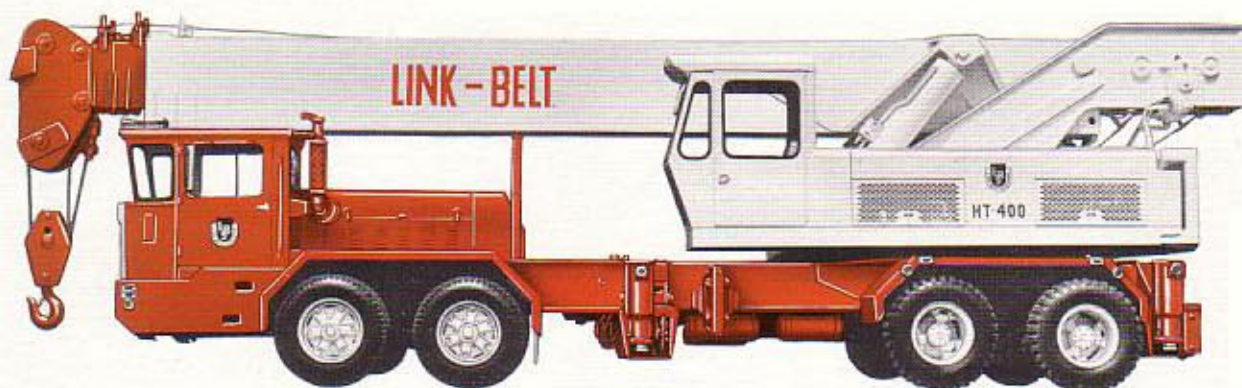


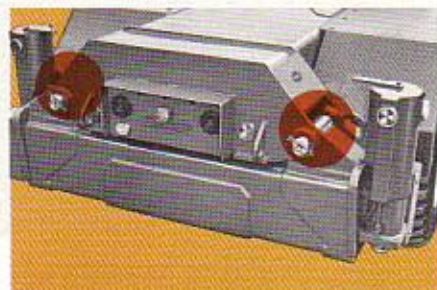
HT-400 Stripdown A Matter Of Minutes

Hydraulic Counterweight Lowering

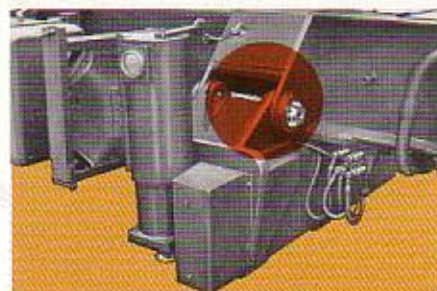


Hydraulic truck crane job-to-job transportability was not overlooked in the design of the HT-400.

Fast stripdown of counterweight and outriggers was a design consideration. Removal of two pins each frees the front and rear outrigger assembly



Rear Outrigger — Pin-Connected



Front Outrigger — Pin-Connected

from the carrier. Hydraulic lines are equipped with quick disconnects. The retracted boom may be used to handle the outriggers.

The counterweight is one piece and held in place by a hydraulically raised and lowered frustum. To lower the counterweight to the carrier deck, simply position the direction valve lever (A) and turn the control lever (B) directing oil to the lowering cylinder. The entire job is completed in 10 seconds. Hydraulic power for the raising/lowering cylinder is from

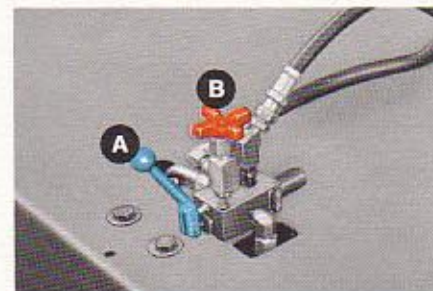
HT-400 Features In Brief

- Single engine: Minimum maintenance.
- Formed box-type carrier frame: For strength and durability.
- 13-speed main transmission: For negotiating steep grades and maneuvering in traffic.
- 2-speed auxiliary transmission: For on-the-job movements as low as .87 m.p.h.
- Holding valves on boomhoist and hoist: For controlled boom and load lowering.
- Unique load hoist and lowering: Permits 2-speed rope drums plus "free fall" capability.
- Boom extend-retract cylinder arrangement: Eliminates need for long hoses and hose reels.
- Boom extension system: For optimum lifting capacity.
- Fast stripdown of counterweight and outriggers: For job-to-job mobility.

the piston-type, engine-driven pump. The contoured counterweight allows the operator to swing away from the counterweight and remove it from the carrier deck with the retracted boom. Hydraulic counterweight lowering is a standard feature on the HT-400.



Counterweight — Hydraulically Lowered/Raise



Direction Valve And Control Lever

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



Link-Belt Speeder

DIVISION OF FMC CORPORATION

Cedar Rapids, Iowa • Woodstock, Ontario, Canada • Queretaro, Mexico • Milan, Italy



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Link-Belt Speeder

HT-400

40-Ton Hydraulic Truck Crane

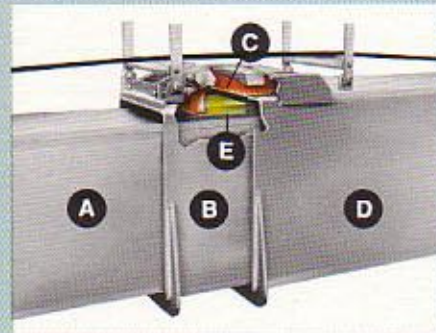


WITH LINK-BELT SPEEDER... Hydraulics are a tradition

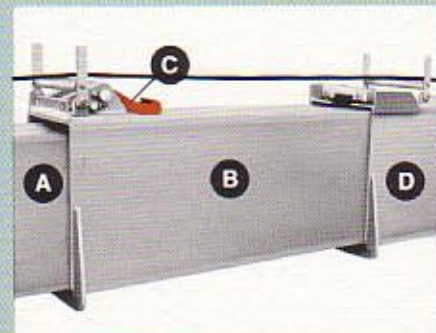
Full Power 4-Section Boom Manual Extension And Jib Available

Boom Extension System For Optimum Lifting Capacity

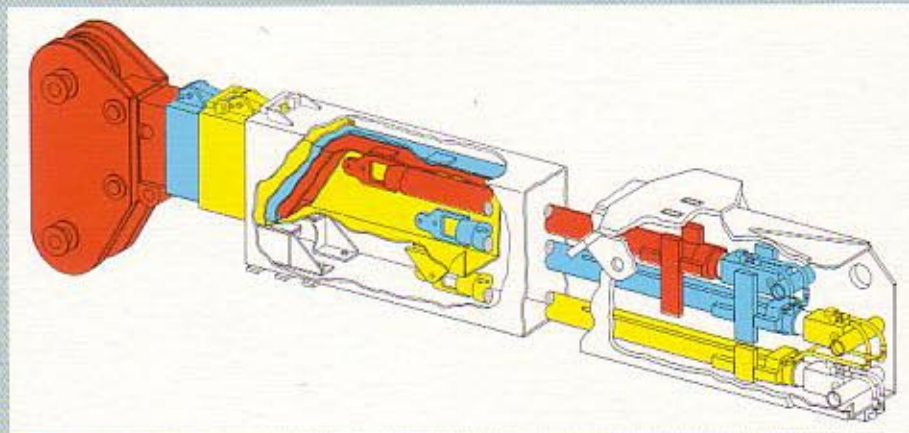
The Link-Belt Speeder Model HT-400 hydraulic crane is equipped with full-power 4-section telescoping boom. For additional reach, manual boom and jib extensions are available. The boom sections are constructed of alloy steel for greater strength. The method of welding the boom sections is a development of Link-Belt Speeder engineering/manufacturing technology. The boom is hydraulically extended and retracted with an **exclusive 3-cylinder arrangement**. The cylinders are double-acting with the cylinder rods remaining stationary and the cylinder case extending-retracting. The **3-cylinder arrangement** eliminates the need for long hoses and hose reels.



Latch Locked



Latch Unlocked

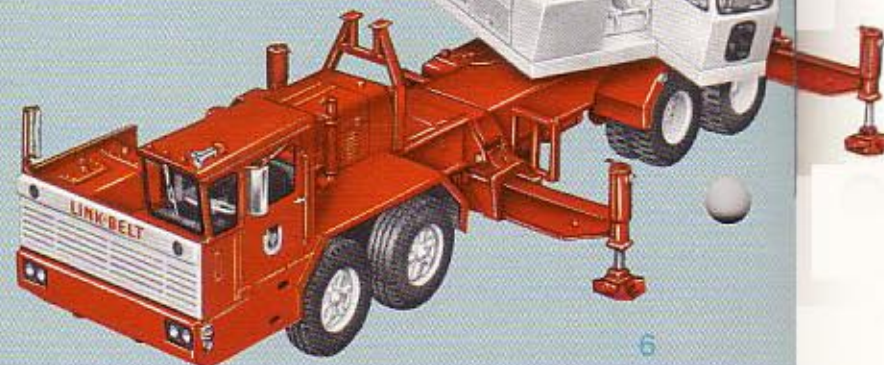


Exclusive 3-Cylinder Arrangement

The Link-Belt Speeder boom extend-retract design allows the power boom to extend in sequence. From tip (red) fully extended to second section (blue) fully extended to third section (yellow) fully extended. This is accomplished by means of an exclusive latch-lock arrangement. The **latch (C)** locks the center sections (B) and (D) in the fully retracted position. At the end of the tip section stroke, block (E) fixed to the top of the tip section (A) will engage the base of latch (C), **unlocking** the section (B) and allowing it to extend fully. At the end of this section stroke, again the latch is unlocked, allowing the third section to extend.

When hydraulically retracting the boom, the sequence is reversed and the center power sections retract completely before the tip power section (A) can be retracted. No need for multiple boom telescope control levers. Only one control lever is used to extend or retract the boom. This boom extend-retract design keeps the greatest portion of the boom weight closest to the machine for

optimum lifting capacity. Boom extend-retract cylinders are equipped with check and holding valves. The check valves hold boom/cylinders in position when operator control lever is in neutral. Holding valves allow controlled retracting of boom.



Jib



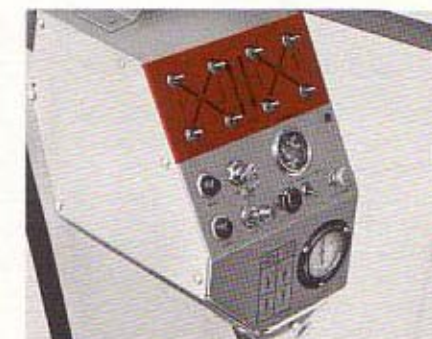
Hydraulic Outriggers



Boom Head With Jib Strut And Link Attached

The **boom head** machinery consists of one top and three bottom sheaves. Sheaves are mounted on anti-friction bearings to eliminate the need for frequent lubrication. Boom head machinery is designed for fast pinning to either the tip power section or the manual boom extension. Hoist line guide rollers are mounted on top of the boom.

The **jib** is pinned to the boom head machinery and is stored under the boom base section when not in use.



Outrigger Controls

Jib mounts to extended lower boom head shaft hubs. For fast on-the-job hook-up, the front stay lines also serve to raise the jib to the stored position. **Jib strut and link** may be left in place on the boom head.

Refer to HT-400 flysheet for boom lengths and manual or jib extensions.

The boom mounts in an in-line bore in the upper revolving frame.

Hydraulic outriggers are standard on the HT-400. Beams are full width with individual control of beams and jacks. This permits leveling the machine on reasonably uneven terrain. **Outrigger controls** are conveniently grouped on the right-hand control panel of the crane upper cab. Once the outriggers are set, a **check valve** fixed to the jack cylinder "locks" oil in the cylinder and the outriggers in place. For assistance in leveling the HT-400 on outriggers, sight levels are located near the outrigger boxes fixed to the carrier frame.



Outrigger Check Valve (Cover Removed)

Carrier Designed For Mobility And On-The-Job Durability

Carrier Engine Furnishes Hydraulic Power For Crane

The Model HT-400 is one of a line of carrier mounted hydraulic cranes available from Link-Belt Speeder. The HT-400 incorporates a proven hydraulic crane concept with a durable 4-axle carrier especially designed for hydraulic crane duty. The carrier is manufactured to Link-Belt Speeder's strict design specifications. The box-type, high-strength alloy steel frame (100,000 p.s.i. min. yield strength steel) gives a desirable weight-to-strength ratio — an important consideration in axle loadings for machine transportability.

Functional carrier styling is an important design consideration. The **carrier cab** is mounted forward of the front axles for easier operator entrance. This also reduces overall cab height. The cab interior provides a touch of luxury for the operator. All side panels are upholstered with pleated vinyl. Floor surface is carpeted to reduce road noise. Bucket seat with safety belt, tachometer, ash tray, lighter, outside handrail, right- and left-hand bus-type mirrors, windshield wiper, air horn, windshield washer, heater, defroster, back-up

alarm and lights are all standard equipment.

The HT-400 carrier features an 8 x 4 drive with 11:00 x 20, 12-ply tires on the tandem rear axles and super single 15:00 x 22.5 16-ply tires on the tandem front axles for excellent load carrying capacity and machine flotation.

Power for travel is from the carrier



Carrier Cab

diesel engine into a 13-speed main transmission for negotiating steep grades, maneuvering through traffic, or travelling at highway speeds up to 46 m.p.h. Mounted behind the main transmission, ahead of the rear axles, is a 2-speed range (direct and low) auxiliary transmission. The low-speed range is for on-the-job precision travel movements as low as .87 m.p.h.

The tandem rear axles are equipped with a double reduction in the bowl. Power steering and 8-wheel service brakes with Maxi brakes on both axles of rear tandem wheels are standard. Service brakes may be set with a brake lock when operating the crane on tires. Maxi brakes provide parking and emergency braking in addition to the service brake function.

The hydraulic crane upper is mounted to the carrier by a turntable bearing with integral swing gear.

Hydraulic outrigger boxes are pin-connected to the carrier for quick removal. Outriggers are controlled

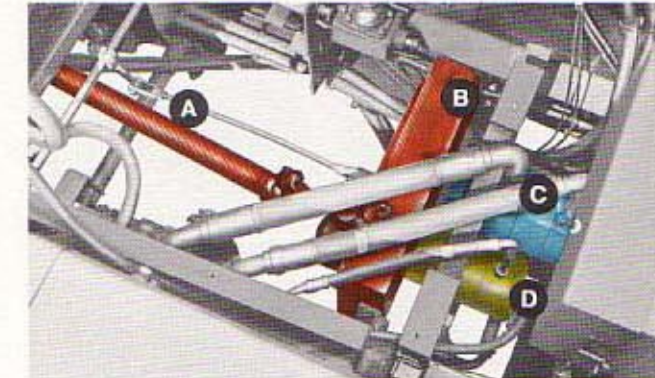


Hydraulic Oil Reservoir

from the crane upper cab. (See page 7.)

The Model HT-400 hydraulic crane is a simple but efficient design. The carrier engine powers the carrier and also supplies hydraulic power for all the crane functions — eliminates the need for a second engine in the crane upper.

The **hydraulic oil reservoir** with filters and strainer is located in the right front corner of the carrier. A large capacity oil cooler in the front of the engine radiator maintains proper oil



Hydraulic Power

operating temperature for increased hydraulic component life.

Hydraulic power is from the front of the engine through a universal drive tube (A) into the gear speed reducer (B) powering pumps (C) and (D). One section of tandem gear-type pump (C) supplies power for hoist and boomhoist. One section supplies power for swing and boom extend-retract. The variable volume piston-type pump (D) supplies power for outrigger cylinders, counterweight lowering cylinder, and 2-shoe

clutches located in the rope drum circuit.

For long distance or full speed over-the-road travel, a cab-controlled disconnect clutch is provided to avoid unnecessary wear and over-speed on the pump and drive assembly.

Oil from the pumps, driven by carrier engine, flows through a rotating joint mounted in the center of rotation which leads into the upper frame. From the rotating joint, oil is directed into the control valves.

