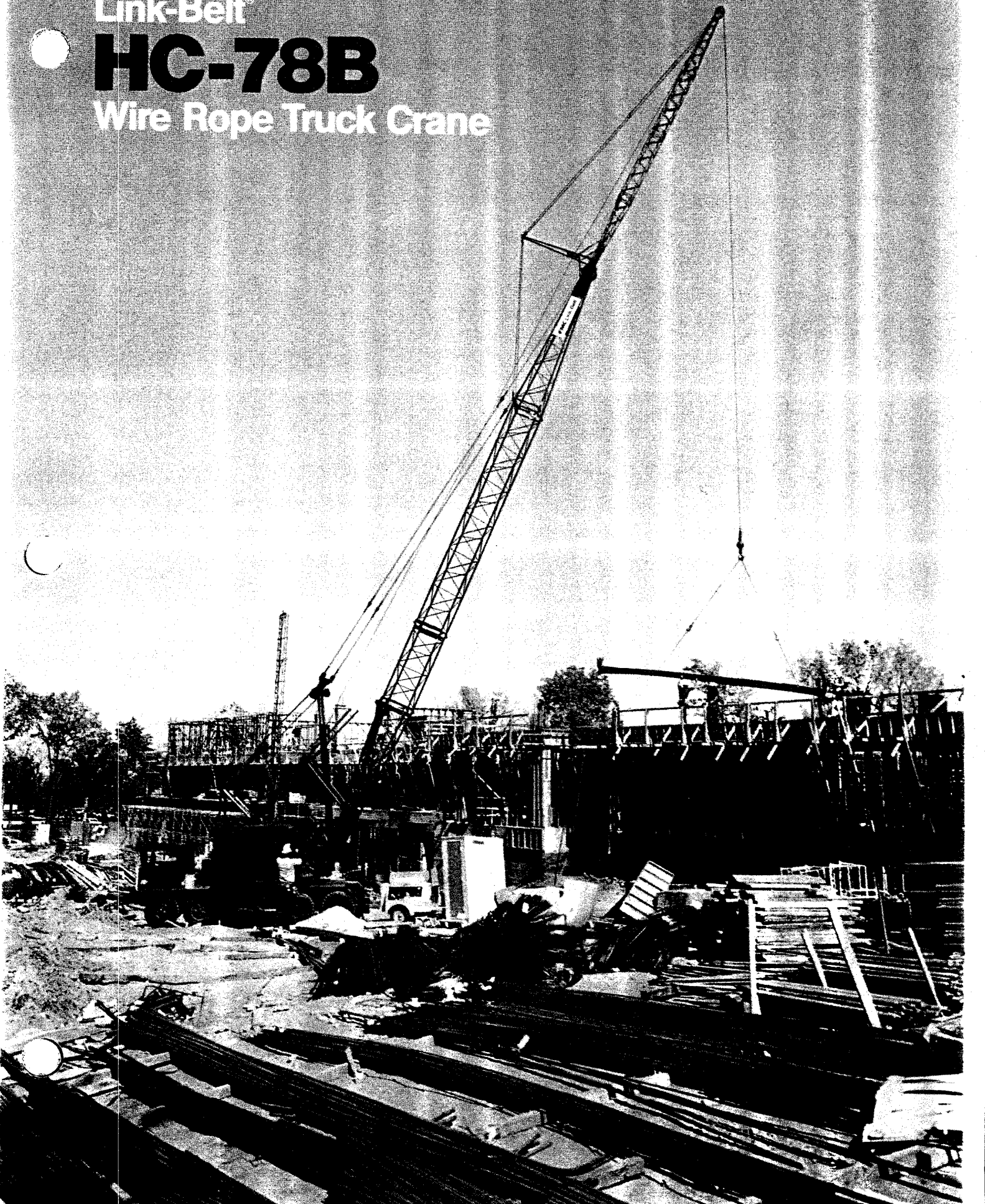


Link-Belt®

HC-78B

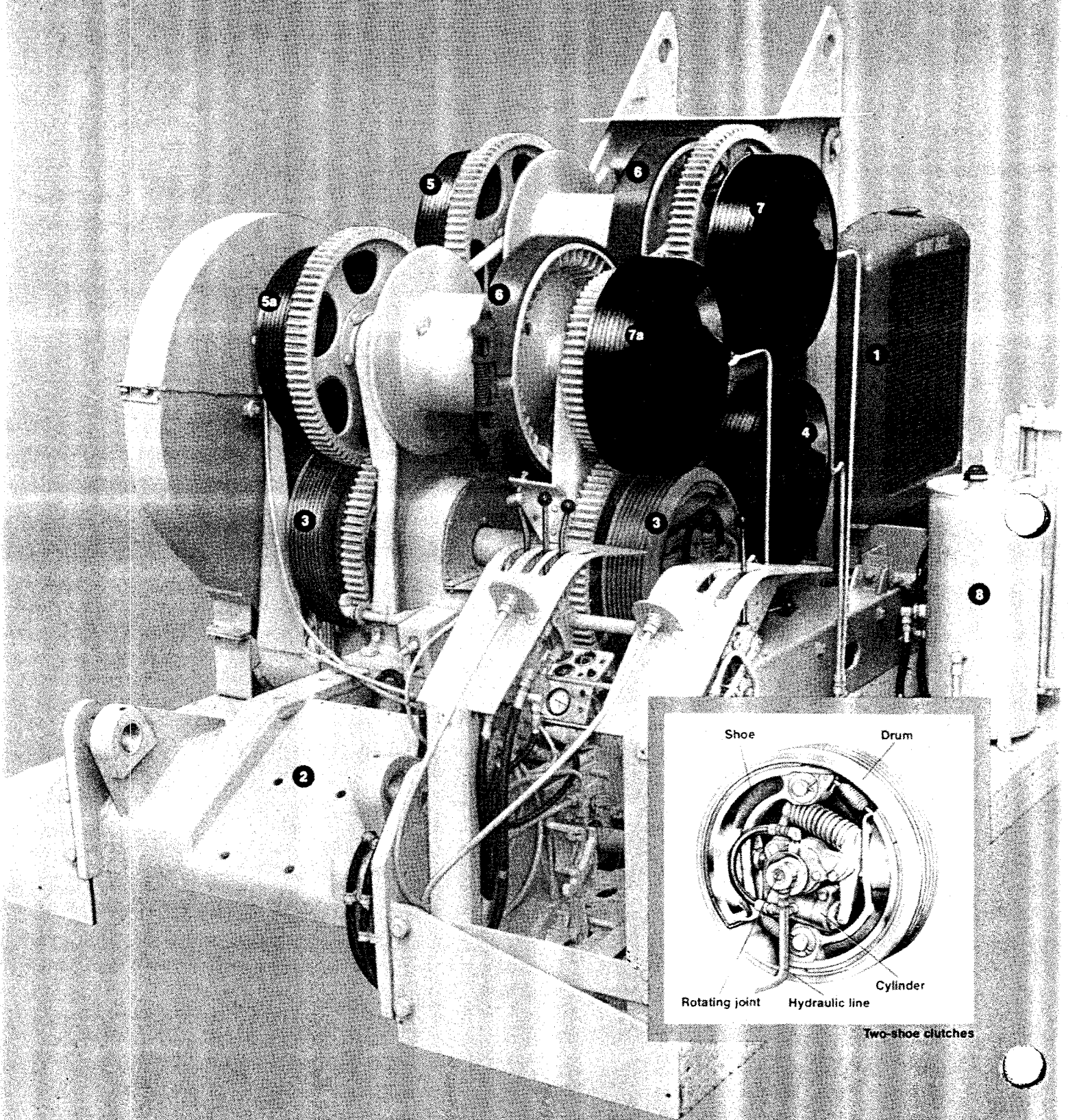
Wire Rope Truck Crane



HC-78B Serviceability

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

GENERAL INFORMATION ONLY



HC-78B Controllability

Exclusive Speed-o-Matic® power hydraulic control system

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

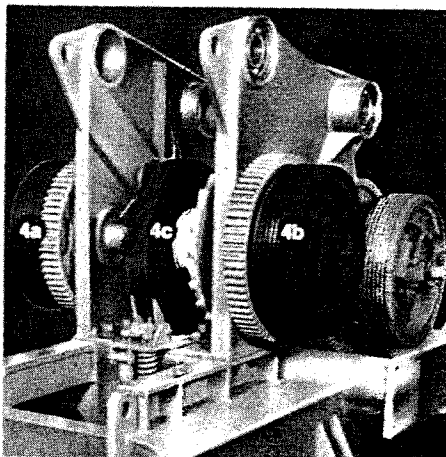
- 1 **Engine:** Diesel equipped with friction clutch, hydraulic coupling or torque converter.
- 2 **Frame:** Fixture welded, then stress relieved for strength and durability. Line bore accuracy for proper shaft and gear alignment for less component wear and lower maintenance cost.
- 3 **Swing:** Two-shoe power hydraulic controlled clutches (3) for left and right swing, power the swing pinion. (Only left hand swing clutch completely visible).
- 4 **Boomhoist:** Independent, gear driven. Two-shoe power hydraulic controlled clutch for boom raising and lowering. (Only raising clutch is visible).
- 5 **5a. Hoist clutches:** Two-shoe power hydraulic controlled rear drum (5) and front drum (5a). (Only clutch drums are visible).
- 6 **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.
- 7 **7a. Power load lowering clutches:** (Independent) Two-shoe, power hydraulic controlled. Ideal for powering down light loads, and controlled lowering of heavier loads.
- 8 **Speed-o-Matic® power hydraulic control system:** Vane-type pump, belt driven from engine, piston-type accumulator, and hydraulic reservoir. Normal system operating pressure range is 900-1050 PSI (6 206-7 240 kPa).

Control system

For superb control of all machine functions, the Link-Belt® HC-78B truck crane 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 pressure does the work. Operator can complete more cycles per shift. Short throw levers in operator's control console actuate variable pressure valves from which oil under pressure is directed to the various hydraulic clutches for prompt, positive engagement of 2-shoe clutches or other functions.

Interchangeable 2-shoe clutches

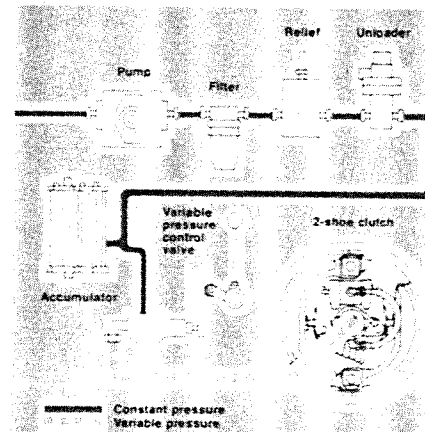
Clutches can be partially engaged for smooth acceleration and deceleration of swing, inhaul, hoist and booming. The 2-shoe clutches are self-compensating over a wide range of lining wear and heat expansion, requiring less operator attention. The control system is time tested and proven throughout the world.



Independent boom hoist

Independent boomhoist

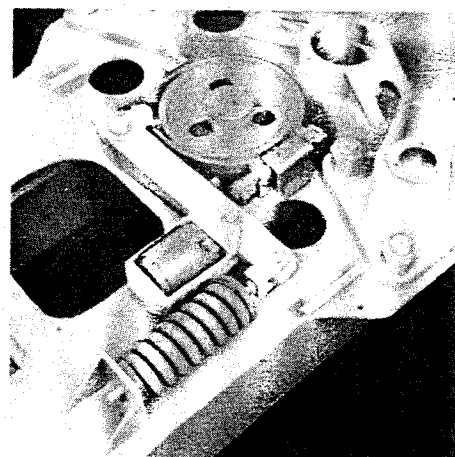
Gear driven with power hydraulic clutch control for boom raising (4a, clutch drum only visible) and boom lowering (4b). An automatic, spring-applied rope drum brake (4c) is power hydraulically released. A manually controlled rope drum locking pawl is standard.



Speed-o-Matic® power hydraulic control system

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



Swing brake

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

HC-78B Mobility

Carrier designed and manufactured by FMC

FMC carrier

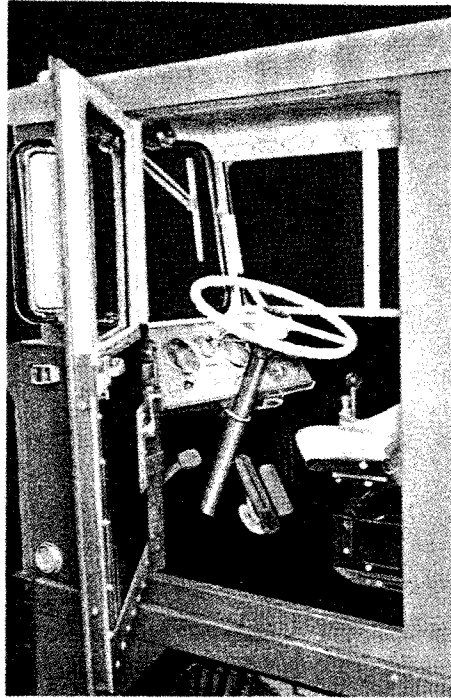
The Link-Belt® HC-78B truck crane 8 x 4 drive carrier is designed with high strength, alloy steel frame to yield an optimum weight-to-strength ratio — an important consideration for providing a carrier which is light enough to enable machine transportability, but strong enough to provide a durable lifting base.

Carrier cab

Interior provides a touch of luxury for the operator. The cab is insulated to reduce shock and sound levels. The upholstered side panels, instrument panel, excellent gauge visibility, floor carpet, large glass area, bucket seat with safety belt, right and left hand mirrors, windshield washers and wipers, heater, and defroster fan are all standard equipment on the HC-78B.

Power train

The carrier diesel engine drives through a Roadranger 13 speed transmission, powering the planetaries mounted in the hubs of the rear axles for optimum torque capability. This versatile, progressive shift power train allows for negotiating steep grades, maneuvering through traffic, and traveling at highway speeds up to 45 mph



Carrier cab

(72.45 km/hr) while permitting on-the-job precision travel movement.

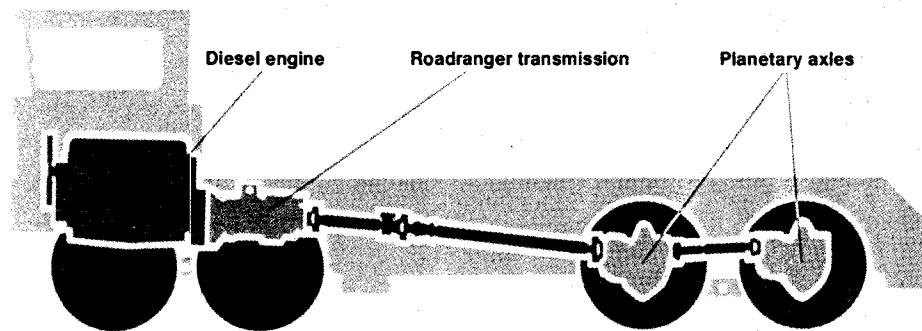
Eight-wheel air brakes are standard. When lifting "on tires", parking brake can be set

from the carrier cab. The brake chambers on the rear tandem also provide emergency braking if air pressure loss occurs in the system.

Hydraulic outriggers

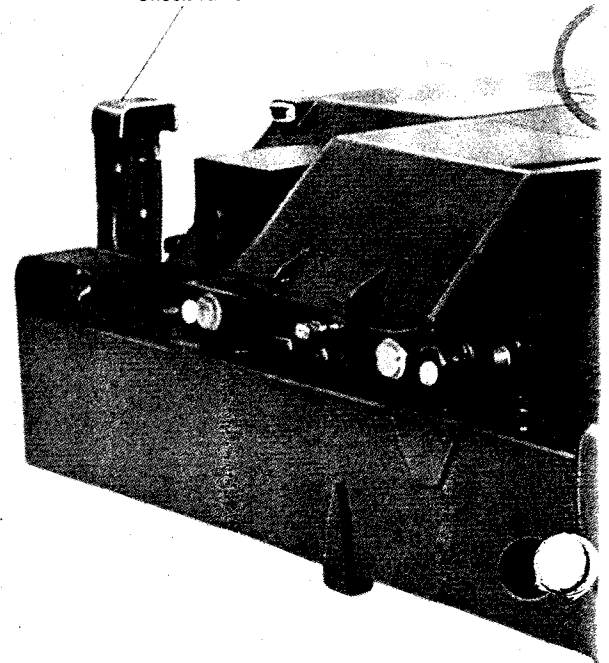
The HC-78B has hydraulic outriggers as standard equipment. Power is provided by the Speed-o-Matic® pump in the upper with individual controls for the beams and jacks. This permits leveling of the machine on reasonably uneven terrain. Once the outriggers are set, a check valve fixed to each of the jack cylinders "locks" the oil in the cylinder, maintaining the position of the outrigger jack. For assistance in leveling, sight levels are located near the outrigger boxes. Outrigger controls are located on each side of the carrier deck for convenience and added safety.

The rear outrigger box is pin-connected to the carrier frame for quick removal to reduce overall weight if this becomes necessary for highway travel. Removal of the pins frees the outrigger box from the carrier. Hydraulic lines are equipped with quick disconnect fittings.



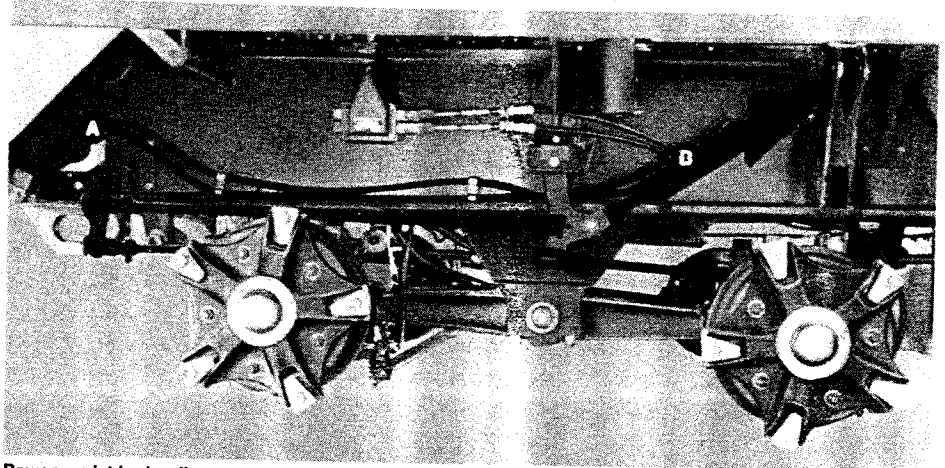
Carrier power train

Check valve



Power assist hydraulic steer

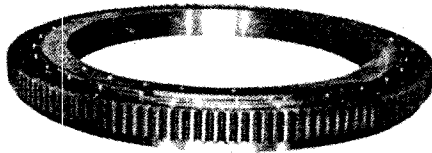
Steer components are mounted to the side of the carrier frame, for protection when traveling on the job site. The operator controls steering gear (A) and steering linkage by rotating steering wheel in the carrier cab. A hydraulic control valve activated by the steering gear (A) directs oil from the steering pump to the double-acting cylinder (B) for power assist hydraulic steer. This design results in smooth power assist force when steering right or left.



Power assist hydraulic steer

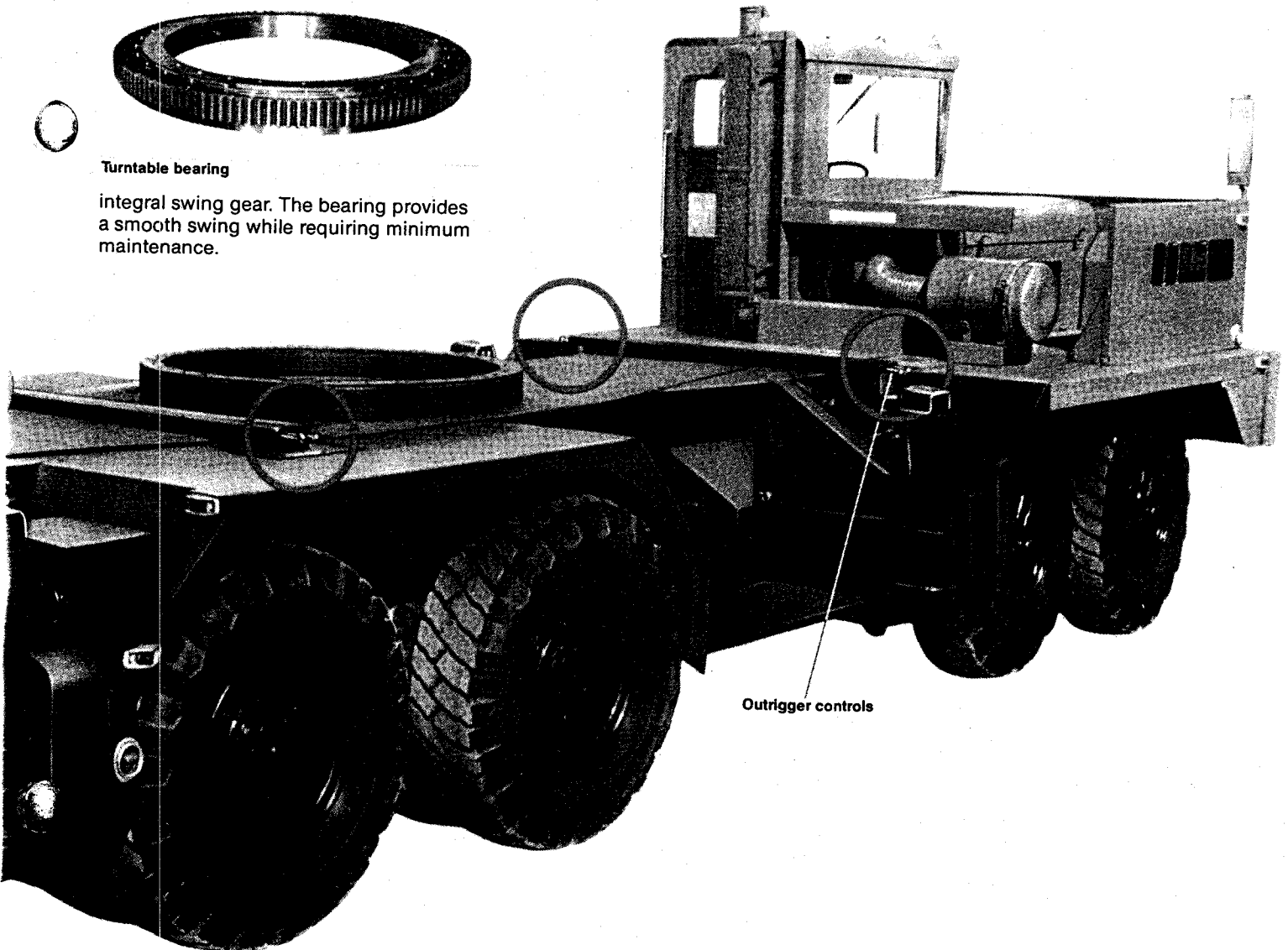
Turntable bearing

Revolving upperstructure is mounted to the carrier by a turntable bearing with



Turntable bearing

integral swing gear. The bearing provides a smooth swing while requiring minimum maintenance.



Outrigger controls

HC-78B Flexibility

Options to tailor the machine to the job

Wide choice of options

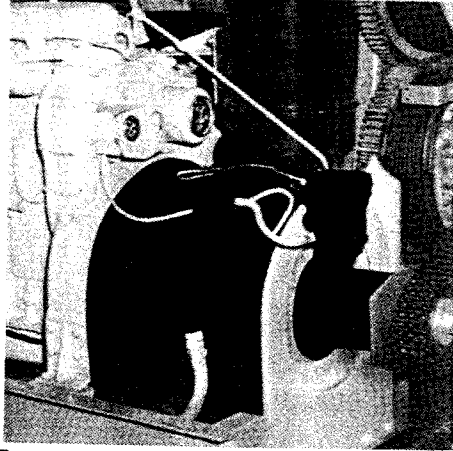
The flexibility of the Link-Belt® crane Full-Function design results in the availability of several options, all designed to maximize the usefulness and productivity of the HC-78B truck cranes, unmatched by other cranes.

Independent machine functions allow for hoisting with one drum, lowering on another, while swinging the load into position for added job productivity and flexibility.

Tailor the HC-78B 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.

Boom attachment

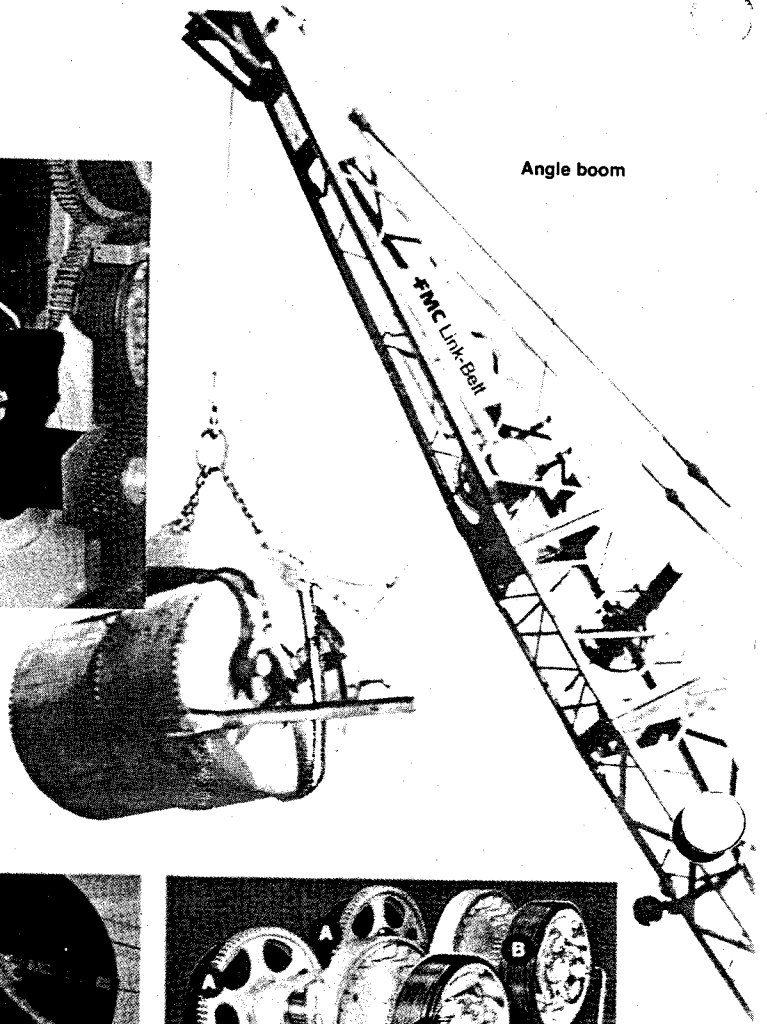
Available on the HC-78B is a pin-connected **angle boom**. Extensions are available to increase the basic 35' (10.67 m) boom up to a maximum of 100' (30.48 m). A 20' (6.10 m) bolt-connected



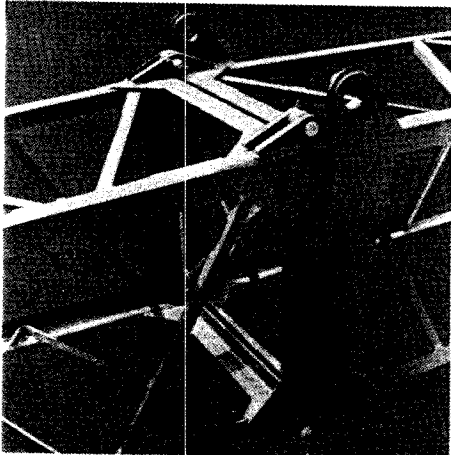
Torque converter drive

Torque converter drive (optional)

For added load control and operating smoothness a single stage torque converter can be utilized to provide a wider torque range



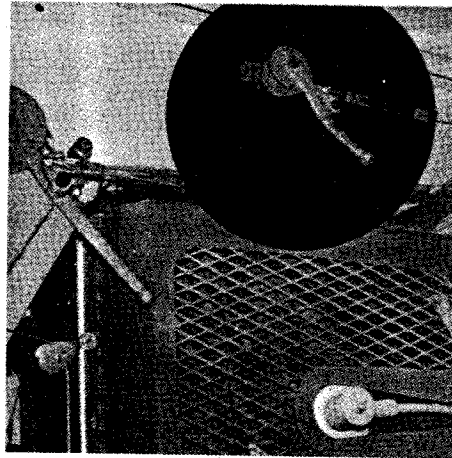
Angle boom



Pin-connected angle boom

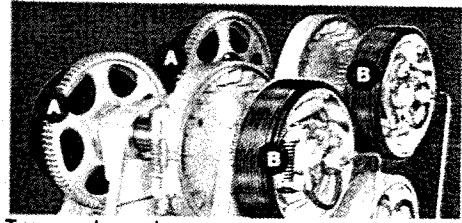
angle jib is available, with 10' (3.05 m) extensions for a maximum 40' (12.19 m).

Also available, primarily for lift crane service, is a pin connected tubular boom. Maximum length available is 170' (51.82 m) or maximum boom and jib length is 140' (42.67 m) + 40' (12.19 m). A **retractable high gantry** is standard for both boom options.



Auxiliary governor control

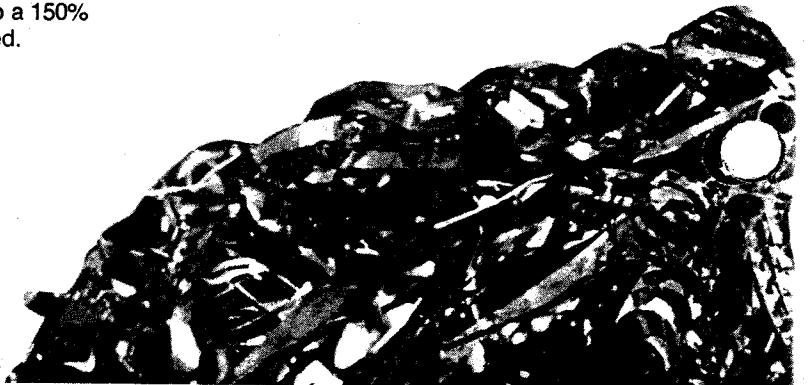
upper machinery components. For lift crane service when line pull is less than maximum, an auxiliary governor control (optional) overrides torque converter governor, permitting up to a 150% increase in hoist line speed.

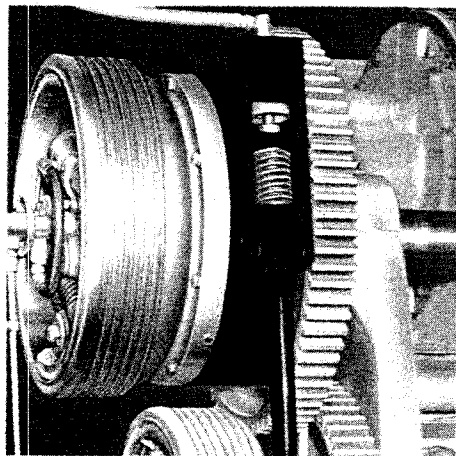


Two-speed rope drums

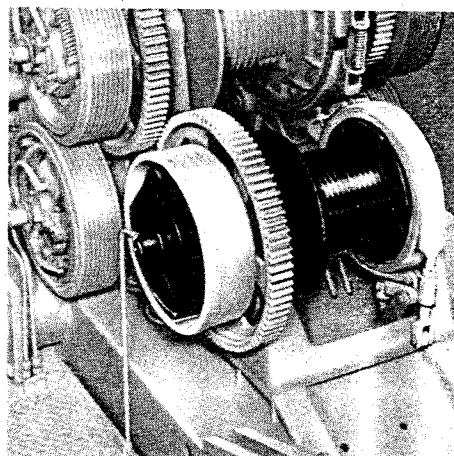
Two-speed rope drums (optional)

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 or auxiliary 2-shoe rear drum brake are not available. (Loads must be lowered on drum brake(s) only.)

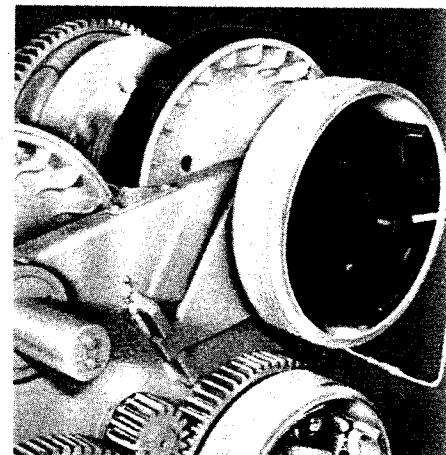




Two-speed, planetary driven hoist/lowering drum



Third rope drum



Auxiliary two-shoe rear drum brake

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

Third rope drum

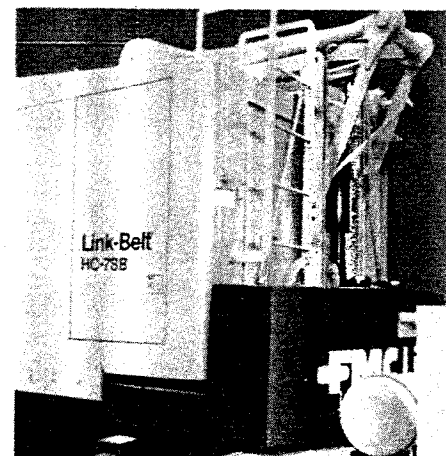
A gear-driven third drum is available. Particularly valuable for "snaking in" a load, the third drum is high in line speed and rope capacity and is completely independent of all other machine functions.

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 variable pressure control valve interconnected

with the standard drum brake linkage for simultaneous engagement of both drum brake band and shoes. When the rear drum auxiliary brake is installed, power load lowering, planetary lowering or 2-speed gear-driven hoist are not available.

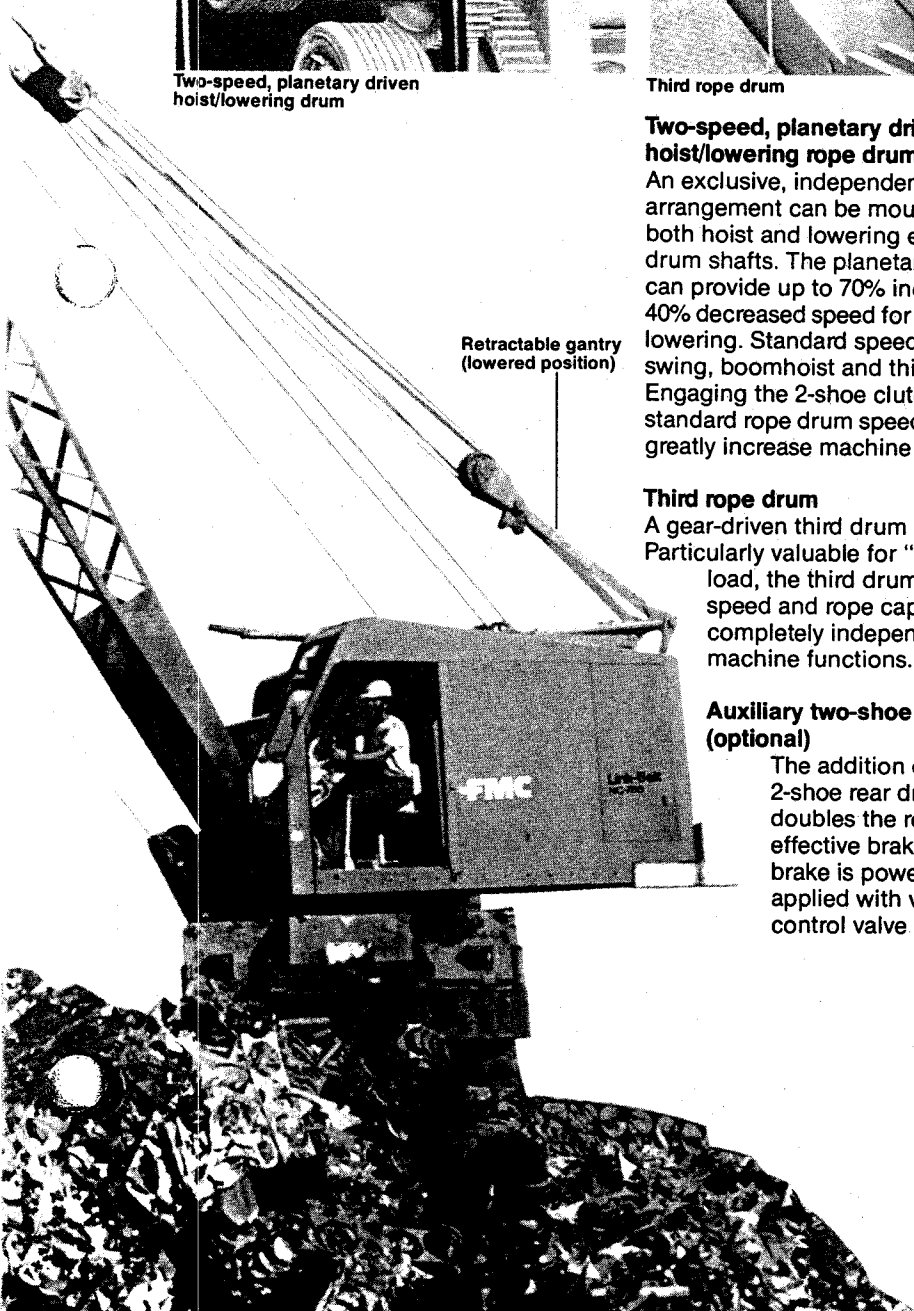
Retractable gantry (lowered position)



Counterweight removal

Counterweight removal (optional)

Upper counterweight can be lowered or raised hydraulically in just seconds to or from the carrier frame. Counterweight is attached to the cylinder with large t-bolt arrangement. Time consuming use of mechanical devices is eliminated.



HC-78B Dependability

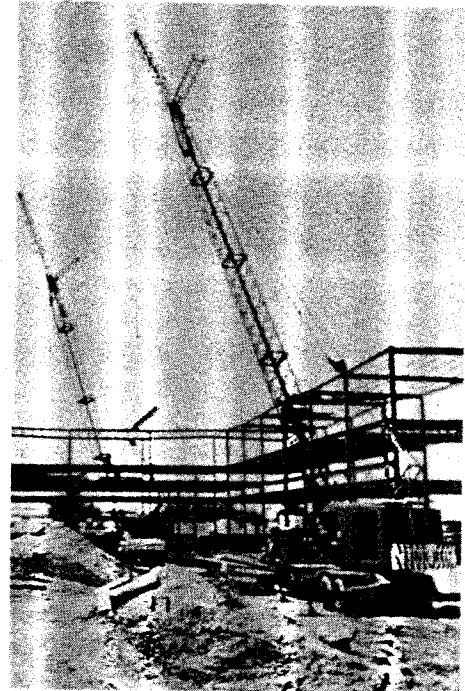
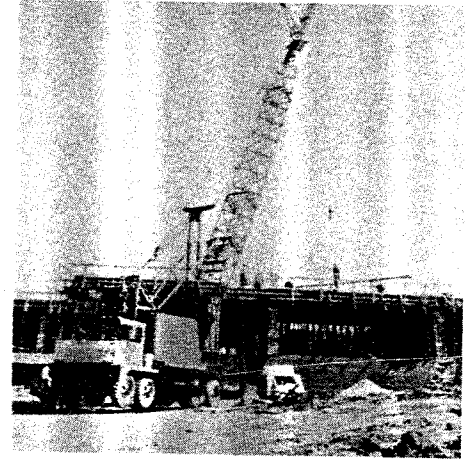
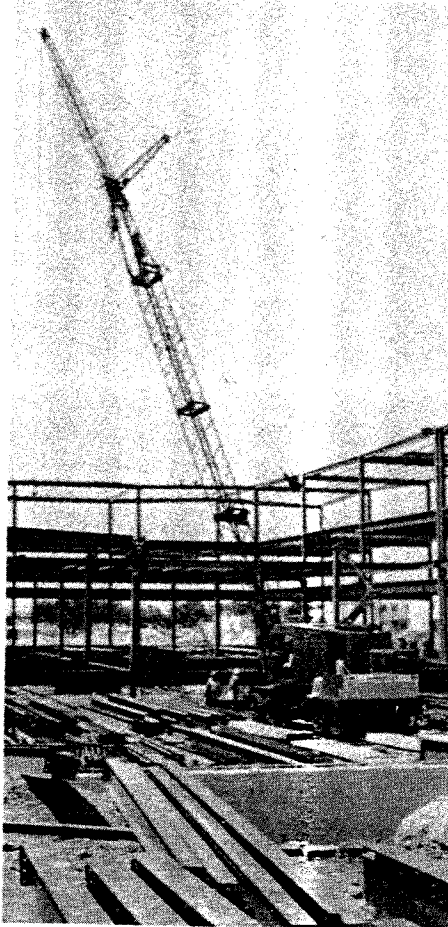
In lift crane, magnet, clamshell, dragline bucket.

The Link-Belt® HC-78B truck crane, through the years, has developed a reputation for dependability not only as a lift crane but also in day-to-day cycle work with magnet, clamshell, or dragline bucket.

Stress-relieved frames followed by in-line boring means longer gear and shaft life. Speed-o-Matic® power hydraulic controls decreases cycle time and interchangeable 2-shoe clutches reduce maintenance cost. And, resale value of the quality-designed HC-78B is amazingly high compared to competitive size machines.

The HC-78B 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 system.
- **Mobility** (page 4 & 5)
FMC designed and built carrier, 8 x 4 drive with 13 speed Roadranger transmission, power assist hydraulic steer and luxurious cab.
- **Flexibility** (page 6 & 7)
Wide choice of options to tailor the HC-78B 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.



Link-Belt
CONSTRUCTION EQUIPMENT

Link-Belt Construction Equipment Company Lexington, Kentucky

A unit of Sumitomo Construction Machinery Co., Ltd.

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