# LS-138H II

## LATTICE BOOM CRAWLER CRANE 80-Ton *(77.62 mt)*

- 80-ton at a 12-foot radius
- 200 feet of conventional boom or 180 feet plus 60 foot boom plus jib combination
- Greater capacities than the competition
- New counterweight removal system with remote control to improve self-assembly
- Lightweight modules for ease of transportation
- New compact travel drives to improve clearance and serviceability
- New two-piece 50,500 lbs. counterweight combination
- New pin-on boom hoist bail
- New improved jib with greater capacities (common to LS-218H)
- New wider and longer lower (side frames hydraulically retract to 11 feet 11 inches for transport)

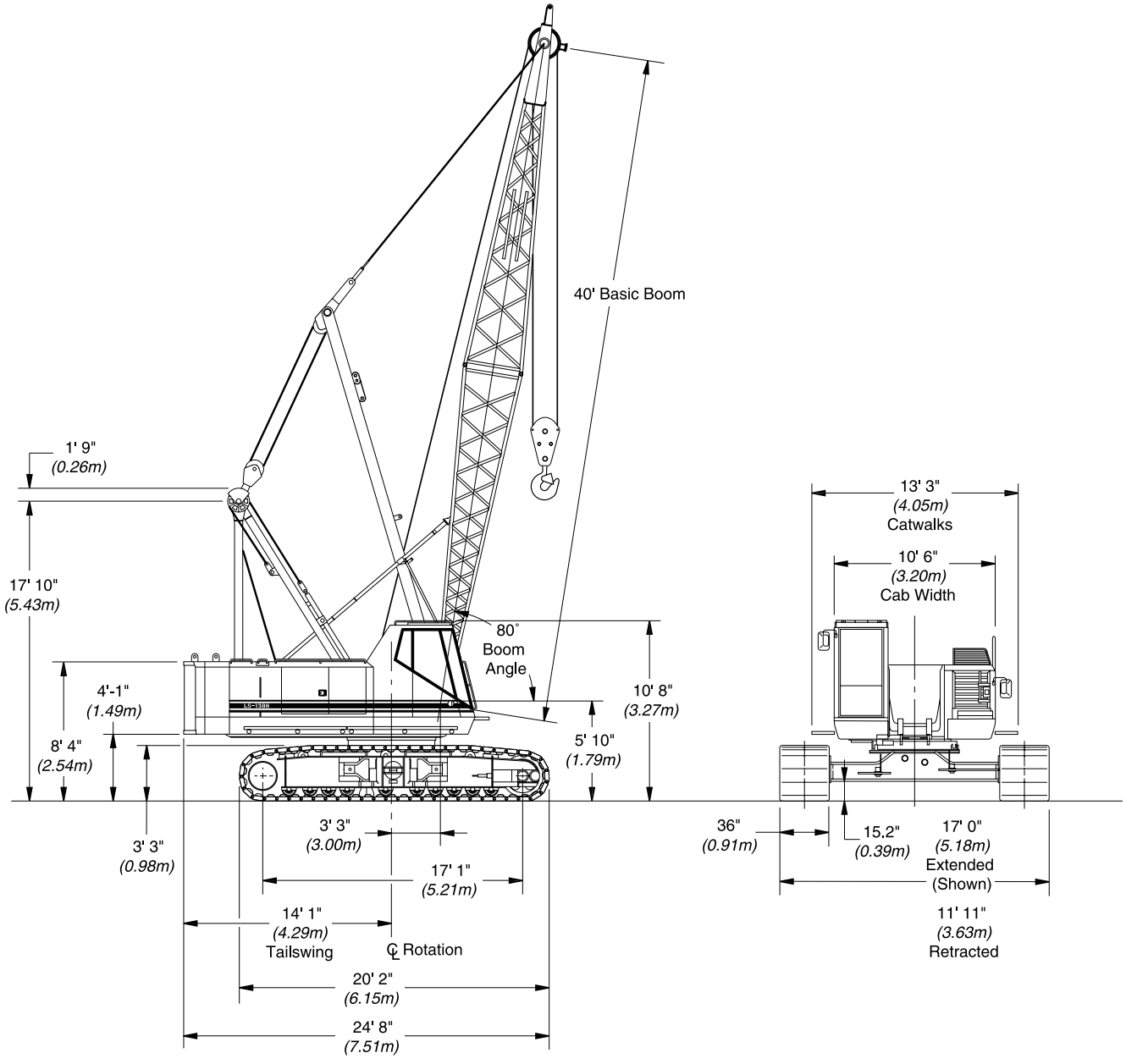
Link-Belt
CONSTRUCTION EQUIPMENT

# Specifications

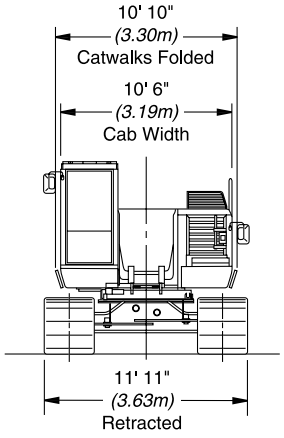
Hydraulic Lattice Boom Crawler Crane

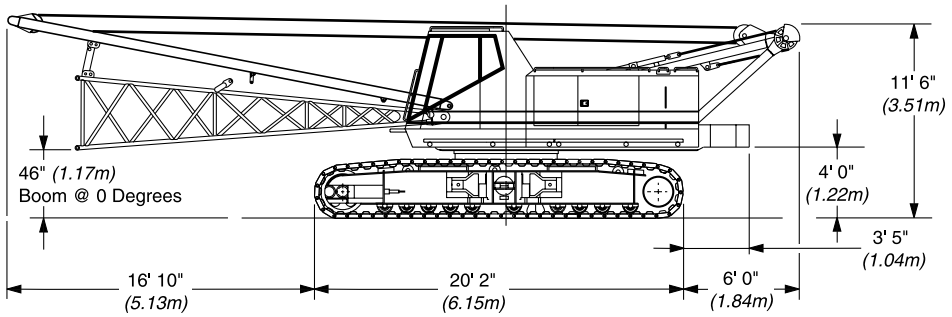
# LS-138H II 80-Ton *(72.5 metric ton)*

| General Dimensions | English | *Metric* |
|---|---|---|
| Tailswing of counterweight "A" | 13' 6" | *4.10 m* |
| Overall width of upper (catwalks folded) | 10' 10" | *3.30 m* |
| Maximum live mast working height | 30' 9" | *9.38 m* |
| Boom foot pin diameter | 3.5" | *8.89 cm* |
| Distance between inside of boom feet lugs | 27" | *0.69 m* |

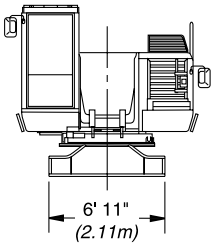


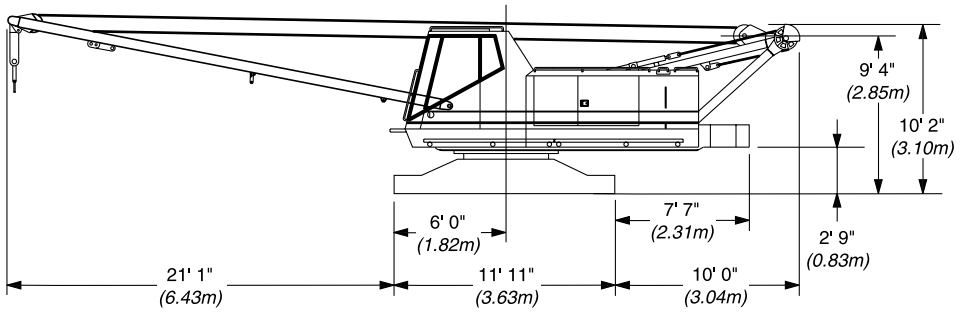
# LS-138H II Machine Transport Weights - approximate



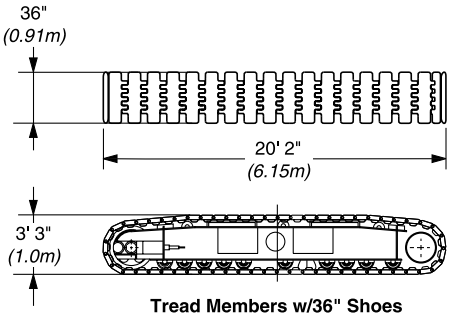




**Transport Weight**
Rope on both drums, Backstops, Catwalks, and 1/3 tank of fuel
Tube: 89,751 lbs. *(40 710 kg)*
Angle: 90,651 lbs. *(41 119 kg)*

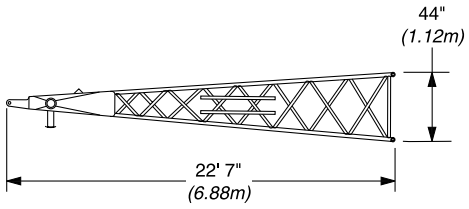


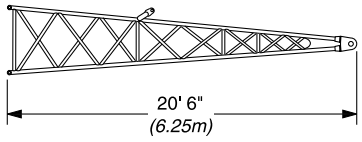

**Upper & Carbody Shipping Weight**
Rope on both drums, Backstops, Catwalks, and full of fuel
48,925 lbs. *(22 192 kg)*



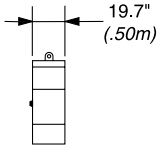

**Tread Members w/36" Shoes**
19,700 lbs. *(8 936 kg)*



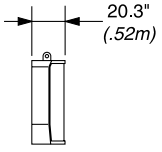

**20' *(6.10m)* Top Section**
2,850 lbs. *(1 293 kg)* Tube Boom
3,500 lbs. *(1 588 kg)* Angle Boom



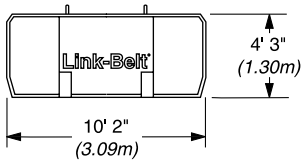

**20' *(6.10m)* Base Section**
1,720 lbs. *(780 kg)* Tube Boom
2,445 lbs. *(1 109 kg)* Angle Boom

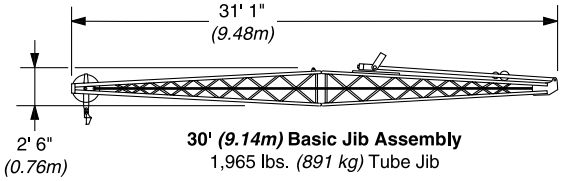



**"A" Upper Counterweight**
25,250 lbs. *(11 453 kg)*




**"B" Upper Counterweight**
25,250 lbs. *(11 453 kg)*




**30' *(9.14m)* Basic Jib Assembly**
1,965 lbs. *(891 kg)* Tube Jib

**Front Mount Third Drum**
1,850 lbs. *(839 kg)* - w/o Rope

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CONSTRUCTION EQUIPMENT

# LS-138H II Transportation Weights

**Base machine:** Rigid Boom Backstops, 27 Gallons of Fuel, Catwalks (front, right, & left side) 20' Tube Base Section, 24' Live Mast, Bridle & Spreader Bar, 14-Part Boom Hoist Reeving, 700' of Type 'DB' Front Hoist Rope, and 540' of Type 'RB' Rear Hoist Rope.

| Item Description | Gross Weight | | Transport Loads | | | | Notes and Load Summary |
|---|---|---|---|---|---|---|---|
| | lbs. | *kg.* | Load #1 | Load #2 | Load #3 | Load #4 | Numbers in the load columns to the left represent quantities |
| **Base Machine** | 89,751 | *40710* | 1 | | | | |
| Add 'A' Counterweight | 25,250 | *11453* | | | 1 | | Estimated transport load assume the load out consist of 200' *(60.96 m)* of tube boom + 60' *(18.29 m )* of jib with full counterweight. |
| Add 'B' Counterweight | 25,250 | *11453* | | 1 | | | |
| Add Hydraulic Third Drum w/o rope | 1,850 | *839* | | | | | |
| Add 20' Tube Top Section | 2,726 | *1237* | | 1 | | | |
| Add 10' Tubular Extension w/pins & pendants | 669 | *304* | | | 1 | | |
| Add 20' Tubular Extension w/pins & pendants | 1,065 | *483* | | 1 | 2 | | |
| Add 30' Tubular Extension w/pins & pendants | 1,461 | *663* | | 2 | 1 | | Support loads were targeted at 45,000 lbs. *(20412 kg)*, 8' - 6" *(2.59 m)* wide, 48' *(14.63 m)* long, and 13' - 6" *(4.11 m)* high using a drop deck trailer. This may vary depending on state laws, empty truck/trailer weights and style of trailer. |
| Add 20' Angle Base Section at 0 degrees | 2,618 | *1188* | | | | | |
| Add 20' Angle Top Section with 4 Lifting Sheaves | 3,500 | *1588* | | | | | |
| Add 20' Angle Top Section with 3 Lifting Sheaves | 3,400 | *1542* | | | | | |
| Add 20' Angle Top Section with 2 Lifting Sheaves | 3,300 | *1497* | | | | | |
| Add 10' Angular Extension w/pins & pendants | 1,040 | *472* | | | | | |
| Add 20' Angular Extension w/pins & pendants | 1,680 | *762* | | | | | |
| Add 30' Angular Extension w/pins & pendants | 2,400 | *1089* | | | | | |
| Add Bridle & Spreader Bar Only (No Live Mast) | 990 | *449* | | | | | Estimated weights vary by +/- 2% |
| Add Tagline Winder | 760 | *345* | | | | | |
| Add Fairlead | 500 | *227* | | | | | |
| Add PAT DS-350 | 100 | *45* | | | | | |
| Add 30' Tubular Jib | 1,965 | *891* | | | 1 | | **Estimated Total Load of #1** 89,751 lbs. *(40710 kg.)* |
| Add 15' Tubular Jib Extension | 290 | *132* | | | 2 | | |
| Add 5' Auxiliary Tip Extension | 800 | *363* | | | | | |
| Add Holding Rope - 0.88" x 220' Type 'DB' | 312 | *142* | | | | | |
| Add Closing Rope - 0.88" x 165' Type 'DB' | 234 | *106* | | | | | |
| Add Inhaul Rope - 0.88" x 80' Type 'M' | 108 | *49* | | | | | **Estimated Total Load of #2** 35,039 lbs. *(15893 kg.)* |
| Add Hoist Rope - 0.88" x 165' Type 'DB' | 234 | *106* | | | | | |
| Add Jib Wire Rope 0.88" x 700' Type 'DB' | 994 | *451* | | | | | |
| Add 3rd Drum Wire Rope 0.63" x 385' Type 'ZB' | 312 | *142* | | | | | |
| Add 3rd Drum Wire Rope 0.63" x 385' Type 'WB' | 296 | *134* | | | | | |
| Add Auxilary Lifting Bail | 200 | *91* | | | | | **Estimated Total Load of #3** 32,056 lbs. *(14540 kg.)* |
| Add 15-Ton Hook Ball - Non Swivel | 750 | *340* | | 1 | | | |
| Add 15-Ton Hook Ball Swivel | 760 | *345* | | | | | |
| Add 80-Ton 4 Sheave Hook Block | 2,325 | *1055* | | 1 | | | |
| Remove 20' Tube Base Section | -1,988 | *-902* | | | | | **Estimated Total Load of #4** 0 lbs. *(0 kg.)* |
| Remove Front Hoist Rope 0.88"x700' Type 'DB' | -994 | *-451* | | | | | |
| Remove Jib Wire Rope 0.88" x 540' Type 'RB' | -810 | *-367* | | | | | |
| Remove 24' Live Mast with Bridle & Spreader Bar | -2,618 | *-1188* | | | | | |
| Add 50 Gallons of Fuel | 362 | *164* | | | | | |

# Machine Working Weight

| Option | Description | Gross Weight Lbs. *(kg)* | Ground Bearing Pressure PSI *(kg/cm²)* |
|---|---|---|---|
| 1 | Base Machine equipped with 40' *(12.20 m)* of tubular boom, live mast, "A" counterweight, 700' *(213.36 m)* front hoist rope, 540' *(164.59 m)* rear hoist rope, 80-Ton *(72.6 mt)* Hook Block, 77Gallons *(291.4 L)* of fuel, and 200 lbs. *(90.7 kg)* operator. | 121,097 *(54929)* | 7.71 *(0.54)* |
| 2 | Option #1 plus "B" counterweight, midpoint pendants, and 160' *(48.77 m)* of boom extensions to obtain 200' *(60.96 m)* of main boom. | 155,627 *(70591)* | 9.92 *(0.70)* |
| 3 | Option #2 plus 60' *(18.29 m)* of jib and 15-ton *(13.61 mt)* hookball – subtract 20' of boom extension and midpoint pendants to obtain maximum 180' + 60' *(54.86 m + 18.29 m)* of main boom + jib. | 157,452 *(71419)* | 10.03 *(0.70)* |
| 4 | Base Machine equipped with 40' *(12.20 m)* of angle boom, live mast, "A" counterweight, 700' *(198.12 m)* front hoist rope, 540' *(164.59 m)* rear hoist rope, 80-Ton *(72.57 mt)* Hook Block, 77 Gallons *(291.4 L)* of fuel, and 200 lbs. *(90.7 kg)* operator. | 121,722 *(55212)* | 7.76 *(0.54)* |
| 5 | Option #4 plus "B" counterweight, and 110' *(33.53 m)* of boom extensions to obtain 150' *(45.72 m)* of main boom. | 156,172 *(70838)* | 9.95 *(0.71)* |
| 6 | Option #5 plus 60' *(18.29 m)* of jib and 15-ton *(13.61 mt*) hookball to obtain maximum 150' + 60' *(45.72 m + 18.29 m)* of main boom + jib. | 155,387 *(70,482)* | 9.90 *(0.70)* |

Notes:
1. Ground bearing pressure is based on the total weight distributed evenly over the track contact area.
2. Total contact area for 36" *(0.91 m)* track shoes is 15,689 in² *(101,219 cm²)*

# Attachment Options

## 40'-200' Tubluar Boom *(12.19 - 60.96 m)*

**Basic Boom** – 40' *(12.19m)* two-piece design that utilizes a 20' *(6.10 m)* base section and a 20' *(6.10 m)* open throat top section with in-line connecting pins on 54" *(1.37 m)* wide and 44" *(1.12 m)* deep centers.

- Boom feet on 50" *(1.27 m)* centers.
- 3" *(76.2 mm)* diameter chords.
- Lugs on Base Section to attach carrying links.
- Skywalk platform.
- Deflector roller on top section.
- Permanent skid pads mounted on top section to protect head machinery.
- Rigid Sheave guards.
- Five 18" *(0.46 m)* root diameter steel sheaves mounted on sealed anti-friction bearings.
- Mechanical boom angle indicator.

**Optional** – Handling system that mounts in the boom base to allow loading/ unloading of a counterweight or a boom section onto transport trailers.

**Boom Extensions** – The following table provides the lengths available and the suggested quantity to obtain maximum boom in 10' *(3.05 m)* increments. Midpoints pendant connections are required at 80' *(24.38 m)* for 190' *(57.91 m)* and 200' *(60.96 m)* of boom lengths.

| Tube Boom Extensions | Suggested Quantity for Max.Boom |
|---|---|
| 10' (3.05 m) | 1 |
| 20' (6.10 m) | 3 |
| 30' (9.14 m) | 3 |

- Deflector roller on top of each section.
- Appropriate length pendants.
- Maximum tube boom tip height of 204' *(62.18 m)*

## 40'-150' Angle Boom *(12.19 - 45.72 m)*

**Basic Angle Boom** – 40' *(12.19m)* two-piece design that utilizes a 20' *(6.10 m)* base section and a 20' *(6.10 m)* open throat top section with in-line connecting pins. Boom extension are 48" *(1.22 m)* wide and 48" *(1.22 m)* deep at outside dimensions of angles.

- Boom feet on 50" *(1.27 m)* centers.
- 4" x 4" x 0.38" *(101.6 x 101.6 x 9.53 mm)* angular chords
- Lugs on Base Section to attach carrying links
- Skywalk platform
- Deflector roller on top section
- Permanent skid pads mounted on top section to protect head machinery
- Rigid Sheave guards
- Four 18" *(0.46 m)* root diameter steel sheaves mounted on sealed anti-friction bearings
- Mechanical boom angle indicator

**Optional** – Handling system that mounts in the boom base to allow loading/ unloading of a counterweight or a boom section onto transport trailers. Three-sheave head machinery for clam applications or two wide mouth sheaves for dragline applications.

**Angle Boom Extensions** – The following table provides the lengths available and the suggested quantity to obtain maximum boom in 10' *(3.05 m)* increments. Midpoints pendant connections are not required.

| Angle Boom Extensions | Suggested Quantity for Max. Boom |
|---|---|
| 10' *(3.05 m)* | 1 |
| 20' *(6.10 m)* | 2 |
| 30' *(9.14 m)* | 2 |

- Deflector roller on top of each section
- Appropriate length pendants
- Maximum angle boom tip height of 154' *(46.94 m)*

## 30' - 60' Tubular Jib *(9.14 – 18.29 m)*

**Basic Jib** – 30' *(9.14 m)* two-piece design that utilizes a 15' *(4.57 m)* base section and a 15' *(4.57 m)* top section with in-line connecting pins on 32" *(0.81 m)* wide and 24" *(0.61 m)* deep centers.

- 2" *(50.8 mm)* diameter tubular chords
- One 18.5" *(0.47 m)* root diameter steel sheave mounted on a sealed anti friction bearings
- 15' jib extension provides jib lengths at 45' *(13.76 m)* and 60' *(18.29 m)*
- Jib offset angles at 5, 15 and 25 degrees
- Maximum tip height of boom + jib is 242' *(73.76 m)*

## Auxiliary 5' *(1.52 m)* Tip Extension

Designed to use instead of a jib to provide clearance between working hoist lines. The extension is equipped with a single 15.25" *(0.39 m)* root diameter steel sheave mounted on a sealed anti-friction bearing. Maximum capacity is 9-ton *(8.16 mt)*.

## Boom Hoist System

Designed to lift-off maximum boom or maximum boom plus jib unassisted, operates up to a maximum boom angle of 82 degrees. Automatically limits maximum boom angle operation.

- Hydraulic controlled retractable gantry frame
- Pin-on bail frame
- 14-part reeving with 5/8" *(14.7 mm)* type 'AC' wire rope
- Bridle assembly
- 24' *(7.31 m)* live mast (optional for angle attachment)
- Two 1.25" *(31.75 mm)* pendants.
- Tubular boom backstops (rigid type)
- Sheaves contain sealed anti-friction bearings
- Boom speed from 10° - 70° is 52 seconds with no load and 94 seconds with full load. Speed was determined using 100 ft. of tube boom

# Revolving Upperstructure

## Frame

All welded steel frame with precision-machined surfaces for mating parts.

## Engine

Isuzu A-6SDITQB with oil filter, oil cooler, air cleaner, fuel filter, water separator, hour meter, tachometer and electrical shutdown.

| | |
|---|---|
| Number of cylinders | 6 |
| Bore and stroke – inch — *(mm)* | 4.72 X 5.71 *(120 X 145)* |
| Piston displacement — *($cm^3$)* | 600 ($in^3$) *(9839)* |
| Engine rpm at full load speed | 2,100 |
| Hi-idle rpm | 2,325 |
| Horsepower at full load speed | 207 *(155 kw)* |
| Peak torque - ft. / lbs. — *(joule)* | 513 ft. / lbs. *696* |
| Peak torque - rpm | 1,400 |
| Electrical system | 24 volt |
| Batteries | 2 - 12 volt |

## Specifications Hydraulic System

**Hydraulic Pumps** – The pump arrangement is designed to provide hydraulically powered functions allowing positive precise control, with independent or simultaneous operation of all crane functions.

 Two variable displacement pumps operating at 4,000 psi *(281.24 kg/cm2)* and 64 gallons/min. *(243 l/min)* powers both hoist drums, boom hoist drum, optional third drum, and travel.

 One fixed displacement gear type pump operating at 3,600 psi *(250 kg/cm2)* and 32 gallons/min. *(121 l/min)* powers the swing and treadmember retract cylinder.

 One fixed displacement gear type pump operating at 1,250 psi *(85 kg/cm2)* and 8 gallons/min. *(32 l/min)* powers the pilot control system, clutches, brakes, pump controls, counterweight removal system, and optional handling system mounted in boom base.

**Pump Control ("Fine Inching") mode** – Special pump setting, selectable from operator's cab, that allows very slow movements of hoist drums, boom hoist drum, and travel for precision work.

**Hydraulic Reservoir** – 78 US gallons *(295 L)*, equipped with sight level gauge. Diffusers built in for deaeration.

**Filtration** – One 10 micron, full flow, line filter in the control circuit. All oil is filtered prior to entering the reservoir.

**Counterbalance Valves** – All hoist motors are equipped with counterbalance valves to provide positive load lowering and prevent accidental load drop if the hydraulic pressure was suddenly lost.

## Load Hoist Drums

Each drum contains a pilot controlled bi-directional axial piston motor and a planetary gear reduction unit to provide positive control under all load conditions.

 Power up/down & freefall operation modes.
 Automatic brake mode (spring applied hydraulic released band type brake).
 7/8" *(22.22 mm)* grooved laggings.
 Drum pawl controlled manually.
 Electronic drum rotation indicators.
 Mounted on anti-friction bearings.
 17.64" *(0.45 m)* root diameter.
 29.92" *(0.76 m)* outside flange diameter.
 19.84" *(0.50m)* width.

**Note:** The freefall operational mode is designed to prevent load lowering even if the freefall switch is accidentally activated. The automatic brake mode meets all OSHA requirements for personnel handling.

**Drum Clutches** – Speed-o-Matic™ power hydraulic two shoe clutch design that uses a 20" *(0.51m)* diameter x 5" *(127 mm)* wide shoe that internally expands to provide load control. Swept area is 314 $in^2$ *(2026 $cm^2$)*.

## Optional Third Hoist Drum

The hydraulic winch is pinned to the front of the upper frame and is used in conjunction with a fleeting sheave and 3-sheave idler assembly to run the wire rope over the boom top section.

 Free-spooling capability for pile driving applications
 10.63" *(0.27 m)* root diameter
• 20" *(0.51 m)* outside flange
• 13.5" *(0.34 m)* width
• Mounted on anti-friction bearings

## Boom Hoist Drum

Contains a pilot controlled bi-directional axial piston motor and a planetary gear reduction unit to provide positive control under all load conditions.

 Spring applied hydraulic released disc type brake controlled automatically
 5/8" *(15.88 mm)* grooved lagging
 Drum pawl controlled automatically.
 Mounted on anti-friction bearings
 12.60" *(0.31 m)* root diameter
 24.41" *(0.62 m)* flange diameter
 9.57" *(0.24 m)* width

## Swing System

Mechanical linkage controls the bi-directional axial piston motor and a planetary gear reduction unit to provide positive control under all load conditions.

 Spring applied hydraulic released 360 degree multi-plate brake
 Free swing mode when lever is in neutral position
 Two position positive house lock
 Audio/Visual swing alarm
 Maximum swing speed is 2.8 r.p.m.

## Upper Counterweight

Consist of a two piece design that is easily lowered to the ground using a remote control box to hydraulically retract the gantry and function the two counterweight removal cylinders.

 25,250lbs. *(11453 kg)* "A" upper counterweight.
 Optional – 25,250lbs. *(11453 kg)* "B" upper counterweight can be added to maximize capacities.

## Operators Cab and Controls

Fully enclosed modular steel compartment is independently mounted and insulated to protect against vibration and noise.

 All tinted/tempered safety glass
 Sliding entry door and front window
 Swing up roof window with wiper
 Door and window locks
 Heater with circulating fan
 Sun visor
 Engine instrumentation panel (tacho meter, voltmeter, engine oil pressure, engine water temperature, fuel level, hydraulic oil temperature, and service monitor system)
 Electronic drum rotation indicators
 Six way adjustable seat with seat belt
 Dry chemical fire extinguisher
 Hand and foot throttle
 Fully adjustable single axis control levers
 Swing lever with swing brake and horn located on handle
 Bubble type level

Link-Belt
CONSTRUCTION EQUIPMENT

# LS-138H II Load Hoisting Performance

Available line speed and line pull - based on Isuzu A-6SDITQB at 2,100 rpm full load speed. Line Pulls are not based on wire rope strength. See wire rope chart for maximum permissible single part of line working loads.

| Rope layer | **Front or Rear Drum - 7/8" *(22.22 mm)* wire rope** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Maximum Line Pull | | No load line speed | | Full load line speed | | Pitch Diameter | | Layer | | Total | |
| | lbs. | *kg* | ft./min | *m/min* | ft./min | *m/min* | in. | *mm* | ft. | *m* | ft. | *m* |
| 1 | 32430 | *14710* | 298 | *91* | 113 | *35* | 18.5 | *470* | 100 | *30* | 100 | *30* |
| 2 | 29630 | *13440* | 326 | *99* | 124 | *38* | 20.3 | *516* | 109 | *33* | 209 | *64* |
| 3 | 27274 | *12372* | 354 | *108* | 135 | *41* | 22.0 | *559* | 119 | *36* | 327 | *100* |
| 4 | 25266 | *11461* | 382 | *116* | 145 | *44* | 23.8 | *605* | 128 | *39* | 455 | *139* |
| 5 | 23533 | *10674* | 410 | *125* | 156 | *48* | 25.5 | *648* | 137 | *42* | 593 | *181* |
| 6 | 22023 | *9989* | 438 | *134* | 167 | *51* | 27.3 | *693* | 147 | *45* | 740 | *225* |
| 7 | — | — | — | — | — | — | 29.0 | *737* | 156 | *48* | 896 | *273* |

| Rope layer | **Boom Hoist Drum - 5/8" *(15.88 mm)* wire rope** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Maximum Line Pull | | No load line speed | | Full load line speed | | Pitch Diameter | | Layer | | Total | |
| | lbs. | *kg* | ft./min | *m/min* | ft./min | *m/min* | in. | *mm* | ft. | *m* | ft. | *m* |
| 1 | 17,832 | *8089* | 196 | *60* | 109 | *33* | 13.2 | *336* | 48 | *15* | 48 | *15* |
| 2 | 16,282 | *7385* | 214 | *65* | 119 | *36* | 14.5 | *368* | 52 | *16* | 100 | *31* |
| 3 | 14,979 | *6794* | 233 | *71* | 130 | *40* | 15.7 | *400* | 57 | *17* | 157 | *48* |
| 4 | 13,869 | *6291* | 251 | *77* | 140 | *43* | 17.0 | *432* | 61 | *19* | 218 | *67* |
| 5 | 12,913 | *5857* | 270 | *82* | 151 | *46* | 18.3 | *464* | 66 | *20* | 284 | *87* |
| 6 | 12,080 | *5479* | 289 | *88* | 161 | *49* | 19.5 | *496* | 70 | *21* | 355 | *108* |
| 7 | 11,348 | *5147* | 307 | *94* | 171 | *52* | 20.8 | *528* | 75 | *23* | 430 | *131* |
| 8 | 10,699 | *4853* | 326 | *99* | 182 | *55* | 22.0 | *560* | 80 | *24* | 509 | *155* |

| Rope layer | **Third Drum - 5/8" *(15.88 mm)* wire rope** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Maximum Line Pull | | No load line speed | | Full load line speed | | Pitch Diameter | | Layer | | Total | |
| | lbs. | *kg* | ft./min | *m/min* | ft./min | m/min | in. | *mm* | ft. | *m* | ft. | *m* |
| 1 | 15,041 | *6822* | 157 | *48* | 143 | *44* | 11.25 | *286* | 57 | *17* | 57 | *17* |
| 2 | 13,537 | *6140* | 175 | *53* | 159 | *48* | 12.50 | *318* | 64 | *20* | 121 | *37* |
| 3 | 12,307 | *5582* | 192 | *59* | 175 | *53* | 13.75 | *349* | 71 | *22* | 192 | *59* |
| 4 | 11,282 | *5117* | 210 | *64* | 191 | *58* | 15.00 | *381* | 77 | *23* | 269 | *82* |
| 5 | 10,414 | *4724* | 228 | *69* | 207 | *63* | 16.25 | *413* | 83 | *25* | 352 | *107* |
| 6 | 9,671 | *4387* | 245 | *75* | 223 | *68* | 17.50 | *445* | 90 | *27* | 442 | *135* |

| **Wire Rope Application** | **Diameter** | | **Length** | | **Type** | **Maximum Permissible Load** | |
|---|---|---|---|---|---|---|---|
| | in. | *mm* | ft. | *m* | | lbs. | *kg* |
| Boom Hoist | 5/8 | *15.88* | 610 | *186* | AC | 11,770 | *5339* |
| Front Hoist | 7/8 | *22.22* | 700 | *213* | DB | 22,740 | *10315* |
| Rear Hoist (optional) | 7/8 | *22.22* | 540 | *165* | RB | 17,520 | *7947* |
| Rear Hoist (optional) | 7/8 | *22.22* | 700 | *213* | DB | 22,740 | *10315* |
| Third Drum (optional) | 5/8 | *15.88* | 385 | *117* | ZB | 11,080 | *5026* |
| Third Drum (optional) | 5/8 | *15.88* | 385 | *117* | WB | 13,650 | *6192* |

| **Rope Type** | **Description** |
|---|---|
| DB | 6 x 26 (6 x 19 Class) -Warrington Sale - Extra Improved Plow Steel - Preformed -Right Lay - Regular Lay - I.W.R.C. |
| RB* | 19 x 19 Rotation Resistant - Extra Lay, Improved Plow Steel - Preformed - Right Lay - Regular Lay. Swaged - SF=5.1 |
| ZB | 36 x 7 - Non-rotating - Extra Improved Plow Steel - Right Lay - Regular Lay - S.F. = 5.1 |
| WB | 8 Strand - Regular Lay |
| AC | 9 Strand - Compacted - Crush Resistant |

* - Use of swivel ball is not reccomended.

## Load Indicator / Rated Capacity Limiter

**Standard Equipment** – PAT EI-65 load indicator provides two lineriders, angle sensor, computer, display, and anti two block equipment to provide the following information.

- Boom length & angle
- Jib length & angle
- Load on hook
- Load radius
- Tip height
- Anti-two block warning & function limiters.
- Operation mode
- Operator settable alarms provide audio/visual warning

**Optional Equipment** – PAT DS-350 rated capacity limiter provides all the same equipment and features of the standard EI-65 in conjunction with the following features.

- Provides an audio/visual warning when the load on hook is within 90% of the cranes rated load.
- Provides an audio/visual warning and limits functions when the load on hook is at 100% of the cranes rated load.

**Note:** The DS 350 function limiters are activated for anti-two block and overload conditions. These limiters are designed to prevent hoist up on front and rear drums and boom hoist down.

## Additional Equipment — *Standard*

- 57.88" *(1.47 m)* outside diameter turn table bearing
- Front, Right & Left side removable catwalks
- 77 US Gallons *(291.5 L)* fuel tank (usable quantity)
- Machine lifting links

## Additional Equipment — *Optional*

- Rud-o-matic® model 1248 tagline winder for angle boom (double barrel, spring wound, drum type)
- Rud-o-matic® model 648 tagline winder for tube boom
- Full revolving type Fairlead with barrel, sheaves and guide rollers

# Lower Structure

## Carbody

All welded box construction frame with precision-machined surfaces for turntable bearing and rotating joint.

- 8'-10.7" *(2.71 m)* overall width
- 11'-11" *(3.63 m)* overall length

## Treadmembers

All welded precision-machined steel frames can be hydraulically extended and retracted by a hydraulic cylinder mounted in the lower frame.

- 14' *(4.27 m)* extended gauge
- 8'-11" *(2.72 m)* retracted gauge
- 20'-2" *(6.15 m)* overall length
- 36" *(0.91 m)* wide track shoes
- 11 sealed (oil filled) track rollers per treadmember
- Sealed (oil filled) idler and drive sprockets
- Compact travel drives
- Hydraulic self adjusting tracks

**Travel and Steering** - Each Treadmember contains a pilot controlled bi-directional axial piston motor and a planetary gear reduction unit to provide positive control under all load conditions.

- Individual control provides smooth precise maneuverability including full counter-rotation
- Spring applied hydraulic released disc type brake controlled automatically
- Maximum travel speed is 1.0 mph *(1.7 km/h)* in high speed & 0.6 mph *(1 km/h)* in low speed
- Designed to 30% gradeability

# THE LS-138H II

**ALL THE TRADITIONAL LINK-BELT STANDARDS: PRECISION, COMFORT, RELIABILITY, CONTROLLABILITY, PLUS INDUSTRY-FIRST TECHNOLOGY AND INNOVATIONS**

### Service Continues After The Sale

When you have invested in a Link-Belt crane, you have also invested in a 125-year legacy of outstanding customer service and support. Link-Belt helps you maintain your investment with the industry's most comprehensive crane product support. Highly trained parts and service department technicians are committed to responding quickly to your downtime and get you going again ... fast!

## KEY FEATURES

### Base Rating
- 80-ton nominal rating

### Transportability
- Less than 90,000 lbs. with treadmembers, boom base, live mast, and hoist ropes

### Boom
- 40 to 200 feet of tubular boom (increased length)
- 44" x 54" cross-section
- Boom configurations in 10-foot increments
- Maximum tip height of 204 feet

### Attachments
- 30 to 60 feet of tubular jib (increased capacities)
- 24" x 32" cross-section
- Jib configurations in 15-foot increments
- 5, 15 and 25 degree offsets
- 180 feet + 60 feet provide maximum tip height of 242 feet
- Auxiliary 5-foot tip extension (9-Ton)

### Upper Counterweight
- 25,250 lbs. "A" (new)
- 25,250 lbs. "B" (optional) (new)
- Hydraulic counterweight removal system with handheld remote control – lowers CTWT to the ground (new)

### Front and Rear Hoist Drums
- Grooved for 7/8 inch wire rope
- Power up/power down and freefall operation modes
- 17.63 inch root diameter drums (new)
- 742 feet of rope storage capacity
- 32,430 lbs. of maximum line pull (new)
- 438 FPM of maximum single line speed (new)
- Drums powered by pilot-operated axial piston motors
- Drum pawls

### Boom Hoist System
- 24-foot live mast
- Pin-on boom hoist bail (new)
- 14-part reeving with 5/8 inch type "AC" wire rope
- Hoist drum grooved for 5/8 inch wire rope
- Hoist drum powered by pilot-operated axial piston motor
- Drum pawl

### Power Plant
- Isuzu A-6SDITQB diesel engine with 207 brake HP
- Two variable displacement pumps
- Two gear type pumps

### Swing System
- Free swing mode
- Pilot-operated axial piston motor
- 360 degree multi-plate disc brake
- Two-position positive house lock
- Audio/visual swing alarm

### Rated Capacity Indicator
- PAT EI-65 (standard)
- PAT DS-350 rated capacity limiter (optional)
- Two lineriders standard with basic boom
- Anti-two block with function kick out

### Operator's Cab
- Pilot-operated single axis control levers
- Electronic drum rotation indicators
- Fully enclosed steel modular cab with safety glass
- Full engine instrumentation package
- Swing up roof window with wiper
- Heater/defroster with circulating fan

### Lower
- 14-foot gauge extended (new)
- 8-foot, 11-inch gauge retracted
- 20-feet, 2-inch overall length (new)
- Compact hydrostatic travel drives (new)
- 36-inch track shoes
- Sealed (oil filled) track rollers, idler and drive sprockets
- Hydraulic track adjustment
- 59,500 lbs. of tractive effort per track (new)

### Miscellaneous Standard Equipment
- Blocks for over end blocked capacities (new)
- Mechanical boom angle indicator
- Rigid sheave guards
- 7/8 inch x 700 feet of type "DB" front hoist rope
- Front, left side and right side catwalks
- Machine lifting links
- Lower step assemblies

### Miscellaneous Optional Equipment
- Hydraulic front mount third drum (15,000# line pull)
- Angle attachment used for lift crane, clamshell, or dragline work
- Attachment extensions available in 10, 20 and 30-foot lengths
- Midpoint suspension system (new)
- 15-ton headache ball, swivel and non-swivel
- 80-ton hook block
- Counterweight boom auxiliary handling device

**Link-Belt Construction Equipment Company**
Lexington, Kentucky



Link-Belt®
CONSTRUCTION EQUIPMENT

Link-Belt®
CONSTRUCTION EQUIPMENT

# LS – 138H II

## CRANE RATING MANUAL

- **44” x 54” TUBULAR BOOM**
- **20’ OPEN THROAT PEAK SECTION**
- **1.25” DIAMETER PENDANTS**
- **WITH LIVE MAST**
- **14’0” GAUGE AND 20’2” OVERALL LENGTH**

SERIAL NUMBER_____

For Replacement, Order Part Number H7P0002.
(022399)

# Table Of Contents

## ⚠ WARNING

**READ AND UNDERSTAND THE OPERATOR'S AND SAFETY MANUALS AND THE FOLLOWING INSTRUCTIONS AND CHART VALUES BEFORE OPERATING THE CRANE. OPERATION WHICH DOES NOT FOLLOW THESE INSTRUCTIONS MAY RESULT IN AN ACCIDENT.**

# OPERATING INSTRUCTIONS

## GENERAL:

1. Rated lifting capacities in pounds as shown on lift charts pertain to this crane as originally manufactured and normally equipped. Modifications to the crane or use of optional equipment other than that specified can result in a reduction of capacity.
2. Construction equipment can be dangerous if improperly operated or maintained. Operation and maintenance of this crane must be in compliance with the information in the Operator's, Parts, and Safety Manuals supplied with this crane. If these manuals are missing, order replacements through the distributor.
3. The operator and other personnel associated with this crane shall read and fully understand the latest applicable American National Standards Institute (ANSI) safety standards for cranes.
4. All capacities listed in this book are in compliance with ASME/ANSI B30.5c−1998, SAE J987−April 1994, and SAE J765−October 1990.

## LIFT CRANE OPERATION:

1. Capacities shown are in pounds and are not more than 75% of the tipping loads with the crane standing level on firm supporting surface. A deduction must be made from these capacities for weight of hook block, hook ball, sling, grapple, load weighing device, etc. When using main hook while jib is attached, reduce capacities by values shown on Capacity Deductions For Lifting Off Main Boom Hook With Jib Installed. When using main hook while 5ft. tip extension is attached, reduce capacities by values shown on Capacity Deductions For Lifting Off Main Boom Hook With 5ft. Tip Extension Installed. See Operator's Manual for all limitations when raising or lowering attachment.
2. The crane capacities in the shaded areas are based on structural strength. The crane capacities in the non−shaded areas are based on stability ratings.
3. For recommended reeving, parts of line, wire rope type, and wire rope inspection, see Wire Rope Capacity chart, Operator's Manual, and Parts Manual.
4. Load ratings in this Crane Rating Manual are based on freely suspended loads and make no allowances for such factors as the effect of the wind, ground conditions, and operating speeds. The operator shall therefore reduce load ratings in order to take these conditions into account.
5. Rated lifting capacities do not account for the effects of wind on a suspended load or boom. Lifting capacities should be considered acceptable for wind speeds less than 20 mph and appropriately reduced for wind speeds greater than 20 mph. Extreme caution should be used when lifting heavy loads or loads with large wind sail area under high wind conditions (over 20 mph).
6. The 24ft. live mast must be used for all capacities in this Crane Rating Manual.
7. The least stable rated condition is over the side.
8. Booms must be erected and lowered over the end.
9. Do not operate at radii and boom lengths where the Crane Rating Manual lists no capacity. Do not use longer booms or jibs than those listed in this Crane Rating Manual. Any of the above can cause a tipping condition, or boom and jib failure.
10. These capacities apply only to the crane as originally manufactured and normally equipped by Link−Belt Construction Equipment Company.

## FOR OVER END CAPACITIES ONLY

1. These capacities can be lifted over either end with the crane standing level on a firm supporting surface with adequate blocking placed under the tread member sprockets/idlers, to prevent rocking.
2. Do not travel with a load.

# WIRE ROPE CAPACITY

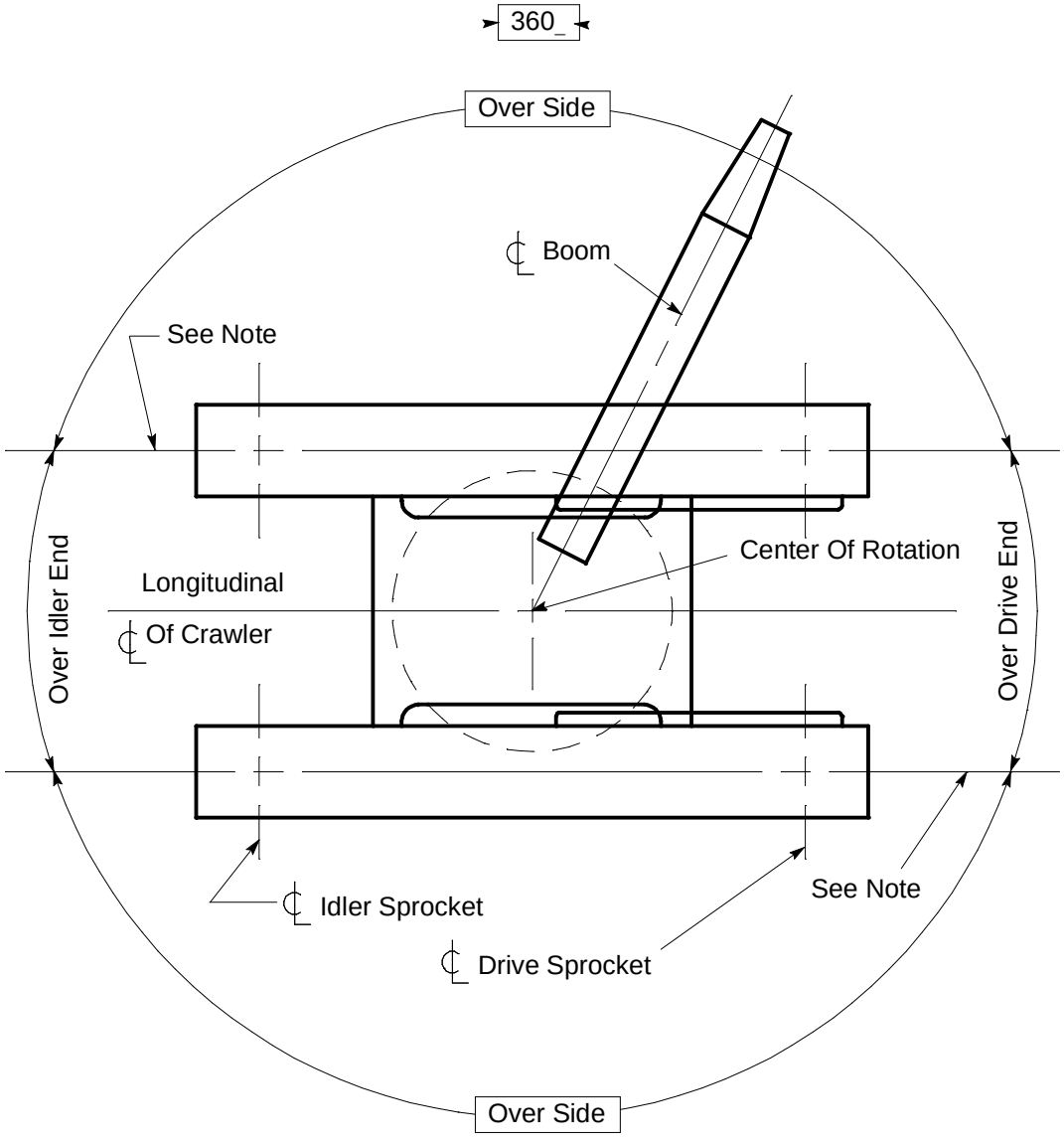
| Parts of Line | 7/8" | | 5/8" | | |
|---|---|---|---|---|---|
| | Type "DB" | Type "RB" | Type "ZB" | Type "WB" | Notes |
| 1 | 22,700 | 17,520 * | 11,000 ** | 13,650 * | Capacities shown are in pounds and working loads must not exceed the ratings on the capacity charts in this Crane Rating Manual. Study Operator's Manual for wire rope inspection procedures. |
| 2 | 45,400 | 35,040 | 22,000 | 27,310 | |
| 3 | 68,100 | 52,560 | 33,000 | 40,970 | |
| 4 | 90,800 | 70,080 | 44,000 | 54,620 | |
| 5 | 113,500 | 87,600 | 55,000 | 68,280 | |
| 6 | 136,200 | 105,120 | 66,000 | 81,940 | |
| 7 | 158,900 | 122,640 | 77,000 | 95,600 | |
| 8 | 181,600 | 140,160 | 88,000 | 109,250 | |

| LBCE Type | Description |
|---|---|
| DB | 6 x 26 (6 x 19 Class) – Warrington Seale – Extra Improved Plow Steel – Preformed – Right Lay – Regular Lay – I.W.R.C. |
| RB | 19 x 19 Rotation Resistant– Extra Extra Improved Plow Steel – Preformed – Right Lay – Regular Lay. Swaged – SF = 5:1 |
| ZB | 36 x 7 Class – Non–Rotating – Extra Improved Plow Steel – Right Lay – Regular Lay – S.F. = 5:1 |
| WB | 8 Strand – Regular Lay |

* Use of swivel end with 1 part of line is not recommended.

** Swivel end is recommended for operation with 1 part of line.

# WORKING AREAS



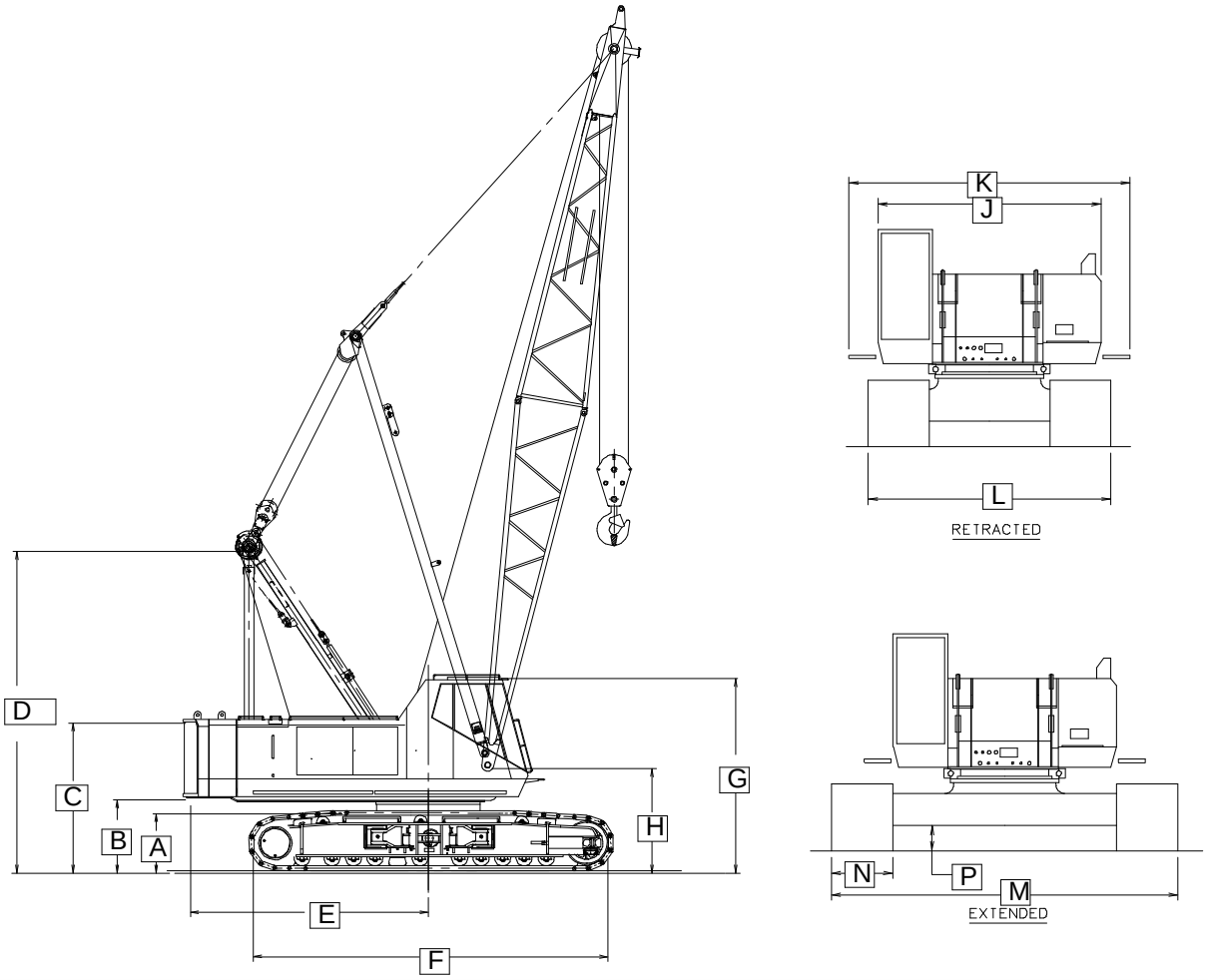

Note:

1. These Lines Determine The Limiting Position Of Any Load For Operation Within Working Areas Indicated.

**Working Areas Chart** CD00785

# GENERAL DIMENSIONS

| | GENERAL DESCRIPTION | DIMENSION |
|---|---|---|
| A | TREADMEMBER HEIGHT | 38.5” |
| B | GROUND CLEARANCE–CTWT | 49” |
| C | OVERALL HEIGHT–CTWT | 8’–4.2” |
| D | WORKING HEIGHT–GANTRY | 17’–10.4” |
| E | CTWT TAILSWING | 14’–1.25” |
| F | TREADMEMBER LENGTH | 20’–2” |
| G | OPERATOR’S CAB HEIGHT | 10’–7.8” |
| H | HEIGHT OF BOOM FOOT PIN | 5’–9.8” |
| J | UPPER WIDTH | 10’–5.6” |
| K | WIDTH OVER CATWALKS | 13’–3.3” |
| L | RETRACTED WIDTH | 11’–11” |
| M | EXTENDED WIDTH | 17’–0” |
| N | TRACK SHOE WIDTH | 36” |
| P | MINIMUM GROUND CLEARANCE | 15.2” |




**General Dimensions Drawing**

# LIFTOFF CAPABILITIES

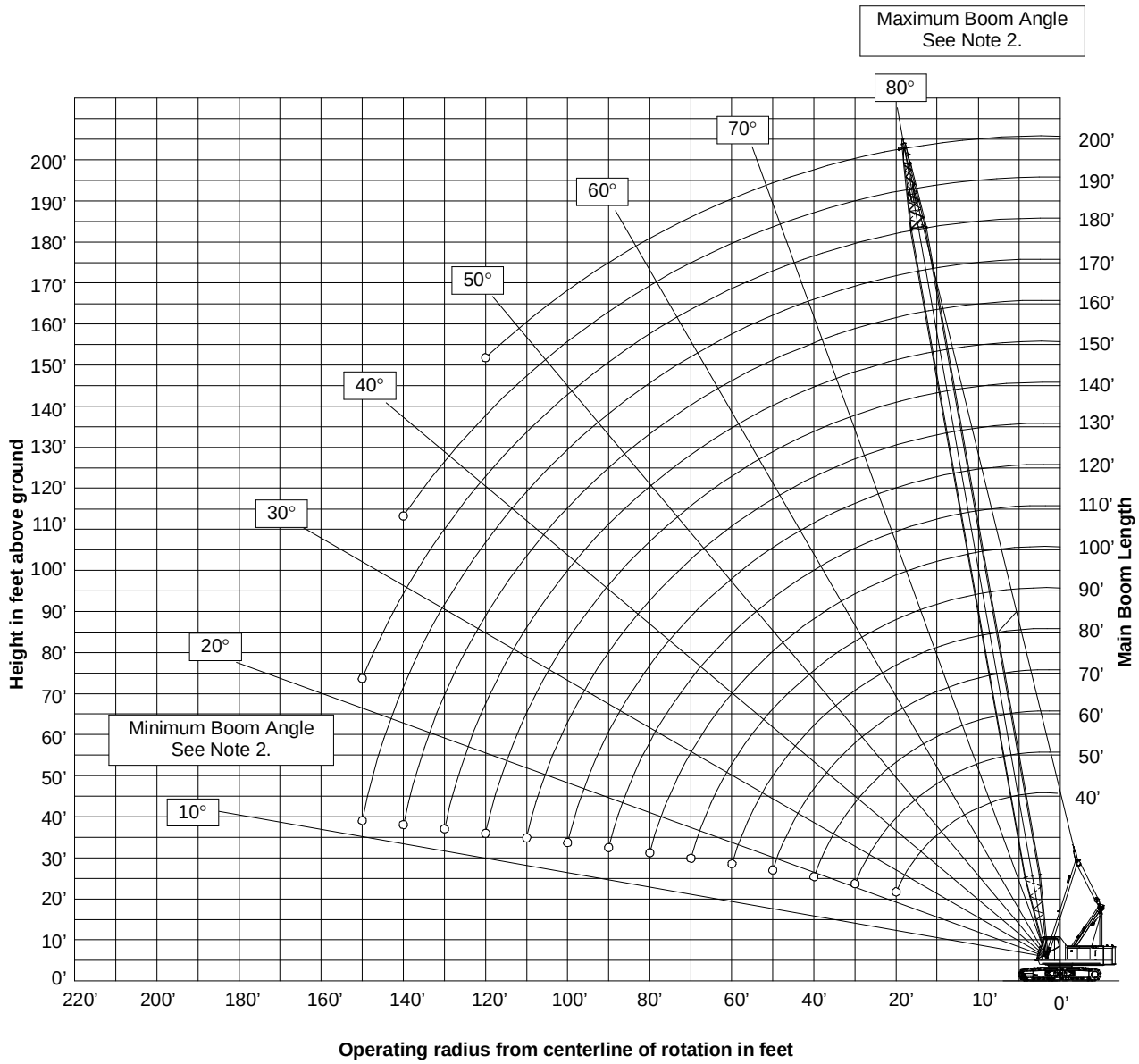
| Counterweight (Side Frames) | Maximum Boom | Maximum Boom + Jib |
|---|---|---|
| | Feet | Feet |
| NO (RETRACTED) | 90 | N/A |
| NO (EXTENDED) | 120 | N/A |
| A (RETRACTED) | 140 | N/A |
| A (EXTENDED) | 170 | N/A |
| AB (EXTENDED) | 200 | 180 + 60<br>190 + 30 |

**NOTES:**

1. **Booms must be erected or lowered over the end with no load - - hook block on ground.**
2. **Crane on firm and level surface.**
3. **Open throat booms 190' and 200' in length require mid–point suspension pendants.**
4. **Boom and jib combination of 190' + 30' does require mid–point suspension pendants.**
5. **Boom and jib combination of 180' + 60' does not require mid–point suspension pendants.**

# WORKING RANGE DIAGRAM

## 40’ TO 200’ OPEN THROAT BOOM




**Notes:**

1. **Boom geometry shown is for unloaded condition and crane standing level on firm supporting surface. Boom deflection, subsequent radius and boom angle change must be accounted for when applying load to hook.**
2. **Maximum and minimum boom angles are equal to the values listed in the capacity chart for each boom length.**

**Working Range Diagram**

# CAPACITY DEDUCTIONS FOR LIFTING OFF MAIN BOOM HOOK WITH JIB INSTALLED (OPEN THROAT BOOM ONLY)

When using main boom hook, while jib is attached, reduce boom capacities by the values in the following chart:

| Jib Length (ft) | Capacity Deduction (lbs) |
|---|---|
| 30 | 2,000 |
| 45 | 2,400 |
| 60 | 3,200 |

# CAPACITY DEDUCTIONS FOR LIFTING OFF MAIN BOOM HOOK WITH 5 FOOT TIP EXTENSION INSTALLED

When using main boom hook, while 5 foot tip extension is attached, reduce boom capacities by the values in the following chart:

| Tip Extension (ft) | Capacity Deduction (lbs) |
|---|---|
| 5 | 1,100 |

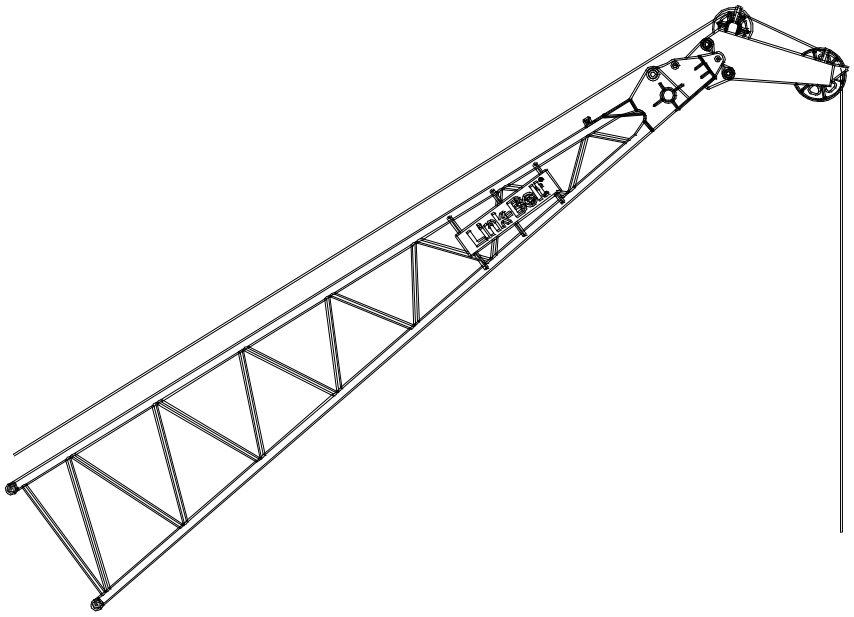
# MAXIMUM ALLOWABLE CAPACITIES FOR 5 FOOT TIP EXTENSION

## LIFTING CAPACITY TO BE THE SMALLEST OF THE FOLLOWING VALUES:

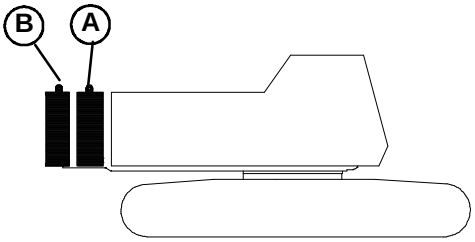
1. 18,000 lb (Maximum).
2. The standard crane lift capacity minus 1,100 lb for the boom length, tip extension load radius, and counterweight configuration in use on the crane.

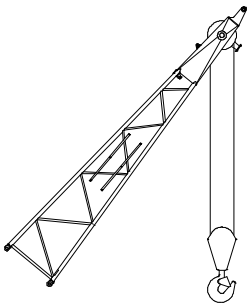
## NOTES:

1. All notes are to be adhered to as listed on the standard lift crane capacity charts .
2. Reduce the main boom lift capacities by 1,100 lb when the tip extension is installed.
3. The maximum boom length on which the tip extension can be installed is 190’.
4. Do not lift or suspend a load from the boom tip extension and main boom at the same time.



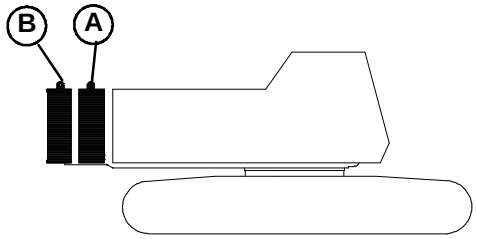

**20’ Open Throat Boom With 5 Foot Tip Extension**

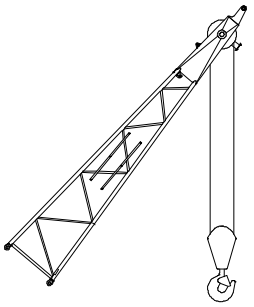


## MAIN BOOM CAPACITIES – 40 FT OPEN THROAT TUBE BOOM

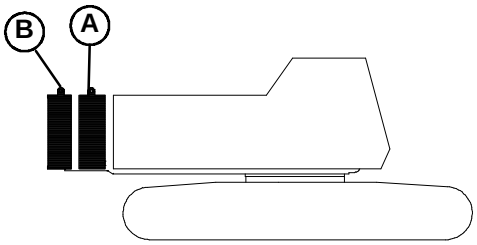
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 9 | 81.8 | 160,000 | 160,000 | 160,000 | 160,000 | 143,300 | 77,200 | 9 |
| 10 | 80.3 | 160,000 | 160,000 | 160,000 | 153,200 | 116,900 | 62,800 | 10 |
| 11 | 78.9 | 160,000 | 160,000 | 157,600 | 123,000 | 98,600 | 52,700 | 11 |
| 12 | 77.4 | 160,000 | 160,000 | 145,300 | 98,100 | 85,100 | 45,300 | 12 |
| 13 | 75.9 | 151,900 | 151,900 | 134,800 | 81,500 | 74,800 | 39,700 | 13 |
| 14 | 74.5 | 141,600 | 141,600 | 118,600 | 69,500 | 66,600 | 35,200 | 14 |
| 15 | 73.0 | 132,600 | 132,600 | 103,500 | 60,500 | 60,000 | 31,500 | 15 |
| 16 | 71.5 | 124,700 | 124,700 | 91,800 | 53,500 | 54,500 | 28,500 | 16 |
| 17 | 69.9 | 117,600 | 117,600 | 82,300 | 47,900 | 49,900 | 26,000 | 17 |
| 18 | 68.4 | 111,300 | 108,700 | 74,600 | 43,300 | 46,000 | 23,900 | 18 |
| 19 | 66.9 | 105,600 | 99,500 | 68,200 | 39,400 | 42,600 | 22,000 | 19 |
| 20 | 65.3 | 100,400 | 91,600 | 62,700 | 36,200 | 39,700 | 20,400 | 20 |
| 25 | 57.1 | 80,200 | 65,400 | 44,500 | 25,300 | 29,200 | 14,600 | 25 |
| 30 | 48.1 | 60,900 | 50,500 | 34,100 | 19,100 | 22,900 | 11,100 | 30 |
| 35 | 37.5 | 48,800 | 40,900 | 27,400 | 15,100 | 18,600 | 8,700 | 35 |
| 40 | 23.4 | 40,500 | 34,100 | 22,700 | 12,200 | 15,400 | 7,000 | 40 |

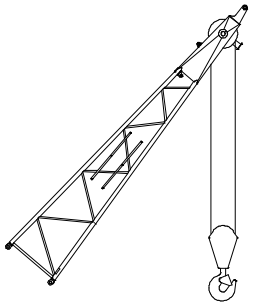


## MAIN BOOM CAPACITIES – 50 FT OPEN THROAT TUBE BOOM

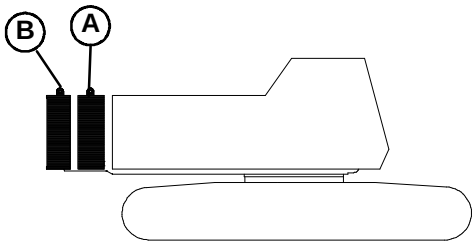
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 11 | 81.1 | 159,900 | 159,900 | 157,300 | 123,900 | 99,000 | 53,100 | 11 |
| 12 | 80.0 | 159,900 | 159,900 | 145,100 | 98,900 | 85,500 | 45,700 | 12 |
| 13 | 78.8 | 151,700 | 151,700 | 134,600 | 82,100 | 75,100 | 40,000 | 13 |
| 14 | 77.6 | 141,500 | 141,500 | 119,100 | 70,000 | 66,900 | 35,500 | 14 |
| 15 | 76.4 | 132,500 | 132,500 | 104,000 | 61,000 | 60,300 | 31,800 | 15 |
| 16 | 75.3 | 124,600 | 124,600 | 92,200 | 53,900 | 54,800 | 28,800 | 16 |
| 17 | 74.1 | 117,500 | 117,500 | 82,700 | 48,300 | 50,200 | 26,200 | 17 |
| 18 | 72.9 | 111,200 | 109,100 | 75,000 | 43,600 | 46,200 | 24,100 | 18 |
| 19 | 71.7 | 105,500 | 99,800 | 68,500 | 39,800 | 42,800 | 22,200 | 19 |
| 20 | 70.5 | 100,300 | 91,900 | 63,000 | 36,500 | 39,900 | 20,600 | 20 |
| 25 | 64.3 | 80,200 | 65,600 | 44,700 | 25,500 | 29,400 | 14,800 | 25 |
| 30 | 57.7 | 61,100 | 50,700 | 34,300 | 19,300 | 23,000 | 11,300 | 30 |
| 35 | 50.6 | 49,000 | 41,100 | 27,600 | 15,300 | 18,700 | 8,900 | 35 |
| 40 | 42.7 | 40,700 | 34,400 | 22,900 | 12,400 | 15,600 | 7,200 | 40 |
| 50 | 20.9 | 30,000 | 25,500 | 16,800 | 8,700 | 11,400 | 4,800 | 50 |

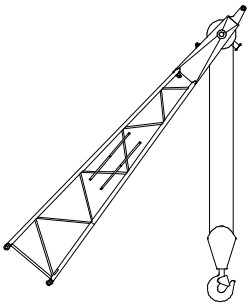


## MAIN BOOM CAPACITIES – 60 FT OPEN THROAT TUBE BOOM

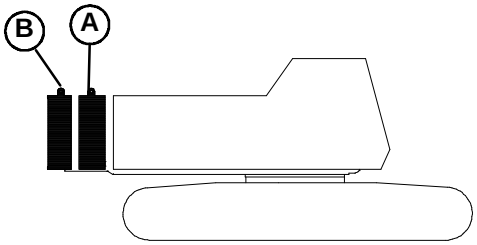
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 12 | 81.6 | 149,600 | 149,600 | 144,800 | 99,300 | 85,600 | 45,900 | 12 |
| 13 | 80.7 | 146,400 | 146,400 | 134,400 | 82,500 | 75,300 | 40,100 | 13 |
| 14 | 79.7 | 141,200 | 141,200 | 119,400 | 70,400 | 67,000 | 35,600 | 14 |
| 15 | 78.7 | 132,300 | 132,300 | 104,200 | 61,300 | 60,400 | 31,900 | 15 |
| 16 | 77.8 | 124,400 | 124,400 | 92,400 | 54,200 | 54,900 | 28,900 | 16 |
| 17 | 76.8 | 117,400 | 117,400 | 82,900 | 48,500 | 50,300 | 26,300 | 17 |
| 18 | 75.8 | 111,100 | 109,300 | 75,100 | 43,800 | 46,300 | 24,200 | 18 |
| 19 | 74.8 | 105,400 | 99,900 | 68,700 | 39,900 | 42,900 | 22,300 | 19 |
| 20 | 73.8 | 100,200 | 92,100 | 63,200 | 36,600 | 39,900 | 20,600 | 20 |
| 25 | 68.8 | 80,200 | 65,700 | 44,800 | 25,600 | 29,400 | 14,800 | 25 |
| 30 | 63.6 | 61,200 | 50,800 | 34,400 | 19,400 | 23,000 | 11,300 | 30 |
| 35 | 58.1 | 49,100 | 41,100 | 27,700 | 15,300 | 18,700 | 8,900 | 35 |
| 40 | 52.3 | 40,800 | 34,400 | 23,000 | 12,500 | 15,600 | 7,200 | 40 |
| 50 | 38.9 | 30,100 | 25,600 | 16,800 | 8,800 | 11,400 | 4,800 | 50 |
| 60 | 19.0 | 23,600 | 20,100 | 13,000 | 6,400 | 8,700 | 3,300 | 60 |

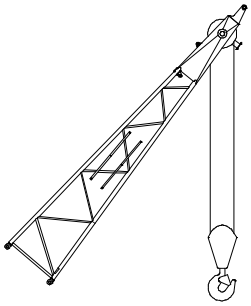


## MAIN BOOM CAPACITIES – 70 FT OPEN THROAT TUBE BOOM

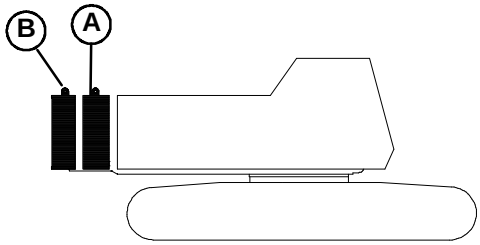
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 14 | 81.2 | 129,700 | 129,700 | 119,600 | 70,600 | 67,100 | 35,700 | 14 |
| 15 | 80.4 | 126,800 | 126,800 | 104,400 | 61,400 | 60,400 | 32,000 | 15 |
| 16 | 79.5 | 124,100 | 124,100 | 92,600 | 54,300 | 54,900 | 28,900 | 16 |
| 17 | 78.7 | 117,100 | 117,100 | 83,000 | 48,600 | 50,300 | 26,400 | 17 |
| 18 | 77.9 | 110,800 | 109,400 | 75,200 | 43,900 | 46,300 | 24,200 | 18 |
| 19 | 77.0 | 105,200 | 100,000 | 68,700 | 40,000 | 42,900 | 22,300 | 19 |
| 20 | 76.2 | 100,000 | 92,100 | 63,200 | 36,700 | 39,900 | 20,600 | 20 |
| 25 | 71.9 | 80,200 | 65,700 | 44,800 | 25,600 | 29,400 | 14,800 | 25 |
| 30 | 67.6 | 61,200 | 50,800 | 34,400 | 19,400 | 23,000 | 11,300 | 30 |
| 35 | 63.1 | 49,100 | 41,100 | 27,700 | 15,300 | 18,700 | 8,900 | 35 |
| 40 | 58.4 | 40,800 | 34,400 | 23,000 | 12,500 | 15,600 | 7,100 | 40 |
| 50 | 48.1 | 30,100 | 25,600 | 16,800 | 8,800 | 11,400 | 4,800 | 50 |
| 60 | 35.9 | 23,600 | 20,100 | 13,000 | 6,400 | 8,700 | 3,300 | 60 |
| 70 | 17.6 | 19,100 | 16,300 | 10,300 | 4,800 | 6,800 | 2,200 | 70 |

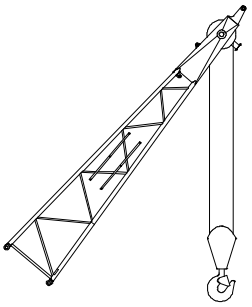


## MAIN BOOM CAPACITIES – 80 FT OPEN THROAT TUBE BOOM

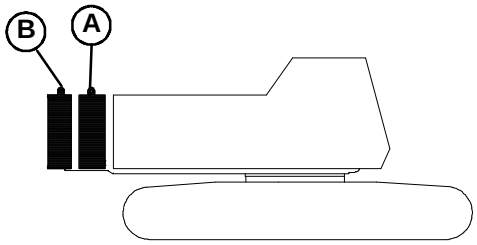
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 15 | 81.6 | 116,800 | 116,800 | 104,500 | 61,600 | 60,400 | 32,000 | 15 |
| 16 | 80.9 | 114,600 | 114,600 | 92,700 | 54,400 | 54,900 | 28,900 | 16 |
| 17 | 80.1 | 111,400 | 111,400 | 83,100 | 48,700 | 50,300 | 26,300 | 17 |
| 18 | 79.4 | 109,300 | 109,300 | 75,300 | 44,000 | 46,300 | 24,100 | 18 |
| 19 | 78.7 | 104,900 | 100,100 | 68,800 | 40,100 | 42,900 | 22,200 | 19 |
| 20 | 77.9 | 99,800 | 92,200 | 63,300 | 36,700 | 39,900 | 20,600 | 20 |
| 25 | 74.2 | 80,000 | 65,700 | 44,800 | 25,600 | 29,400 | 14,700 | 25 |
| 30 | 70.5 | 61,200 | 50,700 | 34,400 | 19,300 | 22,900 | 11,200 | 30 |
| 35 | 66.6 | 49,000 | 41,100 | 27,600 | 15,300 | 18,600 | 8,800 | 35 |
| 40 | 62.7 | 40,700 | 34,300 | 22,900 | 12,400 | 15,500 | 7,100 | 40 |
| 50 | 54.3 | 30,100 | 25,500 | 16,800 | 8,700 | 11,300 | 4,700 | 50 |
| 60 | 44.8 | 23,500 | 20,000 | 12,900 | 6,400 | 8,600 | 3,200 | 60 |
| 70 | 33.5 | 19,100 | 16,300 | 10,300 | 4,800 | 6,700 | 2,100 | 70 |
| 80 | 16.5 | 15,900 | 13,500 | 8,300 | 3,600 | 5,300 | ––––– | 80 |

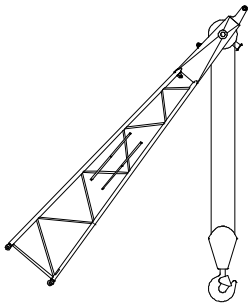


## MAIN BOOM CAPACITIES – 90 FT OPEN THROAT TUBE BOOM

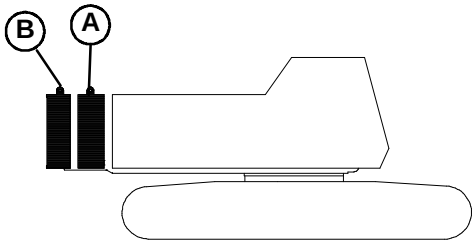
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 16 | 81.9 | 104,700 | 104,700 | 92,700 | 54,500 | 54,900 | 28,900 | 16 |
| 17 | 81.2 | 102,800 | 102,800 | 83,200 | 48,700 | 50,200 | 26,300 | 17 |
| 18 | 80.6 | 101,200 | 101,200 | 75,300 | 44,000 | 46,200 | 24,100 | 18 |
| 19 | 79.9 | 99,600 | 99,600 | 68,800 | 40,100 | 42,800 | 22,200 | 19 |
| 20 | 79.3 | 97,700 | 92,200 | 63,300 | 36,700 | 39,800 | 20,500 | 20 |
| 25 | 76.0 | 79,800 | 65,700 | 44,800 | 25,600 | 29,300 | 14,700 | 25 |
| 30 | 72.7 | 61,200 | 50,700 | 34,300 | 19,300 | 22,800 | 11,100 | 30 |
| 35 | 69.4 | 49,000 | 41,000 | 27,500 | 15,200 | 18,500 | 8,700 | 35 |
| 40 | 65.9 | 40,700 | 34,200 | 22,800 | 12,300 | 15,400 | 6,900 | 40 |
| 50 | 58.7 | 30,000 | 25,400 | 16,700 | 8,600 | 11,200 | 4,600 | 50 |
| 60 | 50.9 | 23,500 | 19,900 | 12,800 | 6,300 | 8,500 | 3,100 | 60 |
| 70 | 42.2 | 19,000 | 16,200 | 10,200 | 4,700 | 6,600 | 2,000 | 70 |
| 80 | 31.5 | 15,800 | 13,400 | 8,300 | 3,500 | 5,200 | ––––– | 80 |
| 90 | 15.5 | 13,400 | 11,300 | 6,800 | 2,600 | 4,100 | ––––– | 90 |

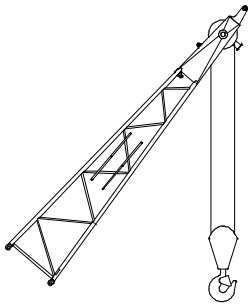


## MAIN BOOM CAPACITIES – 100 FT OPEN THROAT TUBE BOOM

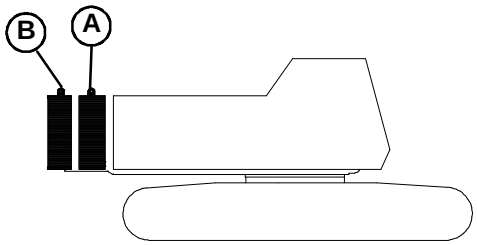
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 18 | 81.5 | 93,400 | 93,400 | 75,300 | 44,000 | 46,200 | | 18 |
| 19 | 81.0 | 92,000 | 92,000 | 68,800 | 40,000 | 42,700 | | 19 |
| 20 | 80.4 | 89,400 | 89,400 | 63,200 | 36,700 | 39,700 | | 20 |
| 25 | 77.5 | 79,600 | 65,600 | 44,700 | 25,500 | 29,200 | | 25 |
| 30 | 74.5 | 61,100 | 50,600 | 34,200 | 19,200 | 22,700 | | 30 |
| 35 | 71.5 | 48,900 | 40,900 | 27,400 | 15,100 | 18,400 | PROHIBITED | 35 |
| 40 | 68.5 | 40,600 | 34,100 | 22,700 | 12,200 | 15,300 | | 40 |
| 50 | 62.1 | 29,900 | 25,300 | 16,600 | 8,500 | 11,100 | | 50 |
| 60 | 55.4 | 23,400 | 19,800 | 12,700 | 6,200 | 8,400 | | 60 |
| 70 | 48.2 | 18,900 | 16,100 | 10,100 | 4,600 | 6,500 | | 70 |
| 80 | 39.9 | 15,700 | 13,300 | 8,100 | 3,400 | 5,100 | | 80 |
| 90 | 29.9 | 13,300 | 11,200 | 6,700 | 2,500 | 4,000 | | 90 |
| 100 | 14.7 | 11,400 | 9,500 | 5,500 | ––––– | 3,100 | | 100 |

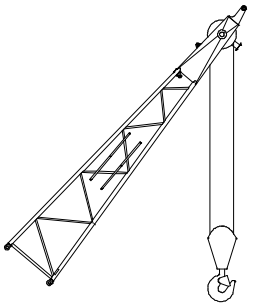


## MAIN BOOM CAPACITIES – 110 FT OPEN THROAT TUBE BOOM

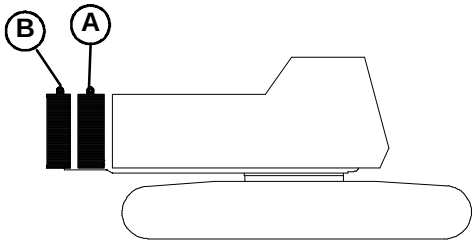
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 25 | 78.6 | 77,100 | 65,500 | 44,600 | 25,400 | 29,000 | PROHIBITED | 25 |
| 30 | 75.9 | 61,000 | 50,500 | 34,100 | 19,100 | 22,600 | | 30 |
| 35 | 73.2 | 48,800 | 40,800 | 27,300 | 15,000 | 18,200 | | 35 |
| 40 | 70.5 | 40,500 | 34,000 | 22,600 | 12,100 | 15,100 | | 40 |
| 50 | 64.9 | 29,800 | 25,200 | 16,400 | 8,400 | 10,900 | | 50 |
| 60 | 59.0 | 23,200 | 19,700 | 12,600 | 6,000 | 8,200 | | 60 |
| 70 | 52.7 | 18,800 | 15,900 | 9,900 | 4,400 | 6,400 | | 70 |
| 80 | 45.8 | 15,600 | 13,200 | 8,000 | 3,300 | 5,000 | | 80 |
| 90 | 38.0 | 13,200 | 11,100 | 6,500 | 2,400 | 3,900 | | 90 |
| 100 | 28.4 | 11,300 | 9,400 | 5,400 | ––––– | 3,000 | | 100 |
| 110 | 14.0 | 9,700 | 8,100 | 4,400 | ––––– | 2,300 | | 110 |

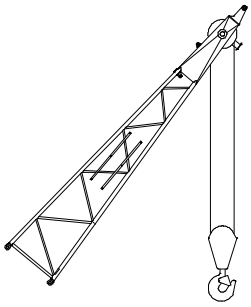


## MAIN BOOM CAPACITIES – 120 FT OPEN THROAT TUBE BOOM

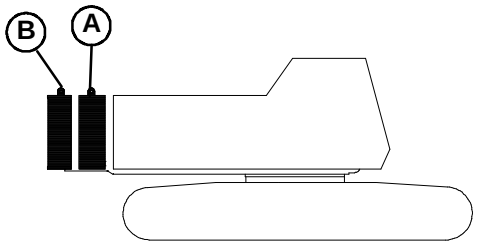
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 25 | 79.6 | 71,600 | 65,500 | 44,600 | 25,400 | 28,900 | PROHIBITED | 25 |
| 30 | 77.1 | 61,000 | 50,400 | 34,000 | 19,000 | 22,500 | | 30 |
| 35 | 74.7 | 48,700 | 40,700 | 27,200 | 14,900 | 18,100 | | 35 |
| 40 | 72.2 | 40,400 | 33,900 | 22,500 | 12,000 | 15,000 | | 40 |
| 50 | 67.1 | 29,700 | 25,100 | 16,300 | 8,200 | 10,800 | | 50 |
| 60 | 61.8 | 23,100 | 19,500 | 12,400 | 5,900 | 8,100 | | 60 |
| 70 | 56.2 | 18,700 | 15,800 | 9,800 | 4,300 | 6,200 | | 70 |
| 80 | 50.3 | 15,500 | 13,000 | 7,900 | 3,100 | 4,800 | | 80 |
| 90 | 43.7 | 13,000 | 10,900 | 6,400 | 2,200 | 3,700 | | 90 |
| 100 | 36.3 | 11,100 | 9,300 | 5,200 | ––––– | 2,900 | | 100 |
| 110 | 27.2 | 9,600 | 8,000 | 4,300 | ––––– | 2,200 | | 110 |
| 120 | 13.4 | 8,300 | 6,800 | 3,500 | ––––– | ––––– | | 120 |

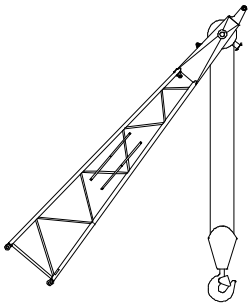


## MAIN BOOM CAPACITIES – 130 FT OPEN THROAT TUBE BOOM

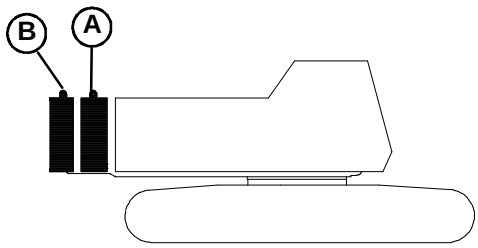
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 25 | 80.4 | 65,100 | 65,100 | 44,500 | PROHIBITED | 28,800 | PROHIBITED | 25 |
| 30 | 78.1 | 60,900 | 50,300 | 33,900 | | 22,300 | | 30 |
| 35 | 75.9 | 48,600 | 40,600 | 27,100 | | 18,000 | | 35 |
| 40 | 73.6 | 40,200 | 33,800 | 22,300 | | 14,800 | | 40 |
| 50 | 68.9 | 29,500 | 24,900 | 16,200 | | 10,600 | | 50 |
| 60 | 64.1 | 23,000 | 19,400 | 12,300 | | 7,900 | | 60 |
| 70 | 59.1 | 18,500 | 15,600 | 9,600 | | 6,000 | | 70 |
| 80 | 53.8 | 15,300 | 12,900 | 7,700 | | 4,700 | | 80 |
| 90 | 48.2 | 12,900 | 10,800 | 6,300 | | 3,600 | | 90 |
| 100 | 41.9 | 11,000 | 9,200 | 5,100 | | 2,700 | | 100 |
| 110 | 34.8 | 9,500 | 7,800 | 4,200 | | 2,000 | | 110 |
| 120 | 26.1 | 8,200 | 6,700 | 3,400 | | ––––– | | 120 |
| 130 | 12.9 | 7,100 | 5,800 | 2,700 | | ––––– | | 130 |

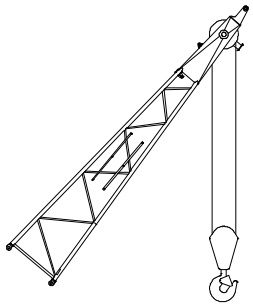


## MAIN BOOM CAPACITIES – 140 FT OPEN THROAT TUBE BOOM

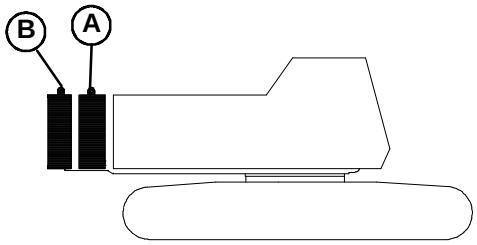
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 25 | 81.1 | 60,000 | 60,000 | 44,400 | PROHIBITED | 28,700 | PROHIBITED | 25 |
| 30 | 79.0 | 56,700 | 50,200 | 33,800 | | 22,200 | | 30 |
| 35 | 76.9 | 48,500 | 40,400 | 27,000 | | 17,800 | | 35 |
| 40 | 74.8 | 40,100 | 33,600 | 22,200 | | 14,700 | | 40 |
| 50 | 70.5 | 29,400 | 24,800 | 16,000 | | 10,500 | | 50 |
| 60 | 66.1 | 22,800 | 19,200 | 12,100 | | 7,800 | | 60 |
| 70 | 61.5 | 18,400 | 15,500 | 9,500 | | 5,900 | | 70 |
| 80 | 56.8 | 15,200 | 12,700 | 7,600 | | 4,500 | | 80 |
| 90 | 51.7 | 12,700 | 10,600 | 6,100 | | 3,400 | | 90 |
| 100 | 46.3 | 10,800 | 9,000 | 4,900 | | 2,600 | | 100 |
| 110 | 40.3 | 9,300 | 7,700 | 4,000 | | ––––– | | 110 |
| 120 | 33.5 | 8,000 | 6,600 | 3,200 | | ––––– | | 120 |
| 130 | 25.2 | 7,000 | 5,600 | 2,600 | | ––––– | | 130 |
| 140 | 12.4 | 6,100 | 4,800 | 2,000 | | ––––– | | 140 |

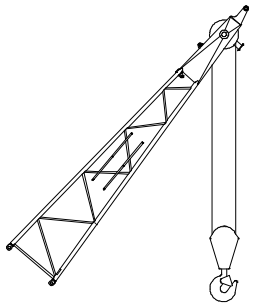


## MAIN BOOM CAPACITIES – 150 FT OPEN THROAT TUBE BOOM

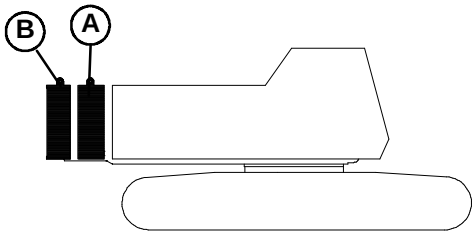
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 25 | 81.7 | 55,100 | 55,100 | 44,300 | PROHIBITED | | | 25 |
| 30 | 79.7 | 52,200 | 50,000 | 33,700 | | | | 30 |
| 35 | 77.8 | 48,400 | 40,300 | 26,800 | | | | 35 |
| 40 | 75.8 | 40,000 | 33,500 | 22,100 | | | | 40 |
| 50 | 71.9 | 29,200 | 24,600 | 15,900 | | | | 50 |
| 60 | 67.8 | 22,700 | 19,100 | 12,000 | | | | 60 |
| 70 | 63.6 | 18,200 | 15,300 | 9,300 | | | | 70 |
| 80 | 59.2 | 15,000 | 12,600 | 7,400 | | | | 80 |
| 90 | 54.7 | 12,600 | 10,500 | 5,900 | | | | 90 |
| 100 | 49.9 | 10,700 | 8,800 | 4,800 | | | | 100 |
| 110 | 44.6 | 9,100 | 7,500 | 3,800 | | | | 110 |
| 120 | 38.9 | 7,900 | 6,400 | 3,100 | | | | 120 |
| 130 | 32.4 | 6,800 | 5,500 | 2,400 | | | | 130 |
| 140 | 24.3 | 5,900 | 4,700 | ––––– | | | | 140 |
| 150 | 12.0 | 5,100 | 4,000 | ––––– | | | | 150 |

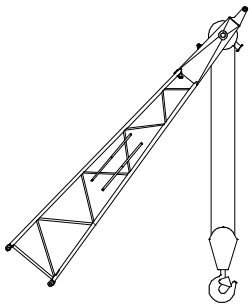


## MAIN BOOM CAPACITIES – 160 FT OPEN THROAT TUBE BOOM

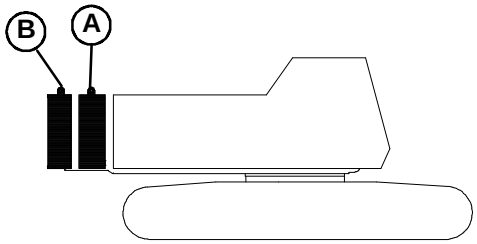
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 30 | 80.4 | 47,900 | 47,900 | 33,500 | | | | 30 |
| 35 | 78.6 | 44,000 | 40,200 | 26,700 | | | | 35 |
| 40 | 76.7 | 39,900 | 33,300 | 21,900 | | | | 40 |
| 50 | 73.0 | 29,100 | 24,500 | 15,700 | | | | 50 |
| 60 | 69.2 | 22,500 | 18,900 | 11,800 | | | | 60 |
| 70 | 65.4 | 18,000 | 15,100 | 9,200 | | | | 70 |
| 80 | 61.3 | 14,800 | 12,400 | 7,200 | | | | 80 |
| 90 | 57.2 | 12,400 | 10,300 | 5,800 | **PROHIBITED** | | | 90 |
| 100 | 52.8 | 10,500 | 8,700 | 4,600 | | | | 100 |
| 110 | 48.2 | 9,000 | 7,300 | 3,700 | | | | 110 |
| 120 | 43.2 | 7,700 | 6,200 | 2,900 | | | | 120 |
| 130 | 37.6 | 6,700 | 5,300 | 2,200 | | | | 130 |
| 140 | 31.3 | 5,800 | 4,500 | ––––– | | | | 140 |
| 150 | 23.5 | 5,000 | 3,800 | ––––– | | | | 150 |
| 160 | 11.6 | 4,300 | 3,200 | ––––– | | | | 160 |

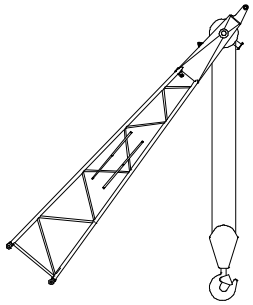


## MAIN BOOM CAPACITIES – 170 FT OPEN THROAT TUBE BOOM

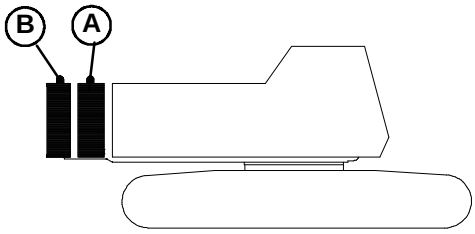
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 30 | 81.0 | 42,400 | 42,400 | 33,400 | PROHIBITED | | | 30 |
| 35 | 79.2 | 40,300 | 40,000 | 26,600 | | | | 35 |
| 40 | 77.5 | 37,000 | 33,200 | 21,800 | | | | 40 |
| 50 | 74.0 | 28,900 | 24,300 | 15,500 | | | | 50 |
| 60 | 70.5 | 22,300 | 18,800 | 11,700 | | | | 60 |
| 70 | 66.9 | 17,900 | 15,000 | 9,000 | | | | 70 |
| 80 | 63.2 | 14,700 | 12,200 | 7,100 | | | | 80 |
| 90 | 59.3 | 12,200 | 10,100 | 5,600 | | | | 90 |
| 100 | 55.3 | 10,300 | 8,500 | 4,400 | | | | 100 |
| 110 | 51.1 | 8,800 | 7,200 | 3,500 | | | | 110 |
| 120 | 46.6 | 7,500 | 6,100 | 2,700 | | | | 120 |
| 130 | 41.8 | 6,500 | 5,100 | 2,100 | | | | 130 |
| 140 | 36.5 | 5,600 | 4,400 | ––––– | | | | 140 |
| 150 | 30.3 | 4,800 | 3,700 | ––––– | | | | 150 |
| 160 | 22.8 | 4,100 | 3,100 | ––––– | | | | 160 |
| 170 | 11.3 | 3,500 | 2,500 | ––––– | | | | 170 |

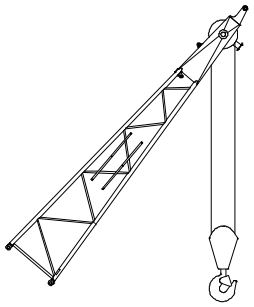


## MAIN BOOM CAPACITIES – 180 FT OPEN THROAT TUBE BOOM

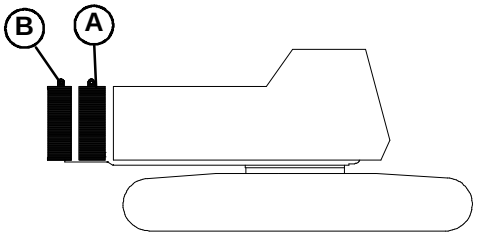
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 30 | 81.5 | 37,500 | 37,500 | PROHIBITED | | | | 30 |
| 35 | 79.9 | 36,800 | 36,800 | | | | | 35 |
| 40 | 78.2 | 33,900 | 33,000 | | | | | 40 |
| 50 | 75.0 | 28,100 | 24,100 | | | | | 50 |
| 60 | 71.6 | 21,900 | 18,600 | | | | | 60 |
| 70 | 68.2 | 17,700 | 14,800 | | | | | 70 |
| 80 | 64.8 | 14,500 | 12,000 | | | | | 80 |
| 90 | 61.2 | 12,100 | 10,000 | | | | | 90 |
| 100 | 57.5 | 10,200 | 8,300 | | | | | 100 |
| 110 | 53.6 | 8,600 | 7,000 | | | | | 110 |
| 120 | 49.6 | 7,400 | 5,900 | | | | | 120 |
| 130 | 45.3 | 6,100 | 5,000 | | | | | 130 |
| 140 | 40.6 | 5,000 | 4,200 | | | | | 140 |
| 150 | 35.4 | 4,100 | 3,500 | | | | | 150 |
| 160 | 29.5 | 3,300 | 2,900 | | | | | 160 |
| 170 | 22.1 | 2,500 | 2,400 | | | | | 170 |

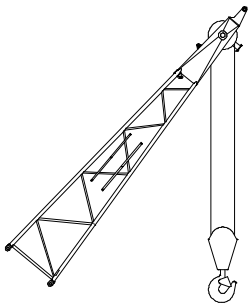


## MAIN BOOM CAPACITIES – 190 FT OPEN THROAT TUBE BOOM

| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 30 | 81.9 | 32,900 | 32,900 | PROHIBITED | | | | 30 |
| 35 | 80.4 | 32,500 | 32,500 | | | | | 35 |
| 40 | 78.9 | 30,700 | 30,700 | | | | | 40 |
| 50 | 75.8 | 25,700 | 24,000 | | | | | 50 |
| 60 | 72.6 | 19,600 | 18,400 | | | | | 60 |
| 70 | 69.4 | 16,200 | 14,600 | | | | | 70 |
| 80 | 66.2 | 13,300 | 11,900 | | | | | 80 |
| 90 | 62.8 | 11,000 | 9,800 | | | | | 90 |
| 100 | 59.4 | 9,100 | 8,100 | | | | | 100 |
| 110 | 55.8 | 7,500 | 6,800 | | | | | 110 |
| 120 | 52.1 | 6,100 | 5,700 | | | | | 120 |
| 130 | 48.2 | 5,000 | 4,800 | | | | | 130 |
| 140 | 44.0 | 4,000 | 4,000 | | | | | 140 |
| 150 | 39.4 | 3,100 | 3,100 | | | | | 150 |
| 160 | 34.4 | 2,100 | 2,100 | | | | | 160 |



## MAIN BOOM CAPACITIES – 200 FT OPEN THROAT TUBE BOOM

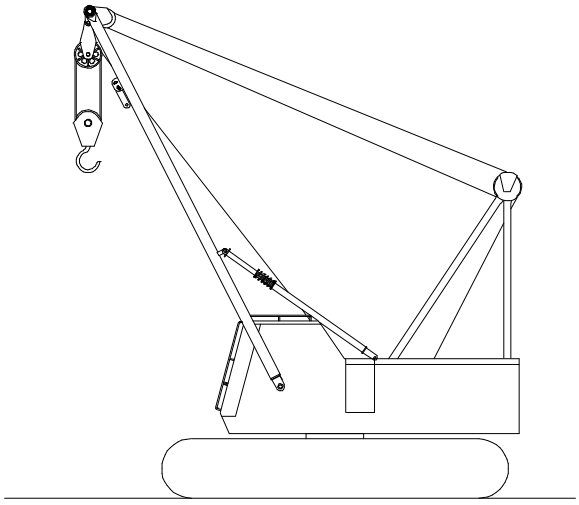
| Load Radius (Ft.) | Boom Angle (deg) | Over End Blocked | 360_ Rotation | | | | | Load Radius (Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | | Side Frames Extended | | | Side Frames Retracted | | |
| | | AB CTWT (lb) | AB CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | A CTWT (lb) | 0 CTWT (lb) | |
| 35 | 80.9 | 28,600 | 28,600 | PROHIBITED | | | | 35 |
| 40 | 79.4 | 27,200 | 27,200 | | | | | 40 |
| 50 | 76.5 | 21,500 | 21,500 | | | | | 50 |
| 60 | 73.5 | 17,500 | 17,500 | | | | | 60 |
| 70 | 70.5 | 14,200 | 14,200 | | | | | 70 |
| 80 | 67.4 | 11,700 | 11,700 | | | | | 80 |
| 90 | 64.3 | 9,500 | 9,500 | | | | | 90 |
| 100 | 61.1 | 7,700 | 7,700 | | | | | 100 |
| 110 | 57.8 | 6,200 | 6,200 | | | | | 110 |
| 120 | 54.3 | 5,000 | 5,000 | | | | | 120 |
| 130 | 50.7 | 3,900 | 3,900 | | | | | 130 |
| 140 | 46.9 | 2,800 | 2,800 | | | | | 140 |

# LIVE MAST LIFTING CAPACITIES (WITHOUT COUNTERWEIGHT INSTALLED)

| Live Mast | | Side Frames Extended (lb) | Side Frames Retracted (lb) |
|---|---|---|---|
| Radius (ft) | Angle (deg) | | |
| 10 | 73.7 | 60,000 | 60,000 |
| 11 | 71.2 | 60,000 | 51,600 |
| 12 | 68.7 | 60,000 | 44,600 |
| 13 | 66.1 | 60,000 | 39,200 |
| 14 | 63.5 | 60,000 | 34,900 |
| 15 | 60.8 | 59,400 | 31,500 |
| 16 | 58.0 | 52,700 | 28,600 |
| 17 | 55.1 | 47,400 | 26,200 |
| 18 | 52.2 | 43,000 | 24,200 |
| 19 | 49.1 | 39,300 | 22,500 |
| 20 | 45.8 | 36,200 | 20,900 |
| 21 | 42.4 | 33,500 | 19,600 |
| 22 | 38.8 | 31,200 | 18,400 |
| 23 | 34.8 | 29,200 | 17,300 |
| 24 | 30.3 | 27,400 | 16,400 |

**NOTES:**

1. **Refer to the Operator's Manual.**
2. **Live mast backstops must be in position and operative.**
3. **Use rear hoist drum only. Reeve hoist line to drum over live mast cross member.**
4. **Reeve hoist rope with three (3) parts of 7/8" diameter wire rope.**
5. **The crane shall be leveled on a firm supporting surface.**
6. **Capacities are based on 75% stability.**
7. **See Crane Assembly Component Weights chart for weight of components for crane assembly.**
8. **Rated capacities for 360_ rotation.**
9. **Gantry can be either in the raised or lowered position when lifting loads with the live mast. When the gantry is in the lowered position the backstay links must be pinned.**
10. **Do not lower live mast below 3_ angle with gantry in lowered position.**

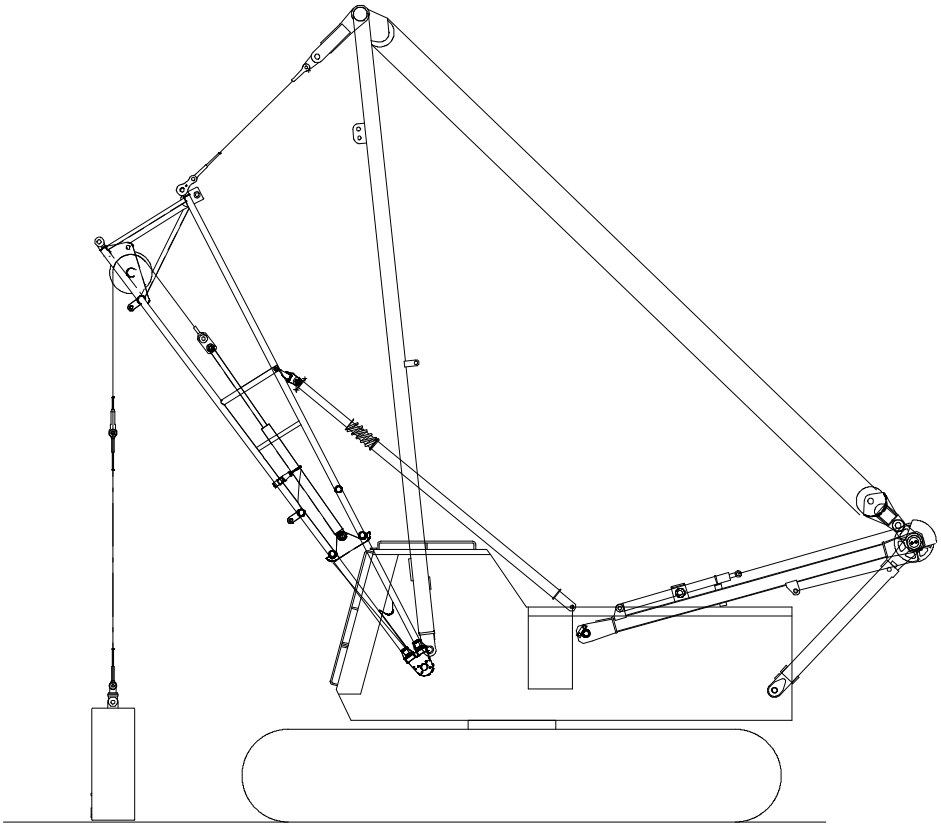


# 20’ BASE SECTION CYLINDER LIFTING CAPACITIES (WITHOUT COUNTERWEIGHT INSTALLED)

| Base Section Cylinders | | Side Frames Extended (lb) | Side Frames Retracted (lb) |
|---|---|---|---|
| Radius (ft) | Angle (deg) | | |
| 15 | 55.0 | 26,500 | 26,500 |
| 16 | 50.9 | 26,500 | 26,500 |
| 17 | 46.4 | 26,500 | 26,100 |
| 18 | 41.6 | 26,500 | 23,900 |
| 19 | 36.0 | 26,500 | 22,000 |
| 20 | 29.5 | 26,500 | 20,300 |
| 21 | 20.6 | 26,500 | 18,700 |

**NOTES:**

1. **Rated capacities for 360_ rotation.**
2. **Boom base section supported by make up pendants.**
3. **Lifting any load with one cylinder is prohibited. Rated capacities are for lifting loads with both cylinders.**
4. **Gantry can be either in the raised or lowered position when lifting loads with the cylinders in the base section. When the gantry is in the lowered position the backstay links must be pinned.**
5. **Do not raise boom higher than 55_ angle.**
6. **Do not lower live mast below 3_ angle with gantry in lowered position.**



# CRANE ASSEMBLY COMPONENT WEIGHTS

| Component | Weight | |
|---|---|---|
| | lb | kg |
| 1. 20 Ft Top Section With Sheave Machinery | 2,695 | 1,123 |
| 2. 20 Ft Top Section With Sheave Machinery and 5Ft Tip Extension | 3,606 | 1,635 |
| 3. 20 Ft Base Section With Lifting Cylinders | 2,435 | 1,105 |
| 4. 20 Ft Base Section Without Lifting Cylinders | 1,520 | 689 |
| 5. Boom Extensions | | |
| 10’ Boom Extensions With Pendants | 638 | 289 |
| 20’ Boom Extensions With Pendants | 1,034 | 469 |
| 30’ Boom Extensions With Pendants | 1,430 | 649 |
| 6. Upper Counterweights | | |
| Counterweight “A” | 25,250 | 11,453 |
| Counterweight “B” | 25,250 | 11,453 |
| 7. Side Frames (Each) | 19,700 | 8,936 |

# DUTY CYCLE NOTES FOR TUBULAR BOOM

1. The capacities included in this chart are the maximum allowable, and are based on machine standing level on firm suporting surface under ideal job conditions.
2. Capacities are based on 75% of minimum tipping loads for dragline; 67.5% for clamshell.
3. Capacities are maximum recommended by PCSA Standard #4. User must make allowances for soft or uneven supporting surfaces, rapid cycle operations, bucket suction or other unfavorable conditions which may require smaller buckets for most efficient operation.
4. Weight of bucket, plus load must not exceed these capacities.
5. Dragline operation is not recommended with boom angles less than 35_.
6. Boom length for dragline/clamshell attachment operation should not exceed 70'.
7. Retractable high gantry must be fixed in raised position for all capacities on this chart.
8. These capacities apply to the machine as originally manufactured and normally equipped by Link–Belt Construction Equipment Company.

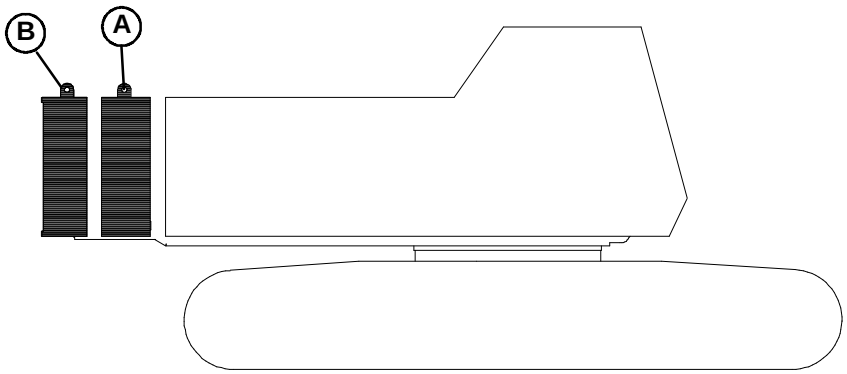
# DUTY CYCLE CAPACITIES – TUBULAR BOOM

| Boom Length (ft) | Load Radius (ft) | Boom Angle (deg) | Side Frames Extended – "A" Counterweight Only (All capacities listed are in pounds) | |
|---|---|---|---|---|
| | | | Dragline | Clamshell/Magnet |
| **40** | 15 | 73.0 | ––– | 15,800 |
| **40** | 20 | 65.3 | ––– | 15,800 |
| **40** | 25 | 57.1 | 15,800 | 15,800 |
| **40** | 30 | 48.1 | 15,800 | 15,800 |
| **40** | 35 | 37.5 | 15,800 | 15,800 |
| **40** | 40 | 23.4 | ––– | 15,800 |
| **50** | 20 | 70.5 | ––– | 15,800 |
| **50** | 25 | 64.3 | ––– | 15,800 |
| **50** | 30 | 57.7 | 15,800 | 15,800 |
| **50** | 35 | 50.6 | 15,800 | 15,800 |
| **50** | 40 | 42.7 | 15,800 | 15,800 |
| **50** | 50 | 20.9 | ––– | 15,800 |
| **60** | 25 | 68.8 | ––– | 15,800 |
| **60** | 30 | 63.6 | ––– | 15,800 |
| **60** | 35 | 58.1 | 15,800 | 15,800 |
| **60** | 40 | 52.3 | 15,800 | 15,800 |
| **60** | 50 | 38.9 | 15,800 | 15,800 |
| **60** | 60 | 19.0 | ––– | 11,700 |
| **70** | 25 | 71.9 | ––– | 15,800 |
| **70** | 30 | 67.6 | ––– | 15,800 |
| **70** | 35 | 63.1 | ––– | 15,800 |
| **70** | 40 | 58.4 | 15,800 | 15,800 |
| **70** | 50 | 48.1 | 15,800 | 15,800 |
| **70** | 60 | 35.9 | 13,000 | 11,700 |
| **70** | 70 | 17.6 | ––– | 9,300 |

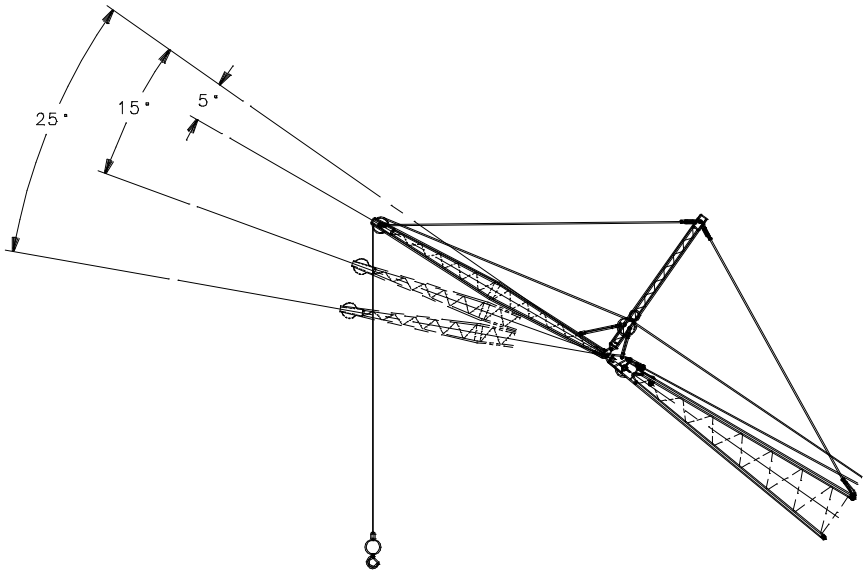
# TUBULAR JIB NOTES FOR OPEN THROAT BOOM

1. Capacities are for a LS−138H II crawler crane with AB (50,500 lb) counterweight.
2. Separate capacity charts are listed for 360_ and for over−end blocked crawler working areas. Verify operating conditions as described on the Working Area Chart found in the general information section of this Crane Rating Manual. Apply the appropriate lift capacity chart based on the working area and the specific operating conditions.
3. Over−end blocked capacities can be lifted over either end with the crane standing level on a firm supporting surface. Adequate blocking must be placed under the treadmember sprockets/idlers to prevent rocking.
4. Capacities are for side frames in the extended position only and are based on the crane standing level on a firm supporting surface.
5. Capacities are limited to a LBCE 44” x 54” tubular boom with an open throat and a LBCE 12 ton, 24” x 32” cross section jib with a 11’6” high jib mast properly assembled.
6. Two parts of 7/8” Diameter Type “DB” or Type “RB” wire rope are required for maximum lift.
7. Capacities are for 30’, 45’, and 60’ jib lengths only.
8. A jib cannot be used on open throat boom lengths longer than 190’. Maximum boom plus jib combination is 180’ + 60’ or 190’ + 30’. The only jib length available on 190’ open throat boom is 30’. Midpoint pendants must be used with 190’ + 30’ combination.
9. The least stable condition is over the side.
10. All capacities are listed in pounds and are not more than 75% of the tipping loads. Those capacities followed by an asterisk (*) are governed by factors other than those that would cause a tipping condition.
11. A deduction must be made from the jib capacities for the weight of the following: Main boom hook block or hook ball, jib hook block or hook ball, slings, grapple, load weighing devices, etc.

# TUBULAR JIB NOTES FOR OPEN THROAT BOOM



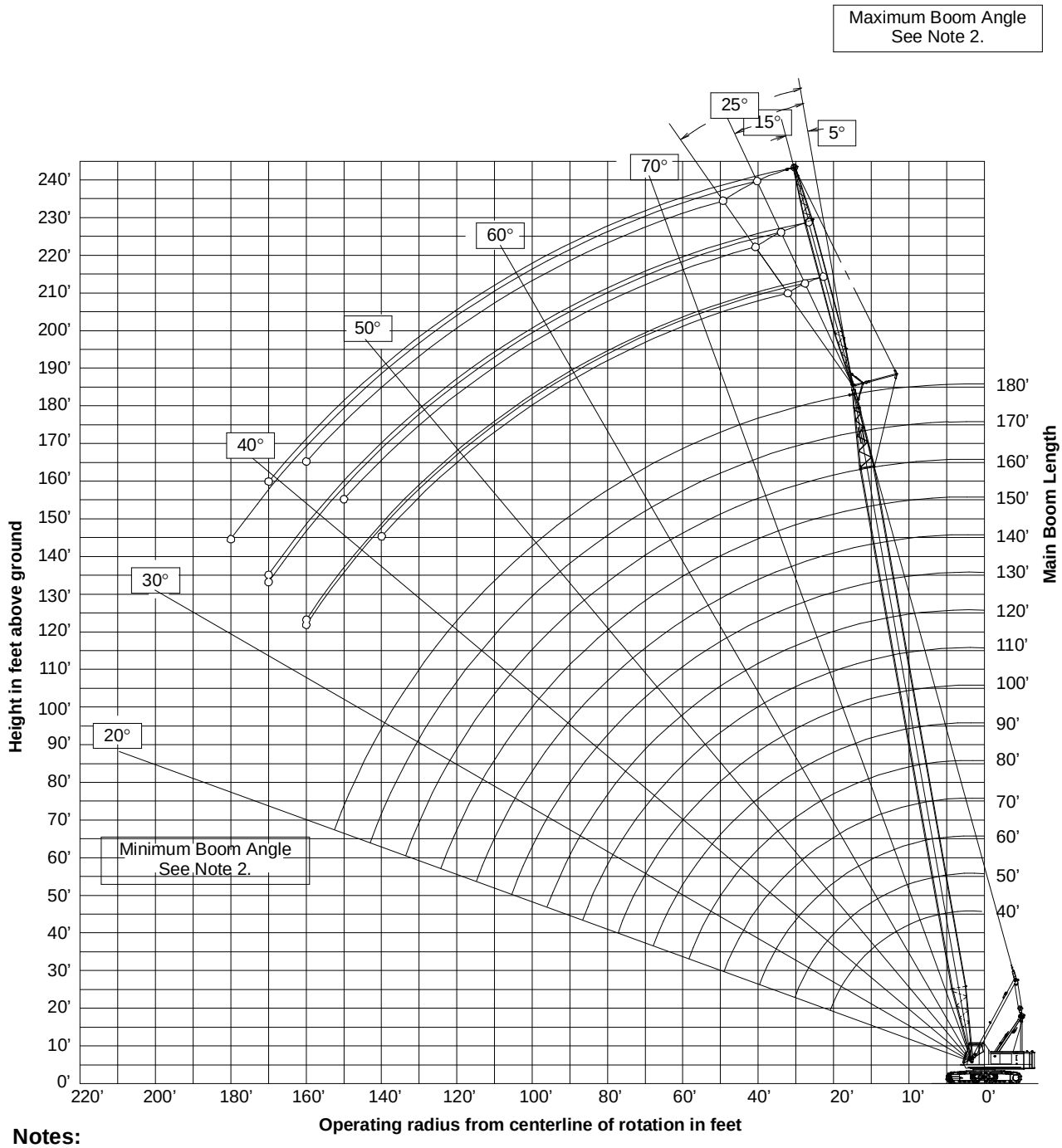

**Full Counterweight Combination**




**Tubular Jib Offset Angle Diagram**

# WORKING RANGE DIAGRAM

## 40’ TO 180’ MAIN BOOM WITH 30’ TO 60’ JIB



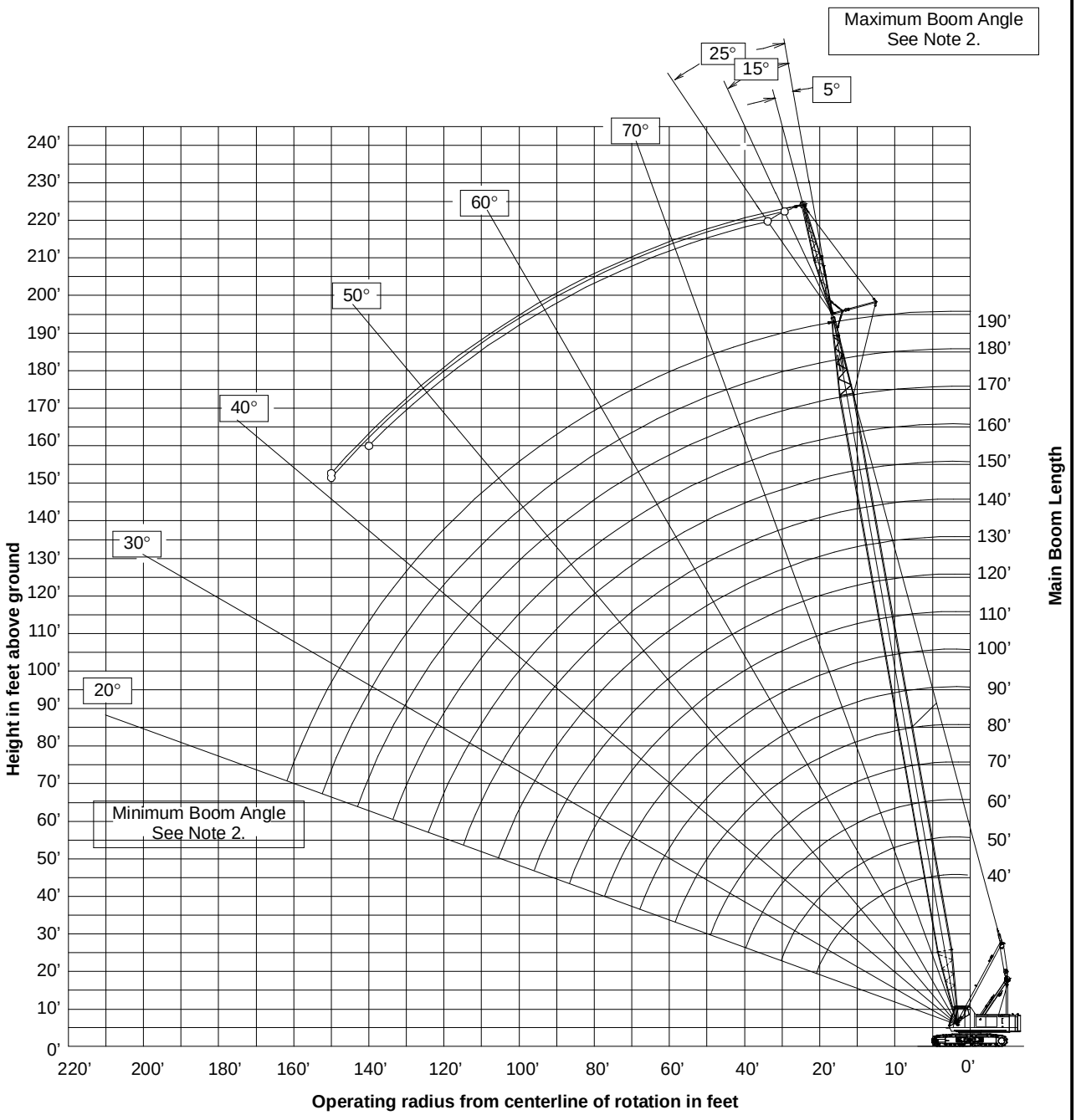

**Notes:**

1. **Boom geometry shown is for unloaded condition and crane standing level on firm supporting surface. Boom deflection, subsequent radius and boom angle change must be accounted for when applying load to hook.**
2. **Maximum and minimum boom angles are equal to the values listed in the capacity chart for each boom length.**

**Working Range Diagram**

# WORKING RANGE DIAGRAM

## 190’ MAIN BOOM WITH 30’ JIB




**Notes:**

1. **Boom geometry shown is for unloaded condition and crane standing level on firm supporting surface. Boom deflection, subsequent radius and boom angle change must be accounted for when applying load to hook.**
2. **Maximum and minimum boom angles are equal to the values listed in the capacity chart for each boom length.**

**Working Range Diagram**