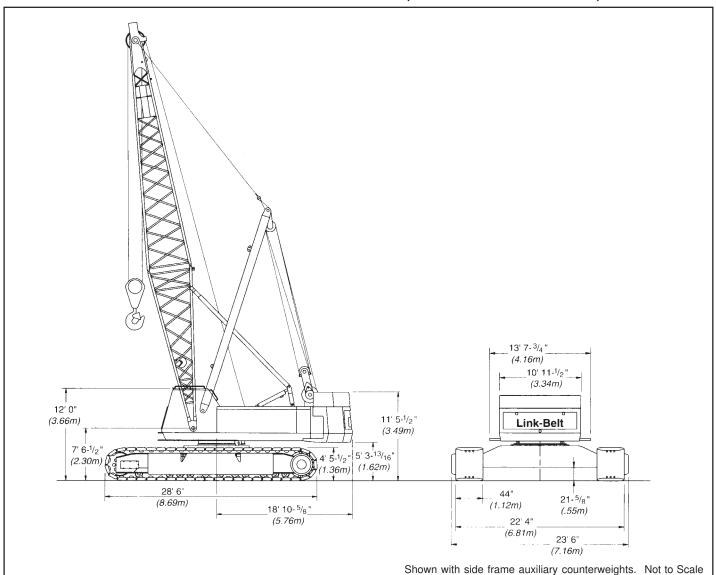


Specifications

Hydraulic Lattice Boom Crawler Crane

LS-248H II

200-Ton (181.50 metric ton)



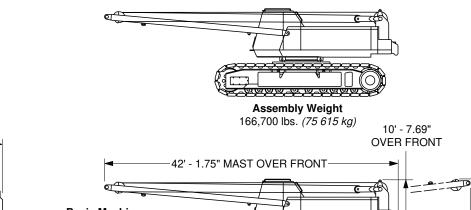
General dimensions	feet	meters
Basic boom length	50	15.24
Overall width of machine with 44" (1.12 m) track shoes	22.5	6.85
Overall width of cab w/catwalks both sides	13.64	4.15
Overall width of cab less catwalks	10.95	3.34

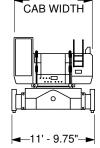
General dimensions	feet	meters
Tailswing of counterweight "A"	16.80	5.12
Tailswing of counterweight "AB"	18.89	5.76
Tailswing of counterweight "ABC"	18.89	5.76
Overall height for transport w/boom base	13.31	4.05
Overall height for transport w/live mast only	13.31	4.05

Machine Working Weights - approximate

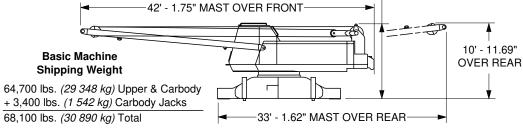
Based on standard machine with Isuzu A-6SD1TQB-01 diesel engine, turntable bearing, independent hydraulic powered drums, boomhoist limiting device, independent hydraulic swing and travel, swing brake, drum rotation indicators, and 18' 10" (5.74 m) gauge by 28' 6" (8.69 m) long crawler lower with 44" (1.12 m) wide track shoes, track rollers with	Equipp upper c + side fra	twt. "A"	upper ct	ed with twt. "AB" ame ctwts.	Equipped with upper ctwt. "ABC" + side frame ctwts.	
dirt seals, 48,000 lb. <i>(21 772 kg)</i> side frame auxiliary counterweights, catwalks, hydraulic boomfoot pin removal, plus the following:	lbs.	kg	lbs.	kg	lbs.	kg
Lifting Crane - includes 50' (15.24 m) basic tubular boom, 30' (9.14 m) live mast, 1,050' (320.04 m) of 1" (25 mm) diameter wire rope, 715' (217.93 m) of 7/8" (22 mm) diameter boomhoist rope, 175-ton (159 mt) hookblock, and basic pendants.	224,560	101 860	269,300	122 154	298,260	135 290

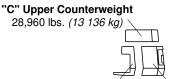
Transport Weights and Dimensions - ±3%





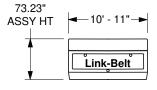
10' - 11.5"



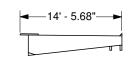


"A" Upper Counterweight 22,730 lbs. (10 310 kg)

"B" Upper Counterweight 44,740 lbs. (20 294 kg)



"ABC" Counterweight Assembly



Counterweight Assist Frame 4,900 lbs. (2 223 kg) (not included in basic machine weight)

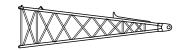


Tread Members 36,600 lbs. *(16 602 kg)* each



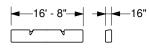
30' *(9.14 m)* **Jib Assembly** 1,900 lbs. *(862 kg)*





68" x 80" cross-section tubular boom

30' *(9.14 m)* **Peak Section** 4,130 lbs. *(1 873 kg)*



Side Frame Auxiliary Counterweights (2)

24,000 lbs. (10 886 kg) each (not included in basic machine weight)

	2	0	•	(6	.10	m)	В	as	зe	S	ection	

4,650 lbs. (2 109 kg) - w/o third drum winch assembly 9,830 lbs. (4 459 kg) - w/third drum winch assembly

40' (12.19 m) boom extension 3,360 lbs. (1 524 kg)

Optional Boom	Sections
10' (3.05 m) boom extension 20' (6.10 m) boom extension 30' (9.14 m) boom extension	840 lbs. <i>(381 kg)</i> 1,680 lbs. <i>(762 kg)</i> 2,520 lbs. <i>(1 143 kg)</i>

Crawler Mounting

Lower frame

All welded high strength steel (100,000 psi yield), box construction; precision machined surfaces for turntable bearing and axle plates.

Turntable bearing

Outer race bolted to lower frame; inner race with internal swing gear bolted to upper.

Crawler side frames

All welded, precision machined and removable. Each side frame comes with lifting brackets. Positioned on cross axles by dowels and held in place with adjustable wedgepacks.

Crawler side frame auxiliary counterweights

Removable 24,000 lb. (10 886 kg) auxiliary counterweight on each crawler side frame.

■ Track drive sprockets

Cast steel, heat treated; self-cleaning and sealed for lifetime lubrication. Powered by hydraulic motor(s) through double reduction gear drive.

Track carrier slide rails

Slide rails on top of each side frame.

Track rollers

Heat treated, oil filled, mounted on "sealed for life" anti-friction bearings; 12 per side crawler side frame.

Tracks

Heat treated, self-cleaning, multiple hinged track shoes joined by one piece full floating pins; 51 shoes per side frame - 44" (1.12 m) wide.

Track tension adjustment - Idler wheel adjusted by means of hydraulic cylinder and hand pump. Idler wheel shaft held in position with shims after adjustment is made.

Take up idlers

Cast steel, heat treated, self-cleaning, mounted on aluminum/bronze bushings. Lubricated through idler shaft.

Independent hydraulic travel/ steering

Power transmitted by axial piston hydraulic motors through planetary gear reduction unit to track drive sprocket.

Steering - Axial piston motor with reduction gear is located at inner drive end of each crawler side frame. Each track is driven simultaneously or individually for straight-line, gradual turn, or pivot turn. The tracks can be counterrotated for spin turns.

Brakes - Spring applied, hydraulically released multiple disc brakes are applied automatically when the control lever is in the neutral position.

Travel speed - 0 - .50 mph (0 - 0.80 km/hr). Gradeability - 30%

Jacking system

Optional; four ground controlled, power hydraulic jacks, pinned to the lower carbody frame, used to raise the machine to facilitate removal or installation of the crawler side frames.

Ground contact area and ground bearing pressure

Based on standard machine equipped with "ABC" counterweight and 50' (15.24 m) tubular boom.

Track	shoes	Ground co	ontact area	Ground bearing pressure			
inches	inches <i>meters</i>		cm²	psi	kg/cm²		
44	44 1.12		82 328	11.6	0.82		

Revolving Upperstructure

Frame

All welded and precision machined.

Turntable bearing

With integral swing (ring) gear. Inner race with internal swing gear is bolted to upper revolving frame; outer race is bolted to machined surface on lower.

Engine

Full pressure lubrication, oil filter, air cleaner, hour meter and throttle, electric control shutdown.

Fuel tank

77 gallon (291 liter) capacity; equipped with fuel sight level gauge, flame arrester, and self-closing cap with locking eye for padlock.

Engine Specifications	Isuzu A-6SD1TQB-01
Number of cylinders Bore and stroke: inch - (mm) Piston displacement - cu. in (cm³) High idle speed - rpm Engine rpm at full load speed Net engine hp at full load speed Peak torque - foot pounds - joules Peak torque - rpm Electrical system Batteries	6 4.72 x 5.71 (120 x 145) 600 (9 839) 2,400 2,200 237 644 (873.3) 1,500 24-volt 2 - 12 volt



LS-248H II Load Hoisting Performance

Available line speed and line pull

Line pulls are not based on wire rope strength. See wire rope chart below for maximum permissible single part of line working loads.

Line Speeds and Pulls

		Front Drum - 1" (25 mm) wire rope							Rear Drum - 1" (25 mm) wire rope				
Rope layer	Rope layer Maximum line pull		No load line speed		Full load I	Full load line speed		Maximum line pull		No load line speed		Full load line speed	
	lbs.	kg	ft./min	m/min	ft./min	m/min	lbs.	kg	ft./min	m/min	ft./min	m/min	
1	48,620	22 055	225	68.5	112	34.2	29,360	13 318	372	113.4	186	56.7	
2	44,200	20 050	247	75.3	124	37.7	26,690	12 108	409	124.8	205	62.4	
3	40,510	18 379	270	82.2	135	41.1	24,470	11 099	446	136.1	223	68.0	
4	37,400	16 965	292	89.0	146	44.5	22,590	10 245	484	147.5	242	73.7	
5	34,720	15 753	315	95.9	157	47.9	20,970	9 513	521	158.8	260	79.4	
6	32,410	14 703	337	102.7	168	51.3	19,570	8 877	558	170.1	279	85.1	
7	30,390	13 784	359	109.6	179	54.7	18,350	8 324	595	181.5	298	90.7	

	Boomhoist Drum - 7/8" (22 mm) wire rope							Third Drum - 1" <i>(25 mm)</i> wire rope				
Rope layer	Rope layer Maximum line pull		No load line speed		Full load line speed		Maximum line pull		No load line speed		Full load line speed	
	lbs.	kg	ft./min	m/min	ft./min	m/min	lbs.	kg	ft./min	m/min	ft./min	m/min
1	40,842	18 526	147	44.9	134	40.8	20,656	9 369	442	135	105	32
2	36,760	16 674	163	49.8	149	45.3	18,752	8 506	486	148	116	35
3	33,417	15 158	180	54.8	163	49.8	17,169	7 788	531	162	127	39
4	30,633	13 895	196	59.8	178	54.4	15,833	7 182	576	176	138	42
5	28,276	12 826	213	64.8	193	58.9	14,690	6 663	621	189	148	45
6	26,257	11 910	229	69.7	208	63.4						
7	24,506	11 116	245	74.7	223	67.9						

Wire Rope Drum Capacities

	Boomhoist Drum Capacity - 7/8" (22 mm) rope								
Rope layer	Pitch D	iameter	La	yer	Total				
	in.	mm	ft.	т	ft.	т			
1	15.88	403.2	51.8	15.8	51.8	15.8			
2	17.63	447.7	57.1	17.4	108.9	33.2			
3	19.38	492.1	62.3	19.0	171.2	52.2			
4	21.13	536.6	67.2	20.5	238.5	72.7			
5	22.88	581.0	72.5	22.1	311.0	94.8			
6	24.63	625.5	77.4	23.6	388.4	118.4			
7	26.38	669.9	82.7	25.2	471.1	143.6			

	Rear Drum Capacity - 1" (25 mm) wire rope							
Rope layer	Pitch D	iameter	Lay	/er	Total			
	in.	mm	ft.	m	ft.	m		
1	20	508	113	34.3	113	34.3		
2	22	559	123	37.4	235	71.7		
3	24	610	133	40.4	368	112.1		
4	26	660	142	43.4	510	155.5		
5	28	711	153	46.5	663	202.0		
6	30	762	163	49.6	825	251.6		
7	32	813	173	52.6	998	304.2		

	Front Drum Capacity - 1" (25 mm) wire rope							
Rope layer	Pitch Diamete		Lay	yer	Total			
	in.	mm	ft.	m	ft.	m		
1	20	508	113	34.3	113	34.3		
2	22	559	123	37.4	235	71.7		
3	24	610	133	40.4	368	112.1		
4	26	660	142	43.4	510	155.5		
5	28	711	153	46.5	663	202.0		
6	30	762	163	49.6	825	251.6		
7	32	813	173	52.6	998	304.2		

	Third Drum Capacity - 1" (25 mm) wire rope								
Rope layer	Pitch Diameter		Lay	/er	Total				
	in.	mm	ft.	m	ft.	m			
1	19.7	500	150	45.8	150	45.8			
2	21.7	551	165	50.4	316	96.2			
3	23.7	602	181	55.1	496	151.3			
4	25.7	653	196	59.7	692	211.0			
5	27.7	704	211	64.4	903	275.3			
6	29.7	754	226	68.9	1,129	344.1			

Wire Rope: size, type and working strength

Wire Rope: types available

- Type "N" 6 x 25 (6 x 19 class) filler wire, extra improved plow steel, preformed, independent wire rope center, right lay, regular lay.
- Type "LB" 6 x 25 (6 x 19 class) filler wire, preformed, independent wire rope center, right lay, regular lay.
- Type "RB" 19 x 19 non-rotating, extra, extra improved plow steel, preformed, right regular lay, swaged.



Hydraulic System

Hydraulic pumps

Two variable displacement piston pumps operating at 4,000 psi (281.24 kg/cm²) power travel, main drum, auxiliary drum, third drum, and boomhoist functions. Two fixed displacement gear pumps operating at 3,000 psi (211 kg/cm²) power swing, counterweight lowering, and machine jack functions. One fixed displacement gear pump operating at 1,210 psi (85 kg/cm²) powers pilot control system, clutches, brakes, and pump controls.

"Fine Inching" pump control mode

Special fine metering pump setting selectable from the operator's cab allows very slow movements for precision work. Main hoist, auxiliary hoist, boomhoist, third drum, and travel are all supplied with this standard feature.

Hydraulic reservoir

42 gal. (159 L), equipped with sight level gauge.

Relief valves

Each function is equipped with relief valves to protect the circuit from overload or shock.

Brake valves

Travel circuit is provided with brake valves for all terrain capability.

Hydraulic filtration

Ten micron, full flow line filter furnished in control circuit. All oil is filtered prior to return to sump tank.

Hydraulic motors

Main hoist drum, auxiliary hoist drum, boomhoist, swing, and travel are powered by axial piston motors.

Counterbalance valves

Upper - Hoist motors are equipped with counterbalance valves to provide positive load lowering and prevent accidental load drop when hydraulic power is suddenly reduced.

Lower - Travel motors equipped with counterbalance valve to prevent overspeeding of motors when traveling down an incline.

Principal Operating Functions

Control system

Remote controlled hydraulic servo for main drum and auxiliary drum. Mechanical linkage controls swing. Function speed is proportional to lever movement. Levers are adjustable for operator comfort.

Load hoisting and lowering

Main and auxiliary hoist drums are driven by individual axial piston motors and reduction gearing. Load hoisting or lowering is provided by actuating or reversing a hydraulic motor. The control lever provides two speeds for hoisting and lowering. Hoisting or lowering speeds are proportional to lever movement.

Freefall - The incorporation of power hydraulic controlled, two-shoe clutches allow freefall operation of the main and auxiliary hoist drums for high cycle crane and duty cycle application. Mode selection switch on control panel allows operator to select the most productive operation mode.

Load hoist drums

Main (front) and auxiliary (rear) hoist drums are 19" (.48 m) root diameter grooved for 1" (25 mm) wire rope. Mounted on anti-friction bearings.

Third operating drum - *Optional*; 12-1/2" (.32 m) grooved drum lagging, mounted in boom base section.

Drum clutches

Speed-o-Matic® power hydraulic two-shoe clutches; internal expanding, lined shoes. Clutch spiders are splined to shafts; clutch drums are integral with hoist drums.

Load hoist clutches - Front and rear main drums - clutch drums 30" (.76 m) diameter, 6-1/2" (.17 m) width.

Drum brakes

External contracting band type; operated by foot pedal equipped with a locking latch. Operator may select automatic brake mode* (spring applied, hydraulically released), which will apply brakes when the hoist control lever is in the neutral position.

*When in the automatic brake mode, the LS-248H II meets all OSHA requirements for personnel handling.

Drum rotation indicators

Standard for front and rear drums. Audibletype indicators.

Drum locking pawl

Standard for front and rear drums; electrically actuated and prevents drum rotation in a lowering direction.

Anti two-block system

Standard - A switch mounted on the boom peak activates a buzzer to warn the operator of a two-block condition and simultaneously disengages hoist function while applying the hoist brakes.

Swing system

Independent, hydraulic swing is driven by two axial piston motors through a gear reduction system; free swing when lever is in neutral position.

Swing brake - Spring applied, hydraulically released; controlled by button on swing control lever.

Swing lock - Mechanically controlled, two-position locking mechanism.

Optional - 360° locking mechanism available to meet New York City code.

Swing speed - Variable from 0 to 2 rpm.

Boomhoist/lowering system

Independent, hydraulic boomhoist is driven by an axial piston motor through a gear reduction system. Boom hoisting or lowering is performed by actuating or reversing the motor. Boomhoist speed is infinitely variable. Boomhoist speed from 0° to 70° boom angle is 90 seconds.

Boomhoist drum

Single grooved lagging 15" (.38 m) root diameter.

Boomhoist drum locking pawl

Electrically operated.

Boomhoist brake

Spring applied, hydraulically released, multiple disc type brake. Brake is automatically applied when control lever is in neutral position.



Boomhoist limiting device - Restricts hoisting boom beyond recommended minimum radius.

Electrical system

24 volt negative ground system with two 12-volt batteries. Standard lighting system includes: two 70 watt headlights mounted on machine front and one interior cab light.

Operator's cab

Full vision, modular compartment with safety glass panels. The completely independent cab is insulated against noise and vibration. Sliding operator's door, swing up roof window. Standard equipment includes: heater, air conditioner, defroster, windshield wiper, dry chemical fire extinguisher, sun visor, bubble-type level, fuel gauge, tachometer, hydraulic temperature gauge, engine oil pressure gauge, coolant temperature gauge, and service monitor system.

Machinery cab

Hinged doors (one on right side, two on left side) for machinery access. Equipped with rooftop access ladder, electric warning horn and skid resistant finish on roof.

Catwalks

Standard on right and left sides. Catwalks remove for reduced travel width.

Bail

Pinned to revolving frame. Seven sheaves are provided for 16 part boomhoist wire rope reeving. Sheaves mounted on "lifetime sealed" anti-friction bearings.

Counterweights

"A" upper ctwt. - 22,730 lb. (10 310 kg)

"AB" upper ctwt. - 67,470 lb. (30 604 kg)

"ABC" upper ctwt. - 96,430 lb. (43 741 kg)

Side frame ctwts. - see side frame auxiliary ctwt. description under Crawler Mounting on page 3.

Boom and Jib

Tubular boom

Two-piece basic boom 50' (15.24 m) long with open throat top section. Boom 80" (2.03 m) wide, 68" (1.73 m) deep at connections. Alloy steel round tubular cords 4" (.10 m) outside diameter. Maximum boom length is 280' (85.34 m).

Base section

20' (6.10 m) long; boomfeet on 55" (1.40 m) centers.

Boom extensions

Available in 10', 20', 30' and 40' (3.05, 6.10, 9.14 and 12.19 m) lengths with appropriate length pendants.

Boom connections

In-line pin connections.

Boom top section

Open throat; 30' (9.14 m) long.

Boompoint machinery

Six 21" (.53 m) root diameter sheaves mounted on "lifetime sealed" anti-friction bearings.

Hydraulic boomfoot pin removal

Standard; Speed-o-Matic controlled; located between mounting lugs on boom base section.

Boom live mast

30' (9.14 m) long; supports boomhoist bridle and boom pendants. Required for all boom lengths. May be used as short boom for assembling and disassembly of side frames and boom, but is not intended for general crane service. Refer to operator's manual for boom live mast lifting capacities.

Jib

Tubular; two-piece basic jib 30' (9.14 m) long; 32" (.81 m) wide, 24" (.61 m) deep at centerline of connections. Alloy steel tubular chords 2-1/4" (57 mm) outside diameter.

Base section - 13' 3" (4.04 m) long.

Jib extensions - Available in 10' (3.05 m) and 20' (6.10 m) lengths with appropriate length pendants.

Jib connections - In-line, tapered pins.

Tip section - 15' (4.57 m) long; equipped with single peak sheave 21" (.53 m) root diameter, heat treated and mounted on anti-friction bearings. Anchor provided at peak of jib tip section for two-part load hoist wire rope (whipline) connection.

Maximum jib length permitted - 100' (30.48 m). All jib lengths may be mounted at 5°, 15°, or 25° offset to boom.

Jib mast

17' 10" (5.44 m) long, mounted on jib base section. Two deflector sheaves mounted within mast to guide whipline; mounted on anti-friction bearings. Two equalizer sheaves mounted on top of mast - one for jib frontstay line, one for jib backstay line.

Jib staylines - Front and back staylines. Back staylines vary in length depending on degree of jib offset from boom centerline; back staylines attached at bottom end of boom top section.

Jib stops - Telescoping type; pinned from jib mast to boom top section and from jib mast to jib base section.

Auxiliary Equipment

Boom angle indicator

Pendulum type; mounted on boom base section. Electronic type readout on load indicator.

Hook blocks

Blocks, or weighted ball with swivel hook, *optional* - refer to price list.

Rated capacity limiter

Standard; PAT DS-350 rated capacity limiter, programmed with multiple charts, provides the operator with: main boom length, main boom angle, jib angle, jib length, operating mode, load radius, boom tip height, anti-two block indicator, prewarning light, audible alarm, overload light, and load on hook.

Swing alarm

Standard; audio/visual warning device signals when upper is swinging.

Lifting slings

For handling side frames and auxiliary side frame counterweights.

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PCSA Class 12-1080 Refer to notes page 11

Boom - <u>Tube</u>; 80" (2.03 m) wide, 68" (1.73m) deep with open throat top section. Hammerhead top section required for max. pick.

Jib - <u>Tube;</u> 32" *(.81 m)* wide, 24" *(.61m)* deep.

Counterweights - Refer to chart below.

Mounting - crawler:

overall length: 28' 6" (8.69 m) gauge: 18' 10" (5.74 m)

Counterweights										
"A" Upper		"AB" Upper		"ABC	' Upper	"A" Auxiliary Lower				
Pounds	Kilograms	Pounds	Kilograms	Pounds	Kilograms	Pounds	Kilograms			
22,730	10 310	67,470	30 604	96,430	43 741	48,000	21 773			

Open throat boom or boom + jib machine can lift off ground unassisted, without load.

		Over End Only						
Counterweight		В	oom	Boom + jlb				
		Feet	meters	Feet	meters			
No Ctwt.	Maximum	150	45.72	n/a	n/a			
Ctwt. "A"	Maximum	180	54.86	n/a	n/a			
Ctwt. "AB"	Maximum	240	73.15	n/a	n/a			
Ctwt. "ABC"	Maximum	270	82.30	n/a	n/a			
Ctwt. "ABC" + "A"	Maximum	280	85.34	240 + 100	73.15 + 30.48			

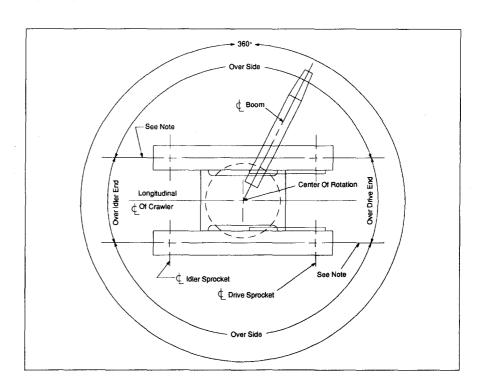
Notes:

- 1. Booms must be erected or lowered over the end with no load.
- 2. Crane on firm and level surface.
- 3. Booms 250 ft. (76.20 m) and longer require midpoint suspension pendants.

Working Areas

Note: These lines determine the limiting position of any load for operation within working areas indicated.

Caution: This material is for reference only. Operator must refer to the Crane Rating Manual to determine allowable machine lifting capacities and operating procedures.



	35 FT. (10.67 m) TUBE BOOM - HAMMERHEAD TOP SECTION										
			3	Over End Blocked							
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)			
10	82.0	400,000					400,000	10			
- 11	80.8	375,000					375,000	11			
12	79.0	350,000					350,000	12			
13	77.2	345,000					345,000	13			
14	75.4	336,100					336,100	14			
15	73.5	315,000					315,000	15			
16	71.6	296,300					296,300	16			
17	69.7	279,700					279,700	17			
18	67.8	264,800					264,800	18			
19	65.8	251,300					251,300	19			
20	63.8	239,100					239,100	20			
25	53.1	192,000					192,000	25			
30	40.1	140,100					140,100	30			
35	19.9	72,700	,			_	72,700	35			

	50	FT. (15.24	m) TUBE E	BOOM - OP	EN THROA	T TOP SE	CTION	
			3	Over End Blocked				
Load	Boom	100 1	450	4.5				Load
Radius	Angle	ABC+A	ABC	AB	Α	0	ABC+A	Radius
(ft)	(deg)	CTWT	CTWT	CTWT	CTWT	CTWT	CTWT	(ft)
		(lb)	(lb)	(lb)_	(lb)	(lb)	(lb)	
12	80.0	350,000	350,000	350,000	319,800	300,300	350,000	12
13	78.8	350,000	350,000	336,700	297,000	279,000	350,000	13
14	77.6	337,100	337,100	314,500	277,300	254,100	337,100	14
15	76.4	316,200	316,200	295,000	260,000	204,700	316,200	15
16	75.3	297,700	297,700	277,700	239,800	171,100	297,700	16
17	74.1	281,200	281,200	262,300	206,000	146,800	281,200	17
18	72.9	266,400	266,400	248,400	180,400	128,300	266,400	18
19	71.7	253,000	253,000	235,900	160,300	113,900	253,000	19
20	70.5	240,900	240,900	224,600	144,100	102,200	240,900	20
25	64.3	194,100	191,500	154,500	95,100	66,900	194,100	25
30	57.7	154,800	142,900	114,900	70,200	49,000	154,800	30
35	50.6	127,300	113,400	91,000	55,100	38,100	127,800	35
40	42.7	105,300	93,700	75,000	45,000	30,800	108,000	40
50	20.9	70,200	68,800	54,700	32,200	21,500	70,200	50

	60	FT. (18.29	m) TUBE E	BOOM - OP	EN THROA	T TOP SE	CTION	
q			3	60 ⁰ Rotatio	n		Over End Blocked	
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
,12	81.6	308,300	308,300	308,300	008,806	299,800	308,300	12
13	80.7	302,300	302,300	302,300	296,500	278,700	302,300	13
14	79.7	296,500	296,500	296,500	277,000	256,300	296,400	14
15	78.7	289,500	289,500	289,500	259,800	206,500	289,600	15
16	77.8	284,200	284,200	277,400	241,300	172,600	284,200	16
17	76.8	279,200	279,200	262,100	207,300	148,100	279,200	17
18	75.8	266,200	266,200	248,300	181,600	129,500	266,200	18
19	74.8	252,900	252,900	235,800	161,400	114,900	252,900	19
20	73.8	240,800	240,800	224,500	145,100	103,200	240,800	20
25	68.8	188,100	188,100	155,200	95,800	67,600	188,100	25
30	63.6	150,500	143,400	115,500	70,800	49,600	150,500	30
35	58.1	124,800	113,900	91,500	55,700	38,700	124,900	35
40	52.3	105,800	94,200	75,500	45,500	31,300	106,300	40
50	38.9	78,000	69,300	55,200	32,700	22,100	79,900	50
60	19.0	58,400	54,200	42,900	24,900	16,400_	58,400	60



	70	FT. (21.34	m) TUBE E	300M - OP	EN THRO	AT TOP SE	CTION	
			3	60 ⁰ Rotatio	on		Over End Blocked	
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
13	82.0	286,600	286,000	286,600	286,600	278,700	286,600	13
14	81.2	281,800	281,800	281,800	277,400	261,200	281,800	14
15	80.4	277,000	277,000	277,000	260,200	210,500	277,000	15
16	79.5	272,500	272,500	272,500	244,700	176,000	272,500	16
17	78.7	268,100	268,100	262,500	210,200	151,000	268,100	17
18	77.9	262,400	262,400	248,700	184,100	132,100	262,400	18
19	77.0	253,300	253,300	236,300	163,700	117,200	253,300	19
20	76.2	241,300	241,300	225,000	147,200	105,300	241,300	20
25	71.9	194,600	193,700	156,600	97,200	69,100	194,600	25
30	67.6	161,900	144,600	116,700	71,900	50,700	162,700	30
35	63.1	128,800	114,900	92,500	56,600	39,600	137,100	35
40	58.4	106,600	95,000	76,300	46,300	32,100	117,600	40
50	48.1	78,700	70,000	55,900	33,400	22,700	89,200	50
60	35.9	61,800	54,800	43,600	25,500	17,000	71,300	60
70	17.6	50,400	44,600	35,200	20,200	13,000	57,800	70

	80	FT. (24.38	m) TUBE E	BOOM - OP	EN THROA	T TOP SE	CTION	
			3	Over End Blocked				
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
14.4	82.0	260,100	260,100	260,100	260,100	238,700	260,100	14.4
15	81.6	257,700	257,700	257,700	257,700	211,400	257,700	15
16	80.9	253,500	253,500	253,500	244,500	176,800	253,500	16
17	80.1	249,600	249,600	249,600	210,900	151,700	249,600	17
18	79.4	245,700	245,700	245,700	184,700	132,700	245,600	18
19	78.7	241,900	241,900	235,800	164,200	117,800	241,900	19
20	77.9	238,300	238,300	224,600	147,700	105,800	238,300	20
25	74.2	194,300	194,000	156,900	97,500	69,300	194,300	25
30	70.5	162,100	144,800	116,800	72,100	50,900	162,400	30
35	66.6	128,900	115,000	92,600	56,700	39,700	135,700	35
40	62.7	106,700	95,100	76,400	46,500	32,300	116,500	40
50	54.3	78,800	70,100	56,000	33,500	22,800	88,600	50
60	44.8	61,900	54,900	43,700	25,700	17,100	71,400	60
70	33.5	50,600	44,800	35,400	20,400	13,200	59,000	70
80	16.5	42,400	37,400	29,400	16,500	10,400	48,400	80

	90	FT. (27.43	M) TUBE E	SOOM - OP	ENTHROA	I TOP SE		
			3		Over End Blocked			
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
15.8	82.0	239,200	239,200	239,200	239,200	183,300	239,200	15.8
16	81.9	238,500	238,500	238,500	238,500	177,400	238,500	16
17	81.2	233,500	233,500	233,500	211,400	152,200	233,500	17
18	80.6	230,000	230,000	230,000	185,200	133,100	230,000	18
19	79.9	226,600	226,600	226,600	164,600	118,100	226,600	19
20	79.3	223,400	223,400	223,400	148,000	106,100	223,300	20
25	76.0	193,900	193,900	157,100	97,700	69,500	193,900	25
30	72.7	160,800	144,900	116,900	72,200	51,000	160,900	30
35	69.4	129,000	115,100	92,700	56,800	39,800	134,300	35
40	65.9	106,700	95,100	76,400	46,500	32,300	115,500	40
50	58.7	78,800	70,100	56,000	33,500	22,800	88,400	50
60	50.9	61,900	54,900	43,700	25,700	17,100	71,000	60
70	42.2	50,600	44,800	35,400	20,400	13,300	59,000	70
80	31.5	42,500	37,500	29,500	16,600	10,500	49,400	80
90	15.5	36,300	31,900	24,900	13,600	8,300	41,300	90

	100 FT. (30.48 m) TUBE BOOM - OPEN THROAT TOP SECTION											
			3	60 ⁰ Rotatio	n		Over End Blocked					
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)				
17.2	82.0	219,200	219,200	219,200	206,100	148,500	219,200	17.2				
18	81.5	216,700	216,700	216,700	185,500	133,500	216,700	18				
19	81.0	213,800	213,800	213,800	164,900	118,500	213,800	19				
20	80.4	210,800	210,800	210,800	148,200	106,400	210,800	20				
25	77.5	193,500	193,500	157,200	97,800	69,600	193,500	25				
30	74.5	159,400	144,900	117,000	72,300	51,000	159,400	30				
35	71.5	129,000	115,100	92,700	56,800	39,800	133,200	35				
40	68.5	106,700	95,100	76,400	46,500	32,300	114,500	40				
50	62.1	78,700	70,000	56,000	33,500	22,800	88,400	50				
60	55.4	61,900	54,900	43,600	25,600	17,100	70,500	60				
70	48.1	50,600	44,800	35,400	20,300	13,200	58,900	70				
80	39.9	42,500	37,500	29,400	16,500	10,400	49,500	80				
90	29.9	36,400	32,000	24,900	13,700	8,300	42,000	90				
100	14.7	31,500	27,600	21,400	11,300	6,600	35,600	100				

	110 FT. (33.53 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	Over End Blocked							
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)			
18.6	82.0	201,100	201,100	201,100	173,100	124,500	201,100	18.6			
19	81.8	200,000	200,000	200,000	165,100	118,700	200,000	19			
20	81.3	197,500	197,500	197,500	148,500	106,600	197,500	20			
25	78.6	185,300	185,300	157,300	97,900	69,700	185,400	25			
30	75.9	158,100	144,900	117,000	72,300	51,000	158,200	30			
35	73.2	128,900	115,000	92,700	56,800	39,800	132,100	35			
40	70.5	106,600	95,000	76,300	46,400	32,200	113,500	40			
50	64.9	78,600	69,900	55,900	33,400	22,700	87,700	50			
60	59.0	61,800	54,800	43,500	25,500	17,000	69.900	60			
70	52.7	50,500	44,700	35,300	20,200	13,100	58,700	70			
80	45.8	42,400	37,400	29,300	16,400	10,300	49,300	80			
90	38.0	36,300	31,900	24,900	13,600	8,200	42,000	90			
100	28.4	31,500	27,600	21,300	11,300	6,500	36,200	100			
110	14.0	27,600	24,100	18,500	9,400	5,100	31,000	110			

	120	FT. <i>(36.58</i>	m) TUBE	BOOM - OP	EN THRO	AT TOP SE	CTION			
			3	360 ^o Rotation Over End Blocked						
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)		
20.0	82.0	186,200	186,200	186,200	148,900	106,900	186,200	20.0		
25	79.6	173,900	173,900	157,300	97,900	69,800	173,900	25		
30	77.1	156,900	144,900	117,000	72,200	51,000	156,900	30		
35	74.7	128,900	115,000	92,600	56,700	39,700	131,100	35		
40	72.2	106,500	94,900	76,300	46,300	32,100	112,600	40		
50	67.1	78,500	69,800	55,800	33,200	22,600	86,900	50		
60	61.8	61,600	54,600	43,400	25,400	16,800	69,300	60		
70	56.2	50,300	44,500	35,100	20,100	13,000	58,300	70		
80	50.3	42,200	37,200	29,200	16,300	10,200	49,000	80		
90	43.7	36,100	31,800	24,700	13,400	8,100	41,800	90		
100	36.3	31,400	27,500	21,200	11,200	6,400	36,100	100		
110	27.2	27,500	24,000	18,400	9,400	5,100	31,400	110		
120	13.4	24,300	21,100	16,000	7,800	3,900	27,500	120		



	130 FT. (39.62 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	Over End Blocked	_						
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)			
21.4	82.0	171,200	171,200	171,200	130,500	93,500	171,200	21.4			
25	80.4	164,400	164,400	157,300	97,900	69,800	164,400	25			
30	78.1	155,800	144,800	116,900	72,200	51,000	155,700	30			
35	75.9	128,800	114,900	92,500	56,600	39,600	130,200	35			
40	73.6	106,400	94,800	76,100	46,200	32,000	111,800	40			
50	68.9	78,400	69,700	55,600	33,100	22,400	86,300	50			
60	64.1	61,500	54,500	43,200	25,200	16,700	68,700	60			
70	59.1	50,200	44,300	35,000	19,900	12,800	57,800	70			
80	53.8	42,100	37,100	29,000	16,100	10,000	48,600	80			
90	48.2	36,000	31,600	24,600	13,300	7,900	41,500	90			
100	41.9	31,200	27,300	21,100	11,000	6,300	35,900	100			
110	34.8	27,400	23,900	18,300	9,200	4,900	31,300	110			
120	26.1	24,200	21,100	15,900	7,700	3,800	28,000	120			
130	12.9	21,600	18,600	13,900	6,400	2,800	24,100	130			

140 FT. (42.67 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3		Over End Blocked					
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)		
22.8	82.0	158,800	158,800	158,800	115,900	82,900	158,800	22.8		
25	81.1	155,200	155,200	155,200	97,900	69,800	155,200	25		
30	79.0	146,000	144,800	116,900	72,100	50,900	146,000	30		
35	76.9	128,700	114,800	92,400	56,500	39,500	129,300	35		
40	74.8	106,300	94,700	76,000	46,100	31,900	111,000	40		
50	70.5	78,200	69,500	55,500	33,000	22,300	85,600	50		
60	66.1	61,300	54,300	43,1,00	25,000	16,500	68,200	60		
70	61.5	50,000	44,200	34,800	19,700	12,600	57,200	70		
80	56.8	41,900	36,900	28,800	16,000	9,800	48,100	80		
90	51.7	35,800	31,400	24,400	13,100	7,700	41,100	90		
100	46.3	31,000	27,200	20,900	10,900	6,100	35,600	100		
110	40.3	27,200	23,700	18,100	9,100	4,800	31,100	110		
120	33.5	24,100	20,900	15,800	7,600	3,700	28,000	120		
130	25.2	21,400	18,500	13,800	6,300	2,700	24,500	130		
140	12.4	19,200	16,500	12,100	5,200		21,200	140		

	150	FT. (45.72	m) TUBE	BOOM - OF	EN THRO	AT TOP SE	CTION	
			3	Over End Blocked				
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
24.2	82.0	146,000	146,000	146,000	104,000		146,000	24.2
25	81.7	144,800	144,800	144,800	97,900		144,800	25
30	79.7	138,100	138,100	116,800	72,000	·	138,100	30
35	77.8	128,500	114,700	92,300	56,400		128,500	35
40	75.8	106,200	94,600	75,900	45,900		110,200	40
50	71.9	78,100	69,300	55,300	32,800		84,900	50
60	67.8	61,100	54,100	42,900	24,900		67,600	60
70	63.6	49,800	44,000	34,600	19,600		56,800	70
80	59.2	41,700	36,700	28,600	15,800		47,700	80
90	54.7	35,600	31,200	24,200	12,900		40,700	90
100	49.8	30,800	27,000	20,700	10,700		35,200	100
110	44.6	27,000	23,500	17,900	8,900		30,800	110
120	38.9	23,900	20,700	15,600	7,400		27,800	120
130	32.3	21,300	18,400	13,700	6,100		24,500	130
140	24.3	19,000	16,300	12,000	5,000		21,500	140
150	12.0	17,100	14,600_	10,500	4,100		18,700	150

	160 FT. (48.77 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	60 ⁰ Rotatio	n		Over End Blocked				
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)			
25.6	82.0	135,700	135,700	135,700	94,200		135,700	25.6			
30	80.4	130,400	130,400	116,700	71,900		130,400	30			
35	78.6	124,600	114,500	92,200	56,300		124,600	35			
40	76.7	106,000	94,400	75,700	45,800		109,600	40			
50	73.0	77,900	69,200	55,100	32,600		84,300	50			
60	69.2	60,900	53,900	42,700	24,700		67,000	60			
70	65.4	49,600	43,800	34,400	19,300		56,200	70			
80	61.3	41,500	36,500	28,400	15,500		47,200	80			
90	57.2	35,400	31,000	24,000	12,700		40,300	90			
100	52.8	30,600	26,700	20,500	10,400		34,800	100			
110	48.2	26,800	23,300	17,700	8,600		30,400	110			
120	43.2	23,700	20,500	15,400	7,200		27,600	120			
130	37.6	21,100	18,100	13,400	5,900		24,300	130			
140	31.3	18,800	16,100	11,800	4,800		21,400	140			
150	23.5	16,900	14,400	10,400	3,900		18,900	150			
160	11.6	15,200	12,900	9,100	3,100		16,500	160			

	170	FT. (51.82	m) TUBE	BOOM - OF	EN THRO	AT TOP SE	170 FT. (51.82 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	60 ⁰ Rotatio	n		Over End Blocked										
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)									
27.0	82.0	126,100	126,100	126,100	86,000		126,100	27.0									
30	81.0	122,900	122,900	116,600	71,800		122,900	30									
35	79.2	116,100	114,400	92,000	56,100		116,100	35									
40	77.5	105,900	94,300	75,600	45,600		108,900	40									
50	74.0	77,700	69,000	54,900	32,400		83,700	50									
60	70.5	60,700	53,700	42,500	24,500		66,400	60									
70	66.9	49,400	43,600	34,200	19,100		55,700	70									
80	63.2	41,300	36,300	28,200	15,300		46,700	80									
90	59.3	35,200	30,800	23,700	12,500		39,800	90									
100	55.3	30,400	26,500	20,200	10,200		34,400	100									
110	51.1	26,600	23,100	17,400	8,400		30,100	110									
120	46.6	23,500	20,300	15,200	6,900		27,200	120									
130	41.8	20,800	17,900	13,200	5,700		24,000	130									
140	36.5	18,600	15,900	11,600	4,600		21,200	140									
150	30.3	16,700	14,200	10,200	3,700		18,800	150									
160	22.8	15,000	12,700	8,900	2,900	1	16,600	160									
170	11.3	13,500	_11,300	7,800	2,200		14,400	170									

	180	FT. (54.86	mi TURE	BOOM - OF	EN THRO	AT TOP SE	CTION	
	100	11. (54.00		60° Rotatio		AT TOP 3E	Over End Blocked	
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
28.3	82.0	115,900	115,900	115,900	78,900		115,900	28.3
30	81.5	114,200	114,200	114,200	71,700		114,200	30
35	79.9	109,500	109,500	91,900	56,000		109,500	35
40	78.2	104,900	94,100	75,400	45,500		104,900	40
50	75.0	77,500	68,800	54,700	32,200		83,100	50
60	71.6	60,500	53,500	42,300	24,300		65,900	60
70	68.2	49,200	43,300	34,000	18,900		55,200	70
80	64.8	41,000	36,000	28,000	15,100		46,200	80
90	61.2	34,900	30,600	23,500	12,200		39,400	90
100	57.5	30,200	26,300	20,000	10,000		34,000	100
110	53.6	26,400	22,900	17,200	8,200		29,600	110
120	49.6	23,200	20,000	14,900	6,700		26,900	120
130	45.3	20,600	17,700	13,000	5,500	Ì	23,600	130
140	40.6	18,400	15,700	11,400	4,400		20,900	140
150	35.4	16,500	14,000	10,000	3,500		18,500	150
160	29.5	14,800	12,500	8,700	2,700		16,400	160
170	22.1	13,300	11,200	7,600	2,000		14,500	170
180	11.0	12,000	9,900	6,600	<u> </u>	<u> </u>	12,600	180



	190 FT. (57.91 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			9	60° Rotatio	ın		Over End				
1				oo notalio	11		Blocked				
Load	Boom							Load			
Radius	Angle	ABC+A	ABC	AB	Α	0	ABC+A	Radius			
(ft)	(deg)	CTWT	CTWT	CTWT	CTWT	CTWT	CTWT	(ft)			
		(lb)	(lb)	(lb)	(tb)	(lb)	(lb)				
29.7	82.0	107,100	107,100	107,100			107,100	29.7			
30	81.9	107,100	107,100	107,100			107,100	30			
35	80.4	103,100	103,100	91,700			103,100	35			
40	78.9	98,900	93,900	75,200			98,900	40			
50	75.8	77,300	68,600	54,500			82,600	50			
60	72.6	60,300	53,300	42,100			65,400	60			
70	69.4	48,900	43,100	33,700			54,700	70			
80	66.2	40,800	35,800	27,800			45,700	80			
90	62.8	34,700	30,300	23,300			38,900	90			
100	59.4	29,900	26,000	19,800			33,500	100			
110	55.8	26,100	22,600	17,000			29,500	110			
120	52.1	23,000	19,800	14,700			26,500	120			
130	48.2	20,400	17,500	12,800			23,300	130			
140	44.0	18,200	15,500	11,100			20,600	140			
150	39.4	16,200	13,700	9,700			18,200	150			
160	34.4	14,600	12,300	8,500			16,100	160			
170	28.7	13,100	10,900	7,400			14,300	170			
180	21.5	11,800	9,800	6,400			12,600	180			
190	10.7	10,600	8,700	5,500			10,900	190			

190	10.7	10,600	8,700	5,500			1 10'800	190
	200	FT. (60.96	m) TUBE	BOOM - OF	EN THRO	AT TOP SE	CTION	
			3	60 ⁰ Rotatio	n		Over End Blocked	
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
31.1	82.0	95,300	95,300	95,300			95,300	31.1
35	80.9	94,100	94,100	91,600			94,100	35
40	79.4	93,100	93,100	75,100			93,100	40
50	76.5	77,100	68,400	54,300			82,000	50
60	73.5	60,100	53,100	41,800			64,800	60
70	70.5	48,700	42,900	33,500			54,200	70
80	67.4	40,600	35,600	27,500			45,200	80
90	64.3	34,400	30,100	23,000			38,400	90
100	61.1	29,700	25,800	19,500			33,100	100
110	57.8	25,900	22,400	16,700			29,400	110
120	54.3	22,700	19,600	14,400			26,100	120
130	50.7	20,100	17,200	12,500			22,900	130
140	46.9	17,900	15,200	10,900			20,200	140
150	42.8	16,000	13,500	9,500			17,900	150
160	38.4	14,300	12,000	8,200			15,800	160
170	33.5	12,900	10,700	7,200			14,000	170
180	27.9	11,600	9,500	6,200			12,400	180
190	21.0	10,400	8,500	5,300			10,900	190
200	10.4	9,400	7,500	4,500			9,400	200

r	210	FT. (64.01	m) TUBE	BOOM - OF	EN THRO	AT TOP SE	CTION	
			3	60° Rotatio	ก		Over End Blocked	
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
32.5	82.0	83,900	83,900	83,900			83,900	32.5
35	81.3	83,900	83,900	83,900			83,900	35
40	79.9	82,800	82,800	74,900			82,600	40
50	77.1	76,900	68,200	54,100			79,600	50
60	74.3	59,900	52,900	41,600			64,300	60
70	71.5	48,500	42,600	33,300			53,700	70
80	68.6	40,300	35,300	27,300			44,800	80
90	65.6	34,200	29,800	22,800			38,000	90
100	62.6	29,400	25,500	19,300			32,700	100
110	59.5	25,600	22,100	16,500			29,400	110
120	56.2	22,500	19,300	14,200			25,700	120
130	52.9	19,900	16,900	12,200			22,500	130
140	49.4	17,700	15,000	10,600			19,800	140
150	45.7	15,700	13,200	9,200			17,500	150
160	41.7	14,100	11,800	8,000			15,500	160
170	37.4	12,600	10,400	6,900			13,700	170
180	32.7	11,400	9,300	6,000			12,100	180
190	27.2	10,200	8,300	5,100			10,700	190
200	20.5	9,200	7,300	4,300			9,300	200
210	10.1	8,000	6,400	3,600			8,000	210

	220	FT. <i>(67.06</i>	m) TUBE I	BOOM - OF	EN THRO	AT TOP SE	CTION	
			3	60° Rotatio	n		Over End Blocked	
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)
33.9	82.0	75,200	75,200	75,200			75,200	33.9
35	81.7	75,200	75,200	75,200			75,000	35
40	80.4	74,300	74,300	74,300			74,300	40
50	77.7	72,400	68,000	53,900			73,100	50
60	75.1	59,600	52,700	41,400			63,800	60
70	72.3	48,200	42,400	33,000			53,200	70
80	69.6	40,100	35,100	27,000			44,300	80
90	66.8	34,000	29,600	22,500			37,500	90
100	63.9	29,200	25,300	19,000			32,200	100
110	61.0	25,400	21,900	16,200			29,000	110
120	58.0	22,200	19,000	13,900			25,200	120
130	54.8	19,600	16,700	12,000			22,100	130
140	51.6	17,400	14,700	10,400			19,400	140
150	48.2	15,500	13,000	9,000			17,100	150
160	44.6	13,800	11,500	7,700			15,100	160
170	40.7	12,400	10,200	6,700			13,300	170
180	36.6	11,100	9,000	5,700			11,800	180
190	31.9	10,000	8,000	4,900			10,400	190
200	26.6	8,900	7,100	4,100			9,100	200
210	20.0	7,900	6,200	3,400			7,900	210
220	9.9	6,600	5,400	2,700			6,600	220

		FT. (70.10	Over End Blocked					
Load Boom Radius Angle (ft) (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)	
35.3	82.0	68,100	68,100	68,100			68,100	35.3
40	80.8	67,200	67,200	67,100			67,200	40
50	78.3	65,600	65,600	53,700			65,600	50
60	75.7	59,400	52,400	41,200			61,900	60
70	73.1	48,000	42,200	32,800			52,700	70
80	70.5	39,800	34,800	26,800			43,800	80
90	67.8	33,700	29,300	22,300			37,100	90
100	65.1	28,900	25,000	18,800			31,700	100
110	62.4	25,100	21,600	16,000			28,600	110
120	59.5	22,000	18,800	13,700	İ		24,800	120
130	56.6	19,300	16,400	11,700			21,600	130
140	53.5	17,100	14,400	10,100			19,000	140
150	50.4	15,200	12,700	8,700			16,700	150
160	47.0	13,600	11,200	7,500			14,700	160
170	43.5	12,100	9,900	6,400			13,000	170
180	39.8	10,800	8,800	5,500			11,400	180
190	35.7	9,700	7,700	4,600			10,000	190
200	31.2	8,700	6,800	3,800			8,800	200
210	26.0	7,600	6,000	3,200			7,600	210
220	19.6	6,500	5,200	2,500			6,500	220
230	9.7	5,400	4,500				5,400	230



	240 FT. (73.15 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	Over End Blocked							
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)			
36.7	82.0	61,200	61,200	61,200			61,200	36.7			
40	81.2	60,400	60,400	60,400			60,400	40			
50	78.8	57,800	57,800	53,500			57,700	50			
60	76.3	54,900	52,200	40,900			54,800	60			
70	73.9	47,800	41,900	32,500			49,600	70			
80	71.4	39,600	34,600	26,500			43,400	80			
90	68.8	33,400	29,100	22,000			36,600	90			
100	66.2	28,700	24,800	18,500			31,300	100			
110	63.6	24,800	21,300	15,700			27,700	110			
120	60.9	21,700	18,500	13,400			24,400	120			
130	58.1	19,100	16,200	11,500			21,200	130			
140	55.3	16,900	14,200	9,800			18,600	140			
150	52.3	15,000	12,500	8,400			16,300	150			
160	49.2	13,300	11,000	7,200			14,300	160			
170	46.0	11,900	9,700	6,100			12,600	170			
180	42.6	10,600	8,500	5,200			11,000	180			
190	38.9	9,400	7,500	4,300			9,700	190			
200	34.9	8,400	6,600	3,600			8,400	200			
210	30.5	7,300	5,700	2,900			7,300	210			
220	25.4	6,200	5,000	2,300			6,200	220			
230	19.1	5,200	4,200				5,200	230			
240	9.5	4,200	3,600				4,200	240			

ſ	250 FT. (76.20 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	Over End Blocked							
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)			
38.1	82.0	53,900	53,900				53,900	38.1			
40	81.6	53,900	53,900				53,900	40			
50	79.2	52,500	52,500				52,300	50			
60	76.9	49,600	49,600				49,700	60			
70	74.5	45,200	41,700				45,300	70			
80	72.1	39,300	34,300				41,100	80			
90	69.7	33,100	28,800				36,300	90			
100	67.2	28,300	24,500				31,100	100			
110	64.7	24,500	21,000				26,500	110			
120	62.2	21,400	18,200				23,600	120			
130	59.5	18,700	15,800				21,100	130			
140	56.8	16,500	13,800				18,600	140			
150	54.1	14,600	12,100				15,900	150			
160	51.2	12,900	10,600				13,700	160			
170	48.2	11,500	9,300				11,700	170			
180	45.0	9,900	8,100				9,900	180			
190	41.7	8,400	7,100				8,400	190			
200	38.1	8,000	6,200				8,000	200			
210	34.2	7,100	5,300				7,500	210			
220	29.9	6,200	4,600				6,500	220			
230	24.9	5,300	3,900				5,300	230			
240	18.8	3,300	3,200				3,300	240			
250	9.3	2,800	2,600				2,800	250			

	260 FT. (79.25 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	Over End Blocked							
Load Radius (ft)	Boom Angle (deg)	ABC+A CTWT (lb)	ABC CTWT (lb)	AB CTWT (lb)	A CTWT (lb)	0 CTWT (lb)	ABC+A CTWT (lb)	Load Radius (ft)			
39.5	82.0	48,900	48,900				48,900	39.5			
40	81.9	48,900	48,900				48,900	40			
50	79.6	47,700	47,700				47,700	50			
60	77.4	45,000	45,000				45,000	60			
70	75.1	41,100	41,100				41,100	70			
80	72.8	37,500	34,000				37,500	80			
90	70.5	32,900	28,500				33,800	90			
100	68.2	28,100	24,200				30,800	100			
110	65.8	24,200	20,700				25,000	110			
120	63.3	21,100	17,900				23,300	120			
130	60.8	18,500	15,500				21,600	130			
140	58.3	16,200	13,500				19,900	140			
150	55.6	14,300	11,800				17,700	150			
160	52.9	12,700	10,300				15,800	160			
170	50.1	11,200	9,000				14,100	170			
180	47.2	9,900	7,900				12,600	180			
190	44.1	8,800	6,800				11,200	190			
200	40.8	7,800	5,900				10,000	200			
210	37.3	6,800	5,100				8,900	210			
220	33.5	6,000	4,300				7,800	220			
230	29.3	5,200	3,600				6,800	230			
240	24.4	4,500	3,000				5,800	240			
250	18.4	3,800	2,400				4,800	250			
260	9.1	3,200					3,500	260			

	270 FT. (82.30 m) TUBE BOOM - OPEN THROAT TOP SECTION										
			3	60 ⁰ Rotatio	n		Over End				
I	_			OU HOIANO	··		Blocked				
Load	Boom	l l						Load			
Radius	Angle	ABC+A	ABC	AB	A	0	ABC+A	Radius			
(ft)	(deg)	CTWT	CTWT	CTWT	CTWT	CTWT	CTWT	(ft)			
		(lb)	(lb)	(lb)	(lb)	(lb)	(lb)				
40.9	82.0	44,400	44,400				44,400	40.9			
50	80.0	43,300	43,300				43,500	50			
60	77.9	40,900	40,900				40,800	60			
70	75.7	37,300	37,300				37,200	70			
80	73.5	33,800	33,800				33,900	80			
90	71.3	30,800	28,300				31,000	90			
100	69.0	27,000	23,900				26,700	100			
110	66.7	24,000	20,500				24,700	110			
120	64.4	20,800	17,600				22,500	120			
130	62.0	18,200	15,300				20,600	130			
140	59.6	16,000	13,300				19,000	140			
150	57.1	14,100	11,600				17,300	150			
160	54.5	12,400	10,100				16,000	160			
170	51.9	10,900	8,800				14,400	170			
180	49.1	9,700	7,600				12,900	180			
190	46.2	8,500	6,600				11,600	190			
200	43.2	7,500	5,600				10,400	200			
210	40.0	6,600	4,800				9,300	210			
220	36.6	5,700	4,000				8,300	220			
230	32.9	4,900	3,400				7,400	230			
240	28.7	4,200	2,700				6,600	240			
250	24.0	3,600	2,100				5,800	250			
260	18.0	3,000					5,000	260			
270	8.9	2,400		L	···		2,400	270			



,	200 ET 705 24 m) TUDE DOOM ODEN TUDOAT TOD SECTION									
	280 FT. (85.34 m) TUBE BOOM - OPEN THROAT TOP SECTION									
1			3	Over End						
l	_			60 ⁰ Rotatio			Blocked			
Load	Boom					_	l l	Load		
Radius	Angle	ABC+A	ABC	AB	Α	0	ABC+A	Radius		
(ft)	(deg)	CTWT	CTWT	CTWT	CTWT	CTWT	CTWT	(ft)		
i .		(lb)	(lb)	(lb)	(lb)	(lb)	(lb)			
40.0	82.0	40,400					40,400	42.3		
42.3	4						39,600	-		
50 60	80.4 78.3	39,600 37,200					37,200	50 60		
4		H-1000000000000000000000000000000000000					34,000	70		
70	76.2	33,900						70 80		
80	74.1	30,900					30,800	90		
90	72.0	26,700					26,700 24,400	100		
100	69.8	24,300					200000000000000000000000000000000000000	110		
110	67.6	22,400					22,300	120		
120	65.4	20,400					20,400			
130	63.1	17,900					18,600	130		
140	60.8	15,700					17,200	140		
150	58.4	13,800					15,700	150		
160	56.0	12,100					14,500	160		
170	53.5	10,700					13,500	170		
180	50.9	9,400					12,400	180		
190	48.2	8,200					11,300	190		
200	45.4	7,200					10,100	200		
210	42.4	6,300					9,000	210		
220	39.3	5,400					8,000	220		
230	35.9	4,700					7,100	230		
240	32.3	4,000					6,300	240		
250	28.2	3,300					5,600	250		
260	23.5	2,700					4,900	260		
270	17.7	2,200					3,900	270		
280	8.8						LI	280		

Notes: Lift Crane Capacities

General:

- Rated lifting capacities in pounds as shown on lift charts pertain to the 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.
- Construction equipment can be dangerous if improperly operated or maintained. Operation and maintenance of the crane must be in compliance with the information in the Operator's, Parts and Safety Manuals supplied with the crane. If these manuals are missing, order replacements through the distributor.
- The operator and other personnel associated with the crane shall read and fully understand the latest applicable American National Standards Institute (ANSI) safety standards for cranes.
- The maximum allowable lifting capacities are based on crane standing level on firm supporting surface.
- All capacities listed are in compliance with ASME/ANSI B30.5b-1991, SAE J987-April 1991, and SAE J765-October 1990.

Set-Up:

- The crane shall be leveled on a firm supporting surface. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the crawler side frames to spread the load to a larger bearing surface.
- For required parts of line, see wire rope strength and winch performance tables in Crane Rating Manual.

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, sling, grapple, load weighing device, etc. When using main hook while jib is attached, reduce capacities by values shown in Crane Rating Manual. See Operator's Manual for all limitations when raising or lowering attachment.
- The capacities in the shaded areas are based on structural strength. The capacities in the non-shaded areas are based on stability ratings.
- For recommended reeving, parts of line, wire rope type and wire rope inspection, see wire rope strength chart, Operator's Manual and Parts Manual.
- 4. Load ratings 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 (32.19 km/hr) and appropriately reduced for wind speeds greater than 20 mph (32.19 km/hr). Extreme caution should be used when lifting heavy loads or loads with large wind sail area under high wind conditions (over 20 mph 32.19 km/hr).

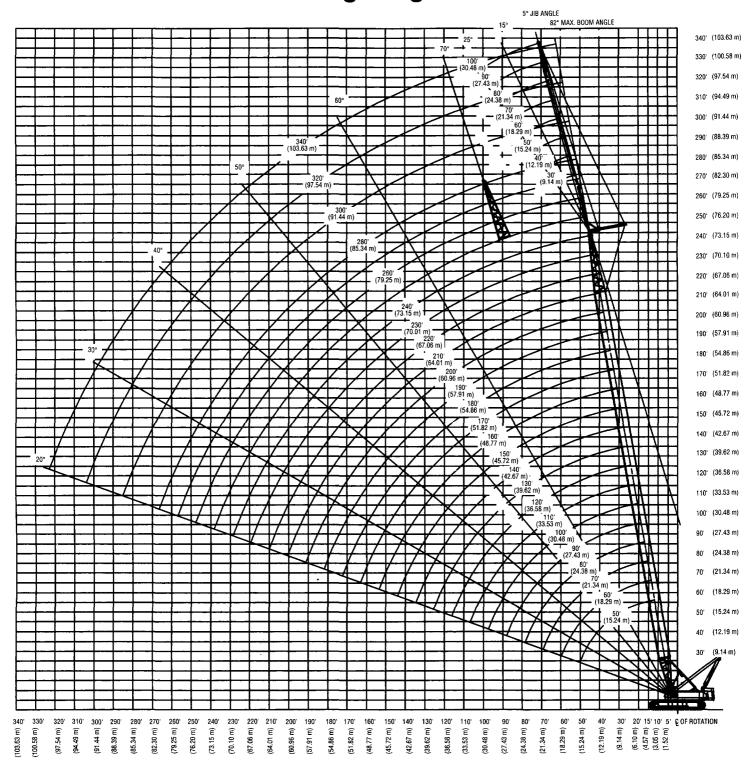
- Auxiliary lower counterweights are to be used for specific, infrequent lifts only. Avoid travel with lower counterweights installed on machine. Doing so may cause decreased travel torque and/or excessive wear to drive components.
- 7. The 30' (9.14 m) live mast must be used for all capacities listed.
- 8. The least stable rated condition is over the side.
- 9. Booms must be erected and lowered over the end.
- 10. 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 the Crane Rating Manual. Any of the above can cause a tipping condition, or boom and jib failure.
- 11. These capacities apply only to the crane as originally manufactured and normally equipped by Link-Belt Construction Equipment Company.

For Over End Capacities Only:

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



LS-248H II Lift Crane Working Range



OPERATING RADIUS