ANSI B30.5

AMERICAN

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MODELS 9300 and 9320

CRAWLER CRANES

GENERAL SPECIFICATIONS

MODELS 9300 AND 9320 CRAWLER CRANES

UPPER MACHINERY:

STANDARD ENGINE: Cummins Model NT-855-C310 Big Cam diesel engine, six cylinder, 5-1/2 in. (140 mm) bore, 6 in. (150 mm) stroke, 855 cu. in. (13.9 l) displacement, 24 volt electric starting, battery charging alternator.

With three stage torque converter - net rated 279 HP (310 gross HP) at 2100 RPM converter input.

ALTERNATE ENGINES:

Detroit Diesel (GM) 12V-71N Model 7123-7101 diesel engine, 12 cylinder, 4-1/4 in. (108 mm) bore 5 in. (127 mm) stroke, 852 cu. in. (13.6 l) displacement, 24 volt electric starting, battery charging alternator.

With three stage torque converter - net rated 297 HP (336 gross HP) at 2100 RPM converter input.

FUEL TANK: 255 gallon (851.8 l) capacity.

PRIMARY DRIVE; Six strand roller chain transmits power from engine to operating machinery. Roller chain is completely enclosed and running in oil for long trouble free service.

COUNTERWEIGHT: Basic counterweight is "KK", 60,000 lb. (27216 kg) with overlays as follows:

900 Crawler Model	Type Cwt.	Basic 60,000# (27215 kg)	L.H. Corner Overlay 21,700# (9843 kg)	Center Overlay 36,600# (16602 kg)	R.H. Corner Overlay 21,700# (9843 kg)	Total Weight
9300	"TT"	1	1	1	1	140,000# 63,504 kg
9320	"TT"	1	1	1	1	140,000# 63,504 kg

The counterweight is pin connected to the rear machinery deck and is quickly removed without assistance by lowering with the retractable A-frame. Counterweight lifting hardware is available for attaching slings to handle the counterweight.

RETRACTABLE A-FRAME is raised or lowered by means of the ball rigging with no special equipment required. An optional fixed A-frame is available for machines used for exclusive duty cycle service.

ROTATING MACHINERY BASE: Tapered deep girder construction extends straight through from boom foot to engine base and counterweight support. Boom foot, shaft pillow blocks, A-frame and counterweight connections fall directly over girder for utmost simplicity and strength. Accurate milling, boring and drilling, with modern computer controlled machines and precise jigs and heavy duty fixtures, insure accurate alignment of machinery under the most severe operating conditions and provide proper fit of replacement parts.

LOAD AND HOOK ROLLERS: Four front and two rear tapered load rollers transmit downward loads to upper roller path on carbody. Four front and four rear tapered hook rollers transmit uplift loads to lower roller path on carbody. Front load rollers and rear hook rollers are mounted on anti-friction bearings, rear load rollers and front hook rollers are mounted on bronze bushings. Rollers are adjusted for wear by means of an eccentric hook roller axle.

DRIVE SHAFT is mounted in pressure grease lubricated anti-friction bearings with the six strand roller chain sprocket splined to it. This shaft assembly has a single purpose of speed reduction and is not compromised by mounting clutches for other functions.

SWING ASSEMBLY: Power is transmitted from the drive shaft to the horizontal reversing shaft, through bevel gears to the vertical reversing shaft - and from the vertical reversing shaft through an idler shaft to the vertical swing shaft. The swing pinion on the vertical swing shaft mates with the bullgear and thus revolves the upperworks.

The horizontal reverse shaft is mounted in anti-friction bearings and its reversing bevel gears are mounted on tapered roller bearings in a rigid housing so that the shaft is not subjected to bending loads. The vertical reverse shaft with the bevel and spur gear is an integral part of the horizontal reversing shaft assembly and is piloted into the machinery base for proper alignment.

SWING BRAKE is spring set and air released to prevent the upper from revolving in the event of loss of air pressure. The swing brake has dual control. The control on the lever stand permits variable pressure from "release" to "set" and side motions of the swing lever also applies variable pressure to the swing brake. A positive swing lock is optional.

HYDROSTATIC SWING (Optional) provides smoother operation for heavy erection and long boom use. A variable displacement piston pump is directly driven off the front of the engine. This pump supplies hydraulic fluid to a constant displacement piston motor which revolves the upperworks through a three gear reduction. Swing speed is substantially independent of engine speed. Hydraulic swing is not recommended for machines which will be used for extensive duty cycle service.

AIR INDEPENDENT SWING: The air independent swing assembly is mounted above the main swing clutches. The independent swing clutches are connected to the swing gearing at all times. All gears are mounted in anti-friction bearings and running in oil. With this arrangement the larger main swing clutches are used for independent travel and may also be used for heavy duty swinging by operation of the swing-travel shifter. An external contracting band swing brake is provided on the independent swing clutch ring.

MAIN DRUM ASSEMBLY: Twin ductile iron drums, with stress relieved brake and clutch surfaces, are mounted on anti-friction bearings on the main drum shaft. The main drum shaft is also mounted in anti-friction bearing pillow blocks.

Lagging options are available to obtain various line pulls and speeds. Split steel laggings are bolted to drums for quick replacement.

Internal expanding clutches are activated by highly responsive variable air controls. Thermal cooling rings on brake and clutch drums assure maximum dissipation of heat. Brake shafts and pins are mounted in anti-friction bearings for responsive operation with power assist for maximum sensitivity and minimum foot pressure from the operator.

A spring set, air released brake mechanism on each drum, controllable from the operator's lever stand, actuates automatically in the event there is a loss of air during crane operation. These external contracting brakes are capable of suspending a rated load indefinitely without further effort from the operator. The spring set hoist brakes are furnished as standard equipment on both machines.

CONTROLLED LOAD LOWERING FOR ONE DRUM: The controlled load lowering shaft is mounted forward of the main drum shaft in anti-friction bearings. A split roller chain sprocket, which is bolted to

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the right hand hoist drum lagging is driven from a sprocket on the controlled load lowering shaft.

When the internal expanding clutch on the controlled load lowering shaft is engaged, the load is lowered through the gear train where it is resisted by the overrunning friction torque of the engine and torque converter. A single air valve controls both hoisting and lowering. The foot brake stops the load.

Controlled load lowering is completely independent of all other operations and is provided for either the right hand, left hand, or both hoist drums.

NOTE: A three stage torque converter must be used with controlled load lowering because of existing gear ratios.

CONTROLLED LOAD LOWERING FOR SECOND DRUM (Optional): A second chain sprocket is mounted on the controlled load lowering shaft and connected by a roller chain to a sprocket on the second drum lagging. An additional clutch is utilized for lowering on the second drum.

THIRD DRUM (Optional): The third drum shaft, which is mounted in anti-friction bearing pillow blocks, is located in front of the main hoist drums. With 15,000 lbs. (6804 kg) or 21,000 lbs. (9526 kg) single line pull, the third drum is adequate for many auxiliary services and operates independent of controlled load lowering. Special guide sheaves are required to lead a third line over the boom point with 77 in. (1956 mm) or 92 in. (2337 mm) boom.

BOOM HOIST: The boom hoist driving gear is powered by a pinion splined to the boom hoist clutch shaft. This shaft is mounted in front of the boom hoist drum in bronze bushings and its large anti-friction bearing mounted gear is powered through the gear train. The boom hoist clutch spider is splined to the clutch shaft while the clutch ring is keyed to the gear hub. The air controlled clutch has an internal expanding band.

The boom hoist brake is spring set, air released external contracting band mounted on the boom hoist clutch shaft.

A hand lever operated air valve with a neutral detent position controls both the raising and lowering of the boom. The boom hoist brake sets automatically when lever is in neutral position. The spring set, air released locking dog, located on the left side of the boom hoist drum, holds the boom during operation or when machine is idle.

CONTROLLED BOOM LOWERING: An overrunning sprag clutch shaft assembly is mounted in bronze bushings above the boom hoist drum. On one end of this shaft a splined pinion mates with the boom hoist driving gear and on the other end a large gear mates with the boom hoist clutch shaft gear. The sprag clutch is keyed to the shaft and mounted inside the large gear and keyed to the gear hub.

Boom lowering speed is proportional to engine speed because of engaged sprag clutch. This clutch engages positively and smoothly when lowering the boom.

To permit lowering the load by reverse rotation of the gear train, a shifter is provided which can disengage the sliding pinion on the overrunning sprag clutch shaft. An interlock sets the boom hoist brake and dog whenever this pinion is not fully engaged.

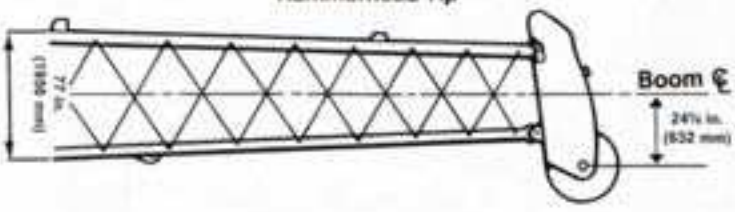
BOOM HOIST SHUT OFF: Automatically stops the boom hoist mechanism when the boom reaches a pre-determined angle. The adjustable actuator arm, located near the base of the boom, simultaneously disengages the boom hoist clutch and sets the boom hoist brake. Standard on all machines sold for lift crane service.

CRANE BOOMS:

Lift Crane Model	Standard Boom	Optional Boom	Min. Length		Max. Length	
			Feet	Meters	Feet	Meters
9300	77H HAMMERHEAD	77H TAPERED TIP	70	21.3	260	79.2
			100	30.5	290	88.4
		92HT	70	21.3	280	85.3
9320	92HT		70	21.3	300	88.4

THE 77H TUBULAR CHORD BOOM is used on the Model 9300 and has a 77 in. (1956 mm) cross section with T-1 tubular chords and tubular lacing. Basic crane boom consists of 30 ft. (9.1 m) inner section and 40 ft. (12.2 m) tapered intermediate section (outer base) which can be fitted with either pin connected hammerhead or optional 30 ft. (9.1 m) two sheave tapered tip. The 77H hammerhead tip has six sheaves and is used for heavy lifts or limited reach. Hammerhead load sheaves are offset 24-7/8 in. (632 mm) to permit handling loads at close radius without boom interference (see illustration below).

Hammerhead Tip



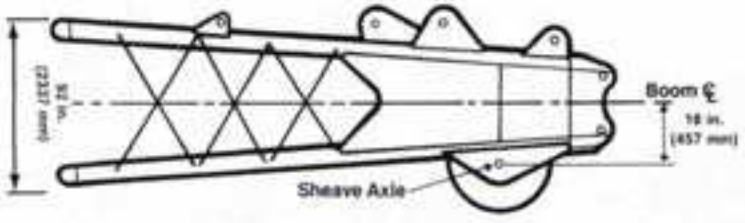
The tapered tip is for long reach. It has one sheave for single or two part line service and a second sheave for an auxiliary load line or for clamshell service. A two sheave hanger block permits reeving three to six parts of load line.

Boom suspension is multiple part boom hoist line to a floating outer bail and four part pin connected pendants to the boom point. Pin connected center boom sections with matching pendants are available in 10 ft. (3 m), 20 ft. (6.1 m) and 50 ft. (15.2 m) lengths.

Pin connected, single sheave tip extensions are available for either the hammerhead or tapered tip booms. These provide a single part auxiliary line capability. With the extension in place a jib cannot be installed.

THE 92HT TUBULAR CHORD BOOM is standard on the 9320 and optional on the 9300. The basic crane boom is 70 ft. (21.3 m) long and consists of a 30 ft. (9.1 m) inner section and a 40 ft. (12.2 m) outer section. There are six 36 in. (914 mm) diameter sheaves mounted on anti-friction bearings in the tip and the sheaves are offset 18 in. (457 mm) below the centerline of the boom. The offset permits handling loads at close radius without interference with the bottom of the boom (see illustration below).

92HT Offset Tip



The 92HT boom is suspended by four part pendants from the outer bail to the boom tip. Pin connected center sections with matching pendants are available in 10 ft. (3 m), 20 ft. (6.1 m) and 50 ft. (15.2 m) lengths.

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Boom inner and center sections are interchangeable for tower crane use. These same boom components, when combined with a heavier 50 ft. (15.2 m) center section, are used in the Sky Horse and Guy Derrick attachments. The same boom components, when combined with lighter transition and outer sections, are used for 92H High Lift boom. For greater flexibility with these available attachments, the heavier 50 ft. (15.2 m) center sections can be used as lift crane boom with slight reduction in stability limited ratings and self-erecting length because of the greater weight.

A pin connected, single sheave tip extension is available for the 92HT boom. The extension provides a single part auxiliary line capability. With the extension in place a jib cannot be installed.

HYDRAULIC OUTER BAIL POSITIONER (Optional): To facilitate installation of pendants the outer bail assembly is moved forward or back hydraulically providing slack in the pendant cables. This system is powered by an electrically driven hydraulic pump.

BOOM STOPS: Telescoping tubular boom stops restrain the boom from overtopping in the event of load line or hoisting tackle failure. Standard on all machines furnished for lift crane service.

CRANE JIBS:

NO. 16HL JIB for use with 77H hammerhead or tapered tip boom or 92HT boom is constructed with T-1 tubular steel chords and tubular lacing. Basic jib is 40 ft. (12.2m), two piece and may be extended to 100 ft. (30.4 m) with pin connected 10 ft. (3 m) and 20 ft. (6.1 m) center sections with matching pendants. Jib point sheave is 24 in. (610 mm) diameter grooved for 1 in. (25 mm) rope. A dead end is provided for two part line. Jib backstay is attached at ears provided on the inner boom section or at ears welded on the boom center sections. These ears are standard on 50 ft. (15.2 m) 92 in. (2337 mm) (S or H) sections and optional on the 10 ft. (3 m) and 20 ft. (6.1 m) 92 in. (2337 mm) sections and all 77 in. (1956 mm) boom center sections. Jib backstay length must equal or exceed the length of the jib. Allowable jib offset is 5 to 25 degrees. Cable type snubbers restrain the jib from overtopping.

NO. 30H JIB for 92HT boom is constructed with T-1 tubular steel chords and tubular lacing. Basic jib is 35 ft. (10.7 m), three piece, pin connected, consisting of 12-1/2 ft. (3.8 m) inner section, 10 ft. (3 m) center section and 12-1/2 ft. (3.8 m) outer. Single jib point sheave is 24 in. (610 mm) diameter and can be furnished grooved for either 1 in. (25 mm) or 1-1/8 in. (28 mm) single part line. Jib may be extended to 105 ft. (32 m) maximum length with the addition of 10 ft. (3 m) and 30 ft. (9.1 m) center sections with matching pendants. Maximum jib offset is 25 degrees. Jib backstay is attached to ears provided at the boom inner section or ears welded to the boom center sections. These ears are standard on 50 ft. (15.2 m) 92 in. (2337 m) sections and optional on 10 ft. (3 m) and 20 ft. (6.1 m) boom center sections. Jib backstay length must equal or exceed the length of the jib. The 92HT boom tip must have double jib ears to accept the No. 30H jib. Cable type snubbers restrain the jib from overtopping.

LOAD TACKLE: Load blocks available for 900 Series cranes for lift crane service are McKissick Series 330/350 Deluxe blocks with 24 in. (610 mm) diameter sheaves mounted on roller bearings with roller swivel hook and flapper latch. Blocks 150 tons (136078 kg) capacity and larger are furnished with a swivel lock. The Model 9300 225-ton (204120 kg) block has a duplex hook with flapper latches and full capacity shackle. All blocks have provision for dead end.

Overhaul balls are from McKissick and have roller bearing swiveling, top wedge socket for appropriate rope size, and hook with flapper latch.

MACHINERY CAB: Fully enclosed 11 ft. (3.4 m) wide steel cab is equipped with full catwalks on both sides with hand rails and a ladder to the roof.

OPERATOR'S CAB: Isolated and insulated operator's cab is equipped with the following: all shatterproof glass windows mounted in rubber, hinged door in cab roof, door at rear of cab to provide direct access to machinery, sliding doors side and rear, removable windows, fully adjustable upholstered seat with back rest, cab hot water heater-defroster, air circulating fan and air horn.

Additional options include: air conditioning, overhead window with wiper and security cover, drum turning indicators and lighting equipment.

LOWER MACHINERY

CARBODY: Heavy duty, deep box construction is bored through for accurate alignment of crawler axles and horizontal travel shaft. Steel bullgear and roller path is a single unit which is welded to the top of the machined carbody. A double tapered roller path is machined precisely to the contour of the load and hook rollers. 9300 carbody is fabricated high alloy steel or cast alloy steel and the 9320 carbody is fabricated high alloy steel.

CENTER PIVOT TUBE is integral with the carbody. The rotating machinery base is mounted on the center pivot tube with pressure lubricated bronze pivot bushings which carry horizontal loads only - no uplift.

TRAVEL AND STEERING: The horizontal travel shaft consists of three sections for easy assembly and removal. The sliding jaw clutches and bevel gears are fully enclosed and running in oil. Single lever air control in operator's cab provides engaged or locked out position for each multiple jaw clutch. An interlock keeps one clutch engaged at all times which prevents machine from running away on a grade.

TRAVEL LOCK consists of a ratchet arrangement which is air controlled from the operator's cab and permits travel in one direction while preventing movement in the opposite direction. This lock automatically sets in the event of loss of air and may also be set to prevent travel in either direction.

CRAWLER SIDE FRAMES: High alloy cast steel tumbler yokes are welded to a rigid, fabricated structure to form the crawler side frames. Journals for crawler axles and drive sprockets are mounted on slide rails for drive chain and crawler shoe adjustments. With proper adjustment of chain and shoes the journal is clamped into position. The side frames easily remove as a complete assembly without removal of shoes or drive chain. Propel power from the carbody to the side frame is transmitted through the horizontal travel shaft and joins to the side frame by a jaw clutch. The jaw clutch separates at the side frame for quick side frame removal.

CRAWLER ROLLERS: Large hardened cast steel crawler rollers are mounted on heavy bronze bushings and spaced close together to prevent any possibility of tread shoes buckling up between rollers. Axles are drilled for pressure grease lubrication. 9300 has 4 pair of upper rollers and 13 lower rollers. The 9320 has 2 pair of rollers and a set of slide rails on top of the side frame and 17 lower rollers.

CRAWLER SHOES are double wall, box section, heat treated alloy steel castings for maximum strength and long wear. Self-cleaning design reduces shoe breakage. Crawler shoe pins are case hardened. On 9300 the standard shoe width is 44 in. (1118 mm) (optional width is 50 in. (1270 mm)) and there are 50 crawler shoes per side frame. On 9320 the standard shoe width is 50 in. (1270 mm) (optional width is 44 in. (1118 mm)) and 57 crawler shoes per side frame.

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CRAWLER DRIVE: Cast steel drive sprockets are splined to drive axles which are mounted in pressure grease lubricated bronze bushings in the side frames. Heavy cast steel idler tumblers, of self-cleaning design, are bronze bushing mounted with pressure grease lubrication. Self-cleaning cast steel sprocket is mounted on the outside of each crawler side frame for easy maintenance. It is unnecessary to break propel chains when removing side frames.

CRAWLER DRIVE ADJUSTEMENT: Simple, easy to use hydraulic jack is provided to adjust drive chain and crawler tread. Spacers are used for positioning and provides balanced adjustment on each side frame.

CRAWLER WIDTH ADJUSTMENT: On Model 9300, the machine can be operated with side frames retracted at reduced ratings or at full ratings with extended side frames. In retracted position the side frame jaw clutch directly engages the jaw clutch at side of carbody. Removable cast steel jaw clutch torque tubes are furnished between the carbody and side frames.

On Model 9320 crawler side frames are bolt connected to the single position extra wide fabricated carbody.

ATTACHMENTS

SKY HORSE ATTACHMENT: Sky Horse lifting capacity averages two to five times greater than the lift crane capacity. Boom and jib lengths are also dramatically increased without sacrificing mobility with addition of the Sky Horse attachment. See separate specifications for complete details.

NO. 75H JIB for 92HT boom is rated 75 tons (68,040 kg) and has T-1 tubular steel chords and tubular lacing. Basic jib is 40 ft. (12.2 m) two piece, 20 ft. (6.1 m) inner and 20 ft. (6.1 m) outer, with four 20 in. (508 mm) diameter point sheaves grooved for 1 in. (25 mm) or 1-1/2 in. (37.5 mm) multiple part jib line. Length may be extended to 140 ft. (42.7 m) with 10 ft. (3 m), 20 ft. (6.1 m) and 30 ft. (9.1 m) pin connected center sections with matching pendants. Allowable jib offset is 5 to 25 degrees. Jib backstay is pin connected pendants attached to ears provided at the boom inner section. The 92H boom tip must have double jib ears to accept the 75H jib. Cushioned jib mast stops and telescoping jib stops restrain the jib from overtopping. A single sheave tip extension is available for pin connecting to this jib. This jib is best suited to work on machines where stability is increased by use of the Sky Horse attachments.

GUY DERRICK ATTACHMENT: The Guy Derrick lifting capacity is as much as thirty times the lift crane capacity at extended radii and averages ten times greater than the lift crane capacity. Increased boom and jib lengths and interchangeability of components are additional benefits of the Guy Derrick attachment. See separate specifications for complete details.

TOWER CRANE ATTACHMENT: Basic 92 in. (2337 mm) tower is 130 ft. (39.6 m) in height made up of 30 ft. (9.1 m) inner section, one 10 ft. (3 m), two 20 ft. (6.1 m) and one 50 ft. (15.2 m) center sections and offset section with tower head. Center sections may be added to extend tower height to 250 ft. (76.2 m) maximum. Except for tower offset section and tower head all tower sections are standard 92H and 92HT crane boom. Basic 100 ft. (38.5 m) 59H luffing boom is made up of 20 ft. (6.1 m) inner section, 40 ft. (12.2 m) center section, 20 ft. (6.1 m) outer base and 20 ft. (6.1 m) tapered tip. Boom center sections are available to extend total boom length to 170 ft. (51.8 m). 60 ft. (18.3 m) No. 9HL jib can be added to this for maximum reach. The attachment includes special drum lagging, drum dog, air piping modifications, hinged mast assembly, tower stops, boom stops, boom angle indicator, bails, ropes, pendants and necessary guide sheaves. See separate specifications for complete details.

NO. 9HL JIB for use with 900 Tower Crane. Jib is constructed with T-1 tubular steel chords and tubular lacing. Basic jib is 40 ft. (12.2 m), two piece. Jib point sheave is 24 in. (610 mm) diameter for use with 1 in. (25 mm) diameter single part whipline. Jib backstay is attached to ears on tower boom inner section, or at optional ears welded to center boom section. Jib backstay length must equal or exceed the length of the jib. Pin connected 10 ft. (3 m) and 20 ft. (6.1 m) center sections are available to extend total jib length to 60 ft. (18.3 m) maximum on tower crane. In this application jib is designed for no offset. Cable type jib snubber and rope spreader restrain the jib from overtopping.

RING HORSE ATTACHMENT: Ring Horse is designed to maximize lifting capacity while reducing the high ground pressures which are typical of competitive ring type attachments. Maximum adaptability to cranes currently in service is achieved through the use of four existing boom or mast sections. Capacities are increased as much as twenty times the lift crane capacity at extended radii and average ten times greater than the lift crane. Maximum boom length is 300 ft. (115.8 m) with boom and jib combinations possible to 500 ft. (152.4 m). The simple and unique self-leveling system allows on-site travel with up to 320 ft. (97.6 m) of boom. See separate specifications for complete detail.

GENERAL:

CONTROLS: Graduated air controls, pioneered by AMERICAN, put "Feel" at every operator's finger tips, insure higher production and more accurate control. Air line alcohol dispenser absorbs excess moisture due to condensation in air system. AMERICAN has designed its control system to conform with ANSI Code B30.5 requirements (which uses SAE J983 as their reference), of standard control arrangement and control functions. This allows operators to easily switch from one machine to another.

MATERIALS: Gears and pinions are heat-treated alloy or high carbon steel. Smooth cut teeth on all gears including the bullgear.

Involute splines are used throughout machine for maximum strength through minimum diameter where needed.

Anti-friction bearings are used on all main or high speed shafts and wherever practical to provide friction-free, smooth operation with minimum maintenance.

LUBRICATION: All anti-friction bearings and bronze bushings requiring short interval lubrication are provided with pressure grease fittings. Swing deck gears are provided with oil bath lubrication. Gear train arranged for easy grease lubrication.

PERFORMANCE:

Travel Speed	1.1 MPH maximum (1.77 KmPH)
Friction Swing	2.28 RPM maximum
Hydrostatic Swing	1.9 RPM maximum

HOISTING PERFORMANCE:

Function	Single Line Pull at Single Line Speed	
	SLP (Pounds) at SLS (Feet Per Min.)	SLP (Kilograms) at SLS (Meters Per Min.)
Crane	40,000 lbs. at 165 FPM	18144 kgs. at 50.1 MPM
Third Drum	15,000 lbs. at 225 FPM	6804 kgs. at 68.6 MPM
Third Drum	21,000 lbs. at 220 FPM	9525 kgs. at 67.0 MPM
G.D./S.H. Third	40,000 lbs. at 90 FPM	18144 kgs. at 27.4 MPM

Performance figures are based on machine equipped with standard engine and torque converter.

DESIGNED AND RATED TO COMPLY WITH (ANSI) CODE B30.5.

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DIMENSION DETAILS

Swing Assembly - Bullgear 80 tooth, 80" (2032 mm) P.D., 6-1/4" (159 mm) wide face. Tapered roller path 95-1/4" (2419 mm) O.D. Conical load rollers 13-1/2" (343 mm) dia., 5-1/2" (140 mm) wide face, 4-1/2" (114 mm) dia. axle. Conical hook rollers on the 9300 are 9-1/4" (235 mm) dia., 4" (102 mm) wide face front hook rollers. Conical hook rollers on the 9320 are 10-1/4" (2546 mm) dia., 4" (102 mm) wide face.

Swing Clutches - 36" (914 mm) dia., 8" (203 mm) wide, tandem, interchangeable. Hydrostatic swing optional.

Swing Brakes - Dual bands for equal braking, each 36" (914 mm) dia., 3" (76 mm) wide.

Air Independent Swing - Clutches are 23" (584 mm) dia., 4" (102 mm) wide. Dual band brakes are each 26" (660 mm) dia., 2" (51 mm) wide.

Hoist Clutches - 44" (1118 mm) dia., 6" (152 mm) wide. Cooling flange for heat dissipation.

Hoist Brakes - 57" (1448 mm) dia., 7" (178 mm) wide. Cooling flange for heat dissipation.

Boom Hoist Clutch - 23" (584 mm) dia., 4" (102 mm) wide.

Boom Hoist Brake - 24" (610 mm) dia., 4" (102 mm) wide. Controlled boom lowering through sprag type overrunning clutch.

Contorlled Load Lowering Clutch - 23" (584 mm) dia., 4" (102 mm) wide.

Third Drum - Clutch is 23" (584 mm) dia., 4" (102 mm) wide. Brake is 25" (635 mm) dia., 4" (102 mm) wide.

S.H.-G.D. Third Drum - Clutch is 23" (584 mm) dia., 4" (102 mm) wide. Brake is 26" (660 mm) dia., 5" (127 mm) wide.

77H Crane Boom - 77" (1956 mm) cross section, 4-1/2" (114 mm) dia. T-1 steel tubular chords, heavy duty outer base section, tubular lattice, 30" (762 mm) O.D. sheaves.

92HT Crane Boom - 92" (2337 mm) cross section, 4-1/2" (114 mm) dia., T-1 steel tubular chords, tubular lattice, 36" (914 mm) O.D. sheaves. Components are interchangeable in Tower Crane, Sky Horse and Guy Derrick.

No. 9HL Jib (for use on Tower boom) - 26" (660 mm) cross section, 1¾" (45 mm) dia., T-1 steel tubular chords, tubular lattice, 24" (610 mm) O.D. Sheave grooved for 1⅛" (28 mm) wire rope, for single part line.

No. 16HL Jib - 32" (813 mm) cross section, 1-3/4" (45 mm) dia., T-1 steel tubular chords, tubular lattice, 24" (610 mm) O.D. sheave grooved for 1" (25 mm) wire rope, becket assembly for 2-part load line.

No. 30H Jib - 32" (813 mm) cross section, 3" (76 mm) dia., T-1 steel tubular chords, tubular lattice, 24" (610 mm) O.D. sheave grooved for 1" (25 mm) or 1⅛" (28 mm) wire rope, becket assembly for 2-part load line.

No. 75H Jib - 47" (1194 mm) cross section, 4" (102 mm) dia., T-1 steel tubular chords, tubular lattice, 20" (508 mm) O.D. sheaves grooved for 1" (25 mm) or 1⅛" (28 mm) wire rope, becket assembly for multiple part load line.

Crawler Lower - 7-1/2" (190 mm) dia. horizotal propel shaft. Drive and idler tumblers are 39-1/2" (1003 mm) dia., 10-sided, self-cleaning. Top side frame rollers are 8-1/2" (216 mm) dia. Lower track rollers are 14-1/2" (368 mm) dia., double flanged with 4-3/4" (121 mm) dia axles. Track shoe pitch is 13-1/2" (343 mm). Tread shoe pins are 1-3/4" (44 mm). Drive chain is 6" (152 mm) pitch, heavy duty. Drive sprocket is 8 tooth; driven sprocket is 15 tooth.

Ropes - Boom hoist line 7/8" (22 mm)

Pendants - 77H and 92 HT boom, four part 1-3/8" (35 mm) dia.

Crane hoist, drag hoist and clamshell hoist line are 1-1/8" (28 mm) dia. Drag inhaul is 1-3/8" (35 mm) dia.

Note: In accordance with our established policy of constant product improvement and varying material conditions, specifications are subject to change without notice and without incurring responsibility for machines previously sold.

5JR871 FORM NO. 900-CGS-9 PRINTED IN U.S.A.

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