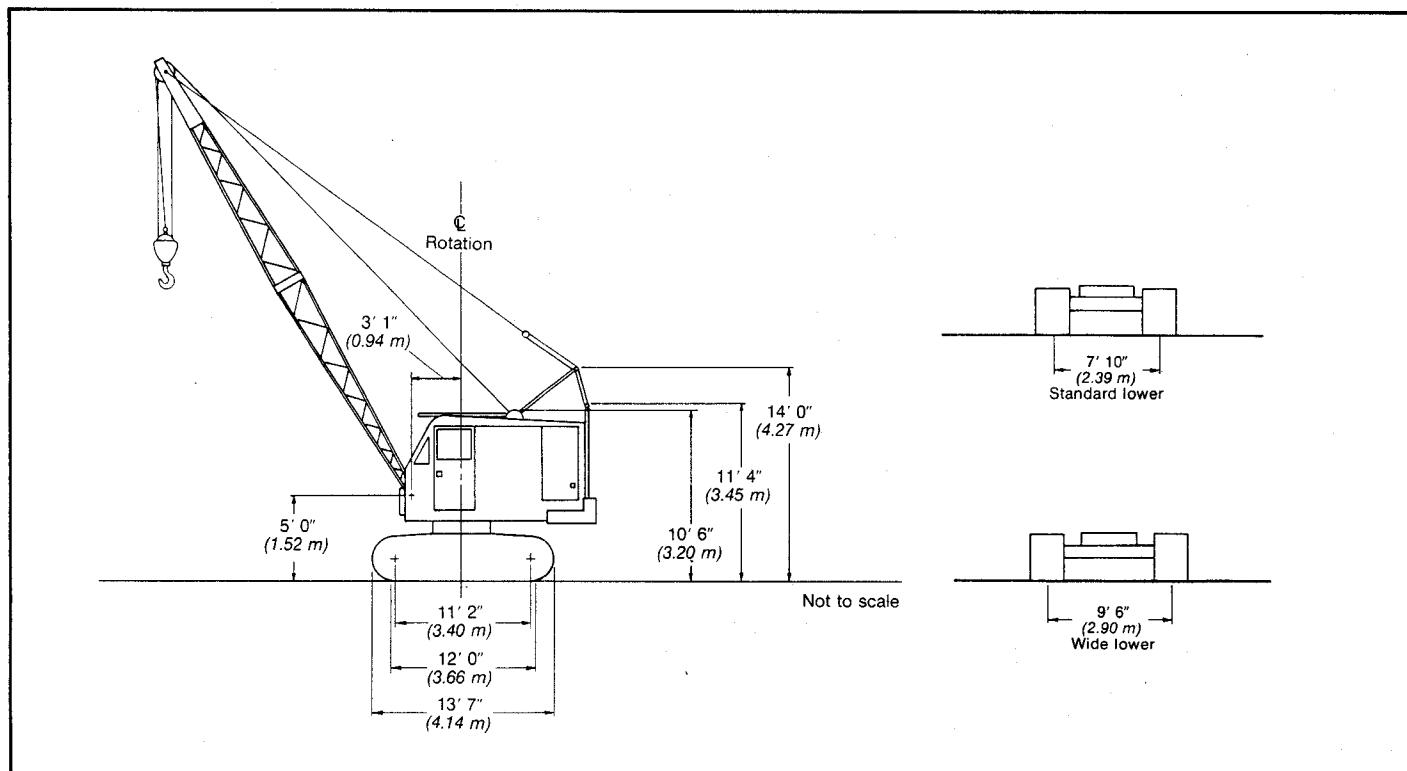


General Specifications

Link-Belt® 17½-30 ton (15.87-27.21 metric ton)
Wire rope crawler crane/excavator

LS-78

GENERAL INFORMATION ONLY



General dimensions	Feet	meters
Basic boom length	—	—
— 26" (0.66 m) angle boom	30' 0"	9.14
— 34" (0.86 m) angle boom	35' 0"	10.67
Ground clearance under counterweight "A"	3' 4"	1.02
Ground clearance under counterweight "AB"	3' 1"	0.94
Ground clearance under counterweight "ABC"	2' 10"	0.86
Ground clearance under counterweight "ABCD"	2' 9"	0.84

General dimensions	Feet	meters
Minimum ground clearance	1' 0"	0.30
Overall cab width	8' 0"	2.44
Tailswing of counterweight "A"	10' 0"	3.05
Tailswing of counterweight "AB"	10' 3"	3.12
Tailswing of counterweight "ABC"	10' 3"	3.12
Tailswing of counterweight "ABCD"	10' 9"	3.28

General dimensions	Crawler mounting			
	7' 10" (2.39 m) gauge		9' 6" (2.90 m) gauge	
	Feet	meters	Feet	meters
Overall width with 24" (0.61 m) shoes	9' 10"	3.00	11' 6"	3.51
Overall width with 30" (0.76 m) shoes	10' 4"	3.15	12' 0"	3.66
Overall width with 36" (0.91 m) shoes	10' 10"	3.30	12' 6"	3.81
Overall width with 42" (1.06 m) shoes	NA	—	13' 0"	3.96
Overall width for transporting; side frames removed and cross axles in line with upper.	—	—	—	—
	NA	—	8' 0"	2.44

Machine working weights — approximate

Based on standard machine including GM 3-71N diesel engine w/friction clutch, 4 hook rollers, independent boomhoist w/lowering clutch, non-independent swing/travel, single speed travel, swing brake, low gantry, necessary drum laggings, counterweight "A", 24" (0.61 m) track shoes, and the following —	Crawler mounting			
	7' 10" (2.39 m) gauge		9' 6" (2.90 m) gauge	
	Pounds	kilograms	Pounds	kilograms
Lifting crane — including independent swing/travel, boom lowering clutch power load lowering clutches on both front and rear drums, retractable high gantry, 8 hook rollers, counterweight "AB", necessary load hoist wire rope on rear drum, and one of the following booms. — 80' (24.38 m) angle boom — 26" (0.66 m) — 80' (24.38 m) angle boom — 34" (0.86 m)	50,561 52,919	22 934 24 004	NA 56,428	— 25 596
Maximum lifting crane — same as above crane except including counterweight "ABCD" and 36" (0.91 m) track shoes, and the following boom. — 100' (30.48 m) angle boom — 34" (0.86 m)	NA	—	68,566	31 102
Dragline — including counterweight "AB", 6 hook rollers, 30" (0.76 m) track shoes, necessary hoist and inhaul wire ropes but no bucket, and one of the following booms. — 50' (15.24 m) angle boom — 26" (0.66 m) — 50' (15.24 m) angle boom — 34" (0.86 m)	47,828 48,328	21 695 21 922	NA 52,798	— 23 949
Clamshell — including counterweight "AB", 6 hook rollers, 30" (0.76 m) track shoes, necessary holding (hoist) and closing wire ropes but no bucket or tagline winder, and one of the following booms. — 50' (15.24 m) angle boom — 26" (0.66 m) — 50' (15.24 m) angle boom — 34" (0.86 m)	47,550 48,050	21 569 21 795	NA 52,520	— 23 823

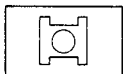
Weight deductions for transporting — approximate

Deduct for removal of the following components:	Pounds	kilograms
Counterweight "A"	4,550	2 064
Counterweight "AB"	7,850	3 561
Counterweight "ABC"	9,350	4 241
Counterweight "ABCD" ①	15,300	6 940
Removable crawler side frames (2) with 24" (0.61 m) shoes ①	12,760	5 793
Removable crawler side frames (2) with 30" (0.76 m) shoes ①	14,260	6 474
Removable crawler side frames (2) with 36" (0.91 m) shoes ①	15,960	7 246
Removable crawler side frames (2) with 42" (1.07 m) shoes ①	16,660	7 564
Basic 30' (9.14 m) angle boom 26" (0.66 m) — including head machinery and boom pendants	2,265	1 027
Basic 35' (10.67 m) angle boom 34" (0.86 m) — including head machinery and boom pendants	2,980	1 352

①9' 6" (2.90 m) gauge lower only.

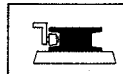
General specifications

Mounting-crawler



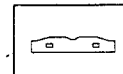
Lower frame

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



Hook roller path

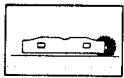
Double-flanged, welded to lower frame; precision machined to accommodate hook roller mounting of revolving upperstructure on lower frame. Swing pinion meshes with internal swing (ring) gear which is integral with roller path.



Crawler side frames

All welded, stress relieved. 7' 10" (2.39 m) gauge lower — side frames welded integral with lower frame cross axles. 9' 6" (2.90 m) gauge lower — side frames bolted to lower frame cross axles to permit removal to reduce overall width (across cross axles) to 8' 0" (2.44 m) to facilitate transporting.

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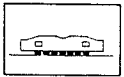
Track/chain drive sprockets

Cast steel, heat treated, two sprockets welded integral, mounted on axle on bronze bushings; one unit mounted at rear end of each crawler side frame.



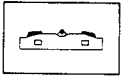
Track idler wheels

Cast steel, mounted on axle on bronze bushings at front end of each crawler side frame.



Track rollers

Heat treated bottom rollers, mounted on sintered iron bushings and equipped with dirt seals; eight per crawler side frame. *Optional* — rollers sealed for lifetime lubrication.



Track carrier rollers

Two heat treated rollers mounted on top side of each crawler side frame.



Crawler tracks

Heat treated, self-cleaning, multiple-hinged shoes joined by one-piece, full floating pins. Thirty-nine shoes per side frame on either standard or optional lower; 24" (0.61 m) wide shoes standard; 30" (0.76 m), 36" (0.91 m) optional for either lower, and 42" (1.07 m) optional for 9' 6" (2.90 m) gauge lower only.

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.



Travel

Standard: Travel non-independent of swing; operator must manually shift deck gears from swing to travel prior to actuating Speed-o-Matic® power hydraulic two-shoe swing/travel clutches. **Optional:** Travel independent of swing; permits simultaneous swing and travel with separate set of shafts and clutches. Horizontal traction shaft powered through bevel gear drive enclosed in oil. Travel/steer jaw clutches involute splined to shaft; all shaft components mounted within lower frame. Sprockets on outer ends of shaft chain drive the track drive sprockets at inside rear of each crawler side frame. **Optional:** two-speed travel and instant travel forward or reverse only. **Note:** Instant travel available only on machine with optional travel independent of swing.

Travel speeds — *Standard;* single speed — approximately 1.19 m.p.h. (1.92 km/hr) forward, 1.12 m.p.h. (1.80 km/hr) reverse. *Optional;* two-speed — approximately 2.37 m.p.h. (3.81 km/hr) forward, 2.24 m.p.h. (3.60 km/hr) reverse.

Gradeability — 30%.

Steering — Power hydraulic. Travel/steer jaw clutches hydraulically engaged, spring released. Spring-applied, hydraulically released travel/steer external contracting band brakes simultaneously released with mechanical linkage interconnected with travel/steer jaw clutches. Brakes automatically set when steer lever is in neutral. Straightline travel (forward or reverse) accomplished by engaging both sets of jaw clutches. Pivot turns (forward or reverse travel) accomplished by engaging one or the other set of jaw clutches. Travel/steer brakes also serve as digging/parking brakes. Brake bands 18" (0.46 m) diameter by 4" (0.10 m) wide.

Ground contact area

Crawler gauge	Track shoes		Ground contact area	
	Inches	meters	Sq. inches	m ²
7' 10" (2.39 m)	24	0.61	6,912	4.46
	30	0.76	8,640	5.57
	36	0.91	10,368	6.69
9' 6" (2.90 m)	24	0.61	6,912	4.46
	30	0.76	8,649	5.57
	36	0.91	10,368	6.69
	42	1.07	12,168	7.85

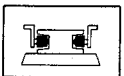
Note: Determining ground bearing pressure — divide total weight of machine as equipped into the respective ground contact area.

Revolving upperstructure



Frame

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

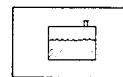


Hook rollers

Serve to hold upper structure on mounting; adjustable, heat treated, conical hook-type rollers mounted on tapered roller bearings.

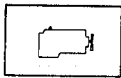
7'10" (2.39 m) gauge lower — four single rollers standard. *Optional* — six rollers; two equalized pairs in front, two single rollers in rear. *Optional* — eight rollers; two equalized pairs front and rear.

9' 6" (2.90 m) gauge lower — six rollers standard; two equalized pairs in front, two single rollers in rear. *Optional* — eight rollers; two equalized pairs front and rear.



Fuel tank

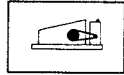
43 gallon (163 L) capacity tank equipped with flame arrester fill unit, self-closing cap with locking eye for padlock, and fuel level gauge. *Optional* — auxiliary 43 gallon (163 L) capacity tank equipped with same accessories as standard tank. Auxiliary tank designed for mounting within machinery cab at right front corner forward of chain wheel case and extending forward outside cab.



Engines

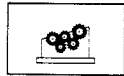
Diesel; full pressure lubrication, oil filter, air cleaner, fuel filter, hand throttle, optional foot throttle and/or hand throttle (lever type on swing control lever). **Note:** Lever type hand throttle not available on machine equipped with magnet generator.

Power train



Transmission

Triple roller chain enclosed in oil-tight chain case with integral sump; pump-driven oil stream lubrication. Engine pinion and chain wheel have machine-cut teeth.



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. Load hoisting/lowering, swing and boomhoist functions completely independent of each other and all other functions. Standard travel is non-independent of swing, but travel independent of swing is optional. With optional arrangement, all functions are completely independent of one another. Components such as bevel gears, pinions, chain wheel, brake drums and clutch spiders involute splined to shafts. Drum gear/clutch drum assemblies bolted together, mounted on shafts with anti-friction bearings. Machine-cut teeth on drum gears, pinions, spur gears and chain wheel.

Engine specifications	GM 3-71N with friction clutch ¹	GM 3-71N with single stage torque converter ²	GM 4-71N with friction clutch	Caterpillar 3304-NA with friction clutch
Number of cylinders	3	3	4	4
Bore and stroke — inches — (mm)	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 — cubic inches — (cm ³)	213 (3 488)	213 (3 488)	284 (4 650)	425 (6 970)
High idlespeed — r.p.m.	1,990	2,220	1,408	1,990
Engine r.p.m. at full load speed	1,815	2,100	1,268	1,800
Net engine horsepower at full load speed	84 (62 638 W)	98 (73 079 W)	80 (59 656 W)	81 (60 402 W)
Peak torque — foot pounds — (J)	271 (367)	266 (360)	351 (476)	278 (377)
Peak torque — r.p.m.	1,200	1,400	1,200	1,000
Electrical system	12-volt	12-volt	12-volt	12-volt
Batteries	2 — 6-volt	2 — 6-volt	2 — 6-volt	2 — 12-volt
Clutch or power take-off	Friction clutch, Twin Disc #SP 111-HP-1	Disconnect between engine and converter	Friction clutch, Twin Disc #SP 111-HP-1	Friction clutch, Twin Disc #SP 111-HP-1
Transmission —				
Number chain wheel teeth	161	161	161	161
Number engine pinion teeth	17	21	17	17

¹Twin Disc hydraulic coupling is optional.

²Equipped with Allison #TCDOA 277 single stage torque converter.

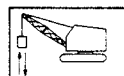
Principal operating functions



Control system

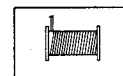
Speed-o-Matic® power hydraulic control system, a variable pressure system requiring no bleeding. Operating pressure is transmitted through oil to all two-shoe clutch cylinders, and other hydraulic cylinders as required. System includes a constant displacement, engine driven, vane type hydraulic pump to provide constant flow of oil, an accumulator to maintain system operating pressure, unloader valve to

control pressure in accumulator, relief valve to control excessive pressure build-up in system, full-flow filter with 40 micron disposable filter element.



Load hoisting and lowering

Independent load hoisting and lowering. Standard — hoisting controlled by Speed-o-Matic, power hydraulic two-shoe clutch and lowering controlled by foot controlled brake. Optional — load lowering controlled by Speed-o-Matic, power hydraulic two-shoe clutch in addition to foot controlled brake.



Load hoist drums

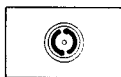
Front and rear main operating drums — Two piece, removable laggings bolted to brake drums which are splined to drum shafts. Laggings either smooth or grooved depending on application.

- Lifting crane operation: 12" (0.30 m) front and rear grooved drum laggings.
- Clamshell or magnet application: 14" (0.36 m) front and rear grooved drum laggings.
- Dragline application: 12" (0.30 m) front and 14" (0.36 m) rear grooved drum laggings.

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Third operating drum — Optional: mounts forward of front main operating drum. Two piece 9" (0.23 m) root diameter grooved drum lagging bolted to brake drum; brake drum splined to shaft.

Note: Lifting crane; when using boom lengths up to 50' (15.24 m) long at maximum radii, amount of wire rope on third drum must be limited to avoid interference with front drum wire rope spooling off underwinding front drum. For longer boom lengths, requiring more wire rope on front drum, third drum wire rope should be removed. Dragline; to prevent interference with inhaul rope, it is necessary to remove third drum rope and lagging. Hoe; third drum unit must be removed complete.



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.

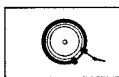
Load hoist clutches — Speed-o-Matic power hydraulic two-shoe clutches, lined type. Front and rear main drums — clutch drums 18" (0.46 m) diameter, 4½" (0.11 m) face width; effective lining area 172 square inches (1 110 cm²). Optional third drum — clutch drum 17¼" (0.44 m) diameter, 4" (0.10 m) face width; effective lining area 122 square inches (787 cm²).

Load lowering clutches — Optional; available on front and rear main operating drums only. Speed-o-Matic two-shoe power hydraulic lined type clutches. Clutch drums 18" (0.46 m) diameter, 4½" (0.11 m) face width; effective lining area 172 square inches (1 110 cm²). **Note:** Optional load lowering clutch not available on rear drum on machine equipped with auxiliary rear drum brake.

Two speed front and rear drum — Optional for either or both drums. Gear driven — for hoist only. Intermediate gears installed in side housings between reduction shaft pinion and drum spur gears converts two-shoe power hydraulic load lowering clutches to high-speed hoist clutches; load hoist wire rope speeds increased 100% over standard rope speeds. **Note:** Not available on drums equipped with power load lowering clutch, planetary drive unit, rear drum with auxiliary rear drum brake or third on operating drum.

Planetary drive units for front and rear drums — Optional. Planetary drive units available for load hoisting on either or both drums; includes special extended drum shafts. Planetary drive units mount between drum spur gears and Speed-o-Matic power hydraulic two-shoe clutch drums — available for increased load hoist or lowering rope speeds as predetermined by customer. 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 two speed drum or auxiliary rear drum brakes, and not available on optional third drum.

Auxiliary rear drum brake — Optional. Internal expanding Speed-o-Matic® power hydraulic two-shoe type; brake drum 18" (0.46 m) diameter, 4½" (0.11 m) face width. Increases brake lining contact area by 172 square inches (1 110 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 machine equipped with power load lowering clutch on rear drum, with two speed rear drum or with planetary drive unit on rear drum.

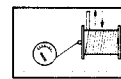


Drum brakes

External contracting band type; brake drum involute splined to shaft. Mechanically foot pedal operated; each brake foot pedal equipped with latch to permit locking brake in applied position.

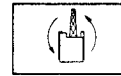
Front and rear main drums — Brake drum 23¾" (0.60 m) diameter, 3¾" (0.10 m) face width; effective lining area 215 square inches (1 387 cm²).

Optional third drum — Brake drum 18" (0.46 m) diameter, 3½" (0.89 m) face width; effective lining area 133 square inches (858 cm²).



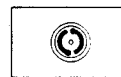
Drum rotation indicators

Standard for front and rear main operating drums. Dial-type indicators mounted on control stand; dials actuated by flexible shaft drives attached to drum shafts.



Swing system

Standard: Swing non-independent of travel; operator must manually shift deck gears from travel to swing prior to actuating Speed-o-Matic power hydraulic two-shoe swing/travel clutches. **Optional:** Swing independent of travel; permits simultaneous swing and travel with separate 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.



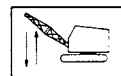
Swing clutches

Speed-o-Matic power hydraulic two-shoe lined type clutches. Clutch drums 18" (0.46 m) diameter, 4½" (0.11 m) face width.

Swing brake — External contracting band; spring applied, 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 drum 11" (0.28 m) diameter, 2" (51 mm) face width.

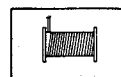
Swing lock — Mechanically controlled pawl engages with internal teeth of swing (ring) gear.

Swing speed — 4.2 r.p.m.



Boom hoist/
lowering system

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



Boomhoist drum

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

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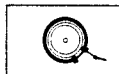
Boomhoist drum locking pawl

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. Clutch drums 18" (0.46 m) diameter, 4½" (0.11 m) face width.



Boom hoist/ lowering brake

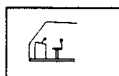
External contracting band brake; automatic, spring applied, hydraulically released. Brake band 22" (0.56 m) diameter, 3" (0.08 m) face width.

Boomhoist limiting device — When properly adjusted, device limits booming up beyond pre-determined minimum operating radius. As boom approaches minimum radius, it contracts head of an adjusting bolt to trip a hydraulic valve which causes hydraulic pressure to by-pass boomhoist clutch and permits simultaneous engagement (setting) of spring applied boomhoist brake.



Electrical system

12-volt negative ground system; includes two 6-volt, 160 hour ampere batteries. *Optional*; Onan independent light plant, 3,000 watt, 120-volt, single phase, 60 cycle A.C. with three interior cab lights, trouble lamp with cord, and two 300 watt adjustable floodlights on cab roof. **Note:** Independent light plant not available on machine equipped with magnet generator, auxiliary fuel tank or third drum. *Optional*; additional 300-watt floodlights mounted on cab and/or boom. *Optional*; battery lighting system including two sealed beam automotive type adjustable headlights on cab roof and one interior cab light plus optional additional headlight mounted on boom. **Note:** Three automotive type headlights are maximum quantity recommended.



Operator's cab

Full-vision operator's compartment equipped with safety glass panels. Door is hinged, front window rolls to overhead storage on ball bearing rollers, and right side window slides open; fixed window in cab roof. Standard equipment

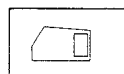
includes dry chemical fire extinguisher, machinery guards, bubble-type level, and hand grab rails.



Elevated operator's cab

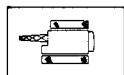
Optional; cab 4' (1.22 m) higher elevation than standard cab. Upper cab portion hinged and hydraulic control lines equipped with quick-disconnect fittings to facilitate folding (or removal) cab portion forward to reduce overall clearance height.

Optional cab accessories — For either standard or elevated cab. Electric windshield wiper, cab heater, defroster fan, sound reduction material in cab, and Lexan window panels.



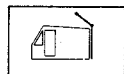
Machinery cab

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, skid-resistant finish on roof.



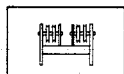
Catwalks

Optional; along operator's side and/or right-hand side of cab, include overhead hand grab rail or sides of cab. Fabricated steel; hinged to permit folding vertically along cab sides to reduce overall width of machine for transporting.



Gantry

Standard; low gantry mounted on revolving upper structure frame to rear of machinery side housings. *Optional*; retractable high gantry (required for lifting crane service with boom lengths exceeding 50' (15.24 m)). Gantry mounted at rear of cab; raised or lowered under power for reducing overall height. May also be used for power raising or lowering of counterweight. **Note:** Retractable high gantry standard on machine equipped with optional 9' 6" (2.90 m) gauge, 13' 7" (4.14 m) long crawler mounting.



Gantry bail

Pinned to low gantry frame or retractable high gantry bail links. Three, four or five sheaves are provided for standard 8-part

or optional 10 or 12-part boomhoist wire rope reeving for crane attachment. Gantry bail sheaves — low gantry, sheaves mounted on bronze bushings; retractable high gantry — sheaves mounted on bronze bushings for 4 or 8 part reeving, sheaves mounted on non-metallic bushings for optional 10 or 12 part reeving.

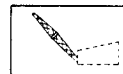


Counterweight

Removable, held in place by "T" bolts. Power raising and lowering by retractable high gantry — controlled by boom hoist power hydraulic clutch or boom lowering power hydraulic clutch. Platform extension under engine — 2,000 lbs. (907 kg) — not included in counterweight figures.

— "A" counterweight — Standard for hoe application; 4,500 lbs. (2 064 kg)
 — "AB" counterweight — Standard for lifting crane, clamshell, dragline, magnet, or piledriver for machine mounted on 7' 10" (2.39 m) or 9' 6" (2.90 m) gauge lower; 7,850 lbs. (3 561 kg).
 — "ABC" counterweight — *Optional*; for lifting crane, dragline, clamshell, or magnet. Available with 7' 10" (2.39 m) gauge lower only; 9,350 lbs. (4 241 kg). Also available is a one-piece "ABC" counterweight.
 — "ABCD" counterweight — *Optional*; for lifting crane application only on machine with 9' 6" (2.90 m) gauge only; 15,300 lbs. (6 940 kg).

Booms and jibs



26" (0.66 m) angle boom

Two-piece basic boom 30' (9.14 m) long; 28" (0.71 m) wide, 26" (0.66 m) deep at connections. Alloy steel main chord angles 2½" x 2½" x 5/16" (64 x 64 x 8 mm) is base and top sections, 2½" x 2½" x ¼" (64 x 64 x 6 mm) in extensions.

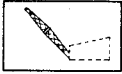
Base section — 17' (5.18 m) long; boom feet 1½" (41 mm) thick on 35" (0.89 m) centers.

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

Boom connections — Standard; pin connections. *Optional*; bolted connections.

Top section — Open throat, 13' (3.96 m) long.

— **Boompoint machinery.** Heat treated, 18" (0.46 m) root diameter head sheaves mounted on anti-friction bearings. **Standard** — two sheaves; **optional** — three or four sheaves, or single wide flared sheave for dragline.



34" (0.86 m) angle boom

Two-piece basic boom 35' (10.67 m) long; 34" (0.86 m) wide, 34" (0.86 m) deep at connections. Alloy steel main chord angles 3" x 3" x 3/8" (76 x 76 x 10 mm) in base and extension chords, 3" x 3" x 5/16" (76 x 76 x 8 mm) in top section.

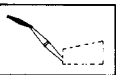
Base section — 20' (6.07 m) long; boom feet 1 5/8" (41 mm) thick on 34" (0.89 m) centers.

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

Boom connections — **Standard**; pin connections. **Optional**; bolted connections.

Top section — Open throat, 15' (4.57 m) long.

— **Boompoint machinery.** Heat treated 18" (0.46 m) root diameter head sheaves mounted on anti-friction bearings. **Standard** — three sheaves; **optional** — two or four sheaves, or single wide flared sheave for dragline.



Jib

Two-piece basic jib 20' (6.10 m) long; 23" (0.58 m) wide, 18" (0.46 m) deep at connections. Alloy steel main chord angles 2" x 2" x 1/4" (51 x 51 x 6 mm) in base section; 2" x 2" x 3/16" (51 x 51 x 5 mm) in extensions and top section. Jib mounts on either angle boom.

Base section — 10' (3.05 m) long.

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

Jib connections — Bolted.

Jib tip section — 10' (3.05 m) long; equipped with single 15 7/8" (0.40 m) root diameter sheave mounted on anti-friction bearings. Wire rope anchor provided at peak of jib for 2-part jib load hoist (whipline) wire rope reeving if desired.



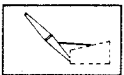
Jib mast

10' (3.05 m) high mast, mounted on base section of jib. Two deflector sheaves mounted within mast to guide jib load hoist line. Two equalizer sheaves for jib front staylines and back staylines mounted on top of jib mast.

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

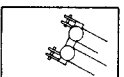
Jib staylines — Front staylines attached between top of jib mast and peak of jib. Back staylines — 26" (0.66 m) angle boom; attached between top of jib mast and boom base section. Back staylines — 34" (0.86 m) angle boom; attached between top of jib mast and base of boom top section.

Items applicable to both angle booms



Boom stops

Dual, tubular type with spring loaded bumper ends, fixed horizontal on cab roof.



Boomhoist bridle

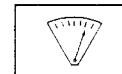
Serves as connection between boom pendants and boomhoist reeving. Low gantry: Bridle contains four 11" (0.28 m) root diameter sheaves, mounted on bronze bushings, for eight-part boomhoist reeving. Retractable high gantry — 26" (0.66 m) angle boom: Bridle contains four, five or six sheaves for eight, ten or twelve-part boomhoist reeving. Sheaves 9 1/2" (0.24 m) root diameter, mounted on non-metallic bushings. Retractable high gantry — 34" (0.86 m) angle boom: Bridle contains

four, five or six sheaves for eight, ten or twelve-part boomhoist reeving. Sheaves 11" (0.28 m) root diameter mounted on bronze bushings.

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, unless center guard is removed, and are not available on boom equipped with jib.

Deflector rollers — 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. Heat treated, tubular steel rollers; mounted on anti-friction bearings. One roller standard on top side of base section of either boom. Recommended optional rollers — one for 50' (12.19 m) boom, two for 45' (13.72 m) through 60' (18.29 m) boom, three for 65' (19.81 m) through 80' (24.38 m) boom, and four for 85' (25.91 m) through 100' (30.48 m) boom.

Auxiliary equipment



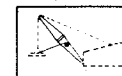
Boom angle indicator

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



Fairlead

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



Tagline

Rud-o-Matic® model 648; spring-wound, drum-type; cable pull off drum 60' (18.29 m) to 75' (22.86 m) from neutral. Also available; Morin Tagmaster Model BR.

Backfill board — 7' (2.13 m) wide; for use in backfilling material into trench.

GENERAL INFORMATION ONLY