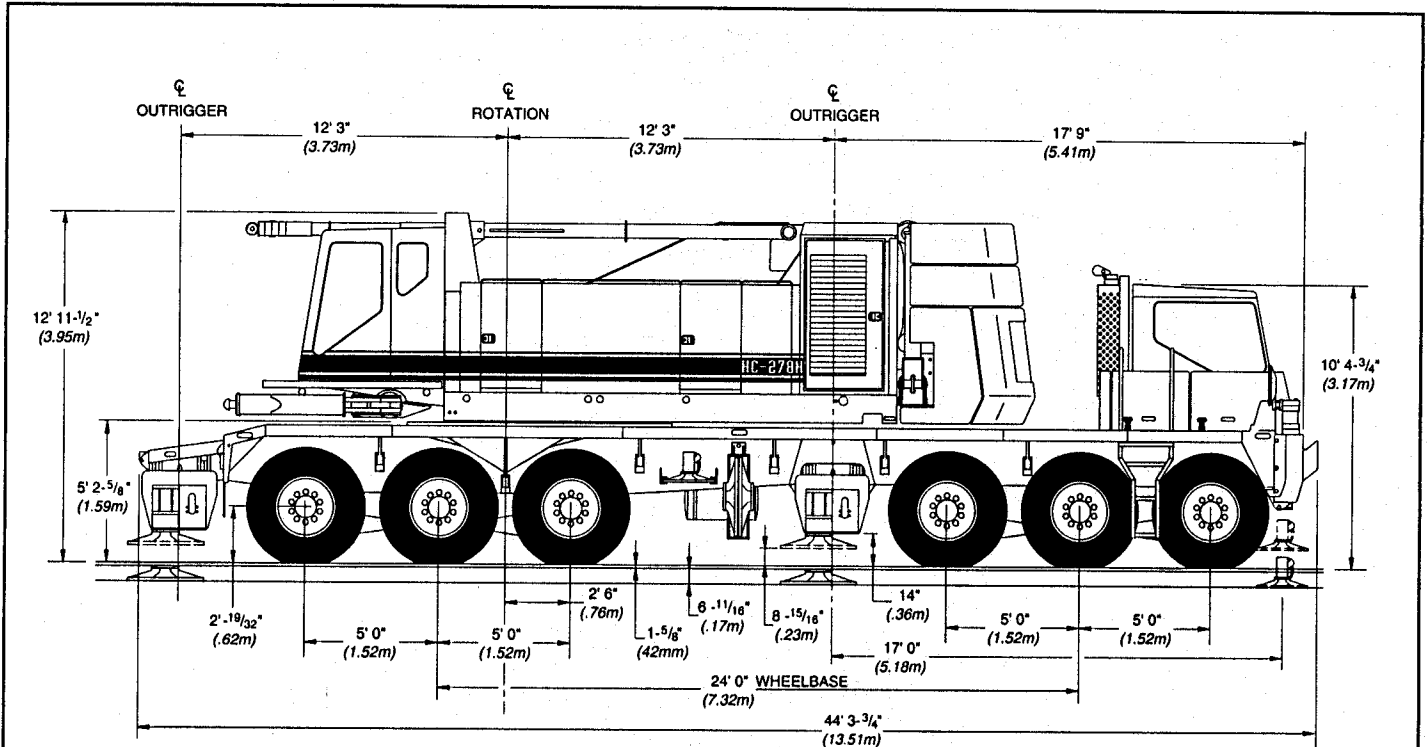


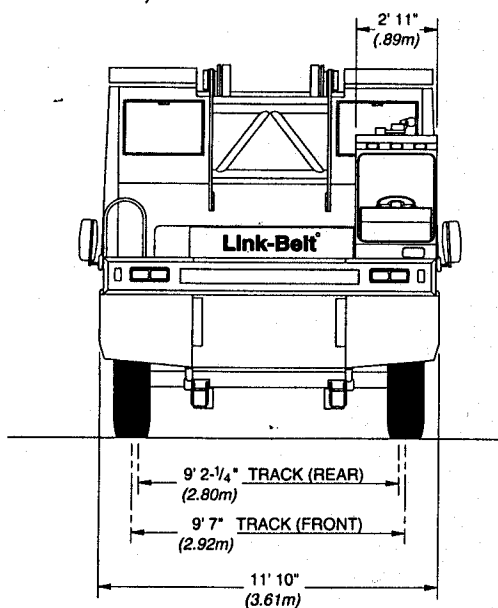
Specifications

300 ton - 272 metric ton - (HYLAB) Hydraulic Lattice Boom Truck Crane

HC-278H



Not to Scale



General dimensions

	feet	meters
Overall width, outriggers extended, (over floats)	27' 4"	8.33
Overall width, outriggers extended, (c/l of jacks)	24' 6"	7.46
Overall width, outriggers retracted, jacks removed	11' 10"	3.61
Vehicle clearance circle over outside of front bumper	122' 10"	37.44
Vehicle clearance circle over outside of front bumper counterweight	125' 10"	38.35
Minimum ground clearance (at bottom of front bogie beams)	8-7/8"	0.22
Counterweight tailswing (at corners)	18' 9"	5.72
Overall cab width (upper)	11' 10"	3.61
Radius of boom hinge pin	3' 2"	0.97
Height of boom hinge pin	7' 3-3/8"	2.22
Ground clearance under counterweight	5' 5-3/8"	1.65

General Dimensions - Open Throat Boom		feet	meters
Basic Boom Length		60'	18.29
Overall length: boom in travel position over rear of carrier, with "A" upper and no bumper counterweights -		-	-
With 60' (18.29 m) basic boom - open throat		96' 4-1/2" ^①	29.38 ^①
Height: over boom live mast with boom in travel position -		-	-
With 60' (18.29 m) basic boom - open throat		21' 9-3/4"	6.65

General Dimensions - Hammerhead Boom		feet	meters
Basic Boom Length		45'	13.71
Overall length: boom in travel position over rear of carrier, with "A" upper and "A" bumper counterweights only -		-	-
With 45' (13.71 m) basic hammerhead boom -		79' 10-1/4" ^①	24.34 ^①
Height: over boom live mast with boom in travel position over rear of carrier -		-	-
With 45' (13.71 m) basic hammerhead boom		23' 5" ^②	7.14 ^②

① Interference with carrier cab prohibits over-the-road travel with boom horizontal over front of carrier.

② Special boom carrying links (for hammerhead boom only) reduce over-all height to 12' 11-1/2" (3.95 m).

Travel Weights - approximate

Carrier Only	Front tridem axle		Rear tridem axle		Total	
	lbs.	kg	lbs.	kg	lbs.	kg
Carrier with Detroit Diesel Series 60 engine and with revolving upperstructure removed	33,020	14 978	63,740	28 912	96,760	43 890
Remove front outrigger jacks	-1,350	-612	-850	-386	-2,200	-998
Remove rear outrigger jacks	+ 890	+ 404	-3,090	-1 402	-2,200	-998
Remove 5 outrigger floats from carrier storage.	-340	-154	-400	-181	-740	-335
Goodyear tires	-600	-272	-1,200	-544	-1,800	-816
Total	31,620	14 343	58,200	26 400	89,820	40 743

Revolving Upperstructure Only	Total	
	lbs.	kg
Basic crane upper with Cummins N14 - C360 diesel engine, boomhoist rope, boom stops, boom live mast, bail assembly, full fuel and self undecking equipment	71,440	32 405
Add 810' (247 m) of 1" (25 mm) Type "P" wire rope on rear drum	1,475	669
Add 1,025' (312 m) of 1-1/8" (29 mm) Type "LB" wire rope on front drum	2,400	1 089
	75,315	34 163
Add 30' (9.14 m) open throat boom base section	4,125	1 871
Total	79,440	36 034

Axle Loads - Approximate

Standard HC-278H revolving upperstructure equipped with Cummins N14-C360 diesel engine, load hoist drums, 30,000 lbs. (13 608 kg) counterweight "A", self undocking equipment mounted on 288" (7.32 m) wheelbase, 12 x 6 drive carrier, 11' 10" (3.61 m) wide, equipped with Detroit Diesel 60 Series engine, front center hydraulic jack, Michelin tires, and full fuel.	Basic Machine Gross Weight		Upper facing front				Upper facing rear				
	**	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
	A	93,330	42 335	-25,666	-11 642	118,996	53 977	48,220	21 873	45,110	20 462
B	70,500	31 979	30,020	13 617	40,480	18 362	30,020	13 617	40,480	18 362	
C	163,830	74 314	4,354	1 975	159,476	72 339	78,240	35 490	85,590	38 824	
Adjust axle loadings accordingly for the following components:	Component Weights		Front axle		Rear axle		Front axle		Rear axle		
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	
Upperstructure -											
Remove self undocking 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	18,625	8 448	-48,625	-22 056	-24,870	-11 281	-5,130	-2 327	
Rear drum wire rope - 810' (247 m) of 1" (25 mm) Type "P"	-	-	-	-	-	-	-	-	-	-	
1" (25 mm) Type "P"	1,475	669	-125	-57	1,600	726	430	195	1,045	474	
Front drum wire rope - 1,025' (312 m) of 1-1/8" (29 mm) Type "LB"	-	-	-	-	-	-	-	-	-	-	
1-1/8" (29 mm) Type "LB"	2,400	1 089	145	66	2,255	1 023	355	161	2,045	928	
Boomhoist wire rope on drum - 870' (265 m) of 1" (25 mm) Type "W"	-	-	-	-	-	-	-	-	-	-	
1" (25 mm) Type "W"	1,620	735	-335	-152	1,955	887	675	306	945	429	
Boom stops, support struts and lever arms	-1,365	-619	285	129	-1,650	-748	-570	-259	-795	-360	
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 floats	660	299	309	140	351	159	309	140	351	159	
Add bumper outrigger float	80	36	31	14	49	22	31	14	49	22	
Remove H/D axles	-2,080	-943	0	0	-2,080	-943	0	0	-2,080	-943	
Add Ceemat transmission	300	136	300	136	0	0	300	136	0	0	
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	
Add Goodyear tires	-1,800	-816	-600	-272	-1,200	-544	-600	-272	-1,200	-544	
Attachment -											
30' (9.14 m) open throat tubular boom base section with 4 connecting pins - horizontal over rear of carrier.	4,125	1 871	-	-	-	-	-2,515	-1 141	6,640	3 012	
35' (10.67 m) boom live mast and bridle - mast horizontal over rear of carrier.	6,490	2 944	7,235	3 282	-745	-338	-5,880	-2 667	12,370	5 671	
Boomhoist wire rope (from bail to boom live mast) - mast horizontal over rear of carrier	1,620	735	1,070	485	550	250	-735	-333	2,355	1 068	
60' (18.29 m) open throat tubular boom - horizontal over rear of carrier.	9,300	4 218	-	-	-	-	-13,985	-6 344	23,285	10 562	
45' (13.72 m) hammerhead tubular boom - horizontal over rear of carrier.	9,860	4 472	-	-	-	-	-12,120	-5 498	21,980	9 970	

** A - Upper B - Carrier C - Total

Mounting

■ Type

288" (7.32 m) wheelbase, 12 x 6 drive.
11' 10" (3.61 m) wide.

Frame - Main members heat treated alloy steel, triple-box construction. Machined mounting surface for outer race of turntable bearing. Towing shackles front and rear.

Turntable bearing - Outer race, with integral external tooth swing (ring) gear bolted to carrier frame.

■ Outriggers

Dual outriggers, with hydraulic beams and jacks, mounted at center and rear of carrier. Hydraulic outrigger beams and jack cylinders individually controlled from valve at each outrigger beam location. Center outrigger box equipped with rollers which ride in a track to facilitate removal of outrigger assembly when required.

Outrigger box pin puller - hydraulic; standard.

Front center hydraulic jack with float - Single hydraulic jack, with float, mounted at front of the carrier. Jack setting controlled by valve at left front of carrier. Jack/float assembly required for handling 360° swing rated capacities. Warning horn sounds if ground surface allows front center jack/float to settle.

Floats - Four low profile, snap-on, alloy steel; 34" (.86 m) dia. base.

Front center: snap-on aluminum; 24" (.61 m) dia. base.

■ Axles

Front - Tubular; bogie mounted tridem axles, single wheels, 115" (2.92 m) track.

Rear - Planetary type; bogie mounted tridem axles, dual wheels, 110.25" (2.80 m) track.

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

Wheels and rims - Front; disc type. Rear; integral with planetary hubs.

■ Tires

Single tires front, dual tires rear.

Standard - 14.00 x 24L (20-ply rating) transport type tread.

Optional - Michelin 14R24 XGC radials front and rear.

■ Brakes

Air brake system

Service - Dual circuit with modulated emergency brakes. Bendix dual circuit 12 wheel air brakes with service chambers on 6 front wheels and spring applied, air released emergency, parking, service chambers on 6 rear wheels. Air dryer standard.

Size -

Rear wheels; 16-1/2" x 7" (0.50 x 0.18 m)

Front wheels; 16-1/2" x 6" (0.50 x 0.15 m)

Steering - Sheppard full integral hydraulic power with one master gear (includes hydraulic control valving), one slave gear (includes no valving) and one hydraulic pump for each axle. Steering gears mounted high on side of frame to minimize exposure to hazards. Separate master and slave for each wheel eliminates transfer of steering force from entire system into one axle which could overload and damage linkage. Steering wheel is mechanically connected to axles to allow steering (with increased steering input effort) in the event of hydraulic system failure. Multiple pumps minimize possibility of total hydraulic system failure and only require increase in steering input effort sufficient to compensate for that portion of system that failed. High speed, high power system to maximize maneuverability both on the job site and on the road.

■ Engine/Transmissions

Carrier engine - 12.7 liter Series 60 DDEC diesel; with starter, full-pressure lubrication, power steering pump, dry-type air cleaner, air compressor and alternator.

Clutch - Valeo 17" (.43 m) single plate, dry disc, diaphragm spring.

Transmissions -

Main - Eaton RTO 14908LL, ten speeds forward, three reverse.

Auxiliary - Spicer P-1241-C; 4-speed, midship mounted.

Universals - Easy service half-round u-joints.

Automatic - Optional

Main - Eaton RTO 14109B ATE CEEMAT (Converter Enhanced Electronically Managed Automatic Transmission), 9 speeds forward, shifted fully automatically, 1 reverse. Ratios and speeds are similar to the manual transmission. Consult factory for more details.

Auxiliary - Spicer P-1241-D; 4-speed midship mounting. Same as the auxiliary transmission for the manual version except with a 1.59:1 1st gear ratio.

■ Bumper Counterweight

"A" counterweight - 11,400 lbs. (5 171 kg)

"B" counterweight - 15,300 lbs. (6 940 kg)

■ Carrier Cab

One-man, fully enclosed. Air suspension mounted bucket seat with seat belt. Noise absorbing insulation with vinyl covering, sound reduction headliner, rubber floor mat. Tilt-out instrument panel (for easy service) includes speedometer, odometer, tachometer, voltmeter, hourmeter, clock, and gauges for fuel level, engine temperature, engine oil pressure, air pressure, and transmission temperature (auto. trans. only). Control switches are included for cruser control, engine fan clutch, heater/defroster, and lights. Also included are low air pressure warning buzzer/light, transmission overheat warning buzzer/light (auto. trans only) and parking brake applied light. The tilt/telescoping steering column includes key locking ignition/starter, and 2-speed windshield wiper/washer. Sliding right and rear windows. Roll down door window. Front and roof fresh air vents.

Carrier

■ Electrical System

12-volt negative ground system with 12-volt starting. Includes dual sealed beam headlights, directional signals with 4-way flashing system, stop and tail lights, side turn indicators, clearance lights, horn, dome light, dimmer switch, and four 12-volt Group 31 batteries.

■ Fuel Tank

One 85 gallon (321.7 liter) capacity aluminum tank; side mounted on carrier frame.

■ Standard Equipment

West Coast type rear view mirrors with adjustable convex mirror, lug wrench, 2-way reading bubble levels on both sides of carrier. High pressure lube fittings at all bearing points, hand grab rails, fenders, mud flaps, skid-resistant finish on carrier deck, backup alarm, carrier deck access ladder both sides and rear of carrier.



Engine Specifications	Detroit Diesel Series 60 DDEC
Number of cylinders	6
Bore	5.12" (0.13 m)
Stroke	6.30" (0.16 m)
Piston Displacement	778 cu. in. (12 751 cm ³)
Max. brake h.p. @ r.p.m.	430 (321 kw) @ 2,100
Governed load speed r.p.m.	2,100
Peak torque @ r.p.m.	1,450 ft. lbs. (1 966 joules) @ 1,200
Electrical system	12-volt charging/12-volt starting
Batteries	Four 12-volt
Air compressor	Bendix TU-FLO 1400

Carrier Speeds

Main - Eaton RTO 14908LL			Auxiliary - Spicer P-1241-C							
			4th (.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	58.5*	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	.85	1.4	.7	1.2	.55	.9	.3	.5
Deep Reduction @ 600 rpm	Rev.	15.22	.8	1.3	.65	1.1	.5	.8	.3	.5

* Radial tires and pick and carry axles and rims required for top speeds above 50 mph (80.45 km/hr).

Turning Ability

Turning circle diameter	Curb clearance circle diameter	Vehicle clearance circle diameter		
		Over outside of front bumper	Over outside of front bumper counterweight "A"	Over outside of front bumper counterweight "AB"
Centerline of outer front tire	Outside of outer front tire	Over outside of front bumper	Over outside of front bumper counterweight "A"	Over outside of front bumper counterweight "AB"
118' 1" (35.99 m)	119' 5" (36.40 m)	122' 10" (37.44 m)	123' 10" (37.74 m)	125' 10" (38.35 m)

Upperstructure

■ Frame

All welded, precision machined; machinery side housings welded integral with frame.

■ Turntable Bearing

Bearing retainer is bolted to machined surface on underside of frame. Turntable bearing with integral external tooth swing (ring) gear is bolted on carrier. Patented

(hydraulic cylinder actuated) quick disconnect lock ring facilitates removing upper from carrier for transport without disturbing the turntable bearing mounting.

■ Self-Undecking Device

Standard; Four hydraulic jacks mounted on the upperstructure allow the upper to be removed from or remounted on carrier. No helper crane is needed for any phase of the undecking operation.

■ Engine

Diesel; full pressure lubrication, oil filter, air cleaner, hour meter, foot and hand throttles. Electrically energized control shutdown for Cummins engine, switch key operated.

■ Fuel Tank

143 gallon (541 liter) capacity; equipped with fuel level gauge and flame arrester filler pipe

HC-278H 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

Rope layer	Front Drum - 1-1/8" (28 mm) wire rope						Rear Drum - 1" (25 mm) wire rope					
	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	50,103	22 727	275	84	137	41	34,143	15 487	461	140	200	60
2	45,281	20 539	305	93	151	46	32,074	14 549	491	149	213	64
3	41,305	18 736	334	102	166	50	30,241	13 717	520	158	226	68
4	37,971	17 224	363	111	180	54	28,606	12 976	550	167	239	72
5	35,135	15 937	393	120	195	59	-	-	-	-	-	-
6	32,693	14 830	422	129	209	64	-	-	-	-	-	-

Rope layer	Boomhoist Drum - 1" (25 mm) wire rope						Third Drum - 1" (25 mm) wire rope					
	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	44,757	20 302	230	70	115	35	22,980	12 689	408	124	207	63
2	40,865	18 536	252	77	126	38	20,862	9 461	449	136	228	69
3	37,596	11 459	274	84	137	41	19,102	8 663	491	149	249	75
4	34,811	15 790	295	90	148	45	17,615	7 988	532	161	270	82
5	-	-	-	-	-	-	16,343	7 411	574	174	291	88

Wire Rope Drum Capacities

Rope layer	Boomhoist Drum Capacity - 1" (25 mm) wire rope					
	Pitch Diameter		Layer		Total	
	in.	mm	ft.	m	ft.	m
1	21	533	152	46	152	46
2	23	584	167	51	319	97
3	25	635	181	55	500	152
4	27	686	196	60	695	212

Rope layer	Front Drum Capacity - 1-1/8" (28 mm) wire rope					
	Pitch Diameter		Layer		Total	
	in.	mm	ft.	m	ft.	m
1	21.125	537	143	44	143	44
2	23.375	594	158	48	301	92
3	25.625	651	173	53	474	144
4	27.875	708	188	57	662	202
5	30.125	765	204	62	866	264
6	32.375	822	219	67	1,084	330

Rope layer	Rear Drum Capacity - 1" (25 mm) wire rope					
	Pitch Diameter		Layer		Total	
	in.	mm	ft.	m	ft.	m
1	31	787	236	72	236	72
2	33	838	251	77	486	148
3	35	889	266	81	752	229
4	37	940	281	86	1,034	315

Rope layer	Third Drum Capacity - 1" (25 mm) wire rope					
	Pitch Diameter		Layer		Total	
	in.	mm	ft.	m	ft.	m
1	19.7	500	150	46	150	46
2	21.7	551	165	50	315	96
3	23.7	602	180	55	495	152
4	25.7	652	195	60	690	210
5	27.7	703	211	64	901	275

Wire Rope: size, type and working strength

Wire rope application	Size: diameter		Type	Max. permissible load	
	inches	mm		lbs.	kg
Main hoist	1-1/8	28	LB	40,800	18 507
Auxiliary hoist (1 part)	1	25	P	16,800	7 620
Auxiliary hoist (2 part)	1	25	N	29,500	13 381
Auxiliary hoist	1-1/8	28	N	37,100	16 829
Boomhoist	1	25	W	29,500	13 381
Third drum	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

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" - 18 x 19 rotation resistant, extra, extra improved plow steel, preformed, right lay, regular lay, swaged.
- 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.
- Type "W" - 6 x 26 (6 x 19 class), extra improved plow steel, preformed, independent wire rope core, right lay, alternate lay.

Engine	Cummins N14 - C360
Number of cylinders	6
Bore	5.5" (0.14 m)
Stroke	6" (0.15 m)
Piston Displacement	855 cu. in. (14 013 cm ³)
Maximum h.p. @ full load speed rpm	360 h.p. (269 kw) @ 1,800 rpm
High idle speed	2,000 rpm
Peak torque	1,215 ft. lbs. (168 kgm) @ 1,400 rpm
Electrical system	12 volt charging - 24 volt starting
Batteries	Two 12-volt

Hydraulic System

Transmission

Four pad pump drive; 1.289 to 1 gear ratio. Helical gears are mounted on tapered roller bearings. Flex plate driven. Front and rear drum pumps operate at 5,000 psi (352 kg/cm²). Boomhoist pump operates at 4,600 psi (323 kg/cm²). Variable displacement swing drive pump operates at 4,350 psi (306 kg/cm²). Speed-o-Matic® control system is powered by a fixed displacement gear pump.

Hydraulic Oil Reservoir

Link-Belt, 89 gallon (337 liter) capacity with filter and strainer assembly.

Relief Valves

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

Hydraulic Filtration

Pumps for front, rear, and boomhoist drums and for swing drive have a built-on 10-micron filter in the charge pressure circuit.

Counterbalance Valves

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

Principal Operating Functions

Control System

Speed-o-Matic® power hydraulics; a variable pressure system requiring no bleeding. Operating pressure is transmitted through oil to all pumps. System includes a gear pump to provide a constant flow, an accumulator to maintain operating pressure, oil filter, relief valve, and variable pressure operator controlled valves to regulate pressure to each pump.

Load Hoisting & 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. Smooth, precise, power load lowering is attained with automatic hydraulic brake. Hoisting or lowering speeds are proportional to lever movement.

Load Hoist Drums

Front drum - One-piece, smooth 20" (0.51 m) root diameter.

Rear drum - One-piece, smooth 30" (0.76 m) root diameter.

Drum Brakes

Multiple disc, integral with drum drive unit. Spring applied, hydraulically released. Brakes automatically apply when control lever is in neutral position.

Drum Rotation Indicators

Standard for front, rear, and boomhoist drums. Solenoid operated indicator button, recessed in drum control lever handles; button pulsates when rope drums rotate.

Drum Locking Pawl

Standard for front and rear drums; spring applied and hydraulically released. Prevents drum rotation in a lowering direction. Pawls automatically apply when control lever is in neutral position.

Swing System

Independent, hydraulic swing is driven by a bent axis, fixed displacement piston motor through a gear reduction system. Free swing when lever is in neutral position.

Swing Brake - Spring applied, hydraulically released multi-plate swing brake mounted at input side of planetary gear box. Brake controlled by button on swing control lever.

Swing lock - Hydraulically controlled, 360°.

Maximum swing speed - 2.4 r.p.m.

Boom Hoisting & Lowering

Independent, hydraulic boomhoist is driven by a variable displacement, 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 Drum

One-piece, smooth; 20" (0.51 m) root diameter. Ratchet wheel for drum locking pawl integral with drum flange.

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

Boomhoist Drum Locking Pawl

Spring applied, hydraulically released. Prevents drum rotation in a lowering direction. Pawl automatically applies when control lever is in neutral position.

Boomhoist limiting device - Provided to restrict hoisting boom above maximum recommended boom angle; located on exterior right-hand side of operator's cab. Electrical switch contacted by boom striker bracket, deactivates hydraulic solenoid valve which shuts off hydraulic pressure in line to boomhoist pump and brake. As pressure is shut off, boomhoist brake is spring applied.

Electrical System

Battery: Two 12-volt, 225 ampere hour batteries and 12-volt, 105 ampere alternator.

Operator's Cab

Environmental cab, modular type with sliding door; isolated from upper machinery cab. Cab door and windows equipped with safety tinted glass panels. Standard cab equipment includes hand grab rail, cab heater/defroster and windshield wiper/washer.

Machinery Cab

Equipped with warning horn, hinged doors for access to machinery, rooftop access ladder and skid resistant finish on roof.

Gantry

Mounted to upper frame; supports boom suspension system.

Gantry Bail

Pinned to gantry; supports boom suspension system. Bail contains 8 sheaves for 18-part boomhoist rope reeving; sheaves mounted on anti-friction bearings.

Counterweights

Total - 98,200 lbs. (44 544 kg)

"A" cwt. - 30,000 lbs. (13 608 kg)

"B" cwt. - 25,200 lbs. (11 431 kg)

"C" cwt. - 21,500 lbs. (9 752 kg)

"D" cwt. - 21,500 lbs. (9 752 kg)

Attachment - Open Throat

Boom - Tubular; two section basic boom 60' (18.29 m) long.

Base section - 30' (9.14 m) long, 80" (2.03 m) wide, 68" (1.73 m) deep. Lifting lugs on top side of base section to attach carrying links for carrying boom base section.

Boom extensions - Available in 10' (3.05 m), 20' (6.10 m), 30' (9.14 m), 40' (12.19 m) and 50' (15.24 m) lengths; 80" (2.03 m) wide, 68" (1.73 m) deep, centerline-to-centerline of main chords. Extensions furnished with appropriate length pendants, and one hoist line deflector roller per extension.

Boom connections - In-line, tapered pins.

Boom top section - Open throat; 30' (9.14 m) long.

Boompoint machinery - Six 21" (0.53 m) root diameter head sheaves mounted on anti-friction bearings.

Boom midpoint suspension pendants -

Required for all boom lengths exceeding 240' (73.15 m). Pendants connected at 140' (42.67 m) point of boom.

Maximum open throat boom length permitted -

330' (100.58 m) boom or 300' (91.44) + 100' (30.48 m) boom and jib combination.

Attachment - Hammerhead

Boom - Tubular; three section basic boom 45' (13.71 m) long.

Base section - 30' (9.14 m) long; 80" (2.03 m) wide, 68" (1.73 m) deep.

"J" Wall Straight Boom Extensions - Available in 10' (3.05 m), 20' (6.10 m) and 30' (9.14 m) lengths.

Note: When using hammerhead attachment the first 40' (12.19 m) of boom extension must be "J" wall extensions. All other extensions are standard open throat boom extensions.

Straight Boom Extensions - Available in 10' (3.05 m), 20' (6.10 m), 30' (9.14 m), 40' (12.19 m) and 50' (15.24 m) lengths; 80" (2.03 m) wide, 68" (1.73 m) deep, centerline-to-centerline of main chords. In making up various boom lengths, straight extensions

must be arranged in the boom as outlined in Crane Rating Manual.

Tapered Boom Extension - 10' (3.05 m) long; 80" (2.03 m) wide, 68" (1.73 m) deep at lower

end and 55" (1.40 m) wide, 41" (1.04 m) deep at top end.

Note: Tapered boom extension must always be used as last boom section prior to mounting hammerhead top section.

Hammerhead Top Section - 5' (1.52 m) long; 55" (1.40 m) wide, 41" (1.04 m) deep lower end.

Maximum hammerhead boom length permitted - 245' (74.68 m).

Boompoint Machinery - Six 21" (0.53 m) root diameter sheaves; mounted on anti-friction bearings.

Items Applicable to Both Hammerhead and Open Throat Tip Booms

Boom Stops

Dual lever type; connected to upper frame and top of boom base section. Spring loaded bumper ends.

Boom Live Mast

Mounted on front of upper frame; supports boomhoist bridle, spreader bar and boom midpoint suspension pendants. Mast 35' (10.67 m) long; may be used as short boom for handling counterweight, outrigger assemblies, etc. in machine stripdown and for boom assembly/disassembly.

Boom live mast stops - Incorporated with boom stops; manually positioned when using live mast as short boom.

Boomhoist Bridle

Bridle contains nine 15" (0.38 m) root diameter sheaves (for 18-part boomhoist reeving) and two 15" (0.38 m) root diameter auxiliary load hoist sheaves which enable boom live mast to be used as short boom for machine assembly/disassembly.

Sheaves mounted on anti-friction bearings.

Boom pendants - Standard; furnished for basic boom lengths plus appropriate length pendants with each boom extension.

Deflector rollers - Deflect load hoist wire rope off boom to avoid chafing; steel rollers mounted on anti-friction bearings. One roller furnished with each boom extension.

Jib

Tubular; two-piece basic jib 30' (9.14 m) long; 32" (0.81 m) wide, 24" (0.61 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' (6.1 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" (0.53 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.

Boomfeet - 4" (101.60 mm) wide on 66" (1.68 m) centers; 5" (0.13 m) diameter boomfoot pins. Pins hydraulically removed/inserted for ease in stripdown. Double-acting hydraulic cylinder mounts on frame between boomfoot lugs.

Boomfoot pins - one connected to cylinder rod end, the other connected to the cylinder body - are pushed in, or pulled from, connection with boomfeet.

Auxiliary Equipment

Boom Angle Indicator

Pendulum type; mounted on boom base section.

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.

Rated Capacity Limiter

Standard; PAT DS-350 rated capacity limiter.

Hook Blocks

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

Lower Counterweight = A

Boom Length (ft)	Load Radius (ft)	Boom Angle (deg)	Over Rear Capacity (lbs)		360 Degree Capacity (lbs)	
100	40	68.4	152,800	*	152,800	*
100	41	67.8	149,000	*	149,000	*
100	42	67.1	145,300	*	145,300	*
100	43	66.5	141,700	*	141,700	*
100	44	65.9	138,300	*	138,300	*
100	45	65.3	135,000	*	135,000	*
100	46	64.6	131,900	*	131,000	
100	47	64.0	128,900	*	127,000	
100	48	63.4	126,000	*	123,200	
100	49	62.7	123,300	*	119,600	
100	50	62.1	120,600	*	116,200	
100	51	61.4	118,100	*	113,000	
100	52	60.8	115,600	*	110,100	
100	53	60.1	113,300	*	107,200	
100	54	59.4	111,200	*	104,400	
100	55	58.8	109,000	*	101,800	
100	56	58.1	106,900	*	99,300	
100	57	57.4	104,900	*	96,900	
100	58	56.7	102,900	*	94,500	
100	59	56.1	101,000	*	92,300	
100	60	55.4	99,200	*	90,200	

GENERAL INFORMATION ONLY

