



FLYSHEET HC-98B

CARRIER MOUNTED CRANE

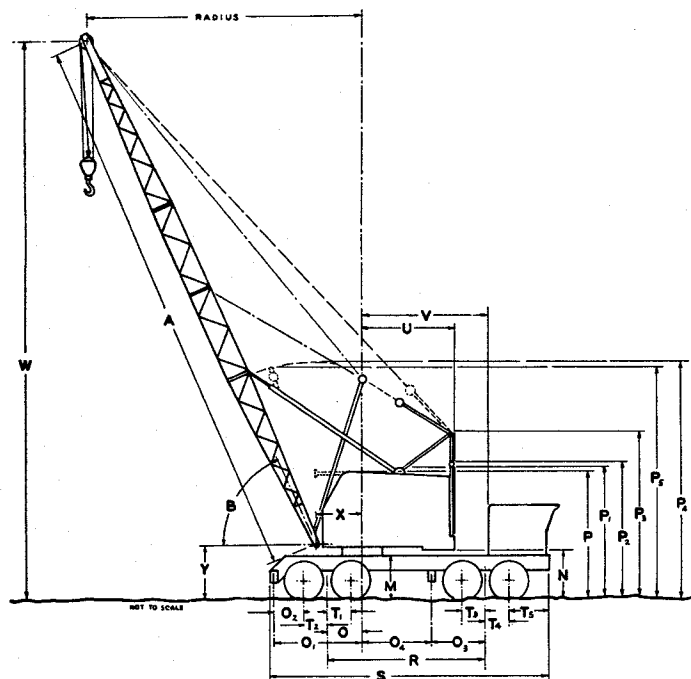
Dimensions
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Specifications



DIMENSIONS AND WORKING RANGES

CARRIER — 8 x 4 , 10' 7" WIDE

Basic angle or "Hi-Lite" tubular boom length	A	40' 0"
Boom angle	B	—
Overall height, top of ring gear plate	M	4' 4"
Ground clearance under counterweight	N	4' 11"
Centerline rotation to center rear axle bogie	O	3' 0"
Centerline rotation to center rear outrigger	O ₁	8' 6"
Center rear axle bogie to center rear outrigger	O ₂	3' 3"
Center front axle bogie to center front outrigger	O ₃	4' 6"
Centerline rotation to front outrigger center	O ₄	8' 2"
Overall height, low gantry	P ₁	12' 4"
Overall height, retractable gantry lowered	P ₂	12' 10"
Overall height, retractable gantry raised	P ₃	16' 2"
Height, over vertical live boom mast	P ₄	27' 3"
Height, over live boom mast with tubular boom horizontal	P ₅	18' 4"
Wheelbase (215")	R	17' 11"
Carrier overall length over rear outrigger box	S	30' 2"
Center rear axle to pivot of rear bogie	T ₁ & T ₂	2' 3"
Center front axle to pivot of front bogie	T ₃ & T ₄	2' 3"
Center front front axle to front bumper	T ₅	3' 7"
Tailswing of 1-piece counterweight	U	11' 5"
Tailswing of 2-piece counterweight	U	11' 10"
Radius boom hinge pin — angle boom	X	3' 2"
Radius boom hinge pin — tubular boom	X	4' 1"
Height boom hinge pin — angle boom	Y	6' 8"
Height boom hinge pin — tubular boom	Y	5' 3"
Overall height boompeak, boom in travel position over front —		—
Angle boom (40')		10' 11"
Tubular boom (40')		16' 1"
Minimum ground clearance		11"
Overall width — outriggers retracted		10' 7"
Overall width, to centerline of jacks, outriggers extended		—
Center rear rear axle to center front front axle		15' 8"
Center front rear axle to center rear front axle		22' 5"
Centers front tandem axles		13' 5"
Centers rear tandem axles		4' 6"
Overall length, 40' angle boom lowered to travel position		—
Over front of carrier — Over rear		55' 9" / 64' 11 1/2"
Overall length, 40' "Hi-Lite" tubular boom lowered to travel position		—
Over front of carrier — Over rear		56' 8" / 65' 10 1/2"



Dimensions do not include bumper cwt.



GENERAL SPECIFICATIONS

CARRIER—Truck-type—8x4 (Crane Carrier Corp.)

FRAME — Box section, high alloy, wide flange beam main members.

FRONT AXLES — Tandem, bogie beam mounted. Shuler Model DKB tubular, 81.7" track.

REAR AXLES — Clark planetary Model BD50-60 double reduction, bogie beam mounted, 94 1/2" track.

WHEELS AND RIMS — Cast spoke, front; integral with planetary hub, rear; 8.50" x 20" diameter rims.

TIRES — Single tires front, dual tires rear.

Standard — 12:00 x 20-H (16-ply) rating, non-directional tread.

Optional — 12:00 x 20-H (16-ply) rating, rock type tread. 14:00 x 20-J (18-ply) rating, non-directional tread. 14:00 x 20-J (18-ply) rating, rock type tread.

OUTRIGGERS — Full width, double-box front and rear, pin connected to carrier frame, hydraulically operated beams and jack cylinders are individually controlled from the ground. Check valve at each jack cylinder. Aluminum floats.

BRAKES — (Air)

Service — Eight-wheel air brakes standard. MAXI-BRAKE on rear wheels, and single diaphragm air chambers on front wheels. Internal expanding.

Size and Area —

Rear Wheels — 16 1/2" x 7", total effective lining area 920 sq. in.

Front Wheels — 17 1/4" x 4", total effective lining area 536 sq. in.

Digging — Eight-wheel service brake applied with air valve on carrier dash.

Parking — Four-wheel rear brakes applied with air valve on carrier dash.

Emergency — Brakes on four rear wheels apply when air pressure drops below 40-60 p.s.i. in the system. Emergency brake may be manually applied at any time by hand control of dash mounted air valve.

STEERING — Power hydraulic, Ross Model TE-71; 21" diameter wheel.

TURNING RADIUS — 56' 0" over outside of front bumper with or without bumper ctwt.

ENGINES — Diesel, 12 volt alternator or generator, starter, pressure lubrication, radiator, air cleaner, 12 c.f.m. air compressor, hydraulic pump.

Standard — GM 6-71N diesel engine, six cylinder, two cycle, 4 1/4" bore, 5" stroke, 425.6 cu. in. displacement, 238 maximum brake horsepower at 2,100 r.p.m. full load speed. Peak torque 649 ft. lbs. at 1,400 r.p.m.

Optional — Cummins NH-230 diesel engine, six cylinder, four cycle, 5 1/2" bore, 6" stroke, 855 cu. in. displacement, 230 maximum brake horsepower at 2,100 r.p.m. full load speed. Peak torque 638 ft. lbs. at 1,500 r.p.m.

CLUTCH — Lipe Rollway, 14" 2-plate.

TRANSMISSIONS —

Main — Fuller 5H740 with five speeds forward and one reverse.

Auxiliary — Fuller 3F92 3-speed.

UNIVERSALS — Mechanics needle bearing type.

CAB — One-man, fully enclosed.

ELECTRICAL SYSTEM — 12-volt system, including sealed beam headlights, directional signals, lighting of instrument panel, and headlight dimmer switch.

WEIGHT — Carrier with hydraulic outriggers, 8 x 4 drive, ring gear, and 1,050# front bumper ctwt. — approximately 39,700 lbs.

STANDARD EQUIPMENT — Bus-type rear view mirrors, front tow hooks, lug wrench, tire gauge, and tire inflation hose. Seat belts, back-up alarm, fire extinguisher, and high pressure lube fittings at all bearing points. Two-way reading bubble levels on each side of carrier, 60-gal. fuel tank with self-closing cap, windshield wiper and washer. Instrument panel and dash includes speedometer, ammeter, low air pressure warning buzzer, locking switch, starter button, hand throttle to supplement foot accelerator and gauges for fuel, engine temperature, air pressure and oil pressure.

SPEEDS — TRANSMISSION RATIOS. All speeds given are for HC-98B with 12:00 x 20-H standard tires and engines at governed full load speed. Speeds will vary with optional tires.

Gear	Main - Fuller 5H740	Auxiliary - Fuller 3F92		
		2.64 to 1.00	1.00 to 1.00	.84 to 1.00
High	.76	13.1 m.p.h.	34.5 m.p.h.	41.1 m.p.h.
Fourth	1.00	9.9 m.p.h.	26.2 m.p.h.	31.2 m.p.h.
Third	1.75	5.7 m.p.h.	15.0 m.p.h.	17.9 m.p.h.
Second	3.19	3.1 m.p.h.	8.2 m.p.h.	9.8 m.p.h.
First	5.83	1.7 m.p.h.	4.5 m.p.h.	5.4 m.p.h.
Reverse	5.75	1.8 m.p.h.	4.6 m.p.h.	5.5 m.p.h.

UPPER

UPPER FRAME — All-welded, stress-relieved, precision machined unit. Side housings bolted to upper frame.

TURNABLE ROLLERS — Eight adjustable, heat-treated conical, hook-type rollers mounted on tapered roller bearings. Two equalized pairs mounted both front and rear.

TRANSMISSION — Link-Belt quadruple roller chain enclosed in oil-tight chain case with integral sump. Pump-driven oil stream lubrication. Engine pinion and chain wheel have machine-cut teeth.

REDUCTION SHAFT — Two-piece shaft, joined by an involute splined coupling, mounted in side housings on anti-friction bearings.

Two Drive Pinions — Heat-treated, machine-cut teeth, involute splined to reduction shaft. Pinions mounted outside side housings.

CLUTCHES — Speed-o-Matic power hydraulic actuated for swing, operating drums, boomhoist and optional load lowering. Internal expanding two-shoe type, aluminum alloy shoes; 20" diameter, 5" face width. Third operating drum clutch 17 1/4" diameter, 4" face width. Load lowering clutches not available with gear-driven two-speed hoist or auxiliary, two-shoe rear drum brake.

Spiders — Involute splined to horizontal shafts.

DRUMS — Front, rear, and third (optional) operating drums.

Shafts — Mounted in line bores on anti-friction bearings. Front and rear drum shafts only, extended to accommodate optional load lowering clutches. Special shaft required to accommodate two-speed, planetary-driven drums.

Spur Gears — Machine-cut teeth; mounted on anti-friction bearings on shaft.

Clutch Drums — Bolted to spur gears.

Brakes — Two-piece, external contracting band, mechanically foot pedal operated. Front and rear drum 27" diameter, 4" face width; third drum 18" diameter, 3" face width.

Brake Drums — Involute splined to drum shaft.

Drum Laggings — Two-piece, removable; bolted to brake drum.



THIRD DRUM — Optional. Mounts forward of front operating drum. Functions as third operating drum with control and design similar to front and rear main operating drums. On machine equipped with third drum, the following must be noted.

Dragline operation — all wire rope must be removed from third drum to avoid interference with inhaul rope (front drum). Minimum of four wraps of inhaul rope must be left on anchor end of front drum to avoid inhaul rope interference with third drum brake enclosure.

Crane-Clamshell operations — quantity of front drum wire rope must be limited in some cases to avoid interference between front drum rope and third drum brake enclosure.

DRUM ROTATION INDICATORS (Optional) — Mounted on control stand. Dials actuated by flexible shafts from front and rear main operating drum shafts.

TWO-SPEED FRONT AND REAR DRUMS (Optional) —

Gear-driven, hoist only — Intermediate gears installed in side housings convert two-shoe load lowering clutches to high-speed hoist clutches; hoist rope speed increased 100% over standard speed.

Planetary-driven, hoist and lowering — Planetary unit mounts between spur gear and two-shoe clutch drum on extended shaft; available for 70% increase or 40% decrease of standard hoist and load lowering rope speeds. Not available for front drum rope lowering. Two-shoe clutch gives standard speed. Planetary controlled by external contracting band through push-button located on clutch control lever.

AUXILIARY TWO-SHOE REAR DRUM BRAKE (Optional) —

Increases brake lining contact area by 212 sq. in. Pressure on mechanical brake pedal applies the standard rear drum brake and the auxiliary two-shoe brake simultaneously. Mechanical linkage actuates the control mechanism of a variable pressure valve to direct hydraulic pressure to the brake cylinder. Lowering clutch, two-speed gear-driven hoist, or two-speed planetary drive unit on lowering side of rear drum not available. Internal expanding two-shoe Speed-o-Matic power hydraulic brake, 20" diameter, 5" face, brake spider involute splined to shaft, and brake drum bolted to anchor plate on machinery side housing.

HORIZONTAL SWING SHAFT — Mounted in line bore on anti-friction bearings.

Spur Gears — Machine-cut teeth. Mounted on shaft on anti-friction bearings.

Bevel Gear — Involute splined to shaft, fully enclosed and running in oil.

INDEPENDENT BOOMHOIST — Spur gear driven with precision boom raising and lowering through a clutch. A rope drum locking pawl, manually controlled from operator's position, is provided.

Shaft — Mounted in line bore on anti-friction bearings.

Spur Gears — Machine-cut teeth mounted on anti-friction bearings on shaft.

Rope and Brake Drum — Involute splined to shaft. Ratchet wheel and 22" diameter 3 1/4" face width brake drum are cast integral.

Brake — External contracting band, 22" diameter, 3" face width, spring applied and power hydraulically released.

BOOMHOIST LEVER KICK-OUT DEVICE — Special mechanism activated by boom at minimum radius "kicks out" boomhoist lever and disengages boom raising clutch. Boom must then be lowered before it can be raised again.

VERTICAL SWING SHAFT — Mounted in line bore on anti-friction bearings.

Bevel Gear — Involute splined to shaft; fully enclosed and running in oil.

Swing Pinion — Involute splined to shaft; teeth mesh with internal teeth of ring gear.

Swing Brake — Two-directional, external contracting band; spring-applied and power hydraulically released.

Brake Drum — Involute splined to swing shaft.

SWING LOCK — Mechanically controlled pawl engages with internal teeth of ring gear.

SWING SPEED — 4 r.p.m.

GANTRY — Retractable type, standard. Mounted to upper to support boom suspension system, bail and two boomhoist rope guide sheaves. Used with both angle and tubular booms. Also used for power lowering of counterweight in conjunction with boom lowering clutch. For tubular boom over 130' long, live boom mast is required in addition to retractable gantry.

Bail — Pinned to gantry frame. Contains three sheaves on bronze bushings for standard 8-part boomhoist (angle boom) or four sheaves on bronze bushings for standard 10-part boomhoist (tubular boom). Five sheaves on anti-friction bearings are furnished with optional 12-part boomhoist (both booms).

Speed-o-Matic Gantry Jack (Optional) — For power hydraulic raising and lowering of retractable high gantry. Controlled from rear of cab.

CAB — Operator's door, rear doors, and front window slide on ball bearing rollers. Full-vision operator's compartment with safety glass panels. Roof-top access ladder.

Elevated Operator Cabs (Optional) — Two or four ft. available. Upper portion of both elevated cabs is hinged and equipped with quick disconnect fittings for easy removal to reduce overall height for transporting.

COUNTERWEIGHTS — Removable and held in position by "T"-bolts. Power raising and lowering with boomhoist clutches through retractable high gantry. Optional power hydraulic cylinder suspended between gantry backstays to raise or lower counterweight.

Lifting Crane —

19,200 lb. cwt. — Waukesha F-554-G, GM 4030N and 4082.

18,400 lb. cwt. — Cat. D-333C-T

Dragline — Clamshell — Magnet —

13,000 lb. cwt. — Waukesha F-554-G, GM 4082 and GM 4030N

12,200 lb. cwt. — Cat. D333C-T

CONTROL SYSTEM — Speed-o-Matic power hydraulics; an open system. Operating pressure is transmitted through oil to all operating two-shoe clutch cylinders, swing brake and boomhoist drum brake cylinders. The system includes a pump to provide a constant flow of oil, an accumulator to maintain operating pressure and variable pressure operator-controlled valves to regulate this pressure to each clutch cylinder.

Pump — Vickers; rated at 4.7 g.p.m. at 1,200 r.p.m.

Oil Filter — Link-Belt Speeder; replaceable Skinner ribbon-type filter element.

Relief Valve — Link-Belt Speeder; set to operate at 1,250 p.s.i.

Unloader Valve — Link-Belt Speeder; set to unload pump at a maximum 1,050 p.s.i. and to load pump when pressure drops below 900 p.s.i.

Accumulator — Link-Belt Speeder; piston-type, pre-charged with nitrogen gas to 650 p.s.i.

Sump Tank — Link-Belt Speeder; 7 gal. capacity with filter and strainer assembly.

Control Valves — Link-Belt Speeder; variable pressure type.



ENGINES — Full pressure lubrication, oil filter, air cleaner, hour meter, hand and foot throttles, 60-gal. capacity fuel tank with fuel gauge.

	Waukesha F-554-G (1)	Waukesha 135GZU with torque converter (2)	Caterpillar D-333C-T	GM 4-71 Series (Model 4030N)	GM 4-71 Series (Model 4082) with torque converter (3)
Number of cylinders	6	6	6	4	4
Bore and stroke (inches)	4 ⁵ / ₈ x 5 ¹ / ₂	4 ³ / ₈ x 5	4 ³ / ₄ x 6	4 ¹ / ₄ x 5	4 ¹ / ₄ x 5
Piston displacement (cu. in.)	554	451	638	283.7	283.7
High idle speed, r.p.m.	1,880	1,880 @ pinion 2,135 @ crankshaft	1,990	1,990	1,207 @ pinion 1,810 @ crankshaft
Engine r.p.m. F.L.S.	1,710		1,890	1,850	
Net engine H.P. @ F.L.S.	109	121	110	110	117
Peak torque; Lbs. Ft.	427	730	418	351	1,170
Peak torque; r.p.m.	800	(output stall)	1,250	1,200	(output stall)
Electrical system	12 volt	12 volt	12 volt	12 volt	12 volt
Batteries	2/6-volt	2/6-volt	2/12-volt	2/6-volt	1/12-volt
Clutch — Type	Friction-Hyd. coupling	Disconnect between engine-converter	Friction	Friction-Hyd. coupling	Disconnect between engine-converter
Make	Twin Disc		Twin Disc	Twin Disc	
Model	SP211-HP-1		SP111-HP-1	SP111-HP-1	
Transmission —					
No. chain wheel teeth	161	161	161	161	161
No. engine pinion teeth	18	18	17	17	28

(1) Two-speed Cotta transmission available for lifting crane services; reduces operating speeds approximately 50%.

(2) 2.5 ratio Allison TCOA-377-19 converter.

(3) 3.4 ratio Allison TCDOA 435 Converter.

FRONT END CRANE EQUIPMENT

ANGLE BOOM — Two-piece 40' total length, 20' upper and lower sections; 34" deep and 34" wide at connections. Chord angles, alloy steel. Lower section 3¹/₂" x 3¹/₂" x 3³/₈"; upper section 3¹/₂" x 3¹/₂" x 5¹/₈".

Boomfoot — 1⁵/₈" wide on 38" centers.

Boompint Machinery — Three 18" root diameter sheaves mounted on anti-friction bearings on boom-peak shaft. Two or four sheaves, or one wide-mouth sheave for dragline, optional.

Pin connections — Permit easy removal and addition of extensions.

BOOM EXTENSIONS — Available in 5', 10' and 20' lengths with proper length pendants.

BOOM BACKSTOPS — Dual, rigid type with spring-loaded bumpers for angle boom; telescoping type for tubular boom.

BOOMHOIST BRIDLE — Serves as connection between the pendants and boomhoist rope. Bridle contains 9¹/₂" diameter sheaves — four for 8-part boomhoist or five for 10-part boomhoist — mounted on bronze bushings. Six sheaves mounted on anti-friction bearings are furnished for optional 12-part boomhoist.

JIB — 20' two-piece with 10' upper and lower sections; 10' extensions available for 30' to 40' jib. Jib is 22³/₄" wide and 18" deep at the connection; chord angles, lower section 2" x 2" x 1¹/₄", upper section and extensions 2" x 2" x 3¹/₈". Jib and extensions are bolted.

Jib Mast — 10' high, mounted on jib base section; two deflector sheaves mounted on needle bearings for jib hoist line within the mast; two equalizer sheaves for jib front stay and jib backstay lines mounted to top of mast.

Jib Backstops — Dual, telescoping type. Pinned from jib mast to boom top section and from jib mast to jib lower section.

Peak Sheave — Mounted on anti-friction bearings.

Peak Shaft — Anchor is provided at peak of jib for two-part jib hoist line. Jib stay line anchors are suspended from shaft.

"HI-LITE" TUBULAR BOOM — Two-piece 40' total length, 20' upper and lower sections, 42" deep and 42" wide at connections. Square tube chords, alloy steel, 2¹/₄" with bracing of round steel tubing.

Boomfoot — 2¹/₄" wide on 50" centers.

Boomfoot Adapter — Required to adapt 38" centers of revolving frame boomfoot lugs to 50" centers of tubular boomfeet.

Boompint Machinery — Three 18" root diameter sheaves mounted on anti-friction bearings on boom-peak shaft. Two and four sheaves optional.

Pin Connections — Permit easy removal and additions of extensions.

BOOM EXTENSIONS — Available in 10', 15', and 20' lengths with proper length pendants.

BOOM BACKSTOPS — Dual, telescoping; spring cushioned.

BOOMHOIST BRIDLE — Serves as a connection between the pendants and boomhoist rope. Bridle contains 12" root diameter sheaves mounted on anti-friction bearings.

Without Live Boom Mast — Five sheaves for standard 10-part boomhoist and six sheaves for optional 12-part boomhoist.

With Live Boom Mast — Connected to mast by a shaft. Six sheaves for 12-part boomhoist; also contains two 9¹/₂" diameter sheaves mounted on non-metallic bushings — enables mast to be used as a short boom.

BOOM MAST — Mounted on boomfoot adapter, supports boomhoist bridle and mid-point suspension pendants. Boom mast and mid-point boom suspension pendants required for all main boom lengths over 130'. Live boom mast retracts to 20' for use as a short boom. Hydraulic extending cylinders optional.

JIB — Bolted or pin-connected, two-piece with 10' upper and lower sections, 10' extensions available for 30', 40', or 50' jib.

Bolted — 24" wide and 24" deep at connections. Tubular chords, alloy steel, 1¹/₂" diameter.

Pin-connected — 24⁵/₈" wide and 18⁵/₈" deep at connections, tubular chords, alloy steel, 1¹/₄" diameter.

Jib Mast — 10' high, mounted on jib base section. Two deflector sheaves mounted on anti-friction bearings for jib hoist line within the mast. Two equalizer sheaves for jib frontstay and jib backstay lines mounted to top of mast.



Jib Backstops — Dual, telescoping type. Pinned from jib mast to boom top section and from jib mast to jib lower section.

Peak Sheaves — Mounted on anti-friction bearings.

Peak Shaft — Anchor is provided at peak of jib for two-part jib hoist line. Jib frontstay line anchors are suspended from shaft.

FAIRLEADER — Full-revolving type with barrel, sheaves and guide rollers mounted on anti-friction bearings.

TAGLINE WINDER — Rud-O-Matic Model 648; spring-wound drum type mounted on crane boom. Cable pull off drum — 60' to 75' from neutral.

BOOM ANGLE INDICATOR — Mounted on boom near base.

ROPE SUPPORTING ROLLERS — To deflect main hoist line over top of boom. Required when third drum rope

passes over crane boom. Rollers mounted on anti-friction bearings, following numbers recommended:

Angle Boom — One through 45'; two through 65'; three through 85'; four through 100'.

Tubular Boom — One supplied as standard; two through 125'; three through 145'; four through 150'.

BOOM FOLDING EQUIPMENT (Optional) — To facilitate folding of pin-connected booms. Two folding links plus shorter pendants are inserted in boomhoist reeving. Eliminates need for "breaking" boom hoist reeving to fold boom.

Angle Boom — Extended head shaft for mounting of two 7:20 x 20, 8-ply rating heavy-duty express tires mounted on wheels.

Tubular "Hi-Lite" Boom — Two 4:00 x 18, 4-ply rating, grooved implement tires with spoked wheels mounted within a strut pinned to boom for folding.

AXLE LOADINGS

Basic HC-98B upper machinery with standard 19,200# cwt. and Waukesha F-554-G gas engine, mounted on C.C.C. 215" wheel-base. 8 x 4 carrier 10' 7" wide equipped with 12:00 x 20-H (16-ply) rating tires, hydraulic outrigger assemblies complete with four floats.	Basic Machine Weight	Upper Facing Front		Upper Facing Rear	
		Front	Rear	Front	Rear
	UPPER: 42,700#	— 6,890#	49,950#	21,200#	21,500#
	CARRIER: 39,700#	17,950#	21,750#	17,950#	21,750#
	TOTAL: 82,400#	11,060#	71,340#	39,150#	43,250#
Adjust axle loadings accordingly for the following components:	Component Weights	Front	Rear	Front	Rear
UPPER MACHINERY —					
Rear drum load lowering clutch	+ 500	0	+ 500	+ 170	+ 330
Rear drum planetary	+ 450	— 4	+ 454	+ 155	+ 295
Rear drum rope — 769', 5/8" Type "N" (Jib hoist line)	+ 554	— 6	+ 550	+ 190	+ 364
Front drum load lowering clutch	+ 400	+ 40	+ 360	+ 90	+ 310
Front drum planetary	+ 450	+ 54	+ 396	+ 96	+ 354
Front drum rope — 481', 3/4" Type "N" (main hoist line)	+ 500	+ 60	+ 440	+ 107	+ 393
Third drum	+ 850	+ 190	+ 660	+ 100	+ 750
Third drum rope — 297', 5/8" Type "N" (9" lagging)	+ 214	+ 47	+ 167	+ 25	+ 189
Counterweight	— 19,200	+ 7,160	— 26,360	— 13,590	— 5,610
ATTACHMENT —					
40' angle boom (with open throat top section) and accessories	+ 4,400	+ 6,385	— 1,985	— 1,745	+ 4,340
20' angle boom base section with accessories	+ 2,595	+ 2,615	— 20	— 4,910	+ 9,310
40' "Hi-Lite" tubular boom (with open throat top section) and accessories	+ 5,710	+ 8,340	— 2,630	— 6,425	+ 12,135
20' "Hi-Lite" tubular boom base section with accessories	+ 3,770	+ 3,890	— 120	— 2,630	+ 6,400
Live boom mast, bridle and spreader bar	+ 1,915	+ 2,130	— 215	— 1,490	+ 3,405
CARRIER —					
Front outrigger box, beams and jacks	— 4,480	— 2,790	— 1,690	— 2,790	— 1,690
Front outrigger beams and jacks	— 2,780	— 1,730	— 1,050	— 1,730	— 1,050
Rear outrigger box, beams and jacks	— 4,480	+ 1,370	— 5,850	+ 1,370	— 5,850
Rear outrigger beams and jacks	— 2,780	+ 850	— 3,630	+ 850	— 3,630
Four floats	— 440	— 220	— 220	— 220	— 220
Bumper counterweight	+ 1,050	+ 1,400	— 350	+ 1,400	— 350
Cummins NH-230 diesel engine	+ 340	+ 340	0	+ 340	0

MAXIMUM BOOM / JIB MACHINE CAN LIFT OFF GROUND UNASSISTED — WITHOUT LOAD

STANDARD MACHINE ^① 18,400# or 19,200# Upper Cwt. ^② — 1,050# Bumper Cwt.	ON OUTRIGGERS				ON TIRES			
	Over Rear		Over Side		Over Rear		Over Side	
	Boom	Boom + Jib	Boom	Boom + Jib	Boom	Boom + Jib	Boom	Boom + Jib
"Hi-Lite" tubular boom with live boom mast*	150'	130' + 50'	150'	120' + 50'	120'	100' + 40'	110'	90' + 40'
"Hi-Lite" tubular boom without live boom mast	130'	130' + 50'	130'	130' + 40'	120'	100' + 40'	110'	90' + 40'
Angle boom	100'	100' + 40'	100'	100' + 40'	100'	100' + 40'	100'	100' + 30'

Limited to 95% of backward stability.

*Live boom mast fully extended in operating position.

MAXIMUM BOOM / JIB MACHINE CAN TRAVEL WITH AT 5 M.P.H. SPEED — WITHOUT LOAD

STANDARD MACHINE ^① 18,400# or 19,200# Upper Cwt. ^② — 1,050# Bumper Cwt.	Over Rear		Over Side	
	Boom	Boom + Jib	Boom	Boom + Jib
	Boom	Boom + Jib	Boom	Boom + Jib
"Hi-Lite" tubular boom with live boom mast	110'	110' + 30'	80'	80' + 30'
Angle boom	100'	100' + 40'	90'	80' + 30'

Limited to 85% of backward stability.

① Lifting Crane

② Depending on engine used



DRUM ROPE CAPACITIES, LINE SPEEDS AND LINE PULL (Available line pull — not based on wire rope strength)

Attachment	Wire Rope Dia.	FRONT DRUM						REAR DRUM						BOOMHOIST DRUM						Wire Rope Dia.
		Lagging		Line Pull and Speed		Drum Capacities		Lagging		Line Pull and Speed		Drum Capacities		Lagging		Line Pull and Speed		Drum Capacities		
		Root Dia.	Groove	F.P.M. 1st Layer	Pull, lbs. 1st Layer	1st Layer Cap.	Total Cap.	Root Dia.	Groove	F.P.M. 1st Layer	Pull, lbs. 1st Layer	1st Layer Cap.	Total Cap.	Root Dia.	Groove	F.P.M. 1st Layer	Pull, lbs. 1st Layer	1st Layer Cap.	Total Cap.	
Crane	5/8"	13 1/4"	Smooth	145	23,200	66'	769'	13 3/4"	Smooth	145	22,500	66'	769'	9"	5/8" dia.	120	27,100	22'	342'	5/8"
	3/4"	13 1/4"	Smooth	146	23,100	54'	481'	13 3/4"	Smooth	146	22,400	54'	481'	—	—	—	—	—	—	—
Clamshell	5/8"	15 1/4"	3/4" dia.	166	20,300	57'	495'	15 1/4"	3/4" dia.	166	19,700	57'	495'	THIRD DRUM						
	3/4"	15 1/4"	3/4" dia.	167	20,200	58'	451'	15 1/4"	3/4" dia.	167	19,600	58'	451'							
	7/8"	15 1/4"	3/4" dia.	169	19,800	50'	304'	—	—	—	—	—	—							
Dragline	3/4"	13 1/4"	7/8" dia.	146	23,100	43'	439'	15 1/4"	3/4" dia.	167	19,600	58'	451'	9" (std.)	5/8" dia.	120	10,000	35.2'	297.1'	5/8"
	7/8"	13 1/4"	7/8" dia.	148	22,800	44'	343'	—	—	—	—	—	—	11"	5/8" dia.	145	8,200	42.5'	208.5'	5/8"

Line pull and speed are based on engine full load speed and first layer of wire rope on drum. Front drum and optional third drum are under-winding; rear drum is over-winding. Only smooth laggings are interchangeable between front and rear drums.

HC-98B JIB CAPACITIES

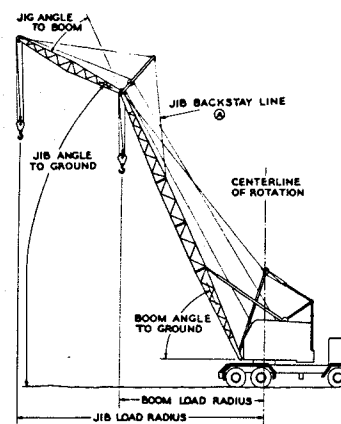
Jib Angles To Ground	JIB LENGTH							
	20'		30'		40'*		50'***	
	Angle	Tube	Angle	Tube	Angle	Tube	Angle	Tube
80°	12,000	12,000	10,000	10,000	8,000	8,000	—	6,000
65°	10,000	10,000	8,000	8,000	6,000	6,000	—	4,000
50°	8,000	8,000	6,000	6,000	4,000	4,000	—	3,000
35°	7,500	7,500	5,500	5,500	3,500	3,500	—	2,000
20°	7,500	7,500	5,500	5,500	3,500	3,500	—	2,000

*40' jib at 30° off centerline of boom not recommended for booms over 130'

**50' jib at 30° off centerline of boom not recommended

***50' jib at 15° off centerline of boom not recommended for booms over 130'

- Capacities shown are in pounds and are based on Link-Belt Speeder jibs. Jib cross-section: Angle, 22 3/4" wide by 18" deep (bolted). Tube, 24" wide by 24" deep (bolted) or 24 5/8" wide by 18 5/8" deep (pin connected). Use jibs with a 10'0" high jib mast in the proper working position.
- The jib backstay line (A) is anchored to the boom upper section.
- To determine jib angle to ground, deduct jib angle to boom from the boom angle to ground.
- The jib angle to boom mast must not exceed 30°.
- Determining machine jib capacities:
 - Add the length of boom plus length of jib used.
 - Determine the jib load radius.
 - Refer to the lifting crane capacity chart and select the boom length that corresponds to the total length of boom and jib in (A) and the radius in (B).
 - The jib capacity is equal to the lifting crane capacity unless restricted by the maximum jib capacities shown above.
 - If the total length of boom and jib exceeds the longest boom length listed in the lifting chart, deduct 300 lbs. from the angle and 200 lbs. from the tube capacity shown for the longest boom length for the radius required in (B).
 - The jib capacity is the resulting figure unless restricted by the maximum jib capacities shown above.
- Determining lifting crane capacities with jib on the boom:
 - When operating off the main boompeak sheaves with a jib on the boom, the following reductions in machine lifting capacities must be made:
 - 20' jib 1,600 lbs.
 - 30' jib 1,900 lbs.
 - 40' jib 2,200 lbs.
 - 50' jib 2,500 lbs.



**WIRE ROPE****TYPE AND SIZE USED**

Boomhoist — Type "N", $\frac{5}{8}$ " dia.
Main hoist — Type "N", $\frac{3}{4}$ " dia. or $\frac{5}{8}$ " dia. Type "N".
Jib Hoistline — Type "N", $\frac{5}{8}$ " dia.
Dragline hoist — Type "N", $\frac{3}{4}$ " dia.
Dragline inhaul — Type "D", $\frac{7}{8}$ " dia.
Clamshell holding — Type "N", $\frac{3}{4}$ " dia.
Clamshell closing — Type "N", $\frac{3}{4}$ " dia.
Tagline — Type "A", $\frac{5}{8}$ " dia.
Jib staylines — Type "A", $\frac{5}{8}$ " dia.; Type "F", $\frac{5}{8}$ " dia.
Boom pendants — Type "N", $\frac{1}{4}$ " dia.
Mid-point suspension pendants (live boom mast) — Type "C", 1" dia.

WIRE ROPE TYPES

Type "A" — 6 x 25 (6 x 19 class), filler wire, improved plow steel, preformed, fiber center, right lay, regular lay.
Type "C" — 6 x 25 (6 x 19 class) filler wire, improved plow steel, preformed, independent wire rope center, right lay, regular lay.
Type "D" — 6 x 25 (6 x 19 class), filler wire, improved plow steel, preformed, independent wire rope center, right lay, long lay.
Type "F" — 6 x 25 (6 x 19 class), filler wire, improved plow steel, preformed, independent wire rope center,

right lay, regular lay.

Type "N" — 6 x 25 (6 x 19 class) filler wire, extra improved plow steel, preformed, independent wire rope center, right lay, regular lay.

JIB MAST STAYLINES**ANGLE JIB**

Backstay — For all boom lengths, 51' long. Rope length adjusted to fix jib angle to boom.

Frontstay — For all booms with 20' jib, 48' long; with 30' jib, 70'; with 40' jib, 100'.

TUBULAR JIB

Bolted connections, backstay — 45' 3 $\frac{3}{4}$ " long (40' 11 $\frac{3}{4}$ " plus two each 2' 2" long) for 30° jib to boom angle; removal of 2' 2" lengths allow 15° and in-line jib-to-boom angle.

Frontstay — For all booms with 20' jib, 55' long; with 30' jib, 75'; with 40' jib, 95'; with 50' jib, 115'.

Pin connections, backstay — 52' 5" long (43' 9" plus two each 4' 4" long) for 30° jib to boom angle; removal of 4' 4" lengths allow 15° and in-line jib to boom angle.

Frontstay — 20' jib basic pendant 43' 9" long. Two pendants 9' 6" long supplied with each 10' jib extension.

MAIN HOIST ROPE LENGTH

Parts of Line	BOOM LENGTH											
	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
1	95	115	135	155	175	195	215	235	255	275	295	315
2	140	170	200	230	260	290	320	350	380	410	440	470
3	185	225	265	305	345	385	425	465	505	545	585	625
4	230	280	330	380	430	480	530	580	630	680	730	780
5	275	335	395	455	515	575	635	695	755	815		
6	320	390	460	530	600	670	740	810	880	950		
7	365	445	525	605	685	765	845					
8	410	500	590	680	770	860	950					

JIB HOIST ROPE LENGTH

Rope Lengths shown in feet	Parts of Line	BOOM LENGTH (Angle or Tubular)										
		40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'
20' Jib Tubular or Angle (except as noted)	1	135	155	175	195	215	235	255	275	295	315	335
	2	200	230	260	290	320	350	380	410	440	470	500
30' Jib Tubular or Angle (except as noted)	1	155	175	195	215	235	255	275	295	315	335	355
	2	230	260	290	320	350	380	410	440	470	500	530
40' Jib Tubular or Angle (except as noted)	1	175	195	215	235	255	275	295	315	335	355	375
	2	260	290	320	350	380	410	440	470	500	530	560
50' Jib Tubular or Angle (except as noted)	1	195	215	235	255	275	295	315	335	355	375	395
	2	290	320	350	380	410	440	470	500	530	560	590

*Tubular boom and jib only

DRAGLINE ROPE LENGTH

Rope lengths shown in feet	Parts of Line	BOOM LENGTH				
		40'	45'	50'	55'	60'
Hoist	1	95	105	115	125	135
Inhaul	1	52	58	64	70	76

CLAMSHELL ROPE LENGTH

Rope lengths shown in feet	Parts of Line	BOOM LENGTH				
		40'	45'	50'	55'	60'
Holding	1	105	115	125	135	145
Closing	1	140	150	160	170	180
Tagline		Furnished with Rud-O-Matic #648				

BOOMHOIST ROPE LENGTH

Parts of Line	Angle Boom	Tubular Boom	Tubular Boom & Mast
8	255'	—	—
10	310'	310'	—
12	360'	360'	390'