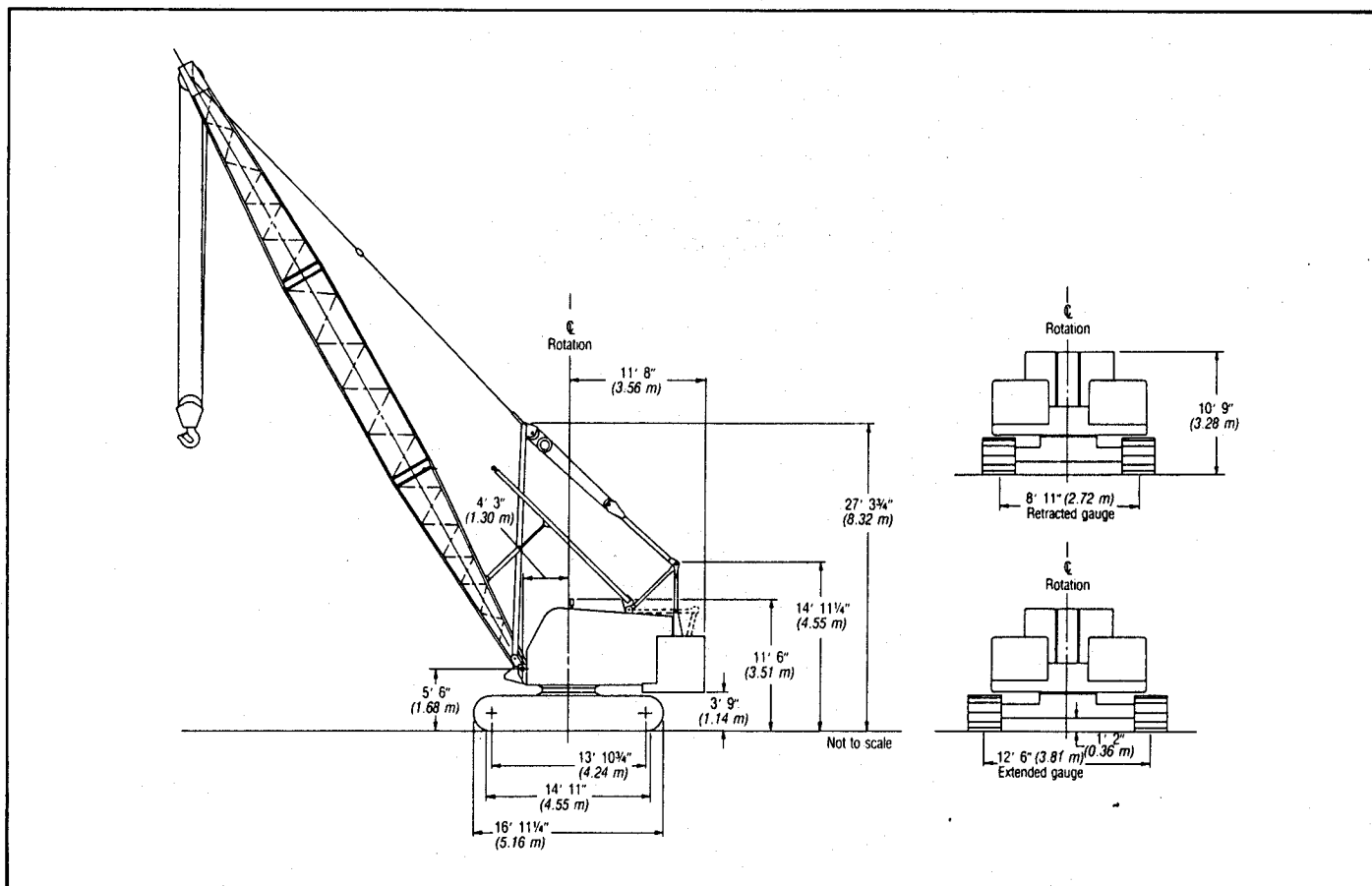


General Specifications

Link-Belt® 60-ton (54.42 metric ton)

Wire rope crawler crane

LS-118



| General dimensions | Feet | meters |
|---|---------|--------|
| Basic boom length | — | — |
| — angle and tubular booms | 40' 0" | 12.19 |
| Overall width with 30" (0.76 m) shoes | — | — |
| — side frames extended | 15' 0" | 4.57 |
| — side frames retracted | 11' 5" | 3.48 |
| Overall width with 36" (0.91 m) shoes | — | — |
| — side frames extended | 15' 6" | 4.72 |
| — side frames retracted | 11' 11" | 3.63 |
| Overall width less side frames, counterweight, and catwalk | — | — |
| | 11' 5" | 3.48 |
| Overall width for transport, less counterweight, less side frames and catwalks, axles in line with revolving upperstructure | — | — |
| | 9' 10" | 3.00 |

| General dimensions | Feet | meters |
|--|------------|--------|
| Minimum ground clearance | 1' 17/8" | 0.35 |
| Width of cab | — | — |
| — less catwalks | 8' 0" | 2.44 |
| — with catwalks | 13' 9 1/8" | 4.19 |
| Height, boom live mast for travel with basic 40' (12.19 m) boom horizontal | — | — |
| | 18' 0" | 5.49 |
| Overall height for transport | — | — |
| — basic machine less crawler side frames | 10' 4" | 3.15 |
| — basic revolving upperstructure only | 7' 4" | 2.24 |

Machine working weights — approximate

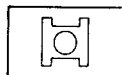
| Based on standard machine including GM6-71N diesel engine with Allison torque converter, 8 conical hook rollers, independent boomhoist with lowering clutch, power load lowering clutch on front and rear drum shafts, independent swing/travel, swing brake, respective counterweight with hydraulic removal device, folding catwalks along both sides, hydraulic retractable high gantry, necessary drum laggings, 30" (0.76 m) wide track shoes and the following: | Counterweight "A" | | Counterweight "AB" | |
|---|----------------------------|----------------------------|--|--------------------------------------|
| | Pounds | kilograms | Pounds | kilograms |
| Lifting Crane — includes five head sheaves, boom backstops, hoist line deflector roller, twelve-part boomhoist, pendants, 13¼" (0.34 m) front and rear smooth laggings, boom live mast, mid-point suspension pendants (as required), 680' (297.26 m) ¾" (19 mm) hoist line, but no hook block, and the following: — 40' (12.19 m) angle boom — 40' (12.19 m) tubular boom — 160' (48.77 m) angle boom — 160' (48.77 m) tubular boom | 86,655 86,845 — — | 39 307 39 393 — — | 120,455 120,645 128,115 126,345 | 54 638 54 725 58 113 57 310 |
| Dragline — includes dragline single head sheave, fairlead, necessary hoist and inhaul wire ropes, but no bucket, and the following: — 60' (18.29 m) angle boom — 60' (18.29 m) tubular boom | 87,945 87,770 | 39 892 39 812 | Not applicable | |
| Clamshell — Includes necessary holding (hoist) and closing wire ropes, but no bucket, and the following: — 60' (18.29 m) angle boom — 60' (18.29 m) tubular boom | 88,050 88,875 | 39 939 39 860 | | |

Weight deductions for transporting — approximate

| Deduct for removal of the following: | Pounds | kilograms |
|--|------------------|------------------|
| Crawler side frames — with 30" (0.76 m) shoes — with 36" (0.91 m) shoes | 25,450 26,800 | 11 544 12 156 |
| Counterweight — "A" — "AB" | 12,200 46,000 | 5 534 20 866 |
| Basic 40' (12.19 m) angle boom Basic 40' (12.19 m) tubular boom | 5,740 5,020 | 2 604 2 277 |
| Basic revolving upperstructure (less counterweight) Catwalks (folding) | 22,200 730 | 10 070 331 |
| Live mast with machinery | 1,850 | 839 |

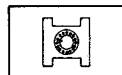
General specifications

Mounting — crawler



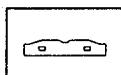
Lower frame

All-welded, stress relieved, precision machined; line bored for traction shaft.



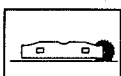
Hook roller path

Double-flanged, welded to lower frame; precision machined to accommodate hook roller mounting of revolving upperstructure on lower frame. Integral, internal swing (ring) gear with which swing pinion meshes.



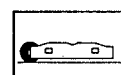
Crawler side frames

Removable and retractable, leaving drive chains connected. Hydraulic cylinders assist side frame extend/retract.



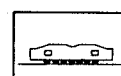
Track drive sprockets

Cast steel, heat treated; one per side frame. Track/drive sprocket assembly involute splined to shaft, mounted on bronze bushings, chain driven from sprocket on outer traction shaft. Track drive sprocket lugs mesh with shoe lugs.



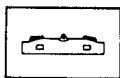
Track idler wheels

Cast steel, heat treated; mounted on anti-friction bearings. One track idler wheel per side frame.



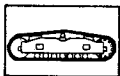
Track rollers

Eleven rollers per side frame; heat treated, mounted on bronze bushings, sealed for lifetime lubrication.



Track carrier rollers

Four cast iron track carrier rollers per side frame.



Tracks

Heat treated, self-cleaning, multiple hinged track shoes joined by two-piece full floating pins. 47 shoes per side frame. *Standard*; 30" (0.76 m) wide. *Optional*; 36" (0.91 m) wide.

Track/chain adjustment — Track drive chain adjusted by positioning axle of chain drive sprocket with jack screw and shims. Track adjusted with threaded adjusting bolt attached to track idler (wheel) axle; polyurethane shock absorber located behind track take-up bolt.



Independent travel

Standard. Four-piece traction shaft; joined with splined, jaw-type couplings, mounted on bronze bushings in precision bored lower frame; powered by bevel gear drive enclosed in oil within lower frame.

Power hydraulic travel/steer — Travel/steer jaw clutches hydraulically engaged, spring-applied travel/steer/digging brakes simultaneously released by inter-connecting mechanical linkage.

Non-independent travel — Optional.

Power hydraulic travel/steer — Operator must manually shift swing/travel gears in upper deck gear compartment from swing to travel position prior to actuating combination swing/travel Speed-o-Matic® power hydraulic two-shoe clutches, to control travel/steer jaw clutches.

Travel speeds — Low; .92 m.p.h. (1.48 km/hr). High; 2.1 m.p.h. (3.38 km/hr).

Gradeability — 30% permissible.

Ground contact area and ground bearing pressure — based on machine equipped with 40' (12.19 m) tubular boom.

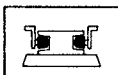
| Counterweight | Track shoes | | Ground contact area | | Ground bearing pressure | |
|-----------------------------------|-------------|--------|---------------------|----------------|-------------------------|-------|
| | Inches | meters | Square inches | m ² | Ps.i. | kPa |
| "A" — 12,200 lbs. (5 534 kg) | 30" | 0.76 | 10,760 | 6.94 | 8.1 | 55.85 |
| | 36" | 0.91 | 12,910 | 8.33 | 6.8 | 47.09 |
| "AB" — 46,000 lbs. (20 866 kg) | 30" | 0.76 | 10,760 | 6.94 | 11.2 | 77.22 |
| | 36" | 0.91 | 12,910 | 8.33 | 9.4 | 64.81 |

Revolving upperstructure



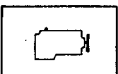
Frame

All-welded, stress relieved, precision machined; machinery side housings bolted on frame.



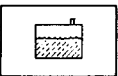
Hook rollers

Eight; adjustable, heat treated, conical; mounted on tapered roller bearings. Two equalized pairs mounted both front and rear.



Engines

Full pressure lubrication, oil filter, oil cooler, air cleaner, fuel filter, hour meter, foot and hand throttles, and optional hand throttle (lever type on swing control lever).

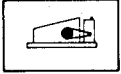


Fuel tank

58 gallon (220 L) capacity fuel tank equipped with fuel gauge, flame arrester, and filler pipe cap with locking eye for padlock.

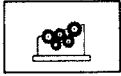
| Engine specifications | GM6-71N with single stage torque converter | GM4-71N with single stage torque converter |
|---|--|--|
| Number of cylinders | 6 | 4 |
| Bore and stroke — inches (mm) | 4¼ x 5 (108 x 127) | 4¼ x 5 (108 x 127) |
| Piston displacement — cu. in. — (cm ³) | 426 (6 982) | 284 (4 654) |
| High idle speed — r.p.m. | 2,250 | 2,150 |
| Engine r.p.m. @ full load speed | 2,100 | 2,000 |
| Net engine h.p. @ full load speed — — (W) | 178 (132 735) | 125 (93 213) |
| Peak torque — ft. lbs. — (J) | 531 (720) | 372 (504) |
| Peak torque — r.p.m. | 1,200 | 1,200 |
| Electrical system | 12 volt | 12 volt |
| Batteries | One 12-volt | One 12-volt |
| Clutch or power take-off | Disconnect clutch between engine and converter | Disconnect clutch between engine and converter |
| Transmission — | | |
| Number chain wheel teeth | 161 | 161 |
| Number engine pinion teeth | 28 | 28 |

Power train



Transmission

FMC quadruple roller chain enclosed in oil tight chain case; pump driven oil stream lubrication with independent oil sump. Machine-cut teeth on engine pinion and chain wheel.



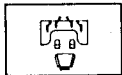
Machinery gear train

"Full-Function" design, two-directional power available to all operating shafts; shafts mounted on anti-friction bearings in precision bored machinery side-housings. All operating functions independent of one another. Components such as drum gears, pinions, chain wheels, brake drums and clutch spiders — 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 and chain wheel.

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

Drive pinions — Two; heat-treated, machine-cut teeth, involute splined to shaft. Pinions mounted on shaft outside of machinery side housings.

Principal operating functions



Control system

Speed-o-Matic® power hydraulic control system; a variable pressure system requiring no bleeding. Operating pressure transmitted to all two-shoe clutch cylinders, and other hydraulic cylinders as required. System includes constant displacement, engine driven, vane type hydraulic pump to provide flow of oil; accumulator to maintain system operating pressure, unloader valve to control pressure in accumulator, relief valve to limit maximum pressure buildup in system, full-flow filter with 40 micron disposable filter element, and variable pressure control valves to control drum clutches and other operating cylinders.



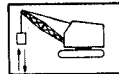
Independent travel

Standard. Spur gear driven; single bevel gear splined to horizontal travel shaft, single bevel gear splined to vertical travel shaft. Bevel gears enclosed in lubrication case.

Clutches — Speed-o-Matic power hydraulic two-shoe lined type; clutch drum 20" (0.51 m) diameter, 5" (0.13 m) wide.

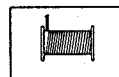
Travel non-independent of swing — Optional. Operator must manually shift swing/travel gears in horizontal deck gear compartment from swing to travel position prior to actuating combination swing/travel Speed-o-Matic power hydraulic two-shoe clutches to engage travel/steer gear jaw clutches.

Clutches — Speed-o-Matic power hydraulic two-shoe lined type; clutch drum 20" (0.51 m) diameter, 5" (0.13 m) wide.



Load hoisting and lowering

"Full-Function", spur gear driven drums; tandem wire rope drums (third drum optional) fixed to shafts. Speed-o-Matic power hydraulic clutch control of all load hoisting/lowering functions.



Load hoist drums

Front and rear main operating drums — Two-piece, removable, smooth or grooved lagging (depending on job application) bolted to brake drum and clamped to shaft. Shafts mounted in in-line bores on anti-friction bearings. Special extended length shafts required for, and supplied with, optional planetary drive units for drums.

Third operating drum — *Optional*; mounts forward of front operating drum. Functions as third operating drum with design and control similar to front and rear main operating drums. Two-piece, removable, 9" (0.23 m) or 11" (0.28 m) root diameter grooved lagging bolted to brake drum and clamped to shaft. Shaft mounted in in-line bores on anti-friction bearings.

Note: For dragline operation all wire rope and the lagging must be removed from third drum to avoid interference with inhaul rope (front drum). Minimum four wraps of inhaul rope must be left on anchor end of front drum to avoid inhaul

rope interference with third drum brake enclosure. For 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 clutches

Speed-o-Matic power hydraulic two-shoe clutches for control of all principal operating functions (except engine master clutch). Internal expanding, aluminum alloy lined shoes. Clutch drums bolted to drum spur gears. Front and rear main operating drum clutches, swing clutches, travel clutches, boom hoist clutch, and boom lowering clutch are all interchangeable.

Load hoist clutches — Front and rear main operating drums. Clutch drum 20" (0.51 m) diameter, 5" (0.13 m) wide; effective lining area 212 square inches (1 368 cm²). Optional third drum clutch drum 17¼" (0.44 m) diameter, 4" (0.10 m) wide; effective lining area 118 square inches (761 cm²).

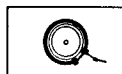
Load lowering clutches — Standard on front and rear main operating drums. Clutches identical to load hoist clutches. Not available on optional third operating drum.

Two-speed front & rear drums — *Optional*; gear driven, for load hoist only. Intermediate gears, installed on stub shafts in machinery side housings, convert Speed-o-Matic power hydraulic two-shoe load lowering clutches to high speed hoist clutches; includes required special extended drum shafts. Main load and jib load hoist wire rope speeds increased 100% over standard speeds. Note: Front and rear drum power load lowering clutches not available with two-speed drums. See note (A).

Planetary drive units for front and rear drums — *Optional*. Planetary drive units available for load hoisting on either or both drums and for load lowering on rear drum only; includes special extended drum shafts. Planetary drive units mount between spur gears and two-shoe clutch drums — available for increased or decreased load hoist or lowering rope speeds. Standard two-shoe hoist and power load lowering clutches provide standard rope speeds. Planetaries controlled by external contracting band brakes through push buttons mounted on clutch control levers. See note (A).

Auxiliary two-shoe rear drum brake — *Optional.* Internal expanding, Speed-o-Matic power hydraulic two-shoe brake; 20" (0.51 m) diameter, 5" (0.13 m) wide. Brake spider involute splined to shaft and brake drum bolted to anchor plate on machinery side housing. Auxiliary brake increases lining contact area by 212 square inches (1 368 cm²). Pressure on rear drum brake foot pedal applies the standard mechanical brake and the auxiliary brake simultaneously. Mechanical linkage, in standard brake mechanism, actuates control mechanism of variable pressure valve to direct hydraulic pressure to the auxiliary brake cylinder. See note (A).

Note (A): Only one item — two-speed gear driven drum, planetary drive unit, or auxiliary two-shoe rear drum brake — can be mounted on the same shaft.

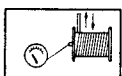


Drum brakes

Front and rear main, and optional third, operating drums — external contracting band; mechanically foot pedal applied. Foot pedals equipped with latch to permit locking brakes in "on" position. Brake drums involute splined to shafts.

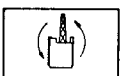
Front and rear main drums — Brakes 27" (0.69 m) diameter, 4½" (0.11 m) face width; effective lining area 270 square inches (1 742 cm²).

Optional third drum — Brake 18" (0.46 m) diameter, 3" (0.08 m) face width; effective lining area 136 square inches (878 cm²).



Drum rotation indicators

Standard for front and rear main operating drums; mounted on control stand. Dials actuated by flexible shafts from front and rear main operating drum shafts.



Swing system

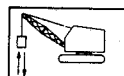
Swing independent of travel standard. Spur gear driven; single bevel gears (enclosed and running in oil) on horizontal and vertical swing shafts. Swing pinion, involute splined to vertical swing shaft, meshes with internal teeth of swing gear which is integral with hook roller path.

Swing clutches — Speed-o-Matic power hydraulic two-shoe lined type; clutch drum 20" (0.51 m) diameter, 5" (0.13 m) wide.

Swing brake — Operator controlled, external contracting band; spring applied, power hydraulically released. Brake drum splined to vertical swing shaft.

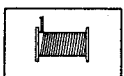
Swing lock — Mechanically controlled pawl engages teeth of swing gear which is integral with hook roller path.

Swing speed — 4 r.p.m.



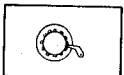
Boom hoist/lowering system

Independent, spur gear driven; single wire rope drum splined to shaft. Rope drum equipped with mechanical locking pawl.



Boomhoist drum

9" (0.23 m) root diameter, grooved; involute splined to shaft.



Boomhoist drum locking pawl

Operator controlled; spring applied, mechanically released. Fixes boom at desired operating angle.



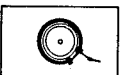
Boom hoist clutch

Speed-o-Matic power hydraulic two-shoe lined type; clutch drum 20" (0.51 m) diameter, 5" (0.13 m) face width.



Boom lowering clutch

Speed-o-Matic power hydraulic two-shoe lined type; clutch drum 20" (0.51 m) diameter, 5" (0.13 m) face width.



Boom hoist/lowering brake

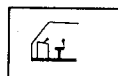
External contracting band; spring applied hydraulically released as hoist clutch or lowering clutch is engaged. Brake drum involute splined to shaft; brake drum 22" (0.56 m) diameter, 3" (0.08 m) face width.

Boomhoist limiting device — Provided to restrict hoisting boom beyond recommended minimum radius; located on exterior right-hand side of operator's cab. As boom approaches minimum radius, it actuates a diverter valve, releasing the boom hoist clutch and automatically applying the spring applied boomhoist brake.



Electrical system

Battery; one 12-volt. *Optional;* battery lighting system, including two sealed beam automotive type adjustable headlights on front of cab roof, one interior cab light and necessary wiring. *Optional;* extra sealed beam automotive type adjustable headlight mounted on boom. *Optional;* Onan independent light plant with single cylinder, four-cycle, air-cooled, diesel engine with remote electric starting; 3,000 watt, 120-volt, three wire single phase, 60 cycles A.C.; including wiring in conduit, three interior cab lights, trouble lamp with cord and two 300 watt adjustable floodlights on front of cab roof. Additional cab-mounted and boom-mounted floodlights available. **Note:** Independent light plant cannot be furnished in conjunction with third drum or magnet generator.



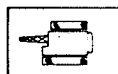
Operator's cab

Full-vision, equipped with safety glass panels. Operator's door is hinged. Front window rolls up to overhead storage area. Standard equipment includes dry chemical fire extinguisher, machinery guards, and bubble-type level. Steel window covers, sound reduction material, electric windshield wiper, cab heater and defroster fan are optional.



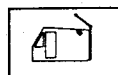
Machinery cab

Hinged doors for machinery access, roof-top access ladder, skid-resistant finish on roof, and electric horn warning device.



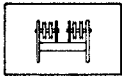
Catwalks

Standard along both sides. Equipped with hand railings; hinged to provide vertical folding along cab sides to reduce overall width for transporting.



Gantry

Mounted to revolving upperstructure frame to support boom suspension system. Retractable; used with all booms. Gantry raised or lowered by hydraulic cylinder which is also used for counterweight lowering or raising.



Gantry bail

Contains five sheaves mounted on anti-friction bearings for 12-part boom hoist.



Counterweight

Removable and held in position by "T"-bolts. Counterweight "A", 12,000 lbs. (5 534 kg); used for lifting crane, dragline and clamshell service. Counterweight "AB", 46,000 lbs. (20 866 kg); used for lifting crane service only, two-piece to permit counterweight reduction to "A".

Counterweight removal device — Power hydraulic cylinder suspended between high gantry backstays to raise or lower counterweight.

Booms and jibs



Tubular boom

Two-piece, 40' (12.19 m) basic length; 54" (1.37 m) wide, 44" (1.12 m) deep at centerline of connections. Alloy steel, round tubular main chords 3" (76 mm) outside diameter. Maximum boom length 160' (48.77 m) with live mast.

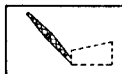
Boom base section — 20' (6.10 m) long; boomfeet 2 $\frac{3}{8}$ " (60 mm) wide on 54" (1.37 m) centers.

Boom extensions — Available in 10' (3.05 m), 15' (4.57 m), 20' (6.10 m) and 30' (9.14 m) lengths with appropriate length pendants.

Boom connections — In-line pin connected.

Boom top section — Open throat; 20' (6.10 m) long.

Boompoin machinery — Five 18" (0.46 m) root diameter head sheaves mounted on anti-friction bearings.



Angle boom

Two piece, 40' (12.19 m) basic length; 42" x 42" (1.07 x 1.07 m) wide at connections. Main chord angles high strength, low alloy steel, 4" x 4" x $\frac{3}{8}$ " (102 x 102 x 10 mm) for base section; 4" x 4" x $\frac{5}{16}$ " (102 x 102 x 8 mm) for top section and extensions. Maximum boom length 160' (48.77 m) with live mast.

Boom base section — 20' (6.10 m) long; boomfeet 2 $\frac{3}{8}$ " (60 mm) wide on 54" (1.37 m) centers.

Boom extensions — Available in 10' (3.05 m), 20' (6.10 m) and 30' (9.14 m) lengths with appropriate length pendants.

Boom connections — In-line pin connected.

Boom top section — Open throat; 20' (6.10 m) long.

Boompoin machinery — Five 18" (0.46 m) root diameter head sheaves mounted on anti-friction bearings. Two or three sheaves are optional. Single head sheave available for dragline operation.



Jib

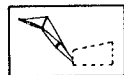
Tubular; two piece, 20' (6.10 m) basic length; 30" (0.76 m) wide, 24" (0.61 m) deep at connections. Main tubular chords alloy steel, 1 $\frac{1}{2}$ " (38 mm) outside diameter.

Base section — 10' (3.05 m) long; mounted to bracket on top section of boom.

Jib extensions — Available in 10' (3.05 m) lengths.

Jib connections — In-line pin connected.

Tip section — 10' (3.05 m) long; equipped with 1 $\frac{1}{4}$ " (0.39 m) root diameter sheave mounted on anti-friction bearings.



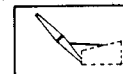
Jib Mast

10' (3.05 m) high, mounted on jib base section. Two deflector sheaves, mounted on anti-friction bearings, mounted within mast to guide whipline. Two equalizer sheaves mounted on top of mast — one for jib frontstay line, one for jib backstay line.

Jib staylines — Front staylines are attached between top of jib mast and peak of jib. Appropriate length pendants are added to front staylines as jib length increases. Rear staylines are attached between top of jib mast and base of boom top section. Adjustment of rear stayline length determines jib angle to boom.

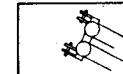
Jib stops — Telescoping type; pinned from jib mast to boom top section and from jib mast to jib base section.

Items applicable to both booms



Boom stops

Dual tubular, retractable type with spring-cushioned bumpers. Main members raised or lowered by telescoping strut pin connected to lower side of each main member, and to top side of boom base section.

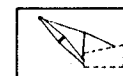


Boomhoist bridle

Serves as connection between boom pendants and boomhoist wire rope reeving. Equipped with 1 $\frac{1}{4}$ " (0.31 m) root diameter sheaves mounted on anti-friction bearings; 6 sheaves required for standard 12-part boomhoist reeving.

Spreader bar — All welded high strength, steel plate construction; mounts to boom live mast head shaft. Spreads pendants for clearance with hoist ropes. Required on all boom lengths.

Boom midpoint suspension pendants — Required for tubular and angle boom lengths exceeding 140' (42.67 m). Connected to boom 80' (24.38 m) from boomfeet.



Boom live mast

20' 6" (6.25 m) long from center of head shaft to mounting pin; mounts on front of frame near boomfeet. Supports boomhoist bridle and boom midpoint suspension pendants. Required for angle boom lengths exceeding 100' (30.48 m) and tubular boom lengths exceeding 120' (36.58 m) when used with "A" counterweight. Also required for all angle or tubular boom lengths when used with "AB" counterweight. Mast can be used as short boom for machine assembly or disassembly, but is not intended for general crane service. Mast equipped with 9 $\frac{1}{2}$ " (0.24 m) root diameter sheaves.

Live mast stops — Welded to inside of boom stops; needed when using live mast as short boom.

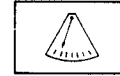
Boom carrying equipment — For carrying boom with boom live mast at approximate 11' 10½" (3.62 m) overall clearance height from ground, when boom is horizontal. Tubular booms 40' (12.19 m) through 110' (33.53 m) and angle boom 40' (12.19 m) through 90' (27.43 m), may be carried with this reduced boom live mast height. Booms must not be used to handle loads when in this position. Boom suspension system includes two links connecting pendants to mast spreader bar. Links can be "scissored" to shorten total pendant length, pulling the mast to reduced overall height.

Boompoint sheave guards — Fabricated round steel guards for standard 5-sheave boompoint. Roller type guards for two or three boompoint sheaves and for optional single boompoint sheave for dragline.

Hoist line deflector rollers — To deflect main drum load hoist line over top side of boom; also required when third drum load hoist line passes over top side of boom. Rollers mounted on anti-friction bearings.

— *Angle and tubular booms.* Boom lengths through 100' (30.48 m) require one roller; lengths through 110' (33.53 m) require two rollers; lengths through 130' (39.62 m) require three rollers; lengths through 150' (45.72 m) require four rollers; lengths through 160' (48.77 m) require five rollers. When using third drum rope over boom head, roller requirements are increased by one on boom lengths of 50' (15.24 m) through 160' (48.77 m).

Auxiliary equipment



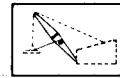
Boom angle indicator

Standard with either crane boom. Pendulum type mounted on left side of boom base section.



Fairlead

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



Tagline

Optional; spring wound drum type mounted on crane boom. Rud-o-Matic model 648, single barrel with 20" (0.51 m) reel for 60' (18.29 m) boom using 1 yd. (0.76 m³) to 1-½ yd. (1.15 m³) clamshell buckets. Also available — Morin Tagmaster, Model BR.

