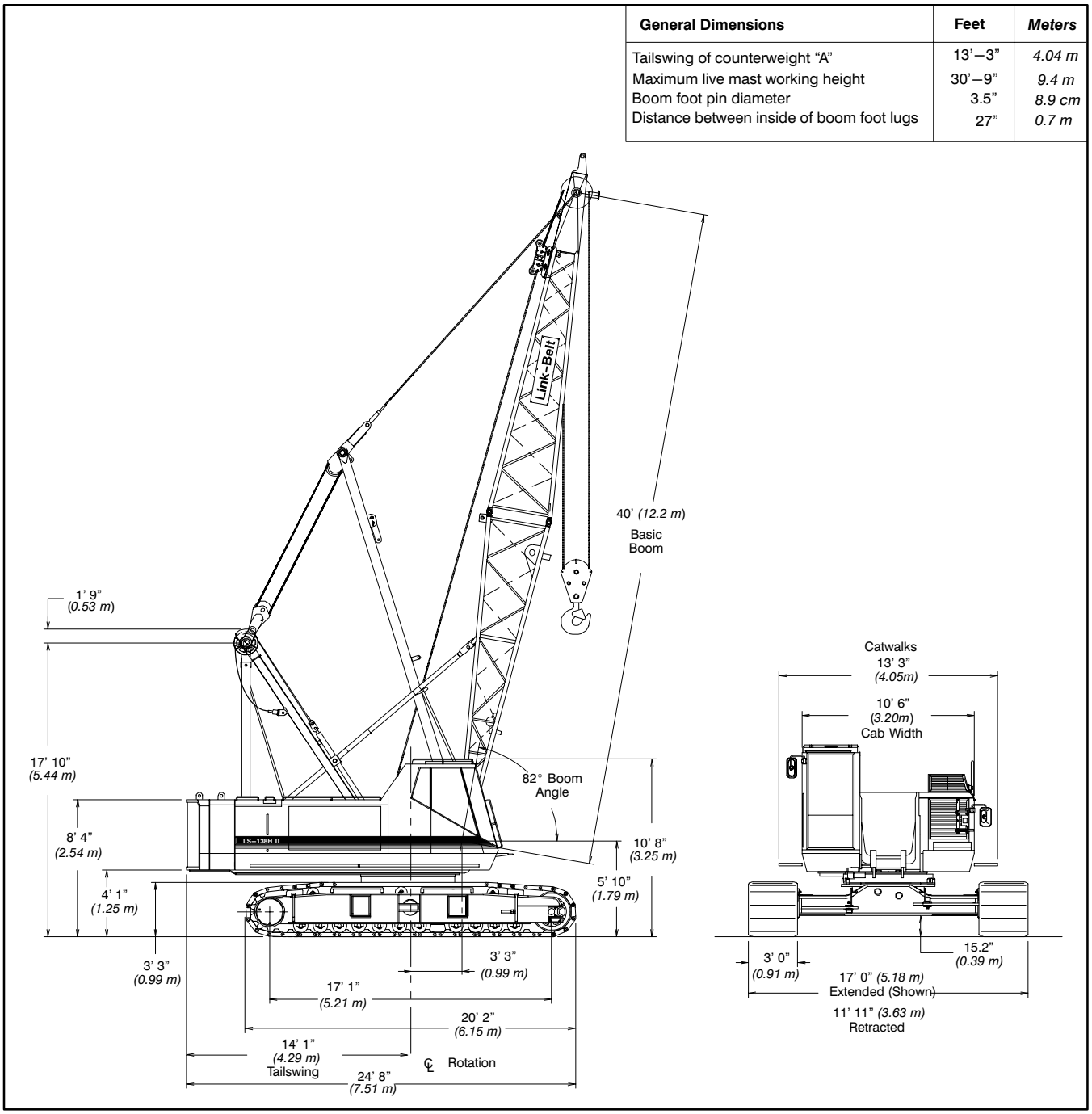
Specifications

Lattice Boom Crawler Crane

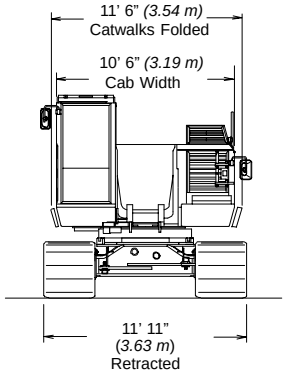
LS–138H II **80–ton** *(72.57 metric ton)*

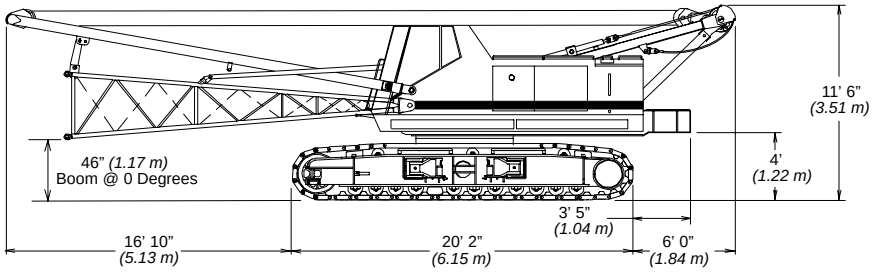
HYLAB Series

General Dimensions	Feet	*Meters*
Tailswing of counterweight "A"	13'–3"	*4.04 m*
Maximum live mast working height	30'–9"	*9.4 m*
Boom foot pin diameter	3.5"	*8.9 cm*
Distance between inside of boom foot lugs	27"	*0.7 m*

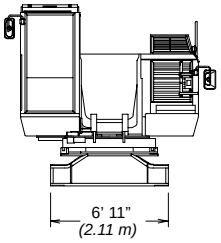


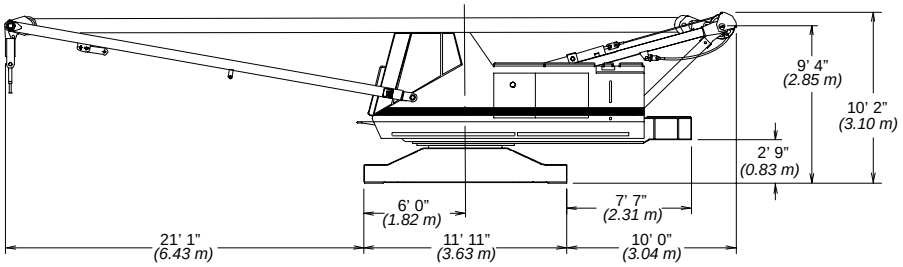
LS–138H II Machine Transport Weights – approximate



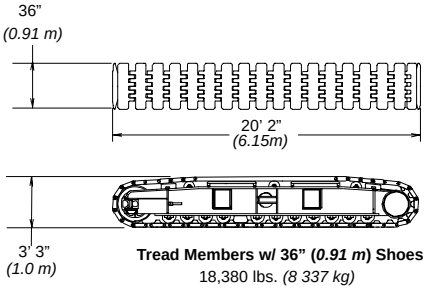


Transport Weight
Rope on both drums, Backstops, Catwalks, and 1/3 tank of fuel
Tube: 89,751 lbs. *(40 710 kg)*
Angle: 90,651 lbs. *(41 119 kg)*

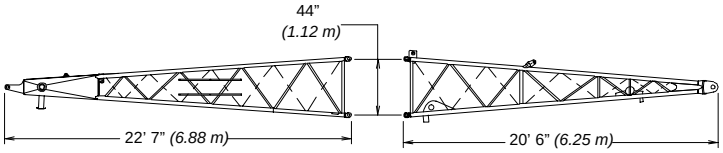




Upper & Carbody Shipping Weight
Rope on both drums, Backstops, Catwalks, and full of fuel
51,300 lbs. *(23 269 kg)*

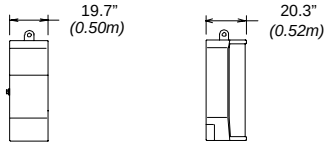


Tread Members w/ 36" (*0.91 m*) Shoes
18,380 lbs. *(8 337 kg)*



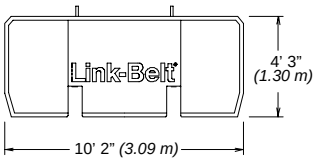
20' (*6.10 m*) Top Section
Tube: 2,726 lbs. *(1 236 kg)*
Angle: 3,500 lbs. *(1 588 kg)*

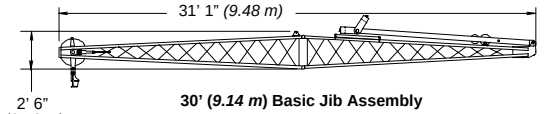
20' (*6.10 m*) Base Section
Tube: 1,720 lbs. *(780 kg)*
Angle: 2,853 lbs. *(1 294 kg)*



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

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





30' (*9.14 m*) Basic Jib Assembly
Tube: 1,683 lbs. *(763 kg)*

Front Mounted Third Drum w/o Rope
1,345 lbs. *(610 kg)*

LS–138H II Transportation Weights – approximate

Base Machine: Rigid Boom Backstops, 27 Gallons *(102.2 L)* of Fuel, Catwalks (front right and left side), 20' *(6.10 m)*Tube Base Section, 24' *(6.10m)* Live Mast, Bridle & Spreader Bar, 14–Part Boom Hoist Reeving, 700' *(189 m)* of Type 'DB' Front Hoist Rope, 540' (*165m*) of Type 'RB' Rear Hoist Rope.

Item Description	Gross Weight		Transport Loads			Notes and Load Summary
	lbs.	*kg*	Load #1	Load #2	Load #3	
Base Machine	89,751	*40 710*	1			Numbers in the load columns to the left represent quantities.
Add "A" Counterweight	25,250	*11 453*			1	
Add "B" Counterweight	25,250	*11 453*		1		Estimated transport load assumes the load out consist of 200' *(60.96 m)* of tube boom + 60' (*18.29 m*) of jib with full counterweight.
Add Hydraulic Third Drum w/o rope	1,345	*610*				
Add 20' *(6.1m)* Tube Top Section	2,726	*1 237*		1		
Add 10' (*3.05m*) Tubular Extension w/pins & pendants	677	*307*			1	
Add 20' (*6.1m*) Tubular Extension w/pins & pendants	1,076	*488*		1	2	
Add 30' (*9.1m*) Tubular Extension w/pins & pendants	1,481	*672*		2	1	Support loads were targeted at 45,000 lb (*20 412 kg*), 8'–6" (*2.6 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' (*6.1m*) Angle Base Section at 0 degrees	2,853	*1 294*				
Add 20' (*6.1m*) Angle Top Section with 4 Lifting Sheaves	3,500	*1 588*				
Add 20' (*6.1m*) Angle Top Section with 3 Lifting Sheaves	3,400	*1 592*				
Add 20' (*6.1m*) Angle Top Section with 2 Lifting Sheaves	3,300	*1 497*				
Add 10' (*3.05m*) Angular Extension w/pins & pendants	1,040	*472*				
Add 20' (*6.1m*) Angular Extension w/pins & pendants	1,680	*762*				
Add 30' (*9.1m*) Angular Extension w/pins & pendants	2,400	*1 089*				Estimated weights vary by +/– 2%.
Add Bridle & Spreader Bar Only (No Live Mast)	990	*449*				
Add Tagline Winder	760	*345*				**Estimated Total Load of #1** 89,751 lbs. *(40 710 kg)*.
Add Fairleader	500	*227*				
Add PAT DS–350	100	*45*				**Estimated Total Load of #2** 35,089 lbs. *(15 916 kg)*.
Add 30' (*9.1m*) Tubular Jib	1,683	*763*			1	
Add 15' (*4.6m*) Tubular Jib Extension	317	*144*			2	
Add 5' (*1.5m*) Auxiliary Tip Extension	800	*363*				**Estimated Total Load of #3** 31,877 lbs. *(14 459 kg)*.
Add Holding Rope – 0.88" X 165' Type 'DB'	234	*106*				
Add Closing Rope – 0.88" X 220' Type 'DB'	312	*142*				
Add Inhaul Rope – 0.88" X 80' Type 'M'	108	*49*				
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 Auxiliary Lifting Bail	200	*91*				
Add 15–ton *(13.6mt)* Hook Ball – Non Swivel	750	*340*		1		
Add 15–ton (*13.6mt*) Hook Ball – Swivel	760	*345*				
Add 80–ton (*72.6mt*) 4 Sheave Hook Block	2,325	*1 055*		1		
Remove 20' Tube Base Section	–1,988	*–902*				
Remove Front Hoist Rope 0.88" X 700' Type 'DB'	–944	*–451*				
Remove Jib Wire Rope 0.88" X 540' Type 'RB'	–810	*–367*				
Remove 24' (*7.3m*) Live Mast with Bridle & Spreader Bar	–2,618	*–1 188*				
Add 50 gallons (*189.3L*) 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' *(12.2 m*) of tubular boom, live mast, "A" counterweight, 700' *(213 m)* front hoist rope, 540' *(164.6 m)* rear hoist rope, 80–ton *(72.6 mt)* hook block, 77 gallons *(291.4 L)* of fuel, and a 200 lbs. *(90.7kg)* operator.	121,097 *(54 929)*	7.71 *(0.54*)
2	Option #1 plus "B" counterweight, midpoint pendants, and 160' *(48.77m)* of boom extensions to obtain 200' *(60.96 m)* of main boom.	155,627 *(70 591)*	9.92 *(0.70*)
3	Option #2 plus 60' *(18.29 m)* of jib and 15–ton *(13.61 mt)* hookball – subtract 20' *(6.10 m)* of boom extension and midpoint pendants to obtain maximum 180' + 60' *(54.86 + 18.29 m)* of main boom + jib.	157,452 *(71 419)*	10.03 *(0.70*)
4	Base Machine equipped with 40' *(12.20 m)* of angle boom, live mast, "A" counterweight, 700' *(213 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 a 200 lbs. *(90.7kg)* operator.	121,722 *(55 212)*	7.76 *(0.54*)
5	Option #4 plus "B" counterweight and 110' *(33.55 m)* of boom extensions to obtain 150' (*45.72 m*) of main boom.	156,172 *(70 838)*	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 + 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" *(0.91m*) track shoes is 15,689 in^2 *(101,219cm^2*).

Attachment Options

■ 40'–200' Tube Boom *(12.19 – 60.96 m)*

Basic Tube Boom – 40' *(12.19 m)* 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.

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

Tube Boom Extensions	Suggested Quantity for Max. Boom
10' (*3.05 m*)	1
20' (*6.10 m*)	1
30' (*9.14 m*)	4

- 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' *(12.19 m)* 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 extensions 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 9.5 mm)* angle 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 – Three sheave head machinery for clam applications or two wide sheaves for dragline appplications

Angle Boom Extensions – The following table provides the lengths available and the suggested quantity to obtain maximum boom in 10' *(3.05 m)* increments. Midpoint 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' Tube Jib *(9.14– 18.29 m)*

Basic Tube 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 sealed anti–friction bearings.
- 15' *(0.38 mm)* jib extensions provide 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)* using the tube boom and 204' *(65.23 m)* using the angle boom

■ 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 sealed anti–friction bearings. 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.

- Retractable gantry frame
- Pin–on bail frame
- 14–part reeving with 5/8" *(14.7 mm)* type 'W' wire rope
- Bridle assembly
- 24' *(7.31 m)* live mast (optional for angle attachment)
- Two 1.25" *(31.75 mm)* pendants
- Telescopic boom backstops (tubular-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' *(30.5 m*) of tube boom

Revolving Upperstructure

■ Frame

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

■ Engine

Isuzu A–6SDITQB with oil cooler, oil cooler, air cleaner, fuel filter, water separator, hour meter, tachometer, and electrical shutdown.	
Number of cylinders	6
Bore and stroke – in (*mm*)	4.72 x 5.71 *(120 x 145)*
Piston displacement – in^3 (cm^3)	600 *(9 839)*
Engine rpm at full load speed	2,100
Hi–idle rpm	2,325
Full load speed – horsepower (*kw*)	207 *(155)*
Peak torque – ft lb (*joule*)	513 *(696)*
Peak torque – rpm	1,400
Electrical system	24 volt
Batteries	2–12 volt

Approximate fuel consumption	Gal./hr *(L/hr)*
100% H.P.	11.50 *(43.53)*
75% H.P.	8.60 *(32.55)*
50% H.P.	5.75 *(21.77)*
25% H.P.	2.87 *(10.86)*

■ 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/cm^2*) and 64 gal/min (*243 l/min*) powers load hoist drums, boom hoist drum, optional third drum, and travel.
- One fixed displacement gear type pump operating at 3,600 psi (*250 kg/cm^2*) and 32 gal/min (*121 l/min*) powers the swing, and treadmember retract cylinders.
- One fixed displacement gear type pump operating at 1,250 psi *(85 kg/cm^2)* and 8 gal/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 load 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 deaeriation.

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 is 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 & free–fall operation modes
- Automatic brake mode (spring applied, hydraulically released, band type brake)
- 0.88” *(22.22 mm)* grooved lagging
- 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)* flange diameter
- 19.84” *(0.50 m)* 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” *(0.51 mm)* diameter x 5” *(127 mm*) wide shoe that internally expands to provide load control. Swept area is 314 in^2 *(2 026 cm^2).*

■ Optional Front Mounted 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 diameter
- 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, hydraulically released, disc type brake controlled automatically
- 5/8” *(15.88 mm*) grooved lagging
- Drum pawl controlled manually
- 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 the planetary gear reduction unit to provide positive control under all load conditions.

- Spring applied, hydraulically 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 rpm

■ Upper Counterweight

Consist of a two piece design that can be easily lowered to the ground using the gantry.

- 25,250 lbs. *(11 453 kg)* “A” upper counterweight
- 25,250 lbs. *(11 453 kg)* “B” upper counterweight can be added to maximize capacities

■ Operator’s 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
- Air conditioner
- Sun visor
- Engine instrumentation panel (tachometer, voltmeter, engine oil pressure, engine water temperature, fuel level, hydraulic oil temperature, and service monitor system)
- Mechanical drum rotation indicators
- Six way adjustable seat
- Dry chemical fire extinguisher
- Hand and foot throttle
- Single axis, armchair control levers
- Swing lever with swing brake and horn located on handle
- Bubble type level

(continued on page 7)

LS–138H II Load Hoisting Performance

Available line speed and line pull – based on Isuzu A–6SDITQB at 2,000 rpm full load speed. Line pulls are not based on wire rope strength. See wire rope capacity 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	32,430	*14 710*	298	*91*	113	*35*	18.5	*470*	100	*30*	100	*30*
2	29,630	*13 440*	326	*99*	124	*38*	20.3	*516*	109	*33*	209	*64*
3	27,274	*12 372*	354	*108*	135	*41*	22.0	*559*	119	*36*	327	*100*
4	25,266	*11 461*	382	*116*	145	*44*	23.8	*605*	128	*39*	455	*139*
5	23,533	*10 674*	410	*125*	156	*48*	25.5	*648*	137	*42*	593	*181*
6	22,023	*9 989*	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	*8 089*	196	*60*	109	*33*	13.2	*336*	48	*15*	48	*15*
2	16 282	*7 385*	214	*65*	119	*36*	14.5	*368*	52	*16*	100	*31*
3	14 979	*6 794*	233	*71*	130	*40*	15.7	*400*	57	*17*	157	*48*
4	13 869	*6 291*	251	*77*	140	*43*	17.0	*432*	61	*19*	218	*67*
5	12 913	*5 857*	270	*82*	151	*46*	18.3	*464*	66	*20*	284	*87*
6	11 080	*5 479*	289	*88*	161	*49*	19.5	*496*	70	*21*	355	*108*
7	11 348	*5 147*	307	*94*	171	*52*	20.8	*528*	75	*23*	430	*131*
8	10 699	*4 853*	326	*99*	182	*55*	22.0	*560*	80	*24*	509	*155*

Rope Layer	**Optional 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	*6 822*	157	*48*	143	*44*	11.25	*286*	57	*17*	57	*17*
2	13,537	*6 140*	175	*53*	159	*48*	12.50	*318*	64	*20*	121	*37*
3	12,307	*5 582*	192	*59*	175	*53*	13.75	*349*	71	*22*	192	*59*
4	11,282	*5 117*	210	*64*	191	*58*	15.00	*381*	77	*23*	269	*82*
5	10,414	*4 724*	228	*69*	207	*63*	16.25	*413*	83	*25*	352	*107*
6	9,671	*4 387*	245	*75*	223	*68*	17.50	*445*	90	*27*	442	*135*

Wire Rope Application	**Diameter**		**Length**		**Type**	**Maximum Permissible Load**	
	in	*mm*	ft	*m*		lb	*kg*
Boom Hoist	5/8	*15.88*	610	*186*	W	11,770	*5 339*
Front Hoist	7/8	*22.22*	700	*213*	DB	22,740	*10 315*
Rear Hoist (Optional)	7/8	*22.22*	540	*165*	RB	17,520	*7 947*
Rear Hoist (Optional)	7/8	*22.22*	700	*213*	DB	22,740	*10 315*
Third Drum (Optional)	5/8	*15.88*	385	*117*	ZB	11,080	*5 026*
Third Drum (Optional)	5/8	*15.88*	385	*117*	WB	13,650	*6 192*

Rope 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*	18 x 19 (19 x 19 Class) – Rotation Resistant – Extra 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
W	6 x 26 (6 x 19 Class) – Warrington Seale – Extra Improved Plow Steel – Preformed – Right Lay – Alternate Lay

* – Use of swivel ball is not recommended.

Revolving Upperstructure *(continued from page 5)*

■ 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 down.

■ Additional Equipment – *Standard*

- 57.88” *(1.47 m*) outside diameter turntable 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 Fairleader with barrel, sheaves, and guide rollers.

Lower Structure

■ Lower Frame

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 planetaries.
- 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, hydraulically released disc type brake controlled automatically.
- Maximum travel speed is 1.0 mph (*1.7 km/h*) in high speed and 0.6 mph (*1 km/h*) in low speed.
- Designed to 30% gradeability.

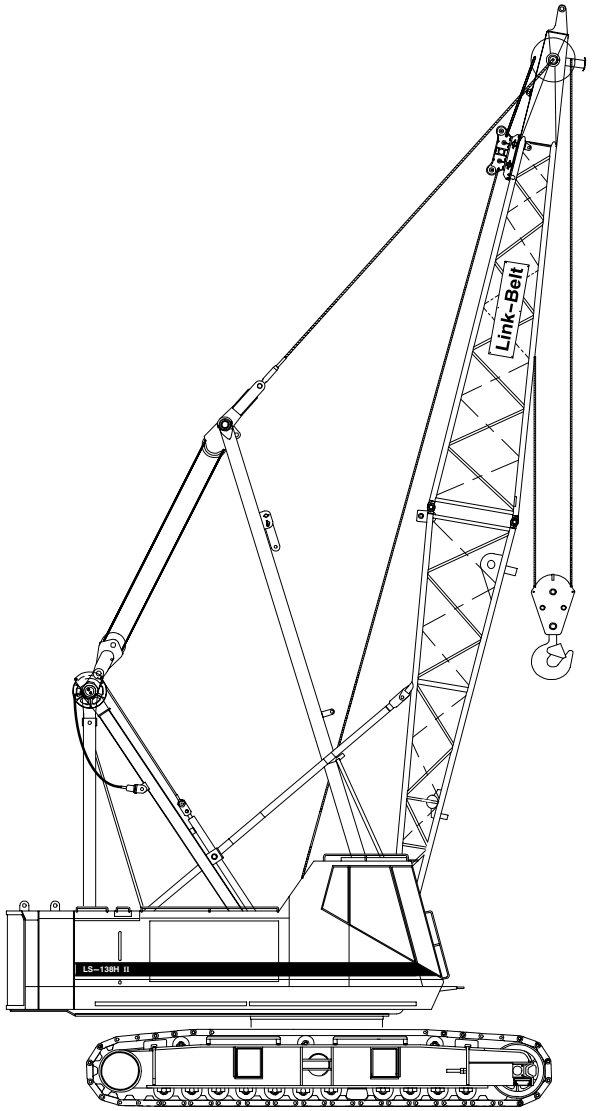
Link-Belt
CONSTRUCTION EQUIPMENT

Lifting Capacities

Lattice Boom Crawler Crane

LS–138H II **80–ton** *(72.57 metric ton)*

HYLAB Series



Tube Boom Capacities
40’ – 200’ *(12.19 – 60.96 m)*

24’ *(7.31 m)* Live Mast
- Extended/Retracted Side Frames

20’ *(6.10 m)* Base Section
- Extended/Retracted Side Frames

5’ *(1.52m)* Tip Extension

Duty Cycle Capacities
- 40’ – 70’ *(12.19 – 21.34 m)* Tube Boom
- Extended Side Frames
- “A” Counterweight

Tube Boom Capacities
- 40’ – 200’ *(12.19 – 60.96 m)* Tube Boom
- 54” *(1.37 m)* Wide x 44” *(1.12 m)* Deep Boom
- 20’ *(6.10 m)* Open Throat Top Section
- 24’ *(7.31 m)* Live Mast
- Extended / Retracted Side Frames
- Over End Blocked Capacities
- “AB”, “A”, or “0” Counterweight Options
- 20’ 2” *(6.15 m)* Crawler Length

CAUTION: This material is supplied for reference use only. Operator must refer to in–cab Crane Rating Manual to determine allowable machine lifting capacities and operating procedures.

Litho in U.S.A. 7/00

#6276 (Supersedes #6240)

⚠ 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

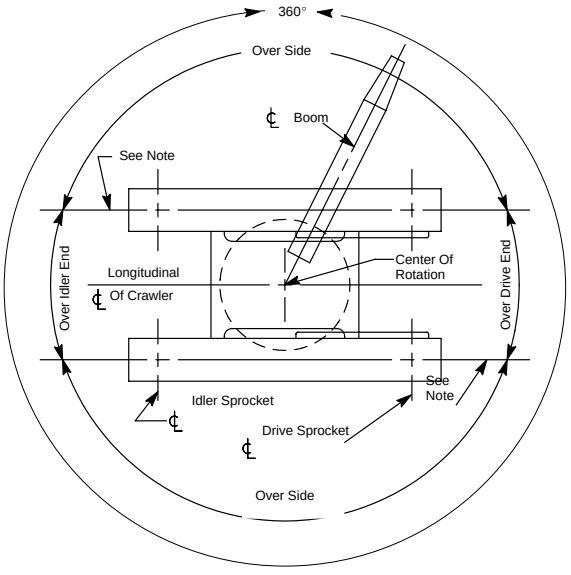
Parts of Line	7/8"		5/8"		
	Type "DB"	Type "RB"	Type "ZB"	Type "WB"	Notes
1	22,700	17,520 *	11,000 **	13,650 *	
2	45,400	35,040	22,000	27,310	Capacities shown are in pounds and working loads must not exceed the ratings on the capacity charts in this Crane Rating Manual. Study Operator's Manual for wire rope inspection procedures.
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.

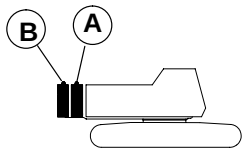
** Swivel end is recommended for operation with 1 part of line.

WORKING AREAS



Note:

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



LIFTOFF CAPABILITIES

Counterweight (Side Frames)	Over End	
	Maximum Boom Feet	Maximum Boom + Jib Feet
NO (RETRACTED)	90	N/A
NO (EXTENDED)	120	N/A
A (RETRACTED)	140	N/A
A (EXTENDED)	170	N/A
AB (EXTENDED) See Note 6	200	180 + 60 190 + 30 See Note 6

Counterweight (Side Frames)	Over Side	
	Maximum Boom Feet	Maximum Boom + Jib Feet
NO (RETRACTED)	90	N/A
NO (EXTENDED)	120	N/A
A (RETRACTED)	140	N/A
A (EXTENDED)	170	N/A
AB (EXTENDED)	200	170 + 60

NOTES:

1. Booms should be erected or lowered over the end with no load if possible – hook block on ground. (See Note 6).
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.
6. For Maximum Boom + Jib Combinations only – Adequate blocking must be placed under The side frame sprockets/idlers to prevent rocking. (Lift Off Over End only).

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

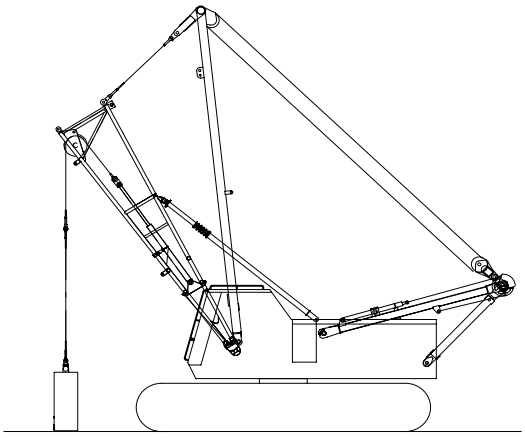
When using main boom hook, while 5 foot tip extension is attached, reduce boom capacities by the values in the following chart:

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

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

Base Section Cylinders		Side Frames Extended	Side Frames Retracted
Radius (ft)	Angle (deg)	(lb)	(lb)
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

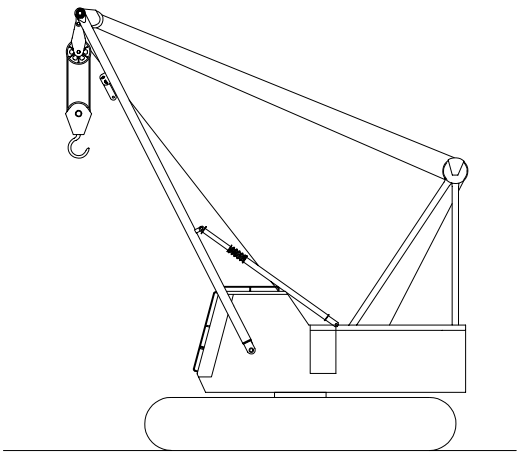
NOTES:
1. Rated capacities for 360° rotation.
2. Boom base section supported by make up pendants.
3. Lifting any load with one cylinder is prohibited. Rated capacities are for lifting loads with both cylinders.
4. Gantry can be either in the raised or lowered position when lifting loads with the cylinders 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.



LIVE MAST LIFTING CAPACITIES (WITHOUT COUNTERWEIGHT INSTALLED)

Live Mast		Side Frames Extended	Side Frames Retracted
Radius (ft)	Angle (deg)	(lb)	(lb)
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.



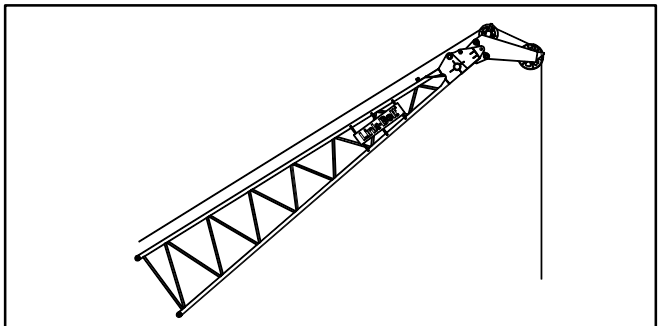
MAXIMUM ALLOWABLE CAPACITIES FOR 5 FOOT TIP EXTENSION

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 150'.
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

DUTY CYCLE NOTES FOR TUBULAR BOOM

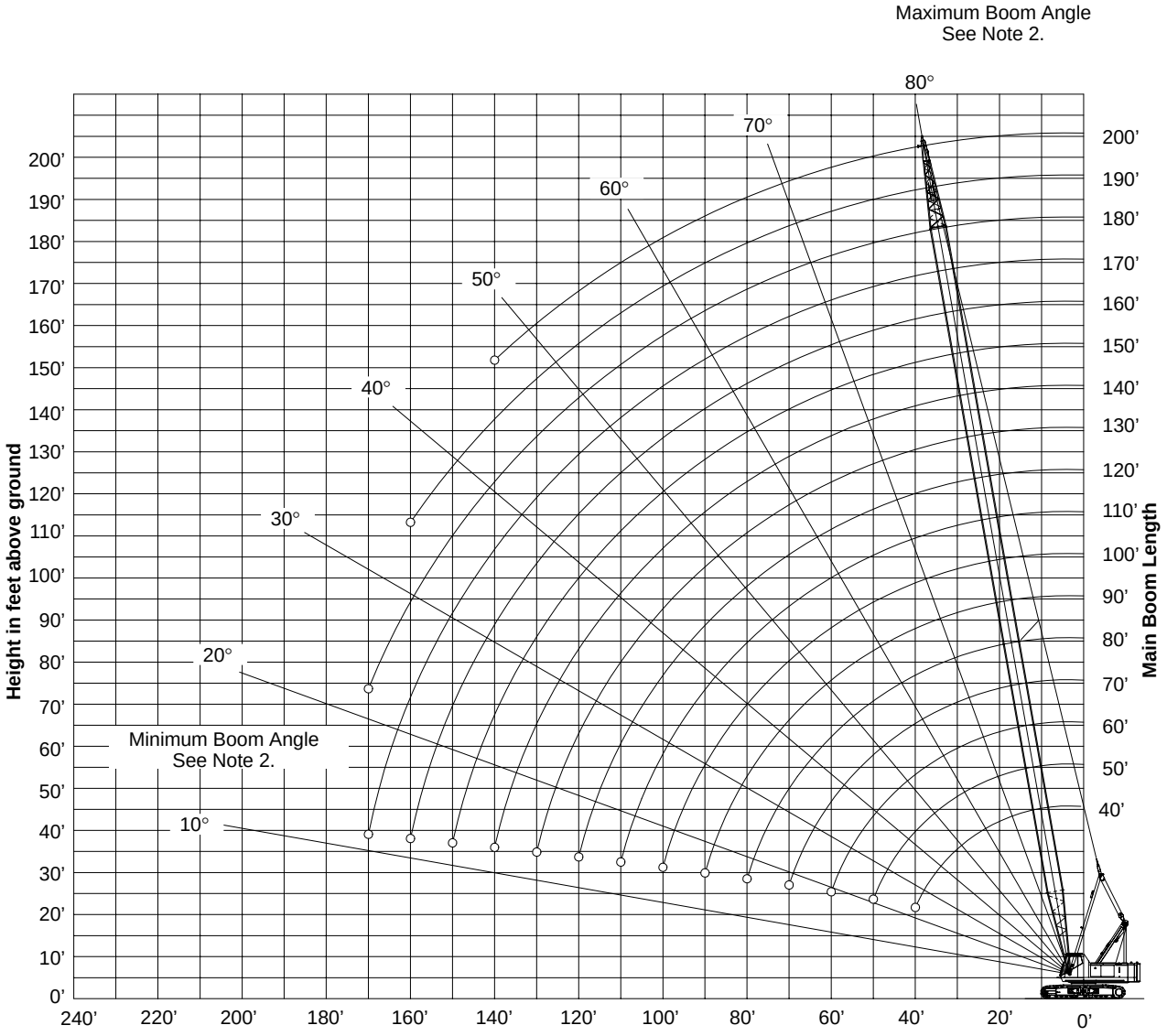
1. The capacities included in this chart are the maximum allowable, and are based on machine standing level on firm suporting surface under ideal job conditions.
2. Capacities are based on 75% of minimum tipping loads for dragline; 67.5% for clamshell.
3. Capacities are maximum recommended by PCSA Standard #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

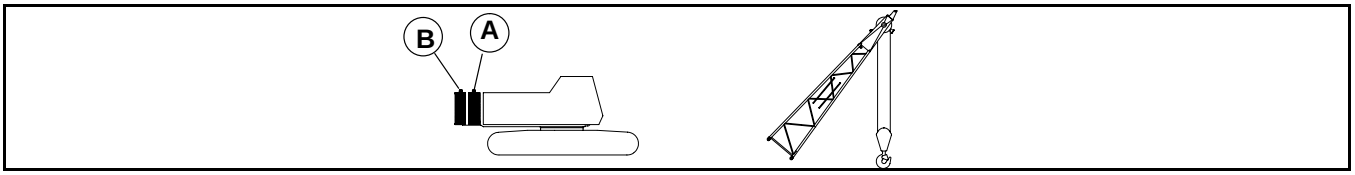
WORKING RANGE DIAGRAM

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.**



MAIN BOOM CAPACITIES – 40 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 50 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 60 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 70 FT OPEN THROAT TUBE BOOM

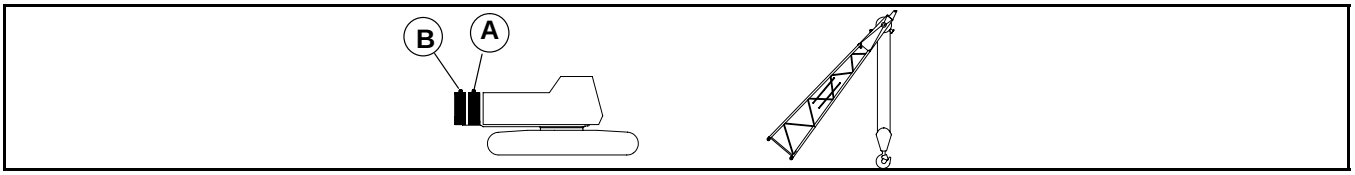
Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			Side Frames Extended			Side Frames Retracted	
		AB CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	A CTWT (lb)	0 CTWT (lb)
14	81.2	129,700	129,700	119,600	70,600	67,100	35,700
15	80.4	126,800	126,800	104,400	61,400	60,400	32,000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

MAIN BOOM CAPACITIES – 80 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 90 FT OPEN THROAT TUBE BOOM

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



MAIN BOOM CAPACITIES – 100 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 110 FT OPEN THROAT TUBE BOOM

Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			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
30	75.9	61,000	50,500	34,100	19,100	22,600	
35	73.2	48,800	40,800	27,300	15,000	18,200	
40	70.5	40,500	34,000	22,600	12,100	15,100	
50	64.9	29,800	25,200	16,400	8,400	10,900	
60	59.0	23,200	19,700	12,600	6,000	8,200	
70	52.7	18,800	15,900	9,900	4,400	6,400	
80	45.8	15,600	13,200	8,000	3,300	5,000	
90	38.0	13,200	11,100	6,500	2,400	3,900	
100	28.4	11,300	9,400	5,400	—	3,000	
110	14.0	9,700	8,100	4,400	—	2,300	

MAIN BOOM CAPACITIES – 120 FT OPEN THROAT TUBE BOOM

Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			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
30	77.1	61,000	50,400	34,000	19,000	22,500	
35	74.7	48,700	40,700	27,200	14,900	18,100	
40	72.2	40,400	33,900	22,500	12,000	15,000	
50	67.1	29,700	25,100	16,300	8,200	10,800	
60	61.8	23,100	19,500	12,400	5,900	8,100	
70	56.2	18,700	15,800	9,800	4,300	6,200	
80	50.3	15,500	13,000	7,900	3,100	4,800	
90	43.7	13,000	10,900	6,400	2,200	3,700	
100	36.3	11,100	9,300	5,200	—	2,900	
110	27.2	9,600	8,000	4,300	—	2,200	
120	13.4	8,300	6,800	3,500	—	—	

MAIN BOOM CAPACITIES – 130 FT OPEN THROAT TUBE BOOM

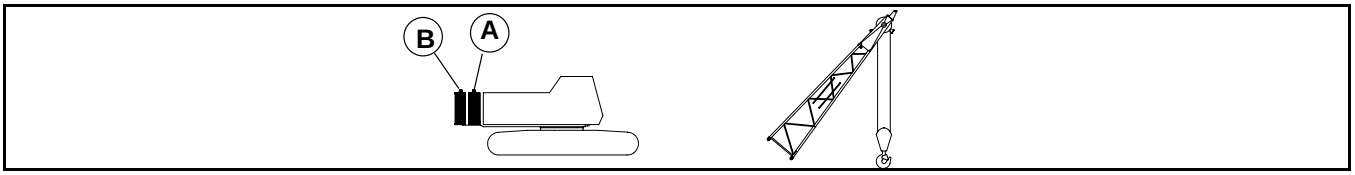
Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			Side Frames Extended			Side Frames Retracted	
		AB CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	A CTWT (lb)	0 CTWT (lb)
25	80.4	65,100	65,100	44,500	PROHIBITED	28,800	PROHIBITED
30	78.1	60,900	50,300	33,900		22,300	
35	75.9	48,600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

MAIN BOOM CAPACITIES – 140 FT OPEN THROAT TUBE BOOM

Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			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
30	79.0	56,700	50,200	33,800		22,200	
35	76.9	48,500	40,400	27,000		17,800	
40	74.8	40,100	33,600	22,200		14,700	
50	70.5	29,400	24,800	16,000		10,500	
60	66.1	22,800	19,200	12,100		7,800	
70	61.5	18,400	15,500	9,500		5,900	
80	56.8	15,200	12,700	7,600		4,500	
90	51.7	12,700	10,600	6,100		3,400	
100	46.3	10,800	9,000	4,900		2,600	
110	40.3	9,300	7,700	4,000		—	
120	33.5	8,000	6,600	3,200		—	
130	25.2	7,000	5,600	2,600		—	
140	12.4	6,100	4,800	2,000		—	

MAIN BOOM CAPACITIES – 150 FT OPEN THROAT TUBE BOOM

Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			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		
30	79.7	52,200	50,000	33,700			
35	77.8	48,400	40,300	26,800			
40	75.8	40,000	33,500	22,100			
50	71.9	29,200	24,600	15,900			
60	67.8	22,700	19,100	12,000			
70	63.6	18,200	15,300	9,300			
80	59.2	15,000	12,600	7,400			
90	54.7	12,600	10,500	5,900			
100	49.9	10,700	8,800	4,800			
110	44.6	9,100	7,500	3,800			
120	38.9	7,900	6,400	3,100			
130	32.4	6,800	5,500	2,400			
140	24.3	5,900	4,700	—			
150	12.0	5,100	4,000	—			



MAIN BOOM CAPACITIES 160 FT OPEN THROAT TUBE BOOM

Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			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	PROHIBITED		
35	78.6	44,000	40,200	26,700			
40	76.7	39,900	33,300	21,900			
50	73.0	29,100	24,500	15,700			
60	69.2	22,500	18,900	11,800			
70	65.4	18,000	15,100	9,200			
80	61.3	14,800	12,400	7,200			
90	57.2	12,400	10,300	5,800			
100	52.8	10,500	8,700	4,600			
110	48.2	9,000	7,300	3,700			
120	43.2	7,700	6,200	2,900			
130	37.6	6,700	5,300	2,200			
140	31.3	5,800	4,500	——			
150	23.5	5,000	3,800	——			
160	11.6	4,300	3,200	——			

MAIN BOOM CAPACITIES – 170 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 180 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 190 FT OPEN THROAT TUBE BOOM

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

MAIN BOOM CAPACITIES – 200 FT OPEN THROAT TUBE BOOM

Load Radius (Ft.)	Boom Angle (deg)	Over End Blocked	360° Rotation				
			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			
40	79.4	27,200	27,200				
50	76.5	21,500	21,500				
60	73.5	17,500	17,500				
70	70.5	14,200	14,200				
80	67.4	11,700	11,700				
90	64.3	9,500	9,500				
100	61.1	7,700	7,700				
110	57.8	6,200	6,200				
120	54.3	5,000	5,000				
130	50.7	3,900	3,900				
140	46.9	2,800	2,800				

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