



# model 22101S



## product guide

features

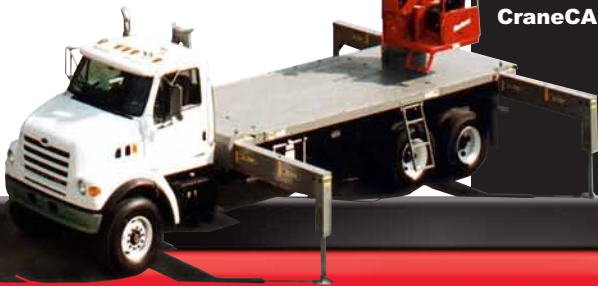
- 22 ton (20 mton) capacity
- 4-section, 101' (30,8 m) proportional booms
- 110' 8" (33,7 m) maximum main boom tip height
- 139' 10" (42,6 m) maximum tip height with jib
- 28' (8,5 m) fixed jib
- 2-speed planetary hoist with grooved drum
- Anti-two-block system
- Load Moment Indicator (LMI) senses boom hoist cylinder pressure, boom length and boom angle
- Adjustable Out-and-Down outriggers from 7' 4.3" (2,2 m) to 19' 9.5" (6,0 m) wide
- System pressure gauge
- Rugged, weatherproof, automotive style electrical system
- Manitowoc CraneCARE<sup>SM</sup> comprehensive support

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**Manitowoc**

Manitowoc Boom Trucks





# specifications

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## Upperworks

### Boom

**Boom** – Inverted T-cross section. 4-section telescoping type, extended and retracted proportionally by double-acting hydraulic cylinder and cable-crowd system. Easily replaceable and adjustable high-density nylon slide pads. **22101S** – 4-Section 29' 5" (9,0 m) to 101' (30,8 m). Maximum tip height 110' 8" (33,7 m). 1-section, 30' (9,1 m) fixed jib. Maximum tip height 139' 10" (42,6 m).

**Quick Reeve Boom Point** – Three high-density nylon sheaves mounted on heavy-duty roller bearings. Two removable pin-type rope guards.

**Boom Elevation** – Double-acting hydraulic cylinder. Working range from 9.5° below horizontal to 80.5° above.

### Hoist

**Hoist** – Theoretical maximum line speed 247 fpm (75,3 mpm). Maximum theoretical bottom-layer line pull 12,000 lb (5 443 kg). Two-speed planetary reducer. Spring-applied, pressure-released internal brake.

**Wire Rope** – 300 feet (91,4 m) of 9/16" (14,3 mm) 6x25 EIPS IWRC wire rope.

### Swing System

Externally mounted, double-reduction planetary driven by hydraulic motor. Maximum swing speed 1.5 rpm. Spring-applied hydraulically released parking brake. Ball-bearing swing circle with external gear. Continuous rotation is standard.

### Outriggers

Out-and-Down type with double-acting hydraulic cylinders operated independently from rear for precise leveling (22101S Dual Axle offers fully extended, intermediate extension and fully retracted positions). Bubble level located near outrigger controls.

### Mounting

**Mounting** – Lower frame is mounted to chassis by threaded rods and clamp plates. No welding to truck chassis is required.

**Lower Frame** – Torsion resistant, rigid 4-plate design.

**Rear Underride Protection** – Supplied on factory mounted cranes. Fabricated structure mounted under rear of carrier. Complies with Bureau of Motor Carrier Safety Standard 393.86.

**Boom Rest** – Heavy-duty, removable.

### Control System

Single operator platform and seat mounted to turret. Four single-axis crane controls, bubble level and system pressure gauge arranged to ANSI B30.5 standards. The operator station includes engine start/stop, air foot throttle, signal horn, boom angle indicator, swing limit indicator, load chart and range diagram.

### Hydraulics

**Hydraulic System** – A 3-section vane pump direct-mounted to power take-off on truck transmission provides 35 gpm (133 lpm) to the hoist, 18 gpm (68 lpm) to perform other crane functions, and 8 gpm (30 lpm) to the swing and outrigger circuit. 70-gallon (265-liter) baffled reservoir with strainer and 25-micron filter in the return lines. Ball-type shutoff valve and strainer are provided in suction line. All fittings are ORS type and SAE.

**Hydraulic Cylinders** – All load-holding cylinders are equipped with integral holding valves.

### Warning Systems

**Anti-Two-Block System** – Audible warning and shutoff functions prevent hook from contacting boom point.

**Load Moment Indicator (LMI)** – Senses boom hoist cylinder pressure, boom length and boom angle. Audio-visual warning indicates overload conditions and overload shutoff feature prevents continuing overload. Operator can access all relative crane configuration and load conditions via display at the operator station.

**Back-Up Alarm** – Electronic audible motion alarm activated when truck transmission is in reverse gear.

### General

**Electrical** – State-of-the-art, weather-resistant components throughout. Automotive style electrical system for easy installation. Designed to withstand high pressure washing and varying climates.

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# specifications

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**Design/Welding** – Design conforms to ANSI B30.5. Welding conforms to AWS D1.1. Tested to SAE 1063 and SAE 765.

**Manuals** – Operator, service and parts manuals depict correct crane operation, maintenance procedures and parts listing.

**Warranty** – 12-month warranty covers parts and labor resulting from defects in material and workmanship.

## Warning

1. The operator must read and understand the owner's manual before operating this crane.
2. Positioning or operation of crane beyond areas shown on this chart is not intended or approved except where specified in owner's manual.
3. Loaded boom angles at specified boom lengths give only an approximation of the operating radius. The boom angle before loading should be greater to account for deflections. Do not exceed the operating radius for rated loads.
4. The operating radius shown in the jib rating chart is for fully extended boom only. When boom is not fully extended, use only loaded boom angle to determine load rating of jib.
5. For boom angles shown on jib load rating chart, use rating of next lower boom angle.
6. For boom lengths not shown, use rating of next shorter or longer boom length, whichever is less. For radii not shown, use rating of next longer radius.
7. Crane load ratings on outriggers are based on freely suspended loads with the machine leveled and standing on a firm uniform supporting surface. No attempt shall be made to move a load horizontally on the ground in any direction.
8. Practical working loads depend on supporting surface, wind, and other factors affecting stability such as hazardous surroundings, experience of personnel, and proper handling, all of which must be taken into account by the operator.
9. The maximum load which may be telescoped is limited by hydraulic pressure, boom angle, and boom lubrication. It is safe to attempt to telescope any load within the limits of the load rating chart.
10. Lifting off the main boom point while the swing-around jib is erected is not intended or approved.

11. All load ratings above the heavy line are based on machine structural competence and do not exceed 85% of tipping. Load ratings below are stability limited and do not exceed 85% of tipping.

12. Do not operate a Manitowoc truck-mounted crane or accessories within 10' (3,05 m) of live power lines.

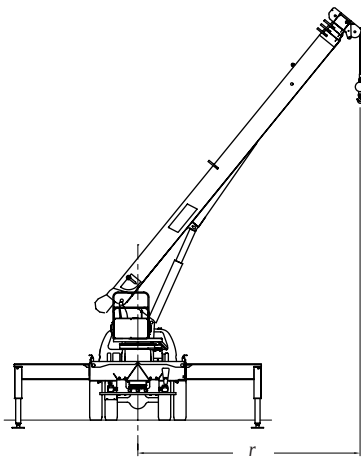
13. This capacity chart is for reference only and must not be used for specific serial number cranes.

## Information

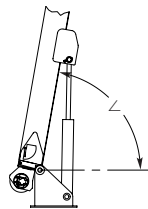
1. Deductions must be made from rated loads for stowed jib, optional attachments, hooks, and loadblocks (see deduction chart). Weights of slings and all other load handling devices shall be considered a part of the load.
2. Load ratings above the heavy line are structurally limited capacities. Load ratings below the heavy line are stability limited capacities and do not exceed 85% of tipping.

## Definitions

1. Operating radius ( $r$ ) is the horizontal distance from the axis of rotation to the center of the vertical hoist line or tackle with load applied (see below).



2. Loaded boom angle ( $\angle$ ), as shown in the column headed by  $\angle$ , is the included angle between the horizontal and longitudinal axes of the boom base after lifting rated load at rated radius (see below).



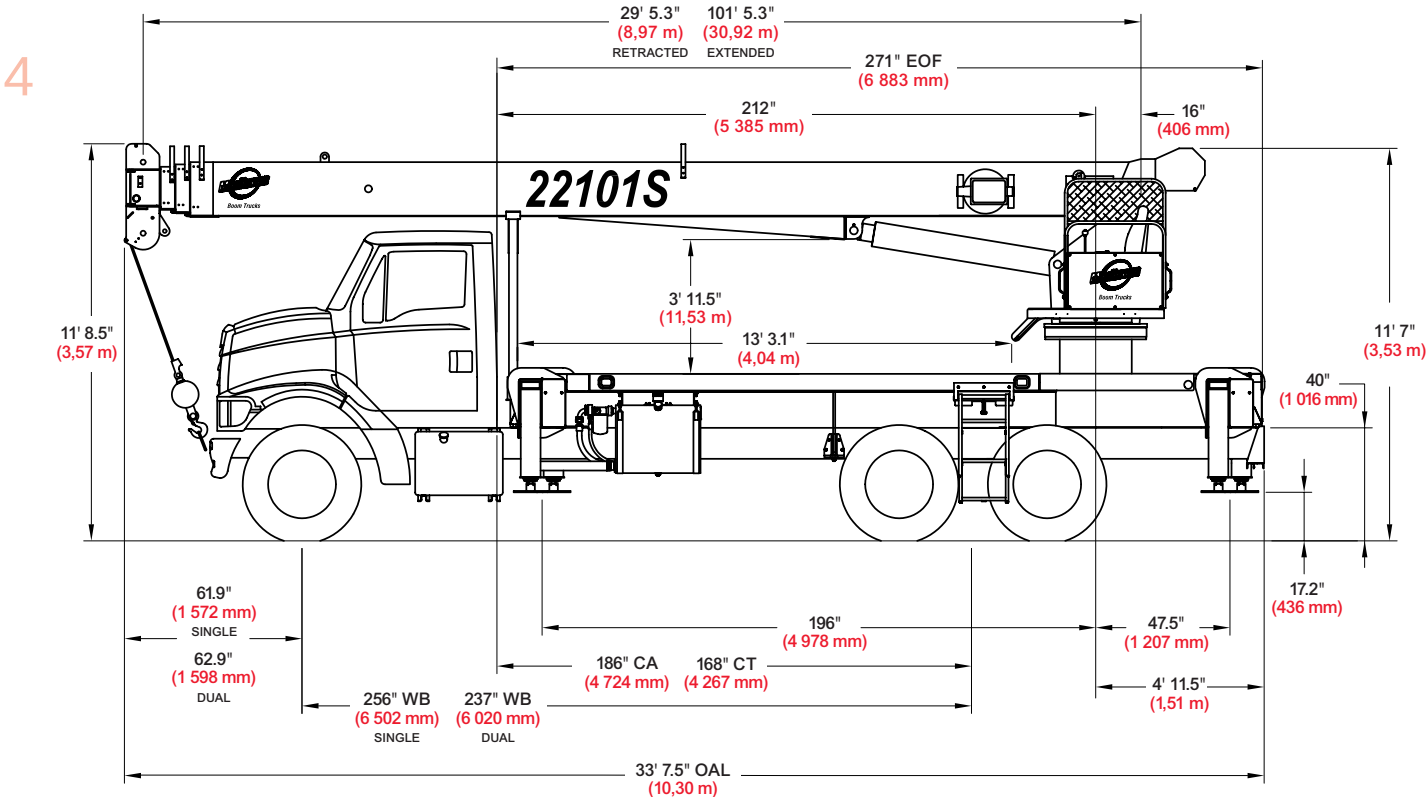
NOTE: Due to continuing improvements, Manitowoc Boom Trucks reserves the right to change product specifications without notice.

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# outline dimensions



| Chassis Data                       |                                                      |                                                      |
|------------------------------------|------------------------------------------------------|------------------------------------------------------|
| Minimum Truck Requirements         | 22101S<br>SINGLE                                     | 22101S<br>DUAL                                       |
| Wheelbase (WB)                     | 256" (6 502 mm)                                      | 237" (6 020 mm)                                      |
| Cab to Axle (CA)                   | 186" (4 724 mm)                                      | -                                                    |
| Cab to Tandem (CT)                 | -                                                    | 168" (4 267 mm)                                      |
| Cab to End of Frame (EOF)          | 271" (6 883 mm)                                      | 271" (6 883 mm)                                      |
| Frame Section Modulus              | 15.9 in <sup>3</sup><br>110,000 psi<br>(758 422 kPa) | 15.9 in <sup>3</sup><br>110,000 psi<br>(758 422 kPa) |
| Frame Section Modulus              | 18.0 in <sup>3</sup><br>50,000 psi<br>(344 750 kPa)  | 18.0 in <sup>3</sup><br>50,000 psi<br>(344 750 kPa)  |
| Front Axle Gross Weight Rating     | 12,000 lb (5 443 kg)                                 | 12,000 lb (5 443 kg)                                 |
| Rear Axle Gross Weight Rating      | 21,000 lb (9 525 kg)                                 | 34,000 lb (15 422 kg)                                |
| Minimum Truck Axle Weight - Front* | 5,750 lb (2 608 kg)                                  | 6,800 lb (3 084 kg)                                  |
| Minimum Truck Axle Weight - Back*  | 4,050 lb (1 837 kg)                                  | 7,400 lb (3 357 kg)                                  |
| Nominal Frame Width                | 34" (864 mm)                                         | 34" (864 mm)                                         |

| Weights                      |                         |
|------------------------------|-------------------------|
|                              | 22101S<br>SINGLE & DUAL |
| Crane- With Out Cab          | 18,553 lb (8 416 kg)    |
| Cab Alone                    | 575 lb (261 kg)         |
| 13' (4,0 m) Flat Bed         | 1,200 lb (544 kg)       |
| 29' (8,8 m) Fixed Length Jib | 660 lb (299 kg)         |

\*Minimum chassis weight is required to meet 85% stability requirements.

Chassis data is general – not for engineering. Some dimensions depend on truck selection.

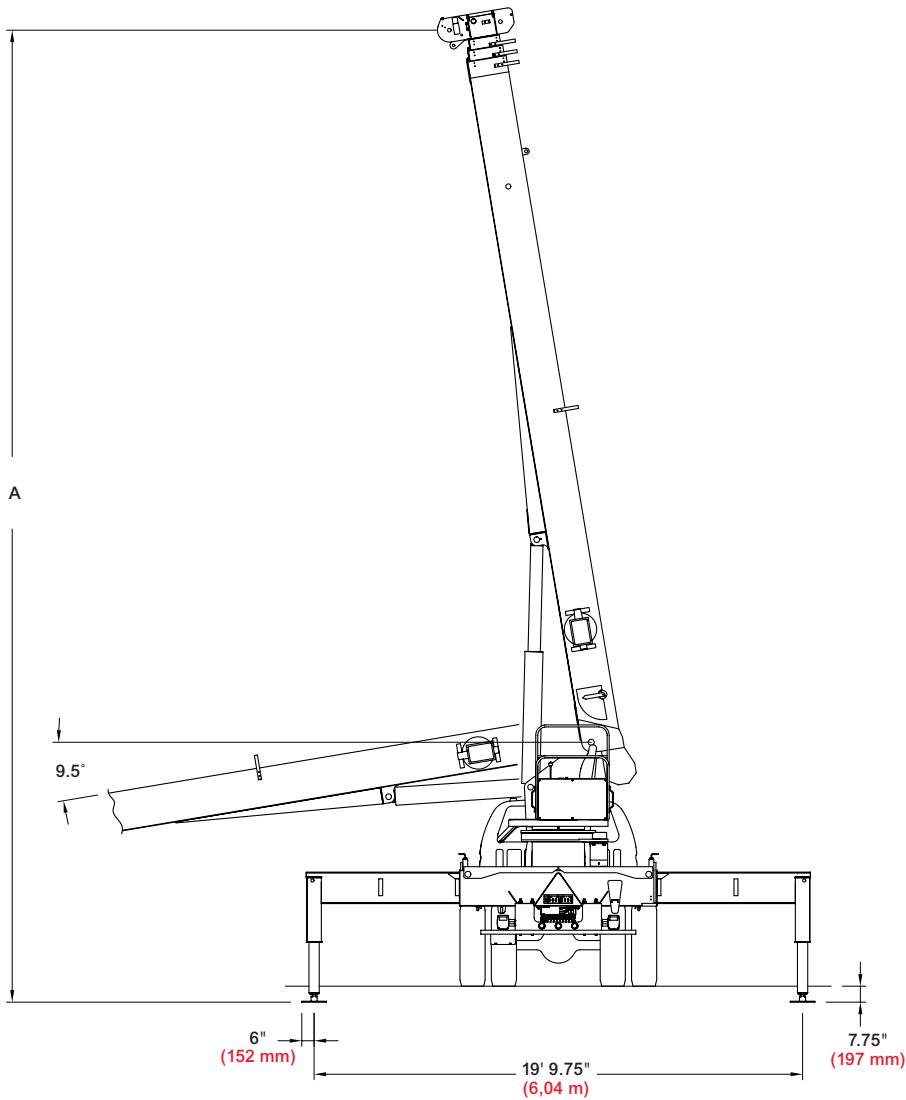
- OAH Overall Height
- CT Cab to Tandem
- CA Cab to Axle
- WB Wheel Base
- OAL Overall Length
- BBC Bumper to Back of Cab
- AF Afterframe
- EOF End of Frame

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# outline dimensions



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## Maximum Tip Height (A)

|                        |                                    |
|------------------------|------------------------------------|
| Configuration          | 22101S<br>Boom<br>101' 0" (30,8 m) |
| Extended Boom          | 110' 8" (33,7 m)                   |
| Fixed or Retracted Jib | 139' 10" (42,6 m)                  |

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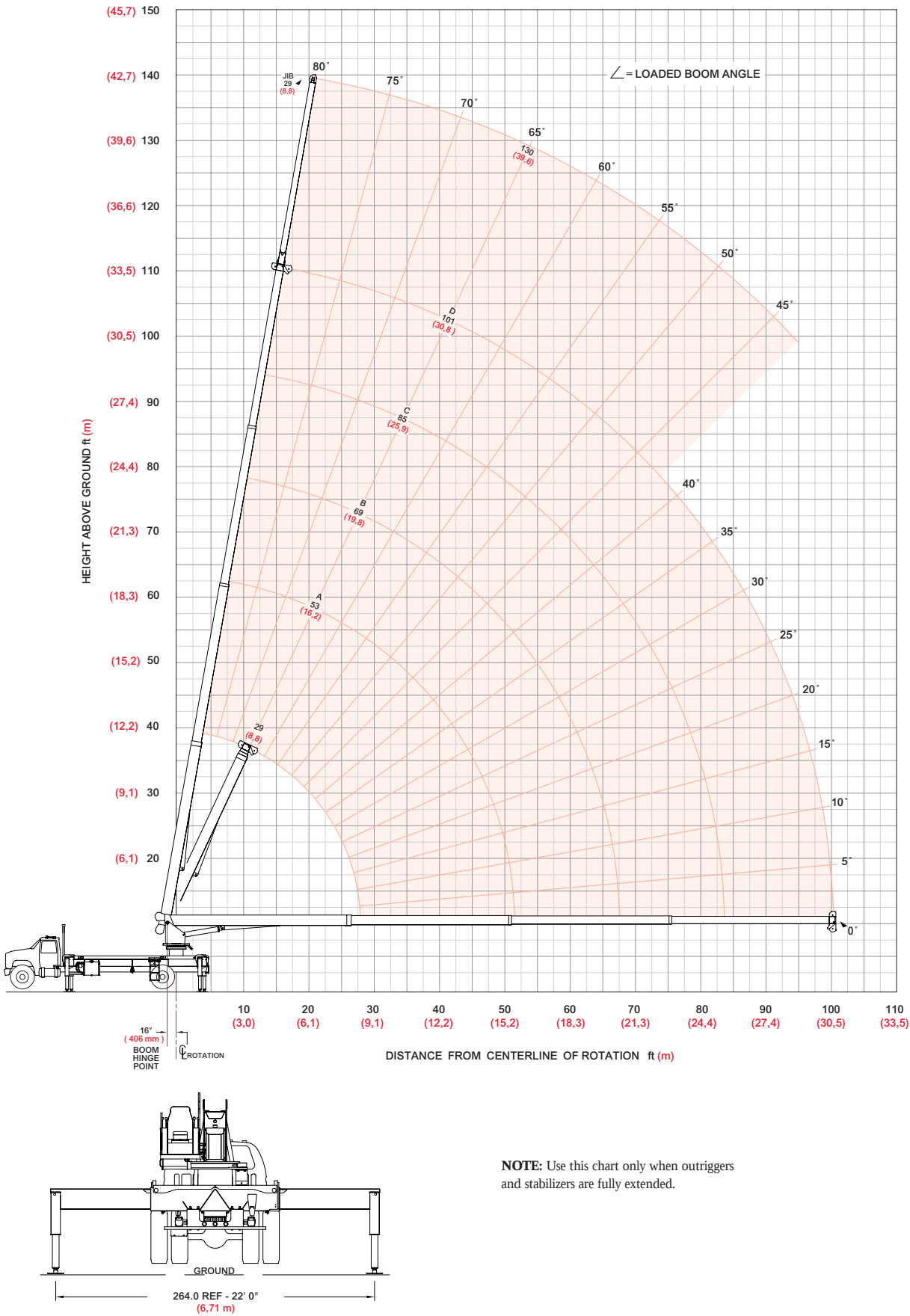




# boom/jib range diagram

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22101S Single Axle Range Diagram - Fully Extended (only available in fully extended position)



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# boom/jib load charts

## 22101S Single Axle Load Ratings Fully Extended Outrigger Spread

## 22101S Jib Load Ratings

|                               |     | A                  |              | B                 |                  | C                 |                  | D                |                  | Fixed Jib                     |                  |              |                  |              |
|-------------------------------|-----|--------------------|--------------|-------------------|------------------|-------------------|------------------|------------------|------------------|-------------------------------|------------------|--------------|------------------|--------------|
| Boom/Jib<br>ft (m)            |     | 29<br>(8,8)        | 53<br>(16,2) | 69<br>(19,8)      | 85<br>(25,9)     | 101<br>(30,8)     |                  |                  | 29<br>(8,8)      | Boom/Jib<br>ft (m)            |                  |              |                  |              |
| Operating<br>Radius<br>ft (m) |     |                    |              |                   |                  |                   |                  |                  |                  | Operating<br>Radius<br>ft (m) |                  |              |                  |              |
|                               | ∠   | lb<br>(kg)         | ∠            | lb<br>(kg)        | ∠                | lb<br>(kg)        | ∠                | lb<br>(kg)       | ∠                |                               | lb<br>(kg)       |              |                  |              |
| 5<br>(1,5)                    | 80° | 44,000<br>(19 958) |              |                   |                  |                   |                  |                  |                  | 5<br>(1,5)                    |                  |              |                  |              |
| 8<br>(2,4)                    | 74° | 33,540<br>(15 213) |              |                   |                  |                   |                  |                  |                  | 8<br>(2,4)                    |                  |              |                  |              |
| 10<br>(3,1)                   | 70° | 28,140<br>(12 764) |              |                   |                  |                   |                  |                  |                  | 10<br>(3,1)                   |                  |              |                  |              |
| 12<br>(3,7)                   | 66° | 24,230<br>(10 991) | 78°          | 14,000<br>(6 350) |                  |                   |                  |                  |                  | 12<br>(3,7)                   |                  |              |                  |              |
| 14<br>(4,3)                   | 61° | 20,460<br>(9 281)  | 76°          | 14,000<br>(6 350) | 80°              | 14,000<br>(6 350) |                  |                  |                  | 14<br>(4,3)                   |                  |              |                  |              |
| 17<br>(5,2)                   | 54° | 16,400<br>(7 439)  | 72°          | 14,000<br>(6 350) | 78°              | 12,880<br>(5 842) |                  |                  |                  | 17<br>(5,2)                   |                  |              |                  |              |
| 20<br>(6,1)                   | 46° | 13,520<br>(6 133)  | 69°          | 13,700<br>(6 214) | 75°              | 11,430<br>(5 185) | 79°              | 8,920<br>(4 046) |                  | 20<br>(6,1)                   |                  |              |                  |              |
| 25<br>(7,6)                   | 29° | 9,910<br>(4 495)   | 63°          | 10,320<br>(4 681) | 71°              | 9,460<br>(4 291)  | 75°              | 8,000<br>(3 629) | 79°              | 6,000<br>(2 722)              | 25<br>(7,6)      |              |                  |              |
| 30<br>(9,1)                   |     |                    |              | 56°               | 7,870<br>(3 570) | 66°               | 7,970<br>(3 615) | 72°              | 7,070<br>(3 207) | 76°                           | 5,500<br>(2 495) | 80°          | 3,000<br>(1 361) | 30<br>(9,1)  |
| 35<br>(10,7)                  |     |                    |              | 49°               | 6,200<br>(2 812) | 61°               | 6,300<br>(2 858) | 68°              | 6,130<br>(2 781) | 73°                           | 4,980<br>(2 259) | 78°          | 2,840<br>(1 288) | 35<br>(10,7) |
| 40<br>(12,2)                  |     |                    |              | 41°               | 4,990<br>(2 263) | 56°               | 5,100<br>(2 312) | 65°              | 5,150<br>(2 336) | 70°                           | 4,490<br>(2 037) | 76°          | 2,620<br>(1 188) | 40<br>(12,2) |
| 45<br>(13,7)                  |     |                    |              | 31°               | 4,000<br>(1 814) | 51°               | 4,130<br>(1 873) | 61°              | 4,210<br>(1 910) | 67°                           | 4,000<br>(1 814) | 73°          | 2,420<br>(1 098) | 45<br>(13,7) |
| 50<br>(15,2)                  |     |                    |              | 17°               | 3,180<br>(1 442) | 45°               | 3,320<br>(1 538) | 57°              | 3,390<br>(1 538) | 64°                           | 3,440<br>(1 560) | 71°          | 2,230<br>(1 012) | 50<br>(15,2) |
| 55<br>(16,8)                  |     |                    |              |                   |                  | 38°               | 2,680<br>(1 216) | 52°              | 2,750<br>(1 247) | 61°                           | 2,800<br>(1 270) | 69°          | 2,020<br>(916)   | 55<br>(16,8) |
| 60<br>(18,3)                  |     |                    |              |                   |                  | 30°               | 2,170<br>(984)   | 47°              | 2,240<br>(1 016) | 57°                           | 2,290<br>(1 039) | 67°          | 1,840<br>(835)   | 60<br>(18,3) |
| 65<br>(19,8)                  |     |                    |              |                   |                  | 19°               | 1,750<br>(794)   | 42°              | 1,830<br>(830)   | 54°                           | 1,870<br>(848)   | 64°          | 1,670<br>(757)   | 65<br>(19,8) |
| 70<br>(21,3)                  |     |                    |              |                   |                  |                   |                  | 36°              | 1,480<br>(671)   | 50°                           | 1,520<br>(689)   | 62°          | 1,520<br>(689)   | 70<br>(21,3) |
| 75<br>(22,9)                  |     |                    |              |                   |                  | 29°               | 1,180<br>(535)   | 45°              | 1,230<br>(558)   | 59°                           | 1,340<br>(608)   | 75<br>(22,9) |                  |              |
| 80<br>(24,4)                  |     |                    |              |                   |                  | 20°               | 920<br>(417)     | 41°              | 970<br>(440)     | 56°                           | 1,080<br>(490)   | 80<br>(24,4) |                  |              |
| 85<br>(25,9)                  |     |                    |              |                   |                  |                   |                  | 36°              | 750<br>(340)     | 53°                           | 860<br>(390)     | 85<br>(25,9) |                  |              |
| 90<br>(27,4)                  |     |                    |              |                   |                  |                   |                  | 30°              | 560<br>(254)     | 50°                           | 670<br>(304)     | 90<br>(27,4) |                  |              |
| 95<br>(29,0)                  |     |                    |              |                   |                  |                   |                  | 22°              | 390<br>(177)     | 47°                           | 500<br>(227)     | 95<br>(29,0) |                  |              |
| Deduction*                    |     | 340<br>(154)       | 190<br>(86)  | 150<br>(68)       | 120<br>(54)      | 100<br>(45)       |                  |                  |                  |                               |                  |              |                  |              |

\*for stowed fixed jib

Meets ANSI B30.5 Requirements - Do not operate crane or accessories within 10' (3.05m) of live power lines.  
NOTICE: This capacity chart is for reference only and must not be used for lifting purposes.



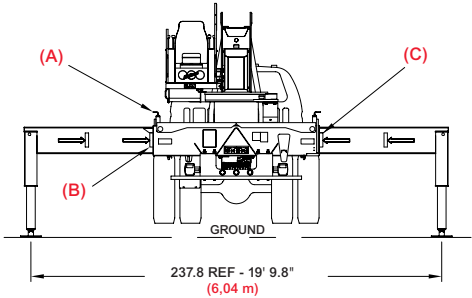
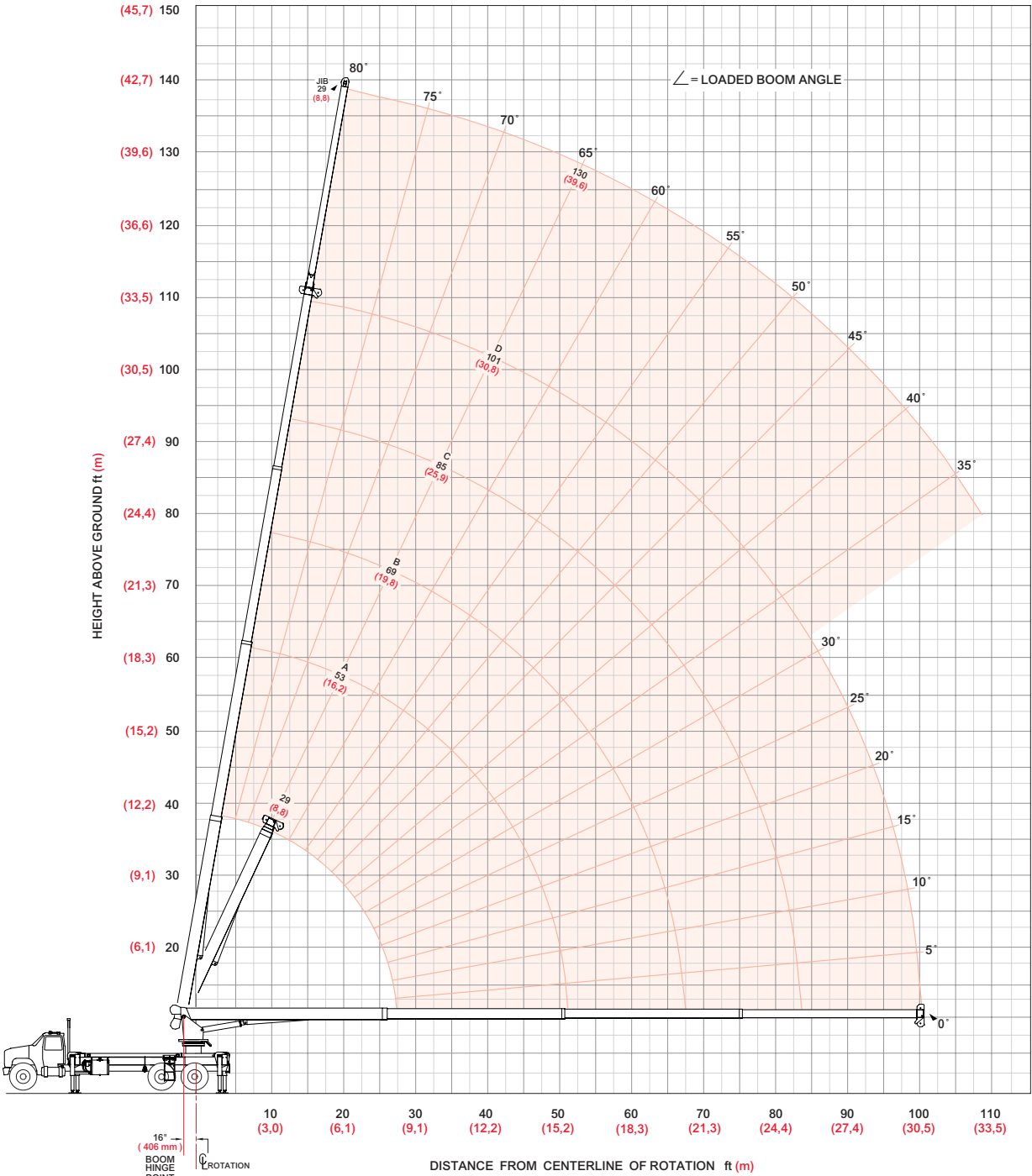
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# boom/jib range diagram

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22101S Dual Axle Range Diagram - Fully Extended



- (A) Pins must be disengaged for this outrigger configuration
- (B) These marks indicate when beams are fully extended
- (C) All outrigger beams must be extended to full extend mark

NOTE: Use this chart only when all outriggers are fully extended.

model 22101S





# boom/jib load charts

## 22101S Dual Axle Load Ratings Fully Extended Outrigger Spread

## 22101S Jib Load Ratings

|                               |     | A                  |              | B                 |              | C                 |     | D                |             | Fixed Jib                     |            |
|-------------------------------|-----|--------------------|--------------|-------------------|--------------|-------------------|-----|------------------|-------------|-------------------------------|------------|
| Boom/Jib<br>ft (m)            |     | 29<br>(8,8)        | 53<br>(16,2) | 69<br>(19,8)      | 85<br>(25,9) | 101<br>(30,8)     |     |                  | 29<br>(8,8) | Boom/Jib<br>ft (m)            |            |
| Operating<br>Radius<br>ft (m) |     |                    |              |                   |              |                   |     |                  |             | Operating<br>Radius<br>ft (m) |            |
|                               | ∠   | lb<br>(kg)         | ∠            | lb<br>(kg)        | ∠            | lb<br>(kg)        | ∠   | lb<br>(kg)       | ∠           |                               | lb<br>(kg) |
| 5<br>(1,5)                    | 80° | 44,000<br>(19 958) |              |                   |              |                   |     |                  |             | 5<br>(1,5)                    |            |
| 8<br>(2,4)                    | 74° | 33,540<br>(15 213) |              |                   |              |                   |     |                  |             | 8<br>(2,4)                    |            |
| 10<br>(3,1)                   | 70° | 28,140<br>(12 764) |              |                   |              |                   |     |                  |             | 10<br>(3,1)                   |            |
| 12<br>(3,7)                   | 66° | 24,230<br>(10 991) | 78°          | 14,000<br>(6 350) |              |                   |     |                  |             | 12<br>(3,7)                   |            |
| 14<br>(4,3)                   | 61° | 20,460<br>(9 281)  | 76°          | 14,000<br>(6 350) | 80°          | 14,000<br>(6 350) |     |                  |             | 14<br>(4,3)                   |            |
| 17<br>(5,2)                   | 54° | 16,400<br>(7 439)  | 72°          | 14,000<br>(6 350) | 78°          | 12,880<br>(5 842) |     |                  |             | 17<br>(5,2)                   |            |
| 20<br>(6,1)                   | 46° | 13,520<br>(6 133)  | 69°          | 13,700<br>(6 214) | 75°          | 11,430<br>(5 185) | 79° | 8,920<br>(4 046) |             | 20<br>(6,1)                   |            |
| 25<br>(7,6)                   | 29° | 10,210<br>(4 631)  | 63°          | 10,600<br>(4 808) | 71°          | 9,460<br>(4 291)  | 75° | 8,000<br>(3 629) | 79°         | 6,000<br>(2 722)              |            |
| 30<br>(9,1)                   |     |                    | 56°          | 8,390<br>(3 806)  | 66°          | 8,210<br>(3 724)  | 72° | 7,070<br>(3 207) | 76°         | 5,500<br>(2 495)              |            |
| 35<br>(10,7)                  |     |                    | 49°          | 6,790<br>(3 080)  | 61°          | 6,890<br>(3 125)  | 68° | 6,130<br>(2 781) | 73°         | 4,980<br>(2 259)              |            |
| 40<br>(12,2)                  |     |                    | 41°          | 5,590<br>(2 536)  | 56°          | 5,700<br>(2 585)  | 65° | 5,320<br>(2 413) | 70°         | 4,490<br>(2 037)              |            |
| 45<br>(13,7)                  |     |                    | 31°          | 4,640<br>(2 105)  | 51°          | 4,760<br>(2 159)  | 61° | 4,640<br>(2 105) | 67°         | 4,000<br>(1 814)              |            |
| 50<br>(15,2)                  |     |                    | 17°          | 3,880<br>(1 760)  | 45°          | 4,000<br>(1 814)  | 57° | 4,070<br>(1 846) | 64°         | 3,580<br>(1 624)              |            |
| 55<br>(16,8)                  |     |                    |              |                   | 38°          | 3,380<br>(1 533)  | 52° | 3,450<br>(1 565) | 61°         | 3,200<br>(1 451)              |            |
| 60<br>(18,3)                  |     |                    |              |                   | 30°          | 2,860<br>(1 297)  | 47° | 2,930<br>(1 329) | 57°         | 2,850<br>(1 293)              |            |
| 65<br>(19,8)                  |     |                    |              |                   | 19°          | 2,410<br>(1 093)  | 42° | 2,490<br>(1 129) | 54°         | 2,520<br>(1 143)              |            |
| 70<br>(21,3)                  |     |                    |              |                   |              |                   | 36° | 2,090<br>(948)   | 50°         | 2,130<br>(966)                |            |
| 75<br>(22,9)                  |     |                    |              |                   |              |                   | 29° | 1,740<br>(789)   | 45°         | 1,790<br>(812)                |            |
| 80<br>(24,4)                  |     |                    |              |                   |              |                   | 20° | 1,440<br>(653)   | 41°         | 1,500<br>(680)                |            |
| 85<br>(25,9)                  |     |                    |              |                   |              |                   |     |                  | 36°         | 1,240<br>(562)                |            |
| 90<br>(27,4)                  |     |                    |              |                   |              |                   |     |                  | 30°         | 1,020<br>(463)                |            |
| 95<br>(29,0)                  |     |                    |              |                   |              |                   |     |                  | 22°         | 820<br>(372)                  |            |
| 100<br>(30,5)                 |     |                    |              |                   |              |                   |     |                  |             |                               |            |
| 105<br>(32,0)                 |     |                    |              |                   |              |                   |     |                  |             |                               |            |
| 110<br>(33,5)                 |     |                    |              |                   |              |                   |     |                  |             |                               |            |
| Deduction *                   |     | 340<br>(154)       | 190<br>(86)  | 150<br>(68)       | 120<br>(54)  | 100<br>(45)       |     |                  |             |                               |            |

\*for stowed fixed jib

Meets ANSI B30.5 Requirements - Do not operate crane or accessories within 10' (3.05m) of live power lines.  
NOTICE: This capacity chart is for reference only and must not be used for lifting purposes.

model 22101S

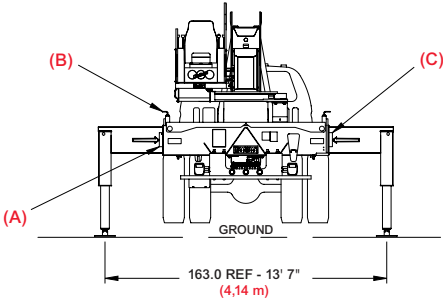
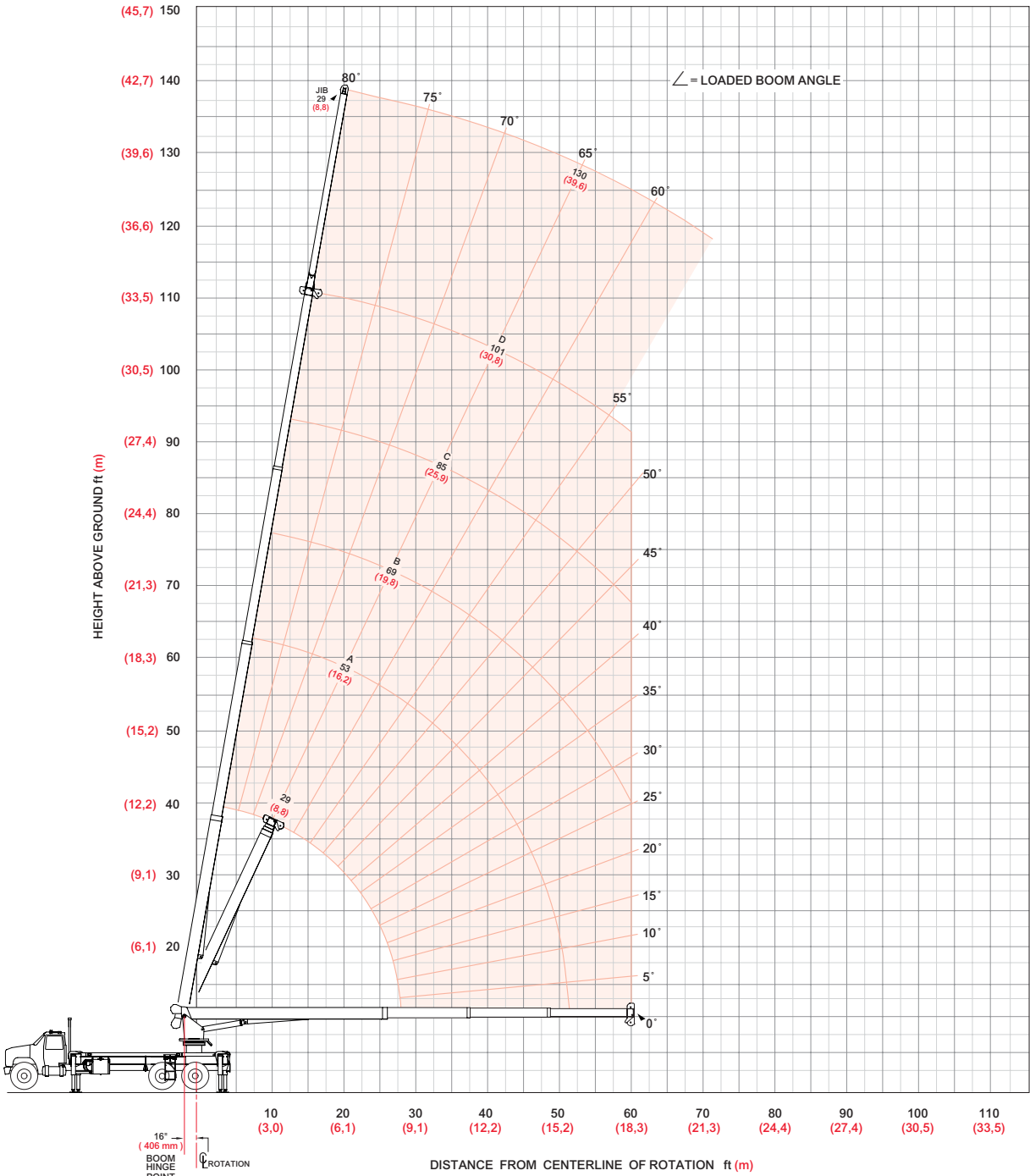




# boom/jib range diagram

10

22101S Dual Axle Range Diagram - Intermediate



- (A) Mark indicates beam is mid extended
- (B) Pins must be engaged for this outrigger configuration
- (C) All outrigger beams must be extended to mid extend mark

**NOTE:** Lifting personnel with crane in this outrigger configuration is strictly prohibited. Use only fully extended outrigger configuration when lifting personnel.

Use this chart only when all outriggers are in the intermediate position.

model 22101S





# boom/jib load charts

## 22101S Dual Axle Load Ratings Intermediate Outrigger Spread

## 22101S Jib Load Ratings

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|                               |              | A                         |                          | B                        |                         | C                       |   | D                   |                         | Fixed Jib          |  |
|-------------------------------|--------------|---------------------------|--------------------------|--------------------------|-------------------------|-------------------------|---|---------------------|-------------------------|--------------------|--|
| Boom/Jib<br>ft (m)            |              | 29<br>(8,8)               | 53<br>(16,2)             | 69<br>(19,8)             | 85<br>(25,9)            | 101<br>(30,8)           |   |                     | 29<br>(8,8)             | Boom/Jib<br>ft (m) |  |
| Operating<br>Radius<br>ft (m) | ∠            | lb<br>(kg)                | ∠                        | lb<br>(kg)               | ∠                       | lb<br>(kg)              | ∠ | lb<br>(kg)          | ∠                       | lb<br>(kg)         |  |
|                               | 5<br>(1,5)   | 80°<br>44,000<br>(19 958) |                          |                          |                         |                         |   |                     |                         | 5<br>(1,5)         |  |
|                               | 8<br>(2,4)   | 74°<br>33,540<br>(15 213) |                          |                          |                         |                         |   |                     |                         | 8<br>(2,4)         |  |
|                               | 10<br>(3,1)  | 70°<br>28,140<br>(12 764) |                          |                          |                         |                         |   |                     |                         | 10<br>(3,1)        |  |
|                               | 12<br>(3,7)  | 66°<br>24,230<br>(10 991) | 78°<br>14,000<br>(6 350) |                          |                         |                         |   |                     |                         | 12<br>(3,7)        |  |
|                               | 14<br>(4,3)  | 61°<br>20,460<br>(9 281)  | 76°<br>14,000<br>(6 350) | 80°<br>14,000<br>(6 350) |                         |                         |   |                     |                         | 14<br>(4,3)        |  |
|                               | 17<br>(5,2)  | 54°<br>14,040<br>(6 368)  | 72°<br>14,000<br>(6 350) | 78°<br>12,880<br>(5 842) |                         |                         |   |                     |                         | 17<br>(5,2)        |  |
|                               | 20<br>(6,1)  | 46°<br>10,190<br>(4 622)  | 69°<br>10,690<br>(4 849) | 75°<br>10,820<br>(4 908) | 79°<br>8,920<br>(4 046) |                         |   |                     |                         | 20<br>(6,1)        |  |
|                               | 25<br>(7,6)  | 29°<br>6,560<br>(2 976)   | 63°<br>7,050<br>(3 198)  | 71°<br>7,170<br>(3 252)  | 75°<br>7,240<br>(3 284) | 79°<br>6,000<br>(2 722) |   |                     |                         | 25<br>(7,6)        |  |
|                               | 30<br>(9,1)  |                           | 56°<br>4,970<br>(2 254)  | 66°<br>5,090<br>(3 309)  | 72°<br>5,160<br>(2 341) | 76°<br>5,210<br>(2 363) |   |                     | 80°<br>3,000<br>(1 361) | 30<br>(9,1)        |  |
|                               | 35<br>(10,7) |                           | 49°<br>3,630<br>(1 647)  | 61°<br>3,750<br>(1 701)  | 68°<br>3,810<br>(1 728) | 73°<br>3,860<br>(1 751) |   |                     | 78°<br>2,840<br>(1 288) | 35<br>(10,7)       |  |
|                               | 40<br>(12,2) |                           | 41°<br>2,690<br>(1 220)  | 56°<br>2,810<br>(1 275)  | 65°<br>2,870<br>(1 302) | 70°<br>2,910<br>(1 320) |   |                     | 76°<br>2,620<br>(1 188) | 40<br>(12,2)       |  |
|                               | 45<br>(13,7) |                           | 31°<br>1,990<br>(903)    | 51°<br>2,110<br>(957)    | 61°<br>2,180<br>(989)   | 67°<br>2,220<br>(1 007) |   |                     | 73°<br>2,310<br>(1 048) | 45<br>(13,7)       |  |
|                               | 50<br>(15,2) |                           | 17°<br>1,450<br>(658)    | 45°<br>1,570<br>(712)    | 57°<br>1,640<br>(744)   | 64°<br>1,680<br>(762)   |   |                     | 71°<br>1,770<br>(803)   | 50<br>(15,2)       |  |
|                               | 55<br>(16,8) |                           |                          | 38°<br>1,150<br>(522)    | 52°<br>1,220<br>(553)   | 61°<br>1,260<br>(572)   |   |                     | 69°<br>1,350<br>(612)   | 55<br>(16,8)       |  |
|                               | 60<br>(18,3) |                           |                          | 30°<br>800<br>(363)      | 47°<br>870<br>(395)     | 57°<br>910<br>(413)     |   |                     | 67°<br>1,000<br>(454)   | 60<br>(18,3)       |  |
|                               | 65<br>(19,8) |                           |                          |                          |                         |                         |   |                     | 64°<br>710<br>(322)     | 65<br>(19,8)       |  |
| 70<br>(21,3)                  |              |                           |                          |                          |                         |                         |   | 62°<br>470<br>(213) | 70<br>(21,3)            |                    |  |
| Deduction*                    |              | 340<br>(154)              | 198<br>(86)              | 150<br>(68)              | 120<br>(54)             | 100<br>(45)             |   |                     |                         |                    |  |

\*for stowed fixed jib

Meets ANSI B30.5 Requirements - Do not operate crane or accessories within 10' (3.05m) of live power lines.  
NOTICE: This capacity chart is for reference only and must not be used for lifting purposes.

model 22101S

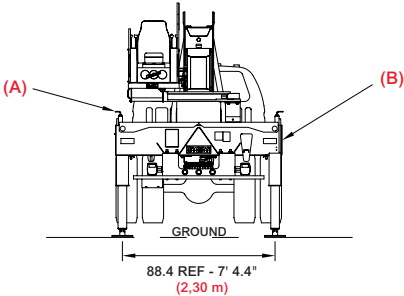
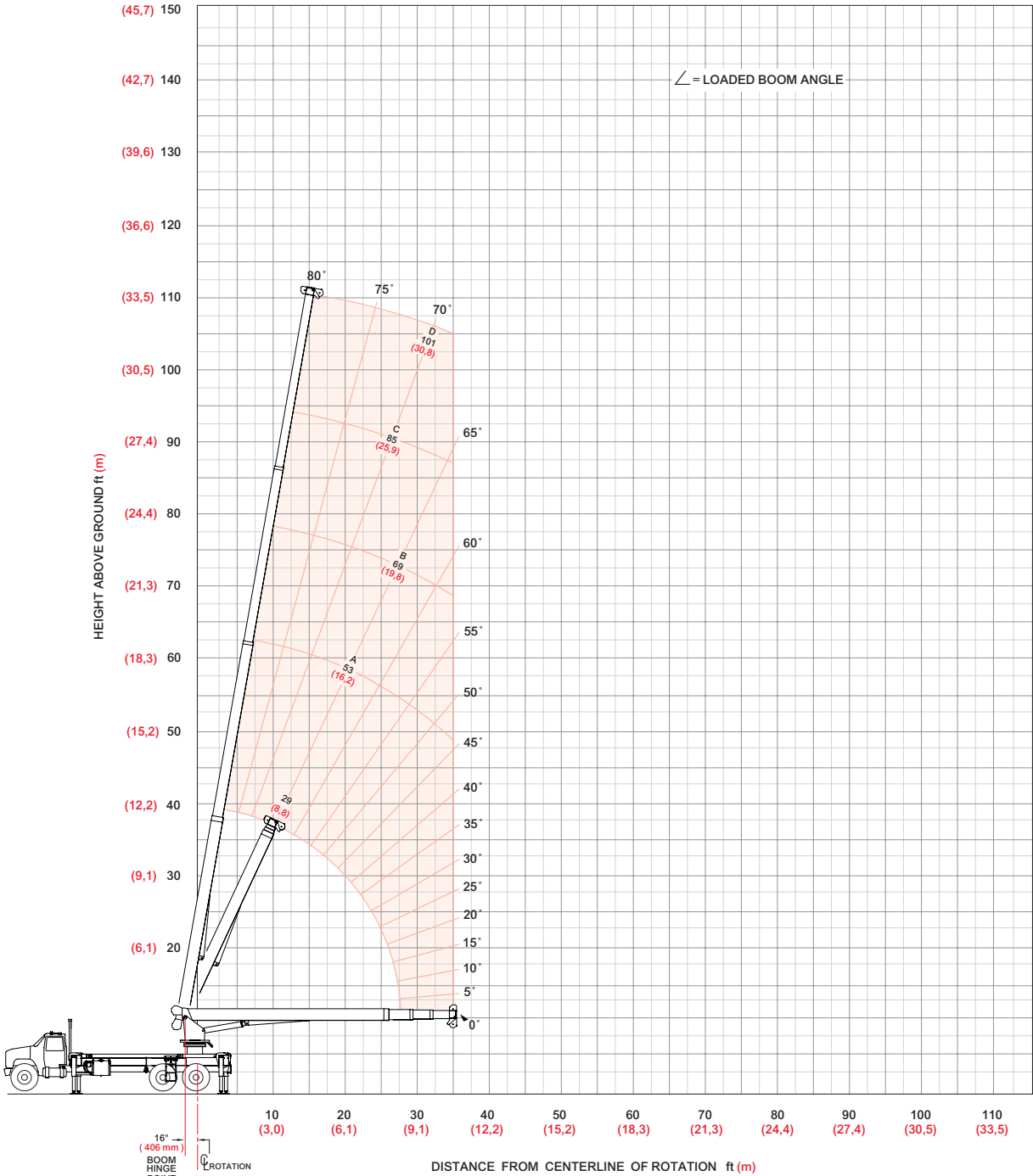




# boom/jib range diagram

12

22101S Dual Axle Range Diagram - Fully Retracted



- (A) Pins must be disengaged for this outrigger configuration
- (B) All outrigger beams must be fully retracted

**NOTE:** Lifting personnel with crane in this outrigger configuration is strictly prohibited. Use only fully extended outrigger configuration when lifting personnel.

Use this chart only when all outriggers are fully retracted.

model 22101S





# boom/jib load charts

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## 22101S Dual Axle Load Ratings Fully Retracted Outrigger Spread

|                               |             | A                         |                         | B                       |                         | C                       |   | D             |   |
|-------------------------------|-------------|---------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---|---------------|---|
| Boom/Jib<br>ft (m)            |             | 29<br>(8,8)               | 53<br>(16,2)            | 69<br>(19,8)            |                         | 85<br>(25,9)            |   | 101<br>(30,8) |   |
| Operating<br>Radius<br>ft (m) | ∠           | lb<br>(kg)                | ∠                       | lb<br>(kg)              | ∠                       | lb<br>(kg)              | ∠ | lb<br>(kg)    | ∠ |
|                               | 5<br>(1,5)  | 80°<br>44,000<br>(19 958) |                         |                         |                         |                         |   |               |   |
|                               | 8<br>(2,4)  | 74°<br>19,630<br>(8 904)  |                         |                         |                         |                         |   |               |   |
|                               | 10<br>(3,1) | 70°<br>12,510<br>(5 674)  |                         |                         |                         |                         |   |               |   |
|                               | 12<br>(3,7) | 66°<br>8,810<br>(3 996)   | 78°<br>9,270<br>(4 205) |                         |                         |                         |   |               |   |
|                               | 14<br>(4,3) | 61°<br>6,540<br>(2 966)   | 76°<br>6,970<br>(3 162) | 80°<br>7,090<br>(3 216) |                         |                         |   |               |   |
|                               | 17<br>(5,2) | 54°<br>4,420<br>(2 005)   | 72°<br>4,830<br>(2 191) | 78°<br>4,940<br>(2 241) |                         |                         |   |               |   |
|                               | 20<br>(6,1) | 46°<br>3 060<br>(1 388)   | 69°<br>3 470<br>(1 574) | 75°<br>3 580<br>(1 624) | 79°<br>3,640<br>(1 651) |                         |   |               |   |
|                               | 25<br>(7,6) | 29°<br>1,640<br>(744)     | 63°<br>2,050<br>(930)   | 71°<br>2,160<br>(980)   | 75°<br>2,220<br>(1 007) | 79°<br>2,260<br>(1 025) |   |               |   |
|                               | 30<br>(9,1) |                           | 56°<br>1,170<br>(531)   | 66°<br>1,270<br>(576)   | 72°<br>1,330<br>(603)   | 76°<br>1,370<br>(621)   |   |               |   |
| 35<br>(10,7)                  |             |                           |                         | 61°<br>670<br>(304)     | 68°<br>730<br>(331)     | 73°<br>770<br>(349)     |   |               |   |
| Deduction*                    |             | 340<br>(154)              | 190<br>(86)             | 150<br>(68)             |                         | 120<br>(54)             |   | 100<br>(45)   |   |

\*for stowed fixed jib

Meets ANSI B30.5 Requirements - Do not operate crane or accessories within 10' (3.05m) of live power lines.  
NOTICE: This capacity chart is for reference only and must not be used for lifting purposes.

load chart data

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Deductions

|                            |                              |
|----------------------------|------------------------------|
| Auxiliary Block            | 50 lb (23 kg)                |
| Load Block                 | See manufacturer's nameplate |
| Overhaul Ball              | See manufacturer's nameplate |
| Hose Reel                  | 160 lb (73 kg)               |
| Swing Around Jib* (Stowed) | See load rating chart        |

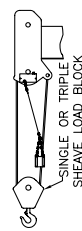
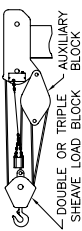
Area of Operation



Standard 360° Full Capacity Work Area

The front tires must be in contact with the ground, and the machine level, when operating in this area

Allowable Line Pull

| 1 Part Line                                                                         | 2 Part Line                                                                         | 3 Part Line                                                                         | 4 Part Line                                                                         | 5 Part Line                                                                         | 6 Part Line                                                                           |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |
| <b>7,400 lb</b><br><b>(3 375 kg)</b>                                                | <b>14,800 lb</b><br><b>(6 713kg)</b>                                                | <b>22,200 lb</b><br><b>(10 070 kg)</b>                                              | <b>29,600 lb</b><br><b>(13 426 kg)</b>                                              | <b>37,000</b><br><b>(16 783 kg)</b>                                                 | <b>44,000</b><br><b>(20 140 kg)</b>                                                   |
| <b>8,500 lb</b><br><b>(3 856 kg)</b>                                                | <b>17,000 lb</b><br><b>(7 711 kg)</b>                                               | <b>25,500 lb</b><br><b>(11 567 kg)</b>                                              | <b>34,000 lb</b><br><b>(15 422 kg)</b>                                              | <b>42,500 lb</b><br><b>(19 278 kg)</b>                                              | <b>44,000 lb</b><br><b>(20 140 kg)</b>                                                |

9/16" 6 x 25 IWRC (3.5:1 SF) – 29,750 lb Min Breaking Strength  
9/16" Rotation Resistant (5.0:1 SF) – 37,000 lb Min Breaking Strength

Warning

Anti-two-block system must be in good operating condition before operating crane. Refer to the owner's manual. Keep at least three wraps of load line on the drum at all times.



# CraneCARE<sup>SM</sup>

CraneCARE is Manitowoc Boom Trucks' complete service and support program. Incorporated into this program are service training, immediate parts availability, professional field service, and technical support and documentation. CraneCARE is available for every one of the thousands of cranes still operating all over the world.

That's dedication and devotion that you won't get anywhere else.

That's **CraneCARE**.

## Service Training

A certified Manitowoc Boom Trucks service specialist works with you in your training facility or in the field to ensure that you know how to achieve maximum performance, dependability, and years from your cranes.

A reputable Manitowoc Boom Trucks Service technician comes to you to provide valuable training to all distributors on the crane's LMI system.

## Parts Availability

Genuine Manitowoc Boom Trucks replacement parts may be obtained through your MBT distributor on a regular basis.

### Hydraulic Test Kit with Case – Part No. 499792-9

- Small national O-ring kit
- Pressure gauges
- Fluke multi-meter
- Hydraulic flow meters
- Multi-load grease gun
- 6-drawer tool box
- 17-piece wrench set

## Field Service

Factory-trained service experts are always ready to help maintain your crane's peak performance.

For a worldwide listing of dealer locations, please consult our website at: [www.manitowocbt.com](http://www.manitowocbt.com).

## Technical Support

Manitowoc Boom Trucks' dealer network and factory personnel are available 24 hours a day, 7 days a week, 365 days a year to answer your technical questions and more.

For a worldwide listing of dealer locations, please consult our website at: [www.manitowocbt.com](http://www.manitowocbt.com).

## Technical Documentation

Manitowoc Boom Trucks boast an extensive, easy-to-understand library of documentation.

A complete set of Operator's parts and service manuals are included with each crane.

Additional copies are available through your Authorized Manitowoc Boom Trucks Distributor.





**Manitowoc Boom Trucks**

Manitowoc Boom Trucks  
3000 South Austin Avenue  
P.O. Box 1609  
Georgetown, TX, USA 78627-1609  
Telephone 512-942-3000  
Facsimile 512-863-3776  
[www.manitowocbt.com](http://www.manitowocbt.com)

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