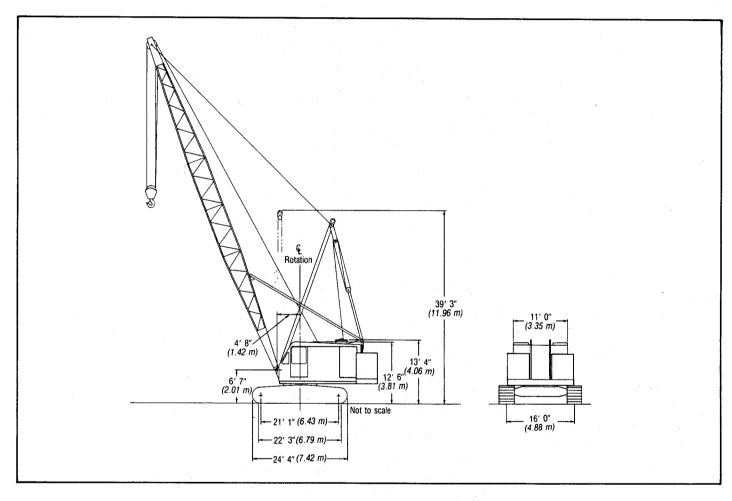


# **General Specifications**

Link-Belt® 150-ton (136.05 metric ton)

# Wire rope crawler excavator/crane

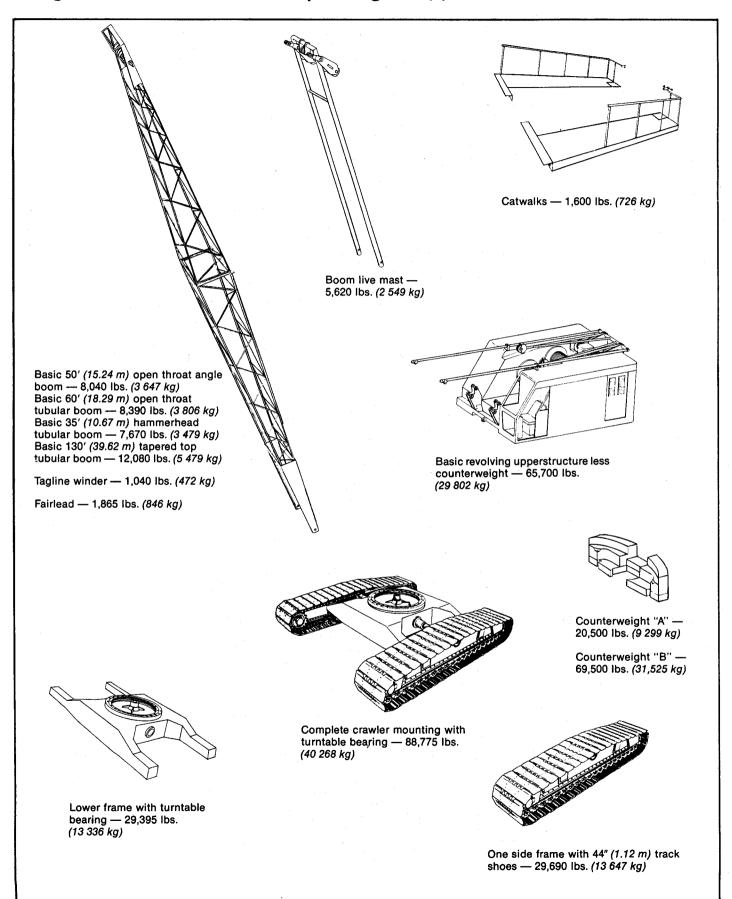




General dimensions	Feet	meters
Overall width for transport less side frames	_	_
and catwalks; axles in line with upper	11' 0"	3.35
Overall width of counterweight	17' 0"	5.25
Width of cab less catwalks	11' 0"	3.35
Width of cab with catwalks both sides	16′ 10″	5.13
Tailswing of counterweight "A" or "AB"	17′ 3″	5.26
Overall height for transport — basic machine	_	_
less crawler side frames	11' 11"	3.63
Overall height, live boom mast with 60'	_	_
(18.29) boom horizontal	25′ 6″	7.77

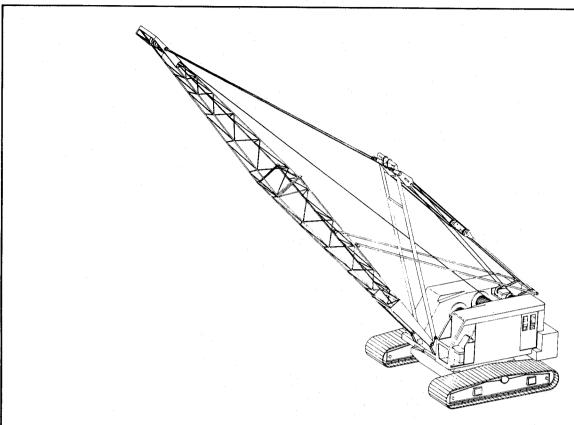
General dimensions	Feet	meters
Basic angle boom length	50'0"	15.24
Basic tubular boom lengths:	_	
— Open throat	60′ 0″	18.29
— Hammerhead	35′ 0″	10.67
— Tapered top	130′ 0″	39.62
Overall width with 44" (1.12 m) track shoes	19′ 8″	5.99
Minimum ground clearance	1′ 5″	0.43
Clearance under counterweight "A" or "AB"	4′ 3″	1.30
Clearance width less crawler side frames,	l –	_
counterweight, and catwalks	17' 7"	5.36

# Weight deductions for transporting — approximate





# Machine working weights — approximate



Complete basic machine with GM 8V-71N diesel engine and single stage Allison torque converter, turntable bearing, independent boomhoist, swing brake, independent swing and	Pounds	kilograms
travel, extended front and rear drum shafts, front and rear drum laggings, catwalks and railings along both sides, counterweight lowering mechanism, 44" (1.12 m) wide track shoes, and 60' (18.29 m) tubular boom.		
— with 20,500 lb. (9 299 kg) counterweight "A"	189,025	85 472
— with 90,000 (40 824 kg) counterweight "AB"	258,525	117 267

# **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 arrangement and held in place with two patented, 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/chain drive

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.

## **GENERAL INFORMATION ONLY**



Track carrier rollers

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



Track rollers

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



Tracks

Heat treated, self-cleaning, multiple hinged track shoes joined by one-piece full floating pins. 52 shoes per side frame, 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.



#### Independent travel

Standard. 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% based on machine equipped with "AB" counterweight, basic 60' (18.29 m) long, 62" (1.57 m) deep tubular boom, and boom live mast.

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 boom live mast and basic 60' (18.29 m) long, 62" (1.57 m) deep tubular boom.

	Track	shoes	Ground contac	ct area	Ground bearing pressure			
Counterweight	Inches	meters	Square inches	cm²	P.s.i.	kPa		
"A" 20,500 lbs. <i>(9 299 kg)</i>	44	1.12	22,940	148 036	8.2	56.54		
"AB" 90,000 lbs. (40 824 kg)	44	1.12	22,940	148 036	11.3	77.91		

## Revolving upperstructure



#### Frame

All-welded, stress relieved, precision machined; machinery side housings 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 lever) and foot throttle available. Manual control shutdown for GM engines; electrical shutdown for Cummins engine.

Auxiliary governor control — Optional; for use with GM8V-71N and Cummins NT 855 engines only. Provides approximately 50% greater pinion r.p.m. Recommended for lifting crane service only.



#### Fuel tank

85 gallon (322 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 8V-71N with single-stage torque converter <sup>①</sup>	GM 8V-71N with three-stage torque converter <sup>②</sup>	Cummins NT 855-P310 with three-stage torque converter <sup>®</sup>
Number of cylinders Bore and stroke — inches — (mm) Piston displacement — cu. in. — (cm³)	8	8	6
	4½ x 5	4¼ x 5	5½ x 6
	(108 x 127)	(108 x 127)	(140 x 152)
	568	568	855
	(9 310)	(9 310)	(14 013)
High idle speed — r.p.m. Engine r.p.m. at full load speed	2,250	2,250	2,350
	2,100	2,100	2,100
Net engine h.p. at full load speed	245 (183 kW)	260 (194 kW)	279 (208 kW)
Peak torque — ft. lbs.	710	749	890
— (joules)	(963)	(1 016)	(1 207)
— r.p.m.	1,200	1,200	1,500
Electrical system	12-volt	12-volt	12-volt
Batteries	Two 12-volt	Two 12-volt	Two 12-volt
Clutch or power takeoff	Disconnect between engine and converter	Disconnect between engine and converter	Disconnect between engine and converter
Transmission — Number chain wheel teeth Number engine pinion teeth	164 30	164 36	164 33

<sup>© 2.54:1</sup> ratio Allison TCDOA-565 single-stage converter with output shaft governor.

# 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 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 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 applications: 191/8" (0.49 m) front and 27" (0.69 m) rear smooth drum laggings.

 Clamshell or magnet applications: 27" (0.69 m) front and rear grooved drum laggings.

— Dragline application: 24%" (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. Brake drum splined to shaft.

#### 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 cm²). Optional third drum clutch: 20" (0.51 m) diameter, 5" (0.13 m) face width; effective lining area 215 square inches (1 387 cm²).

Two-speed rear drum — Optional. An added spur gear, mounted between left swing clutch and standard spur gear, powers idler pinion mounted on outer end of extended reduction shaft. Idler pinion powers large spur gear and clutch drum that is normally the rear drum lowering clutch. Through this gear arrangement, the rear drum shaft is powered in the same direction as the standard hoist clutch, but at 80% higher than standard speed. Control is by pulling the hoist drum lever for standard speed, pushing for high speed. All gears machine cut. Note: Two-speed rear drum not available on machines equipped with optional power load lowering clutch or auxiliary brake on rear drum.

Twin Disc Co-10066-TC1 three-stage converter with output shaft governor.

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. Note: Load lowering clutch not available on rear drum equipped with optional two-speed hoist or auxiliary rear drum brake.



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" (1.12 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 swing gear integral with outer race of turntable.



Swing clutches

Speed-o-Matic power hydraulic internal expanding two-shoe clutches. 30" (0.76 m) diameter, 6½" (0.15 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 cm<sup>2</sup>).

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

Maximum swing speed — 3.0 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 drum** 

Dual laggings involute splined to shaft;  $10\frac{1}{2}$ " (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 cm<sup>2</sup>).

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; two batteries. 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 adjustable flood lights on cab front roof and necessary cab extensions. Optional: additional 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:* electrical windshield wiper, cab heater, defroster fan, 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 included 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, right rear side door hinged, sliding doors (two at rear, one at left rear side, and one at right front side) for machinery access, roof-top access ladder, and skid-resistant finish on roof.



#### Catwalks

Standard for both sides of machinery 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 eight 12" (0.30 m) root diameter sheaves mounted on bronze bushings for 18-part boomhoist wire rope reeving.



#### Counterweight

Removable; held in place by "T" bolts.

— Counterweight "A" 20,500 lbs.

(9 299 kg).

— Counterweight "AB" (standard): 90,000 lbs. (40 824 kg) available for lifting crane service only; three-piece allowing for reduction to weight "A". (Refer to counterweight requirement instructions with lifting capacity charts).

Counterweight removal device — Standard. 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



#### Angle boom

Two-piece basic boom 50' (15.24 m) long with open throat top section; 60'' (1.52 m) wide, 54'' (13.7 m) deep at connections. Alloy steel chord angles  $4'' \times 4'' \times 1/2''$  (102 x 102 x 13 mm).

Base section — 25' (7.62 m) long; boomfeet  $2\frac{3}{4}$ " (78 mm) wide on  $54\frac{1}{2}$ " (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.

Boompoint machinery. Five 21" (0.53 m) root diameter sheaves mounted on anti-friction bearings for lifting crane application; two 21" (0.53 m) root diameter sheaves for dragline application.

Boom midpoint suspension pendants — Required on boom lengths exceeding 180' (54.86 m). **Note:** Boom must have a joint 85' (25.91 m) from boom foot pins to allow attachment of midpoints.



#### Angle jib

Two-piece basic jib 20' (6.10 m) long; 24" (0.61 m) wide, 20" (0.51 m) deep at connections. Alloy steel main chord angles  $2\frac{1}{2}$ " x  $2\frac{1}{2}$ " x  $2\frac{1}{2}$ " x  $2\frac{5}{16}$ "  $(64 \times 64 \times 8 \text{ mm})$ .

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 15%" (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 line.



#### **Tubular boom**

Two-piece basic boom 60' (18.29 m) long with open throat top section; 35' (10.67 m) long with hammerhead top section. Boom 70" (1.77 m) wide, 62" (1.57 m) deep at connections. Alloy steel round tubular chords 4" (0.10 m) outside diameter.

Base section — 30' (9.14 m) long; boomfeet 2%'' (70 mm) wide on 54% (1.37 m) centers.

Boom extensions — Available in 10', 20', 30', and 40' (3.05, 6.10, 9.14 and 12.19 m) lengths (chord wall thickness "F") with appropriate length pendants. Available in 10' and 20' (3.05 and 6.10 m) lengths (chord wall thickness "J") with appropriate length pendants for boom with hammerhead top section only.

Note: The 40' (12.19 m) of hammerhead boom extensions immediately above boom base section must consist of 10' or 20' (3.05 or 6.10 m) extensions with chord wall thickness "J".

Boom connections — In-line pin connections.

Boom top section — Open throat; 30' (9.14 m) long.

— Boompoint machinery. Five 21" (0.53 m) root diameter sheaves mounted on anti-friction bearings for lifting crane applications; two 261/4" (0.67 m) root diameter sheaves for dragline applications.

Boom top section — Hammerhead; 5' (1.52 m) long.

— Boompoint machinery. Five 21" (0.53 m) root diameter head sheaves mounted on anti-friction bearings for lifting crane applications.

Boom midpoint suspension pendants — Required on boom lengths exceeding 180' (54.86 m).

**Note:** Boom must have a joint 110' (33.53 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 21/4" (57 mm) outside diameter.

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

Jib extensions — Available in 10', 15', 20', 30', and 40' (3.05, 4.57, 6.10, 9.14, and 12.19 m) lengths; maximum jib length permitted — 70' (21.34 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' 7%" (6.85 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.



#### **Tubular boom**

Three-piece basic boom 130' (39.62 m) long with tapered top section; 80" (2.03 m) wide, 68" (1.73 m) deep at connections. Alloy steel round tubular chords 41/4" (0.10 m) outside diameter.

Base section — 35' (10.67 m) long; boomfeet 234'' (10 mm) wide on 541/2'' (1.37 m) centers.

Transition section — Tapered, 50' (15.24 m) tapered from 80" (2.03 m) wide, 68" (1.73 m) deep at lower end to 55" (1.40 m) wide, 41" (1.04 m) deep at top end.

Boom extensions — Available in 10', 20', 30', 40' and 50' (3.05, 6.10, 9.14, 12.19, and 15.24 m) lengths with appropriate length pendants.

Boom connections — In-line pin connections.

Boom top section — Tapered, 45' (13.72 m) long; tapered from 55" (1.40 m) wide, 41" (1.04 m) deep at lower end to 32" (0.81 m) wide, 17" (0.43 m) deep at top end.

Boompoint machinery — Two 28%" (0.72 m) root diameter head sheaves, mounted on anti-friction bearings.

Boom midpoint suspension pendants — Required on boom lengths greater than 200' (60.96 m). Note: Boom must have a joint 115' (35.05 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 21/4" (57 mm) outside diameter.

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

Jib extensions — Available in 20' (6.10 m) lengths; maximum jib length permitted — 70' (21.34 m).

Jib connections - In-line pin connected. capacities.

Jib tip section — 15' (4.57 m) long; single peak sheave 15%" (0.40 m) root diameter mounted on anti-friction bearings.



Jib mast

12'7%" (6.85 m) high, mounted on jib base section. Two deflector sheaves, 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.

# 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 eight 12" (0.30 m) root diameter head sheaves, mounted on bronze bushings, for eighteen-part boomhoist reeving with boom live mast.

Spreader bar — Installed at end of first 30' (9.14 m) pendant which is connected directly to boom head shaft. Required on boom lengths 150' (45.72 m) and over, with or without jib.



#### **Boom live mast**

Required for all boom lengths; reduces boom compression loadings. 30' (9.14 m) long from center of head shaft to mounting pin; mounts on front of upper frame near boomfeet. Supports boomhoist bridle and boom midpoint suspension pendants. Mast may be used for machine assembly/disassembly, but is not intended for general crane service. **Note:** Refer to Performance Specifications for boom live mast lifting

<del>--- 8 ---</del>

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 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 sheave guards — Standard for open throat crane/clamshell/magnet/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/magnet/dragline service. Rigid guards for hammerhead and tapered top booms.

Deflector rollers — Deflect main or third drum hoist line off boom to avoid chafing; rollers mounted an anti-friction bearings. Angle boom: none on base section, two mounted on top section, and one on each boom extension. Tubular boom: open throat — none on base section, two mounted on top section, and one on each boom extension; hammerhead - none on base section, one mounted on each boom section: tapered top — none on base section, three mounted on top section, two on 40' and 50' (12.19 and 15.24 m) extensions, and one on remaining extensions.

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 angle or tubular booms 50' through 120' (15.24 through 36.28 m). Note: Tapered top boom cannot be carried with live mast in lowered position. Boom suspension system uses two links, one at each end of the 10' (3.05 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



**Fairlead** 



Tagline

Standard with all crane booms. Pendulum type, mounted on boom base section.

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

Optional. Spring wound drum type mounted on crane boom. Rud-O-Matic® model 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.

# **GENERAL INFORMATION ONLY**





# Link-Belt® LS-518 Performance Specifications

Boom live mast — lifting capacities when used as short boom 1

	ast radius @@	Capa	acities
Feet	meters	Pounds	kilograms
13 to 20* 25* 28*	3.96 to 6.10* 7.62* 8.53*	47,000 30,000 23,000	21 319 13 608 10 433

Based on factors other than that which would cause a tipping condition.

Requires 4 parts of ¾" (19 mm) Type "N" wire rope.

## Wire rope and drum data

Main load hoist wire rope length — for open throat ① hammerhead ② and tapered top ③ booms using 11/8" (28 mm) diameter wire rope

Parts								Boom I	engths							
of		5.24 m)	60' (18.29 m)		70' (21.34 m)		80' (24.38 m)		90' (2	7.43 m)	100′ (3	30.48 m)	110′ (:	33.53 m)	120' (36.58 m)	
line	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	120 180	36.58	140	42.67	160	48.77	180	54.86	200	60.96	220	67.06	240	73.15	260	79.25
3	240	54.86 73.15	210 280	64.01 85.34	240 320	73.15 97.54	270 360	82.30 109.73	300 400	91.44 121.92	330 440	100.58 134.11	360	109.73	390	118.87
4 5	300 360	91.44 109.73	350 420	106.68 128.02	400	121.92	450	137.16	500	152.40	550	167.64	480 600	146.30 182.88	520 650	158.50 198.12
6	420	128.02	490	149.35	480 560	146.30 170.69	540 630	164.59 192.02	600 700	182.88 213.36	660 770	201.17 234.70	720 840	219.46	780	237.74
8	480 540	146.30 164.59	560 630	170.69 192.02	640 720	195.07	720	219.46	800	243.84	880	268.22	960	256.03 292.61	910 1,040	277.37 316.99
9	600	182.88	700	213.36	800	219.46 243.84	810 900	246.89 274.32	900 1.000	274.32 304.80	990	301.75 335.28	1,080 1,200	329.18 365.76	1,170 1,300	356.62 396.24
10	660	201.17	770	234.70	880	268.22	990	301.75	1,100	335.28	1,210	368.81	1,320	402.34	1,430	435.86

Parts								Boom I	engths							
of	130′ (3	39.62 m)	140' (42.67 m)		r) 150′ (45.72 m)		160' (48.77 m)		170′ (	1.82 m)	180′ (5	4.86 m)	190' (5	7.91 m)	200′ (6	0.96 m)
line	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1	280	85.34	300	91.44	320	97.54	340	103.63	360	109.73	380	115.82	400	121.92		
2	420	128.02	450	137.16	480	146.30	510	155.45	540	164.59	570	173.74			420	128.02
3	560	170.69	600	182.88	640	195.07	680	207.26	720	219.46	760	231.65	600 800	182.88	630	192.02
4	700	213.36	750	228.60	800	243.84	850	259.08	900	274.32	950	289.56		243.84	840	256.03
5	840	256.03	900	274.32	960	292.61	1.020	310.90	1.080	329.18		347.47	1,000	304.80	1,050	320.04
6	980	298.70	1.050	320.04	1,120	341.38	1.190	362.71	1.260	384.05	1,140		1,200	365.76	1,260	384.05
7	1.120	341.38	1.200	365.76	1.280	390.14	1,360	414.53	1,440		1,330	405.38	1,400	426.72	1,470	448.06
8	1,260	384.05	1.350	411.48	1,440	438.91	1.530	466.34	1 '	438.91	1,520	463.30	1,600	487.68	1,680	512.06
9	1,400	426.72	1,500	457.20	1,600	487.68	1,700		1,620	493.78	1,710	521.21	1,800	548.64	1,890	576.07
10	1.540	469.39	1,650	502.92	1,760	536.45		518.16	1,800	548.64	1,900	579.12	2,000	609.60	2,100	640.08
	.,540	700.00	1,000	302.92	1,700	030.45	1,870	569.98	1,980	603.50	2,090	637.03	2,200	670.56	2,310	704.09

Parts		Boom lengths														
of	210′ (6	34.01 m)	220' (67.06 m)		230' (70.10 m)		240' (73.15 m)		250' (75.20 m)		260' (79.25 m)		270' (82.30 m)		280' (85.34 m	
line	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1 2 3 4 5 6 7 8 9	440 660 880 1,100 1,320 1,540 1,760 1,980 2,200	134.11 201.17 268.22 335.28 402.34 469.39 536.45 603.50 670.56	460 690 920 1,150 1,380 1,610 1,840 2,070 2,300	140.21 210.31 280.42 350.52 420.62 490.73 560.83 630.94 701.04	480 720 960 1,200 1,440 1,680 1,920 2,160	146.30 219.46 292.61 365.76 438.91 512.06 585.22 658.37	500 750 1,000 1,250 1,500 1,750 2,000 2,250	152.40 288.60 304.80 381.00 457.20 533.40 609.60 685.80	520 780 1,040 1,300 1,560 1,820 2,080 2,340	158.50 237.74 316.99 396.24 475.49 554.74 633.98 713.23	540 810 1,080 1,350	164.59 246.89 329.18 411.48	560 840 1,120 1,400	170.69 256.03 341.38 426.72	580 870 1,160 1,450	176.78 265.18 353.57 441.96

Parts	Boom	lengths
of	290′ (8	8.39 m)
line	Feet	meters
1	600	182.88
2	900	274.32
3	1,200	365.76
4	1,500	457.20

① Open throat 54" x 60" (1.37 x 1.52 m) angle boom lengths: 50' (15.24 m) through 210' (64.01 m). Open throat 62" x 70" (1.57 x 1.77 m) tubular boom lengths: 60' (18.29 m) through 250' (76.20 m). ② Hammerhead 62" x 70" (1.57 x 1.77 m) tubular boom lengths: 35' (10.67 m) through 245' (74.68 m). ③ Tapered top 80" x 68" (2.03 x 1.73 m) tubular boom lengths: 130' (39.62 m) through 290' (88.39 m).





② Boom live mast stops must be in proper working condition and operative. Use of live mast as short boom is intended for machine assembly or disassembly only. It should not be used for general crane service.

① Live mast must not be operated at radius less than 13' (3.96 m).

## LS-518 performance specifications



rope and drum data — (continued)

Jib load hoist rope lengths (whipline) — using 1/8" (22 mm) diameter wire rope

	Parts								Boom I	engths			-				
Jib	of	50′ (1	5.24 m)	60' (18.29 m)		70' (21.34 m)		80′ (2	4.38 m)	90' (2	7.43 m)	100′ (	30.48 m)	110′ (	33.53 m)	120' (36.58 m)	
length	line	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
20' ① (6.10 m)	1 2	160 235	48.77 71.63	180 265	54.86 80.77	200 295	60.96 89.92	220 325	67.06 99.06	240 355	73.15 108.20	260 385	79.25 117.35	280 415	85.34 126.49	300 445	91.44 135.64
30′ (9.14 m)	1 2	180 265	54.86 80.77	200 295	60.96 89.92	220 325	67.06 99.06	240 355	73.15 108.20	260 385	79.25 117.35	280 415	85.34 126.49	300 445	91.44 135.64	320 475	97.54 144.78
50' ② (15.24 m)	1 2	Not applicable		240 355	73.15 108.20	260 385	79.25 117.35	280 415	85.34 126.49	300 445	91.44 135.64	320 475	97.54 144.78	340 505	103.63 153.92	360 535	109.73 163.07
70' ② (21.34 m)	1 2			280 415	85.34 126.49	300 445	91.44 135.64	320 475	97.54 144.78	340 505	103.63 153.92	360 535	109.73 163.07	380 565	115.82 172.21	400 595	121.92 181.36

	Parts	L							Boom I	engths							
Jib	of	130′ (3	39.62 m)	140' (42.67 m)		150' (45.72 m)		160' (4	18.72 m)	170′ (5	1.82 m)	180' (54.86 m)		190' (5	7.91 m)③	200' (60	0.96 m)
length	line	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
20' ① (6.10 m)	1 2	320 475	97.54 144.78	340 505	103.63 153.92	360 535	109.73 163.07	380 565	115.82 172.21	400 595	121.92 181.36	420 625	128.02 190.50	440 635	134.11 193.55	Not ap	plicable
30' (9.14 m)	1 2	340 505	103.63 153.92	360 535	109.73 163.07	380 565	115.82 172.21	400 595	121.92 181.36	420 625	128.02 190.50	440 655	134.11 199.64	460 685	140.21 208.79	480 715	146.30 217.93
50' ② (15.24 m)	1 2	380 565	115.82 172.21	400 595	121.92 181.36	420 625	128.02 190.50	440 655	134.11 199.64	460 685	140.21 208.79	480 715	146.30 217.93	500 745	152.40 227.08	520 775	158.50 236.22
70′ ② (21.34 m)	1 2	420 625	128.02 190.50	440 655	134.11 199.64	460 685	140.21 208.79	480 715	146.30 217.93	500 745	152.40 227.08	520 775	158.50 236.22	540 805	164.59 245.36	560 835	170.69 254.51

	Dama.		Boom lengths									
Jib	Parts of	210′ (6	4.01 m)	220′ (6	7.06 m)	230' (70	0.10 m)@	240' (7:	3.15 m)®	250' (7	5.20 m)@	
length	line	Feet	meters									
20' ① (6.10m)	1 2	•				– Not ap	plicable ·				-	
30' (9.14 m)	1 2	500 745	152.40 227.08	520 775	158.50 236.22	540 805	164.59 245.36	560 835	170.69 254.51	580 865	176.78 263.65	
50' ② (15.24 m)	1 2	540 805	164.59 245.36	560 835	170.69 254.51	580 865	176.78 263.65	600 895	182.88 272.80	620 925	188.98 281.94	
70' ② (21.34 m)	1 2	580 865	176.78 263.65	600 895	182.88 272.80	620 925	188.98 281.94	640 955	195.07 291.08	660 985	201.17 300.23	

### Clamshell or dragline wire rope lengths using one part wire rope

		Boom lengths												
		50' (15.24 m)		60' (18.29 m)		70' (21.34 m)		80' (24.38 m)		90' (27.43 m)				
Attachment	Function	Feet	meters											
Clamshell	Holding Closing	130 180	39.62 54.86	150 200	45.72 60.96	170 220	51.82 67.06	190 240	57.91 73.15	210 260	64.01 79.25			
Dragline	Hoist Inhaul	130 75	39.62 22.86	150 85	45.72 25.91	170 95	51.82 28.96	190 105	57.91 32.00	210 115	64.01 35.05			

Boom hoist wire rope length — 640' (195.07 m)



① Angle jibs only.
② Tubular jibs only.
③ Tubular jibs only.
③ Maximum angle boom length on which jib can be mounted is 190' (57.91 m).
④ Maximum tubular boom lengths on which jibs can be mounted: open throat — 230' (70.10 m); hammerhead — 225' (68.58 m); tapered top — 250' (75.20 m).



# LS-518 performance specifications



### Drum wire rope capacities

	Front or rear drum — 19%" (0.48 m) root diameter smooth lagging 1%" (28 mm) wire rope				Fro	nt or rear dru t diameter sm	ooth laggir	ng	Boomhoist drum — 10½" (0.27 m) root diameter grooved lagging				
Wire			) wire rope			11/s" (28 mm	wire rope			¾" (19 mm)	wire rope		
rope	Rope p	er layer	Total w	ire rope	Rope p	er layer	Total wire rope		Rope per layer		Total wire rope		
layer	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	
1 2 3 4	75 90 99 109 117	22.86 27.43 30.18 33.22	75 165 264 373	22.86 50.29 80.47 113.69	103 118 126 132	31.39 35.97 38.40 40.23	103 221 347 479	31.39 67.36 105.77 146.00	29 40 45 49	8.84 12.19 13.72 14.94	29 69 114 163	8.84 21.03 34.75 49.68	
6 7 8	126 135 144	35.66 38.40 41.15 43.89	490 616 751 895	149.35 187.76 228.90 272.80					54 59	16.46 17.98	217 276	66.14 84.12	

Wire		ont drum (inh: ot diameter g 11/8" (28 mm	ging		ront or rear d oot diameter ( 3/8" (22 mm)	grooved lag		Third drum — 13½" (0.34 m) root diameter smooth lagging %" (22 mm) wire rope				
rope	Rope p	oer layer	Total w	ire rope	Rope p	er layer	Total wire rope		Rope	per layer	Total wire rope	
layer	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters	Feet	meters
1 2 3 4 5	89 111 120 129 138 147	27.13 33.83 36.58 39.32 42.06 44.81	89 200 320 449 587 734	27.13 60.86 97.54 136.86 178.92 223.72	110 154 162 171 180 189	33.53 46.94 49.38 52.12 54.86 57.61	110 264 426 597 777 966	33.53 80.47 129.84 181.97 236.83 294.44	69 151 242 342 451	21.03 46.02 73.76 104.24 137.46	69 220 462 804 1,255	21.03 67.06 140.82 245.06 382.52

<u>Available</u> line speed and line pull<sup>①</sup> — based on Cummins N855-P310 <sup>②</sup> diesel engine with three stage Twin Disc torque converter developing maximum net horsepower as developed by P.C.S.A. Standard No. 1

			Fre	ont or rea	r drum						Third dru	ım		
	Root	Wire rope diameter		Line speed first layer		Line pull first layer		Root	Wire rope diameter		Line speed first layer		Line puil first layer	
Attachment	diameter	Inches	mm	F.p.m.	m/min	Pounds	kilograms	diameter	inches	mm	Ep.m.	m/min	Pounds	kilograms
Crane	19½" (0.49 m)	⅓ 1 1⅓	22 26 28	101 102 103	30.78 31.09 31.39	61,400 61,000 60,700	27 851 27 670 27 534	13¼" (0.34 m)	7∕8	22	117	35.66	29,800	13 517
Crane	27" (0.69 m)	7⁄8 1 11∕8	22 26 28	142 142 143	43.28 43.28 43.59	44,100 43,800 43,500	20 004 19 868 19 732							
Clamshell hoist and closing or dragline hoist	27" (0.69 m)	7/8 1	22 26	142 142	43.28 43.28	44,100 43,800	20 004 19 868							
Dragline inhaul	24%" (0.62 m)	1 11/8	26 28	129 130	39.32 39.62	47,000 46,700	21 319 21 183							

## Permissible line speed and pull - based on Type "N" wire rope strength, single part line

			Fre	ont or reas	drum						Third dru	ım		
	Root	Wire rope diameter		Line speed first layer		Line pull first layer		Root	Wire rope diameter		Line speed first layer		Line pull first layer	
Attachment	diameter	Inches	mm	F.p.m.	m/min	Pounds	kilograms	diameter	Inches	mm	F.p.m.	m/min	Pounds	kilograms
Crane	191⁄s" (0.49 m)	7/s 1 11/s	22 26 28	101 102 103	30.78 31.09 31.39	22,700 29,500 37,100	10 297 13 381 16 829	13¼" (0.34 m)	7∕8	22	117	35.66	22,700	10 297
Crane	27" (0.69 m)	7⁄8 1 11∕8	22 26 28	142 142 143	43.28 43.28 43.59	22,700 29,500 37,100	10 297 13 381 16 829					-		
Clamshell hoist and closing, or dragline hoist	27" (0.69 m)	7/8 1	22 26	142 142	43.28 43.28	22,700 29,500	10 297 13 381							
Dragline inhaul	24%" (0.62 m)	1 11⁄8	26 28	129 130	39.32 39.62	29,500 37,100	13 381 16 829							

① Maximum permissible load on single part of line for Type "N" wire rope: ¾"(19 mm) — 16,800 lbs. (7 620 kg); ¾"(22 mm) — 22,700 lbs. (10 297 kg); 1" (26 mm) — 29,600 lbs. (13 427 kg); 1½"\_(28 mm) — 37,100 lbs. (16 829 kg). Maximum permissible load for ¾" (22 mm) Type "P" wire rope — 14,800 lbs. (6 713 kg). ② Data applicable only to Cummins NT855-P310 engine package. If required, similar data for other engine packages available from Sales Office.



# LS-518 performance specifications

d hoisting performance 1 — line speeds are maximum for full throttle operation (2,100 r.p.m. load speed) with Cummins NT855-P310 diesel engine equipped with three stage Twin Disc torque converter and auxiliary governor control

			Fron	t or rear d	rum — 191⁄	" (0.48 m)	root diamet	er using 1	/s" (28 mm)	diameter v	vire rope		
								speed		***			
			First lay	er rope			Fifth lay	er rope	1	Fighth Is	ver rope		
	ne load ②	Star	dard	High s	peed ③	Star	ndard		peed ③	Star	ndard		peed ③
Pounds	kilograms	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min
5,000 10,000 15,000 20,000 25,000 35,000 40,000* 45,000* 55,000* 60,000*	2 268 4 536 6 804 9 072 11 340 13 608 15 876 18 144* 20 412* 22 680* 24 948* 27 216*	199 191 180 170 159 151 143 132* 122* 117* 109*	60.66 58.22 54.86 51.82 48.46 46.02 43.59 40.23* 37.19* 35.66* 33.22* 31.39*	337 310 276 244 215 191 170 148* 132*	102.72 94.49 84.12 74.37 65.53 58.22 51.82 45.11* 40.23*	279 260 241 222 199 180 165 152* 140* 126* 115*	85.04 79.25 73.46 67.67 60.66 54.86 50.29 46.33* 42.67* 38.40* 35.05* 32.61*	471 406 335 283 237 198 168	143.56 123.75 102.11 86.26 72.24 60.35 51.21	339 306 278 250 221 198 179 160* 141* 127*	103.33 93.27 84.73 76.20 67.36 60.35 54.56 48.77* 42.98* 38.71*	561 452 368 297 236	170.99 137.77 112.17 90.53 71.93

				Front	or rear dru	m — 27" (C	).69 m) root	diameter	using %" (22	mm) wire	rope		
							Line s		·····	· · · · · · · · · · · · · · · · · · ·		<del></del>	· · · · · ·
	_		First lay	er rope			Fourth la	yer rope			Sixth la	yer rope	
	ne load ②	Standard High speed ③		peed ③	Stan	dard	High s	peed 3	Star	dard	,	peed ③	
Pounds	kilograms	F.p.m.	m/min	F.p.m.	m/min	F.p.m.	m/min	Ep.m.	m/min	F.p.m.	m/min	Ep.m.	m/min
5,000 10,000 15,000 20,000 00* 000* 40,000* 45,000* 55,000* 60,000*	2 268 4 536 6 804 9 072 11 340* 13 608* 15 876* 18 144* 20 412* 22 680* 24 948* 27 216*	267 251 235 215 197* 180* 164* 150* 138* 127* 116* 106*	81.38 76.50 71.63 65.53 60.05* 54.87* 49.99* 45.72* 42.06* 38.71* 35.36* 32.31*	447 389 329 276 236* 201* 171*	136.25 118.57 100.28 84.12 71.93* 61.26* 52.12*	314 292 266 240 215* 192* 174* 157* 142* 127*	95.71 89.00 81.08 73.15 65.53* 58.52* 53.04* 47.85* 43.28* 38.71*	520 434 355 292 241* 200*	158.50 132.28 108.20 89.00 73.46* 60.96*	345 317 285 253 224* 199* 178* 159* 142*	105.16 96.62 86.87 77.11 68.28* 60.66* 54.25* 48.46* 43.28*	566 460 366 297 240*	172.52 140.21 111.56 90.53 73.15

## Rope size and type

Wire rope application	Size and type used						
Boomhoist Main load hoist Jib load hoist (1-part) Jib load hoist (2-part) Third drum Clamshell holding (hoist) or closing Dragline hoist Dragline inhaul Boom pendants Boom midpoint suspension pendants Jib frontstay line Jib backstay line	34" (19 mm) diameter, Type "W" 11/6" (28 mm) diameter, Type "N" 76" (22 mm) diameter, Type "M" 11/6" (28 mm) diameter, Type "G" 136" (35 mm) diameter, Type "N" 76" (22 mm) diameter, Type "N" 76" (21 mm) diameter, Type "N" 76" (21 mm) diameter, Type "N" 34" (19 mm) diameter, Type "N" 34" (19 mm) diameter, Type "N"						

Required on boom lengths exceeding 180' (54.86 m).

Wire rope types Type "M" — 6 x 25 (6 x 19 class), filler wire, extra improved plow steel, preformed, independent wire rope center, right lay, lang lay.

Type "N" --- 6 x 25 (6 x 19 class), filler wire, extra improved plow steel, preformed, independent wire rope center, right lay, regular lay.

Type "P" — 19 x 7 non-rotating, extra improved plow steel, preformed, wire strand core.

Type "G" — 6 x 30 flattened strand, extra improved plow steel, preformed, independent wire rope center, right lay, lang lay.

Type "W" — 6 x 26 (6 x 19 class), extra improved plow steel,

preformed, independent wire rope center, right lay, alternate lay.

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

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<sup>\*</sup>Based on factors other than allowable strength of single line of wire rope.

① Data applicable only to Cummins NT855-P310 engine package as described above. If required, similar data for other engine packages available from Sales Office.
② Maximum permissible load on single part of line for Type "N" wire rope: %" (22 mm) — 22,700 lbs. (10 297 kg); 1\%" (28 mm) — 37,100 lbs. (16 829 kg). Maximum permissible load for \%" (22 mm) Type "P" wire rope; 14,800 lbs. (6 713 kg).