Specifications
Hydraulic Lattice Boom Truck Crane
With Luffing Attachment

HC-278H
42.5-Ton (38.58 metric ton)

<table>
<thead>
<tr>
<th>Luffing Boom - Luffing Jib - Fixed Jib Combinations</th>
<th>Feet</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic &amp; maximum luffing boom lengths</td>
<td>140/250'</td>
<td>42.67/76.20</td>
</tr>
<tr>
<td>Basic &amp; maximum luffing jib lengths</td>
<td>100/200'</td>
<td>30.48/60.96</td>
</tr>
<tr>
<td>Basic &amp; maximum fixed jib lengths</td>
<td>30/30'</td>
<td>9.14/9.14</td>
</tr>
<tr>
<td>Maximum luffing boom and luffing jib combination lengths; assist erected</td>
<td>250' + 200'</td>
<td>76.20 + 60.96</td>
</tr>
<tr>
<td>Maximum height - center luffing jib head sheave @ 80' (24.38 m) radius</td>
<td>446'</td>
<td>135.9</td>
</tr>
<tr>
<td>Maximum horizontal reach - center luffing jib load hook @ max. chart radius w/ luffing boom @ 85° offset</td>
<td>233'</td>
<td>71.02</td>
</tr>
<tr>
<td>Maximum luffing boom, luffing jib, and fixed jib combination lengths; assist erected</td>
<td>250' + 200' + 30'</td>
<td>76.20 + 60.96 + 9.14</td>
</tr>
<tr>
<td>Maximum height - center fixed jib peak sheave @ 80' (24.38 m) radius</td>
<td>477'</td>
<td>145.39</td>
</tr>
<tr>
<td>Maximum horizontal reach - center fixed jib load hook @ max. chart radius w/ luffing boom @ 85° offset</td>
<td>263'</td>
<td>80.16</td>
</tr>
<tr>
<td>Maximum luffing boom, luffing jib, and fixed jib combination lengths; non-assist erected</td>
<td>200' + 200' + 30'</td>
<td>60.96 + 60.96 + 9.14</td>
</tr>
<tr>
<td>Maximum height - center fixed jib head sheave @ 75' (22.86 m) radius</td>
<td>428'</td>
<td>130.45</td>
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<tr>
<td>Maximum horizontal reach - center fixed jib load hook @ max. chart radius w/ luffing boom @ 85° offset</td>
<td>259'</td>
<td>78.94</td>
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<table>
<thead>
<tr>
<th>General Dimensions - 90° Luffing Boom</th>
<th>Feet</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luffing boom live mast</td>
<td>35' 0&quot;</td>
<td>10.66</td>
</tr>
<tr>
<td>Overall height, top of turntable bearing</td>
<td>5' 5&quot;</td>
<td>1.65</td>
</tr>
<tr>
<td>Ground clearance under counterweight</td>
<td>5' 5&quot;</td>
<td>1.65</td>
</tr>
<tr>
<td>Minimum ground clearance</td>
<td>9&quot;</td>
<td>.29</td>
</tr>
<tr>
<td>Overall height - live mast vertical</td>
<td>44' 5&quot;</td>
<td>13.53</td>
</tr>
<tr>
<td>Overall truck length</td>
<td>43' 7&quot;</td>
<td>13.28</td>
</tr>
<tr>
<td>Tailsway of counterweight (at corners)</td>
<td>18' 9&quot;</td>
<td>5.72</td>
</tr>
<tr>
<td>Tailsway of balance arm and luffing boom live mast</td>
<td>32' 6&quot;</td>
<td>10.00</td>
</tr>
<tr>
<td>Overall width of counterweight</td>
<td>11' 10&quot;</td>
<td>3.60</td>
</tr>
<tr>
<td>Radius of luffing jib hinge pin</td>
<td>11' 2&quot;</td>
<td>3.40</td>
</tr>
<tr>
<td>Radius of luffing boom hinge pin</td>
<td>3' 2&quot;</td>
<td>.96</td>
</tr>
<tr>
<td>Height of luffing boom hinge pin (on outriggers)</td>
<td>6' 0&quot;</td>
<td>2.44</td>
</tr>
<tr>
<td>Overall length - attachment removed but with luffing boom mast lowered horizontal</td>
<td>66' 6&quot;</td>
<td>20.87</td>
</tr>
<tr>
<td>Height of luffing jib foot pin (140° - 42.67m - luffing boom)</td>
<td>146' 0&quot;</td>
<td>45.11</td>
</tr>
<tr>
<td>Centerline of luffing boom to end of balance arm</td>
<td>36' 0&quot;</td>
<td>10.97</td>
</tr>
<tr>
<td>Luffing jib hinge pin to centerline of luffing boom</td>
<td>8' 0&quot;</td>
<td>2.44</td>
</tr>
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</table>

Not to Scale

Liitho in U.S.A. 6/97

#5238
Nomenclature

1. Rear standoff
2. Luffing jib hoist reeving - 10 part
3. Balance arm
4. Balance arm deflector sheave
5. Luffing jib live mast
6. Luffing jib live mast limit switch
7. Front standoff
8. Luffing jib base section
9. Dual luffing jib pendants
10. Fixed jib backstay
11. Fixed jib mast
12. Mast deflector sheaves
13. Fixed jib base section
14. Fixed jib front stay
15. Fixed jib nose wheel
16. Fixed jib load hoist rope
17. Fixed jib peak section
18. Fixed jib backstops
19. Luffing jib nose wheel
20. Luffing jib load hoist rope
21. Luffing jib peak section
22. Luffing jib extension
23. Balance arm backstays
24. Luffing jib backstays
25. 40' (12.19 m) luffing boom extension
26. Backstop spring cannister
27. Luffing jib backstop limit switch
28. 50' (15.24 m) luffing boom extension w/assist erection lugs
29. Luffing boom base section
30. Third drum winch
31. Luffing boom hoist limit switch
32. Luffing boom hoist rope
33. Luffing boom hoist reeving - 18 part
34. Spreader bar and linkage
35. Luffing boom live mast
36. Luffing boom backstays
37. Deflector sheaves
38. Dual backstay pendants
39. Dual luffing boom pendants
40. Luffing jib hoist rope
41. Luffing boom cap
42. 98,200 lb. (44 544 kg) upper counterweight
43. 26,700 lb. (12 111 kg) bumper counterweight
44. Luffing boom extensions
45. Luffing jib live mast bridle
46. Balance arm bail
Specifications

- **Luffing Boom**
  Tubular; 100' (2.54 m) wide, 85" (2.16 m) deep at connections. Alloy steel round tubular chords 5-1/4" (.13 m) outside diameter.

- **Luffing Boom Base Section**
  35' (10.67 m) long. Luffing boom foot on 66" (1.67 m) centers. Hydraulic powered luffing boom pin removal system standard.

- **Luffing Boom Extensions**
  Available in 20' (6.10 m), 30' (9.14 m), 40' (12.19 m) and 50' (15.24 m) lengths with appropriate length pendants.

- **Luffing Boom Connections**
  In-line pin connections.

- **Luffing Boom Cap**
  7" 6" (2.29 m) long; tubular construction, pin connected to the top luffing boom extension.

- **Balance Arm**
  Provides an offset luffing jib connection to allow for a full 180° of luffing jib angle variation from erection to minimum radius operating position. Transfers the resultant of the luffing jib foot thrust to the luffing boom centerline so that all four chords are loaded equally. Tubular construction, front chords span 8' 0" (2.44 m) from luffing boom centerline and rear chords span 35' 0" (10.67 m) from luffing boom centerline to the luffing jib hoist ball shaft.

- **Luffing Boom Stops**
  Dual lever type, spring cushioned. Adjustable levers pin to luffing boom base section; backstop anchor to the upper revolving frame. Required for all luffing boom lengths.

- **Luffing Boom Hoist Bridle**
  The bridle contains nine 15' (.38 m) root dia. sheaves (18-part reeving) and two 15' (.38 m) root dia. auxiliary load hoist sheaves which enable the mast to be used as an auxiliary boom for machine assembly and disassembly.

- **Luffing Boom Live Mast**
  Welded plate/tube construction 35' 0" (10.67 m) long, required for all luffing boom/luffing jib lengths; supports luffing jib hoist bridle. (Same live mast as on standard crane.)

- **Balance Arm Stops**
  Prevent the balance arm from angling past a line perpendicular to the centerline of the luffing boom during erection.

- **Wire Rope**
  See chart on page 4.

- **Basic Luffing Boom**
  140' (42.67 m) long; contains one 35' 0" (10.67 m) base section, one 40' 0" (12.19 m) extension, one 50' 0" (15.24 m) extension, 7" 6" (2.29 m) tapered luffing boom cap and 7" 6" (2.29 m) balance arm. (Includes bail, live mast, hoist bridle and live mast stops.)

- **Maximum Luffing Boom**
  No assist luffing boom erection; 200' (60.96 m) luffing boom for use with maximum 200' (60.96 m) luffing jib and 30' (9.14 m) fixed jib.

  Assist luffing boom erection; 250' (76.20 m) luffing boom for use with maximum 200' (60.96 m) luffing jib and 30' (9.14 m) fixed jib.

- **Luffing Jib**
  Tubular; basic luffing jib 100' (30.48 m) long; 80' (2.03 m) wide, 68" (1.72 m) deep at connections. Alloy steel round tubular chords 4-1/4" (.10 m) outside diameter.

- **Luffing Jib Base Section**
  10' 0" (3.04 m) long; 100' (2.54 m) wide at luffing jib foot. 68" (1.72 m) deep and 80" (2.03 m) wide at pin connections.

- **Luffing Jib Extensions**
  Available in 10' (3.05 m), 20' (6.10 m), 30' (9.14 m), 40' (12.19 m) and 50' (15.24 m) lengths with appropriate length pendants. (Standard luffing jib extensions.)

- **Luffing Jib Connections**
  In-line pin connections.

- **Top Section**
  Open throat, 30' (9.14 m) long. (Standard luffing jib top section, modified to accept nose wheel.)

- **Luffing Jib Live Mast**
  35' (10.67 m) long, required for all luffing jib/fixed jib lengths.

- **Luffing Jib Point Machinery**
  Six 21" (.53 m) root diameter sheaves. Sheaves mounted on anti-friction bearings.

- **Luffing Jib Sheave Guards**
  Tubular upper guard, steel rod lower guard.

- **Deflector Rollers**
  Deflect load hoist wire rope off luffing boom/luffing jib. Steel rollers mounted on anti-friction pillow block bearings.

- **Luffing Jib Backstop System**
  3/4" (19 mm) wire rope type "N" pendants. Contains spring canisters and a limit switch to prevent luffing jib from exceeding max. operating angle.

- **Luffing Jib Hoist**
  1" (25 mm) type "N" luffing jib hoist line runs from the rear drum to the balance arm ball. Ten part reeving hoists luffing jib from -90° to 0° during erection and from 0° to 73° during operation.

- **Luffing Jib Hoist Limiting Device**
  The balance arm is equipped with a luffing jib hoist limit switch used to avoid hoisting above minimum radius. Brakes apply automatically.

- **Drum Rotation Indicators**
  Standard for front drum (load hoist) and rear drum (luffing jib hoist).

- **Luffing Jib Lengths**
  Luffing jib lengths from 100' (30.48 m) to 200' (60.96 m) may be used on all luffing boom lengths from 140' (42.67 m) to 250' (76.20 m) with luffing boom at 85° or 90° angles.

- **Luffing Jib Nose Wheels**
  Pin-connected to end of luffing jib top section; support luffing jib peak on ground during luffing boom and luffing jib erection. Dual 8.35 x 15 (12-ply) rating tires.

- **Luffing Boom And Luffing Jib Angle Indicators**
  Electronic type standard. Read out unit conveniently located in crane operator's cab.

- **Fixed Jib**
  Tubular; basic two-piece 30' (9.14 m) long; 32" (.81 m) wide; 24" (.61 m) deep at connections. Alloy steel round tubular chords 2-1/4" (57 mm) outside diameter. (Same jib as used on standard boom.)
## Load Hoisting Performance

### Line speed and pull

<table>
<thead>
<tr>
<th>Rope layer</th>
<th>Low speed</th>
<th>High speed</th>
<th>Low speed</th>
<th>High speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Line Pull</td>
<td>Line Speed</td>
<td>Line Pull</td>
<td>Line Speed</td>
</tr>
<tr>
<td></td>
<td>lb.</td>
<td>kg</td>
<td>fpm</td>
<td>m/min</td>
</tr>
<tr>
<td>1</td>
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<td>0</td>
<td>218</td>
<td>66.4</td>
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<tr>
<td>2</td>
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<td>0</td>
<td>237</td>
<td>72.2</td>
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<td>0</td>
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<td>5</td>
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<td>89.6</td>
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</tbody>
</table>

### Third Drum - 1" (25 mm) wire rope - With Full Load

<table>
<thead>
<tr>
<th>Rope layer</th>
<th>Low speed</th>
<th>High speed</th>
<th>Low speed</th>
<th>High speed</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Line Pull</td>
<td>Line Speed</td>
<td>Line Pull</td>
<td>Line Speed</td>
</tr>
<tr>
<td></td>
<td>lb.</td>
<td>kg</td>
<td>fpm</td>
<td>m/min</td>
</tr>
<tr>
<td>1</td>
<td>23,600</td>
<td>10,714</td>
<td>184</td>
<td>56.1</td>
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<tr>
<td>2</td>
<td>21,700</td>
<td>9,852</td>
<td>200</td>
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<td>3</td>
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<td>4</td>
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<td>71.0</td>
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<tr>
<td>5</td>
<td>17,500</td>
<td>7,945</td>
<td>249</td>
<td>75.9</td>
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</tbody>
</table>

### Jobsite Travel

(Without load)

The HC-278H with luffing attachment may be moved on the jobsite with all combinations of luffing boom, luffing jib, and fixed jib. This can be done with the upper facing either over the front or rear of the carrier. Consult Operator’s Manual for proper attachment angles.

See page 6 for over front configuration.
Load Hoisting Performance

Line speed and pull

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<thead>
<tr>
<th>Rope layer</th>
<th>Third Drum - 1&quot; (25 mm) wire rope - No Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low speed</td>
</tr>
<tr>
<td></td>
<td>Line Pull</td>
</tr>
<tr>
<td></td>
<td>lb.</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Rope layer</th>
<th>Third Drum - 1&quot; (25 mm) wire rope - With Full Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>lb.</td>
</tr>
<tr>
<td>1</td>
<td>23,600</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>20,100</td>
</tr>
<tr>
<td>4</td>
<td>18,700</td>
</tr>
<tr>
<td>5</td>
<td>17,500</td>
</tr>
</tbody>
</table>

Jobsite Travel
(without load)

The HC-278H with luffing attachment may be moved on the jobsite with all combinations of luffing boom, luffing jib, and fixed jib. This can be done with the upper facing either the front or rear of the carrier. Consult Operator's Manual for proper attachment angles.

See page 6 for over front configuration.
Jobsite Travel (without load) con't

The HC-278H with luffing attachment may be moved on the jobsite with all combinations of luffing boom, luffing jib, and fixed jib. This can be done with the upper facing either over the front or rear of the carrier. Consult Operator's Manual for proper attachment angles.

See page 5 for over rear configuration.