

GENERAL INFORMATION ONLY

Weights for shipping — approximate

5' (1.52 m) boom top section — 10,280 lbs. (4 663 kg)
 35' (10.67 m) tapered extension — 7,370 lbs. (3 343 kg)
 30' (9.14 m) boom base section — 8,640 lbs. (3 919 kg)
 10' (3.05 m) boom base section — 4,900 lbs. (2 223 kg)
 Pendants for 80' (24.38 m) basic boom — 2,880 lbs. (1 306 kg)
 Total 80' (24.38 m) basic boom and pendants — 36,370 lbs. (16 497 kg)

Complete rear working frame module (3rd drum, boomhoist, boomhoist rope, and live mast) — 47,880 lbs. (21 718 kg)

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

Main upper frame module (hoist drums, backstop assembly, quick disconnect bearing retainer) — 98,361 lbs. (44 616 kg)

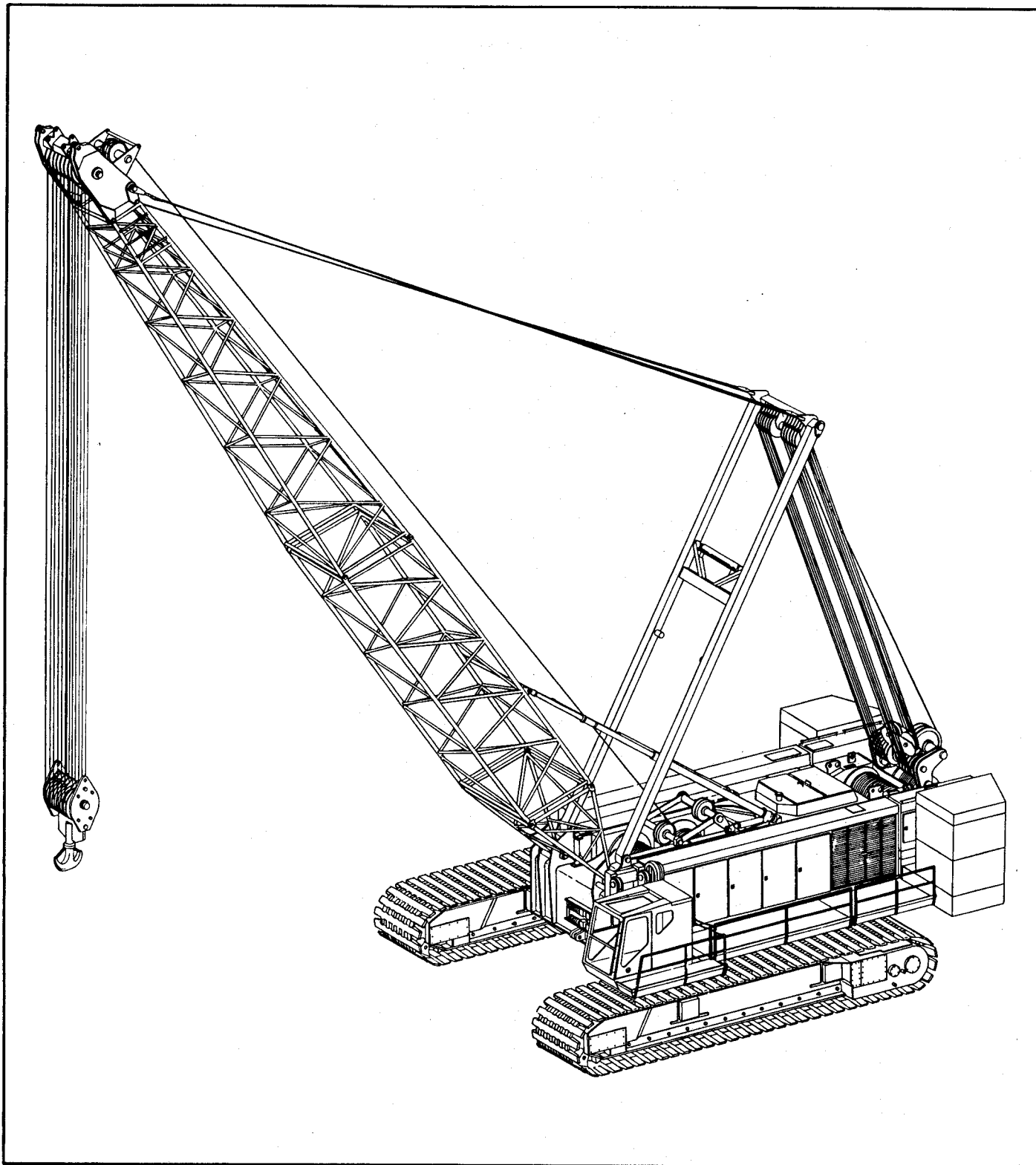
Fixed operator's module — 3,340 lbs. (1 515 kg)
 Movable operator's module — 5,160 lbs. (2 341 kg)

Catwalks — 2,500 lbs. (1 134 kg)

Carbody with quick disconnect turntable bearing — 40,700 lbs. (18 462 kg)
 Crawler side frames (each) — 90,850 lbs. (41 210 kg)
 Fixed cross axles (each) — 35,320 lbs. (16 021 kg)
 Struts (4 total) — 1,300 lbs. (590 kg)
 Total crawler lower — 294,340 lbs. (133 513 kg)

"A" counterweight — 56,400 lbs. (25 583 kg); consisting of 45,100 lb. (20 457 kg) counterweight base plus 11,300 lb. (5 126 kg) inner counterweight.
 "B", or wing, counterweights — two each lower and upper pieces.
 Lower (each) — 41,700 lbs. (18 915 kg)
 Upper (each) — 32,500 lbs. (14 742 kg)
 "C", or auxiliary wing, counterweights — two each at 10,000 lbs. (4 536 kg)
 Linkage and pins — 200 lbs. (91 kg)
 Total counterweight, linkage and pins — 225,000 lbs. (102 060 kg)

Machine working weight — approximate

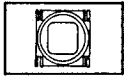


Basic machine including all standard equipment with 80' (24.38 m) basic boom, plus the following options: quick disconnect turntable bearing, movable operator's module, and 3rd drum package.

Pounds	kilograms
730,100	331 173

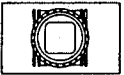
General Specifications

Mounting — crawler



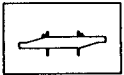
Carbody

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



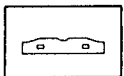
Turntable bearing

Outer race, with integral swing gear, bolted to lower frame. Optional: "Quick disconnect" capability for dismounting revolving-upperstructure.



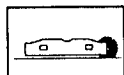
Cross axles

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



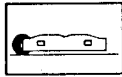
Crawler side frames

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.



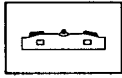
Track drive sprockets

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.



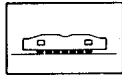
Track idler wheels

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



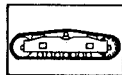
Track carrier slide rails

Tracks slide on two rails on top of each side frame.



Track rollers

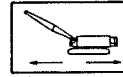
Sixteen double flange, heat treated rollers per side frame; each mounted on two sealed bronze bushings.



Tracks

Heat treated, self-cleaning, multiple hinged track shoes; two full floating pins per track shoe. Shoes 60" (1.52 m) wide; 73 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.

Ground contact area and ground bearing pressure — based on machine equipped with 80' (24.38 m) boom and 225,000 lbs. (102 060 kg) counterweight.

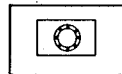
Shoes	Ground contact area		Ground bearing pressure	
	Square Inches	m ²	P.s.i.	kPa
60" (1.52 m)	50,955	32.87	14.3	98.60

Revolving upperstructure



Frame

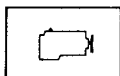
All welded, stress relieved, precision machined. Modular design frame consists of three pin connected units: main upper frame, engine package frame, and rear frame. Pinned connections provide for fast removal or installation of rear frame unit.



Turntable bearing

Standard: Quick disconnect bearing consisting of three components: (1) Bearing unit with integral external swing gear; (2) Retainer which bolts to upper frame; (3) Retainer ring which hydraulically extends or retracts on retainer to accomplish the connection

or disconnection of the bearing and its retainer. Retainer ring is locked in position mechanically. *Optional:* Inner race of bolt-on bearing bolted to machined surface on underside of upper frame.



Engine

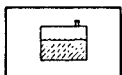
Full pressure lubrication, oil filter, oil cooler, air cleaner, fuel filter, hour meter, hand throttle and foot throttle.

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.

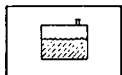


Torque converter reservoir

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.

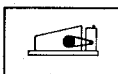


Fuel tank

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

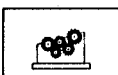
Engine specifications	Cummins KTA-1150-C600
Number of cylinders	6
Bore and stroke — inches — mm	6¼" x 6¼" (159 x 159)
Piston displacement — cubic inches — cm ³	1,150 (18 849)
Engine r.p.m. @ full load speed	2100
Engine horsepower @ full load speed	600 (447 kw)
Peak torque — ft. lbs. — (J)	1,650 2 237
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

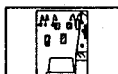
FMC 5-strand roller chain enclosed in a chain case and running in oil.



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, boom hoist, 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.

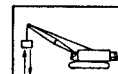
Principal operating functions



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.

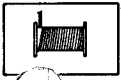


Load hoisting and lowering

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 bolted to dual brake drums. Left flange has integral drum locking pawl teeth.



Drum clutches

Front and rear main operating drums only. Speed-O-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).

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.



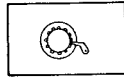
Drum brakes

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.

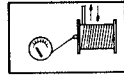
Optional third drum — Brakes 34" (0.86 m) diameter, 6" (0.15 m) wide;

effective lining area 539 square inches (3 478 cm²) per brake drum. Brakes spring applied, hydraulically released.



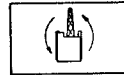
Drum locking pawls

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.



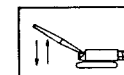
Swing system

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.

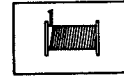
Maximum swing speed — 1.1 r.p.m.



Independent hydraulic boom hoist/lowering system

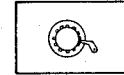
Hydraulic boom hoist system allows for precision boom hoisting/lowering. System consists of an engine-driven, variable displacement, piston-type hydraulic pump powering a fixed displacement, bi-directional radial piston hydraulic motor. Power from the

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



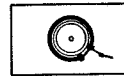
Boom hoist drum

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



Boom hoist drum locking pawl

Operator controlled; spring applied, hydraulically released.



Boom hoist/lowering brakes

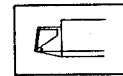
Dual external contracting band brakes bolt to rope drum. Brakes spring applied, hydraulically released. Brakes 34" (0.86 m) diameter, 6" (0.15 m) wide; effective lining area 539 square inches (3 478 cm²) per brake drum.

Boom hoist 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.



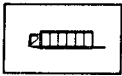
Electrical system

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



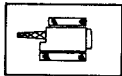
Operator's cab

Full vision, modular type cab has two doors, a sliding side door and a hinged rear door. All glass is tinted safety glass. Operator eye level approximately 10' 6¼" (3.21 m) above ground level. Standard equipment includes hot water cab heater, defroster, windshield wiper, sound reduction material, electric horn warning device, and dry chemical fire extinguisher. Hydraulically elevated cab. Cab can also be tilted back 10° for improved operator view of boom point. Operator's eye level approximately 10' 6¼" (3.21 m) above ground level in lowered position; approximately 18' 9/16" (5.70 m) above ground level in raised position. *Optional*: Hydraulic elevation can be omitted if not required.



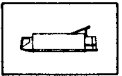
Machinery cab

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.



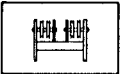
Catwalks

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.



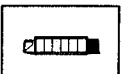
Gantry

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 ball

Contains fourteen 22" (0.56 m) root diameter sheaves to accommodate standard 28-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

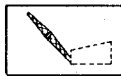
Basic machine counterweight is an 8-piece assembly — total weight 225,000 lbs. (102 060 kg). Counterweight pins to rear of upper frame. All counterweight sections are fabricated steel plate.

—"A" counterweight — 56,400 lbs. (25 583 kg); consisting of 45,100 lb. (20 457 kg) counterweight base plus 11,300 lb. (5 126 kg) inner counterweight.

- "B", or wing, counterweights — two each lower and upper pieces. Lower (each) — 41,700 lbs. (18 915 kg). Upper (each) — 32,500 lbs. (14 742 kg).
- "C", or auxiliary wing, counterweights — two each at 10,000 lbs. (4 536 kg).
- Linkage and pins — 200 lbs. (91 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 ft. (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.

Boompoint machinery — Eleven 30½" (0.77 m) root diameter sheaves; heat treated and mounted on anti-friction bearings.

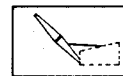
Boom tip extension — Optional. Fabricated of steel plate/rectangular tubing. Equipped with two 30½"

(0.77 m) root diameter sheaves; sheaves heat treated and mounted on anti-friction bearings. Extension intended for use with single part line only; maximum capacity is 35,000 lbs. (15 876 kg).

Boompoint 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.

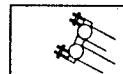
Deflector rollers — Deflect load hoist wire rope off boom to avoid chafing; rollers mounted on anti-friction pillow blocks. One roller required for each 10' (3.05 m) 20' (6.10 m), and 30' (9.14 m) boom extension; 2 rollers required on the 35' (10.67 m) tapered extension, and 40' (12.19 m) and 50' (15.24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

Deflector sheave assembly — Used in conjunction with deflector rollers; mounts to boom top section. Two sheaves, 24" (0.61 m) root diameter; heat treated and mounted on anti-friction bearings.



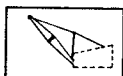
Boom stops

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.



Boom hoist bridle

Serves as connection for boom pendants and boom hoist wire rope reeving. Bridle contains 14 sheaves for 28-part boom hoist reeving. Sheaves 22" (0.56 m) root diameter, heat treated, and mounted on anti-friction bearings. Bridle pivots on boom live mast head shaft.

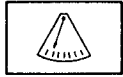


Boom live mast

40' (12.19 m) long from center of head shaft to mounting pin; mounts on front of upper frame near boom feet. Supports boom hoist bridle and boom 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 $\frac{3}{4}$ " (0.72 m) root diameter sheaves, one for front main operating drum and one for main operating drum. Each sheave runs 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.



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 ft. (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.

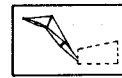
Jib extensions — Available in 20' (6.10 m) length only.

Jib connections — In-line pin connected.

Jib tip section — 20' (6.10 m) long; equipped with two 28 $\frac{3}{4}$ " (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.

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 20' (6.10 m) boom extension, 90' (27.38 m) from boom peak shaft. 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.

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



FMC Corporation Construction Equipment Group Cedar Rapids Iowa 52406

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