

Specifications

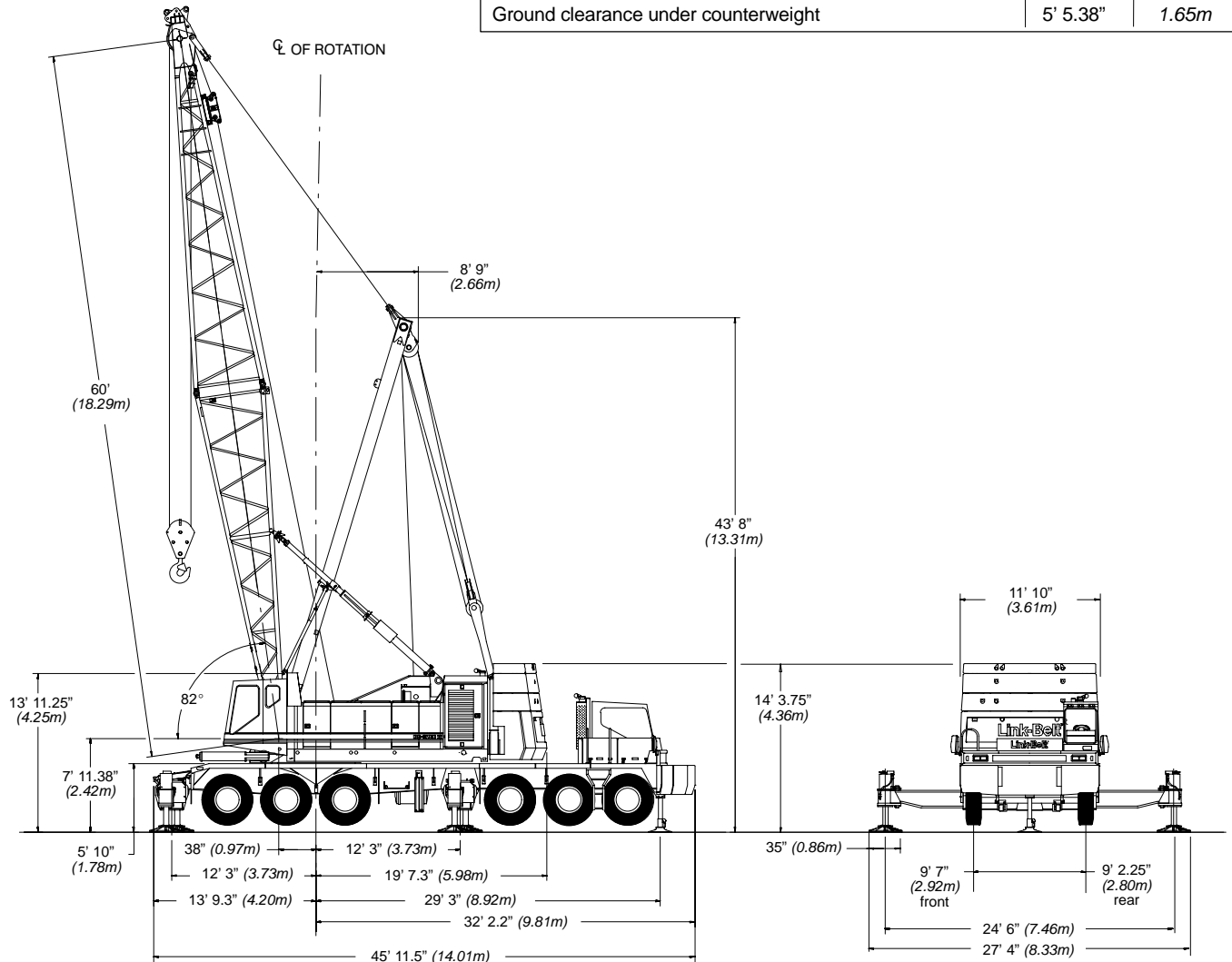
Lattice Boom Truck Crane

HC-278H II

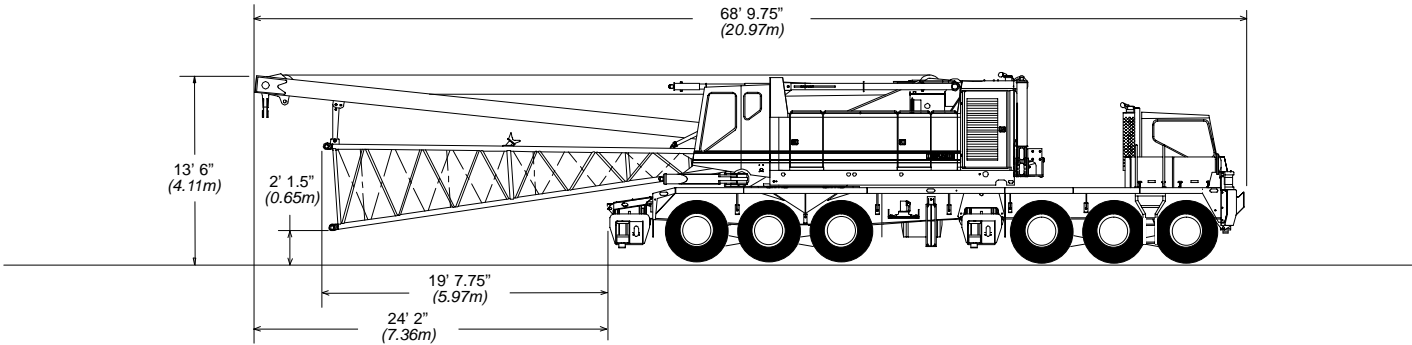
300-ton (272 metric ton)

HYLAB Series

General Dimensions	English	Metric
Overall width, outriggers extended (over pontoons)	27' 4"	8.33m
Overall width, outriggers extended (c/l of pontoons)	24' 6"	7.46m
Overall width, outriggers retracted, jacks removed	11' 10"	3.61m
Vehicle clearance circle over outside of front bumper	122' 10"	37.44m
Vehicle clearance circle over outside of front bumper cwtw.	125' 10"	38.35m
Minimum ground clearance (at bottom of front bogie beams)	8.88"	0.22m
Counterweight tailswing (at corners)	18' 9"	5.69m
Overall width (upper)	11' 10"	3.61m
Radius of boom foot pin	3' 2"	0.97m
Height of boom foot pin	7' 3.38"	2.22m
Ground clearance under counterweight	5' 5.38"	1.65m



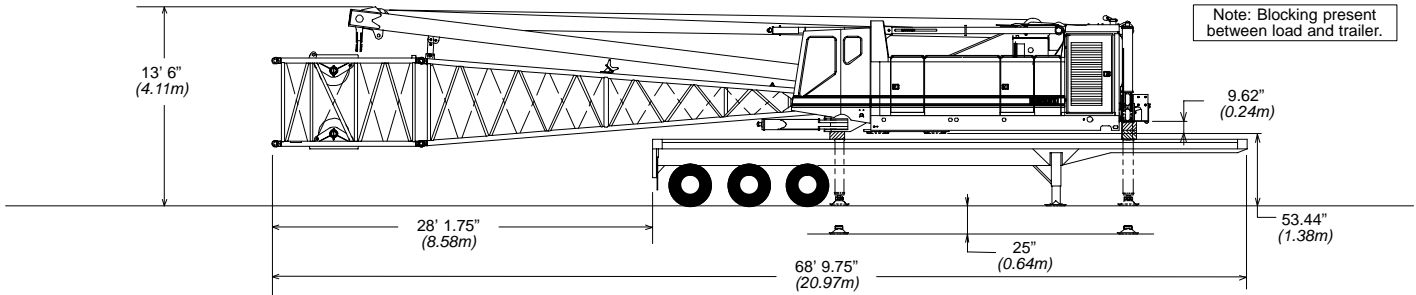
HC-278H II Crane Transport Weights and Dimensions – approximate



Transport Weights

- without boom base – 168,824 lb (76 577kg)
- with boom base – 173,736 lb (78 805kg)
- with boom base and 10 ft self-assembly section – 177,011 lb (80 291kg)

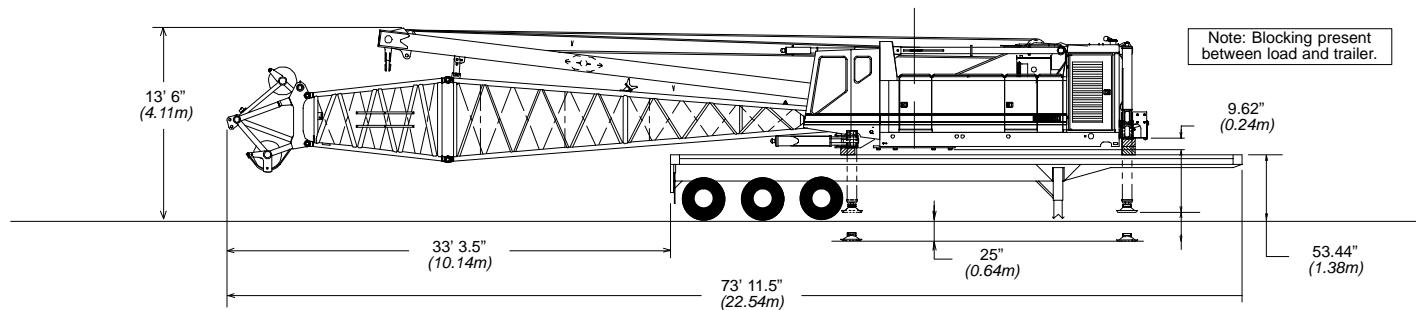
Note: Carrier undecked with outrigger boxes and without jacks = 70,500 lb (31 978kg)



Note: Blocking present between load and trailer.

Transport Weights

- without boom base – 76,976 lb (34 916kg)
- with boom base – 83,173 lb (37 727kg)
- with boom base and 10 ft self-assembly section – 84,757 lb (38 446kg)

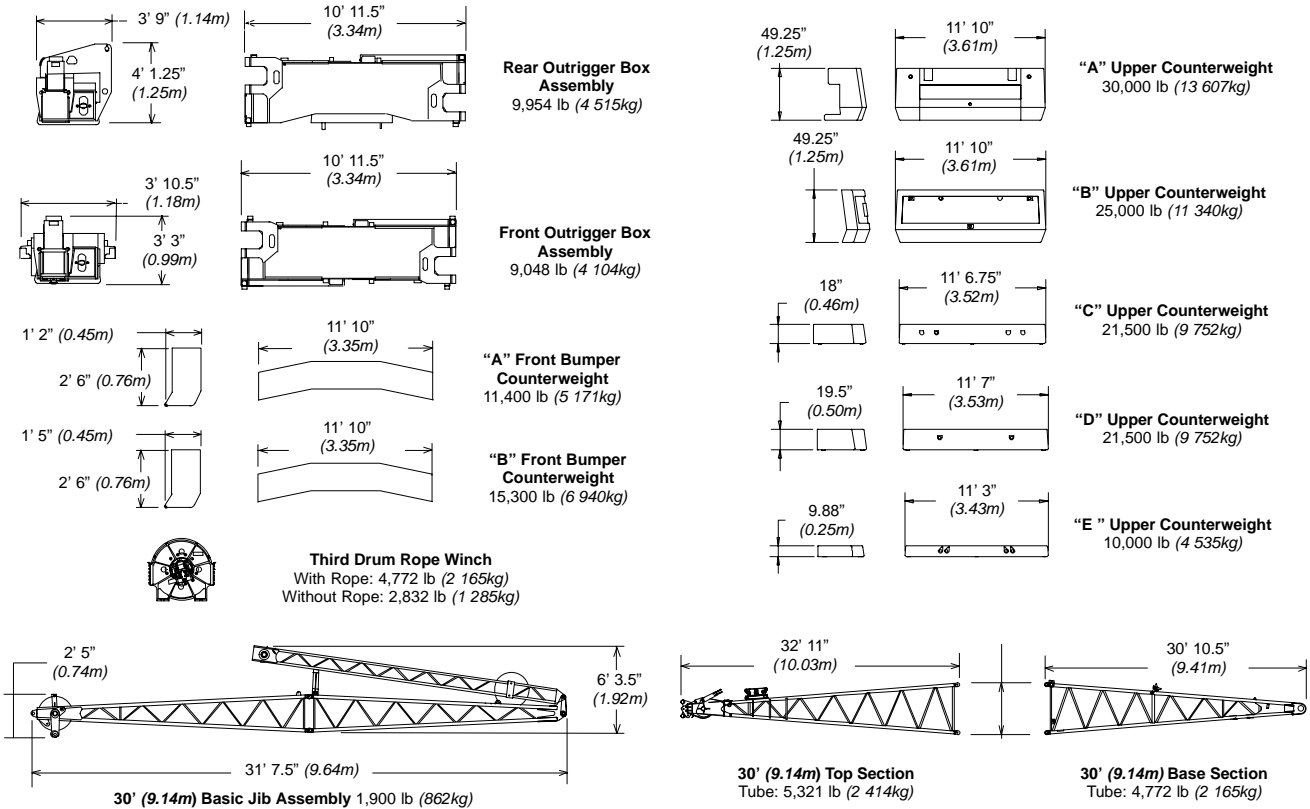


Note: Blocking present between load and trailer.

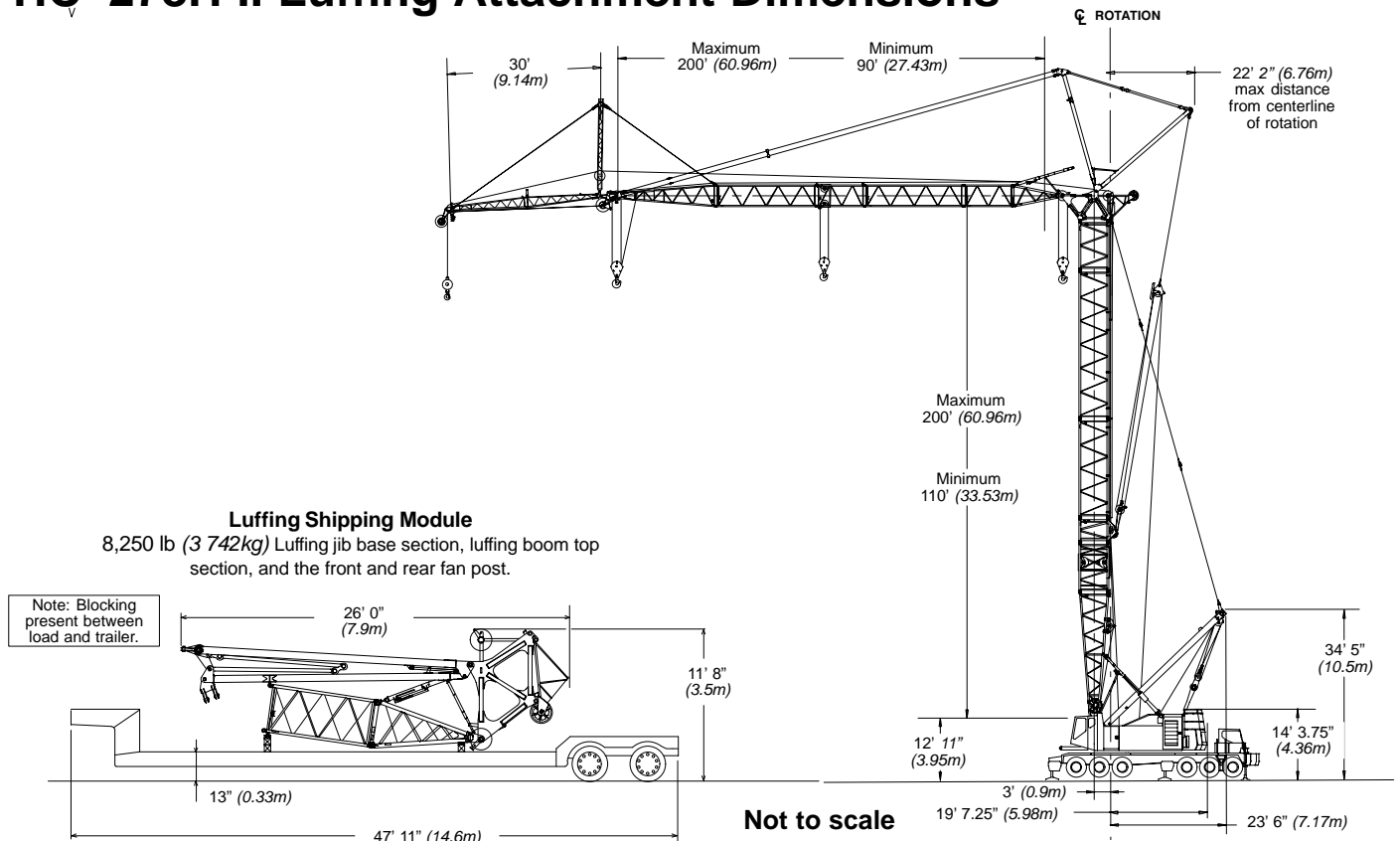
Transport Weights

- with hammerhead and transition section and head machinery – 86,996 lb (39 461kg)

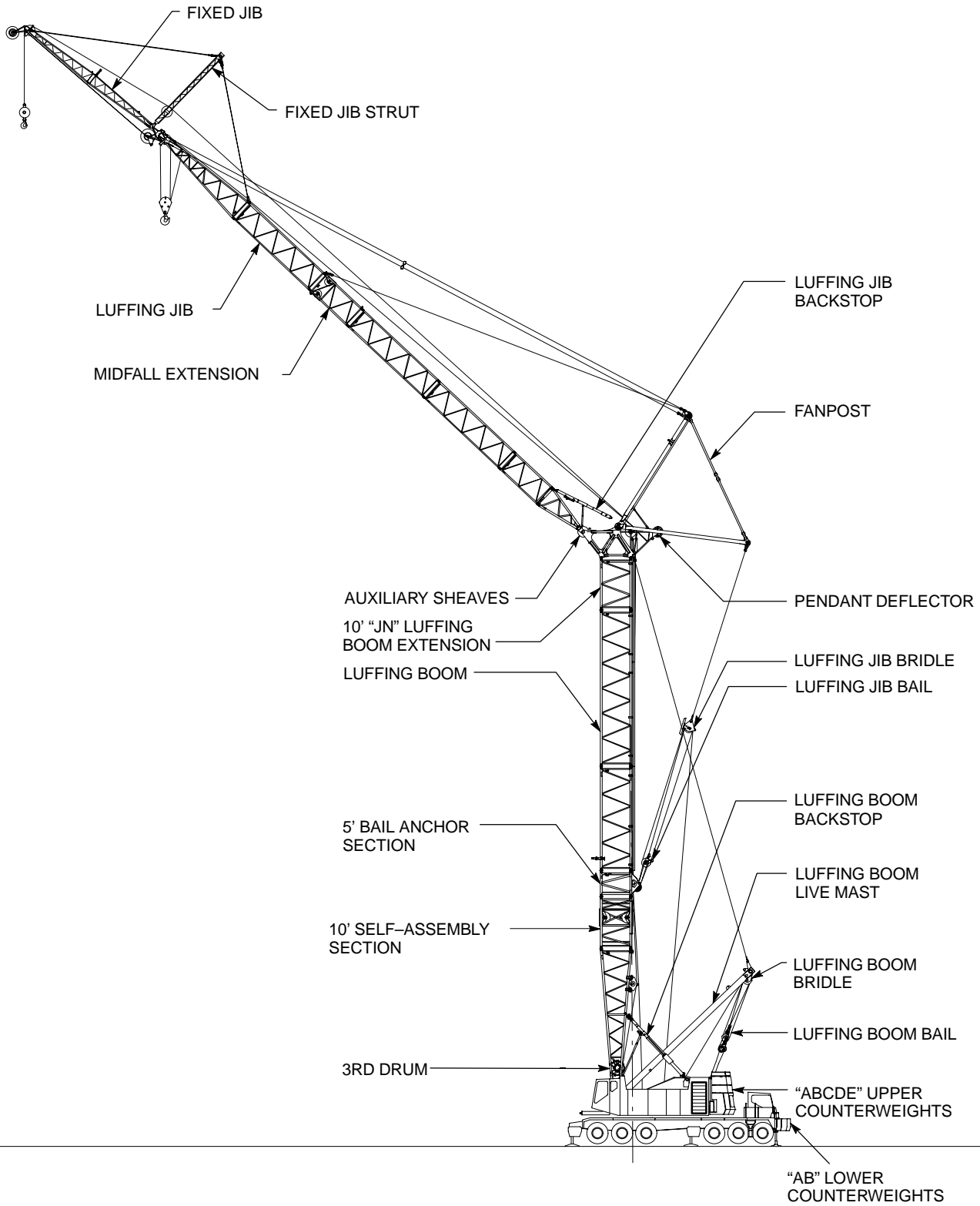
HC-278H II Crane Transport Weights and Dimensions – approximate



HC-278H II Luffing Attachment Dimensions



HC-278H II Luffing Attachment Nomenclature



HC-278H II Transportation Weights – approximate

Base Crane: 85 gal (321L) of carrier fuel, live mast, 30' boom base section, 10' self-assembly section, 12-part boom hoist reeving, rigid boom backstops, auxiliary lifting bail, 950' (290m) front hoist rope, 600' (182.88m) rear hoist rope, and 77 gal (291L) of upper fuel.

Item Description	Gross Weight		Transport Loads										
	lb	kg	#1	#2	#3	#4	#5	#6	#7	#8	#9		
Base Crane	76,976	34 916		1									<p>Notes and Load Summary</p> <p>Numbers in the load columns to the left represent quantities.</p> <p>Estimated transport assumes the load out consist of 330' (100.58m) of tube boom + 30' (9.14m) of jib with full counterweight.</p> <p>Loads were estimated for a 8' 6" (2.6m) wide, 48' (14.6m) long, and 13' 6" (4.1m) high using a drop deck trailer. This may vary depending on state laws, empty truck/trailer weights, and style of trailer.</p> <p>Estimated weights vary by +/- 2%.</p> <p>Estimated Total Load #1 70,500 lb (31 978kg)</p> <p>Estimated Total Load #2 76,976 lb (34 916kg)</p> <p>Estimated Total Load #3 45,966 lb (20 850kg)</p> <p>Estimated Total Load #4 37,320 lb (16 928kg)</p> <p>Estimated Total Load #5 44,889 lb (23 361kg)</p> <p>Estimated Total Load #6 44,736 lb (20 292kg).</p> <p>Estimated Total Load #7 11,596 lb (5 260kg)</p> <p>Estimated Total Load #8 4,583 lb (2 058kg)</p> <p>Estimated Total Load #9 15,103 lb (6 851kg)</p>
Carrier	70,500	31 978	1										
Add Front Outrigger Assembly	10,560	4 790						1					
Add Rear Outrigger Assembly	10,560	4 790						1					
Add Main Outrigger Jacks And pontoons	5,060	2 295				1							
Add Front Outrigger Pontoon	80	36				1							
Add "A" Bumper Counterweight	11,400	5 171						1					
Add "B" Bumper Counterweight	15,300	6 940						1					
Add "A" Upper Counterweight	30,000	13 607				1							
Add "B" Upper Counterweight	25,200	11 430						1					
Add "C" Upper Counterweight	21,500	9 752			1								
Add "D" Upper Counterweight	21,500	9 752			1								
Add "E" Upper Counterweight	10,000	4 536								1			
Add Upper Catwalk – Left Side	154	70											
Remove 30' (6.10m) Boom Base Section	-4,912	-2 228											
Add 30' (9.14m) Boom Top Section	5,612	2 546							1				
Add 10' (3.05m) "JN" Boom Extension W/Pins, Pendants, & Toller	1,584	719			1								
Remove 10' (3.05m) "J" Boom Extension W/Lifting Sheaves, Pins, Pendants, & Roller	-3,275	-1 486											
Add 20' (6.10m) "JE" Boom Extension W/Pins, Pendants, & Roller	2,524	1 145						1	1				
Add 30' (9.14m) "JE" Boom Extension W/Pins, Pendants, & Roller	3,464	1 571							1				
Add 40' (12.19m) "JE" Boom Extension W/Pins, Pendants, & Roller	4,609	2 091					1						
Add 50' (15.24m) "JE" Boom Extension W/Pins, Pendants, & Roller	5,608	2 544							1				
Add 10' (3.05m) "HJ" Boom Extension W/Pins, Pendants, & Roller	1,382	627			1								
Add 20' (6.10m) "HJ" Boom Extension W/Pins, Pendants, & Roller	2,163	981								1			
Add 30' (9.14m) "HJ" Boom Extension W/Pins, Pendants, & Roller	2,940	1 334								1			
Add 40' (12.19m) "HJ" Boom Extension W/Pins, Pendants, & Roller	3,687	1 672									1		
Add 50' (15.24m) "HJ" Boom Extension W/Pins, Pendants, & Roller	4,538	2 058									1		
Add Auxiliary Tip Extension	980	445											
Add Third Drum Fleeting Sheave For Luffer To Boom Base Section	2,373	1 076											
Add Third Drum 3-Sheave Assembly To Boom Top Section W/O Rope	2,832	1 285											
Add 30' (9.14m) Tubular Jib	2,180	990				1							
Add 10' (3.05m) Tubular Jib Extension	259	118											
Add 20' (6.1m) Tubular Jib Extension	442	201											
Add Luffing Top Assembly	8,250	3 742											
Add Hammerhead Top Section With 10' Transition Section	5,520	2 504											
Add Auxiliary Hammerhead Tip Extension	976	443											
Add Jib Wire Rope 1" x 850' Type "RB"	1,700	771											
Add jib Wire Rope 1.125" x 850' Type "RB"	2,125	964											
Add Jib Wire Rope 1" x 1,210' Type "RB"	2,420	1 098											
Add Third Drum Wire Rope 1" x 970' Type "RB"	1,940	880											
Remove Front Drum Rope 1.12" x 1,084' Type "LB"	-2,537	-1 151											
Remove Rear Drum Rope 1" x 850' Type "RB"	-1,700	-770											
Remove Boom Hoist Rope 1" x 1,070' Type "W"	-1,010	-458											
Add 15-ton (13.6mt) Hook Ball – Non Swivel or Swivel	1,400	635											
Add 60-ton (54mt) 2-Sheave Hook Block	1,650	747											
Add 150-ton (136mt) 6-Sheave Hook Block	3,525	1 599											
Add 200-ton (181mt) 6-Sheave Hook Block	3,860	1 751						1					
Add 250-ton (227mt) 6-Sheave Hook Block	5,721	2 595											

HC-278H II Crane Working Weights

Option	Description	Gross Weight lb (kg)	Maximum Ground Bearing Pressure psi (kg/cm ²)
1	Base crane equipped with 60' (18.28m) of tube boom, live mast, "ABCDE" counterweight, 1,026' (312m) hoist rope, 250-ton (227mt) hook block, 143 gal (541L) of upper fuel, 85 gal (321L) of carrier fuel, front and rear outrigger boxes with pontoons and fifth outrigger pontoon, and 200 lb (90.7kg) operator.	297,982 (135 162)	152 (10.69)
2	Option #1 plus "A" and "B" bumper counterweights and 270' (82.3m) of boom extensions to obtain 330' (100.58m) of main boom.	356,773 (161 830)	167 (11.74)
3	Option #2 plus 100' (30.5m) of tubular jib, 15-ton (13.6mt) hook ball and jib rope – subtract 30' (9.14m) of boom extension to obtain maximum 300' + 100' (91.4 + 30.5m) of main boom + jib.	359,813 (163 208)	161 (11.32)
4	Option #1 plus, remove 30' (9.14m) and 250-ton (227mt) hook block. Add "AB" bumper counterweight, 10' (3.05m) self-assembly section, 5' (1.52m) bail anchor, 140' (42.67m) "JE" boom, 10' (3.05m) "JN" boom, 5' (1.52m) luffing boom cap, fan post, pendant deflector, luffing jib base (with backstops), 160' (48.77m) luffing jib extensions, luffing jib peak (with nose wheel), luffing jib bail, luffing jib bridle, 60' (18.29m) bridle guide rails, 660' (201m) of 1" (25mm) type "DB" wire rope, and 15-ton (13.6mt) hook ball.	368,252 (167 036)	179 (12.58)
5	Base crane equipped with 45' (13.72m) of hammerhead boom, live mast, "ABCD" upper counterweight, 1026' (313m) front hoist rope, 150-ton (136mt) hook block, 143 gal (531L) of upper fuel, 85 gal (321.76L) of carrier fuel, front and rear outrigger boxes with pontoons and fifth outrigger pontoon, and 200 lb (90.7kg) operator.	268,750 (121 903)	144 (10.12)

Attachment Options

■ 60' – 330' (18.29–100.58m) Tubular Boom

Basic Boom – 60' (18.29m) two-piece design that utilizes a 30' (9.14m) base section and a 30' (9.14m) open throat top section with in-line connecting pins on 80" (2.03m) wide and 68" (1.73m) deep centers.

- 250-ton (227mt) maximum capacity
- Max boom tip height of 333' (101.5m)
- Boom feet on 66" (1.67m) centers
- 4.25" (10.80 cm) diameter chords
- Lugs on base section to attach carrying links
- Skywalk platform
- Deflector roller on top section
- Rigid sheave guards
- Six 21" (0.53m) root diameter steel sheaves mounted on sealed anti-friction bearings
- Oil filled mechanical boom angle indicator

Boom Extensions – The following table provides the lengths available and the suggested quantity to obtain maximum boom in 10' (3.05m) increments. Midpoint pendant connections are required at 140' (42.67m) for boom lengths 250' (72.6m) and longer.

Tube Boom Extensions	Suggested Quantity for Maximum Boom
JN type 10' (3.05m)	1
JE type 20' (6.10m)	1
JE type 30' (9.14m)	1
JE type 40' (12.19m)	1
JE type 50' (15.24m)	1
HJ type 10' (3.05m)	1
HJ type 20' (6.10m)	1
HJ type 30' (9.14m)	1
HJ type 40' (12.19m)	0
HJ type 50' (15.24m)	1

- Deflector roller on top of each section
- Two rollers on 40' (12.19m) and 50' (15.24m) extensions
- Appropriate length pendants
- The optional 10' (3.05m) extension with lifting sheaves is used for self assembly/disassembly instead of using live mast and auxiliary lifting bail.

■ 45' – 245' (13.72–74.68m) Hammer-Head Boom

Basic Boom – 45' (13.72m) three-piece design that utilizes a 30' (9.14m) base section, a 10' (3.05m) taper section, and a 5' (1.52m) hammer head top section. Taper section pins to standard base section with in-line connecting pins on 80" (2.03m) wide and 68" (1.73m) deep centers.

- 200-ton (181.4mt) maximum capacity
- Maximum boom tip height is 243' (74.07m)
- 4.25" (10.80m) tubular "JE" wall chords
- Lugs on base section to attach carrying links
- Skywalk platform
- Deflector roller on top section
- Rigid sheave guards
- Six 21" (0.53m) root diameter steel sheaves mounted on sealed anti-friction bearings
- Oil-filled mechanical boom angle indicator

Hammer Head Boom Extensions – The following table provides the lengths available and the suggested quantity to obtain maximum boom in 10' (3.05m) increments. Extensions are common with open throat extensions.

Hammer Head Boom Extensions "JE"	Suggested Quantity for Maximum Boom
10' (3.05m) with or without lifting sheaves	1
20' (6.10m)	1
30' (9.14m)	1
40' (12.19m)	0
50' (15.24m)	3

- Deflector roller on top of each section. Two rollers on 40' (12.19m) and 50' (15.24m) extensions.
- Appropriate length pendants
- 10' (3.05m) extension with lifting sheaves is available for self-assembly and disassembly.

■ 30' – 100' (9.14–30.48m) Tubular Jib

Basic Tube Jib – 30' (9.14m) two-piece design that utilizes a 15' (4.57m) base section and a 15' (4.57m) top section with in-line connecting pins on 32" (0.81m) wide and 24" (0.61m) deep centers. Designed to be used on the open throat top section only.

- 30-ton (27.2mt) maximum capacity
- Maximum tip height of tube boom + jib is 403.8' (123.1m)
- Jib offset angles at 5°, 15°, and 25°
- 2.25" (57mm) tubular chords
- One 18.5" (0.47m) root diameter steel sheave mounted on sealed anti-friction bearings

Jib Extensions – The following table provides the lengths available and the suggested quantity to obtain maximum jib in 10' (3.05m) increments.

Jib Extensions	Suggested Quantity for Maximum Boom
10' (3.05m)	1
20' (6.10m)	3

- Wood wear block on top of each section
- Appropriate length pendants

■ 90' – 200' (27.43–50.29m) Luffing Jib

Basic Luffing Jib – 90' (24.38m) five-piece design utilizes a 10' (3.05m) base section, 10' (3.05m) extension, 20' (6.01m) extension, 30' (9.14m) extension, and 20' (6.10m) top section and a 5' (1.52m) luffing boom top section with in-line connecting pins. Boom extensions are 50" (1.27m) wide and 60" (1.52m) deep at the centers.

- 52.0-ton (47.17mt) maximum capacity
- Maximum tip height is 432' (131.67m)
- Working boom lengths of 90' (27.43m) to 200' (60.96m)
- Top section includes mounting lugs for all attachment options
- Lugs on base section to attach fan-post transport links
- Two 24" (0.61m) diameter polyamide luffing jib head sheaves
- Two 25" (0.63m) diameter polyamide luffing boom auxiliary head sheaves
- Pin on nose wheel
- Ten-part luffing jib hoist
- 1.25" (31.75mm) diameter type "BC" pendants

Luffing Jib Extensions – The following table provides the lengths available and the suggested quantity to obtain the maximum luffing jib in 10' (3.05m) increments. Midpoint pendants are not required.

Luffing Jib Extensions	Suggested Quantity for Maximum Boom
* 10' (3.05m)	1
* 20' (6.10m)	1
* 30' (9.14m)	1
40' (12.19m)	2
* One of each included with the basic luffing kit	

Midfall Extension – The midfall (if equipped) consists of a 10' (3.05m) luffing jib extension equipped with load hoisting machinery and provides an auxiliary load hoist location for short radius light duty lifting.

- Midfall capacities and suspension adjustments are available for luffing jib lengths of 110–200' (33.5–61.0m).
- Midfall capacities range from 18,800 lb (8 528kg) to 9,400 lb (4 264kg).

■ Luffing Boom

- Base and extensions are common to open throat boom
- 10' (3.05m) self-assembly section required for bail anchor assembly
- Working angles of 90°, 85°, 80°, 75°, 70°, and 65°
- Working lengths of 110' (25.91m) to 220' (50.29m)
- 1.25" (31.75mm) diameter type "BC" pendants; same as open throat boom.

Luffing Boom Extensions – The following table provides the lengths available and the suggested quantity to obtain the maximum luffing boom in 10' (3.05m) increments. Midpoint pendants are not required.

Luffing Boom Extensions	Suggested Quantity for Maximum Boom
* 10' (3.05m)	2
20' (6.10m)	1
30' (9.14m)	1
40' (12.19m)	1
50' (15.24m)	1
* One 10' (3.05m) must be the self-assembly and one 10' (3.05m) section must be "JN" section.	

- Rear hoist drum becomes luffing jib hoist
- Optional third drum provides second working hoist line, if required.
- Designed for self-assembly
- Luffing jib hoist bridle and bail can remain reeved for crane transport
- Job site mobility with attachment
- Rolled out or rolled under erection methods
- Compact transport module

■ Auxiliary 5' (1.5m) Tip Extension

Designed to use in place of jib to provide clearance between working hoist lines. The horsehead style extension is equipped with a single 28.3" (0.72m) root diameter steel sheave mounted on sealed anti-friction bearings. Maximum capacity is 25-ton (22.68mt).

■ Auxiliary Hammer—Head Tip Extension

Designed to use in place of jib to provide clearance between working hoist lines. The extension is equipped with a single 20" (0.51m) root diameter steel sheave mounted on sealed anti-friction bearings. Maximum capacity is 17.5-ton (15.9mt).

■ Boom Hoist System

Designed to lift off maximum boom or maximum boom plus jib unassisted. Operates up to a maximum boom angle of 82°. Boom hoist limit system limits maximum boom angle operation.

- Hydraulic controlled retractable gantry frame
- 18-part reeving with 1" (2.54cm) type "W" wire rope
- Bridle assembly and 35' (10.67m) live mast
- Four 1.25" x 26' 4" (3.18cm x 8.03m) pendants
- Two 1" x 112' 10" (25.4cm x 34.39m) midpoint pendants
- Tubular spring-buffered boom backstops (rigid type)
- Sheaves contain sealed anti-friction bearings
- Boom speed from minimum to maximum operating radius for 150' (45.72m) of open throat boom is 84 seconds.

Revolving Upper Structure

■ Frame

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

■ Engine

Detroit Diesel Series 60 – 12.7 Liter with oil filter, oil cooler, air cleaner, fuel filter, water separator, tachometer and electrical shutdown.	
Number of cylinders	6
Bore and stroke – in (mm)	5.12 x 6.30 (130 x 160)
Piston displacement – cu in (cm ³)	778 (12 751)
Hi-idle rpm	2,225
Max brake hp (kw)	430 (321) @ 2,100 rpm
Peak torque – ft/lb (joules)	1,450 (1 966) @ 1,200 rpm
Batteries	4–12 volt
Approximate fuel consumption	gal/hr (L/hr)
100% hp	19.90 (75.33)
75% hp	14.93 (56.52)
50% hp	9.95 (37.66)
25% hp	4.98 (18.85)

■ Hydraulic System Specifications

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.

- One variable displacement pump operating at 5,225 psi (36 025kPa) and 94 gal/min (355L/min) powers front hoist drum.
- One variable displacement pump operating at 5,100 psi (35 163kPa) and 94 gal/min (355.8L/min) powers the rear hoist drum.
- One variable displacement pump operating at 4,600 psi (31 71 kPa) and 73 gal/min (276L/min) powers the boom hoist drum.
- One variable displacement pump operating at 4,350 psi (29 993kPa) and 73 gal/min (276L/min) powers the swing system.
- One fixed displacement gear type pump operating at 1,250 psi (8 619kPa) and 8 gal/min (30.3L/min) powers the pilot control system.

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

Hydraulic Reservoir – 144 gal (545L), equipped with sight level gauge. Diffusers built in for deaeration.

Filtration – One 10 micron, full flow, line filter in the return line of the hydraulic 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.

■ Front Hoist Drums

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 operation mode
- Spring applied, hydraulically released, multiple disc, controlled automatically
- Drum pawl controlled automatically
- Electronic drum rotation indicator
- Mounted on anti-friction bearings
- 20.88" (0.53m) root diameter
- 36" (0.91m) flange diameter
- 31.94" (0.81m) width
- Optional – 1.12" (28.4mm) grooved "Lebus" lagging

■ Rear Hoist Drums

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 operation mode
- Spring applied, hydraulically released, multiple disc, controlled automatically
- Drum pawl controlled automatically
- Electronic drum rotation indicator
- Mounted on anti-friction bearings
- 30.88" (0.78m) root diameter
- 40.5" (1.03m) flange diameter
- 31.94" (0.81m) width
- Optional – 1" (25.4mm) grooved "Lebus" lagging

■ Optional Third Hoist Drum

The hydraulic winch is mounted in the boom base section and is used in conjunction with a fleeting sheave and three sheave assembly to run the wire rope over the boom top section.

- Power up/down operation mode
- Automatic brake mode (spring applied, hydraulically released)
- Smooth drum
- Mounted on anti-friction bearings
- 12.75" (0.32m) root diameter
- 22.75" (0.58m) flange diameter
- 17" (0.43m) width

■ 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
- 1" (2.54cm) grooved lagging
- Drum pawl controlled automatically
- Mounted on anti-friction bearings
- 20.88" (0.53m) root diameter
- 31" (0.79m) flange diameter
- 30.75" (0.78m) width

■ Swing System

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

- Spring applied, hydraulically released, 360° multi-plate brake
- Free swing mode when lever is in neutral position
- 360° positive house lock
- Audio/visual swing alarm
- Maximum swing speed is 2.4 rpm

■ Upper Counterweight

Consist of a five-piece design. The design allows division of 108,000 lb (48 988kg) of counterweight into modules for transportation. This design allows for operating with less than maximum counterweight.

- Refer to page 3 for counterweight component weights and dimensions.

■ Operator's Cab and Controls

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

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

■ Rated Capacity Limiter

Standard Equipment: PAT DS-350G/1334 modular system that includes two lineriders, angle sensor, computer, graphics display, and anti-two block equipment to provide the following information:

- Graphical representation of crane configuration
- Graphical step-by-step crane set-up
- Boom length & angle
- Jib length & angle
- Load on hook
- Rated load
- Load radius
- Tip height
- Anti-two block warning & function limiters operation mode
- Provides an audio/visual warning when the load on hook is within 90% of the rated load.
- Provides an audio/visual warning and limits functions when the load on hook is at 100% of the rated load.
- Operator settable alarms include maximum and minimum boom angle and maximum tip height. These alarms provide an audio/visual warning only.

Note: Function limiters are activated for anti-two block and overload conditions.

These limiters are designed to prevent hoist up on front, rear, and third hoist drums, and boom hoist down.

■ Additional Equipment – Standard

- 93" (2.36m) outside diameter turntable bearing
- Front and removable left catwalks
- 77 (usable) gal (291.5L) fuel tank
- Upper lifting links
- Two 70-watt headlights

HC-278H II Load Hoist 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.

Front Drum – 1 1/8" (28mm) Rope												
Layer	Maximum Line Pull		No Load Line Speed		Full Load Line Speed		Pitch Diameter		Layer		Total	
	lb	kg	ft/min	m/min	ft/min	m/min	in	mm	ft	m	ft	m
1	50,103	22 727	275	84	137	41	21.13	537	143	44	143	44
2	48,281	21 900	305	93	151	46	23.38	594	158	48	301	92
3	41,305	18 736	334	102	166	50	25.63	651	173	53	474	144
4	37,971	17 224	363	111	180	54	27.88	708	188	57	662	202
5	35,135	15 937	393	120	195	59	30.13	765	204	62	866	264
6	32,693	14 830	422	129	209	64	32.38	822	219	67	1,084	330

Rear Drum – 1 1/8" (28mm) Rope												
Layer	Maximum Line Pull		No Load Line Speed		Full Load Line Speed		Pitch Diameter		Layer		Total	
	lb	kg	ft/min	m/min	ft/min	m/min	in	mm	ft	m	ft	m
1	34,143	15 487	461	140	200	60	31	787	236	72	236	72
2	32,074	14 549	491	149	213	64	33	838	251	77	486	148
3	30,241	13 717	520	158	226	68	35	889	266	81	752	229
4	28,606	12 976	550	167	239	72	37	940	281	86	1034	315

Boom Hoist Drum – 1 1/8" (28mm) Rope												
Layer	Maximum Line Pull		No Load Line Speed		Full Load Line Speed		Pitch Diameter		Layer		Total	
	lb	kg	ft/min	m/min	ft/min	m/min	in	mm	ft	m	ft	m
1	44,757	20 302	230	70	115	35	21	533	152	46	152	46
2	40,865	18 536	252	77	126	38	23	584	167	51	319	97
3	37,596	17 053	274	84	137	41	25	635	181	55	500	152
4	34,811	15 790	295	90	148	45	27	686	196	60	695	212

Third Drum Capacity – 1 1/8" (28mm) Rope												
Layer	Maximum Line Pull		No Load Line Speed		Full Load Line Speed		Pitch Diameter		Layer		Total	
	lb	kg	ft/min	m/min	ft/min	m/min	in	mm	ft	m	ft	m
1	22,980	10 424	408	124	207	63	19.7	500	150	46	150	46
2	20,862	9 463	449	136	228	69	21.7	551	165	50	315	96
3	19,102	8 664	491	149	249	75	23.7	602	180	55	495	152
4	17,615	7 990	532	161	270	82	25.7	652	195	60	690	210
5	16,343	7 413	574	174	291	88	27.7	703	211	64	901	275

Application	Size: Diameter		Type	Maximum Permissible Load		
	inch	mm		lb	kg	
Main hoist – 1,025 ft (312m)	1 1/8	28	LB	40,800	18 507	Type N: 6 X 25 (6 x 19 Class) – filler wire – extra improved plow steel – preformed I.W.R.C. – right lay – regular lay.
Auxiliary hoist – 1,084 ft (330m)	1 1/8	28	ZB	35,300	16 012	Type RB: 19 x 19 rotation resistant – extra extra improved plow steel – preformed right lay – regular lay – swaged
Auxiliary hoist (1 part) – 850 ft (259m)	1	25	P	16,800	7 620	Type ZB: 36 X 7 rotation resistant – extra improved plow steel – right regular lay
Auxiliary hoist (2 part) – 1,210 ft (369m)	1	25	N	29,500	13 381	Type LB: 6 x 25 (6 x 19 class) filler wire, preformed, independent wire rope center, right lay, regular lay
Auxiliary hoist (1 part) – 850 ft (259m)	1 1/8	28	RB	28,600	12 973	Type P: 19 x 7 rotation resistant, extra improved plow steel, preformed, wire strand core. Inner 7 strands: left lang lay. Outer 12 strands: right regular lay.
Boom hoist – 870 ft (265m)	1	25	W	29,500	13 381	Type W: 6 x 26 (6 x 19 class), extra improved plow steel, preformed, independent wire rope core, right lay, alternate lay
Third drum – 1,050 ft (320m)	1	25	RB	22,700	10 297	
Boom pendants	1 1/4	32	N	n/a	n/a	
Midpoints pendants	1	25	N	n/a	n/a	
Jib pendants	7/8	22	N	n/a	n/a	

Carrier

■ Type

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

- 11' 10" (3.61m) wide
- 288" (7.32m) wheel base.
- 12 x 6 drive.
- 100,000 psi (689.5mPa) alloy steel, triple box construction.

■ Axles

Front

- Tubular bogie mounted tridem axles, single wheels, 115" (2.92m) track
- Oil lubed wheel bearings with see through hubcaps
- 43,660 lb (19 804kg) maximum axle loading at 65 mph (105km/hr)

Rear

- Planetary type, bogie mounted tridem axles, dual wheels, 110.25" (2.80m)
- Oil lubed wheel bearings with see through hubcaps
- 9.14:1 ratio
- 85,840 lb (38 937kg) maximum axle loading at 65 mph (105km/hr)

■ Suspension

- Hendrickson bronze bushed equalizer beams with rubber bushed torque rods and shock absorbers on front axle

■ Wheels

Front – Disc type

Rear – Integral with planetary hubs

■ Tires

- Standard – Single – front, dual – rear
- 14R25 on/off highway type, tubeless tires

■ Brakes

Service

- Full air brakes on all wheel ends. Dual circuit with modulated emergency brakes.

Front

- 16.5" x 7" (0.42m x 0.18m) S–Cam brakes

Rear

- 16.5" x 7" (0.42m x 0.18m) S–Cam brakes

Parking/Emergency

- One spring set, air released chamber per rear axle end. Emergency brakes apply automatically when air pressure drops below 60 psi (413.7kPa) in both systems.

■ Steering

- Sheppard full integral, hydraulic power
- Steering mounted high on sides of frame to minimize exposure to hazards
- High speed, high power system to maximize maneuverability both on job and on the road

■ Transmissions

- Standard – Eaton RTO 14908LL with 10 forward speeds and 3 reverse speeds.
- Optional – Eaton RTO 14109B ATE CEEMAT. Nine forward speeds shifted automatically and 1 reverse speed.

Auxiliary

- Standard – Spicer P–1241–C; used with manual transmission; midship mounted with 4–speed gearing; 2.31:1 first gear ratio.
- Optional – Spicer P–1241–D; used with manual transmission; midship mounted with 4–speed gearing; 1.59:1 first gear ratio.

■ Electrical

Four, Group–31 batteries provide 12–volt operating system and 12–volt starting with 1,600 cold cranking amps available. Charging is provided by a 130 amp alternator.

Lights

- Two dual, sealed beam headlights
- Front, side, and rear directional signals with 4–way hazard system
- Stop and tail lights
- Rear and side clearance lights
- Side turn indicators
- Lighted license plate bracket

■ Outriggers

The outrigger system is designed with five hydraulically controlled outriggers that provide an optimal 360° working area and simultaneous operation of steering and outriggers.

- The front and rear outriggers are a double–box design that allows all four telescoping beams and jacks to extend/retract independently.
- Hydraulic controls are located at each outrigger location with the bumper outrigger operated at the front bumper. The controls are designed to allow both front and rear jacks to be operated from the driver's side of carrier if necessary.
- Vertical jack cylinders are equipped with holding valves.
- Quick–attach, self–aligning rear outrigger box with hydraulic pins
- Quick attach self–aligning front outrigger box with manual pins. Hydraulic pins are optional.
- Front left outrigger jack will tilt to allow front box to roll under carrier frame for removal.
- 34" (0.86m) diameter quick–release steel pontoons
- 24" (0.61m) diameter self–storing aluminum bumper pontoon

Jack Reactions

- Maximum 180,000 lb (81 648kg) force and 198 psi (1 365kPa) ground bearing pressure on main outriggers
- Maximum 41,000 lb (18 598kg) force and 91 psi (627kPa) ground bearing pressure on front bumper outrigger

■ Carrier Engine Specifications

Detroit Diesel Series 60 – 12.7 Liter with oil filter, oil cooler, air cleaner, fuel filter, water separator, tachometer, and electrical shutdown.	
Number of cylinders	6
Bore and stroke – in (mm)	5.12" x 6.30" (130 x 160)
Piston displacement – cu. in (cm ³)	778 (12 751)
Hi–idle rpm	2,225
Max brake hp (kw)	430 (321) @ 2,100 rpm
Peak torque – ft/lb (joules)	1,450 (1 966) @ 1,200 rpm
Batteries	4–12 volt
Approximate fuel consumption	gal/hr (L/hr)
100% hp	19.90 (75.33)
75% hp	14.93 (56.52)
50% hp	9.95 (37.66)
25% hp	4.98 (18.85)

■ Bumper Counterweight

- Standard – "A" counterweight – 11,400 lb (5 171kg)
- Optional – "B" counterweight – 15,300 lb (6 940kg)

■ Carrier Cab

Fully enclosed, one person, steel construction, lined with vinyl covered acoustical insulation with sound reduction insulation and isolated from engine compartment

Equipped with:

- Air ride seat with seat belt
- 2–speed, electric windshield wiper and washer
- Tilt/telescoping steering column
- Front and roof fresh air vents
- Safety plate glass on front
- Sliding, tinted, rear and right side windows
- Roll down door window
- Door and window locks
- Diagnostic connectors for engine
- Fire extinguisher
- 19,800 BTU heater/defroster
- Rubber floor mat
- Horn
- Dome light
- Accessory plug/lighter

Cab Instrumentation – Tilt-out (for service access), illuminated, instrument panel includes:

- Speedometer
- Hourmeter
- Voltmeter
- Light controls
- Stop and check engine warning lights
- Engine oil pressure gauge
- Engine temperature gauge
- Front and rear air pressure gauges with low air pressure warning buzzer/light
- Odometer
- Tachometer
- Fuel gauge
- Cruise control

- Engine fan override switch
- Heater and defroster controls
- Park brake switch and indicator light
- Engine diagnostic switch

■ Additional Equipment

Standard:

- Towing shackles, front and rear
- Aluminum, full deck fenders and ladders
- Outrigger controls located on outrigger boxes
- Engine throttle-up control switch

- West Coast-type rear view mirrors with adjustable convex mirror
- 2-way reading bubble levels
- Back-up alarm
- Mud flaps
- Air dryer
- Lug wrench
- Tire inflation system
- Remote plug for block heater
- 85 gal (321.76L) fuel tank

Optional:

- Spare tires and rims

■ Carrier Speeds

Main-Eaton RTO 14908LL			Auxiliary-Spicer P-1241-C							
			4th (0.81)		3rd (1.00)		2nd (1.24)		1st (2.37)	
Gear		Ratio	mph	km/h	mph	km/h	mph	km/h	mph	km/h
High	8th	.74	58.4	94.2	47.4	76.3	38.2	61.5	20.0	32.2
	7th	1.00	43.2	69.5	35.1	56.5	28.3	45.5	14.8	23.8
	6th	1.36	31.8	51.2	25.8	41.5	20.8	33.5	10.9	17.5
	5th	1.83	23.6	38.0	19.2	30.9	15.5	24.9	8.1	13.0
Low	4th	2.53	17.1	27.5	13.9	22.4	11.2	18.0	5.9	9.5
	3rd	3.40	12.7	20.4	10.3	16.6	8.3	13.4	4.4	7.1
	2nd	4.63	9.3	15.0	7.6	12.2	6.1	9.8	3.2	5.1
	1st	6.24	6.9	11.1	5.6	9.0	4.5	7.2	2.4	3.9
	L	9.42	4.6	7.4	3.7	6.0	3.0	4.8	1.6	2.6
Deep Reduction	LL	14.56	3.0	4.8	2.4	3.9	1.9	3.1	1.0	1.6
Hi Rev.	Rev.	2.89	15.0	24.1	12.1	19.5	9.8	15.8	5.1	8.2
Lo Rev.	Rev.	9.85	4.4	7.1	3.6	5.8	2.9	4.7	1.5	2.4
Deep Reduction	Rev.	15.22	2.8	4.5	2.3	3.7	1.9	3.1	1.0	1.6
Deep Reduction @ 600 rpm	LL	14.56	0.85	1.4	0.7	1.2	.55	0.9	0.3	0.5
Deep Reduction @ 600 rpm	Rev.	15.22	0.8	1.3	0.65	1.1	0.5	0.8	0.3	0.5

■ Axle Loads

Standard HC-278H II revolving upper equipped with Detroit Diesel Series 60 diesel engine, rear load hoist drums, 30,000 (13 608kg) "A" counterweight, self undecking equipment mounted on 288" (7.32m) wheelbase, 12 x 6 drive carrier, 1' 10" (3.61m) wide, equipped with Detroit Diesel Series 60 engine, front center hydraulic jack, Bridgestone tires, and full fuel.	Gross Weight		Upper Facing Front				Upper Facing Rear			
	*	lb	kg	lb	kg	lb	kg	lb	kg	lb
U	93,330	42 335	-25,121	-11 395	118,451	53 729	44,565	20 214	48,765	22 119
C	70,500	31 979	30,020	13 617	40,480	18 362	30,020	13 617	40,480	18 362
T	163,830	74 314	4,899	2 222	158,931	72 090	74,585	33 831	89,245	40 481
Adjust axle weights for adding following components	Component Weights		Front Axle		Rear Axle		Front Axle		Rear Axle	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Upperstructure –										
Remove self undecking equipment from upper	-13,910	-6 310	-695	-315	-13,215	-5 994	-2,200	-998	-11,710	-5 312
Remove counterweight "A"	-30,000	-13 608	17,975	8 153	-47,975	-21 761	-24,225	-10 988	-5,775	-2 620
Add rear drum wire rope – 850' (259m) of 1" (25mm) Type "RB"	1,700	771	-142	-64	1,842	836	497	225	1,203	546
Add front drum wire rope – 1,170' (357m) of 1 1/8" (29mm) Type "LB"	2,738	1 242	165	75	2,572	1 167	405	184	2,333	1 058
Add boom hoist wire rope on drum – 1010' (308m) of 1" (25mm) Type "W"	1,869	848	-389	-176	2,258	1 024	779	353	1 090	494
Remove boom stops, support struts and lever arms	-1,983	899	109	49	-2,092	-948	-522	-237	-1,460	-662
Carrier –										
Add front outrigger box	10,560	4 790	6,490	2 944	4,070	1 846	6,490	2 944	4,070	1 846
Add rear outrigger box	10,560	4 790	-4,290	-1 946	14,850	6 736	-4,290	-1 946	14,850	6 736
Add front outrigger jacks	2,200	998	1,350	612	850	386	1,350	612	850	386
Add rear outrigger jacks	2,200	998	-890	-404	3,090	1 402	-890	-404	3,090	1 402
Add main outrigger pontoons	660	299	309	140	351	159	309	140	351	159
Add bumper outrigger pontoon	80	36	31	14	49	22	31	14	49	22
Add "A" bumper counterweight	11,400	5 171	15,570	7 063	-4,170	-1 892	15,570	7 063	-4,170	-1 892
Add "B" bumper counterweight	15,300	6 940	21,591	9 794	-6,291	-2 854	21,591	9 794	-6,291	-2 854
Attachment –										
30' (9.14m) (3rd drum ready) open throat tubular boom base section with 4 connecting pins –horizontal over rear of carrier.	4,912	2 228	-	-	-	-	-2,736	-1 241	7,648	3 469
Add 3rd drum with rope	4,772	2 165					-6,313	-2 864	1,541	699
35' (10.67m) boom live mast and bridle – mast horizontal over rear of carrier.	6,922	3 140	6,463	2 932	-459	-208	-6,561	-2 976	13,483	6 116
Boom hoist wire rope (from ball to boom live mast) – mast horizontal over rear of carrier	1,869	248	1,309	593	560	254	-920	-417	2,789	1 265
60' (18.29m) open throat tubular boom – horizontal over rear of carrier.	10,524	4 774	-	-	-	-	-14,229	-6 554	24,753	11 228
45' (13.72m) hammerhead tubular boom – horizontal over rear of carrier.	10,412	4 729	-	-	-	-	-10,577	-4 798	20,989	9 520
*U=Upper C=Carrier T=Total										

Axle	Maximum Highway Allowable Load
Front Tridem	65,460 lb (29 692kg)
Rear Tridem	128,760 lb (58 405kg)