
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<td>12,550</td>
<td>8,750</td>
<td>6,250</td>
<td>4,510</td>
<td>3,160</td>
<td>2,110</td>
<td>1,260</td>
<td>1,260</td>
</tr>
</tbody>
</table>

NOTE: () Reference radii in feet.

---

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WARNING:

Next lower boom angle.

RT600E load charts

<table>
<thead>
<tr>
<th>Pounds</th>
<th>Feats</th>
<th>#021</th>
<th>#022</th>
<th>#023</th>
<th>#041</th>
<th>#042</th>
<th>#043</th>
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<tbody>
<tr>
<td><strong>30 ft. LENGTH</strong></td>
<td><strong>51 ft. LENGTH</strong></td>
<td><strong>OFFSET</strong></td>
<td><strong>OFFSET</strong></td>
<td><strong>OFFSET</strong></td>
<td><strong>OFFSET</strong></td>
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<td>(57)</td>
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<td>(57)</td>
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</table>

Min. boom angle (+) for indicated length (no load)

Max. boom angle (°) at 0° boom angle (no load)

Lifting Capacities at Zero Degree Boom Angle

On Rubber - 36"-

<table>
<thead>
<tr>
<th>Boom Angle</th>
<th>Main Boom Length in Feet</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
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</thead>
<tbody>
<tr>
<td>0°</td>
<td>7,580</td>
<td>4,850</td>
<td>2,410</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension.
2. 29 ft. and 51 ft. boom extension lengths may be used for single line lifting service.
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 length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle.
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 fully extended and vertical jacks set.
### RT600E Load Charts

**Load Charts**

#### #9005

<table>
<thead>
<tr>
<th>Feet</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>4800</td>
<td>4800</td>
<td>3400</td>
<td>3400</td>
<td>2150</td>
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<tr>
<td>12</td>
<td>4800</td>
<td>4800</td>
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<td>3400</td>
<td>2150</td>
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<tr>
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<td>5200</td>
<td>3400</td>
<td>3400</td>
<td>2550</td>
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<td>20</td>
<td>2650</td>
<td>2650</td>
<td>2650</td>
<td>2650</td>
<td>2150</td>
</tr>
<tr>
<td>25</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
</tr>
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<td>35</td>
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<td>1020</td>
<td>1020</td>
<td>1020</td>
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</tr>
<tr>
<td>40</td>
<td>780</td>
<td>780</td>
<td>780</td>
<td>780</td>
<td>780</td>
</tr>
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<td>45</td>
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<tr>
<td>60</td>
<td>3260</td>
<td>3260</td>
<td>3260</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Min. boom angle (°) for indicated length (no load): 70

Max. boom length (°) at 0° boom angle (no load): 70

**NOTE:** (") Boom angles are in degrees.

**ALM Operating Code:** Refer to LM Manual for operating instructions.

#### #9008

<table>
<thead>
<tr>
<th>Feet</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>3000</td>
<td>3000</td>
<td>1780</td>
<td>1780</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>3000</td>
<td>3000</td>
<td>1780</td>
<td>1780</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>2900</td>
<td>2900</td>
<td>1780</td>
<td>1780</td>
<td></td>
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<tr>
<td>20</td>
<td>2200</td>
<td>2200</td>
<td>1780</td>
<td>1780</td>
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<tr>
<td>25</td>
<td>1750</td>
<td>1750</td>
<td>1750</td>
<td>1750</td>
<td></td>
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<tr>
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<td>4050</td>
<td>4050</td>
<td>4050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>3260</td>
<td>3260</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Min. boom angle (°) for indicated length (no load): 70

Max. boom length (°) at 0° boom angle (no load): 70

**NOTE:** (") Boom angles are in degrees.

**ALM Operating Code:** Refer to LM Manual for operating instructions.

#### Lifting Capacities at Zero Degree Boom Angle on Rubber - Defined Arc Over Front

<table>
<thead>
<tr>
<th>Boom Angle</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>14000</td>
<td>10000</td>
<td>6200</td>
<td>4000</td>
<td>2500</td>
</tr>
<tr>
<td>3°</td>
<td>14000</td>
<td>10000</td>
<td>6200</td>
<td>4000</td>
<td>2500</td>
</tr>
</tbody>
</table>

**NOTE:** (") Reference radii in feet.

A6-829-100353

#### Lifting Capacities at Zero Degree Boom Angle on Rubber - Pick & Carry

<table>
<thead>
<tr>
<th>Boom Angle</th>
<th>33</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>14000</td>
<td>10000</td>
<td>6200</td>
<td>4000</td>
<td>2500</td>
</tr>
<tr>
<td>3°</td>
<td>14000</td>
<td>10000</td>
<td>6200</td>
<td>4000</td>
<td>2500</td>
</tr>
</tbody>
</table>

**NOTE:** (") Reference radii in feet.

A6-829-100373

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*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.*
**Weight Reductions for Load Handling Devices**

<table>
<thead>
<tr>
<th>Device Description</th>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 Ft. Offsetable Boom Extension</td>
<td>4,412</td>
</tr>
<tr>
<td>29 Ft. 51 ft. Tele. Boom Extension</td>
<td>6,611</td>
</tr>
<tr>
<td>*Erected (Retracted)</td>
<td>9,332</td>
</tr>
</tbody>
</table>

*Reduction of main boom capacities

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.

**Auxiliary Boom Nose**

<table>
<thead>
<tr>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>137</td>
</tr>
</tbody>
</table>

**Hookblocks and Headache Balls**

| 50 Ton, 4 Sheave | 1075 |
| 50 Ton, 3 Sheave | 1000 |
| 40 Ton, 3 Sheave | 800  |
| 8.3 Ton Headache Ball (non-swivel) | 350  |
| 8.3 Ton Headache Ball (swivel)* | 370  |

*Refer to rating plate for actual weight.

**Line Pulls and Reeving Information**

<table>
<thead>
<tr>
<th>Hoists</th>
<th>Cable Spec</th>
<th>Permissible Line Pulls</th>
<th>Nominal Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
<td>3/4&quot; (19 mm) 6X37 Class EIPS, IWRC Special Flexible</td>
<td>16,800 lb.</td>
<td>450 ft.</td>
</tr>
<tr>
<td>Min. Breaking Str. 58,800 lb.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4&quot; (19 mm) Flex - X35</td>
<td></td>
<td>16,800 lb.</td>
<td>450 ft.</td>
</tr>
<tr>
<td>Min. Breaking Strength 85,900 lb.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***Hoist Performance***

<table>
<thead>
<tr>
<th>Wire Rope Layer</th>
<th>Hoist Line Pulls</th>
<th>Capacity (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Available lb.*</td>
<td>High Available lb.*</td>
<td>Layer Total</td>
</tr>
<tr>
<td>1</td>
<td>18,134</td>
<td>9,067</td>
</tr>
<tr>
<td>2</td>
<td>16,668</td>
<td>8,334</td>
</tr>
<tr>
<td>3</td>
<td>15,420</td>
<td>7,710</td>
</tr>
<tr>
<td>4</td>
<td>14,347</td>
<td>7,174</td>
</tr>
<tr>
<td>5</td>
<td>13,413</td>
<td>6,707</td>
</tr>
<tr>
<td>6</td>
<td>12,594</td>
<td>6,297</td>
</tr>
</tbody>
</table>

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

**Working Area Diagram**

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

**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.
Constant improvement and engineering progress make it necessary that we reserve the right to make specification, equipment, and price changes without notice. Illustrations shown may include optional equipment and accessories, and may not include all standard equipment.