



Link-Belt®

LS-98A

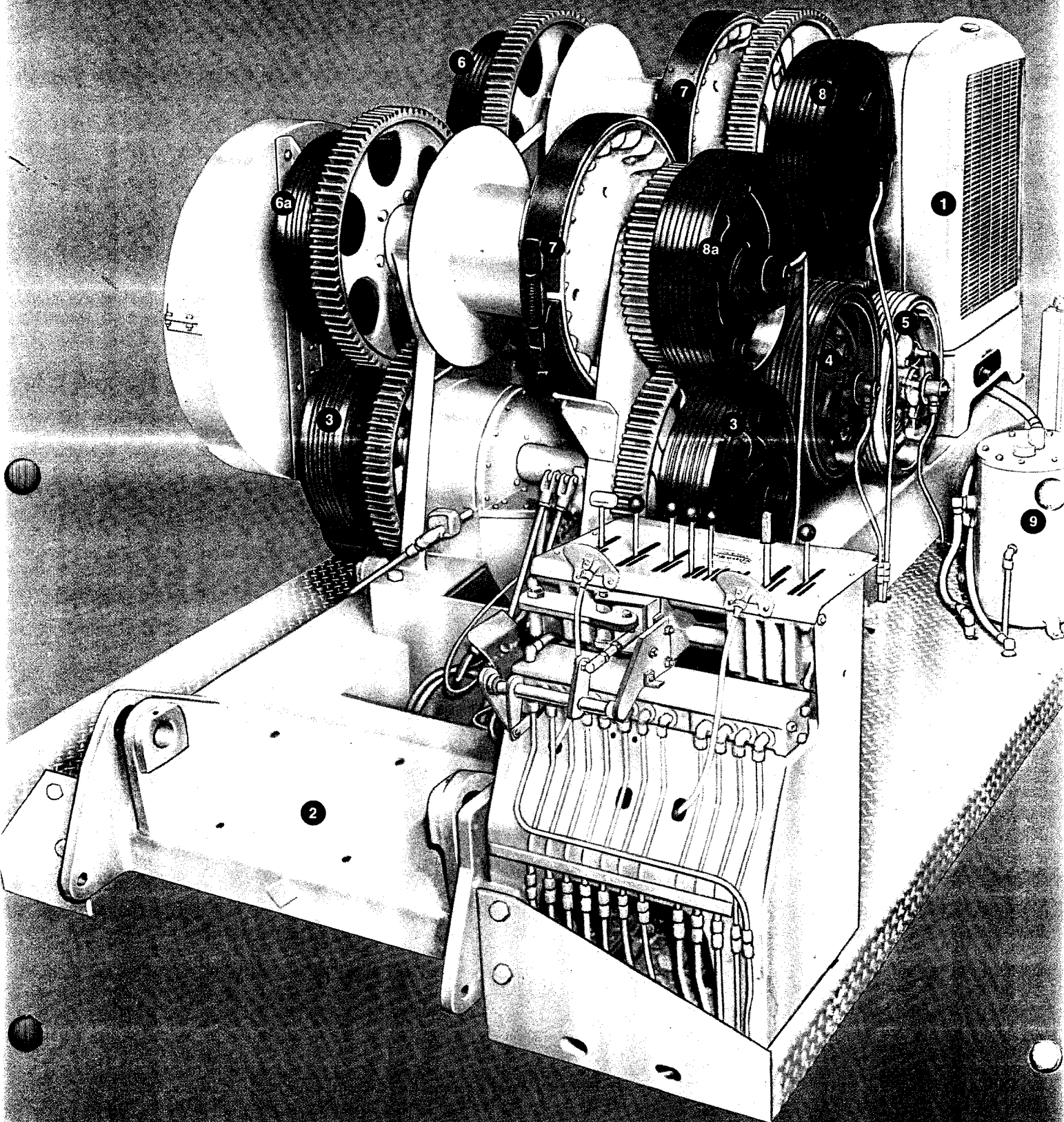
Wire Rope Crawler Excavator/Crane





LS-98A Serviceability

Exclusive Full-Function design with easy-to-reach components





LS-98A Controllability

Exclusive Speed-o-Matic® power hydraulic control system

GENERAL INFORMATION ONLY

- 1 Engine:** Diesel equipped with friction clutch, hydraulic coupling or torque converter.
- 2 Frame:** Fixture welded, then stress relieved for strength and durability. Line bore accuracy for proper shaft and gear alignment for less component wear and lower maintenance cost.
- 3 and 4: Travel and swing:** (Independent is optional.) Two-shoe power hydraulic controlled travel clutches (3) transmit power into the travel sprockets. Swing clutches (4) power the swing pinion. (Only left hand swing clutch is visible.)
- 5 Boomhoist:** Independent, gear driven. Two-shoe power hydraulic controlled clutch for boom raising and lowering. (Only left hand clutch is visible.)
- 6 6a. Hoist clutches:** Two-shoe power hydraulic controlled rear drum (6) and front drum (6a). (Only clutch drums are visible.)
- 7 Drum brakes:** Mechanically operated by foot pedals. Separated from 2-shoe clutches to eliminate heat transfer, resulting in cooler brakes and clutches for longer component life. Brake drum is splined to the drum shaft.
- 8 8a. Power load lowering clutches:** (Optional) Independent. Two-shoe, power hydraulic controlled. Ideal for powering down light loads, and controlled lowering of heavier loads.
- 9 Speed-o-Matic® power hydraulic control system:** Vane-type pump, belt driven from engine; piston-type accumulator; and sump tank. Normal system operating pressure is 900-1050 psi (6 206 – 7 240 kPa). Short-throw control levers actuate variable pressure valves which direct oil under variable pressure to each operating clutch.

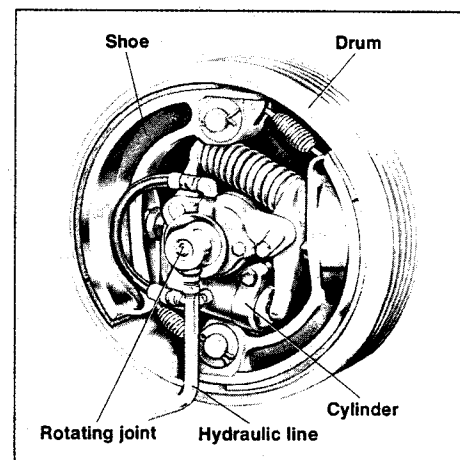
Full-Function design: Offers a separate shaft, set of clutches, and gears for swing/travel, rope drums and boom hoist for increased component life. Shafts have involute splines, and mounted on anti-friction bearings — no press fits — all for easier component removal. Clutches and gears are outside the side housings for service accessibility.

Control system

For superb control of all the machine functions, the LS-98A incorporates the exclusive 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 variable pressure does the work. Operator can complete more cycles per shift.

Interchangeable two-shoe clutches

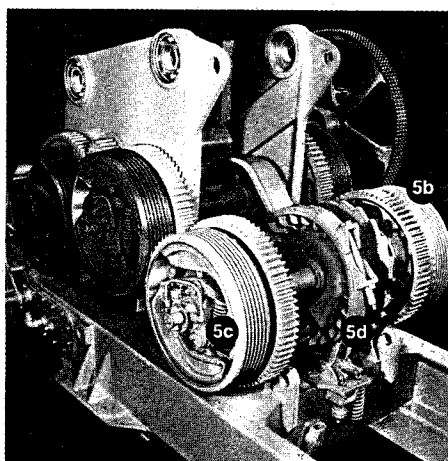
Short throw levers in operator's control console actuate variable pressure valves from which oil under variable pressure is directed to the various hydraulic clutches for prompt, positive engagement of 2-shoe clutches or other functions. Clutches can be partially engaged for smooth acceleration and deceleration of swing, travel, inhaul, hoist and booming. The 2-shoe clutches are self-compensating over a wide range of lining wear and heat expansion, requiring less operator attention. The control system is time tested and proven throughout the world.



Two-shoe clutches

Swing brake

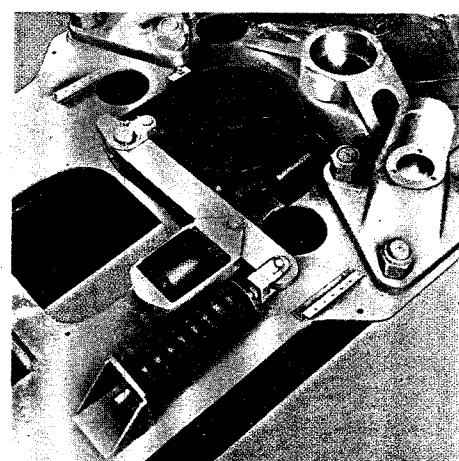
Spring applied or power hydraulically released under control of the operator. Acts to hold upper and boom at any swing position, or can be partially engaged for a slight drag to control side drift. The brake is controlled from the operator's position



Independent boomhoist

Independent boomhoist

Gear driven with power hydraulic clutch control for boom raising (5b, clutch drum only visible) and boom lowering (5c). An automatic, spring applied rope drum brake (5d) is power hydraulically released. A manually controlled rope drum locking pawl is standard.



Swing brake

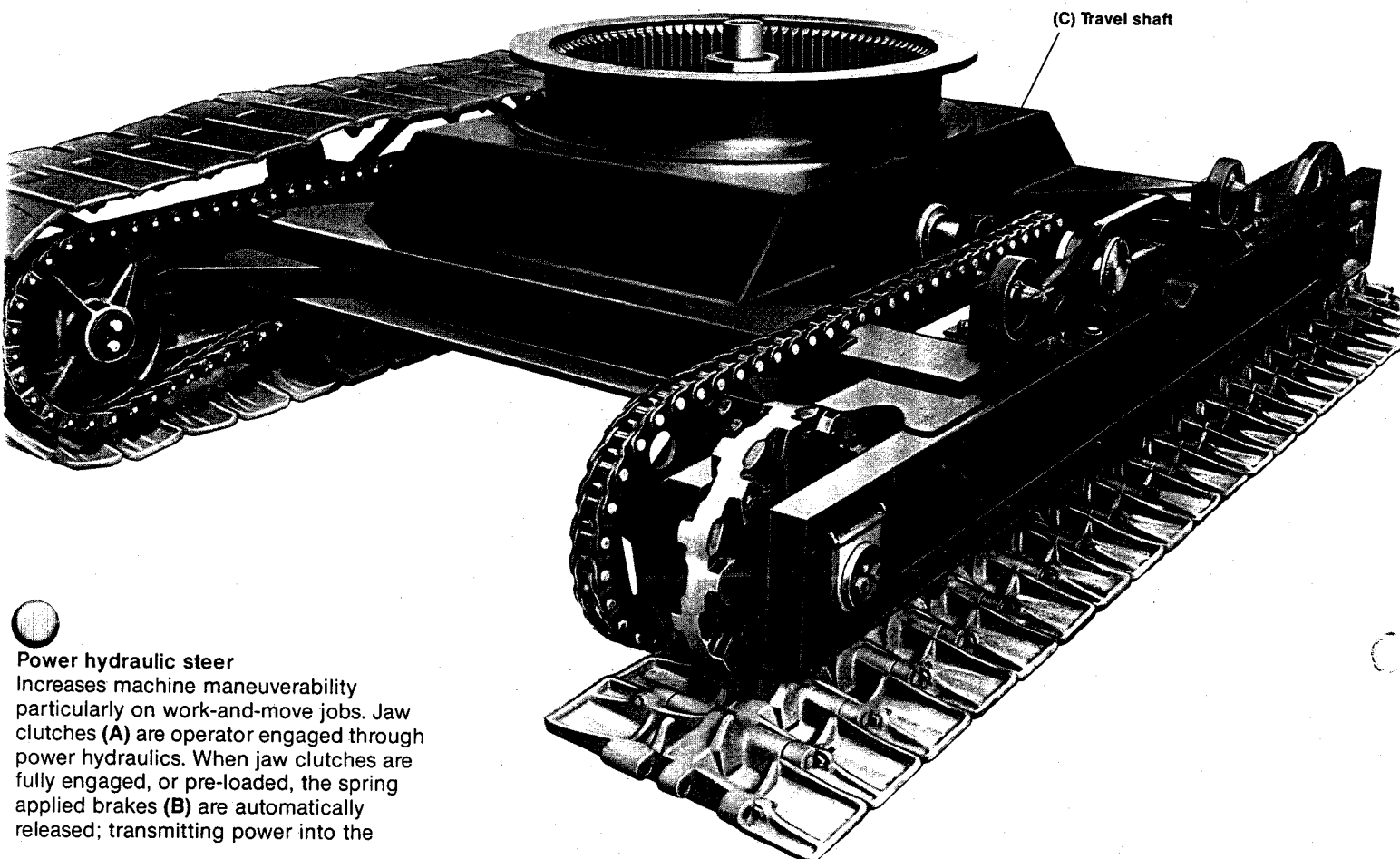
through a variable pressure control valve. A mechanical swing lock is also standard equipment.



LS-98A Maneuverability

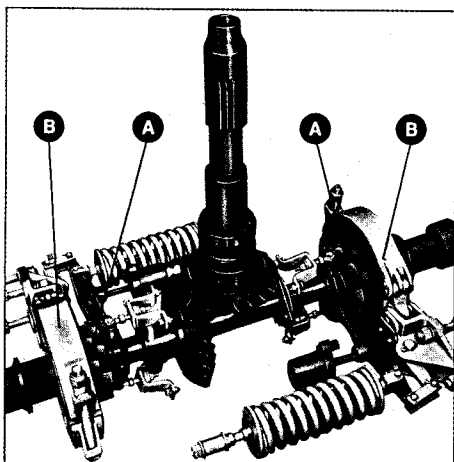
Power hydraulic steering-travel

GENERAL INFORMATION ONLY



Power hydraulic steer

Increases machine maneuverability particularly on work-and-move jobs. Jaw clutches (A) are operator engaged through power hydraulics. When jaw clutches are fully engaged, or pre-loaded, the spring applied brakes (B) are automatically released; transmitting power into the

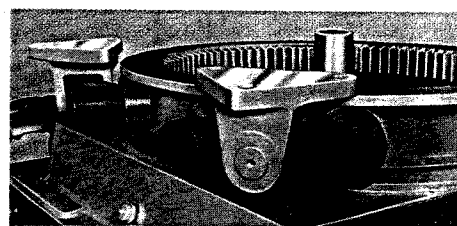


Power hydraulic steer

travel shaft, and chain drive mechanism. Jaw clutches (A) are engaged independently for steer by either of two operator steer control levers. They are simultaneously engaged for straightline travel by the two steer control levers. Brakes (B) also serve as digging brakes while working. The steer/travel mechanism is completely enclosed within the lower frame . . . no components protrude below the underside of the carbody to be subject to damage when working or being transported.

Rugged lower

All-welded, stress relieved and then line bored for mounting of the travel shaft (C). The overall crawler length 15'1" (4.60 m) provides mobility plus over-the-end stability for dragline, clamshell, wrecking ball, magnet or lifting crane applications.



Conical hook rollers

Eight hardened, conical hook rollers

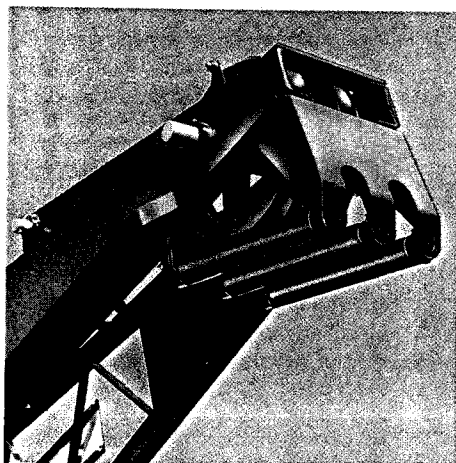
Rollers are mounted on anti-friction bearings and join the upperstructure to the crawler mounting. Rollers, mounting brackets and roller path are all heat treated for long, trouble-free service. Rollers are shim-adjusted for wear.



LS-98A Dragline production capability

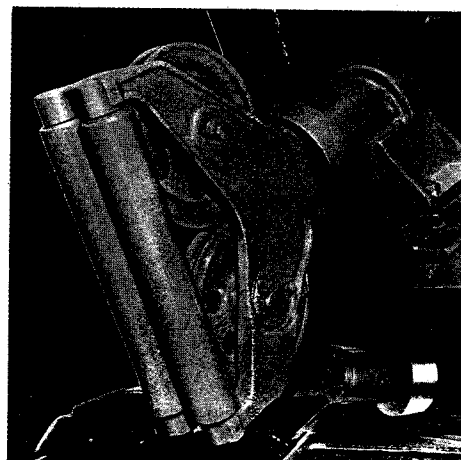
More engine horsepower to the rope drums

GENERAL INFORMATION ONLY



Angle boompoint

Angle boompoint
Sheaves and roller-type hoist rope guards are mounted on anti-friction bearings for increased rope and sheave life.



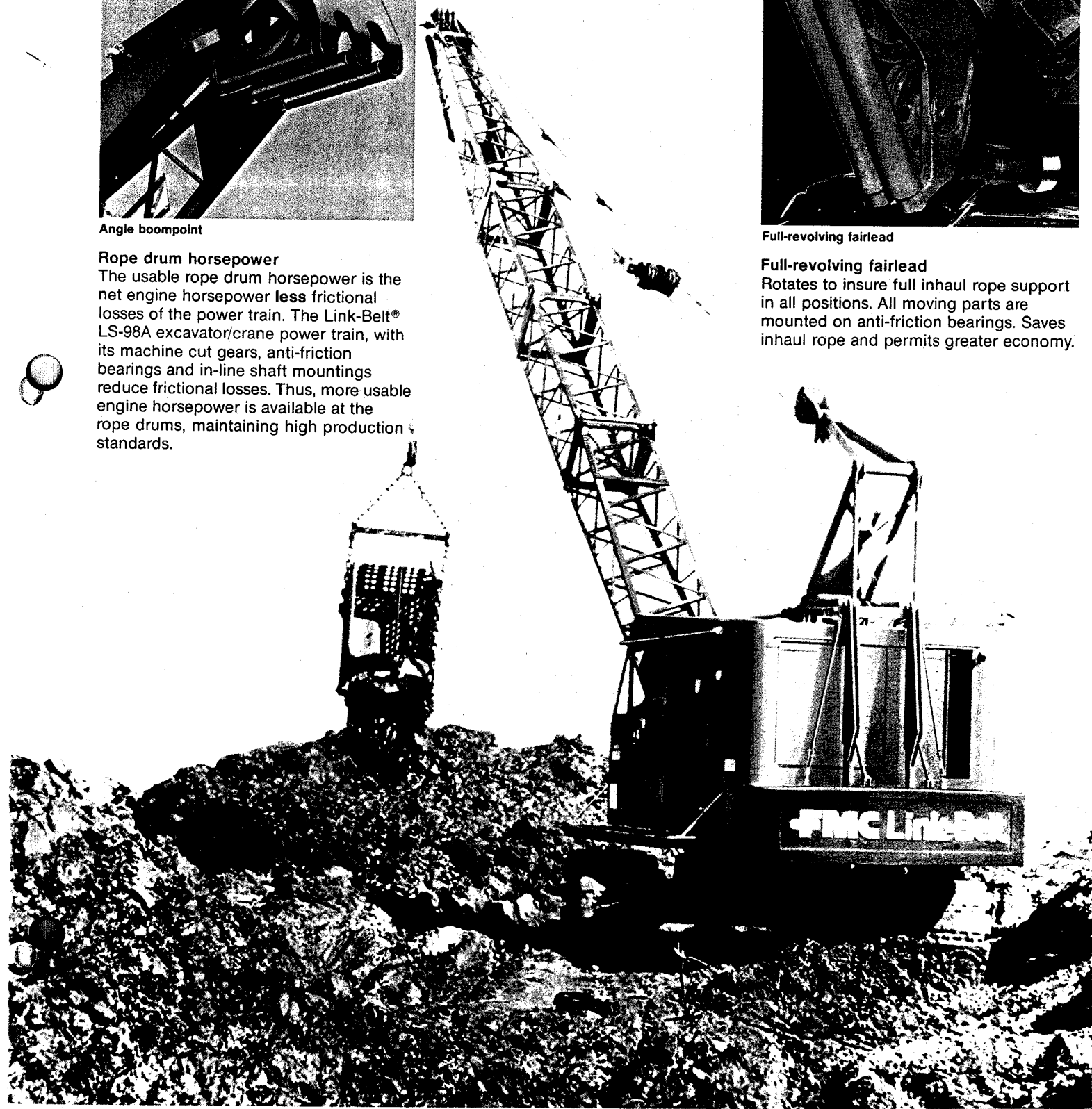
Full-revolving fairlead

Rope drum horsepower

The usable rope drum horsepower is the net engine horsepower **less** frictional losses of the power train. The Link-Belt® LS-98A excavator/crane power train, with its machine cut gears, anti-friction bearings and in-line shaft mountings reduce frictional losses. Thus, more usable engine horsepower is available at the rope drums, maintaining high production standards.

Full-revolving fairlead

Rotates to insure full inhaul rope support in all positions. All moving parts are mounted on anti-friction bearings. Saves inhaul rope and permits greater economy.





LS-98A Flexibility

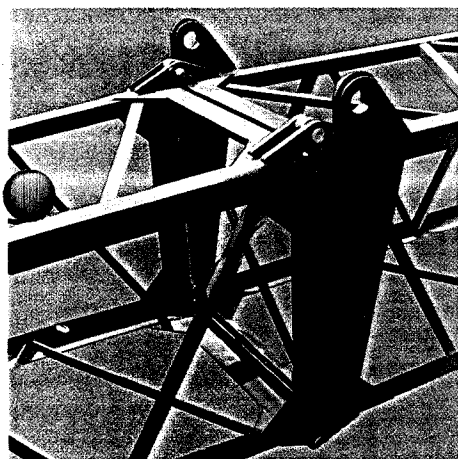
Options to tailor the machine to the job

Wide choice of options

The flexibility of the Link-Belt® excavator/crane Full-Function design results in the availability of options, all designed to maximize the usefulness and productivity of the LS-98A, unmatched by other cranes.

With the optional independent swing and travel, the LS-98A is able to swing while traveling, or travel while swinging for greater on-the-job maneuverability.

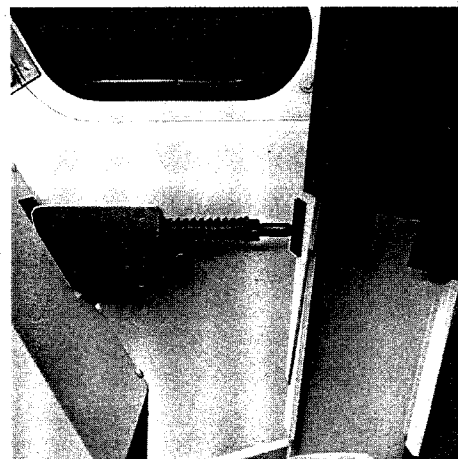
Tailor the LS-98A to the job from a wide choice of options to meet varied job application requirements. The result is increased on-the-job machine and load handling capability for increased profits.



Pin-connected angle boom

Boom attachment

The Link-Belt 40-ton (36.28 metric ton) LS-98A lift crane is available with a **pin-connected angle boom**. Basic boom is 40' (12.19 m) in length, with extensions available up to a maximum boom length of 100' (30.48 m). A 20' (6.10 m). Bolt-connected angle jib is available, with 10' (3.05 m) extensions up to maximum jib



Boomhoist limiting device

Boomhoist limiting device

This device is for added safety in close-radius booming. When the boom approaches minimum radius this mechanism acts to disengage the boom raising clutch with simultaneous engagement of the boomhoist brake.

GENERAL INFORMATION ONLY

Jib mast

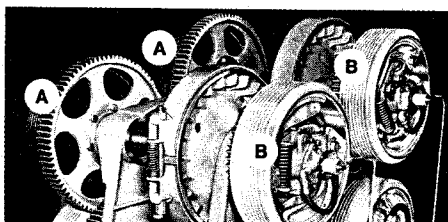




GENERAL INFORMATION ON

Two-speed rope drums (optional)

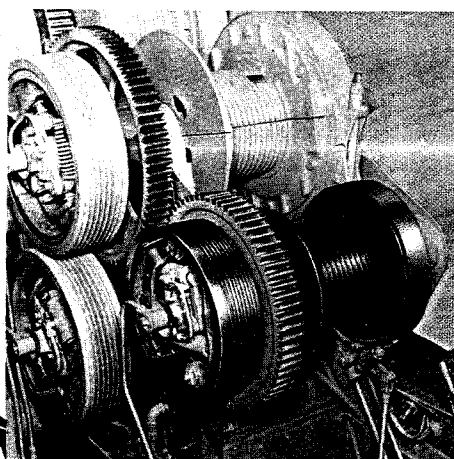
For specialized applications, 2-speed gear driven rope drums are available. Clutches (A) operate at standard hoist line speed. Clutches (B) operate at 90% higher than standard speed. However, with this arrangement, clutch-controlled power load lowering is not available. Loads must be lowered on the drum brake(s).



Two-speed rope drums

Third rope drum (optional)

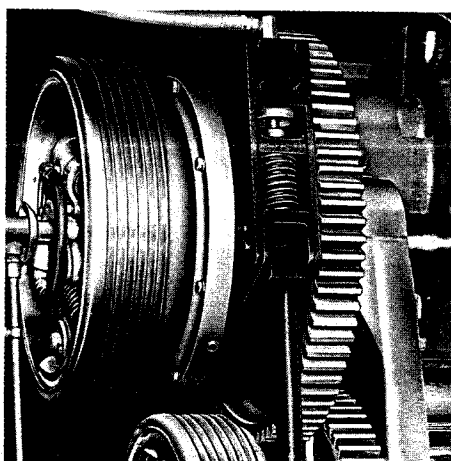
A gear-driven third drum is available. Particularly valuable for "snaking in" a load, the third drum is high in line speed and rope capacity and is completely independent of all other machine functions.



Third rope drum

Two-speed, planetary driven hoist/lowering rope drum (optional)

An exclusive, independent planetary arrangement can be mounted at either or both hoist and lowering ends of extended drum shafts. The planetary arrangement can provide up to 70% increased speed or

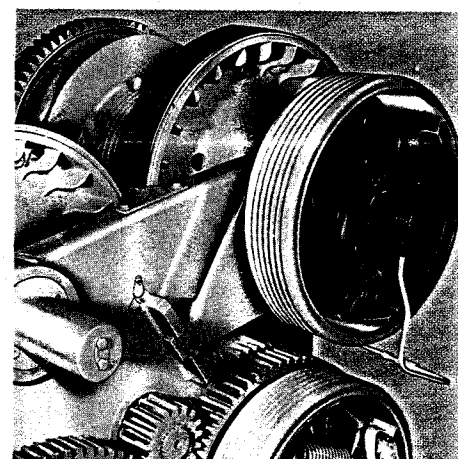


Two-speed, planetary driven hoist/lowering rope drum

40% decreased speed for either hoisting or lowering. Standard speed is retained for swing, travel, boomhoist and third drum. Engaging the 2-shoe clutch provides standard rope drum speed. This option will greatly increase machine production.

Auxiliary two-shoe rear drum brake (optional)

The addition of the auxiliary 2-shoe rear drum brake nearly doubles the rear drum total effective braking area. The brake is power hydraulically applied with a variable pressure control valve interconnected with the standard drum brake linkage for simultaneous engagement of both drum brake band and shoes. When the rear

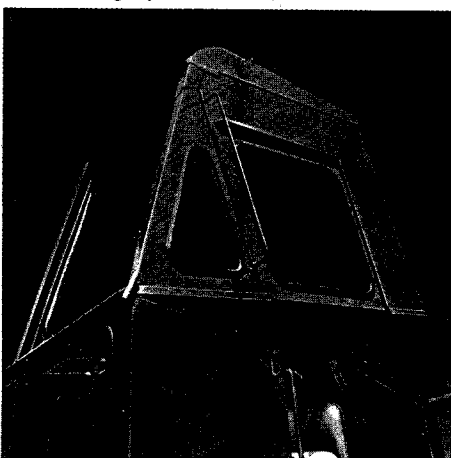


Auxiliary two-shoe rear drum brake

drum auxiliary brake is installed, power load lowering, planetary lowering or 2-speed gear-driven hoist are not available.

Elevated operator's cab (optional)

2' (0.61 m), 4' (1.22 m), or 7' (2.13 m) above the standard position are available. This option puts the operator up where he can see his work on specialized loading jobs. The result is greater speed of operation.



Elevated operator's cab

Retractable gantry

FMC Link-Belt



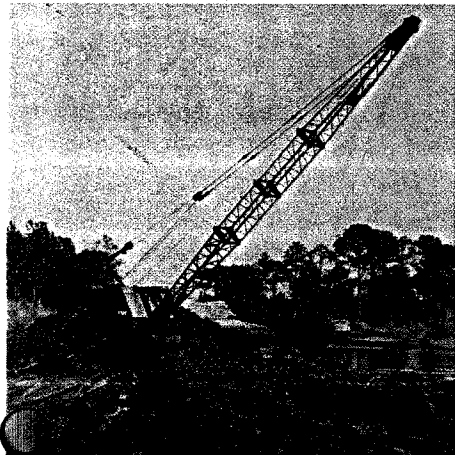
LS-98A Dependability

In dragline – clamshell – magnet – lifting crane

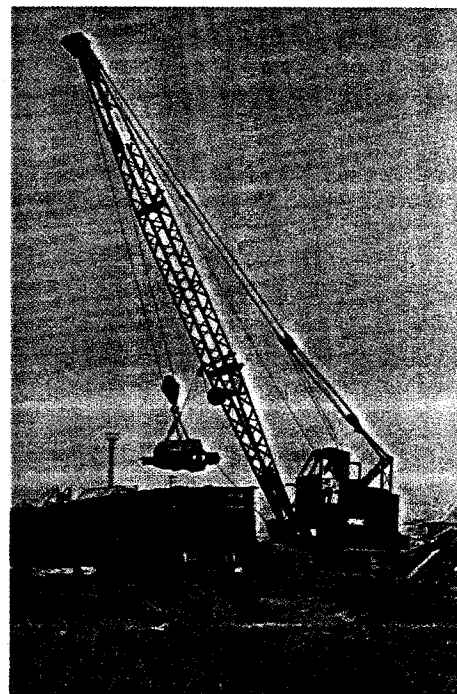
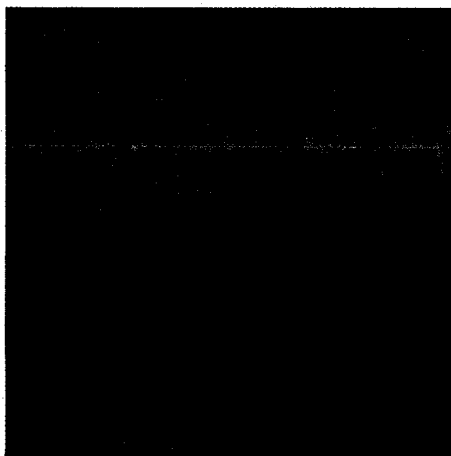
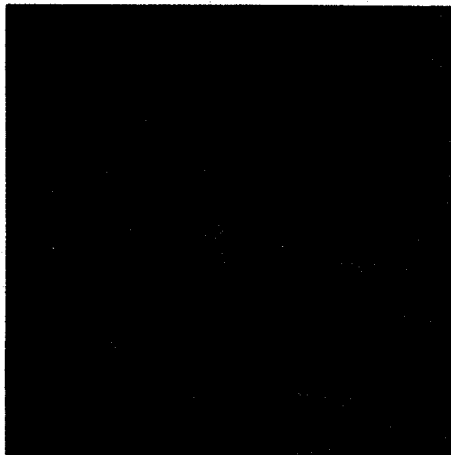
GENERAL INFORMATION ONLY

Through the years, the LS-98A has developed a reputation for dependability not only in day-to-day cycle work with magnet, clamshell or dragline bucket, but also as a lifting crane.

Stress relieved frames followed by in-line bores means longer gear and shaft life.



Speed-o-Matic® power hydraulic controls and interchangeable 2-shoe clutches decrease cycle time plus reduce maintenance cost. And, resale value of the quality-designed LS-98A is amazingly high compared to competitive size machines.



The LS-98A design benefits:

- **Serviceability** (page 2)
FMC exclusive Full-Function gear train design with easy-to-reach components.
- **Controllability** (page 3)
FMC exclusive Speed-o-Matic® power hydraulic control system, plus 2-shoe clutches, independent boomhoist and swing brake.
- **Maneuverability** (page 4)
Power hydraulic controlled swing and travel; 15' 1" (4.60 m) crawler length and conical hook rollers on anti-friction bearings.
- **Dragline production capability** (page 5)
High usable rope drum horsepower. Boompoint sheaves, rope guard rollers and fairlead components mounted on anti-friction bearings.
- **Flexibility** (page 6-7)
Wide choice of options to tailor the LS-98A to the job.
- **Dependability** (page 8)
Stress relieved frames. Shafts mounted in in-line bores. Speed-o-Matic power hydraulic control system and interchangeable 2-shoe clutches.

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

FMC Corporation Cable Crane & Excavator Division Cedar Rapids Iowa 52406

Link-Belt® cranes/excavators manufactured in: Cedar Rapids Iowa • Lexington & Bowling Green Kentucky • Ontario Canada • Milan Italy • Queretaro Mexico & Nagoya Japan (under license)