

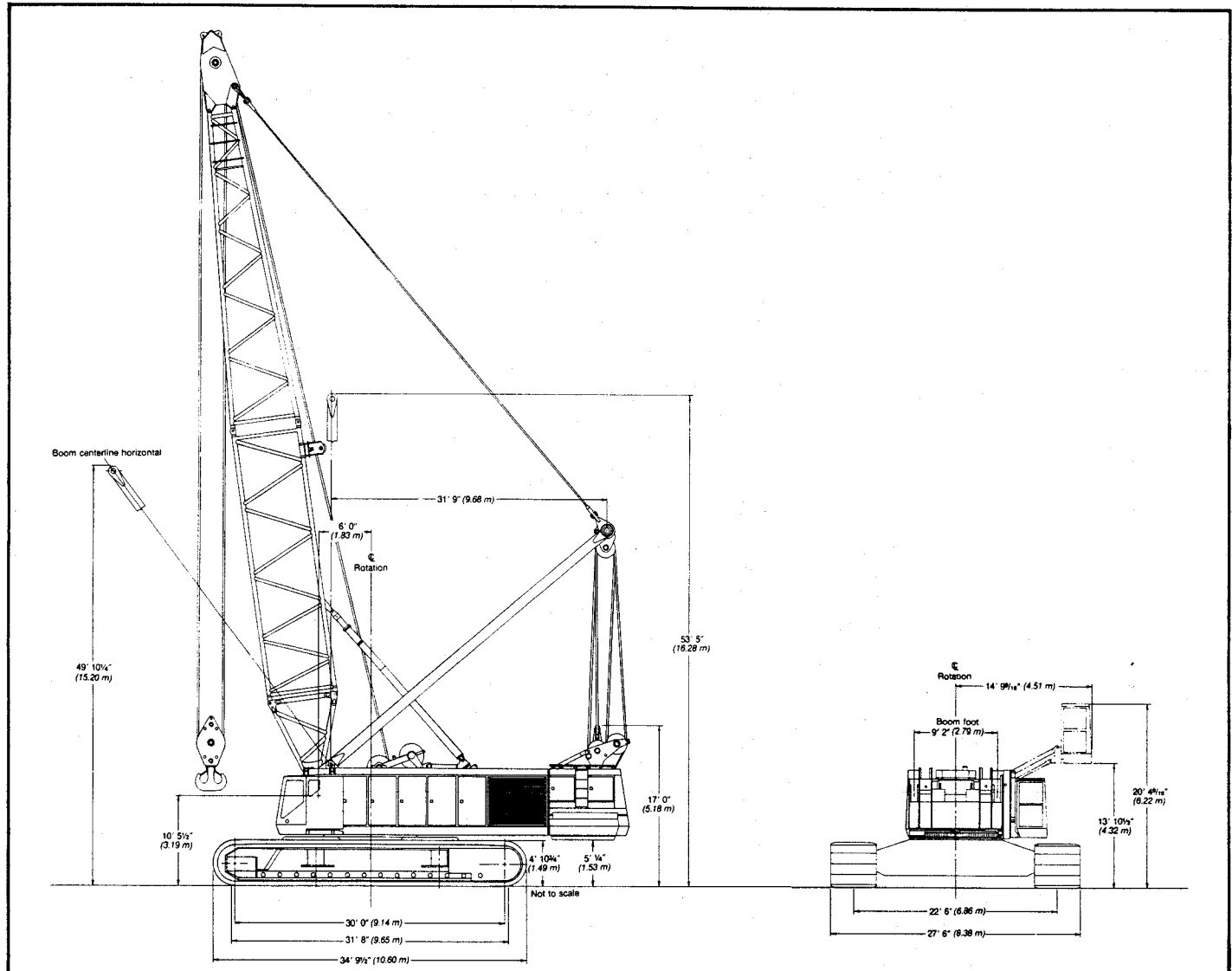
General Specifications

Link-Belt® 400 ton (362.80 metric ton)

Wire rope crawler crane

LS-918

GENERAL INFORMATION ONLY



General dimensions	Feet	meters
Basic boom length	80' 0"	24.38
Overall width with 60" (1.52 m) shoes	27' 6"	8.38
Minimum ground clearance	9 1/8"	0.23
Tailswing of counterweight	29' 27/8"	8.91
Tailswing of live mast (maximum)	32' 8"	9.95
Overall width of counterweight	17' 9 13/16"	5.43
Width of upperstructure with moveable operator's cab in down position	21' 67/16"	6.56

General dimensions	Feet	meters
Width of machinery cab with catwalks (less operator's cab)	18' 7/8"	5.51
Width of machinery cab without catwalks (less operator's cab)	11' 17/8"	3.40
Overall cab height	—	—
—Gantry raised	17' 0"	5.18
—Gantry lowered	13' 21 1/16"	4.02
—Fleeter sheave assembly in lowered position	13' 10 1/2"	4.22

Weights and dimensions for shipping — approximate

GENERAL INFORMATION ONLY

- 5' (1.52 m) boom top section — 7,280 lbs. (3 302 kg)
- 35' (10.67 m) tapered top section — 5,190 lbs. (2 354 kg)
- 30' (9.14 m) boom base extension — 6,410 lbs. (2 908 kg)
- 10' (3.05 m) boom base section — 4,220 lbs. (1 914 kg)
- Pendants for 80' (24.38 m) basic boom — 2,140 lbs. (971 kg)
- Total 80' (24.38 m) basic boom and pendants — 26,680 lbs. (12 102 kg)

Complete rear working frame module (boomhoist, boomhoist rope, third drum, and live mast) — 45,680 lbs. (20 720 kg)

Main upper frame module (main hoist drums, boom stop assembly, and quick disconnect turntable bearing retainer) — 96,700 lbs. (43 863 kg)

Fixed operator's module — 3,340 lbs. (1 515 kg)

Movable operator's module — 5,160 lbs. (2 341 kg)

Carbody with quick disconnect turntable bearing — 40,700 lbs. (18 462 kg)

Crawler side frames (each) — 83,500 lbs. (37 876 kg)

Fixed cross axles (each) — 31,000 lbs. (14 062 kg)

Struts (4 total) — 1,000 lbs. (454 kg)

Total crawler lower — 270,700 lbs. (122 790 kg)

Catwalks — 2,500 lbs. (1 134 kg)

Complete engine assembly and frame — 22,140 lbs. (10 043 kg)

"A" counterweight or shell — 40,000 lbs. (18 144 kg)

Inner counterweight — 35,750 lbs. (16 216 kg)

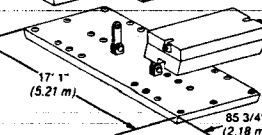
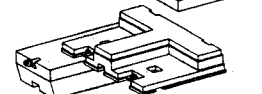
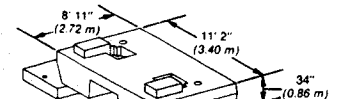
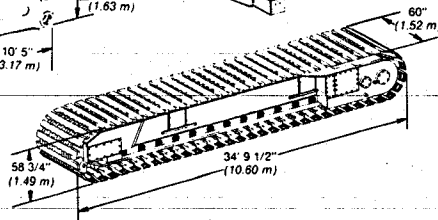
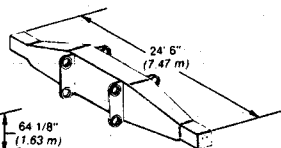
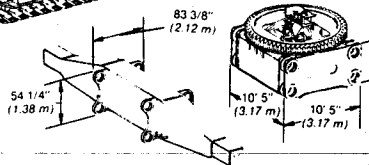
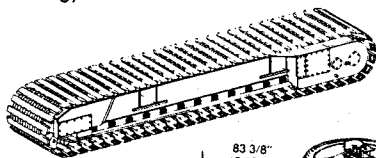
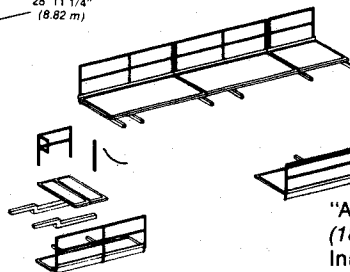
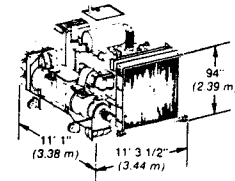
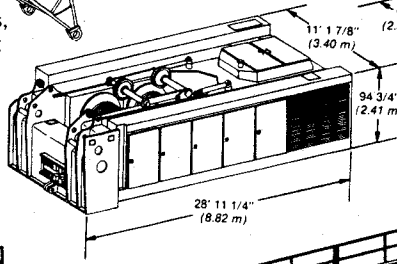
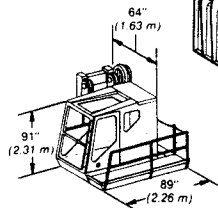
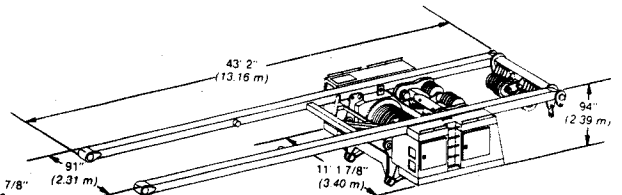
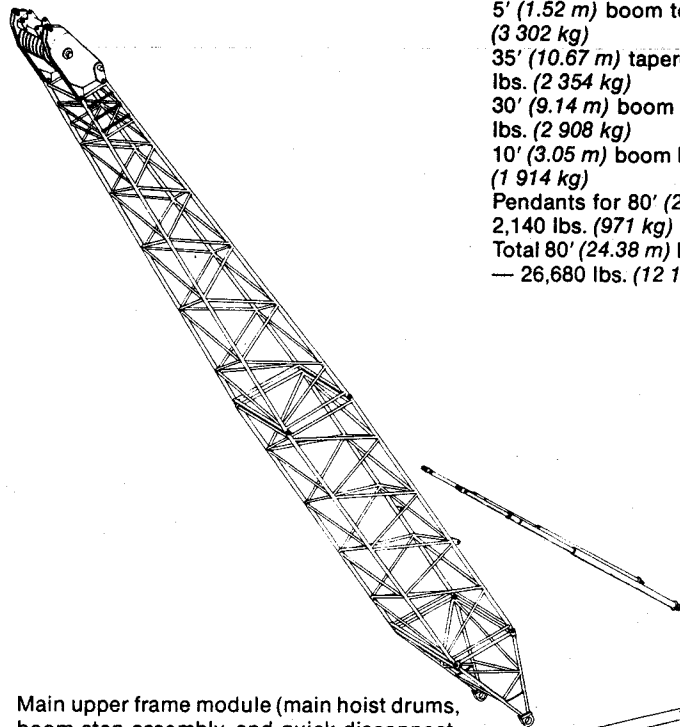
Counterweight base — 23,700 lbs. (10 750 kg)

Wing counterweights (each) — 19,600 lbs. (8 890 kg)

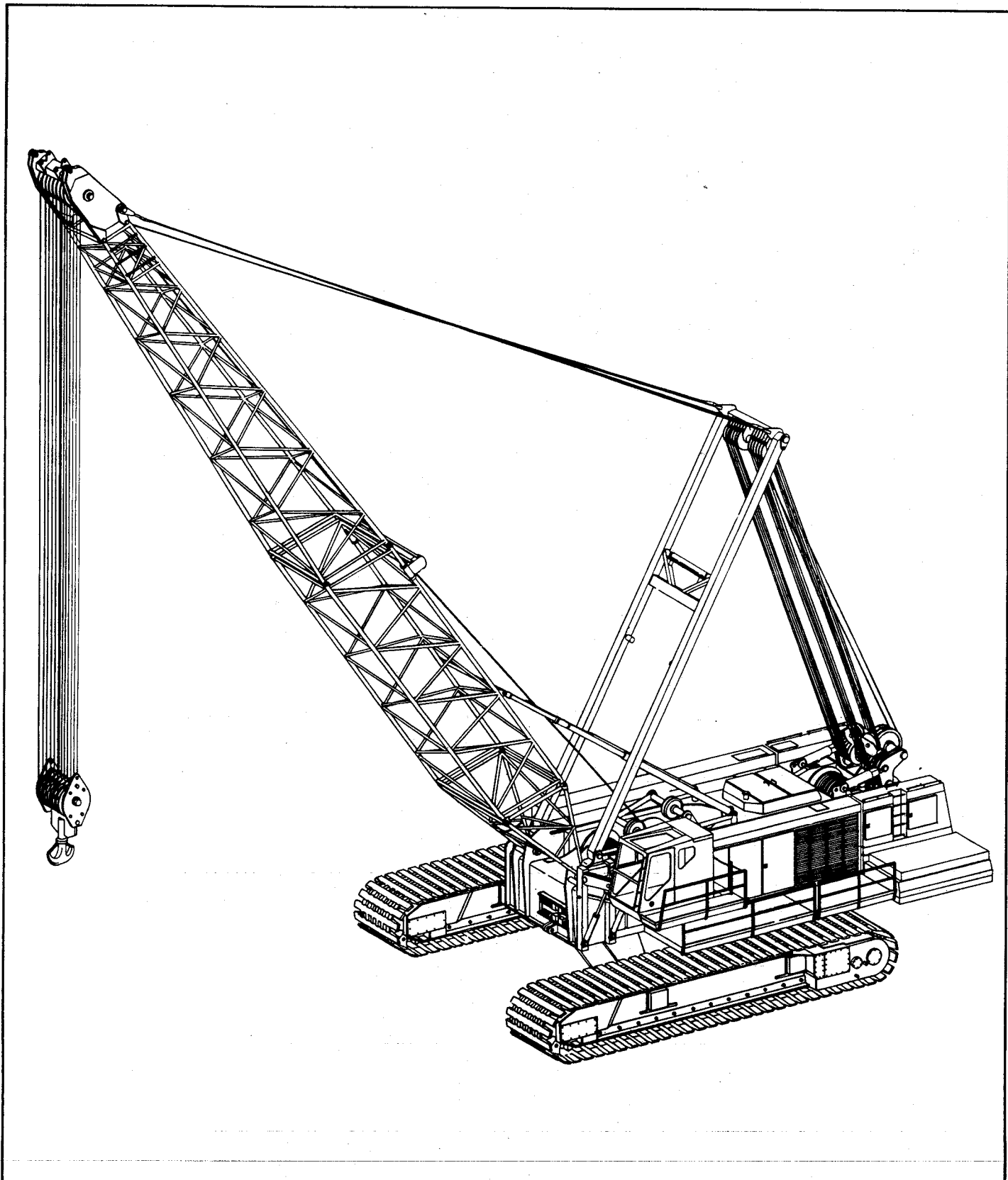
"C" or auxiliary wing counterweights (each) — 10,000 lbs. (4 536 kg)

Linkage and pins — 1,350 lbs. (612 kg)

Total counterweight and linkage — 160,000 lbs. (72 576 kg)



Machine working weight — approximate



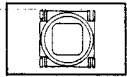
Basic machine including all standard equipment with 80' (24.38 m) basic boom, 160,000 lb. (72 576 kg) counterweight, optional third drum mechanism, and optional two-speed planetary drive unit on one main operating drum.

Pounds	kilograms
629,560	285 586

General Specifications

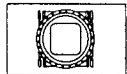
GENERAL INFORMATION ONLY

Mounting — crawler



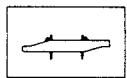
Carbody

All welded and precision machined. Machined surface for turntable bearing; machined lugs for cross axle pin connections.



Turntable bearing

Outer race with integral swing gear bolts to machined surface on lower frame. Quick disconnect capability for dismounting revolving upperstructure from crawler mounting.



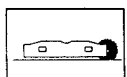
Cross axles

All welded and precision machined. Machined lugs for carbody and heavy lift attachment connections.



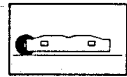
Crawler side frames

All welded, stress relieved, precision machined. Removable; positioned on cross axles by dowel and key arrangement and held in place with two patented, adjustable wedge packs per side frame. Quick disconnect fittings on the travel motor hydraulic lines facilitate removal of side frames.



Track drive sprockets

Cast steel, heat treated; one per side frame. Track drive sprocket involute splined to planetary cage, which is mounted on anti-friction bearings. Each track drive sprocket is powered by a hydraulic motor through a spur gear reduction and into a planetary gear reduction.



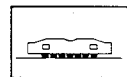
Track idler wheels

Cast steel, heat treated; mounted on two sealed anti-friction bearings.



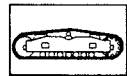
Track carrier slide rails

Tracks slide on single rail on top of each side frame.



Track rollers

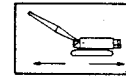
Fourteen double flange, heat treated rollers per side frame; each mounted on two sealed bronze bushings.



Tracks

Heat treated, self-cleaning, multiple hinged track shoes; two full floating pins per track shoe. Shoes 60" (1.52 m) wide; 66 shoes per side frame.

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



Independent hydraulic travel/steer

Provided by two engine-driven, variable displacement piston-type hydraulic pumps, each powering a two-speed motor. Each travel motor connected to a combination spur gear/planetary reduction arrangement powering a track drive sprocket. Travel motors can be powered simultaneously or individually for straight line travel (forward or reverse), pivot or differential turns, or track can be counter-rotated for spin turns.

Travel motors — Two bi-directional, two-speed, high torque radial piston-type motors.

Travel speed — Low, 0.25 m.p.h. (0.40 km/hr); high, 0.50 m.p.h. (0.80 km/hr).

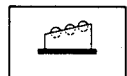
Parking brakes — Fully automatic, spring applied and hydraulically released; brakes set by returning travel levers to neutral position. External contracting band type; brake drum involute splined to travel motor output shaft. Brake band 20" (0.51 m) diameter x 3 1/4" (83 mm) wide; brake lining area 153 square inches (987 cm²) per drum.

Gradeability — 30% permissible.

Basic machine including all standard equipment with 80' (24.38 m) basic boom, 160,000 lb. (72 576 kg) counterweight, optional third drum mechanism, and optional two-speed planetary drive unit on one main operating drum.

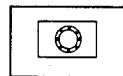
Shoes	Ground contact area		Ground bearing pressure	
	Square inches	m ²	P.s.i.	kPa
60" (1.52 m)	45,615	29.41	13.80	95.15

Revolving upperstructure



Frame

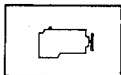
All welded, stress relieved, precision machined. Modular design frame consists of three pin connected units: main upper frame, engine package frame, and rear frame. Pinned connections provide for fast removal or installation of rear frame unit.



Turntable bearing

Quick disconnect bearing consisting of three components: (1) bearing unit, with integral external swing gear, which bolts to lower frame carbody; (2) Retainer which bolts to machined surface on underside of upper frame; (3) Retainer ring which hydraulically extends or

retracts on retainer to accomplish the connection or disconnection of the bearing and retainer. Retainer ring mechanically locked in position. *Optional:* bolt-on bearing, inner race of bearing bolts to machined surface on underside of upper frame.



Engine

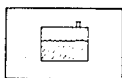
Full pressure lubrication, oil filter, oil cooler, air cleaner, fuel filter, hour meter, hand throttle and foot throttle.

Radiator, oil cooler, and fan — Remote mounted on left side of machine. Fan driven by a hydraulic motor.

Engine master clutch — Twin Disc model SP314 friction clutch disconnect. Applied and released by a double-acting hydraulic cylinder; cylinder activated by operator controlled solenoid valve.

Engine gear box — All welded, stress relieved, precision machined. Mounts to engine flywheel housing; gears and bearings totally enclosed and running in oil. Transmits power from engine to load hoist converter and hydraulic pump drive gear box.

Load hoist torque converter — Twin Disc Type 4 with modulating clutch. Provides independent control of power delivered to load hoist/lowering gear train.

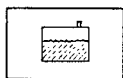


Torque converter reservoir

60 gallon (227 L) capacity; for load hoist torque converter.

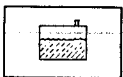
Pump drive gear box — Twin Disc pump drive gear box mounts on engine gear box; five machined mounting pads for hydraulic pumps.

Hydraulic pumps — Three variable volume piston-type pumps, one variable torque piston-type pump (swing), and one gear-type pump. One piston-type pump provided for each of the following functions: boomhoist, swing, and right track travel. Third drum motor and left track travel motor share a piston-type pump. One gear-type pump is provided for secondary functions such as counter-weight raising/lowering and turntable quick disconnect.



Hydraulic oil reservoir

All welded, 146 gallon (553 L) capacity; supplies oil for hydraulic operated functions.

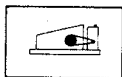


Fuel tank

310 gallon (1 173 L) capacity; equipped with fuel sight level gauge, flame arrester, and filler pipe cap with locking eye for padlock.

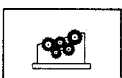
Engine specifications	Cummins KTA-1150-C600
Number of cylinders	6
Bore and stroke — inches — mm	6¼ x 6¼ (159 x 159)
Piston displacement — cubic inches — cm ³	1,150 (18 849)
Engine r.p.m. @ full load speed	2100
Engine horsepower @ full load speed	600 (447 kw)
Peak torque — ft. lbs. — (J)	1,650 2 237
Peak torque — r.p.m.	1,600
Electrical system	24-volt
Batteries	4 12-volt
Load hoist transmission — Number chain wheel teeth Number engine pinion teeth	96 24

Power train



Load hoist transmission

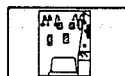
FMC 5-strand roller chain enclosed in a chain case and running in oil.



Machinery gear train

"Full Function" design, two directional power available to all operating shafts; shafts mounted on anti-friction bearings in precision bored machinery side housings. All load hoist, boomhoist, and swing functions are independent of one another. Boomhoist, third drum, and swing hydraulically powered. Components such as gears, pinions, chain wheel, brake drums, clutch spiders, and planetary cages (boomhoist, third drum, swing) involute splined to shafts. Drum gear/clutch drum assemblies bolted together and mounted on shafts on anti-friction bearings. Machine cut teeth on drum gears, pinions, spur gears, planetary gears, and chain wheel.

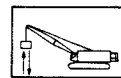
Principal operating functions



Control system

Speed-o-Matic® power hydraulic control system; a variable pressure system requiring no bleeding. Operating pressure is transmitted through oil to 2-shoe clutch cylinders, and other

hydraulic cylinders as required. System includes a constant displacement, engine driven, gear-type hydraulic pump to provide constant flow of oil, an accumulator to maintain system operating pressure, unloader valve to control pressure in accumulator, relief valve to control excessive pressure build-up in system, full-flow filter with 40-micron disposable filter element, and variable pressure control valves which control load hoist clutches and other principal operating functions.

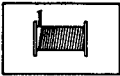


Load hoisting and lowering

Front and rear main operating drums — Independent load hoisting and lowering is powered from the load hoist converter. Initially, actuating the front and/or rear drum control lever engages the 2-shoe power hydraulic clutch. Further movement of control lever engages torque converter modulating clutch. Degree of movement of control lever determines the degree of modulating clutch engagement. The load may be held stationary, or hoisted/lowered at variable speeds by varying the engagement of the modulating clutch.

Third drum - Optional: Power for hoisting and lowering is provided by power from an engine driven variable displacement pump. The hydraulic pump drives the bi-directional, 2-speed hydraulic motor. From the hydraulic motor, power goes through a planetary reduction to the drum shaft/drum assembly.

GENERAL INFORMATION ONLY



Load hoist drums

Front and rear main operating drums — One-piece 25½" (0.65 m) root diameter smooth lagging; lagging bolted to brake drums. Left flange of each drum has integral drum locking pawl teeth.

Third drum - Optional: mounts forward of boomhoist drum and behind rear main operating drum. One-piece 17" (0.43 m) root diameter grooved lagging; lagging bolts to dual brake drums. Left flange has integral drum locking pawl teeth. **Note:** third drum mechanism required on machine intended to be equipped with tower or heavy lift attachment in the future.



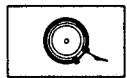
Drum clutches

Front and rear main operating drums only. Speed-0-matic® power hydraulic 2-shoe clutches; internal expanding, lined shoes. Clutch spiders splined to shafts; clutch drums bolted to drum spur gears and mounted on shafts on anti-friction bearings.

Load hoist clutches — Clutches 50" (1.27 m) diameter, 8" (0.20 m) wide; effective lining area 838 square inches (5 408 cm²).

Load lowering clutches — Clutches 50" (1.27 m) diameter, 8" (0.20 m) wide; effective lining area 838 square inches (5 408 cm²).

Drum planetary drive units - Optional: Available on front and/or rear main operating drums. Planetary units allow 66% increase of standard load hoist speed or 40% reduction of standard load lowering speed. Planetary unit mounts between special drum spur gear and special 2-shoe clutch drum. Two-shoe clutches control standard line speeds. Planetary drive unit controlled by external contracting band brake through push button located on clutch control lever.

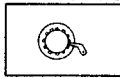


Drum brakes

Dual external contracting band brakes bolt to rope drums.

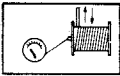
Front and rear main operating drums — Brakes 52½" (1.33 m) diameter, 5½" (0.14 m) wide; effective lining area 771 square inches (4 975 cm²) per brake drum. Brakes hydraulically applied, spring released; brakes spring applied in case of hydraulic system failure.

Optional third drum — Brakes 34" (0.86 m) diameter, 6" (0.15 m) wide; effective lining area 539 square inches (3 478 cm²) per brake drum. Brakes spring applied, hydraulically released.



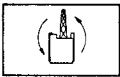
Drum locking pawls

Standard on front and rear main, and optional third drums; spring applied, hydraulically released. Pawl engages ratchet teeth integral with left flange of rope drum.



Drum rotation indicators

Standard for front and rear load hoist drums, boomhoist, and optional third drum. Pulsating buttons, recessed in the drum clutch control lever handles, indicate to operator when rope drums are rotating in either direction.



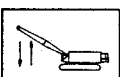
Swing system

Swing independent of all other operating functions. System consists of an engine-driven, variable torque, piston-type hydraulic pump powering a fixed displacement, bi-directional, radial piston hydraulic motor. From the motor, power goes through a planetary gear reduction unit, to a swing shaft system, and finally to the swing pinion and idler.

Swing brake — Disc-type; spring applied, hydraulically released. Brake assembly mounted between swing motor and planetary reduction unit. Dual calipers on brake disc, which bolts to planetary sun gear/swing motor adaptor.

Swing lock — Double tooth pawl meshes with swing gear teeth; hydraulically engaged/disengaged. Swing mechanism equipped with sensing device and hydraulic lock-out to prevent engagement of swing lock during swing cycle.

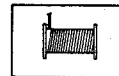
Maximum swing speed — 1.1 r.p.m.



Independent hydraulic boom hoist/lowering system

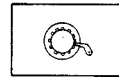
Hydraulic boomhoist system allows for precision boom hoisting/lowering. System consists of an engine-driven, variable displacement, piston-type hydraulic pump powering a fixed displacement, bi-directional radial piston hydraulic motor. Power from the

hydraulic motor goes through a planetary reduction to the drum shaft/drum assembly.



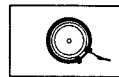
Boomhoist drum

Dual grooved lagging, bolted to brake drums; 17" (0.43 m) root diameter.



Boomhoist drum locking pawl

Operator controlled; spring applied, hydraulically released.



Boom hoist/lowering brakes

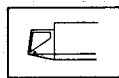
Dual external contracting band brakes bolt to rope drum. Brakes spring applied, hydraulically released. Brakes 34" (0.86 m) diameter, 6" (0.15 m) wide; effective lining area 539 square inches (3 478 cm²) per brake drum.

Boomhoist limiting device — Provided to restrict hoisting boom beyond recommended minimum radius; located on left side of boom live mast foot lug of upper frame. Electrical switch, contacts the boom when boom approaches minimum radius, actuating a hydraulic solenoid valve which shuts off hydraulic control pressure to boom hoist pump. As hydraulic control line pressure is shut off, boom hoist brake is spring applied.



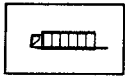
Electrical system

24-volt negative ground system; includes 4 maintenance-free 12-volt batteries.



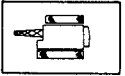
Operator's cab

Full vision, modular type cab may be hydraulically elevated and tilted back 10° for improved operator view of boom point. Operator eye level approximately 10' 6" (3.21 m) above ground level in lowered position; approximately 18' 9" (5.70 m) above ground level in elevated position. Cab has sliding side door and hinged rear door. All glass is tinted safety glass. Standard equipment includes hot water cab heater, defroster, windshield wiper, sound reduction material, electric horn warning device, and dry chemical fire extinguisher. **Optional:** non-elevating operator's cab. **Note:** elevated operator's cab required on machine intended to be equipped with heavy lift attachment in the future.



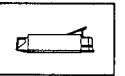
Machinery cab

Equipped with hinged doors on both sides of main frame cab and rear frame cab. Main frame cab has removable roof panels for access to the top of the fuel tank, radiator, sump tank, and engine. Engine door is vented. Rear frame cab has access panel on right side roof for access to rear frame quick disconnect hydraulic couplings. Roof-top access ladder located on operator's side of rear frame cab. Skid resistant finish on roof.



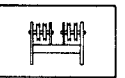
Catwalks

Catwalks run length of main upper frame machinery cab and operator's cab. Fabricated from serrated steel grating, bolted in place. Catwalks complete with hand rails and safety chains between hand rails and machinery cab at ends of catwalks.



Gantry

Gantry frame pin-connected to rear upper frame. Two spring loaded struts position the bail frame vertically or allow rearward rotation at extreme live mast or boom angles.



Gantry bail

Contains twelve 22" (0.56 m) root diameter sheaves to accommodate standard 24-part boomhoist reeving. Sheaves heat treated and mounted on anti-friction bearings. Two fleeter sheaves 22" (0.56 m) root diameter; heat treated and mounted on anti-friction bearings.



Counterweight

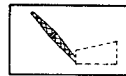
Basic machine counterweight is a 7-piece assembly with a total weight of 160,000 lbs. (72 576 kg). Counterweight pins to rear upper frame. All counterweight sections are fabricated steel plate except "A" or "shell" which is cast iron.

- "A" counterweight or shell — 40,000 lbs. (18 144 kg).
- Inner counterweight — 35,750 lbs. (16 216 kg).
- Counterweight base — 23,700 lbs. (10 750 kg).
- Wing counterweights (2 required) — 19,600 lbs. (8 890 kg) each.

- "C" or auxiliary wing counterweights (2 required) — 10,000 lbs. (4 536 kg) each.
- Linkage and pins — 1,350 lbs. (612 kg).

Counterweight removal — Standard: Power hydraulic counterweight lowering/raising. Lowering/raising of counterweight by 2 double acting hydraulic cylinders pinned to rear upper frame; cylinders also pin to counterweight. Individual cylinder control valves located at right rear of main upper frame machinery cab.

Boom and jib



Heavy duty boom

Four-piece, 80' (24.38 m) basic length; 110" (2.79 m) wide, 89" (2.26 m) deep at centerline of connections. Boom top section and top end of tapered extension are 60" (1.52 m) wide, 32" (0.81 m) deep at centerline of connections. Alloy steel round tubular main chords 6" (0.15 m) outside diameter. Maximum boom length 340' (103.63 m).

Boom base section — 10' (3.05 m) long, boom feet 7" (0.18 m) wide on 110" (2.79 m) centers.

Boom base extension — 30' (9.14 m) long, one required.

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 with appropriate length dual pendants.

Boom connections — In-line pin connected.

Tapered extension — 35' (10.67 m) long, open throat.

Boom top section — 5' (1.52 m) long, welded plate construction; pins to tapered extension.

Boompint machinery — Nine 30½" (0.77 m) root diameter sheaves for standard 18-parts hoist line reeving. Sheaves heat treated and mounted on anti-friction bearings.

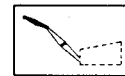
Boompint sheave guards — Upper sheave guard — single tubular guard. Lower sheave guards — round steel rods between each sheave, bolted to under side of boom top section.

Deflector rollers — Deflect load hoist wire rope off boom to avoid chafing; rollers mounted on anti-friction pillow blocks. One roller required for each 10' (3.05 m), 20' (6.10 m), and 30' (9.14 m) boom extension; 2 rollers required on each 40' (12.19 m) and 50' (15.24 m) boom extension and the 35' (10.67 m) tapered extension.

Deflector sheave assembly — Used in conjunction with deflector rollers; mounts to top boom chords behind pin connection of a straight boom extension and 35' (10.67 m) tapered extension. Sheave assembly uses 4 sheaves; 2 on upper shaft, 2 on lower shaft. Sheaves 10" (0.25 m) root diameter, heat treated and mounted on anti-friction bearings.

Boom midpoint suspension pendants — Required for all boom lengths 310' (94.49 m) and longer.

Boom tip extension — Pins to heavy duty boom top section. Fabricated from steel plate and rectangular tubing. Equipped with two 30½" (0.77 m) root diameter sheaves, sheaves heat treated and mounted on anti-friction bearings. Intended for use with single part line only. 35,000 lbs. (15 876 kg) maximum capacity.



Jib

Two-piece, 40' (12.19 m) basic length for heavy duty boom; 49" (1.22 m) wide, 39" (0.99 m) deep at connections. Main tubular chords alloy steel, 3" (76 mm) outside diameter. Maximum boom/jib combination 300' (91.44 m) boom, 100' (30.48 m) jib. Minimum boom length for mounting jib 130' (39.62 m).

Jib base section — 20' (6.10 m) long; mounts on lugs on boom top section.

Jib extensions — Available in 20' (6.10 m) length only.

Jib connections — In-line pin connected.

Jib tip section — 20' (6.10 m) long; equipped with two 28¾" (0.72 m) root diameter sheaves. Sheaves heat treated and mounted on anti-friction bearings.

Sheave guards — Upper sheave guard is of tubular steel construction; lower sheave guard is of steel rod construction.

GENERAL INFORMATION ONLY

Deflector rollers — Deflect jib load hoist line off jib to avoid chafing; rollers mounted on anti-friction pillow blocks. One roller required on 40'-80' (12.19-24.38 m) jib, 2 rollers required on 100' (30.48 m) jib.

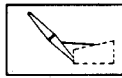


Jib mast

Tubular chord sections; 20' (6.10 m) long. One hoist line deflector sheave mounted in lower section of jib mast. Sheave 28 $\frac{3}{4}$ " (0.73 m) root diameter, mounted on anti-friction bearings.

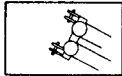
Jib staylines — Front staylines attach to jib peak shaft and jib mast peak. Pendant ropes are added to front staylines as jib length increases. Rear staylines attach at jib mast peak and at lower end of 50' (15.24 m) boom extension which must precede the 35' (10.67 m) tapered extension. One pair of pendants added to offset jib 15°, 2 pairs added to offset jib 25°.

Jib mast stops — Telescoping type; one pair to boom top section and jib mast, another pair pinned to jib base section and jib mast.



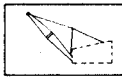
Boom stops

Dual telescoping, spring loaded type with rotating lever arm assembly. Tube assemblies pin connected to the boom and lever arm assembly; lever arm assembly pin connected to upper frame. Required for all boom lengths.



Boomhoist bridle

Serves as connection for boom pendants and boomhoist wire rope reeving. Bridle contains 12 sheaves for 24-part boomhoist reeving. Sheaves 22" (0.56 m) root diameter, heat treated, and mounted on anti-friction bearings. Bridle pivots on boom live mast head shaft.



Boom live mast

40' (12.19 m) long from center of head shaft to mounting pin; mounts on front of upper frame near boom feet. Supports boomhoist bridle, boom pendants, and boom midpoint suspension pendants.

Hydraulic boomfoot pin removal — Standard; Speed-o-Matic® controlled cylinders located between boomfoot lugs. Hydraulically inserts or retracts boomfoot pins.

Fleeter sheave assembly — Two 28 $\frac{3}{8}$ " (0.72 m) root diameter sheaves, one for front main operating drum and one for rear main operating drum. Each sheave rides on a separate shaft. Sheaves heat treated and mounted on bronze bushings.



Boom angle indicator

Standard: Pendulum type, mounted on left side lower chord of boom base extension.

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Link-Belt® LS-918 Performance Specifications

GENERAL INFORMATION ONLY

Wire rope and rope drum data

Main load hoist wire rope length — for heavy duty boom using 1¼" (32 mm) wire rope

Parts of line	Boom length													
	80' (24.38 m)		90' (27.43 m)		100' (30.48 m)		110' (33.52 m)		120' (36.57 m)		130' (39.62 m)		140' (42.67 m)	
	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	190	57.91	210	64.00	230	70.10	250	76.20	270	82.30	290	88.39	310	94.49
2	290	88.39	320	97.54	350	106.68	380	115.82	410	124.97	440	134.11	470	143.26
3	380	115.82	420	128.02	460	140.21	500	152.40	540	164.59	580	176.78	620	188.98
4	480	146.30	530	161.54	580	176.78	630	192.02	680	207.26	730	222.50	780	237.74
5	570	173.74	630	192.02	690	210.31	750	228.60	810	246.89	870	265.18	930	283.46
6	670	204.21	740	225.55	810	246.89	880	268.22	950	289.56	1,020	310.90	1,090	332.23
7	760	231.65	840	256.03	920	280.42	1,000	304.80	1,080	329.18	1,160	353.57	1,240	377.95
8	850	259.08	940	286.51	1,030	313.94	1,120	341.38	1,210	368.81	1,300	396.24	1,390	423.67
9	950	289.56	1,050	320.04	1,150	350.52	1,250	381.00	1,350	411.48	1,450	441.96	1,550	472.44
10	1,040	316.99	1,150	350.52	1,260	384.05	1,370	417.58	1,480	451.10	1,590	484.63	1,700	518.16
11	1,140	347.47	1,260	384.05	1,380	420.62	1,500	457.20	1,620	493.78	1,740	530.35	1,860	566.93
12	1,230	374.90	1,360	414.53	1,490	454.15	1,620	493.77	1,750	533.40	1,880	573.02	2,010	612.65
13	1,330	405.38	1,470	448.06	1,610	490.73	1,750	533.40	1,890	576.07	2,030	618.74	2,170	661.42
14	1,420	432.82	1,570	478.54	1,720	524.26	1,870	569.98	2,020	615.70	2,170	661.42	2,320	707.14
15	1,510	460.25	1,670	509.02	1,830	557.78	1,990	606.55	2,150	655.32	2,310	704.09	2,470	752.86
16	1,610	490.73	1,780	542.54	1,950	594.36	2,120	646.18	2,290	697.99	2,460	749.81	2,630	801.62
17	1,700	518.16	1,880	573.02	2,060	627.89	2,240	682.75	2,420	737.62	2,600	792.48	2,780	847.34
18	1,800	548.64	1,990	606.55	2,180	664.46	2,370	722.38	2,560	780.29	2,750	838.20	2,940	896.11

Parts of line	Boom length													
	150' (45.72 m)		160' (48.77 m)		170' (51.82 m)		180' (54.86 m)		190' (57.91 m)		200' (60.96 m)		210' (64.01 m)	
	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	330	100.58	350	106.68	370	112.78	390	118.87	410	124.97	430	131.06	450	137.16
2	500	152.40	530	161.54	560	170.69	590	179.83	620	188.98	650	198.12	680	207.26
3	660	201.17	700	213.36	740	225.55	780	237.74	820	249.94	860	262.13	900	274.32
4	830	252.98	880	268.22	930	283.46	980	298.70	1,030	313.94	1,080	329.18	1,130	344.42
5	990	301.75	1,050	320.04	1,110	338.33	1,170	356.62	1,230	374.90	1,290	393.19	1,350	411.48
6	1,160	353.57	1,230	374.90	1,300	396.24	1,370	417.58	1,440	438.91	1,510	460.25	1,580	481.58
7	1,320	402.34	1,400	426.72	1,480	451.10	1,560	475.49	1,640	499.87	1,720	524.26	1,800	548.64
8	1,480	451.10	1,570	478.54	1,660	505.97	1,750	533.40	1,840	560.83	1,930	588.26	2,020	615.70
9	1,650	502.92	1,750	533.40	1,850	563.88	1,950	594.36	2,050	624.84	2,150	655.32	2,250	685.80
10	1,810	551.69	1,920	585.22	2,030	618.74	2,140	652.27	2,250	685.80	2,360	719.33	2,470	752.86
11	1,980	603.50	2,100	640.08	2,220	676.66	2,340	713.23	2,460	749.81	2,580	786.38	2,700	822.96
12	2,140	652.27	2,270	691.90	2,400	731.52	2,530	771.14	2,660	810.77	2,790	850.39	2,920	890.02
13	2,310	704.09	2,450	746.76	2,590	789.43	2,730	832.10	2,870	874.78	3,010	917.45	3,150	960.12
14	2,470	752.86	2,620	798.58	2,770	844.29	2,920	890.02	3,070	935.74	3,220	981.46	3,370	1 027.18
15	2,630	801.62	2,790	850.39	2,950	899.16	3,110	947.93	3,270	996.70	3,430	1 045.47		
16	2,800	853.44	2,970	905.26	3,140	957.07	3,310	1 008.89	3,480	1 060.70				
17	2,960	902.21	3,140	957.07	3,320	1 011.94	3,500	1 066.80						
18	3,130	954.02	3,320	1 011.94										

Parts of line	Boom length													
	220' (67.05 m)		230' (70.10 m)		240' (73.15 m)		250' (76.20 m)		260' (79.25 m)		270' (82.30 m)		280' (85.34 m)	
	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	470	143.26	490	149.35	510	155.45	530	161.54	550	167.64	570	173.74	590	179.83
2	710	216.41	740	225.55	770	234.70	800	243.84	830	252.98	860	262.13	890	271.27
3	940	286.51	980	298.70	1,020	310.90	1,060	323.09	1,100	335.28	1,140	347.47	1,180	359.66
4	1,180	359.66	1,230	374.90	1,280	390.14	1,330	405.38	1,380	420.62	1,430	435.86	1,480	451.10
5	1,410	429.77	1,470	448.06	1,530	466.34	1,590	484.63	1,650	502.92	1,710	521.21	1,770	539.50
6	1,650	502.92	1,720	524.26	1,790	545.59	1,860	566.93	1,930	588.26	2,000	609.60	2,070	630.94
7	1,880	573.02	1,960	597.41	2,040	621.79	2,120	646.18	2,200	670.56	2,280	694.94	2,360	719.33
8	2,110	643.13	2,200	670.56	2,290	697.99	2,380	725.42	2,470	752.86	2,560	780.29	2,650	807.72
9	2,350	716.28	2,450	746.76	2,550	777.24	2,650	807.72	2,750	838.20	2,850	868.68	2,950	899.16
10	2,580	786.38	2,690	819.91	2,800	853.44	2,910	886.97	3,020	920.50	3,130	954.02	3,240	987.56
11	2,820	859.54	2,940	896.11	3,060	932.69	3,180	969.26	3,300	1 005.84	3,420	1 042.42		
12	3,050	929.64	3,180	969.26	3,310	1 008.89	3,440	1 048.51						
13	3,290	1 002.79	3,430	1 045.46										

LS-918 performance specifications

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Wire rope and rope drum data — (continued)

Main load hoist wire rope length — (continued)

Parts of line	Boom length											
	290' (88.39 m)		300' (91.44 m)		310' (94.49 m)		320' (97.54 m)		330' (100.58 m)		340' (103.63 m)	
	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	610	185.92	630	192.02	650	198.12	670	204.22	690	210.31	710	216.41
2	920	280.42	950	289.56	980	298.70	1,010	307.85	1,040	316.99	1,070	326.13
3	1,220	371.86	1,260	384.05	1,300	396.24	1,340	408.43	1,380	420.62	1,420	432.82
4	1,530	466.34	1,580	481.58	1,630	496.82	1,680	512.06	1,730	527.30	1,780	542.55
5	1,830	557.78	1,890	576.07	1,950	594.36	2,010	612.65	2,070	630.94	2,130	649.23
6	2,140	652.27	2,210	673.61	2,280	694.94	2,350	716.28	2,420	737.62	2,490	758.96
7	2,440	743.71	2,520	768.10	2,600	792.48	2,680	816.86	2,760	841.25	2,840	865.64
8	2,740	835.15	2,830	862.58	2,920	890.02	3,010	917.45	3,100	944.88	3,190	972.32
9	3,050	929.64	3,150	960.12	3,250	990.60	3,350	1 021.08	3,450	1 051.56		
10	3,350	1 021.08	3,460	1 054.61								

Jib load hoist wire rope lengths (whipline) — using 1¼" (32 mm) diameter wire rope

Jib length	Parts of line	Boom length [Ⓢ]											
		130' (39.62 m)		140' (42.67 m)		150' (45.72 m)		160' (48.77 m)		170' (51.82 m)		180' (54.86 m)	
		Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
40' (12.19 m)	1	380	115.82	400	121.92	420	128.02	440	134.11	460	140.21	480	146.30
	2	570	173.74	600	182.88	630	192.02	660	201.17	690	210.31	720	219.46
	3	760	231.65	800	243.84	840	256.03	880	268.22	920	280.42	960	292.61
	4	940	286.51	990	301.75	1,040	316.99	1,090	332.23	1,140	347.47	1,190	362.71
60' (18.29 m)	1	420	128.02	440	134.11	460	140.21	480	146.30	500	152.40	520	158.59
	2	630	192.02	660	201.17	690	210.31	720	219.46	750	228.60	780	237.74
	3	840	256.03	880	268.22	920	280.42	960	292.61	1,000	304.80	1,040	316.99
	4	1,040	316.99	1,090	332.23	1,140	347.47	1,190	362.71	1,240	377.95	1,290	393.19
80' (24.38 m)	1	460	140.21	480	146.30	500	152.40	520	158.59	540	164.78	560	170.97
	2	690	210.31	720	219.46	750	228.60	780	237.74	810	246.89	840	255.03
	3	920	280.42	960	292.61	1,000	304.80	1,040	316.99	1,080	329.18	1,120	341.38
	4	1,140	347.47	1,190	362.71	1,240	377.95	1,290	393.19	1,340	408.43	1,390	423.67
100' (30.48 m)	1	500	152.40	520	158.59	540	164.78	560	170.97	580	177.16	600	183.35
	2	750	228.60	780	237.74	810	246.89	840	256.03	870	265.18	900	273.42
	3	1,000	304.80	1,040	316.99	1,080	329.18	1,120	341.38	1,160	353.57	1,200	365.76
	4	1,240	377.95	1,290	393.19	1,340	408.43	1,390	423.67	1,440	438.91	1,490	454.15

Jib length	Parts of line	Boom length [Ⓢ]											
		190' (57.91 m)		200' (60.96 m)		210' (64.01 m)		220' (67.05 m)		230' (70.10 m)		240' (73.15 m)	
		Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
40' (12.19 m)	1	500	152.40	520	158.59	540	164.78	560	170.97	580	177.16	600	183.35
	2	750	228.60	780	237.74	810	246.89	840	256.03	870	265.18	900	273.42
	3	1,000	304.80	1,040	316.99	1,080	329.18	1,120	341.38	1,160	353.57	1,200	365.76
	4	1,240	377.95	1,290	393.19	1,340	408.43	1,390	423.67	1,440	438.91	1,490	454.15
60' (18.29 m)	1	540	164.78	560	170.97	580	177.16	600	183.35	620	189.54	640	195.07
	2	810	246.89	840	256.03	870	265.18	900	273.42	930	283.46	960	292.61
	3	1,080	329.18	1,120	341.38	1,160	353.57	1,200	365.76	1,240	377.95	1,280	390.14
	4	1,340	408.43	1,390	423.67	1,440	438.91	1,490	454.15	1,540	469.39	1,590	484.63
80' (24.38 m)	1	580	177.16	600	183.35	620	189.54	640	195.07	660	201.17	680	207.26
	2	870	265.18	900	273.42	930	283.46	960	292.61	990	301.75	1,020	310.90
	3	1,160	353.57	1,200	365.76	1,240	377.95	1,280	390.14	1,320	402.34	1,360	414.53
	4	1,440	438.91	1,490	454.15	1,540	469.39	1,590	484.63	1,640	499.87	1,690	515.11
100' (30.48 m)	1	620	189.54	640	195.07	660	201.17	680	207.26	700	213.36	720	219.46
	2	930	283.46	960	292.61	990	301.75	1,020	310.90	1,050	320.04	1,080	329.18
	3	1,240	377.95	1,280	390.14	1,320	402.34	1,360	414.53	1,400	426.72	1,440	438.91
	4	1,540	469.39	1,590	484.63	1,640	499.87	1,690	515.11	1,740	530.35	1,790	545.59

Minimum boom length jib can be used with is 130' (39.62 m); maximum boom length jib can be used with is 300' (91.44 m).

LS-918 performance specifications

Wire rope and rope drum data — (continued)

GENERAL INFORMATION ONLY

Jib load hoist wire rope length (whipline) — (continued)

Jib length	Parts of line	Boom length [Ⓢ]											
		250' (76.20 m)		260' (79.25 m)		270' (82.30 m)		280' (85.34 m)		290' (88.39 m)		300' (91.44 m)	
		Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
40' (12.19 m)	1	620	188.98	640	195.07	660	201.17	680	207.26	700	213.36	720	219.46
	2	930	283.46	960	292.61	990	301.75	1,020	310.90	1,050	320.04	1,080	329.18
	3	1,240	377.95	1,280	390.14	1,320	402.34	1,360	414.53	1,400	426.72	1,440	438.91
	4	1,540	469.39	1,590	484.63	1,640	499.87	1,690	515.11	1,740	530.35	1,790	545.59
60' (18.29 m)	1	660	201.17	680	207.26	700	213.36	720	219.46	740	225.55	760	231.65
	2	990	301.75	1,020	310.90	1,050	320.04	1,080	329.18	1,110	338.33	1,140	347.47
	3	1,320	402.34	1,360	414.53	1,400	426.72	1,440	438.91	1,480	451.10	1,520	463.30
	4	1,640	499.87	1,690	515.11	1,740	530.35	1,790	545.59	1,840	560.83	1,890	576.07
80' (24.38 m)	1	700	213.36	720	219.46	740	225.55	760	231.65	780	237.74	800	243.84
	2	1,050	320.04	1,080	329.18	1,110	338.33	1,140	347.47	1,170	356.62	1,200	365.76
	3	1,400	426.72	1,440	438.91	1,480	451.10	1,520	463.30	1,560	475.49	1,600	487.68
	4	1,740	530.35	1,790	545.59	1,840	560.83	1,890	576.07	1,940	591.31	1,990	606.55
100' (30.48 m)	1	740	225.55	760	231.65	780	237.74	800	243.84	820	249.94	840	256.03
	2	1,110	338.33	1,140	347.47	1,170	356.62	1,200	365.76	1,230	374.90	1,260	384.05
	3	1,480	451.10	1,520	463.30	1,560	475.49	1,600	487.68	1,640	499.87	1,680	512.06
	4	1,840	560.83	1,890	576.07	1,940	591.31	1,990	606.55	2,040	621.79	2,090	637.03

[Ⓢ]Minimum boom length jib can be used with is 130' (39.62 m); maximum boom length jib can be used with is 300' (91.44 m).

Drum wire rope capacities

Wire rope layer	Front or rear drum — 25½" (0.65 m) root diameter smooth lagging				Third drum — 17" (0.43 m) root diameter grooved lagging				Dual boomhoist drum — 17" (0.43 m) root diameter grooved lagging			
	1½" (32 mm) wire rope								1" (25 mm) wire rope			
	Rope per layer		Total wire rope		Rope per layer		Total wire rope		Rope per layer [Ⓢ]		Total wire rope [Ⓢ]	
	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	217	66.14	217	66.14	174	53.04	174	53.04	170	51.82	170	51.82
2	238	72.54	455	138.69	186	56.69	360	109.73	176	53.64	346	105.46
3	258	78.64	713	217.33	207	63.09	567	172.82	202	61.57	548	167.03
4	278	84.74	991	302.06	218	66.45	785	239.27	206	62.79	754	229.82
5	298	90.83	1,289	392.89	240	73.15	1,025	312.42	234	71.32	988	301.14
6	319	97.23	1,608	490.12	250	76.20	1,275	388.62	236	71.93	1,224	373.07
7	339	103.33	1,947	593.45	273	83.21	1,548	471.84	266	81.08	1,490	454.15
8	359	109.42	2,306	702.88	282	85.95	1,830	557.79	266	81.08	1,756	535.23
9	379	115.52	2,685	818.40	306	93.27	2,136	651.06				
10	400	121.92	3,085	940.32	314	95.71	2,450	746.77				
11	420	128.02	3,505	1 068.34	339	103.33	2,789	850.10				
12					346	105.46	3,135	955.56				
13					372	113.39	3,507	1 068.95				
14					378	115.22	3,885	1 184.16				

[Ⓢ]Wire rope lengths shown are based on 24-part dual drum spooling capacities.

Rope size and type

Wire rope application	Size and type used
Boom hoist	1" (25 mm) diameter, Type "T"
Main load hoist	1½" (32 mm) diameter, Type "N"
Jib load hoist (1 part)	1½" (32 mm) diameter, Type "P"
Jib load hoist (2-4 part)	1½" (32 mm) diameter, Type "N"
Boom pendants	1½" (38 mm) diameter, Type "N"
Jib frontstay line	1½" (29 mm) diameter, Type "N"
Jib backstay line	1½" (29 mm) diameter, Type "N"
Boom midpoint pendants	1" (25 mm) diameter, Type "N"

Wire rope type
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 "P" — 19 x 7, non-rotating, extra improved plow steel, wire center core.
Type "T" — 6 x 30, flattened strand, extra improved plow steel, preformed, independent wire rope center, right lay, lang lay.

Permissible main hoist loads — based on 1½" (32 mm) diameter, Type "N" wire rope[Ⓢ]

Main load hoist drum only	Parts of line											
	1		2		3		4		5		6	
	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms
Maximum load	45,600	20 684	91,200	41 368	136,800	62 051	182,400	82 735	228,000	103 419	273,600	124 103

[Ⓢ]Based on wire rope strength only. Consult capacity chart for allowable loads.



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Wire rope and rope drum data — (continued)

Permissible main hoist loads — (continued)

Main load hoist drum only	Parts of line											
	7		8		9		10		11		12	
	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms
Maximum load	319,200	144 787	364,800	165 471	410,400	186 154	456,000	206 838	501,600	227 522	547,200	248 206

Main load hoist drum only	Parts of line											
	13		14		15		16		17		18	
	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms	Pounds	kilograms
Maximum load	592,800	268 890	638,400	289 573	684,000	310 257	729,600	330 941	775,200	351 625	820,800	372 309

①Based on wire rope strength only. Consult capacity chart for allowable loads.

Permissible line speed and line pull^① — based on wire rope strength^②, single part line

Attachment	Front or rear drum								Third drum							
	Root diameter	Wire rope diameter		Rope layer	Line speed		Line pull		Drum operating speed	Root diameter	Wire rope diameter		Line speed — first layer		Line pull — first layer	
		Inches	mm		F.p.m.	m/min	Pounds	kilograms			Inches	mm	F.p.m.	m/min	Pounds	kilograms
Crane — ③	2 1/2" (0.65 m)	1 1/4	32	1	239	72.85	45,600	20 684	Low	17" (0.43 m)	1	25	65	19.81	31,000	14 061
				4	231	70.41	45,600	20 684								
				7	227	69.19	45,600	20 684								

①For available line speeds and line pulls based on machinery, consult Sales Office.
 ②Maximum permissible load on single part of line: 31,000 lbs. (14 062 kg) for 1" (25 mm) Type "T" wire rope, 37,200 lbs. (16 874 kg) for 1 1/4" (32 mm) Type "P" wire rope, 45,600 lbs. (20 684 kg) for 1 1/4" (32 mm) Type "N" wire rope.
 ③For high speed and low speed planetaries, consult Sales Office.

Load hoisting performance — line speeds are maximum for full throttle operation (2,100 r.p.m. full load speed) with Cummins KTA-1150-600 diesel engine with Twin Disc Type 4 single stage torque converter and modulating clutch.

Front or rear drum — 2 1/2" (0.65 m) root diameter smooth lagging using 1 1/4" (32 mm) wire rope															
Line speed															
First layer rope				Sixth layer rope				Twelfth layer rope							
Standard		High speed ^②		Standard		High speed ^②		Standard		High speed ^②		Standard		High speed ^②	
Pounds	kilograms	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min
2,000	907	312	95.09	519	158.19	458	139.60	759	231.34	631	192.33	1,045	318.52		
5,000	2 268	310	94.49	514	156.67	454	138.38	749	228.30	625	190.50	1,026	312.72		
10,000	4 536	308	93.88	506	154.23	449	136.86	733	223.42	614	187.15	991	302.06		
15,000	6 804	305	92.96	498	151.79	443	135.02	677	206.35	604	184.10	682	207.87		
20,000	9 072	303	92.35	491	149.66	438	133.50	510	155.45	545	166.12	492	149.96		
25,000	11 340	300	91.44	413	125.88	423	128.93	398	121.31	437	133.20	389	118.57		
30,000	13 608	298	90.83	340	103.63	366	111.56	330	100.58	354	107.90	301	91.74		
35,000	15 876	294	89.61	285	86.87	311	94.79	276	84.12	299	91.14	222	67.67		
40,000	18 144	272	82.91	245	74.68	266	81.08	231	70.41	262	79.86	141	42.98		
45,600	20 684	239	72.85	215	65.53	229	69.80	181	55.17	223	67.97	42	12.80		

①Maximum permissible load on a single part of line: 37,200 lbs. (16 874 kg) for 1 1/4" (32 mm) Type "P" and 45,600 lbs. (20 684 kg) for 1 1/4" (32 mm) Type "N".
 ②Machine equipped with optional high speed planetary drive unit.

We are constantly improving our products and therefore reserve the right to change designs and specifications.

