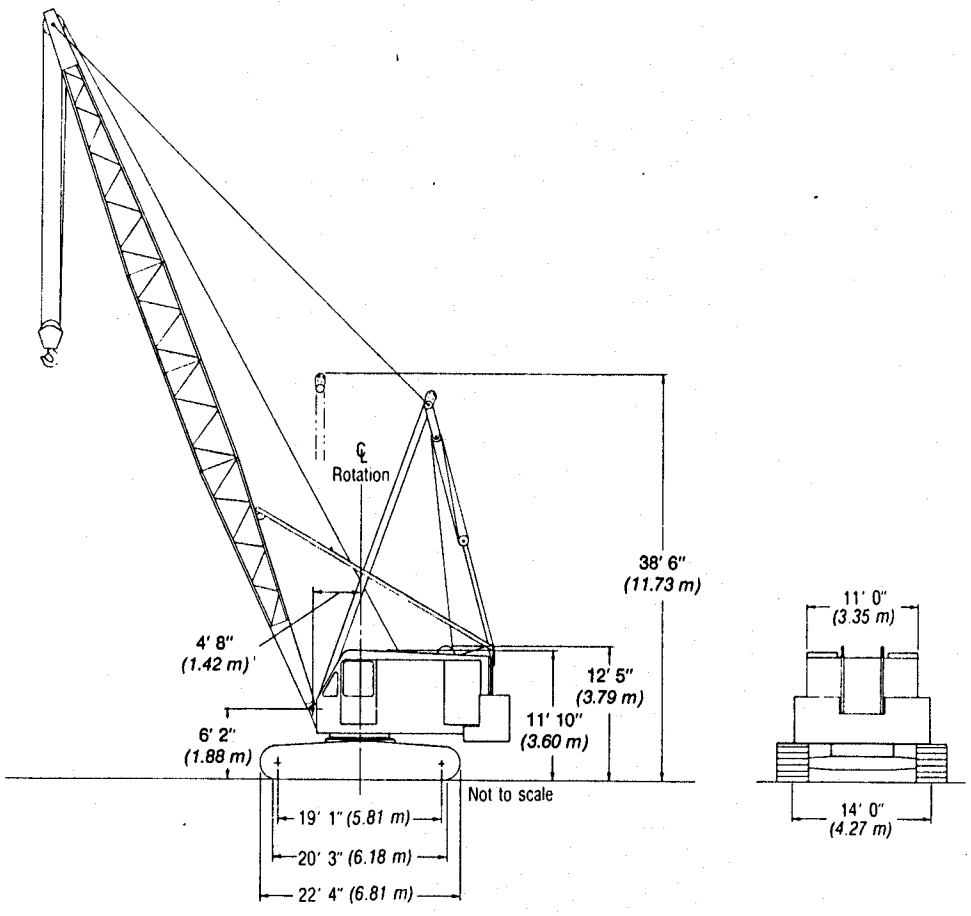
FMC

# General Specifications

## Link-Belt® 117′-ton *(106.11 metric ton)*

## Wire rope crawler crane/excavator

# LS-418A




| General dimensions | Feet | *meters* |
|---|---|---|
| Basic angle boom length | 50′ 0″ | *15.24* |
| Basic tubular boom lengths: | 50′ 0″ | *15.24* |
| Overall width: | | |
| — with 38″ *(0.96 m)* track shoes | 17′ 2″ | *5.23* |
| — with 44″ *(1.12 m)* track shoes | 17′ 8″ | *5.38* |
| Minimum ground clearance | 1′ 2″ | *0.36* |
| Clearance under counterweight "A" | 3′ 10″ | *1.16* |
| Clearance width less crawler side frames, counterweight, and catwalks | — | — |
| | 15′ 7″ | *4.75* |

| General dimensions | Feet | *meters* |
|---|---|---|
| Overall width for transport less side frames | — | — |
| and catwalks; axles in line with upper | 11′ 0″ | *3.35* |
| Overall width of counterweight | 12′ 0″ | *3.66* |
| Width of cab less catwalks | 11′ 0″ | *3.35* |
| Width of cab with catwalks both sides | 15′ 2″ | *4.62* |
| Tailswing of counterweight | 16′ 4″ | *4.98* |
| Overall height for transport — basic machine | — | — |
| less crawler side frames | 11′ 1″ | *3.63* |
| Overall height, live boom mast with 50′ | — | — |
| *(15.24 m)* boom horizontal | 23′ 7″ | *7.19* |

# Weight deductions for transporting — approximate

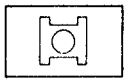
| m | Pounds | *kilograms* |
|---|---|---|
| Basic 50' *(15.24 m)* tubular boom | 5,820 | *2 640* |
| Basic 50' *(15.24 m)* angle boom | 7,900 | *3 583* |
| Tagline | 705 | *320* |
| Fairlead | 1,300 | *590* |
| Boom live mast | 5,525 | *2 506* |
| Catwalks | 1,550 | *703* |
| Basic revolving upperstructure less counterweight | 59,129 | *26 821* |
| Counterweight "A" | 34,000 | *15 422* |
| Counterweight "AB" | 60,000 | *27 216* |
| Complete crawler mounting with turntable bearing: | — | — |
| — with 38" *(0.97 m)* wide track shoes | 69,760 | *31 643* |
| — with 44" *(1.12 m)* wide track shoes | 70,948 | *32 182* |
| Basic lower frame with turntable bearing | 23,370 | *10 601* |
| One crawler side frame: | — | — |
| — with 38" *(0.97 m)* wide track shoes | 23,195 | *10 521* |
| — with 44" *(1.12 m)* wide track shoes | 23,789 | *10 791* |

# Machine working weights — approximate

| **Complete basic machine with GM 6-71N diesel engine and hydraulic coupling, turntable bearing, independent boomhoist, swing brake, non-independent swing and travel, front and rear drum laggings, 38" *(0.97 m)* wide track shoes, and 50' *(15.24 m)* tubular boom:** | **Pounds** | ***kilograms*** |
|---|---|---|
| — with 34,000 lbs. *(15 422 kg)* counterweight "A" | 175,024 | *79 391* |
| — with 60,000 lbs. *(27 216 kg)* counterweight "AB" | 201,024 | *91 184* |

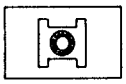
# General specifications

## Mounting — crawler



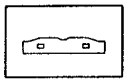
**Lower frame**

All-welded, stress relieved, precision machined; lined bored for traction shaft. Machined surface provided for mounting turntable bearing.



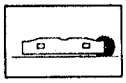
**Turntable bearing**

Inner race with internal swing gear bolted to lower frame.



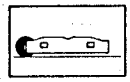
**Crawler side frames**

All-welded, stress relieved, precision machined. Removable; positioned on cross axles by patented dowel and key engagement and held in place with two mounted, adjustable wedgepacks per side frame.



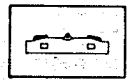
*Track drive sprockets*

Cast steel, heat treated, involute splined to shafts which are mounted on bronze bushings. One-piece track/drive chain sprocket assembly mounted on bronze bushings, chain driven from sprocket on outer traction shaft; one per side frame. Track drive sprocket lugs mesh with shoe lugs; axle adjusted for chain take-up.



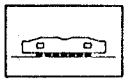
*Track idler wheels*

Cast steel heat treated; mounted on bronze bushings. One track idler wheel per side frame. Axle adjusted for track take-up.



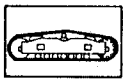
*Track carrier rollers*

Heat treated, mounted on bronze bushings; two rollers per side frame.



*Track rollers*

Heat treated, mounted on bronze bushings; twelve per side frame.



*Tracks*

Heat treated, self-cleaning, multiple hinged track shoes joined by one-piece full floating pins. 48 shoes per side frame. Standard shoes 38" *(0.97 m)* wide; optional shoes: 44" *(1.12 m)* wide.

*Track/chain adjustment* — Track drive chains adjusted by shimming axles of chain drive sprockets. Track adjusted with threaded adjusting bolts attached to track idler (wheel) axles.

**Travel**

*Standard.* travel non-independent of swing; operator must manually shift gears from swing to travel prior to actuating two-shoe Speed-o-Matic® power hydraulic swing/travel clutches. *Optional:* travel independent of swing; permits simultaneous swing and travel with separate set of shafts and clutches. Three-piece traction shaft joined with involute splined couplings; inner traction shaft mounted on bronze bushings in precision bored lower frame. Outer traction shaft engages splines in chain drive sprockets which are mounted on bronze bushings in side frames. Powered by bevel gear drive enclosed in oil within lower frame.

*Travel speed* — Standard: 1.0 m.p.h. *(1.61 km/h)*. Optional high speed planetary: 1.65 m.p.h. *(2.65 km/h)*.

**Gradeability** — 30%

**Steering** — Power hydraulic. Travel/steer jaw clutches hydraulically engaged, spring released. Spring applied, hydraulically released travel/steer/digging/parking external contracting band brakes simultaneously released by interconnecting mechanical linkage. Brakes automatically set when steer levers are in neutral. Two 24" *(0.61 m)* diameter by 5" *(0.13 m)* wide brake bands; effective lining area 281 square inches *(1 813 cm²)* per brake.

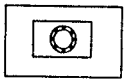
Ground contact area and ground bearing pressure — based on machine equipped with basic 50' *(15.24 m)* tubular boom.

| Counterweight | Track shoes | | Ground contact area | | Ground bearing pressure | |
|---|---|---|---|---|---|---|
| | Inches | *meters* | Square inches | *cm²* | P.s.i. | *kPa* |
| "A" — 34,000 lbs. *(15 422 kg)* | 38<br>44 | *0.97*<br>*1.12* | 17,950<br>20,870 | *115 835*<br>*134 678* | 9.75<br>8.39 | *67.23*<br>*57.85* |
| "AB" — 60,000 lbs. *(27 216 kg)* | 38<br>44 | *0.97*<br>*1.12* | 17,950<br>20,870 | *115 835*<br>*134 678* | 11.20<br>9.63 | *77.22*<br>*66.40* |

## Revolving upperstructure

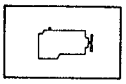
**Frame**

All-welded, stress relieved, precision machined; machinery side housing welded integral with frame.



**Turntable bearing**

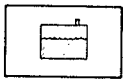
Outer race of bearing bolted to machined surface on under side of frame.



**Engines**

Full pressure lubrication, oil filter, oil cooler, air cleaner, fuel filter, hour meter and hand throttle. Optional hand throttle (lever type on swing control level) and foot throttle available. Manual control shutdown for GM engine; electrical shutdown for Cummins.

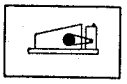
*Auxiliary governor control — Optional;* for use with GM 8V-71N and Cummins NT 855 engines only. Provides approximately 50% greater pinion r.p.m. Recommended for lifting crane service only.



**Fuel tank**

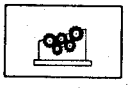
100 gallon *(379 L)* capacity; equipped with fuel sight level gauge, flame arrester, and filler pipe cap with locking eye for padlock.

## Power train



**Transmission**

FMC quadruple roller chain enclosed in chain case and running in oil. Pump driven oil stream lubrication with independent sump.



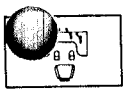
**Machinery gear train**

"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, swing, and boomhoist functions independent of one another. Components such as 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.

| Engine specifications | GM 6-71N with hydraulic coupling | GM 8V-71N with single-stage torque converter ① | GM 8V-71N with three-stage torque converter ② | Cummins NT 855-P310 with three-stage torque converter ② |
|---|---|---|---|---|
| Number of cylinders | 6 | 8 | 8 | 6 |
| Bore and stroke — inches | 4¼ x 5 | 4¼ x 5 | 4¼ x 5 | 5½ x 6 |
| — *(mm)* | *(108 x 127)* | *(108 x 127)* | *(108 x 127)* | *(143 x 150)* |
| Piston displacement — cu. in. | 426 | 568 | 568 | 855 |
| — *($cm^3$)* | *(6 982)* | *(9 310)* | *(9 310)* | *(14 013)* |
| High idle speed — r.p.m. | 2,200 | 2,250 | 2,250 | 2,350 |
| Engine r.p.m. at full load speed | 2,060 | 2,100 | 2,100 | 2,100 |
| Net engine h.p. at full load speed | 190 *(142 kW)* | 245 *(183 kW)* | 260 *(194 kW)* | 279 *(209 kW)* |
| Peak torque — ft. lbs. | 558 | 710 | 749 | 890 |
| — *(joules)* | *(757)* | *(963)* | *(1 016)* | *(1 207)* |
| — r.p.m. | 1,200 | 1,200 | 1,200 | 1,500 |
| Electrical system | 12-volt | 12-volt | 12-volt | 12-volt |
| Batteries | One 12-volt | Two 12-volt | Two 12-volt | Two 12-volt |
| Clutch or power takeoff | Hydraulic coupling Twin Disc SP211-HP1 | Disconnect clutch between engine and converter | Disconnect clutch between engine and converter | Disconnect clutch between engine and converter |
| Transmission — | | | | |
| Number chain wheel teeth | 164 | 164 | 164 | 164 |
| Number engine pinion teeth | 20 | 30 | 36 | 33 |

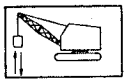
① 2.54:1 ratio Allison TC DOA-565 single-stage converter.
② Twin Disc Co-10066-TC1 three-stage converter.

# Principal operating functions



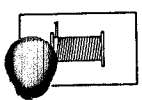
## Control system

Speed-o-Matic power hydraulic control system requiring no bleeding. Variable operating pressure transmitted to all two-shoe clutch cylinders. 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.



## Load hoisting and lowering

Wire rope drum gear train (front and rear main, and optional third, operating drums) spur gear driven, powered by chain transmission from engine.



## Load hoist drums

Front and rear main operating drums — Two-piece, removable, smooth or grooved laggings bolted to adapter which is involute splined to drum shaft.

Extended length shafts permit installation of optional power load lowering clutches; special length shaft required for, and furnished with, optional planetary drive unit for rear drum.

— Lifting crane application: 24⅜" *(0.62 m)* front and rear smooth drum laggings.
— Clamshell or magnet applications: 27" *(0.69 m)* front and rear grooved drum laggings.
— Dragline application: 24⅜" *(0.62 m)* front and 27" *(0.69 m)* rear grooved drum laggings.

*Third operating drum – Optional;* mounts forward of front main operating drum. Two-piece removable 13¼" *(0.34 m)* root diameter smooth drum lagging bolted to brake drum. Deflector drum and auxiliary third drum lagging flange, required when using third drum line through fairlead.

**Note** — Third drum limits:
— Lifting crane application: to prevent front drum hoist rope interference with third drum, front drum operation limited to certain boom radii and requires special investigation.
— Use of fairlead: third drum is over-winding requiring use of auxiliary third drum lagging flange and deflector roller to deflect wire rope downward and horizontally toward fairleader.

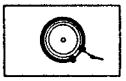
## *Drum clutches*

Speed-o-Matic power hydraulic two-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* — Speed-o-Matic power hydraulic two-shoe clutches. Front and rear main operating drum clutches: 37" *(0.94 m)* diameter, 5½" *(0.14 m)* face width; effective lining area 501 square inches *(3 233 $cm^2$)*. Optional third drum clutch: 20" *(0.51 m)* diameter, 5" *(0.13 m)* face width; effective lining area 215 square inches *(1 387 $cm^2$)*.

**Drum planetary drive unit** — *Optional*; available for load hoist on rear main operating drum to allow increase of standard load hoist line speed. Planetary unit mounts on extended drum shaft between drum spur gear and two-shoe clutch drum. Two-shoe clutch controls standard line speeds. Planetary drive unit controlled by external contracting band brake through push button located on clutch control lever.

*Load lowering clutches — Optional*; Speed-o-Matic power hydraulic two-shoe clutches. Front and/or rear main operating drum clutches: 30" *(0.76 m)* diameter, 6½" *(0.17 m)* face width.



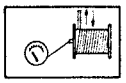
*Drum brakes*

Three piece, external contracting band; brake drum involute splined to shaft. Mechanically foot pedal operated; foot pedal equipped with latch to permit locking brake in applied position.

*Front and rear main drums* — Brakes 44" *(1.12 m)* diameter, 5½" *(0.14 m)* face width; effective lining area 651 square inches *(4 201 cm²)*.

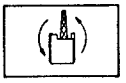
*Optional third drum* — Brake 27" *(0.69 m)* diameter, 4" *(0.10 m)* face width; effective lining area 268 square inches *(1 729 cm²)*.

**Auxiliary rear drum brake** — *Optional.* Increases brake lining contact area by 651 square inches *(4 201 cm²)*; 44" *(1.11 m)* diameter, 5½" *(0.14 m)* face width. Pressure on mechanical brake pedal applies the standard rear drum brake band and the auxiliary rear drum brake band simultaneously; linkage divides braking effort equally between standard and auxiliary brakes. Mounts in load lowering clutch location. **Note:** Auxiliary rear drum brake not available on rear drum equipped with optional load lowering clutch or two-speed hoist.



*Drum rotation indicators*

Standard for front and rear main operating drums. Two rotating dials mounted on control stand; dials actuated by flexible shaft drive from front or rear main operating drum.



Swing system

Spur gear driven; single bevel gears (enclosed and running in oil) on horizontal swing shaft and vertical shaft. Swing pinion, involute splined to vertical swing shaft, meshes with internal teeth of ring (swing) gear.

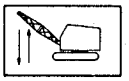
*Swing clutches*

Speed-o-Matic power hydraulic internal expanding two-shoe clutches. 30" *(0.76 m)* diameter, 6½" *(0.16 m)* face width; lined shoes.

*Swing brake* — External contracting band; spring applied, hydraulically released by operator controlled lever. Brake drum involute splined to vertical swing shaft. Brake 18" *(0.46 m)* diameter, 5" *(0.13 m)* face width; effective lining area 212 square inches *(1 368 cm²)*.

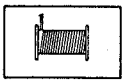
*Swing lock* — Mechanically controlled pawl engages with internal teeth of swing (ring) gear.

*Maximum swing speed* — 2.90 r.p.m.



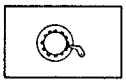
Boom hoist/ lowering system

Independent, worm gear driven. Boom hoist/lowering assembly mounted on platform at cab roof level. Precision control boom hoisting and lowering through power hydraulic two-shoe clutches.



**Boomhoist drums**

Dual laggings involute splined to shaft; 10½" *(0.27 m)* root diameter grooved.

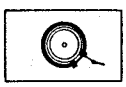


*Boomhoist drum locking pawl*

Operator controlled; mechanically applied and released.

*Boom hoist/ lowering clutches*

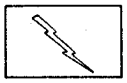
Speed-o-Matic power hydraulic two-shoe clutches; one each for boom hoisting and boom lowering. Clutches 17½" *(0.44 m)* diameter, 4" *(0.10 m)* face width; effective lining area 121 square inches *(781 cm²)*.



*Boom hoist brake*

One external contracting band brake; spring applied, hydraulically released. Brake drum involute splined to worm shaft. Brake 12" *(0.80 m)* diameter, 4" *(0.10 m)* face width; effective lining area 120 square inches *(774 cm²)*.

*Boomhoist limiting device* — Provided to restrict hoisting boom beyond recommended minimum radius; located on exterior right hand side of operator's cab.

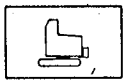


Electrical system

Battery, 12 volt, 225 ampere hour; either one or two batteries depending on engine. *Optional:* battery lighting system, including two sealed beam automotive type adjustable headlights located on cab front roof, one interior cab light and automotive type wiring. *Optional:* additional 50 watt sealed beam automotive type headlight mounted on boom (three maximum quantity recommended). *Optional:* Onan independent light plant with single cylinder, four cycle, air cooled diesel engine with remote electrical 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, two 300 watt flood lights available for mounting on cab and boom.

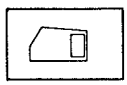
**Operator's cab**

Full vision, equipped with safety glass panels. Operator's door is hinged; front window slides on ball bearing rollers. Standard equipment includes dry chemical fire extinguisher, machinery guards. *Optional:* electric windshield wiper, cab heater, defroster fan, Lexan window panels, and sound reduction material.



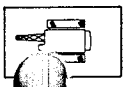
**Elevated operator's cab**

*Optional.* 18' *(5.49 m)* higher than standard operator's cab (25' — *7.62 m* — eye level). Catwalk is required along operator's side. Sound reduction material is not available, and cab heater and defroster fan are not recommended for elevated cab.



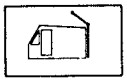
**Machinery cab**

Equipped with warning horn, sliding or hinged doors (two at rear, one at each rear side, and one at right front side) for machinery access, roof-top access ladder, and skid-resistant finish on roof.



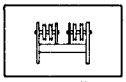
**Catwalks**

Optional for operator's side or both sides of standard cab. Required for operator's side of elevated cab. Channel and floor plate construction with hand railings.



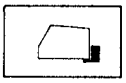
**Gantry**

Fixed low, mounted to revolving upperstructure frame to support boom suspension system.



*Gantry bail*

Mounted to gantry headshaft. Contains four 12" *(0.30 m)* root diameter sheaves mounted on bronze bushings for 10-part boomhoist wire rope reeving; six sheaves for 14-part boomhoist wire rope reeving with boom live mast.

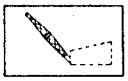


**Counterweight**

Removable; held in place by "T" bolts.
— Counterweight "A" (standard): 34,000 lbs. *(15 422 kg).*
— Counterweight "AB": 60,000 lbs. *(27 216 kg)* available for lifting crane service only. Two-piece allowing for reduction to weight "A". (Refer to counterweight requirement instructions with lifting capacity charts).

*Counterweight removal device — Optional.* Counterweight can be raised or lowered with rope mechanism. Rope is anchored to and wound on special drum cast integrally with rear brake drum and lowered against rear drum brake.

# Booms and jibs



**Tubular boom**

Two-piece basic boom 50' *(15.24 m)* long with open throat top section; 60" *(1.52 m)* wide, 54" *(1.37 m)* deep at connections. Alloy steel round tubular chords 3⅝" *(92 mm)* outside diameter.

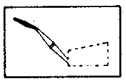
*Base section* — 25' *(7.62 m)* long; boomfeet 2¾" *(70 mm)* wide on 54½" *(1.37 m)* centers.

*Boom extensions* — Available in 10', 20', 30' and 40' *(3.05, 6.10, 9.14 and 12.19 m)* lengths with appropriate length pendants.

*Boom connections* — In-line pin connections.

*Boom top section* — Open throat; 25' *(7.62 m)* long.

*Boom midpoint suspension pendants* Required for tubular boom lengths exceeding 150' *(45.72 m)*. **Note:** Boom must have a joint 85' *(25.91 m)* from boom foot pins to allow attachment of midpoints.



**Tubular jib**

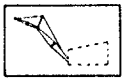
Two-piece basic jib 30' *(9.14 m)* long; 36" *(0.91 m)* wide, 30" *(0.76 m)* deep at connections. Alloy steel tubular chords 2¼" *(57 mm)* outside diameter.

*Base section* — 15' *(4.57 m)* long; mounted to boom headshaft hubs.

*Jib extensions* — Available in 10', 15', 20', and 30' *(3.05, 4.57, 6.10 and 9.14 m)* lengths; maximum jib length permitted — 60' *(18.29 m)*.

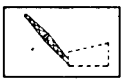
*Jib connections* — In-line pin connections.

*Jib tip section* — 15' *(4.57 m)* long; single peak sheave 21" *(0.53 m)* root diameter mounted on anti-friction bearings.



*Jib mast*

12' 7⅝" *(3.86 m)* high, mounted on jib base section. One deflector sheave mounted on anti-friction bearings, mounted within mast to guide jib load hoist line. Jib frontstay line and jib backstay line pin at top of jib mast.



**Angle boom**

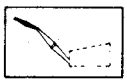
Two-piece basic boom 50' *(15.24 m)* long with open throat top section; 60' *(1.52 m)* wide, 54" *(1.37 m)* deep at connections. Alloy steel chord angles 4" x 4" x ½" *(102 x 102 x 0.01 mm)*.

*Base section* — 25' *(7.62 m)* long; boomfeet 2¾" *(78 mm)* wide on 54½" *(0.86 m)* centers.

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

*Boom connections* — Pin connected.

*Boom top section* — Open throat; 25' *(7.62 m)* long.



**Angle jib**

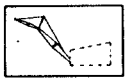
Two-piece basic jib 20' *(6.10 m)* long; 24" *(0.61 m)* wide, 20" *(0.51 m)* deep across chords. High strength low alloy steel main chord angles, 2½" x 2½" x 5/16" *(64 x 64 x 8 mm)*.

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

*Jib extensions* — Available in 10' and 15' *(3.05 and 4.57 m)* lengths; maximum jib length permitted — 40' *(12.19 m)*.

*Jib connections* — Bolted.

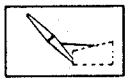
Jib tip section — 10' *(3.05 m)* long; single peak sheave 15⅞" *(4.57 m)* root diameter mounted on anti-friction bearings.



*Jib mast*

10' *(3.05 m)* high, mounted on jib base section. One deflector sheave, mounted on anti-friction bearings, mounted within mast to guide jib load hoist line. Three equalizer sheaves mounted on top of mast — one for jib frontstay line, two for jib backstay lines.

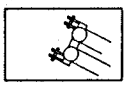
# Items applicable to both tubular or angle booms and jibs



**Boom stops**

Dual rail, retractable tubular type; spring-loaded bumper ends. Also serve as mast stops when live mast is used as short boom.

*Boom stop warning indicator* — Mounts on boom base section; visually warns operator that boom is near minimum radius and boom stops are approaching seating condition. When boom stop disengages, indicator is spring released to original position.



**Boomhoist bridle**

Serves as connection between boom pendants and boomhoist reeving. Bridle contains four 12" *(0.30 m)* root diameter head sheaves, mounted on bronze bushings, for ten-part boomhoist reeving for use without boom live mast; six sheaves required for 14-part boomhoist reeving for use with boom live mast.

*Spreader bar* — Arched to clear main load hoist rope; installed at inner (lower) end of boom top section pendants. Required on boom lengths exceeding 60' *(18.29 m)* without boom live mast, and boom lengths 150' *(45.72 m)* and over with boom live mast, with or without jib. On boom lengths 60' *(19.28 m)* through 140' *(42.67 m)* spreader cannot be used with jib.

**Boom live mast**

Welded plate/tube construction; reduces boom compression loadings. 30' *(9.14 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 both tubular and angle boom lengths over 50' *(15.24 m)* when using jib, and for all tubular boom lengths over 120' *(36.58 m)* without jib, and for angle boom lengths over 110' *(33.53 m)* without jib. Mast may be used for machine assembly/disassembly, but it is not intended for general crane service. **Note:** Refer to Performance Specifications for boom live mast lifting capacities.

*Auxiliary load hoist sheaves* — Two 13" *(0.33 m)* root diameter sheaves mounted on bronze bushings, grooved for ¾" *(19 mm)* diameter wire rope. For use of boom live mast as a short boom.

*Live mast stops* — When using mast as short boom, main boom stops must be attached to cab for live mast backstops to function properly. Live mast backstops must be manually positioned.

**Boompoint machinery** — Lifting crane: four 21" *(0.53 m)* root diameter head sheaves for angle and tubular boom. Clamshell: two 26¼" *(0.67 m)* root diameter head sheaves. Dragline: two 26¼" *(0.67 m)* root diameter head sheave. All sheaves mounted on anti-friction bearings.

**Boompoint sheave guards** — Standard for crane/clamshell/dragline service. Upper sheave guard: single tubular guard bolted to top side of boom head. Lower sheave guards: tubular roller guards mounted on anti-friction bearings; five for crane service, three for clamshell/dragline service.

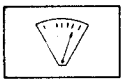
**Deflector rollers** — Deflect main or third drum hoist line off boom to avoid chafing. Angle boom: two rollers standard on boom top section; one additional for boom lengths 100' *(30.48 m)* through 120' *(36.58 m)*, two through 160' *(48.77 m)*; three through 180' *(54.86 m)*, and four through 200' *(60.96 m)*; two additional required for boom lengths beyond 120' *(36.58 m)*. Tubular boom: two rollers standard on boom top section; one additional required for each additional boom length.

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

**Jib staylines** — Back staylines attached between top of jib mast and base of boom top section. Front staylines attached between top of jib mast and peak of jib.

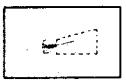
**Boom carrying equipment** — For carrying boom in horizontal position with live mast at approximate 15' *(4.57 m)* overall clearance height from ground. May be used with tubular or angle booms 50' through 120' *(15.24 through 36.28 m)* long. Boom suspension system uses two links, one at each end at the 10' *(0.30 m)* pendant portion of basic pendants. The free ends of the links are pinned together shortening overall pendant length, lowering live mast relative to the boom. Booms cannot be used to handle loads with reduced mast height.

## Auxiliary equipment



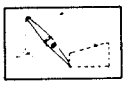
**Boom angle indicator**

Standard with either crane boom. Pendulum type, mounted on 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® models:
— 1248, double barrel with 20" *(0.51 m)* reel for booms not exceeding 80' *(24.38 m)*; for use with 1¾ to 4 cubic yard *(1.34 to 3.06 m³)* clamshell buckets.
— 1248, double barrel with 30" *(0.76 m)* reel for booms not exceeding 100' *(30.48 m)*; for use with 1¾ to 2 cubic yard *(1.34 to 1.53 m³)* clamshell buckets.
— 1848, triple barrel with 30" *(0.76 m)* reel for booms not exceeding 100' *(30.48 m)*; for use with 4 to 5 cubic yard *(3.06 to 3.82 m³)* clamshell buckets.