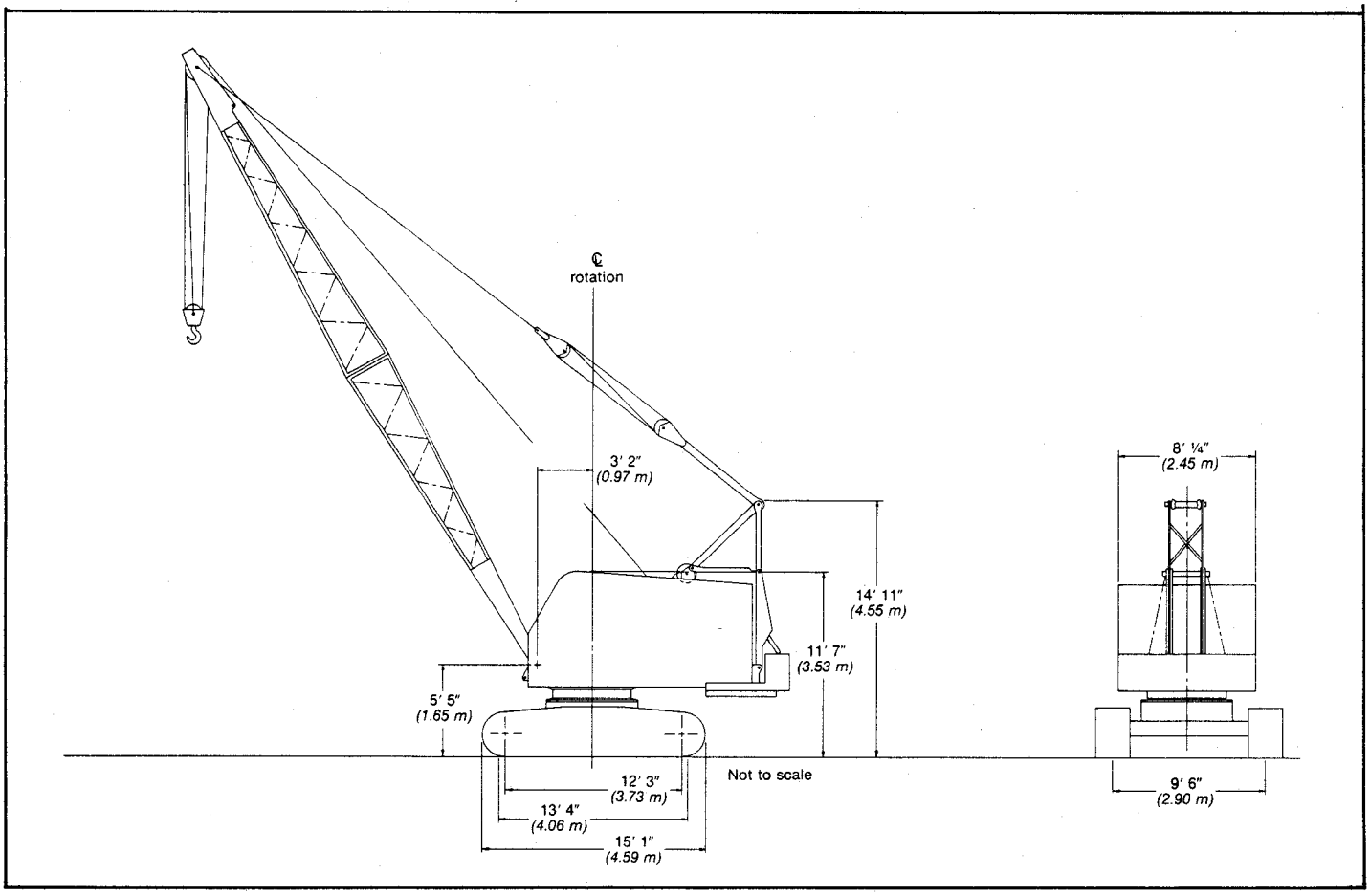
FMC

General Specifications

Link-Belt® 40-ton *(18.14 metric ton)*

Wire rope crawler crane/excavator

LS-98A



General dimensions	Feet	*meters*
Basic angle boom length	40' 0"	*12.19*
Overall height:	—	—
— Retractable high gantry raised	14' 11"	*4.55*
— Retractable high gantry lowered	11' 7"	*3.53*
— Standard low gantry	11' 1"	*3.38*
Overall width of cab less catwalks	8' ¼"	*2.45*
Overall width of cab with catwalks both sides	11' ¼"	*3.36*
Clearance under counterweight "A"	3' 9"	*1.14*
Clearance under counterweight "AB"	3' 5"	*1.04*
Tailswing of counterweight "A"	11' 5"	*3.48*
Tailswing of counterweight "AB"	11' 5"	*3.48*

General dimensions	Feet	*meters*
Overall width of counterweight	8' ¼"	*2.45*
Overall width of machine:	—	—
— 24" *(0.61 m)* wide track shoes	11' 6"	*3.51*
— 30" *(0.76 m)* wide track shoes	12' 0"	*3.66*
— 36" *(0.91 m)* wide track shoes	12' 6"	*3.81*
— 42" *(1.07 m)* wide track shoes	13' 0"	*3.96*
Minimum ground clearance:	—	—
— 24" *(0.61 m)* wide track shoes	12½"	*0.32*
— 30" *(0.76 m)* wide track shoes	13"	*0.33*
— 36" *(0.91 m)* wide track shoes	13½"	*0.34*
— 42" *(1.07 m)* wide track shoes	13½"	*0.34*

GENERAL INFORMATION ONLY

CR9221807.5
(Supersedes CRF 4204-9-70)

Printed in U.S.A.

Machine working weights — approximate

Based on standard machine including GM4-71N diesel engine and friction clutch, six conical hook rollers, independent boom hoist with lowering clutch, boomhoist limiting device, non-independent swing and travel, swing brake, low gantry, drum rotation indicators, and 9′ 6″ *(2.90 m)* gauge by 15′ 1″ *(4.60 m)* long crawler lower with 24″ *(0.61 m)* wide track shoes and track rollers with dirt seals, plus the following:	Crawler mounting 15′ 1″ *(4.60 m)* overall length			
	Counterweight "A"		Counterweight "AB"	
	Pounds	*kilograms*	Pounds	*kilograms*
Lifting crane — includes necessary drum laggings, main load hoist wire rope, boom angle indicator, three head sheaves, boom backstops, hoist line deflector roller, eight-part boom hoist and pendants, counterweight "B" and basic 40′ *(12.19 m)* angle boom.	—	—	70,660	*32 051*
Dragline — includes necessary drum laggings, hoist and inhaul lines, fairlead with adapter base, boom angle indicator, one head sheave, boom backstops, hoist line deflector roller, eight-part boom hoist and pendants, and maximum 60′ *(18.29 m)* angle boom.	66,285	*30 067*	—	—
Clamshell or magnet — includes necessary drum laggings, holding and closing lines, boom angle indicator, three head sheaves, boom backstops, hoist line deflector roller, eight-part boom hoist and pendants, and maximum 60′ *(18.29 m)* angle boom.	65,550	*29 733*	—	—
Hoe — includes necessary drum laggings, mast backstops, one cubic yard *(0.76 m³)* 39″ *(0.99 m)* outside lip width Esco bucket with side cutters for 43″ *(1.09 m)* cutting width and 20′ *(6.10 m)* boom.	71,710	*32 528*	—	—
Hoe — includes necessary drum laggings, mast backstops, auxiliary rear drum brake, one cubic yard *(0.76 m³)* 39″ *(0.99 m)* outside lip width Esco bucket with side cutters for 43″ *(1.09 m)* cutting width, and 23′ *(7.01 m)* boom.	73,545	*33 360*	—	—
Hoe with hydraulic digging bucket — includes necessary drum laggings, mast backstops, complete hydraulic system and cylinder, auxiliary rear drum brake, 1¼ cubic yard *(0.96 m³)* 39″ *(0.99 m)* outside lip width Esco bucket with side cutters for 43″ *(1.09 m)* cutting width, and 20′ *(6.10 m)* boom (available only on machines equipped with either GM 6-71N or Caterpillar 3306T diesel engines with friction clutch).	74,300	*33 702*	—	—

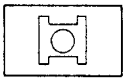
Weight deductions for transporting — approximate

Deduct for removal of the following components:	Crawler mounting 15′ 1″ *(4.60 m)* overall length	
	Pounds	*kilograms*
Counterweight "A" ①	14,800	*6 713*
Counterweight "B" ①	5,200	*2 359*
Basic 40′ *(12.19 m)* angle boom including head machinery and pendants	3,320	*1 506*

① Based on machine equipped with GM engines. For machines equipped with Caterpillar engine, subtract 900 lbs. *(408 kg)* from these weights.

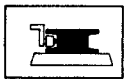
General specifications

Crawler mounting



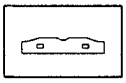
Lower frame

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



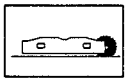
Hook roller path

Double flanged, machined roller path; swing pinion meshes with internal swing (ring) gear which is integral with roller path.



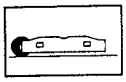
Crawler side frames

All-welded, stress relieved, precision machined; welded integral with lower frame cross axles.



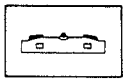
Track drive sprockets

Cast steel, heated treated, involute splined to shafts which are mounted on bronze bushings. Track/chain drive sprockets splined on single shaft which is mounted on bronze bushings in crawler side frames; one assembly per side frame.



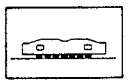
Track idler wheels

Cast steel, heat treated, mounted on bronze bushings; one track idler wheel per side frame. Axle adjusted for track take up. Optional heavy duty track shoes require a heavy duty track chain drive sprocket and idler wheel; idler wheel mounted on anti-friction bearings.



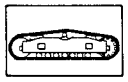
Track carrier rollers

Two cast iron rollers and one slide rail on top of each side frame.



Track rollers

Heat treated, mounted on sintered iron bushings and equipped with dirt seals; nine per crawler side frame.



Tracks

Heat treated, self-cleaning, multiple hinged track shoes joined by one-piece full floating pins; 43 shoes per side frame. Standard shoes: 24" *(0.61 m)* wide; optional: 30", 36", or 42" *(0.76 m, 0.91 or 1.07 m)* wide. Optional heavy duty shoes: 30" or 36" *(0.76 m or 0.91 m)* wide, joined by two-piece pins; require heavy duty sprocket and idler.

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

Travel

Includes two-speed 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. Four-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. *Optional:* Instant travel for forward and reverse.

Steering — Power hydraulic. Travel/steer jaw clutches hydraulically engaged, spring released. External contracting band brakes, spring applied, hydraulically released for travel/steer/digging/parking. Brakes simultaneously released by interconnecting mechanical linkage as jaw clutches are pre-loaded or fully engaged; brakes are automatically set when travel/steer levers are in neutral. Two 18" *(0.46 m)* diameter by 4" *(0.10 m)* wide brake bands; effective lining area 164 square inches *(1 058 cm²)* per brake.

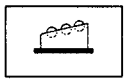
Travel speeds — Low: 0.79 mph *(1.27 km/h)*; high: 1.78 mph *(2.86 km/h)*.

Gradeability — 30%.

Ground contact area and ground bearing pressure (based on standard machine equipped with "AB" counterweight, 40' *(12.19 m)* angle boom and standard track shoes, sprocket and idler).

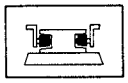
Track shoes		Ground contact area		Ground bearing pressure	
Inches	***meters***	**Square inches**	***cm²***	**P.s.i.**	***kPa***
24	*0.61*	7,600	*49 035*	9.30	*64.12*
30	*0.76*	9,500	*61 294*	7.44	*51.30*
36	*0.91*	11,500	*74 198*	6.14	*42.34*
42	*1.07*	13,300	*85 812*	5.31	*36.61*

Revolving upperstructure



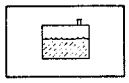
Frame

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



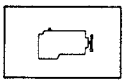
Hook rollers

Standard: six adjustable, heat-treated, conical hook-type rollers mounted on tapered roller bearings; two equalized pairs in front and two in rear. *Optional:* eight adjustable, heat-treated, conical hook-type rollers mounted on tapered roller bearings; two equalized pairs mounted both front and rear.



Fuel tank

58 gallon *(220 L)* capacity; equipped with fuel sight level gauge, flame arrester, and self-closing cap with locking eye for padlock.



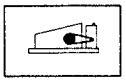
Engines

Full pressure lubrication, oil filter, air cleaner, hour meter and hand throttle. Optional hand throttle (lever type on swing control lever) and foot throttle available. Manual control shutdown.

Engine specifications	GM 4-71N with friction clutch	GM 4-71N with hydraulic coupling	GM 4-71N with torque converter	GM 6-71N with friction clutch	Caterpillar 3306T with friction clutch
Number of cylinders	4	4	4	6	6
Bore and strokes — inches — *(mm)*	4¼ x 5 *108 x 127*	4¼ x 5 *108 x 127*	4¼ x 5 *108 x 127*	4¼ x 5 *108 x 127*	4¾ x 6 *121 x 152*
Piston displacement — cu. in. — *(cm^3)*	284 *4 650*	284 *4 650*	284 *4 650*	426 *6 982*	638 *10 457*
High idle speed — r.p.m. Engine r.p.m. at full load speed	1,990 1,850	1,990 1,850	2,150 2,000	1,990 1,840	1,990 1,825
Net engine h.p. at full load speed	110 *(82 027 W)*	110 *(82 027 W)*	125 *(93 213 W)*	125 *(93 213 W)*	110 *(82 027 W)*
Peak torque — ft. lbs. — *joules* Peak torque — r.p.m.	351 *476* 1,200	351 *476* 1,200	372 *504* 1,200	410 *556* 1,000	356 *483* 1,300
Electrical system Batteries	12-volt Two 6-volt	12-volt Two 6-volt	12-volt One 12-volt	12-volt One 12-volt	12-volt Two 12-volt
Clutch or power take-off	Friction clutch	Hydraulic coupling Twin Disc #SP111-HP-1	Disconnect between engine and converter	Friction clutch	Friction clutch
Transmission: — Number chain wheel teeth — Number engine pinion teeth	 161 17	 161 17	 161 28	 161 17	 161 17

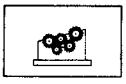
① Allison TCDOA 435 single stage torque converter

Power train



Transmission

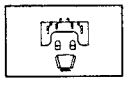
FMC quadruple roller chain enclosed in oil tight chain case with integral chain lubrication pump for oil stream lubrication; oil flow indicator switch.



Machinery gear train

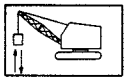
"Full Function" design, two-directional power available for all operating shafts; shafts mounted on anti-friction bearings in precision bored machinery side housings. All load hoisting/lowering, swing and boom hoist functions completely independent of one another. Standard travel is non-independent of swing; travel independent of swing is optional and allows all functions to be completely independent of each other. Components such as gears, pinions, chain wheels, brake drums and clutch spiders are involute splined to shafts. Drum gear/clutch drum assemblies are bolted together and mounted on shafts on anti-friction bearings. Machine-cut teeth on drum gears, pinions, spur gears and chain wheel.

Principal operating functions



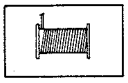
Control system

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



Load hoisting and lowering

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



Front and rear main operating drums

Two-piece, removable, smooth or grooved laggings bolted to brake drums which are splined to shafts. Extended length shafts permit installation of optional power load lowering clutches.

— Lifting crane operation: 13¼" *(0.34 m)* front and rear smooth drum laggings.

— Clamshell, magnet or dragline operation: 15¼" *(0.39 m)* front and rear grooved drum laggings.

Third operating drum – Optional; mounts forward of front main operating drum. Two-piece 9" *(0.23 m)* or 11" *(0.28 m)* root diameter grooved lagging bolted to brake drum which is splined to shaft.

Note: Third drum limitations:

— Dragline application: Lagging must be removed from third drum. To prevent interference of inhaul rope with third drum brake enclosure it is necessary to use ten feet longer inhaul rope than normal to leave minimum of four wraps of rope at anchor end of drum.

— Lifting crane application: To prevent interference of hoist line with third drum brake enclosure, quantity of line on front drum must be limited in certain cases. Four parts of 5/8" *(16 mm)* hoist line on 13¼" *(0.34 m)* lagging may be used with booms up to 55' *(16.76 m)* in length at all radii. For longer boom lengths, operation is limited to certain radii and requires special investigation.

— Hoe applications: Third drum unit must be removed.

Drum clutches

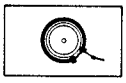
Speed-o-Matic power hydraulic two-shoe clutches; internal expanding, lined shoes. Clutch spiders splined to shafts; clutch drums bolted to drum spur gears and mounted on shafts on anti-friction bearings.

Load hoist clutches — Speed-o-Matic power hydraulic two-shoe clutches. Front and rear main operating drums 20" *(0.51 m)* diameter, 5" *(0.13 m)* face width; effective lining area 212 square inches *(1 368 cm²)*. Optional 20" *(0.51 m)* diameter, 6½" *(0.16 m)* face width front drum hoist/inhaul clutch; effective lining area 260 square inches *(1 678 cm²)*. Optional third drum 17¼" *(0.44 m)* diameter, 4" *(101.60 mm)* face width; effective lining area 118 square inches *(761 cm²)*.

Load lowering clutches — Optional; Speed-o-Matic power hydraulic two-shoe clutches. Front and/or rear main operating drums 20" *(0.51 m)* diameter, 5" *(0.13 m)* face width; effective lining area 212 square inches *(1 368 cm²)*. **Note:** Optional load lowering clutch on rear drum not available on machine equipped with optional auxiliary rear drum brake.

Optional two-speed gear driven drums — For front and/or rear hoist drums only. Intermediate gears installed in side housings between reduction shaft pinion and drum spur gears convert two-shoe Speed-o-Matic power hydraulic load lowering clutches to high-speed hoist clutches; load hoist wire rope speeds increased 90% over standard rope speeds. **Note:** Not available on drums equipped with optional power load lowering clutch, planetary drive unit, or rear drum with auxiliary rear drum brake.

Optional planetary drive units — For front and/or rear drums. Planetary drive units available for up to 70% increase or 40% decrease in load hoisting on either or both drums, or load lowering on rear drum (predetermined by customer); includes special extended drum shafts. Planetary drive units mount between drum spur gears and Speed-o-Matic power hydraulic two-shoe clutch drums. Standard 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. **Note:** Not available on drums equipped with optional two-speed gear driven drum or auxiliary rear drum brake.



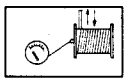
Drum brakes

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 27" *(0.69 m)* diameter, 4½" *(0.11 m)* face width; effective lining area 301 square inches *(1 942 cm²)*.

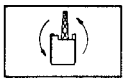
Optional third drum — Brake 18" *(0.46 m)* diameter, 3½" *(88.90 mm)* face width; effective lining area 136 square inches *(877 cm²)*.

Auxiliary rear drum brake — *Optional* with other attachments. Internal expanding Speed-o-Matic power hydraulic two-shoe type; brake drum 23" *(0.58 m)* diameter, 6" *(0.15 m)* face width. Increases brake lining contact area by 287 square inches *(1 852 cm²)*. Pressure on mechanical brake pedal applies standard rear drum brake band and the auxiliary two-shoe brake simultaneously. Mechanical linkage actuates control mechanism of a variable pressure valve to direct hydraulic pressure to the auxiliary brake cylinder. Brake shoe spider splined to shaft; brake drum bolted to anchor plate attached to machinery side housing. **Note:** Auxiliary rear drum brake not available on rear drum equipped with optional power load lowering clutch, two-speed gear driven drum, or planetary drive unit for power lowering.



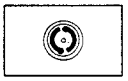
Drum rotation indicators

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

Standard: swing non-independent of travel; operator must manually shift gears from travel to swing prior to actuating two-shoe Speed-o-Matic power hydraulic swing/travel clutches. Optional: swing independent of travel; permits simultaneous swing and travel with separate set of shafts and clutches. Spur gear driven; single bevel gears (enclosed and running in oil) on horizontal swing shaft and vertical swing drive shaft. Swing pinion involute splined to vertical swing shaft, meshes with internal teeth of swing (ring) gear.



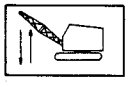
Swing clutches

Speed-o-Matic power hydraulic two-shoe clutches. *Standard:* 20" *(0.51 m)* diameter, 6½", *(0.16 m)* face width, lined shoes; effective lining area 260 square inches *(1 678 cm²)*. Optional for lifting crane only: clutch drums 20" *(0.51 m)* diameter, 5" *(0.13 m)* face width, lined shoes; effective lining area 212 square inches *(1 368 cm²)*.

Swing brake — External contracting band; spring applied, power hydraulically released by operator controlled lever. Swing non-independent of travel: brake drum involute splined to swing brake shaft. Swing independent of travel: brake drum involute splined to vertical swing drive shaft. Brake 14" *(0.36 m)* diameter, 2¼" *(57.15 mm)* face width; effective lining area 74 square inches *(477 cm²)*.

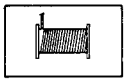
Swing lock — Mechanically controlled double pawl engages with internal teeth of swing (ring) gear.

Maximum swing speed — 4.0 rpm.



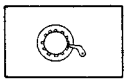
Boom/hoist lowering system

Independent, spur gear driven. Precision control boom hoisting and lowering through Speed-o-Matic power hydraulic two-shoe clutches.



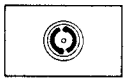
Boomhoist drum

Grooved, 9" *(0.23 m)* root diameter, wire rope drum involute splined to shaft.



Boomhoist drum locking pawl

Operator controlled; mechanically applied and released. Locking pawl engages ratchet teeth on flange of boomhoist drum to hold boom at fixed operating radius.



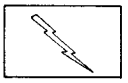
Boomhoist/ lowering clutches

Speed-o-Matic power hydraulic two-shoe clutches; one each for boom hoisting and lowering. 20" *(0.51 m)* diameter, 5" *(0.13 m)* face width; effective lining area 212 square inches *(1 368 cm²)*.

Boomhoist brake

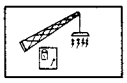
One external contracting band brake; automatically spring applied, hydraulically released. Brake 22" *(0.56 m)* diameter, 3" *(76.20 mm)* face width; effective lining area 174 square inches *(1 123 cm²)*.

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



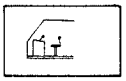
Electrical system

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, 3000 watt, 120-volt, three-wire, single phase, 60 cycles A.C., including wiring in conduit, interior cab lights, trouble lamp with cord, and two 300 watt adjustable flood lights on cab front roof. *Optional:* additional 300 watt floodlights available for mounting on cab and boom. **Note:** Independent light plant cannot be furnished in conjunction with magnet generator package or third drum.



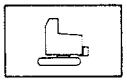
Magnet generator/ control package

Optional. 15 or 22.5 kw magnet generator belt driven off engine power take-off shaft. 15 kw magnet generator for use with 230 volt magnets rated at 30 to 73 operating amperes; 22.5 kw magnet generator for use with 230 volt magnets rated at 81 to 115 operating amperes with the 34" *(0.86 m)* angle boom only. Rheostat, controller, magnet load lift control button on rear drum lever, load drop control button on swing lever, and Rud-O-Matic #636 combination tagline/magnet cable take-up reel.



Operator's cab

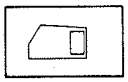
Full-vision, equipped with safety glass panels. Operator's door is hinged; front window slides to overhead storage on ball bearing rollers and right window slides open. Standard equipment includes dry chemical fire extinguisher, machinery guards, bubble-type level, and hand grab rails.



Elevated operator's cab

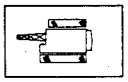
Optional. 2' *(0.61 m)*, 4' *(1.22 m)*, or 7' *(2.13 m)* higher than standard cab. Upper cab portion hinged on 2' *(0.61 m)* cab, removable on 4' *(1.22 m)* and 7' *(2.13 m)* cab; hydraulic control lines equipped with quick-disconnect fittings to facilitate folding to rear (or removing) cab portion forward to reduce overall clearance height.

Optional cab accessories — Electric windshield wiper for both standard and elevated cabs. Cab heater, defroster fan, and steel vandalism window covers for standard cab only. Sound reduction material in operator's cab for standard and 4" *(1.22 m)* elevated cabs.



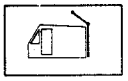
Machinery cab

Machinery access provided by hinged doors on sides and right front corner; rear doors roll on ball bearing rollers. Cab equipped with roof-top access ladder, electric warning horn, machinery guards, hand grab rails, and skid-resistant finish on roof.



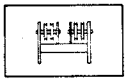
Catwalks

Optional for operator's side or both sides of standard cab; include overhead hand grab rail on sides of cab.



Gantry

Standard: low gantry mounted on revolving upperstructure frame to rear of machinery side housing to support boom suspension system. *Optional:* retractable high gantry required on boom lengths exceeding 60' *(18.29 m)*. Mounted at rear of cab to support boom suspension system; can be raised or lowered by the boomhoist clutches. Also serves to raise counterweight into position or lower it to the ground.



Gantry bail

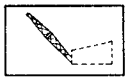
Pinned to low gantry frame or retractable high gantry bail links; serves as connection between gantry and boomhoist wire rope reeving. *Standard:* three sheaves mounted on bronze bushings for eight-part boomhoist wire rope reeving. Optional for retractable high gantry only: four or five sheaves for ten or twelve-part line. Sheaves for eight or ten-part line mounted on bronze bushings. Sheaves for twelve-part line mounted on anti-friction bearings.

Counterweight

Removable; held in place by "T" bolts.
— Counterweight "A": 14,800 lbs. *(6 713 kg)* or 13,900 lbs. *(6 305 kg)* depending on engine used.
— Counterweight "AB": 20,000 lbs. *(9 072 kg)* or 19,100 lbs. *(8 664 kg)* depending on engine used.
Note: Refer to capacity charts for counterweight requirements.

Counterweight removal device — Power raising and lowering with boomhoist clutches on machines equipped with retractable high gantry.

Crane booms and jibs



Angle boom

Two-piece basic boom 40' *(12.19 m)* long with open throat top section; 34" *(0.86 m)* wide, 34" *(0.86 m)* deep at connections. Alloy steel main chord angles; base section 3" x 3" x 3/8" *(76.20 x 76.20 x 9.53 mm)*; top section and extensions — 3" x 3" x 5/16" *(76.20 x 76.20 x 7.94 mm)*.

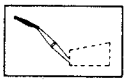
Base section — 20' *(6.10 m)* long; boomfeet 1 5/8" *(41.33 mm)* wide on 38" *(0.97 m)* centers.

Boom extensions — Available in 5', 10', 15' and 20' *(1.52, 3.05, 4.57 and 6.10 m)* lengths with appropriate length pendants.

Boom connections – Standard: pin connections. *Optional:* bolted connections.

Boom top section — 20' *(6.10 m)* long.

Boompoint machinery — Heat treated head sheaves, mounted on anti-friction bearings on boompeak shaft. *Standard:* three 17 7/8" *(0.45 m)* root diameter head sheaves. *Optional:* four 18" *(0.46 m)* root diameter or two 17 7/8" *(0.45 m)* root diameter sheaves instead of three; one wide-mouth 18" *(0.46 m)* root diameter sheave is available for dragline applications.



Angle jib

Two-piece basic jib 20' *(6.10 m)* long; 22 3/4" *(0.58 m)* wide, 18" *(0.46 m)* deep at connections. Alloy steel main chord angles: base section chords 2" x 2" x 1/4" *(50.80 x 50.80 x 6.35 mm)*; tip section chords 2" x 2" x 3/16" *(50.80 x 50.80 x 4.76 mm)*.

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

Jib extensions — Available in 10' *(3.05 m)* lengths for 30' or 40' *(9.14 or 12.19 m)* jibs.

Jib connections — Bolted.

Jib tip section — 10' *(3.05 m)* long; single peak sheave 15 7/8" *(0.40 m)* root diameter 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 for jib load hoist line within the mast. Two equalizer sheaves for jib front stay and jib back staylines mounted to top of mast.

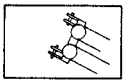
Jib mast stops — Telescoping type, spring-loaded; pinned from jib mast to boom top section and from jib mast to jib base section.

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.

Boompoint sheave guards – Standard: rigid, round steel rod bolted over top of sheaves and rigid, round steel rods between sheaves. *Optional:* roller-type guards mounted on anti-friction bearings, mounted on brackets beneath sheaves.
Note: Roller-type guards do not permit use of center sheave(s), and are not available on boom equipped with jib.

Boom stops

Dual tubular boom stops with spring loaded bumper ends: fixed horizontal on cab roof.

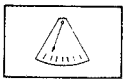


Boomhoist bridle

Serves as connection between pendants and boomhoist reeving. Bridle contains 9 1/2" *(0.24 m)* root diameter sheaves mounted on bronze bushings. Four sheaves for eight-part boomhoist reeving for use with low gantry; retractable high gantry requires either four, five or six sheaves depending on whether using eight, ten or twelve-part boomhoist reeving.

Deflector rollers — Heat treated, tubular steel rollers mounted on anti-friction bearings. Required when third drum wire rope passes over crane boompoint. Recommended for long booms and for short booms when load is being handled on front drum wire rope. One roller standard on top side of boom base section. Recommended optional rollers: one roller for boom lengths through 45' *(13.72 m)*; two rollers for boom lengths beyond 45' *(13.72 m)* through 65' *(19.81 m)*; three rollers for boom lengths beyond 65' *(19.81 m)* through 85' *(25.91 m)*; four rollers for boom lengths beyond 85' *(25.91 m)* through 100' *(30.48 m)*.

Auxiliary equipment

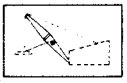


Boom angle indicator

Standard; pendulum type, mounted on operator's side of boom base section.

Fairlead

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



Tagline

Optional: Rud-O-Matic® model 648; spring wound drum type mounted on crane boom. Rope pull off drum — 90' *(27.43 m)* from neutral. Morin Tagmaster Model BR — 0 to 100 lbs. *(0 – 45.36 kg)* adjustable pull; 2,000 lb. *(907.20 kg)* maximum pull at operator demand.

GENERAL INFORMATION ONLY

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