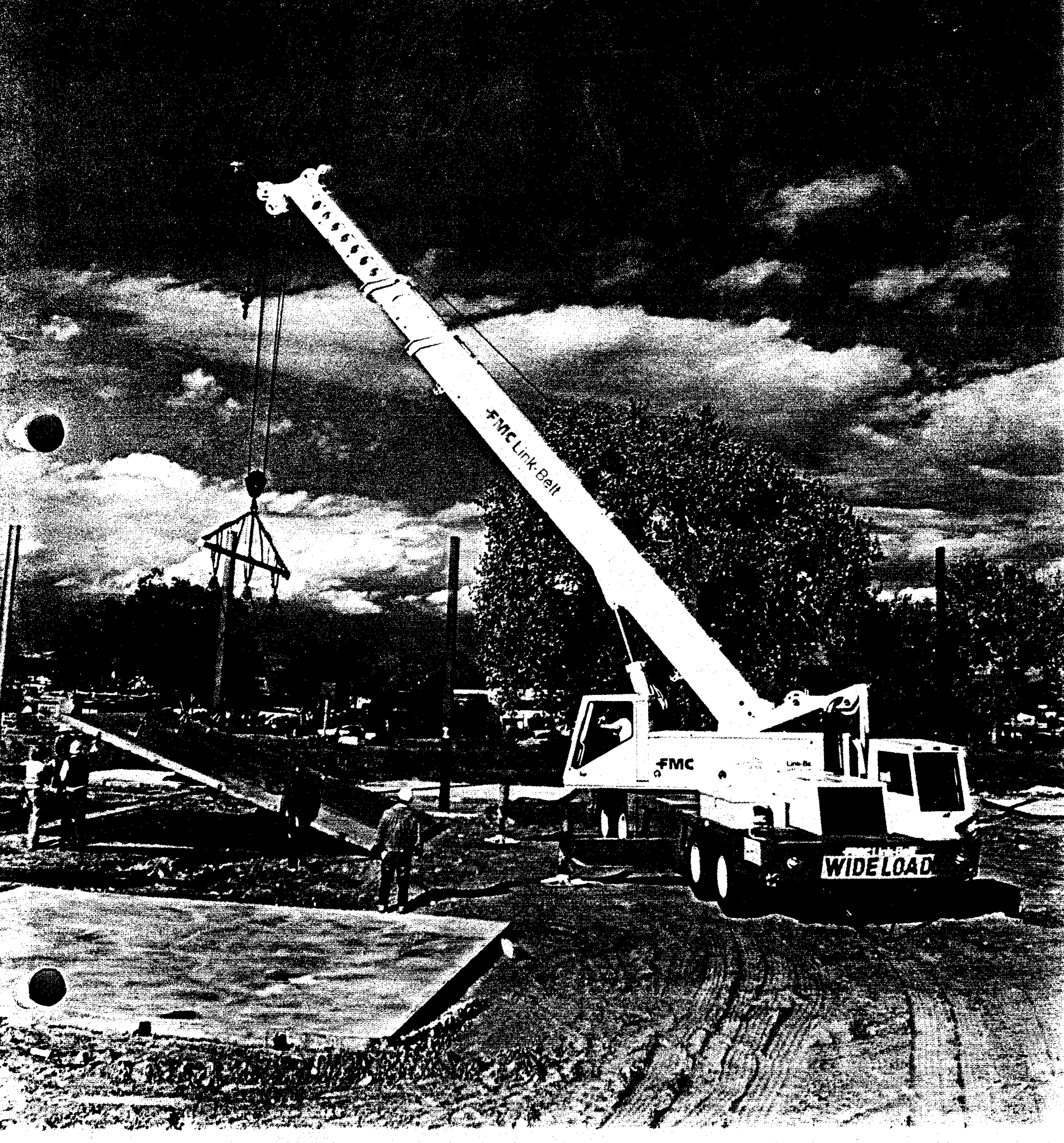
FMC

Link-Belt®

HTC-50W

Hydraulic Truck Crane

50-ton *(45.35 metric ton)*

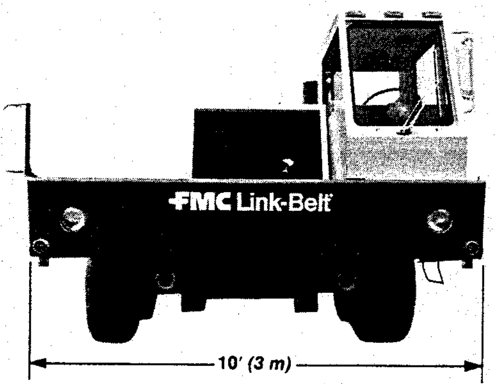


FMC designed wide carrier for increased capacities

10' (3 m) width enables greater stability

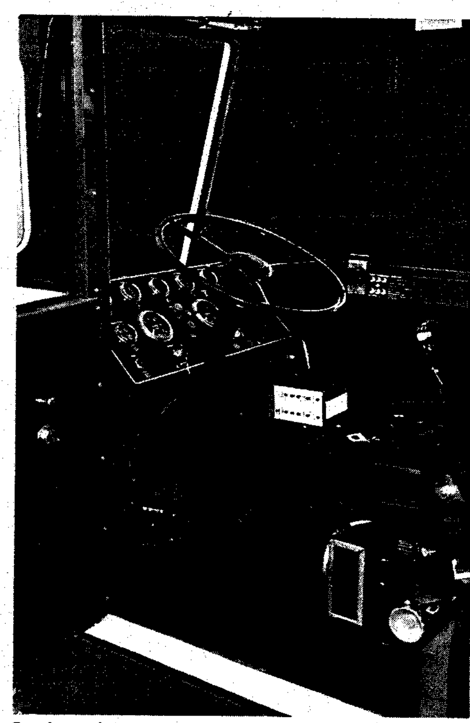
GENERAL INFORMATION ONLY

To its already impressive line of hydraulic cranes, FMC offers the Link-Belt® HTC-50W hydraulic truck crane, a 50-ton *(45.35 metric ton)* capacity machine mounted on a **10' *(3 m)*** wide carrier. The FMC designed and manufactured carrier features a wider axle width, longer



wheelbase, and greater distance between front and rear outriggers — combining to increase stability by distributing the weight of the machine over a broader area. Also, the larger carrier provides increased stability for off-the-road travel.

The HTC-50W mounting is designed using a 100,000 p.s.i. *(689 500 kPa)* quench and tempered, high-strength alloy steel (between outrigger boxes) for an optimum weight-to-strength ratio. This is an important consideration in the axle



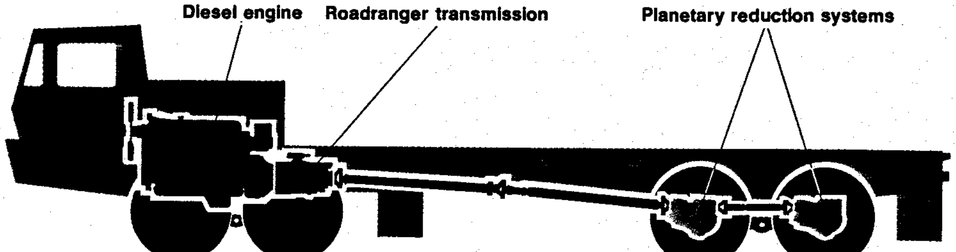
Carrier cab

loadings of the HTC-50W for machine transportability.

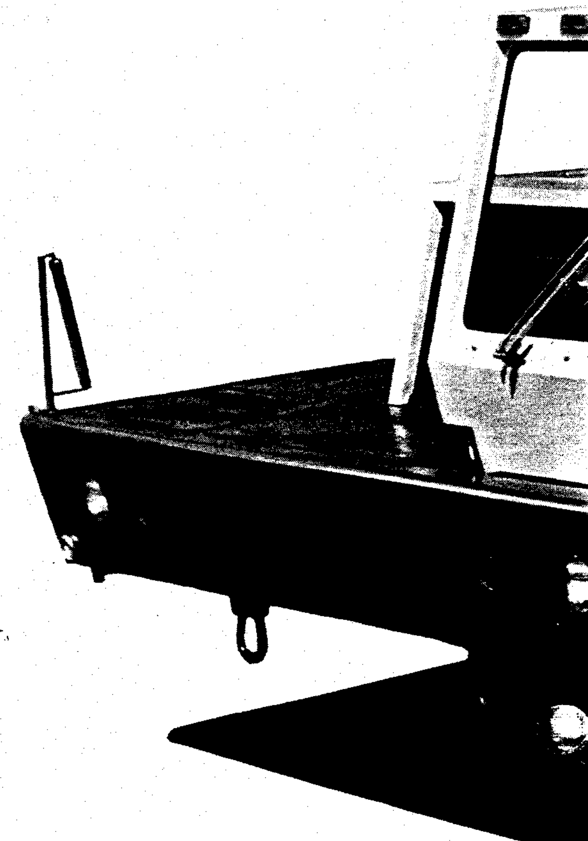
The **carrier cab** interior provides a touch of luxury for the operator. The cab is insulated from the frame by rubber mounts to reduce shock and sound levels. Upholstered side panels, full instrumented panel, excellent gauge visibility, floor carpet, large glass area, bucket seat with safety belt, right and left hand mirrors, windshield washer and wipers, heater, defroster, fan and tachometer are all standard equipment on the HTC-50W. Also inside the cab is a centralized circuit-breaker panel to provide an instant status check of the major electrical systems in the carrier.

The in-line **carrier power train** is powered by a **diesel engine.** Engine options provide customer preference. A 13-speed **Roadranger transmission** allows negotiating steep grades, maneuvering through traffic, and traveling at highway speeds.

Eight-wheel air brakes are standard. When lifting "on tires", parking brakes can be set from the carrier cab. The brake chambers on the rear tandem also provide emergency braking. The tandem rear axles are equipped with **planetary reduction systems** for increased tractive effort.

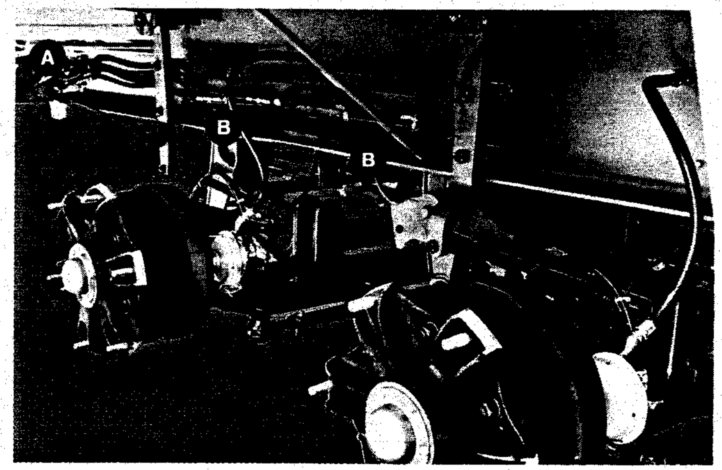


Carrier power train



The HTC-50W carrier not only provides for an ideal lifting base, but also for optimum maneuverability. The power assist hydraulic steer requires minimum effort when driving in congested areas.

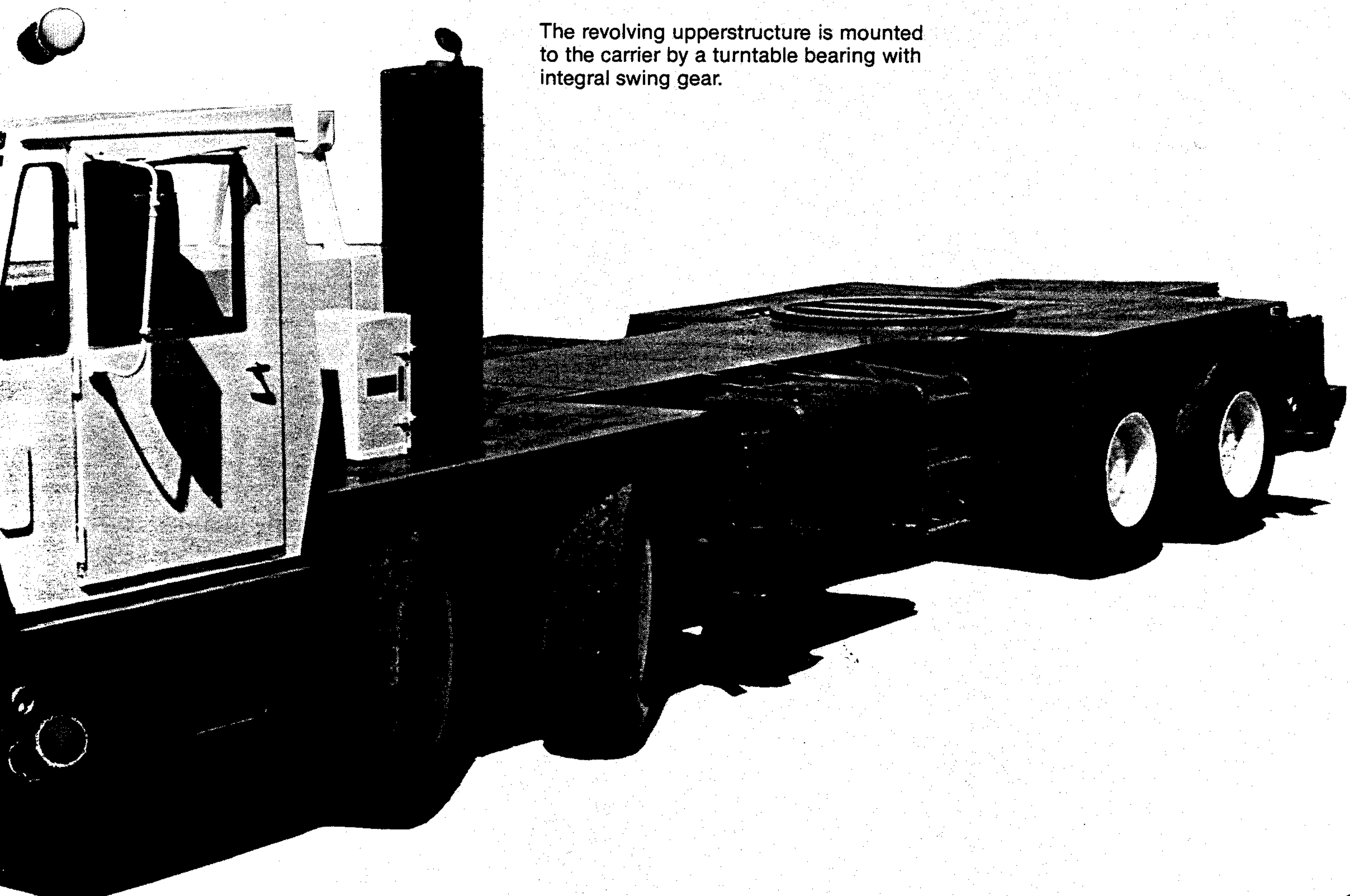
The **hydraulic assist steer** components are mounted to the side of the carrier frame for protection. The operator controls steering gear **(A)** and steer linkage. A hydraulic control valve, activated by the steering gear **(A)** directs oil from the steering pump to the interconnected, double-acting cylinders **(B)** for power assist hydraulic steer.



Power assist hydraulic steer

Hydraulic power for all upper crane functions and the carrier mounted outriggers is provided by engine-driven, gear-type pumps located in the front of the carrier. A carrier cab controlled, pump disconnect is standard. Oil for the crane functions flows through a rotating joint mounted on the center of rotation which routes oil into the upper hydraulic systems. A hydraulic reservoir is mounted amidship on the right side of the carrier.

The revolving upperstructure is mounted to the carrier by a turntable bearing with integral swing gear.



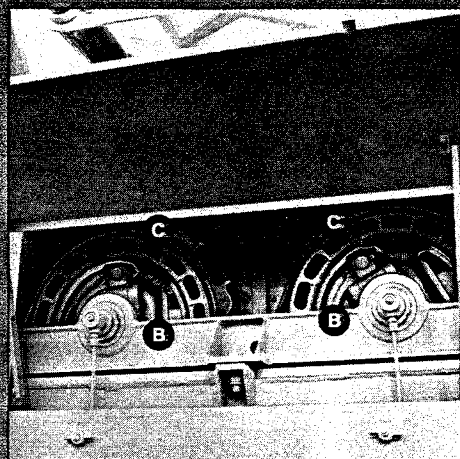
Extended, low profile revolving upperstructure with large accessible rope drums

True "free-fall" load lowering increases production

GENERAL INFORMATION ONLY

The Link-Belt® HTC-50W hydraulic truck crane revolving upperstructure design introduces a new concept to the hydraulic truck crane user. The major components are mounted inside the extended, low profile frame. This enables the use of larger accessible drums, for greater wire-rope capacity. It also keeps the bulk of the weight low in the frame reducing the crane's overall center of gravity.

To obtain an optimum weight-to-strength ratio the entire upper frame was subjected to an extensive testing program in the FMC **Applied Mechanics Laboratory.** Powerful hydraulic rams apply real-life loadings to simulate the stress imposed under actual crane working conditions. Strain gauges applied directly to the metal surface detect the strain as force is applied to the structure. The strain data is then recorded through the use of sophisticated, sensitive acquisition systems. This elaborate program helps to assure Link-Belt crane users of a superior/total product.

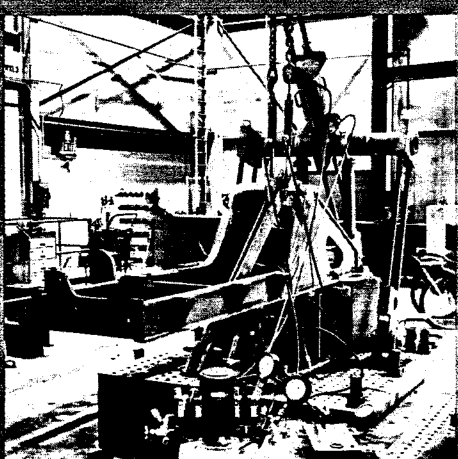


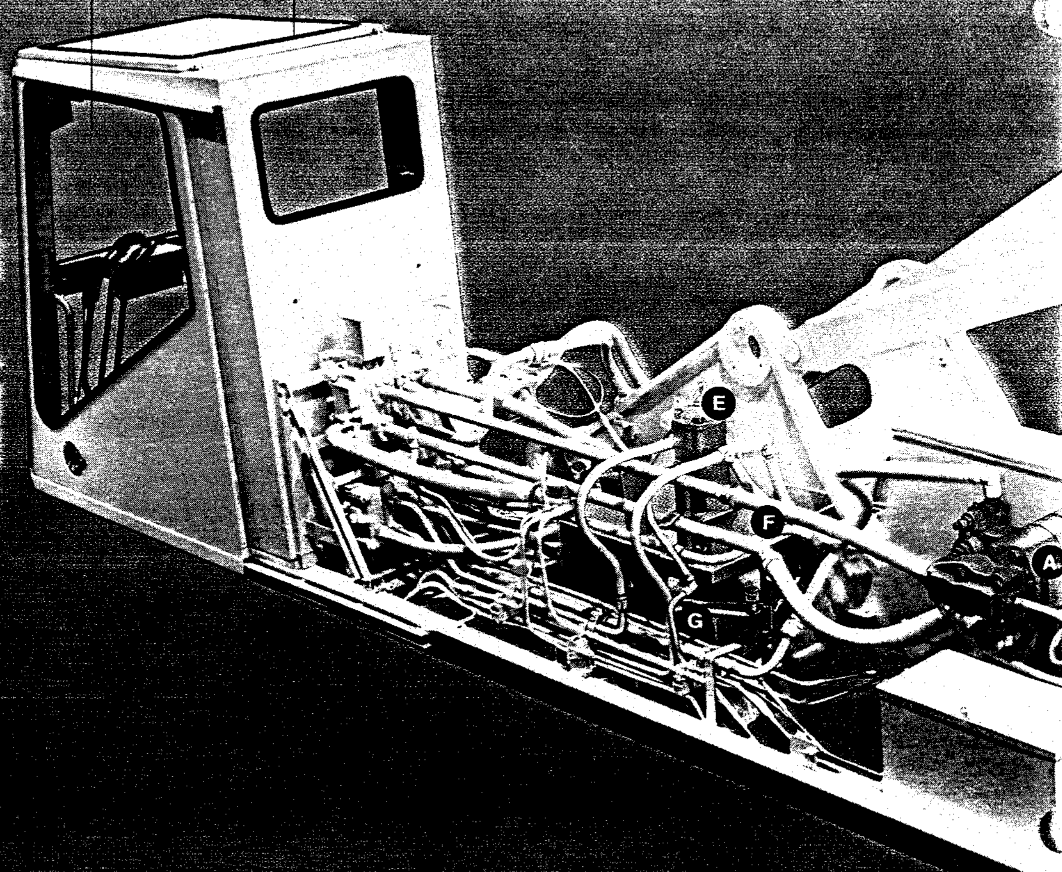
Free fall rope drums

The hydraulic power for the HTC-50W upperstructure functions is provided by hydraulic pumps driven off the carrier engine (see page 2). The HTC-50W is available with two wire rope drums (front drum optional) which utilize the exclusive 2-shoe power hydraulic clutches.

Power for the two **rope drums** is from a bi-directional motor **(A)** through an FMC gear reduction system. Two speed hoisting is standard. The utilization of two-shoe clutches **(B)** enables the operator to perform load hoisting/lowering using one of two methods.

1. With the 2-shoe clutch **(B) engaged,** and drum brake **(C) released,** the operator controls the load (hoisting, lowering and holding) with the hydraulic motor control lever. The automatic brake **(D)** holds load when lever is returned to the neutral position.



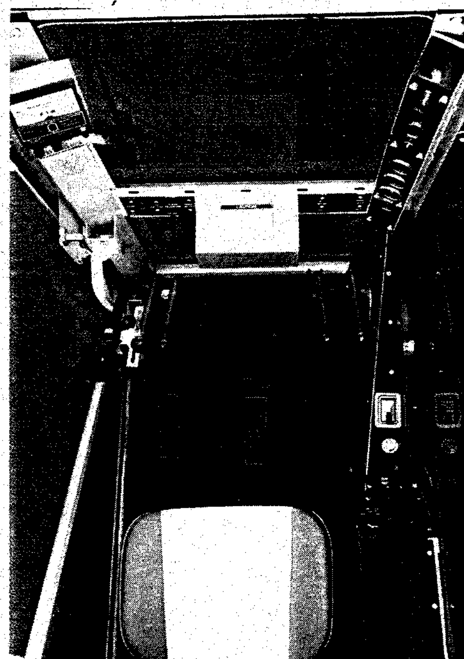


GENERAL INFORMATION ONLY

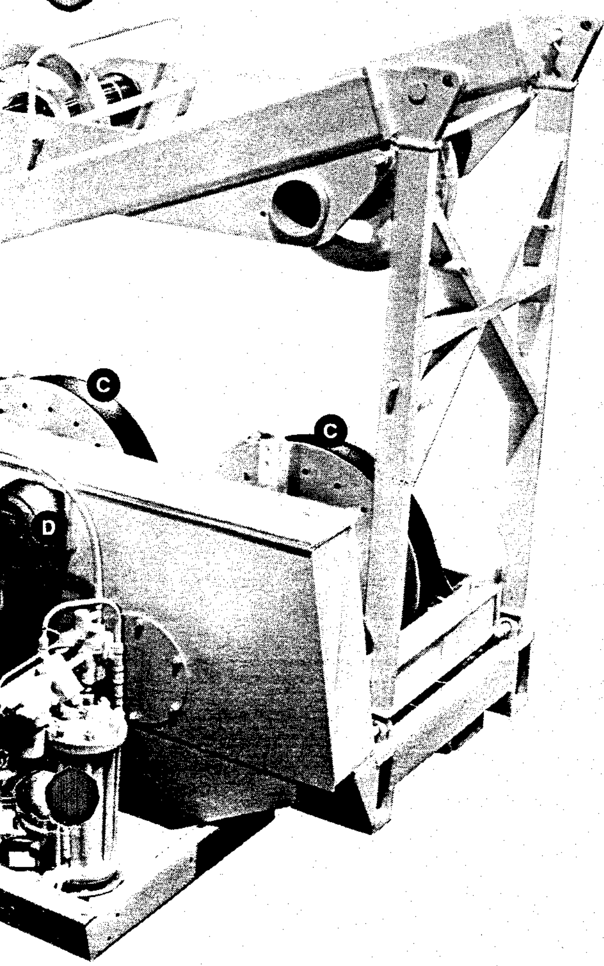
2. With the 2-shoe clutch **(B) disengaged** and drum brake **(C) released,** but with the hydraulic motor control lever engaged (gear train running, drums remain stationary) the operator controls load by engaging the 2-shoe clutch control lever. To hold the load at a desired height the mechanical drum brake is applied by depressing the foot pedal in the cab as the 2-shoe clutch is disengaged. Releasing the drum brake **(C)** will permit true **"free-fall"** load lowering.

Free-fall load lowering enables an empty hook (or concrete bucket) to be returned to the ground faster to increase production while improving fuel economy. Also, with the two large equal size drums the HTC-50W is capable of some duty cycle applications.

The 360° **swing** power is from the bi-directional tandem gear-type motor **(E)** into the FMC reduction unit **(F)** and then into the swing shaft/pinion. "Free-swing" or "metered swing speed" is possible. Results in smooth swing acceleration and deceleration, and permits centering of the boom over the load before the load is lifted. A manually controlled swing brake **(G)** plus a pin-type swing lock is standard.

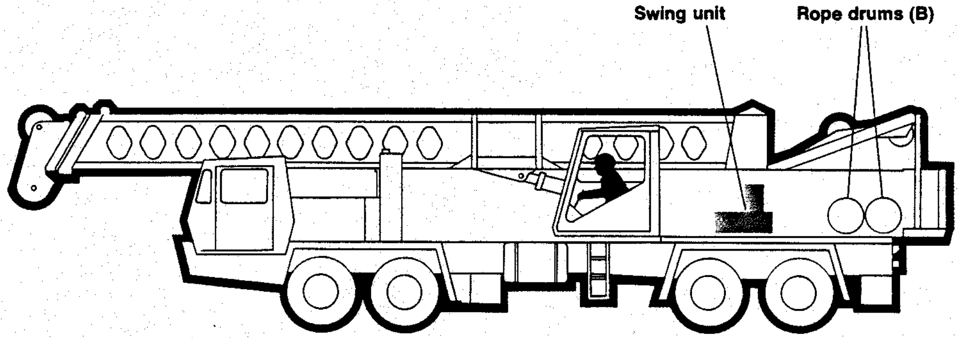


Operator cab



The modular and humanized **operator cab** is the result of FMC's styling and design engineering group. Directly in front of the operator is the luxurious yet functional control console with full complement of instruments. Control levers for crane functions and foot pedals for the mechanical drum brakes and throttle are all conveniently located. An air actuated throttle controls engine rpm. Control console includes boom angle indicator, bubble level and throttle control. In addition to providing smooth acceleration and deceleration of crane functions it can be set to remain at any engine rpm level during machine operation. An electric boom length indicator is standard. For operating visibility and comfort, the cab is equipped with a **hinged roof window** and **removable front window.** The cab is rubber-mounted to the frame.

The superb design of the **low profile crane upper structure** mounted on a wider longer carrier is an ideal combination for an operator to experience increased stability, high mobility, and high rated capacity.



Low-profile upperstructure

Exclusive boom design embossed with diamond-shaped depressions

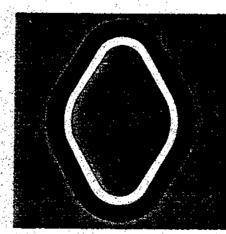
Custom machine tools assure precision and dependability

GENERAL INFORMATION ONLY

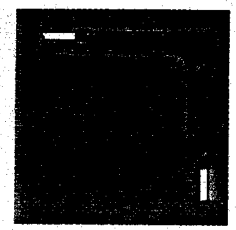
The 3-section power boom design is an exclusive FMC engineering achievement. With the aid of the Applied Mechanics Laboratory and extensive testing, the **boom design (patented)** was developed to consist of minimum gauge side plates along with 100,000 p.s.i. *(689 500 kPa)* yield strength steel angles in the four corners resulting in a more durable boom.

To maintain the tolerances and precision established by engineering, FMC made a considerable investment in custom designed machine tools and an all new facility for manufacturing the boom.

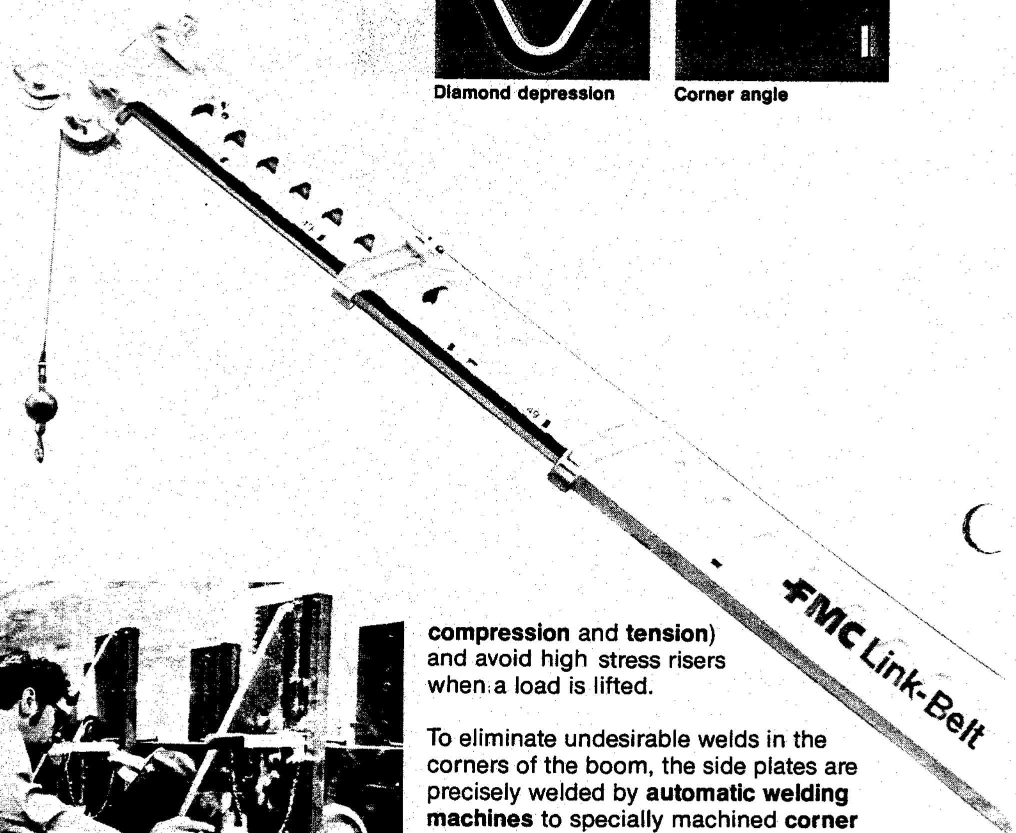
The Link-Belt® HTC-50W hydraulic truck crane boom side plates are embossed with a 1200-ton *(1 088 metric ton)* **hydraulically operated press.** The embossing of the minimum gauge boom side plates increases the strength and stiffness while keeping the weight at a minimum. The **diamond shaped depressions** were adapted to the design to allow for the natural flow of boom stresses (both

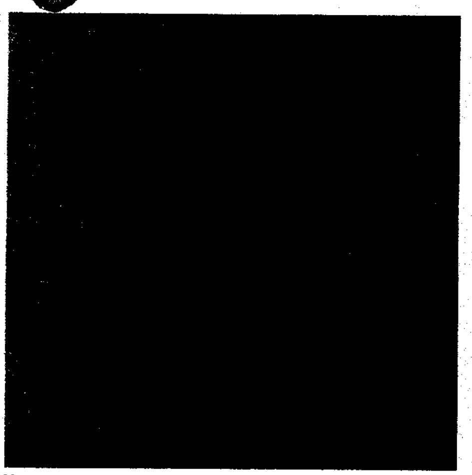


Diamond depression

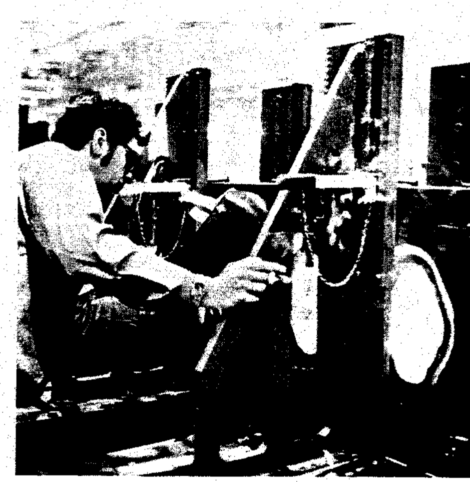


Corner angle





Hydraulically operated press

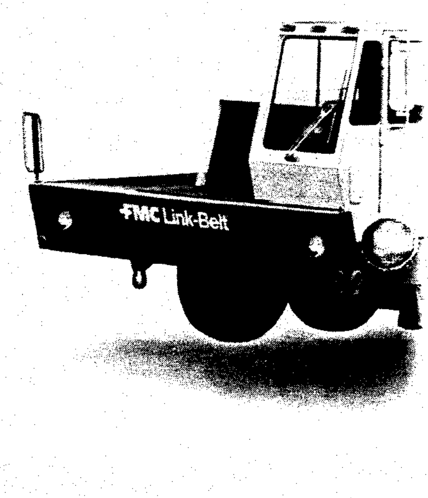


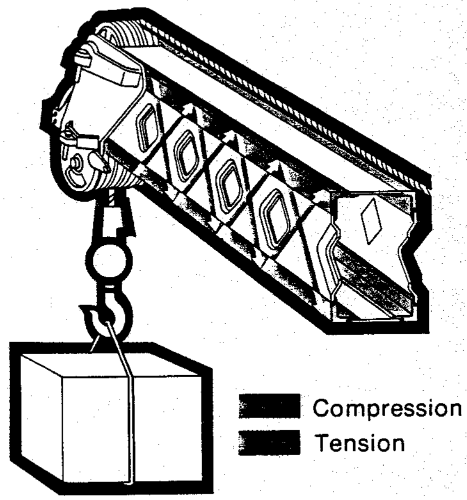
Automatic welding machine

compression and **tension**) and avoid high stress risers when a load is lifted.

To eliminate undesirable welds in the corners of the boom, the side plates are precisely welded by **automatic welding machines** to specially machined **corner angles.** The angles promote greater boom rigidity while increasing the overall reliability. The corner angles are able to absorb and efficiently transmit the boom stresses which occur when lifting a load.

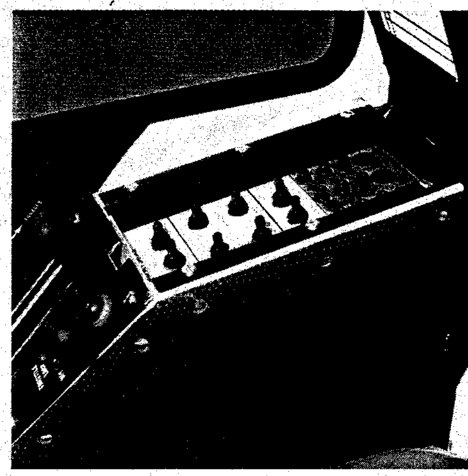
To maintain proper alignment of the power boom sections, the FMC boom design





FMC's exclusive boom design (patented)

incorporates the use of **wear shoes** which are positioned on the top, bottom and sides of each power section. All of the shoes are readily accessible for serviceability. The rear wear shoes are lubricated through external fittings located at the head of each section. It is not necessary to dismantle the boom for wear shoe replacement.

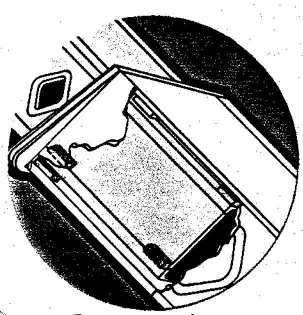


Outrigger controls

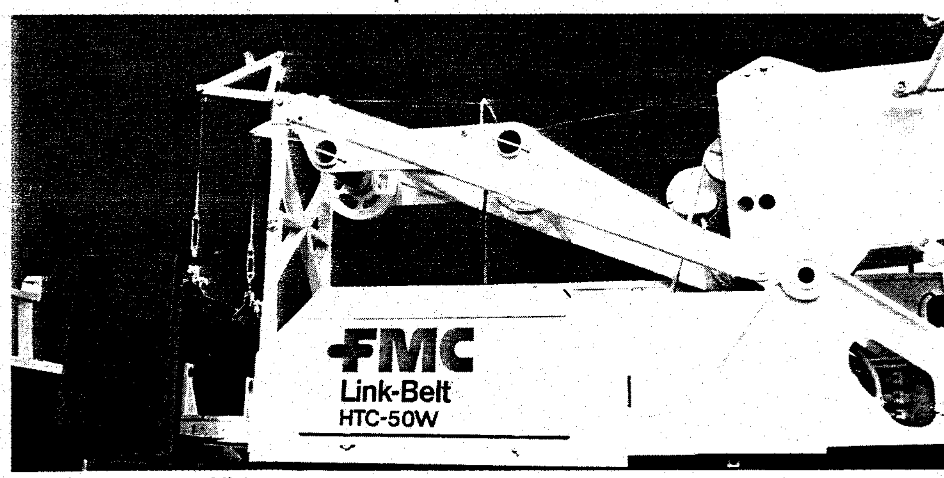
The total power boom length is 35 - 90′ *(10.67 - 27.43 m)*. Standard is 32′ *(9.75 m)* swing around lattice fly section. A 28′ *(8.53 m)* lattice extension is available which when used with fly, makes a 60′ *(18.29 m)* jib. An additional 20′ *(6.10 m)* extension is also available to make an 80′ *(24.38 m)* jib giving a total tip height of 173′ *(52.73 m)*.

The hydraulic out-and-down outriggers are conveniently controlled by the **controls** located under the right arm-rest in the operator's cab. Automatic check valves attached directly to the jack cylinder "locks" oil in the cylinder to secure the jack in place once the outrigger is set. The pontoons may be stored in racks on each side of the carrier.

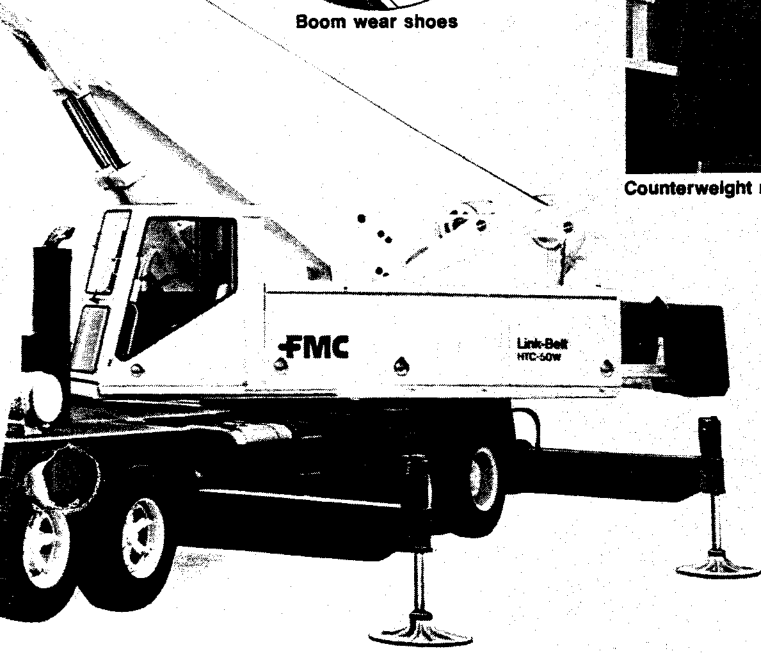
In the event that the counterweight must be removed to transport the machine, a **counterweight removal linkage** is available. Attaching the special linkage to the boom base and the counterweight, permits the boom to be raised, lowering the counterweight to the bed of the carrier. The upper can then be swung around to lift the counterweight with the boom for lowering onto a trailer.



Boom wear shoes



Counterweight removal linkage



FMC

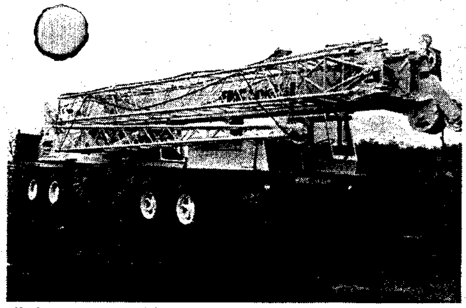
The HTC-50W maximum boom/jib tip height is 173′ *(52.73 m)*

Convenient storage of fly/jib in travel position

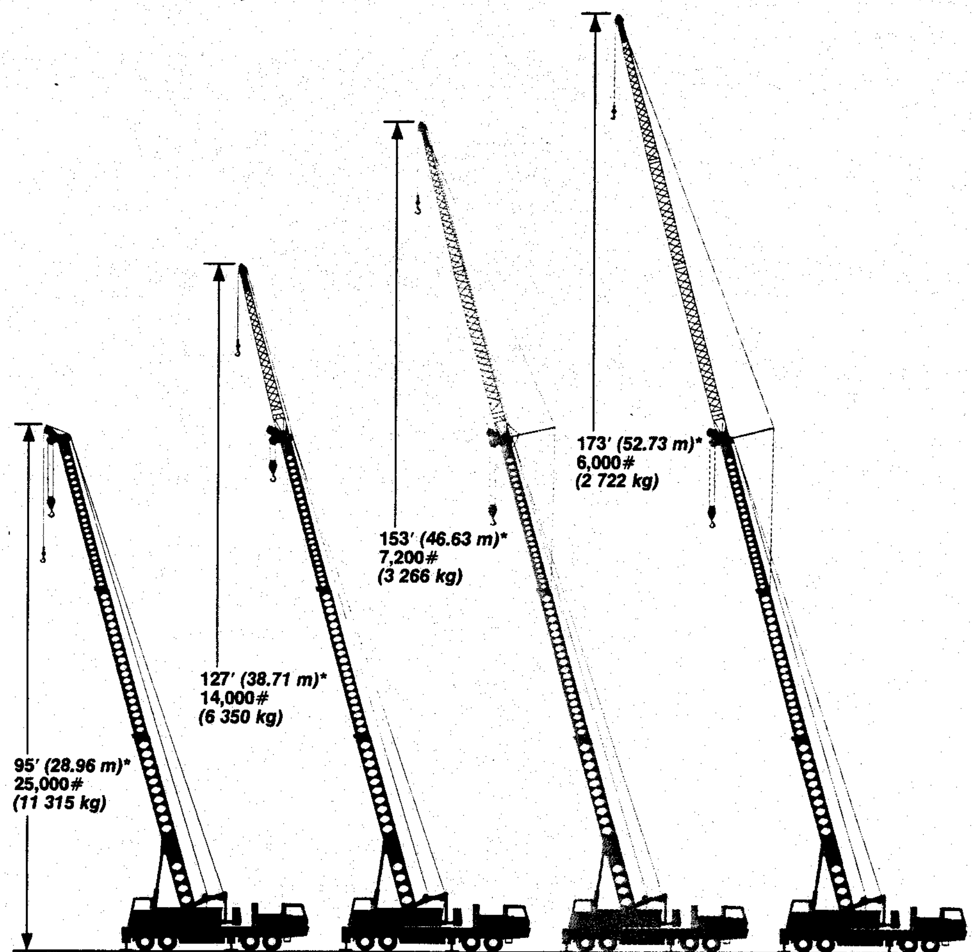
GENERAL INFORMATION ONLY

The HTC-50W lattice fly or jib options are conveniently **stored** on the side of boom (except 80′ *(24.38 m)* jib) in the **travel position.** A minimum amount of time is required to assemble the boom extensions into a working position. The HTC-50W offers exceptional **boom/fly/jib tip heights,** reach, and lifting capacity.

Fly in travel position



Jib in travel position



Maximum boom/fly/jib tip height

*Tip height with no load on hook

The HTC-50W features:

Carrier
- FMC designed and manufactured
  Benefit: *Dependability and performance*
- Wide 10′ *(3 m)* carrier
  Benefit: *Added stability and lifting capacity*
- Reduced overall weight
  Benefit: *Increased transportability, reduced stripdown time required*
- Roadranger 13-speed transmission
  Benefit: *Job-to-job mobility*

Upperstructure
- Low profile frame
  Benefit: *Reduce overall center of gravity*
- Large equal sized 2-speed hoist drums
  Benefit: *Decreased cycle times, added wire-rope capacity*
- True "free-fall" load lowering
  Benefit: *Increased production, reduced fuel consumption, plus duty cycle capability*
- Luxurious operator's cab
  Benefit: *Increased operator efficiency*

Attachment
- FMC exclusive boom design
  Benefit: *Dependable and reliable*
- Swing around fly and jib section
  Benefit: *Easily assembled, exceptional capacities*
- 173′ *(52.73 m)* boom/jib tip height
  Benefit: *Gives extra added working range capability*

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

FMC Corporation Hydraulic Crane Division Lexington Kentucky 40502
Link-Belt® cranes/excavators manufactured in: Cedar Rapids Iowa • Lexington & Bowling Green Kentucky • Ontario Canada • Milan Italy • Queretaro Mexico & Nagoya Japan (under license)

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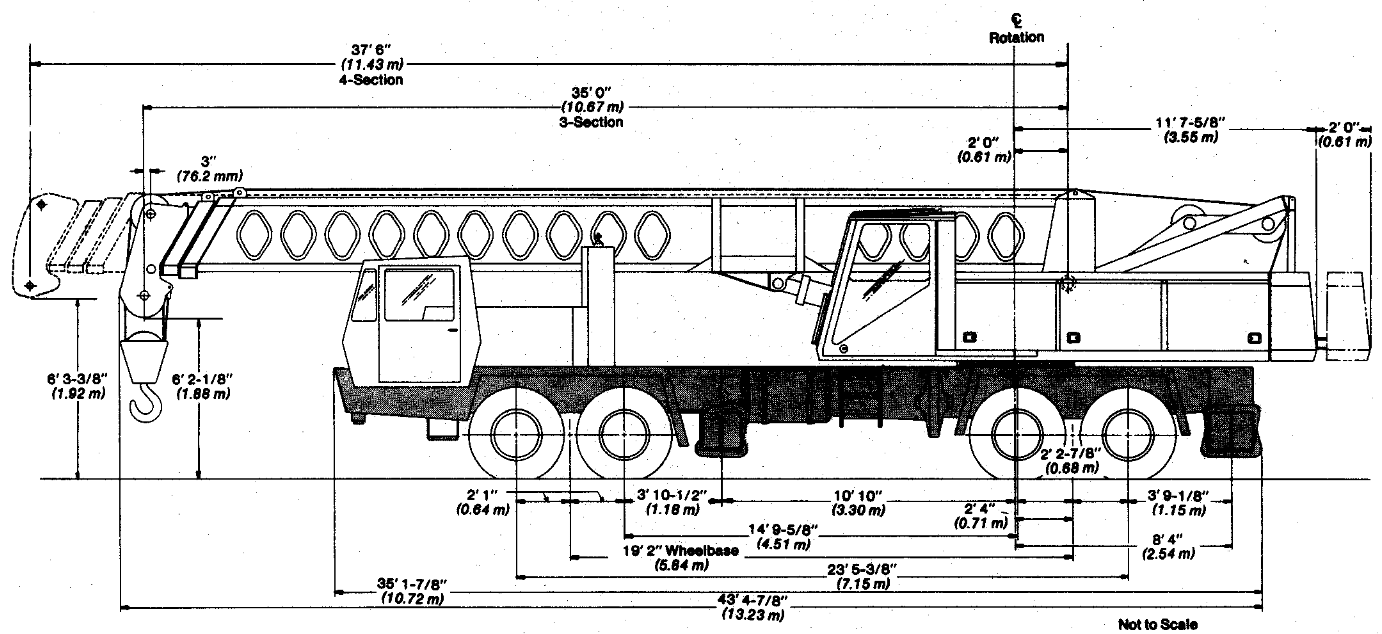
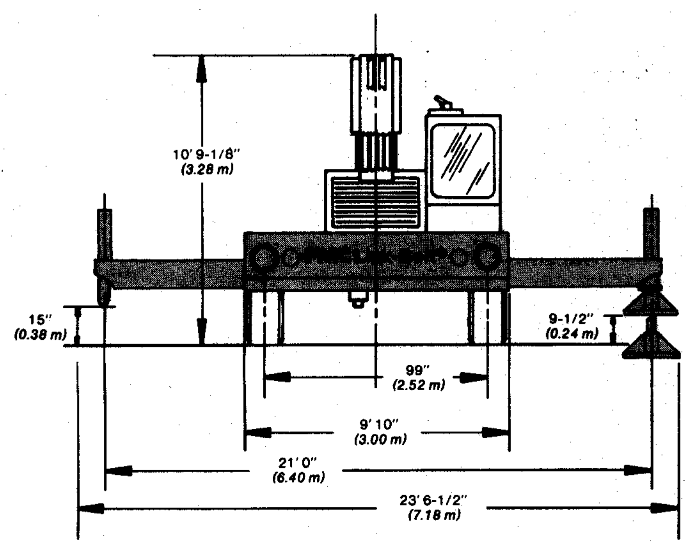
Printed in U.S.A.

General Specifications

Link-Belt®
Hydraulic Crane
HTC-50W   50-ton *(45.35 metric ton)*





General dimensions	Feet	*meters*
Turning radius - C/L of outer front tire	49' 0"	*14.94*
Tailswing - across corners	12' 5/8"	*3.68*
Tailswing - counterweight extended	14' 0"	*4.27*
Minimum ground clearance	9-1/2"	*0.24*

GENERAL INFORMATION ONLY

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(Supersedes No. L0422807.5 & 2209767.5)

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Upperstructure

Boom

FMC patented design. Boom side plates have diamond shaped impressions for superior strength to weight ratio and 100,000 p.s.i. *(689.5 MPa)* steel angle chords for lateral stiffness. Boom telescope sections are supported by wear shoes both vertically and horizontally.

Standard boom — 35′ 0″ - 90′ 0″ *(10.67 m - 27.43 m)* 3 - section power boom.

Boom head — Four or five 14-1/4″ *(0.36 m)* root diameter head sheaves handle up to 10 parts of wire rope. Three removable wire rope guards, and rope dead end lugs provided on each side of boom head.

Auxiliary lifting sheave — Optional; single 14-1/4″ *(0.36m)* root diameter sheave mounted to boom head with removable wire rope guards. For use with one or two parts of line off the optional auxiliary winch. Does not affect erection of jib, or use of main head sheaves for multiple reeving.

Boom elevation — Two FMC designed double-acting 9-3/4″ *(0.25 m)* diameter hydraulic cylinders with integral holding valves. Hand or foot controls for controlling boom elevation from - 5° to 75°.

Fly

Standard; 32′ 0″ *(9.75 m)* long, stowable two-piece lattice type consisting of a 5′ *(1.52 m)* folding base section plus a 27′ *(8.23 m)* lattice top section.

Jib

Optional; 28′ 0″ *(8.53 m)* straight lattice extension. Added to standard 32′ 0″ *(9.75 m)* two-piece lattice fly to make 60′ *(18.92 m)* jib.

Jib Extension — Optional; 20′ 0″ *(18.29 m)* lattice added to 60′ 0″ *(18.29 m)* jib to make maximum 80′ 0″ *(24.38 m)* jib. Jib can be offset 7.5°.

Optional boom — 37′ 6″ - 120′ 0″ *(11.98 m - 36.58 m)* 4-section boom consisting of two power sections plus a manual.

Auxiliary lifting sheave — Optional; single 14-1/4″ *(0.36m)* root diameter sheave mounted to boom head with removable wire rope guards. For use with one or two parts of line off the optional auxiliary winch. Does not affect erection of jib, or use of main head sheaves for multiple reeving.

Boom elevation — Two FMC designed double-acting 9-3/4″ *(0.25 m)* diameter, hydraulic cylinders with integral holding valves. Hand or foot controls for controlling boom elevation from - 5° to 80°.

Fly

Standard; 34′ 6″ *(10.52 m)* stowable one-piece lattice type. (4-section boom only.)

Jib

Optional; 30′ 0″ *(9.14 m)* stowable A-frame. Attaches to 34′ 6″ *(10.52 m)* fly only. Jib can be offset 5°, 17.5° or 30°.

Cab and Controls

Standard environmental cab; isolated from vibration by rubber mounts. Accoustical insulation and Neopreme weather seals. All safety glass windows with tinted roof glass. Removable front window and swing up roof window for maximum visibility and ventilation. Slide-by door opens to 3′ 0″ *(0.91 m)* width. 4-way adjustable operator's seat. Control levers for boom telescope, winches; dual controls for boom hoist and swing functions. Outrigger controls, sight leveling bubble, boom angle indicator, boom length and drum rotation indicators, windshield wiper, heater and defroster fan, instrumentation light and fire extinguisher.

Cab instrumentation — Standard illuminated gauges for engine oil pressure and water temperature, voltmeter, Speed-o-Matic® pressure hydraulic oil temperature, fuel, and an engine on-and-off switch.

Swing

Bi-directional hydraulic swing motor mounted to FMC speed reducer for 360° continuous smooth swing at 2.7 r.p.m.

Swing brake — Two shoe, external contracting brake mounted to speed reducer. Foot or hand controlled.

Swing lock — Two position pin-type house lock operated from operator cab.

Counterweight — Extend/retract and removable. Standard machine with 3-section boom and one winch - 7,700 lbs. *(3 493 kg)*. Standard machine with 3-section boom and optional auxiliary winch - 6,700 lbs. *(3 039 kg)*. Standard machine with optional 4-section boom and one winch - 8,100 lbs. *(3 674 kg)*. Standard machine with optional 4-section boom and auxiliary winch -7,100 lbs. *(3 221 kg)*.

Hydraulic System

Main pump — Tandem, triple gear-type pump. Powered by carrier engine with pump disconnect. Pump disconnect is a FMC jaw-type clutch engaged/ disengaged from carrier cab. Maximum system pressure 2,800 p.s.i. *(193.1 Bars)*.

Reservoir — FMC, 140 g.p.m *(530.0 L/min.)* capacity. Internal baffles for tank strength, deareation and oil cooling. Total system capacity 267 gallons *(1 010.6 L)*.

Filter — 10 micron filter, located at return port of hydraulic reservoir. Replaceable cartridge.

Speed-o-Matic power hydraulic control system — Provides hydraulic power for 2-shoe clutch control of main and optional auxiliary winches. Maximum system pressure 1,050 p.s.i. *(72.41 Bars)*.

GENERAL INFORMATION ONLY

Load hoist system

FMC's exclusive Dual Mode load hoisting/lowering system allows two modes of operation for variable speed and precise control.

For normal hydraulic operation, one mode allows the load to be hydraulically powered up/powered down in two speed ranges. This mode incorporates an automatic multiple disc brake to hold the load.

The second mode uses FMC's exclusive 2-shoe drum clutch for variable speed in hoisting and a drum brake for operator's controlled load lowering on the foot operated brake.

This exclusive design allows the operator to precisely feather the load while hoisting or lowering and allows the operator to achieve optimum speed, in addition to true gravity free fall, if desired.

Hoist motor — Two-speed hydraulic gear type; powers gear train through spur gear reduction.

Drum clutches — Two-shoe internal expanding. Engaged/disengaged from operators cab through Speed-o-Matic® power hydraulic system; 18" x 4-1/2" *(0.46 m x 0.11 m)*. Clutch/brake drums cast integral with wire rope drum.

Drum brakes — Two-piece external contracting band; manually applied and released by foot pedals in operator's cab. Brake drum diameter, 23" *(0.58 m)* brake band 4-1/2" *(0.11 m)* wide.

Line pulls and speeds — Maximum permissible line pull 16,800 lbs. *(7 620 kg)* and maximum permissible line speed 479 f.p.m. ***(146.00 m/min.)***

Optional equipment — Load moment indication with kickout, anti-two block with audio/visual warning and kickout, auxiliary front drum, counterweight removal mechanism, boom and cab mounted working light packages, 50-ton *(45.35 metric ton)* hook block, 8-1/2-ton *(7.71 metric ton)* hook ball & swivel, and lifting lug package.

Chassis

Type

FMC 8 x 4 drive, 9' 10" *(3.00 m)* wide, 230" *(5.84 m)* wheelbase.

Frame — All-welded high strength alloy steel plate construction with box-type design and integral 100,000 p.s.i. *(689.5 MPa)* steel outrigger boxes.

Outriggers

Standard; power hydraulic, double box, single beam outriggers, front and rear. Vertical jack cylinders equipped with integral holding valve. Beams extend 21' 0" *(6.40 m)* centerline to centerline and retract to within 9' 10" *(3.00 m)* overall width. Equipped with stowable, lightweight 30-1/2" *(0.77 m)* diameter floats. Controls and sight level bubble located in upperstructure cab.

Bumper outrigger - Optional; a front center vertical jack mounted under bumper with 30-1/2" *(0.77 m)* diameter lightweight float.

Axles

Front — Tandem; 99" *(2.51 m)* track.

Rear — Tandem; planetary 85" *(2.16 m)* track, 9.14 to 1.0 ratio.

Suspension

Front — Reyco spring suspension with torque rods.

Rear — Hendrickson solid mount 54" *(1.37 m)* bogie beam.

Wheels

Front — Gunite cast 5 spoke.

Rear — Gunite cast 6 spoke.

Tires

Front — 16:50 x 22.5 (16-ply) transport type tubeless.

Rear — 12:00 x 20 (16-ply) transport type with tube.

Optional — 12:00 x 20 (16-ply) road lug type on rear only.

Brakes

Service — Cam type front and rear with maxi-spring actuators on rear. Total effective lining area 1,416 sq. in. *(9 136 cm²)*. Front - 17-1/4" x 4" *(0.44 m x 0.10 m)*. Rear - 16-1/2" x 7" *(0.42 m x 0.18 m)*.

Parking and emergency — One spring set, air released chamber per rear axle end. Parking brakes applied with air control valve mounted on carrier dash. Emergency brakes apply automatically when air pressure drops below 70 p.s.i. *(4.83 Bars)* in both systems.

Steering — Ross steering unit with hydraulic power assist.

Clutch — Lipe-Rollway 14" *(0.36 m)* diameter, spring loaded, double plate dry disc.

Universals —Mechanics needle; FMC midpoint bearing.

Transmission — Fuller Roadranger RTO-613, 13 speeds forward 3 reverse.

Electrical system

Standard; one 12-volt battery for GM and two 12-volt batteries for Cummins, 340 total amp, 65 amp alternator. Two single sealed beam headlights, front and rear directional signals, stop and tail lights, 4-way emergency flashers, back-up lights, front, rear and side clearance lights with integral reflectors and license plate lights.

Carrier cab

Standard FMC one man low-profile, humanized cab. Accoustical insulation with vinyl covering, and mounted on rubber isolation pads. Equipped with electric windshield wiper, windshield washer, horn, mechanical spring suspended seat, dome and dash light, cigar lighter, ashtray, heater, defroster, door and window locks, fire extinguisher and two rear view mirrors.

Cab instrumentation — Standard illuminated instrument panel with speedometer, odometer, tachometer, voltmeter, hourmeter, low air pressure warning buzzer, push button starting switch, engine oil pressure gauge, air pressure gauge, water temperature gauge, and fuel gauge. Safety switch to prevent starting engine if transmission is not in neutral or if winch drum motor control valve is not in neutral.

Miscellaneous standard equipment
Front and rear fenders, back-up warning alarm, cab step, access ladder to carrier deck with hand grab, two front tow loops, and skid-resistant finish on carrier deck.

Miscellaneous optional equipment
Engine block heater, ether injection starting package, alcohol evaporator for air system, spare tire and rim assemblies.

Speed and gradeability①

Engine	Speed range	Percent of gradeability
GM 6-71N	2.35 to 45.88 m.p.h. *(3.78 to 73.82 km/h)*	40.89 to .50
Cummins NTCC-230*	2.11 to 41.19 m.p.h. *(3.39 to 66.27 km/h)*	42.53 to .55

① Travel speed based on full load r.p.m. Gradeability based on peak torque of the engine.

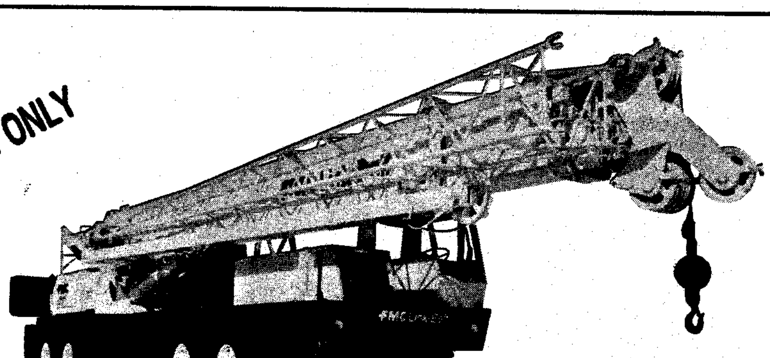
Engine	GM 6-71N	Cummins NTCC-230*
Cylinders - cycle	6 - 2	6 - 4
Bore	4-1/4" *(0.11 m)*	5-1/2" *(0.14 m)*
Stroke	5" *(0.13 m)*	6" *(0.15 m)*
Displacement	426 cu.in. *(7 146 cm³)*	855 cu.in. *(14 013 cm³)*
Maximum brake h.p.	238 at 2,100 r.p.m.	230 at 2,100 r.p.m.
Peak torque	635 ft. lbs. *(861.06 J)*	650 ft. lbs. *(881.40 J)*
Electric system	12 volt negative ground	12 volt negative ground
Fuel capacity	92 gallons *(348.22 L)*	92 gallons *(348.22 L)*
Alternator	65 amp	65 amp
Crankcase capacity	30.5 quarts *(33.59 L)*	46 quarts *(43.53 L)*
Air compressor	12 c.f.m. *(0.34 m³/min)*	13.2 c.f.m. *(0.37 m³/min)*

*Optional Equipment

Axle loads

	G.V.W.①		Upper facing front				Upper facing rear			
			Front axle		Rear axle		Front axle		Rear axle	
Base machine includes 35' - 90' *(10.67 - 27.43 m)* 3-section boom, 32' *(9.75 m)* two-piece fly, one winch with two-speed hoisting and power load lowering, 550' *(168.71 m)* 3/4" *(19 mm)* hoist line, FMC 8 x 4 carrier with GM 6-71N diesel, Roadranger transmission and without counterweight:	Lbs.	Kgs	Lbs.	Kgs	Lbs.	Kgs	Lbs.	Kgs	Lbs.	Kgs
	66,681	*30 247*	32,977	*14 958*	33,704	*15 288*	8,575	*3 890*	58,106	*26 357*
Counterweight for one winch	+ 7,700	*+3 493*	− 3,454	*−1 576*	+ 11,154	*+ 5 059*	+ 5,333	*+2 419*	+ 2,367	*+ 1 074*
Counterweight for auxiliary winch	+ 6,700	*+3 039*	− 3,035	*−1 377*	+ 9,735	*+ 4 416*	+ 4,670	*+2 118*	+ 2,030	*+ 921*
Auxiliary winch	+ 1 610	*+ 730*	− 316	*− 143*	+ 1,926	*+ 874*	+ 709	*+ 322*	+ 901	*+ 409*
60' *(18.29 m)* three-piece jib-stowed	+ 1,104	*+ 501*	+ 1,319	*+ 598*	− 215	*− 98*	− 1,049	*− 476*	+ 2,153	*+ 977*
Hook block at bumper	+ 800	*+ 363*	+ 1,237	*+ 561*	− 437	*− 198*	—	—	—	—
Headache ball at bumper	+ 215	*+ 98*	+ 333	*+ 151*	− 118	*− 54*	—	—	—	—
Auxiliary lifting sheave	+ 150	*+ 68*	+ 278	*+ 126*	− 128	*− 58*	− 241	*+ 109*	+ 391	*+ 177*
Base machine as above, but with 37' 6"-120' *(11.43 -36.58 m)* 4-section boom and without counterweight.	69,070	*31 330*	36,954	*16 762*	32,116	*14 568*	6,641	*3 012*	62,429	*28 318*
Counterweight for one winch	+ 8,100	*+3 674*	− 3,659	*−1 660*	+ 11,759	*+ 5 334*	+ 5,507	*+2 498*	+ 2,593	*+ 1 176*
Counterweight for auxiliary winch	+ 7,100	*+3 221*	− 3,207	*−1 455*	+ 10,307	*+ 4 675*	+ 4,827	*+2 190*	+ 2,273	*+ 1 031*
Auxiliary winch	+ 1 610	*+ 730*	− 316	*− 143*	+ 1,926	*+ 874*	+ 709	*+ 322*	+ 901	*+ 409*
34' 6" *(10.52 m)* one-piece fly-stowed	+ 1,150	*+ 522*	+ 1,267	*+ 575*	− 117	*− 53*	− 986	*− 447*	+ 2,136	*+ 969*
30' *(9.14 m)* A-frame jib.	+ 1,160	*+ 526*	+ 1,065	*+ 483*	+ 95	*+ 43*	− 782	*− 355*	+ 1,942	*+ 881*
Hook block at bumper	+ 800	*+ 363*	+ 1,238	*+ 562*	− 438	*− 199*	—	—	—	—
Headache ball at bumper	+ 215	*+ 98*	+ 333	*+ 151*	− 118	*− 54*	—	—	—	—
Auxiliary lifting sheave	+ 150	*+ 68*	+ 312	*+ 142*	− 162	*− 74*	− 276	*− 126*	+ 426	*+ 193*
Bumper outrigger	+ 290	*+ 132*	+ 412	*+ 187*	− 122	*− 55*	+ 412	*+ 187*	− 122	*− 55*

① Adjust gross vehicle weight and axle loading according to components weight.



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

FMC Corporation Hydraulic Crane Division Lexington Kentucky 40512
Link-Belt* cranes/excavators manufactured in Cedar Rapids Iowa • Lexington & Bowling Green Kentucky • Ontario Canada • Milan Italy • Queretaro Mexico & Nagoya Japan (under license)

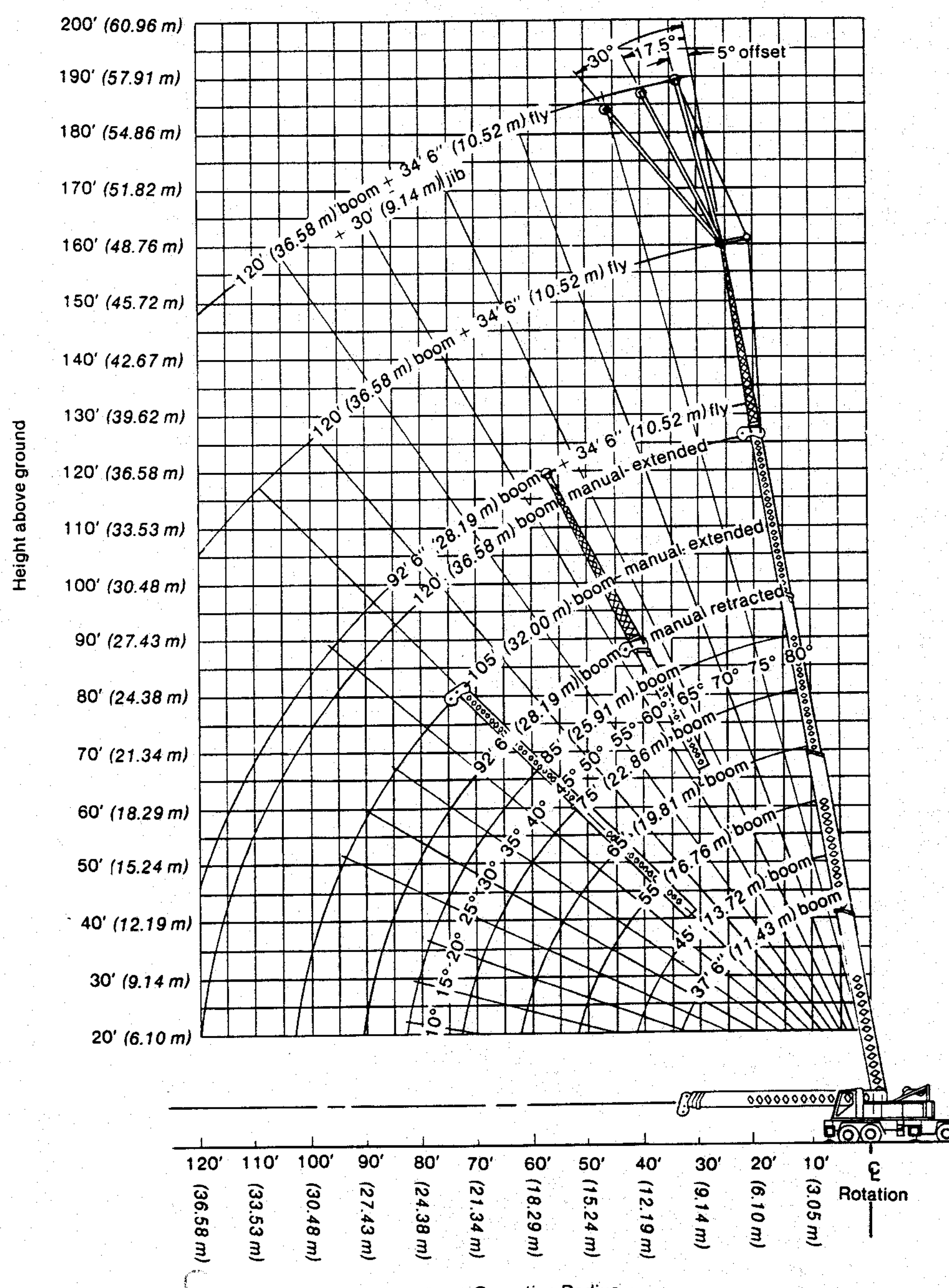
Lifting Capacities

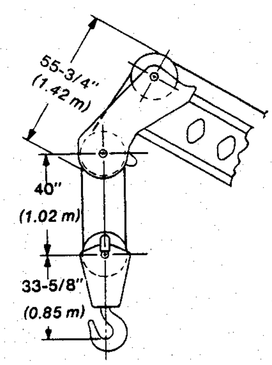
PCSA Class 10-171

Link-Belt®
Hydraulic Crane
HTC-50W 50-ton *(45.35 metric ton)*

GENERAL INFORMATION ONLY

4-Section Boom





Note: Boom and fly and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and angle change must be accounted for when applying load to hook.

HT[illegible]C-50W Lifting Capacities

GENERAL INFORMATION ONLY

Refer to **Operating Instructions** page 4

1[illegible]3 *m)* carrier

37′ 6″ - 120′0″ *(11.43 - 36.58 m)* 4-section boom

Load radius	37′ 6″ *(11.43 m)* Side	37′ 6″ *(11.43 m)* Rear	45′ *(13.72 m)* Side	45′ *(13.72 m)* Rear	55′ *(16.76 m)* Side	55′ *(16.76 m)* Rear	65′ *(19.81 m)* Side	65′ *(19.81 m)* Rear	75′ *(22.86 m)* Side	75′ *(22.86 m)* Rear	85′ *(25.91 m)* Side	85′ *(25.91 m)* Rear	92′ 6″ *(28.19 m)* Side	92′ 6″ *(28.19 m)* Rear	92′ 6″ *(28.19 m)* boom plus 34′6″ *(10.52 m)* fly: Boom angle	Side	Rear
Capacities On Outriggers **Manual Section Retracted**																	
10′ *3.05 m*	100,000 *45 360*	100,000 *45 360*	78,700 *35 698*	78,700 *35 698*	77,700 *35 245*	77,700 *35 245*									See Note①		
12′ *3.66 m*	90,000 *40 824*	90,000 *40 824*	78,700 *35 698*	78,700 *35 698*	77,700 *35 245*	77,700 *35 245*	74,000 *33 566*	74,000 *33 566*									
15′ *4.57 m*	74,500 *33 793*	74,500 *33 793*	73,400 *33 294*	73,400 *33 294*	69,900 *31 707*	69,900 *31 707*	65,300 *29 620*	65,300 *29 620*	50,300 *22 816*	50,300 *22 816*	40,100 *18 189*	40,100 *18 189*					
20′ *6.10 m*	53,300 *24 177*	54,300 *24 630*	53,300 *24 177*	54,300 *24 630*	53,300 *24 177*	54,300 *24 630*	52,100 *23 633*	52,100 *23 633*	44,300 *20 094*	44,300 *20 094*	35,900 *16 284*	35,900 *16 284*	31,000 *14 062*	31,000 *14 062*			
25′ *7.62 m*	40,100 *18 189*	41,700 *18 915*	40,100 *18 189*	41,700 *18 915*	40,100 *18 189*	41,700 *18 915*	40,100 *18 189*	41,700 *18 915*	39,000 *17 690*	39,000 *17 690*	32,600 *14 787*	32,600 *14 787*	27,800 *12 610*	27,800 *12 610*	79°	14,200 *6 441*	14,200 *6 441*
30′ *9.14 m*	30,400 *13 789*	30,600 *13 880*	30,400 *13 789*	30,600 *13 880*	30,400 *13 789*	30,600 *13 880*	30,400 *13 789*	30,600 *13 800*	30,400 *13 789*	30,600 *13 880*	29,500 *13 381*	29,500 *13 381*	24,300 *11 022*	24,300 *11 022*	77°	14,200 *6 441*	14,200 *6 441*
35′ *10.67 m*	22,100 *10 025*	22,900 *10 387*	22,100 *10 025*	22,900 *10 387*	22,100 *10 025*	22,900 *10 387*	22,100 *10 025*	22,900 *10 387*	22,100 *10 025*	22,900 *10 387*	22,100 *10 025*	22,900 *10 387*	21,400 *9 707*	21,400 *9 707*	75°	13,300 *6 033*	13,300 *6 033*
40′ *12.19 m*			17,100 *7 757*	18,200 *8 256*	17,100 *7 757*	18,200 *8 256*	17,100 *7 757*	18,200 *8 256*	17,100 *7 757*	18,200 *8 256*	17,100 *7 757*	18,200 *8 256*	17,100 *7 757*	18,200 *8 256*	73°	11,900 *5 398*	11,900 *5 398*
45′ *13.72 m*					13,500 *6 124*	14,700 *6 668*	13,500 *6 124*	14,700 *6 668*	13,500 *6 124*	14,700 *6 668*	13,500 *6 124*	14,700 *6 668*	13,500 *6 124*	14,700 *6 668*	70°	10,900 *4 944*	10,900 *4 944*
50′ *15.24 m*					10,600 *4 808*	11,800 *5 352*	10,600 *4 808*	11,800 *5 352*	10,600 *4 808*	11,800 *5 352*	10,600 *4 808*	11,800 *5 352*	10,600 *4 808*	11,800 *5 352*	68°	9,700 *4 400*	9,700 *4 400*
55′ *16.76 m*							8,600 *3 901*	9,700 *4 400*	8,600 *3 901*	9,700 *4 400*	8,600 *3 901*	9,700 *4 400*	8,600 *3 901*	9,700 *4 400*	65°	8,700 *3 946*	8,700 *3 946*
60′ *18.29 m*							6,800 *3 084*	7,900 *3 583*	6,800 *3 084*	7,900 *3 583*	6,800 *3 084*	7,900 *3 583*	6,800 *3 084*	7,900 *3 583*	63°	7,900 *3 583*	7,900 *3 583*
70′ *21.34 m*									4,200 *1 905*	5,200 *2 359*	4,200 *1 905*	5,200 *2 359*	4,200 *1 905*	5,200 *2 359*	58°	6,000 *2 722*	6,500 *2 948*
[illegible] 2[illegible]											2,400 *1 087*	3,300 *1 497*	2,400 *1 087*	3,300 *1 497*	52°	4,100 *1 860*	4,900 *2 223*
[illegible] *27.43 m*															45°	2,700 *1 225*	3,400 *1 542*
100′ *30.48*															38°	1,600 *726*	2,300 *1 043*

Note: For 360° capacities, use the over side capacities with the bumper outrigger set in proper working position.

① Calculating capacities for extended or retracted boom plus fly must be based on boom angle only. See Operating Instructions Number 16.

Main Boom Capacities① On Tires			
Load radius		1.0 m.p.h. *(1.61 km/hr)* over rear only	
Feet	*meters*	Pounds	*kilograms*
10	*3.05*	51,200	*23 244*
12	*3.66*	39,100	*17 736*
15	*4.57*	28,000	*12 701*
20	*6.10*	18,000	*8 165*
25	*7.62*	12,300	*5 579*
30	*9.14*	8,600	*3 901*
35	*10.67*	5,800	*2 631*
40	*12.19*	4,200	*1 905*
45	*13.72*	3,000	*1 361*
50	*15.24*	2,000	*907*
55	*16.76*	1,000	*454*

Crane capacities on tires depend on tire capacity, condition of tires, and tire pressures.

Tires	Ply rating	Inflation
16.5 x 22.5	16	100 p.s.i. *(6.90 Bars)*
12.0 x 20.0	16	100 p.s.i. *(6.90 Bars)*

① See Operating Instruction. Set-Up Number 7

HTC-50W hydraulic circuit pressure settings		
Circuit	Function	Pressure
Main	Winches; Boom hoist	2,800 p.s.i *(193.10 Bars)*
Secondary	Boom telescope Counterweight Outriggers	2,500 p.s.i. *(172.41 Bars)*
	Swing	2,100 p.s.i. *(144.83 Bars)*
Speed-o-Matic® system	Hydraulic clutch control of winches	1,050 p.s.i. *(72.41 Bars)*

Wire rope size and type

W[illegible]pe application	Size and type used	Wire rope description
Main winch	3/4″ *(19 mm)* diameter, Type "N"	Type "N" - 6 x 25 (6 x 19 class) filler wire, improved plow steel, pre-formed, independent wire rope core, right lay, regular lay.
Auxiliary winch	3/4″ *(19 mm)* diameter, Type "N"	
Jib frontstay pendants①	5/8″ *(16 mm)* diameter, Type "N"	
Jib backstay pendants②	5/8″ *(16 mm)* diameter, Type "N"	

① Jib frontstay pendants - 29′ 5-5/8″ *(8.98 m)* long

② Jib backstay pendants - 33′ 8-3/16″ *(10.28 m)* long

HTC-50W Lifting Capacities

GENERAL INFORMATION ONLY

Refer to Operating Instructions page 4

10′ *(3 m)* Carrier
37′ 6″ - 120′0″ *(11.43 - 36.58 m)* 4-section boom

Capacities On Outriggers **Manual Section Extended**									
Load radius	105′ *(32.00 m)*			120′ *(36.58 m)*			120′ *(36.58 m)* boom plus 34′ 6″ *(10.52 m)* fly		
	Boom angle	Side	Rear	Boom angle	Side	Rear	Boom angle	Side	Rear
	See Note①			See Note①			See Note②		
25′ *7.62 m*	77°	23,500 *10 660*	23,500 *10 660*	79°	16,300 *7 394*	16,300 *7 394*			
30′ *9.14 m*	75°	21,000 *9 526*	21,000 *9 526*	77°	16,300 *7 394*	16,300 *7 394*	80°	7,000 *3 175*	7,000 *3 175*
35′ *10.67 m*	72°	18,400 *8 346*	18,400 *8 346*	75°	15,800 *7 167*	15,800 *7 167*	78°	6,900 *3 130*	6,900 *3 130*
40′ *12.19 m*	69°	16,300 *7 394*	16,300 *7 394*	72°	13,600 *6 170*	13,600 *6 170*	76°	6,700 *3 039*	6,700 *3 039*
45′ *13.72 m*	66°	14,600 *6 623*	14,600 *6 623*	70°	12,500 *5 670*	12,500 *5 670*	75°	6,600 *2 994*	6,600 *2 994*
50′ *15.24 m*	63°	12,900 *5 851*	13,200 *5 988*	67°	11,200 *5 080*	11,200 *5 080*	73°	6,500 *2 948*	6,500 *2 948*
55′ *16.76 m*	60°	10,700 *4 854*	11,800 *5 353*	64°	9,900 *4 491*	9,900 *4 491*	71°	6,400 *2 903*	6,400 *2 903*
60′ *18.29 m*	56°	8,900 *4 037*	9,900 *4 491*	62°	8,700 *3 946*	8,800 *3 992*	69°	5,500 *2 993*	5,500 *2 495*
70′ *21.34 m*	49°	6,300 *2 858*	7,200 *3 266*	56°	6,000 *2 722*	7,000 *3 175*	65°	4,100 *1 860*	4,100 *1 860*
80′ *24.38 m*	41°	4,300 *1 950*	5,200 *2 359*	50°	4,100 *1 860*	5,000 *2 268*	60°	2,900 *1 315*	2,900 *1 315*
90′ *27.43 m*	31°	2,900 *1 315*	3,700 *1 678*	43°	2,700 *1 225*	3,500 *1 588*	56°	2,000 *907*	2,000 *907*
100′ *30.48 m*	18°	1,700 *771*	2,500 *1 134*	34°	1,600 *726*	2,300 *1 043*	51°	1,200 *544*	1,200 *544*

Note: For 360° capacities, use the over side capacities with the bumper outrigger set in proper working position.

① Calculating capacities for extended or retracted boom plus fly must be based on boom angle only. See Operating Instructions Number 15.

② Calculating capacities for extended or retracted boom with manual section extended plus fly must be based on boom angle only. See Operating Instructions Number 16.

Jib Capacities

34′ 6″ *(10.52 m)* fly plus 30′ *(9.14 m)* jib			
Boom angle	Jib Offset		
	5°	17.5°	30°
80°	4,000 *1 814*	4,000 *1 814*	4,000 *1 814*
75°	4,000 *1 814*	4,000 *1 814*	3,200 *1 452*
70°	4,000 *1 814*	3,000 *1 316*	2,300 *1 043*
65°	3,000 *1 316*	2,000 *907*	1,600 *726*
60°	2,000 *907*	1,300 *726*	1,000 *454*

Note: Jib capacities are based on structural strength.

Drum wire rope capacities

Wire rope layer	Main and auxiliary drum 14-1/4″ *(0.36 m)* root diameter			
	3/4″ *(19 mm)* wire rope			
	Rope per layer		Total wire rope	
	Feet	*meters*	Feet	*meters*
1	86	*26.21*	86	*26.21*
2	99	*30.18*	185	*56.37*
3	104	*31.70*	289	*88.09*
4	112	*34.14*	401	*122.22*
5	121	*36.88*	522	*159.11*
6	130	*39.62*	652	*198.73*
7①	138	*42.06*	790	*240.79*

① For storage purposes only - not a working layer.

Permissible line speed and line pull - Based on 3/4″ *(19 mm)* Type "N" wire rope strength.

Main and auxiliary drums		Operator control load hoist lever ①				Operator control 2-shoe clutches ②			
		Line speed		Line pull		Line speed		Line pull	
		F.p.m.	*m/min.*	Pounds	*kilograms*	F.p.m.	*m/min.*	Pounds	*kilograms*
First layer	Low speed high speed	150 300	*45.72* *91.44*	15,720 7,860	*7 131* *3 565*	150 300	*45.72* *91.44*	16,800 10,200	*7 620* *4 627*
Seventh layer	Low speed high speed	239 479	*72.85* *146.00*	9,830 4,910	*4 459* *2 227*	239 479	*72.85* *146.00*	11,860 4,910	*5 380* *2 227*

Available line speed and line pull - Developed by machinery with first layer of wire rope, but not based on wire rope strength.

Main and auxiliary drums		Operator control load hoist lever ①				Operator control 2-shoe clutches ②			
		Line speed		Line pull		Line speed		Line pull	
		F.p.m.	*m/min.*	Pounds	*kilograms*	F.p.m.	*m/min.*	Pounds	*kilograms*
First layer	Low speed high speed	150 300	*45.72* *91.44*	17,290 8,650	*7 843* *3 924*	150 300	*45.72* *91.44*	20,870 11,220	*9 467* *5 087*
Seventh layer	Low speed high speed	239 479	*72.85* *146.00*	10,810 5,410	*4 903* *2 454*	239 479	*72.85* *146.00*	13,040 5,410	*5 915* *2 544*

① Utilizes hydraulic motor only for hoisting or lowering loads; 2-shoe clutches engaged prior to activating hoist lever.

② Utilizes variable pressure of clutches for hoisting or lowering loads; hoist lever engaged to activate hydraulic motor prior to using clutches.

HTC-50W Operating Instructions

General:

1. These capacities apply only to the machine as originally manufactured and normally equipped by FMC Corporation, Hydraulic Crane Division.
2. Construction equipment can be dangerous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with the information in the operator's, parts and safety manuals supplied with the machine. If these manuals are missing, order replacements through the distributor.
3. The operator and other personnel associated with this machine shall fully acquaint themselves with the latest applicable American National Standards Institute (ANSI) Safety Standards for cranes.
4. All capacities are in pounds with metric equivalent in italics.

Set-Up:

1. Capacities included in this chart are the maximum allowable crane capacities, and are based on machine standing level on firm supporting surface under ideal job conditions.
2. When making lifts on outriggers, machine must be level and supported on fully extended outriggers with tires free of supporting surface.
3. The front and rear outriggers must be in proper working position before swinging over side. The bumper outrigger must be set in proper working position before swinging 360°
4. Machine must be on outriggers, with boom fully retracted, for installation/removal of counterweight.
5. With the bumper outrigger set in proper working position, use the over side capacities for 360° working area.
6. Eight parts of 3/4" *(19 mm)* Type "N" wire rope required to lift maximum 100,000 lbs. *(43 360 kg)* rated load.
7. Picks on tires can only be made with boom positioned over rear and swing lock engaged. Crane Capacities on tires depend on tire capacity, condition of tires, and tire pressure. On tire picks require lifting from main boom head only on a smooth and level surface. Boom sections **must** be extended equally.

Operation:

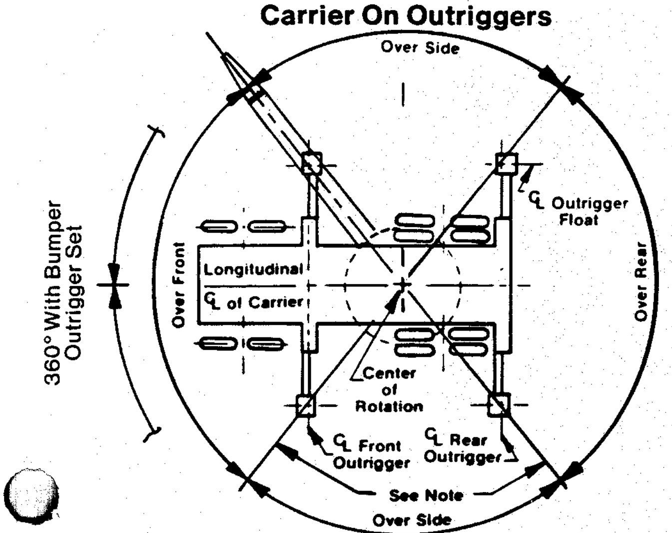
1. For the clamshell and concrete bucket operation, weight of bucket and material must not exceed 80% of rated lifting capacity. Manual jib/fly is not to be used for clamshell operation.
2. Crane capacities do not exceed 85% of minimum tipping loads.
3. Those capacities above the heavy line indicate capacities based on factors other than those which would cause a tipping condition.
4. Do not operate machine with boom or boom plus jib/fly lengths at or beyond radii where no capacities are shown. Machine may overturn without any load on the hook.
5. To determine capacities in-between those shown on charts, refer to the rated lifting capacity of the next longer and next shorter booms for the same radius. The lesser of the two capacities will apply.
6. When making lifts at a load radius not shown on charts, use next longer radius to determine allowable capacity.
7. Crane capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tires, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deduction from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, fly, or other suspended gear.
8. The following deductions from rated main boom capacities must be made if machine is equipped with the following:
   a. Auxiliary lifting sheave - 200 lbs. *(90 kg)*
   b. 34' 6" *(10.52 m)* fly in stowed position - 400 lbs. *(181 kg)*
   c. 34' 6" *(10.52 m)* fly in operating position - 2,000 lbs. *(907 kg)*
   d. 34' 6" *(10.52 m)* fly and 30' *(9.14 m)* jib in stowed position - 800 lbs. *(363 kg)*
   e. 34' 6" *(10.52 m)* fly and 30' *(9.14 m)* jib in operating position - 5,900 lbs. *(2 676 kg)*
9. Extension or retraction of the boom with loads within the limits of the applicable rating chart may be attempted. The ability to telescope load is limited by hydraulic pressure, boom angle, boom length, boom lubrication, etc.
10. Do not move load to radii or boom lengths greater than those specified on applicable chart.
11. Capacities for 37' 6" *(11.43 m)* 4-section main boom at 10' *(3.05 m)* or 12' *(3.66 m)* radius must be lifted with boom fully retracted.
12. Effective length of boom with auxiliary lifting sheave is boom length shown on boom length indicator plus 2' *(0.61 m)*.
13. Boom sliding surfaces must always be properly lubricated and hydraulic function pressure settings must be properly set.
14. **Warning** - Do not lower 92' 6" *(28.19 m)* boom below 18°. Do not lower 105' *(32.00 m)* boom below 18°. Do not lower 120' *(36.58 m)* boom below 31°. Do not lower 92' 6" *(28.19 m)* boom, with 34' 6" *(10.52 m)* fly below 35°. Do not lower 120' *(36.58 m)* boom with 34' 6" *(10.52 m)* fly below 45°. Do not lower 30' *(9.14 m)* jib in working position below 55°, unless boom is fully retracted.
15. For boom lengths less than 105' *(32.00 m)* or between 105' *(32.00 m)* and 120' *(36.58 m)* with manual extended, the rated loads are determined by boom angle only in their respective column. For angles not shown, use next lower boom angle to determine allowable capacity.
16. For boom lengths plus fly less than 127' *(38.71 m)* with manual retracted or less than 154' 6" *(47.09 m)* with manual extended the rated loads are determined by boom angle only in their respective column. For angles not shown, use next lower boom angle to determine allowable capacity.

Definitions:

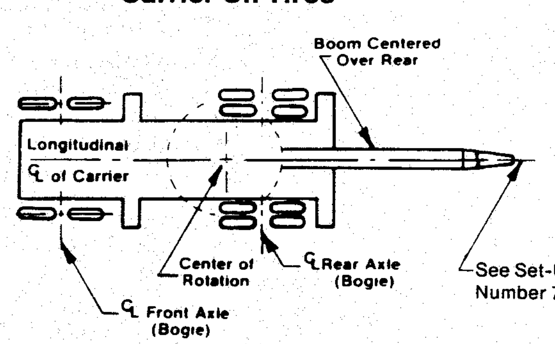
1. Operating Radius: Horizontal distance from a projection of the axis of rotation to the supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
2. Loaded Boom Angle: The angle between the boom base section and the horizontal, after lifting the rated load at the rated radius.
3. Working Areas: Areas measured in a circular arc about the center line of rotation as shown on the working area diagram.
4. Freely Suspended Load: Load hanging free with no direct external force applied except by the lift cable.
5. Side Load: Horizontal force applied to the lifted load either on the ground or in the air.

HTC-50W Working Areas

Carrier On Outriggers



Carrier On Tires



Note: These lines determine the limiting position of any load for operation within working areas indicated.