



900 SERIES  
**CRAWLER CRANE**  
GENERAL SPECIFICATIONS



# MODELS 9260, 9299, 9310-A AND 9320 CRAWLER CRANES

## UPPER MACHINERY

**STANDARD ENGINE:** Cummins Model N14-C335 turbocharged and aftercooled diesel engine, six cylinder 5.50 inch (140 mm) bore, 6.00 inch (152 mm) stroke, 855 cubic inch (14 liter) displacement, 24 volt electric starting, battery charging alternator.

With three stage torque converter – net rated 308 HP (335 gross HP) at 2100 RPM converter input.

**ALTERNATE ENGINE:** Detroit Diesel 6V92 turbocharged and aftercooled mechanical unit injectors Model 8063-7433 diesel engine, six cylinder, 4.84 inch (123 mm) bore, 5.00 inch (127 mm) stroke, 552 cubic inch (9.5 liter) displacement, 24 volt electric starting, battery charging alternator.

With three stage torque converter – net rated 313 HP (340 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 lbs. (27,216 kg.) casting with overlays as follows:

| 900 Crawler Model | Type Cwt. | Basic 60,000 lb Casting | L.H. Corner Overlay (In Pounds) |        |        | Center Overlay (In Pounds) |        |        | R.H. Corner Overlay (In Pounds) |        |        | Total Weight            |
|-------------------|-----------|-------------------------|---------------------------------|--------|--------|----------------------------|--------|--------|---------------------------------|--------|--------|-------------------------|
|                   |           |                         | 4,075                           | 20,340 | 21,700 | 6,950                      | 34,320 | 36,600 | 4,075                           | 20,340 | 21,700 |                         |
| 9260              | “MM”      | 1                       | 2                               | -      | -      | 2                          | -      | -      | 2                               | -      | -      | 90,700 lb<br>41,142 kg  |
| 9299              | “PP”      | 1                       | 3                               | -      | -      | 3                          | -      | -      | 3                               | -      | -      | 105,000 lb<br>47,628 kg |
| 9310A             | “TT”      | 1                       | -                               | -      | 1      | -                          | -      | 1      | -                               | -      | 1      | 140,000 lb<br>63,504 kg |
| 9320              | “TT”      | 1                       | -                               | -      | 1      | -                          | -      | 1      | -                               | -      | 1      | 140,000 lb<br>63,504 kg |

All overlays are removed for duty cycle work on all models. Counterweight is removed without assistance by lowering through the retractable A-frame. Counterweight lifting hardware is available for attaching slings to handle counterweight.

**RETRACTABLE A-FRAME** is raised or lowered by means of the bail 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 of carbody. Front load rollers and rear hook rollers are mounted on anti-friction bearings on Models 9260, 9299, 9310A and 9320.

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 motion of the swing lever also applies variable pressure to the swing brake. Positive swing lock is optional.

**AIR CONTROLLED INDEPENDENT SWING (Standard on 9260, 9299, 9310A and 9320) – FOR ERECTION CRANE SERVICE ONLY:** Air controlled independent swing assembly is mounted above the main swing clutches. The smaller 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.

**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. Not recommended for machines which will be used for extensive duty cycle service.

**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, and will function under normal conditions of brake temperature and lining wear, provided the brake mechanisms receive proper adjustment. The spring set hoist brakes are furnished as standard equipment on all machines sold for lift crane service.

# MODELS 9260, 9299, 9310-A AND 9320 CRAWLER CRANES

An anti-two block system for the main hoist drum only is standard on all lift cranes. An optional auxiliary and third drum systems are also available.

**CONTROLLED LOAD LOWERING FOR ONE DRUM (Standard on 9260, 9299, 9310A and 9320):** 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 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 over-running 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. Two clutches are utilized for lowering of either 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. (6,804 kg.) or 21,000 lbs. (9,526 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" (1,956 mm) or 92" (2,337 mm) boom.

An additional third drum with more than 2,000 feet (610 m) of storage capacity and 40,000 lbs. (18,144 kg) of single line pull at 116 fpm (35.41 mpm) can be used with the Sky Horse®, Guy Derrick or Tower configurations. This drum is used for the extra-long double-ended load line that can then be reeved up to 18 parts.

**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 over-running sprag clutch shaft assembly is mounted in bronze bushings above the boom hoist drum. On one end of this shaft 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 lowered speed is proportional to engine speed because of engaged sprag clutch. This clutch engages the shaft 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 over-running sprag clutch shaft. An interlock sets the boom hoist brake and dog whenever this pinion is not in full engagement.

**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.

## BOOM

| Lift Crane Model | Standard Boom  | Optional Boom  | Min. Length |        | Max. Length |        |
|------------------|----------------|----------------|-------------|--------|-------------|--------|
|                  |                |                | Feet        | Meters | Feet        | Meters |
| 9260             | 58HR           | -              | 60          | 18.3   | 200         | 61.0   |
|                  |                | 58ABSH         | 60          | 18.3   | 200         | 61.0   |
|                  |                | 77S Taper Tip  | 100         | 30.5   | 270         | 82.3   |
|                  |                | 77S Hammerhead | 70          | 21.3   | 230         | 70.1   |
|                  |                | 92H            | 70          | 21.3   | 210         | 64.0   |
| 9299             | 77S Hammerhead | -              | 70          | 21.3   | 240         | 73.2   |
|                  |                | 58ABSH         | 60          | 18.3   | 200         | 61.0   |
|                  |                | 77S Taper Tip  | 100         | 30.5   | 280         | 85.3   |
|                  |                | 92H            | 70          | 21.3   | 230         | 70.1   |
|                  |                | 92H High Lift  | 200         | 61.0   | 310         | 94.5   |
| 9310A            | 77H Hammerhead | -              | 70          | 21.3   | 260         | 79.2   |
|                  |                | 58ABSH         | 60          | 18.3   | 200         | 61.0   |
|                  |                | 77H Taper Tip  | 100         | 30.5   | 290         | 88.4   |
|                  |                | 92HT           | 70          | 21.3   | 280         | 85.3   |
|                  |                | 92H High Lift  | 200         | 61.0   | 350         | 106.7  |
| 9320             | 92HT           | -              | 70          | 21.3   | 280         | 85.3   |
|                  |                | 58ABSH         | 60          | 18.3   | 200         | 61.0   |
|                  |                | 77H Taper Tip  | 100         | 30.5   | 290         | 88.4   |
|                  |                | 77H Hammerhead | 70          | 21.3   | 260         | 79.2   |
|                  |                | 92H High Lift  | 200         | 61.0   | 350         | 106.7  |

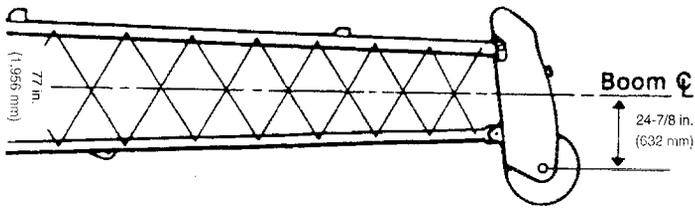
**CRANE BOOMS:** Available crane booms on the 900 Series Crawler Cranes are 58HR, 58ABSH, 77S, 77H, 92HT and 92H High Lift. The first two numbers of the boom title indicate the cross section (outside dimension) in inches of the boom. All booms are square. Example – 58HR boom is 58 inches (1,473 mm) wide and 58 inches (1,473 mm) deep. Angle chord booms have alloy steel chords. Tubular chord booms have T-1 steel cords. The preceding chart lists the booms available for each crane model and allowable lengths.

**58HR ANGLE CHORD BOOM:** Basic boom is 60 ft. (18.3 m), two piece, pin connected with angle chords and tubular lacing. Outer section has open throat for load line clearance at close radius. Lift crane has three 30 in. (762 mm) diameter boom point sheaves mounted on anti-friction bearings. Clamshell or magnet crane has two sheaves. A single 48 in. (1,219 mm) diameter wide mouth sheave is available for exclusive dragline service. Boom point sheave axle is available in extended length for mounting pile driver leads. Boom suspension is eight part full reeving from A-frame to boom point on excavator models and sectional pendants on lifting cranes to simplify addition or removal of center sections. Pin connected center sections with matching pendants are available in 10 ft. (3 m), 20 ft. (6.1 m) and 40 ft. (12.2 m) lengths to 200 ft. (60.96 m) maximum boom length.

**58ABSH ANGLE CHORD BOOM:** A heavy duty construction boom with angle chords and angle lacing is available as an option on Models 9260, 9299 and 9310A and 9320 where combination duty cycle service and heavy lift crane capacity are required. Basic boom is 60 ft. (18.3 m), two piece made up of 30 ft. (9.1 m) inner and 30 ft. (9.1 m) pin connected outer section, 58 inch (1,473 mm) cross section with five 30 inch (762 mm) diameter anti-friction bearing boom point sheaves. Outer section is open throat design. A bolt connected 36 inch (914 mm) diameter single sheave boom point extension is available. Suspension is by thirteen or fourteen part boom hoist line with pendants. Pin connected center sections with matching pendants are available in 10 ft. (3 m), 20 ft. (6.1 m) and 40 ft. (12.2 m) lengths to 200 ft. (60.96 m) maximum boom length.

# MODELS 9260, 9299, 9310-A AND 9320 CRAWLER CRANES

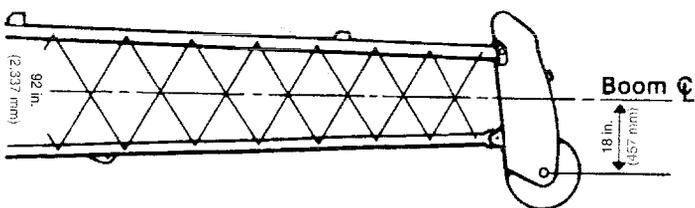
**77 INCH TUBULAR CHORD BOOM:** 77S boom is available on Models 9260 and 9299. 77H boom is used on Models 9310A and 9320.



Boom is 77 inch (1,956 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. 77S hammerhead has five 30 inch (762 mm) diameter anti-friction bearing mounted sheaves with two lead on sheaves. 77H hammerhead has six sheaves. The hammerhead is 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. The tapered tip is for long reach and has 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.

A pin connected two sheave boom point extension is available for the 77S and 77H hammerhead. A pin connected single sheave boom point extension is available for the tapered tip. With the extension in place a jib cannot be installed simultaneously.

**92HT TUBULAR CHORD BOOM:** 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 with six 36 inch (914 mm) diameter sheaves mounted in anti-friction bearings in the offset tip. Load sheaves are offset 18 in. (457 mm) from the centerline of the boom to permit handling loads at close radius without interference with the bottom of the boom. 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. 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®, Ring 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, offset, single sheave extension approximately 7 ft. (2.1 m) long with 37,140 lbs. (16,846 kg.) single line capacity is available for the 92H boom. A boom tip modification permits installation of the No. 30H or 75H jib.

**92HT HIGH LIFT BOOM:** Boom and jib length of 450 ft. (137.2 m) is available on Models 9299, 9310A and 9320 with 92H High Lift boom. Minimum 200 ft. (61 m) boom is made up of 30 ft. (9.1 m) 92H inner section, 20 ft. (6.1 m) 92HT center section, 50 ft. (15.2 m) transition section, 50 ft. (15.2 m) tapered outer base section and 50 ft. (15.2 m) two sheave tapered tip. Boom suspension is by four part pendants from an equalizer at the outer bail, the two lower pendants extending to midpoint on the boom and the two upper pendants extending to the boom point. 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. Maximum boom length is 350 ft. (106.7 m).

**HYDRAULIC OUTER BAIL POSITIONER (Optional):** To facilitate installation of pendants the outer bail assembly is moved forward and 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.

**NO.15 JIB** for use with 58HR and 58ABSH boom. Basic jib is 20 ft. (6.1 m), two piece, pin connected with alloy steel angle chords and tubular lacing. Thirty inch (762 mm) point sheave is grooved for 1-1/8 in. (28 mm) single part whipline. Jib backstay is attached at ears provided on boom inner section, or at optional ears welded to center boom section. Distance to jib backstay connecting point on the boom must equal or exceed the length of the jib. Maximum jib offset is 25 degrees. Ten foot (3 m) center sections with matching pendant are available to extend total length to 50 ft. (15.2 m). An ear at the jib base restrains the jib from overtopping.

**NO.9HL JIB** for use with 900 Tower Crane. Jib is constructed with T1 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.

**NO.16HL JIB** for use with 77S and 77H hammerhead or tapered tip boom, 92HT and 92H High Lift boom. Basic jib is 40 ft. (12.2 m) two piece with T-1 tubular steel chords and tubular lattice. Length 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 8 sheave is 24 in. (610 mm) diameter grooved for 1 in. (25 mm) or 1-1/8 in. (28 mm) rope. A dead end is provided for two part whipline. Jib backstay is attached at ears provided on the inner boom section or at ears welded to the center boom section. These ears are standard on 50 ft. (15.2 m) 92 in. (2,337 mm) sections and optional on 10 ft. (3 m) and 20 ft. (6.1 m) 92 in. (2,337 mm) sections and 77 in. (1,956 mm) sections. Jib backstay length must equal or exceed the length of the jib. Maximum jib offset is 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 whipline. 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. Jib working offset is 5, 15 or 25 degrees. Jib backstay is attached to ears provided at the boom inner section or connection point on the boom equal or greater distance from the boom point than the jib

# MODELS 9260, 9299, 9310-A AND 9320 CRAWLER CRANES

length. The 92HT boom tip is modified to accept the No. 30H jib. Cable type snubbers restrain the jib from overtopping.

**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 for 1 in. (25 mm) or 1-1/8 in. (28 mm) multiple part whipline. 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. Jib working offset is 5, 15 or 25 degrees. Jib backstay is pin connected pendants attached to ears provided at the boom inner section. The 92H boom tip is modified to accept the 75H jib. Cushioned mast stops and telescoping jib stops restrain the jib from overtopping. A single sheave extension is available for pin connecting to this jib. The application for this high capacity jib is for use with the Sky Horse®, Ring Horse or Guy Derrick attachment.

**LOAD TACKLE:** Load blocks available for 900 Series cranes for lift crane service are McKissick, Johnson or other manufacturer.

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

**CAB:** Fully enclosed 11 ft. (3.4 m) wide steel cab is equipped with the following: full catwalks on both sides with hand rails, all shatter-proof glass windows mounted in rubber, hinged door in operators cab roof, totally enclosed operators cab to shield from engine and machinery noise, door at rear of operators compartment to provide direct access to machinery, ladder to roof at left front, sliding doors side and rear, removable windows in operator's cab, and fully adjustable upholstered seat with back rest.

Nine foot (2.7 m) and fifteen foot (4.6 m) elevated operator's cab are optional. Additional options include insulated operator's cab, air conditioning, overhead window with wiper, drum turning indicators, lighting equipment, and tandem windshield wiper. An elevated environmental cab set at machinery cab roof height is also available.

## 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. Carbodies are 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 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 position 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 drive 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 without disassembly of the horizontal travel shaft.

**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. Listed below are the number of upper and lower track rollers per side frame.

**CRAWLER TRACK ROLLER PER SIDE FRAME**

| Model | Upper Rollers       | Lower Rollers |
|-------|---------------------|---------------|
| 9260  | 4 Pair              | 11            |
| 9299  | 4 Pair              | 12            |
| 9310A | 5 Pair              | 15            |
| 9320  | 2 Pair + Slide Rail | 17            |

**CRAWLER SHOES** are double wall, box section alloy steel castings for maximum strength and long wear. Self-cleaning design reduces shoe breakage. Crawler shoe pins are case hardened. Below is a listing of various shoe widths per model and the number of shoes per side frame.

**CRAWLER SHOES**

| Model | Standard Width | Optional Width | No. Per Side Frame |
|-------|----------------|----------------|--------------------|
| 9260  | 44" (1,118 mm) | 50" (1,260 mm) | 45                 |
| 9299  | 44" (1,118 mm) | 50" (1,260 mm) | 47                 |
| 9310A | 44" (1,118 mm) | 50" (1,260 mm) | 53                 |
| 9320  | 50" (1,270 mm) | 44" (1,118 mm) | 57                 |

**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 roller chain when removing side frames.

**CRAWLER DRIVE ADJUSTMENT:** Simple, easy to use hydraulic jack is utilized to adjust drive chain and crawler tread. Spacers are used for holding and positioning to obtain even adjustment on each side.

**CRAWLER WIDTH ADJUSTMENT:** On Models 9260 through 9310A removable cast steel jaw clutch torque tubes are furnished between the carbody and side frames. In retracted position the side frame jaw clutch directly engages the jaw clutch at side of carbody. The machine can be operated with side frames retracted at reduced ratings or at full ratings with extended side frames.

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

# MODELS 9260, 9299, 9310-A AND 9320 CRAWLER CRANES

## ATTACHMENTS

**DRAGLINE ATTACHMENT:** Machines sold for exclusive dragline service will include full revolving fairlead, fairlead and boom support to move the fairlead forward for improved spooling of the inhaul line, dirt guard under the inhaul drum, high speed hoist lagging with 1-1/8" (25 mm) hoist line, grooved drag lagging with 1-3/8" (35 mm) dragline, 58" (1,473 mm) heavy duty angle chord boom with single, wide mouth, 48" (1,220 mm) sheave in boom point and bronze bushed swing rollers.

Machines sold for dragline service in combination with lift crane or clamshell service will include full revolving fairlead, dirt guard under the inhaul drum, high speed drag hoist lagging with 1-1/8" (25 mm) hoist line, grooved drag lagging with 1-3/8" (35 mm) dragline, and 58HR heavy duty angle chord boom with two sheave or three sheave boom point.

**CLAMSHELL ATTACHMENT:** For clamshell or grapple service machine will include tagline winder mounted in boom, clam lagging, 1-1/8" (25 mm) holding line and 1-1/8" (25 mm) closing line.

**NOTE:** For dragline or clamshell application the counterweight must be reduced to 60,000 pounds (27,216 kg.) by removing all overlays.

**MAGNET CRANE:** Machine is equipped with Cummins Model M11-C275 turbocharged and aftercooled diesel engine, six cylinder 4.92 inch (125 mm) bore, 5.79 (147 mm) stroke, 661 cubic inch (10.8 liter) displacement, 24 volt electric starting, battery charging alternator, net rated 253 HP (275 gross HP) at 1800 RPM. Drive is through plate clutch power take-off with air actuated clutch. 40 KW totally enclosed magnet generator is belt driven from the engine crankshaft pulley and mounted behind the machinery cab, over the special type "J", 35,000 lb. (15,876 kg.) counterweight. Engine approval is based on a maximum 96 HP load at the generator drive. This is the peak horsepower demand from the 40 KW generator when used with a Square D 87DSH partial voltage magnet with overexcitation (82% generator efficiency). If a larger magnet is required the optional magnet arrangement with separate diesel generator set must be furnished.

Magnet control equipment includes push buttons mounted in the operating levers so the operator need not release the control lever while operating the magnet. Ten seconds after the "lift" button on the LH hoist lever is pushed the magnet controller drops the voltage from 230 volts to 135 volts, which is ample to hold the load. The result is less overheating and greater efficiency. The "drop" button on the swing lever releases the load.

Included with the magnet crane are a tagline winder, a magnet cable reel with magnet cable, 33-1/4" (844 mm) dia. grooved LH magnet lagging, single sheave magnet block and 2-part magnet hoist line for applicable boom length.

**NOTE:** When ordering crane for use with magnet other than that specified the magnet size, model and type must be specified in order to properly size the generator and controller.

For combination machines equipped with torque converter the magnet generator is direct driven off the front of the engine. A voltage regulator is included to provide constant voltage.

**OPTIONAL MAGNET ATTACHMENT:** Independently driven 50KW, shunt wound, 230 volt DC, 1800 RPM magnet generator direct driven from General Motor Series 71, 3-cylinder diesel engine, rated 98 HP at 1800 RPM and mounted on LH walkway with weatherproof enclosure and 60 gallon (227 l) fuel tank. Accessory equipment is the same as on standard magnet crane.

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

**GUY DERRICK ATTACHMENT:** The Guy Derrick lifting capability is as much as thirty times the lift crane capability (270 ft. [823 m] boom at 200 ft. [61 m] radius) and averages approximately ten times 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" (2,337 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 wedge section with tower head. Center sections may be added to extend tower height to 250 ft. (76.2 m) maximum. Except for tower wedge section and tower head all tower sections are standard 92H and 92HT crane boom. Basic 100 ft. (38.5 m) 59H 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) To this can be added 60 ft. (18.3 m) No. 9HL jib for maximum reach. Included are special drum lagging, drum dog, air piping modifications, hinged mast assembly, tower stops, boom stops, boom angle indicator, pendants and necessary guide sheaves.

**RING HORSE ATTACHMENT:** Designed for maximum utilization of existing components for machines in the field. Adaptable to 9299, 9310A or 9320 Cranes currently in service utilizing existing boom and mast sections to decrease total investment. Ratings are increased an average of ten times over the standard crane configuration with some ratings at extended reach as much as twenty times greater. Maximum boom length of 380 ft. (1,158 m) and boom and jib combinations to 500 ft. (1,524 m). The unique yet simple design that provides all this is the American 900 Series Ring Horse. On site travel with only minutes of preparation and with up to 320 ft. (97.6 m) boom in place is possible.

# MODELS 9260, 9299, 9310-A AND 9320 CRAWLER CRANES

## GENERAL

**CONTROLS:** Graduated air controls, pioneered by AMERICAN, put "Feel" at every operator's fingertips, 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, which allows operators to easily shift 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 bearings requiring short period lubrication are provided with pressure grease fittings. Swing deck gears are provided with oil bath lubrication. Gear train arranged for easy grease lubrication. A group of lube fittings centrally located to aid in quick maintenance is available as an option.

### 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                | 18,144 kg. at 50.1 MPM                   |
| Clamshell (Grapple)    | 30,000 lbs. at 185 FPM                | 13,600 kg. at 56.4 MPM                   |
| Magnet, Dragline Hoist | 30,000 lbs. at 220 FPM                | 13,600 kg. at 67.0 MPM                   |
| Dragline Inhaul        | 45,000 lbs. at 145 FPM                | 20,412 kg. at 44.2 MPM                   |
| Third Drum             | 15,000 lbs. at 225 FPM                | 6,804 kg. at 68.6 MPM                    |
| Third Drum             | 21,000 lbs. at 220 FPM                | 9,525 kg. at 67.0 MPM                    |
| G.D./S.H. Third Drum   | 40,000 lbs. at 90 FPM                 | 18,144 kg. 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.**

## DIMENSION DETAILS

**Swing Assembly** – Bullgear 80 tooth, 80 in. (2,032 mm) P.D., 6-1/4 in. (159 mm) wide face. Tapered roller path 95-1/4 in. (2,419 mm) O.D. Conical load rollers 13-1/2 in. (343 mm) dia., 5-1/2 in. (140 mm) wide face, 4-1/2 in. (114 mm) dia. axle. Conical Hook Rollers – 9260, 9299 and 9310A – 9-1/4 in. (235 mm) dia., 4 in. (102 mm) wide face front hook rollers. Front hook rollers on the 9320 are 10-1/4 in. (2,546 mm) dia., 4 in. (102 mm) wide face.

**Swing Clutches** – 36 in. (914 mm) dia., 8 in. (203 mm) wide, tandem, interchangeable. Hydrostatic swing optional.

**Swing Brakes** – Dual bands for equal braking, each 36 in. (914 mm) dia., 3 in. (76 mm) wide.

**Hoist Clutches** – 44 in. (1,118 mm) dia., 6 in. (152 mm) wide. Cooling flange for heat dissipation.

**Hoist Brakes** – 57 in. (1,448 mm) dia., 7 in. (178 mm) wide. Cooling flange for heat dissipation.

**Boom Hoist Clutch** – 23 in. (584 mm) dia., 4 in. (102 mm) wide.

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

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

**Controlled Load Lowering Clutch** – 23 in. (584 mm) dia., 4 in. (102 mm) wide.

**Third Drum** – Clutch is 23 in. (584 mm) dia., 4 in. (102 mm) wide. Brake is 25 in. (635 mm) dia., 4 in. (102 mm) wide.

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

**58HR Crane Boom** – 58 in. (1,473 mm) cross section, 5 in. (127 mm) x 5 in. (127 mm) x 1/2 in. (13 mm) alloy steel angle chords, tubular lattice, 30 in. (762 mm) O.D. sheaves.

**58ABSH Crane Boom** – 58 in. (1,473 mm) cross section, 6 in. (152 mm) x 6 in. (152 mm) x 9/16 in. (14 mm) alloy steel angle chords, angle lattice, 30 in. (762 mm) O.D. sheaves.

**77S Crane Boom** – 77 in. (1,956 mm) cross section, 4-1/2 in. (114 mm) dia. T-1 steel tubular chords, tubular lattice, 30 in. (762 mm) O.D. sheaves.

**77H Crane Boom** – 77 in. (1,956 mm) cross section, 4-1/2 in. (114 mm) dia. T-1 steel tubular chords, heavy duty outer base section, tubular lattice, 30 in. (762 mm) O.D. sheaves.

**92HT Crane Boom** – 92 in. (2,337 mm) cross section, 4-1/2 in. (114 mm) dia. T-1 steel tubular chords, tubular lattice, 36 in. (914 mm) O.D. sheaves. Components are interchangeable in Tower Crane, Sky Horse® and Guy Derrick.

**No. 15 Jib** – 22-1/2 in. (572 mm) cross section, 2 in. (51 mm) x 2 in. (51 mm) x 5/16 in. (8 mm) alloy steel angle chords, tubular lattice, 30 in. (762 mm) O.D. sheave grooved for 1-1/8 in. (29 mm) wire rope.

**No. 16HL Jib** – 32 in. (813 mm) cross section, 1-3/4 in. (45 mm) dia. T-1 steel tubular chords, tubular lattice, 24 in. (610 mm) O.D. sheave grooved for 1 in. (25 mm) or 1-1/8 in. (29 mm) wire rope, bucket assembly for 2-part load line.

**No. 30H Jib** – 32 in. (813 mm) cross section, 3 in. (76 mm) dia. T-1 steel tubular chords, tubular lattice, 24 in. (610 mm) O.D. sheave grooved for 1 in. (25 mm) or 1-1/8 in. (29 mm) wire rope, bucket assembly for 2-part load line.

**No. 75H Jib** – 47 in. (1,194 mm) cross section, 4 in. (102 mm) dia. T-1 steel tubular chords, tubular lattice, 20 in. (508 mm) O.D. sheaves grooved for 1 in. (25 mm) or 1-1/8 in. (29 mm) wire rope, bucket assembly for multiple part load line.

**Crawler Lower** – 7-1/2 in. (190 mm) dia. horizontal propel shaft. Drive and idler tumblers are 39-1/2 in. (1,003 mm) dia., 10-sided, self cleaning. Top side frame rollers are 8-1/2 in. (216 mm) dia. Lower track rollers are 14-1/2 in. (368 mm) dia., double flanged with 4-3/4 in. (121 mm) dia. axles Track shoe pitch is 13-1/2 in. (343 mm). Tread shoe pins are 1-3/4 in. (44 mm). Drive chain is 6 in. (152 mm) pitch heavy duty. Drive sprocket is 8 tooth; driven sprocket is 15 tooth.

**Ropes** – Boom hoist line 7/8 in. (22 mm).

**Pendants** – 58HR and 58ABSH boom four part 1-1/4 in. (32 mm) dia.; 77S, 77H and 92HT boom four part 1-3/8 in. (35 mm) dia.

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

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