ENGINE: Diesel with hydraulic coupling or torque converter. With torque converter drive, auxiliary output shaft power is control (optional) for lifting crane service, allows increase of hoist line speed up to of 150 ft when line pull is less than maximum.

UPPER FRAME: Jig welded and stress relieved for strength and durability. Front bore accuracy for proper shaft and gear alignment. Results in less component wear and lower maintenance costs.

TRAVEL: Independent. Two-shoe clutches transmit travel power smoothly into the track sprockets. (Only left-hand clutch is visible.)

SWING: Independent. Extraordinary size 2-shoe clutches transmit swing power smoothly into the swing pinion. (Only left-hand clutch is visible.)

BOOMHOIST: Independent. Gear driven with 2-shoe clutches for boom raising and lowering of the boom. Boom raising clutch on opposite end of shaft is visible.

BOOMHOIST ROPE DRUM: One-piece, dual drum with integral ratchet wheel splined to shaft. Manually controlled pawl locks ratchet wheel and drum in lowering direction.

BOOMHOIST ROPE DRUM BRAKE: Automatically spring applied, power hydraulically released.

DRUM BRAKES: Mechanically operated by foot pedals. Drum brakes separated from clutches (item 6, 6a, and 6b) to eliminate heat transfer resulting in cooler brakes and clutches for longer component life of both. Brake drum splined to shaft.

POWER LOAD LOWERING CLUTCHES: (Optional). Independent front and rear drum 2-shoe clutches for lowering down light loads and controlled lowering of heavier loads.

POWER PACKAGE FOR POWER HYDRAULIC CYLINDERS: Vane-type pump, belt driven from engine, plunger-type accumulator and pump tank. Normal system operating pressure 900 to 1,550 p.s.i.

CONTROL CONSOLE: Exclusive Speed-o-Matic power hydraulic controls, time-tested and proven throughout the world.
The model LS-318 represents total engineering of the upper machinery for excavator service. Strength and size of components were all serious design considerations. Ordinarily, excavator users are concerned about marginal "swingers". The LS-318 was, therefore, designed with extraordinary size swing clutches . . . and independent from travel, too . . . for greater machine production and lower maintenance cost.

For superb control of all the machine functions, the LS-318 incorporates the famous Speed-o-Matic power hydraulic control system. This system is unaffected by day-to-day atmospheric variations and does not require priming or bleeding. Oil under pressure from the belt-driven, vane-type pump and from the pressure accumulator storage tank does the work. Normal system operating pressure is 900 — 1,050 p.s.i. The accumulator is pre-charged to 650 p.s.i.

Short throw levers in operator's control console actuate variable pressure valves from which oil under pressure is metered to the various hydraulic cylinders for prompt, positive engagement of a 2-shoe clutch or other function. Speed-o-Matic power hydraulics — the exclusive control system that permits the use of 2-shoe clutches for control of swing, travel, boom, and rope drums.

The brakes for the front, rear, and optional third operating rope drums (see page 2, items 8) are mechanically operated by foot pedals equipped with positive latches located beneath the operator's control console.

Foot throttle, lever-type hand throttle on swing control lever, electric windshield wiper, cab heater, and defroster fan are optional.

The power hydraulic 2-shoe clutch is self-compensating over a wide range of lining wear and heat expansion and is separated from the rope drum brake to eliminate heat transfer between them for longer clutch and brake lining life. Clutches can be engaged to any degree for smooth acceleration of swing, travel, hoist, and boom hoist. For maximum rope line pull, the clutch can be fully engaged by complete application or toggling in, of the control lever.

The inhaul drum load lowering (reversing) clutch is ideal for dragline operation. Upon completion of dragline bucket inhaul, to hoist the bucket with load, operator first engages hoist clutch (A) then engages front drum lowering (reversing) clutch (B) to pay out the inhaul rope. (Brake (C) is fully released.) No need for operator to continually slip the foot pedal controlled drum brake (C). Speed of bucket hoist rope and bucket pay-out permits clutch controlled bucket hoist. In fact, when hoisting, the weight of bucket and load will add to engine power instead of retard it, thus reducing fuel consumption. Also, increases brake drum lining life. It's one other reason why the LS-318 is fast becoming the standard of performance in its class.
Lower and Side Frames Designed
For Heavy-Duty Excavator Service


turntable Bearing

External Travel Shaft

The LS-318 lower and side frames are all-welded and stress relieved to provide a more durable working base. Lower frame is then machined and line bored for mounting of the center horizontal travel shaft. External horizontal travel shafts are spline connected to both the center travel shaft located in the lower frame and the drive chain sprocket hub located in the side frame. When removing side frames, external travel shafts are stored in the drive sprocket hub. When extending or retracting side frames, splined end of external travel shaft slides in the internal splines of the sprocket hub. When removing, extending, or retracting side frames, the drive chains remain intact. Lower frame can be retracted from 11' 0" gauge to 9' 0" for transport (except with 44" shoes).

The side frames are positioned to the lower frame cross axles by two dowels fixed in the bottom of each side frame window. (One for the retract and one for the extend position.) The dowel fits in circular recess on underneath side of cross axles. A wedgepack (A) is then placed above each cross axle inside the window of the side frame. By means of a tie bolt, the wedge is drawn up the inclined plane, locking each side frame to its respective cross axle. End plate (B) secures wedgepack in position. A patented feature.

The LS-318 is available with 17' and 20' long side frames, with various width shoes available. The track shoes and rollers are heat treated to minimize track wear. Chain/track sprocket, track idler roller, and track rollers are mounted on bronze bushings.

Power Hydraulic Steer

Power hydraulic steer is standard. Jaw clutches (C) are operator engaged through power hydraulics. When jaw clutches are fully engaged, or pre-loaded, spring applied brakes (D) are automatically released. Jaw clutches (C) are engaged independently for steer by either of two operator steer control levers. They are simultaneously engaged for straightline travel by the two steer levers. Brakes (D) also serve as digging brakes while working.

The crane upper is mounted to the crawler lower by a turntable bearing which provides extremely smooth swinging.
The LS-318 is a sturdy, powerful dragline, clamshell, or grapple with a recommended boom length up to 80'.

The full-revolving fairlead rotates to insure inhaul rope support in all positions. All moving parts are mounted on anti-friction bearings. Increases inhaul rope life; permits greater economy.

Boom angle indicator is standard with the angle boom. (See photo page 6.)

Four sheaves are optional for lifting crane operation.

Dual, rail-type boom stops, each with spring loaded bumpers, are standard.

As a lifting crane, the LS-318 with 20' long lower and with live mast handles up to 140' of angle boom plus 40' angle jib. Live mast is required for angle boom exceeding 100' and for boom exceeding 50' when equipped with jib. The basic angle jib is 2-piece, 20' in length, with 10' and 15' jib extensions available.
The LS-318 crawler crane can be equipped with a tubular boom and jib. The basic boom is 50', 2-piece, pin-connected with 10', 20', and 30' extensions available up to a maximum length of 190' for lifting crane service. Also available is a 2-piece, 30' jib, pin-connected, with 10' and 15' extensions available for a maximum jib length of 60'.

The tube boom represents latest advances in design and is precision built with special automatic machine tools and fixtures. Machine-coped lattice ends match the contour of the round, alloy steel, tubular chords and are carefully welded in place with 360° welds.

The method of welding the in-line pin lugs to the round chord tube minimizes stress concentration and is an exclusive development of FMC engineering/manufacturing technology. The extended hub on the female connection serves as an anchor for the jib guyline or for pendant lines when assembling the boom. The tapered end pin is held in place with two latch pins.

The tubular boompoint contains four sheaves plus roller-type rope guards, all mounted on anti-friction bearings to eliminate the need for daily lubrication. Two sheaves are available for dragline, clamshell or grapple operation. Jib mounts conveniently to extended spool head shaft hubs with jib mast pinned to jib base.

The boomhoist limiting device improves close-radius operation. When an attempt is made to raise the boom closer than minimum radius, this mechanism acts to disengage the boom raising clutch and simultaneously engage the boomhoist brake.

The live mast is required for all boom lengths in excess of 100' and for booms exceeding 50' when equipped with jib. Midpoint suspension pendants required for all booms in excess of 150'. Live mast, equipped with sheaves.
can be used as a short boom for handling side frames, boom sections, and counterweight when dismantling or assembling the machine.

The entire counterweight is quickly raised or lowered with rope mechanism. The rope drum is splined to the boomhoist drum shaft. The counterweight is lowered with the boomhoist brake and raised with the boomhoist clutch. Permits fast, 1-piece raising or lowering of the counterweight.

The flexibility of the machine design results in the availability of options, all designed to maximize the usefulness and productivity of the machine, unmatched by other crawler cranes.

The swing brake is spring applied or power hydraulically released (under control of the operator). Acts to hold upper and boom at any swing position or it can be partially engaged for a slight drag to control side drift when making precision lifts. Swing brake is controlled from operator's position through variable pressure control valve. The LS-318 also features a mechanical swing lock as standard equipment.

With the crawl side frames relieved of the machine weight and with hydraulic cylinder pinned to side frame and carbody, side frames can be hydraulically retracted or extended for gauges of 8' or 11'. Hydraulic power is from the power hydraulic steer system.

For high-speed hoisting, an exclusive independent planetary hoist arrangement can be mounted on the extended rear hoist drum shaft. Planetary is mounted between the drum gear and clutch drum. The planetary arrangement can provide up to 70% increased hoisting speed. Engaging the 2-shoe clutch provides standard hoist rope speed; planetary brake is controlled by push button on hoist control lever.
The model LS-318 Link-Belt® crane was designed for demanding excavating situations as well as lifting crane duty. The upper, lower, and side frames are all-welded and stress relieved to provide a durable working base. Side frames are removable with drive chains remaining intact. The upper design is the proven Full-Function with independent travel, swing, boom, and hoist. All clutches are 2-shoe type and are mounted outside the side housings for accessibility... and away from the drum brakes to eliminate heat transfer between brakes and clutches. The clutches are controlled by proven Speed-o-Matic power hydraulics. The swing clutches are of extraordinary size for increased service life. Power boom up and power boom down, plus a wide choice of options. This is truly a "one of a kind" machine... as a lifting crane or excavator.

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