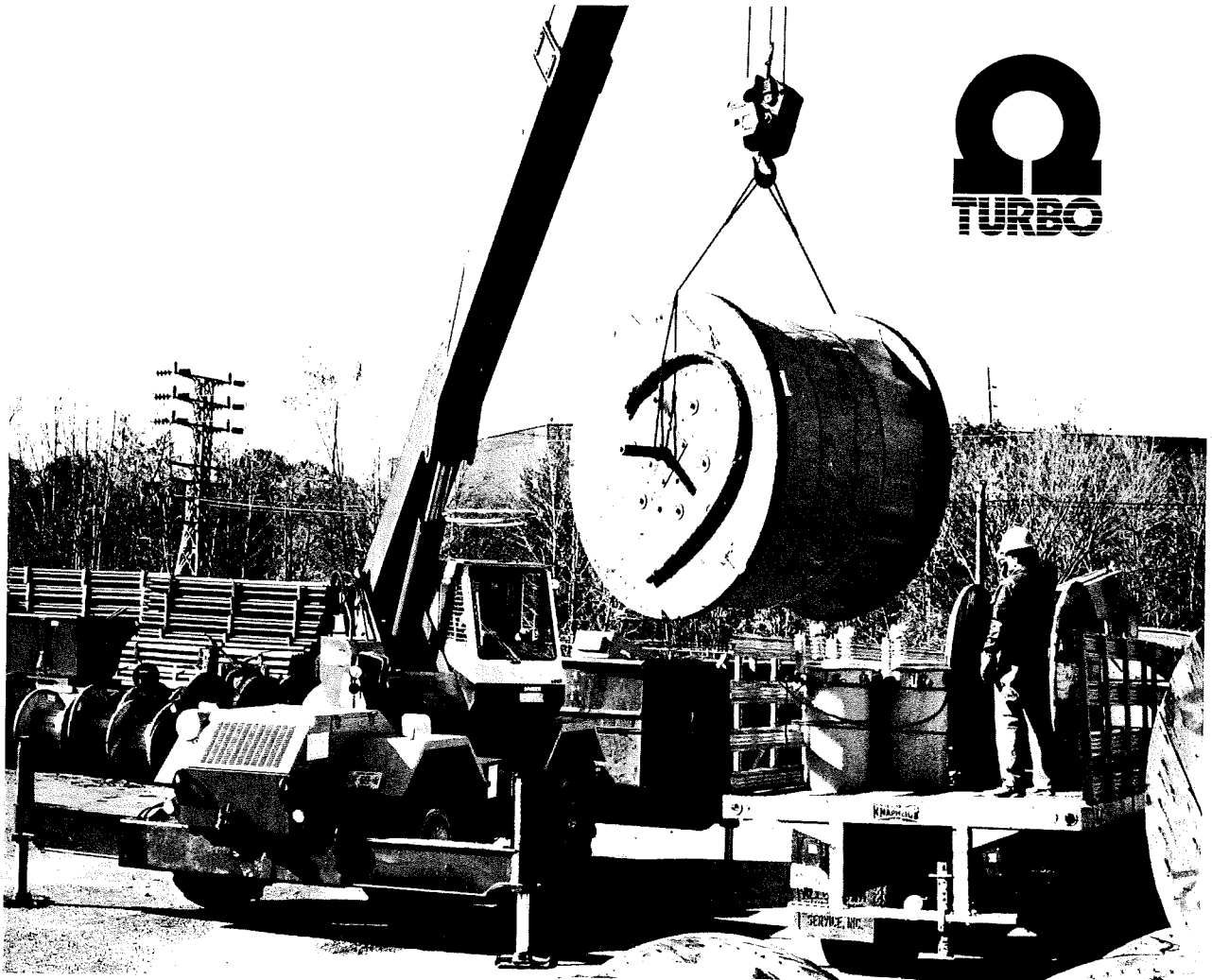


P&H OMEGA-20

20-ton Rough Terrain Crane
109-ft. (33.2m) maximum tip height



THE ULTIMATE IN PERFORMANCE, SERVICEABILITY, ECONOMY

- **Superior lifting performance** provided by rectangular full depth four-plate OMEGA boom that is welded inside and out. Four boom options available.
- **Telescope rated loads** for precise placement. Semi-fixed cylinder mounts decrease cylinder deflection under load and increase telescoping capacity.
- **Industry's most maneuverable RT crane** — four wheel drive/steer OMEGA with coordinated steering has shortest turning radius and lowest travel height.
- **Turbocharged engine** offers low sound levels, low fuel consumption, excellent high altitude performance and superior torque for optimum horsepower usage.
- **Total operator comfort** means less fatigue and greater production. Spacious OMEGA cab module allows placement of controls "in the palm of your hand", lots of leg and elbow room, and full vision of all activities.
- **A duty-cycle machine** — OMEGA's powerful winches offer high line speeds and pull. VOLUMATIK[®] hydraulic system provides optimum oil flow for fast crane functioning.
- **Less downtime** — OMEGA is "Pit-Stop" maintenance-proven. It's industry's most serviceable crane — engineered for parts commonality, accessibility and fast tear-down.



Specifications

specifications



BOOM: All boom sections are of full depth rectangular four-plate construction, welded inside and out, with adjustable nylon slider pads on top, bottom and sides. All powered sections are random sequencing, single lever controlled. Semi-fixed telescope cylinder mounts

provide capacity to telescope rated loads. Boom point contains one idler and three load sheaves that are non-metallic. Sheaves are 11.875" (302 mm) P.D. with bronze bushings.

STANDARD:

A) Two (2) section full powered boom, 25.2' (7.7 m) retracted length, 43.2' (13.2 m) extended length, consisting of one base section and one powered section with boom point. Attachments are not offered for this boom.

OPTIONAL

B) Three (3) section boom with manual extension, 26.23' (8.0 m) retracted length, 62.23' (19.0 m) extended length, consisting of one base section, one powered section and one manual extended and retracted section with boom point.

OPTIONAL:

C) Three (3) section full powered boom, 26.23' (8.0 m) retracted length, 62.23' (19.0 m) extended length, consisting of one base section and 2 powered sections with boom point.

OPTIONAL:

D) Four (4) section boom, with manual extension, 27' (8.2 m) retracted length, 80' (24.4 m) extended length, consisting of one base section, 2 powered sections and one manual extended and retracted section with boom point.

BOOM EXTENSION (OPTIONAL): 22' (6.7 m) swing-around tapered lattice structure with single 11.875" (302 mm) P.D. non-metallic point sheave with bronze bushing. Easily installed from ground level by pivoting from its stored position on right side of boom base and pin connecting to boom point. For extending reach of boom.

JIB (OPTIONAL): 15' (4.6 m) underslung "A" frame section with single 11.875" (302 mm) P.D. non-metallic point sheave with bronze bushing. Easily installed from ground level by pivoting from its stored position on underside of boom base. Pin and guy line connected to boom point. For extending reach of boom.

AUXILIARY SHEAVE (OPTIONAL): Single 11.875" (302 mm) P.D. non-metallic sheave with bronze bushings, bracket-mounted on boom point, for use with single auxiliary winch line.

HOOK BLOCKS (OPTIONAL):

5 Ton — weighted hook with swivel and safety latch, for 1/2" (13 mm) wire rope.

10 Ton — Single sheave with swivel hook and safety latch, for 1/2" (13 mm) wire rope.

15 Ton — 2 sheave with swivel hook and safety latch, for 1/2" (13 mm) wire rope.

20 Ton — 3 sheave with swivel hook and safety latch, for 1/2" (13 mm) wire rope.

COUNTERWEIGHTS:

For all boom options (except 3 section full power) — 4774 lb. (2165 kg) non-removable weight is standard

For 3 section full power boom with auxiliary winch — 5023 lb. (2278 kg)

For 3 section full power boom without an auxiliary winch — 5674 lb. (2574 kg)



OPERATOR'S CAB: All-weather environmental cab of steel has hinged ceiling window, slide-by right side window, locking slide-by door and large windows with full view in all directions. Safety glass used throughout. Operator's four-way adjustable seat has torsion

suspension. Cab is 34.5 inches (876 mm) wide with a stand-up height of 56 inches (1422 mm) and is cushion-mounted for vibration dampening and noise reduction.

CAB ACCESSORIES (OPTIONAL): Heater (diesel or propane fueled, thermostatically controlled), defroster fan, electric horn, electric windshield wiper and washer, electric roof window wiper, seat belt, fire extinguisher, drum rotation indicators for main and auxiliary winches, vandal-proof glass (lexan), noise-suppression kit for engine compartment, rotary roof beacon, rear view mirrors and warning light and buzzer monitoring power plant gauge panel.



CONTROLS: In front of operator are foot pedals for boom hoist, swing brake (optional), service brakes, and engine throttle. Left of steering wheel are console mounted double-acting levers for swing (with optional horn button) and telescope. At the right are levers for auxiliary winch (optional), slow speed main winch (optional), medium speed main winch and boom hoist. On right side of seat are floor mounted levers for swing brake and house lock. Drum rotation indicators (optional) are mounted on auxiliary and medium speed winch levers and a directional indicator (emergency flasher) switch on steering column. At operator's right are console mounted switches for starting aid, master ignition, engine start, engine stop, emergency/parking brake, windshield wiper, master lights (optional), defroster (optional), hi-low transmission range, steering mode selection and outrigger controls. Also on console are cigar lighter, high temperature warning light (optional), dash light, fuel gauge, air pressure gauge, circular level, gear range selector switch, forward-reverse selector lever and hand throttle. Console has prewired removable modules for ease of service.

OTHER CONTROLS: Located elsewhere are — Power plant gauge panel (rear of engine compartment) with gauges for hydraulic oil temperature, engine oil pressure, engine water temperature, torque converter oil temperature, transmission clutch oil pressure, volt meter and hour meter. Hydraulic axle oscillation lockouts on rear axle cradle, pump disconnect lever on pump drive housing (inside right rear engine compartment) and front axle disconnect is automatic when transmission is shifted into high range.



MAIN WINCH: Braden Model PD12A single speed, mounted on rear of boom base. Planetary gearing with equal speed power raising and lowering. Infinitely variable controlled speed. Spring applied, hydraulically released load holding multiple disc brake is automatic. Three (3) speed winch option is available (additional pump, valve and lever are required). Complete with 400' (122 m) wire rope.

Drum: 9.625" (24.4 cm) P.D. x 13.75" (34.9 cm) wide with 16.25" (41.3 cm) dia. flanges.

Wire Rope: 1/2" (13 mm) dia. 8 x 19 spin resistant with 7 x 7 I.W.R.C.

Drum Capacity: 535 ft. (163m) 6 layers.

Line Pull (Max): 9250 lb. (4196 kg) 1st layer.

Line Pull (Permissible): 6,000 lb. (2721 kg) per part of line.

Line Speed Up (Max.):

Medium speed (std.) 216 fpm (66 m/m) 5th layer.

Slow speed (optional) 140 fpm (43 m/m) 5th layer.

High speed (optional) 320 fpm (98 m/m) 5th layer.

Single speed — single lever control for medium top speed.

Third speed option — 2 lever control for slow and medium speed, simultaneous operation of both levers for high speed.

AUXILIARY WINCH (OPTIONAL): Same as main winch — available only with single medium speed. Mounted on rear of revolving frame. Complete with 340' (104 m) wire rope and additional boom point idler sheave.



BOOM HOIST: One 10" (25.4 cm) I.D. cylinder, double-acting. Hydraulically powered raising and lowering with holding valve.

BOOM TELESCOPE: One 5.25" (12.7 cm) I.D. cylinder — double acting for each powered section. Hydraulically powered extending and retracting with holding valve.

HYDRAULIC SYSTEM: System utilizes either 3 or 4 gear type pumps — 3 if a (standard) single speed main winch is used, or 4 if (optional) three speed main winch is used. One double pump operating at 2173 rpm, provides 53 gpm (200.6 lpm) to the single speed main and/or auxiliary winches and 37.5 gpm (141.9 lpm) to the boom hoist and boom

telescope cylinders. One single pump operating at 2500 rpm, provides 27.5 gpm (104.1 lpm) for steering, swing and outrigger circuits. An optional single pump can be added to provide 24 gpm (90.84 lpm) for 3 speeds to main winch. Total flow at 2500 engine rpm is 118 gpm (446.6 lpm) for 3 pump system and 142 gpm (537.5 lpm) for 4 pump system. From this flow, all but 37.5 gpm (141.9 lpm) is filtered to 10 microns on return to the reservoir. Another filter in the pressure line of the swing, steer and outrigger circuit filters to 20 microns. Total filter capacity is 275 gpm (1040.9 lpm) to assure minimum fluid resistance and power loss while protecting seals in cylinders, valves and motors. The 90 gal. (340.7 liter) reservoir is located on right side of carrier. Pumps, valves, cylinders and motors are readily accessible and easy to service. Control valves are four-way, three-position type with low effort spools and pilot-operated relief valves for quick, smooth response. Swing circuit has pressure compensated valve for swing metering control. Cable linkage connects valves to control levers. Air to oil cooler is optional.



SWING UNIT: Hydraulic motor driving through double reduction gear reducer to pinion gear, 360° continuous rotation to 3.49 RPM.

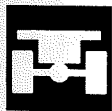
SWING GEAR: External cut spur gear 39.667" (100.75 cm) P.D. Ring gear dust cover is available (optional).

SWING BRAKE: STANDARD — Multiple disc brake integral with swing gear reducer, manually engaged with swing brake lever and hydraulically released by swing lever engagement. **OPTIONAL** — Caliper disc brake mounted on swing gear reducer, manually applied with swing brake pedal for slow dynamic stopping and swing brake lever for static holding. Hydraulically released by swing lever engagement.

HOUSE LOCK: Two position (front and rear) pin-in-hole lock manually engaged with house lock lever in cab is standard. A positive 360° position lock is available (optional).

FASTENING TO LOWER: Single row ball bearing integral with swing gear. Welded to carrier frame and bolted to rotating frame. Bearing is protected from dust by labyrinth seal.

ROTARY MANIFOLD: Sealed rotary swivel for air and hydraulic hose connections between rotating upper and carrier. Quickly removable from above or below for servicing. Electrical swivel is mounted on top of air and hydraulic swivel.



CARRIER: Driving and steering combinations available.

STANDARD

4x2x2 (Rear wheels drive, front wheels steer) — For flat terrain with unlimited turning area.

OPTIONAL

4x2x4 (Rear wheels drive. Four wheels steer) — For flat terrain with limited turning area.

OPTIONAL

4x4x4 (Four wheels drive. Four wheels steer) — For rough terrain with limited turning area.

FRAME: All-welded unitized construction assures rigidity and permanent alignment of swing bearing and rotating upper machinery. Fabricated of rectangular structural tubing main frame beams of high strength 46,000 psi (3234 kg/cm²) minimum yield steel and reinforced with rectangular box cross members of high strength 50,000 psi (3515 kg/cm²) minimum yield steel.



HYDRAULIC OUTRIGGERS: Four (4) independent assemblies that hydraulically extend out horizontally from carrier frame and down vertically to form a stable working platform. Four (4) double acting hydraulic cylinders provide independent horizontal beam movement and four (4) provide vertical rod movement. Vertical cylinders are

equipped with holding valves. Cylinders are actuated by electric solenoid directional control valves operated from cab console switches. Beams are rectangular box members fabricated of high strength 50,000 psi (3515 kg/cm²) minimum yield steel. Four (4) fabricated 14" (35.6 cm) sq. floats are removable and stored on outrigger box. Extended spread is 16'-5½" (5.02 m) from C/L to C/L of vertical cylinders. Retracted within carrier width of 8'-0" (2.44 m).



STEERING OPTIONS: A) Front axle steer — pressure compensated hydrostatic power system fully controlled by steering wheel B) Front and rear axle steer — pressure compensated hydrostatic power system fully controlled by steering wheel for front and rear axles.

Two wheel, four wheel and crab steering mode selection is controlled by 3 position toggle switch located in cab on side console. Center position of switch locks position of rear wheels and only front wheels are steerable. The amount of rear wheel turn is controlled by steering wheel.

FRONT AXLE: Rockwell PSM-594, ratio 16.65:1, steer and drive axle driven through differential with planetary in hubs. Axles are rigid mounted and have power steering. Manual drive disconnect for highway travel is standard.

REAR AXLE OPTIONS: A) Rockwell PRM-672, ratio 16.65:1 drive non-steering axle driven through differential with optional non-spin differential. B) Rockwell PSM-594, ratio 16.65:1, steer and drive axle driven through differential with planetary in hubs. Power steering, with optional no-spin differential. Axles are pivot-mounted with automatic hydraulic lockout cylinders to prevent oscillation (vertical movement of axle). Total oscillation attainable is 8 in. (20.3 cm).

SERVICE BRAKES: Air over hydraulic brakes on all 4 wheels. Rockwell 17¼ x 4 in. (438.15 x 101.6 mm) internal expanding shoe type, actuated by foot pedal in cab.

PARKING BRAKES: Maxi spring-set air chamber on 10 in. (25.4 cm) drum brake on transmission. Spring set and air released for safety.

TIRES: STANDARD — 14:00 x 24 — 16PR Tubeless Suregrip grader. **OPTIONAL** — 16:00 x 24 — 16PR Tubeless Suregrip grader; 16:00 x 24 Michelin XRB; 17.5 x 25 — 20PR Tubeless Suregrip Loader; 20.5 x 25 — 16PR Tubeless Suregrip Loader.



POWER PLANT:

ENGINE

Model	Detroit Diesel 3L-53T
Type	Diesel — direct injection
No. of cylinders	3
Cycle	2
Bore x Stoke, in (mm)	3.875 x 4.50 (99 x 114)
Displacement, cu.in.	159
(Liters)	(2.6)
Air Induction	Turbo-Charged
Air Cleaner	2 stage dry type — replaceable element
Oil Filter	Fullflow with replaceable element
Fuel Filter	Fullflow with replaceable element
Fuel Tank	50 gal. (189.3 liters) FHWA approved (Left side of carrier)
Cooling	Liquid-pressurized, recirculating by-pass
Radiator	Fin and tube core, thermostat controlled
Fan	6 Blade, suction type, 22 in. (559 mm) dia.
Starting	12 volt motor
Charging	12 volt - 42 amp alternator, negative ground
Battery	210 amp. hour
Compressor, air	12 CFM @ 1250 RPM
Governor, air	105-120 PSI
Horsepower, Gross	125 (93.2 Kilowatts) @ 2500 RPM

OPTIONAL POWER PLANT:



ENGINE

Model Deutz Model F6L912
 Type Diesel - direct injection
 No. of cylinders 6
 Cycle 4
 Bore x Stroke, in. (mm) 3.938 x 4.719 (100 x 119.9)
 Displacement, cu.in. (Liters) 346 (5.7)
 Air Induction Naturally aspirated
 Air Cleaner 2 stage dry type - replaceable element
 Oil Filter Fullflow with replaceable element
 Fuel Filter Fullflow with replaceable element
 Fuel Tank 50 gal. (189.3 Liters) FHWA approved (Left side of carrier)
 Cooling Air - 3.389 CFM air flow
 Starting 12 volt motor
 Charging 12 volt - 55 amp alternator, negative ground
 Battery 210 amp. hour
 Compressor, air 7.2 CFM @ 1250 RPM
 Governor, air 105-120 PSI
 Horsepower, Gross 112 (83.5 Kilowatts) @ 2500 RPM

MISCELLANEOUS EQUIPMENT (OPTIONAL): Sheet metal cover for control valves, boom angle indicator, boom length indicator, load moment device, automatic electrical hook block to boom point sheave protection (anti-two block) device, hook blocks, aux. boom point sheave with bracket mounting, air to oil hydraulic oil cooler, engine starting aid, fenders, pintle hooks, spare wheel, tire and mounting, headlights, taillights, directional lights, emergency flashers, clearance lights and reflectors, floodlights, large rear view mirrors, alcohol evaporator, air dryer, plumbing and controls for aux. winch, front bumper tow winch, electric back-up alarm, non-spin rear axle, warning beacon on cab roof, ring gear dust cover and 80 DBA sound reduction package.



PERFORMANCE: Six (6) forward speeds, 6 reverse speeds. Performance in highest and lowest gear based on engine at full load rpm, 43,000 lb. gross vehicle weight, 14:00 x 24 tires, and good surface road. Maximum grade is under ideal conditions and limited by tire slip.

Low Range Speeds

1st	1.9 mph (3.1 Kmph)
2nd	3.7 mph (6.0 Kmph)
3rd	10.9 mph (17.5 Kmph)

High Range Speeds

1st	4.6 mph (7.4 Kmph)
2nd	8.8 mph (14.2 Kmph)
3rd	25.8 mph (41.5 Kmph)

TRANSMISSION

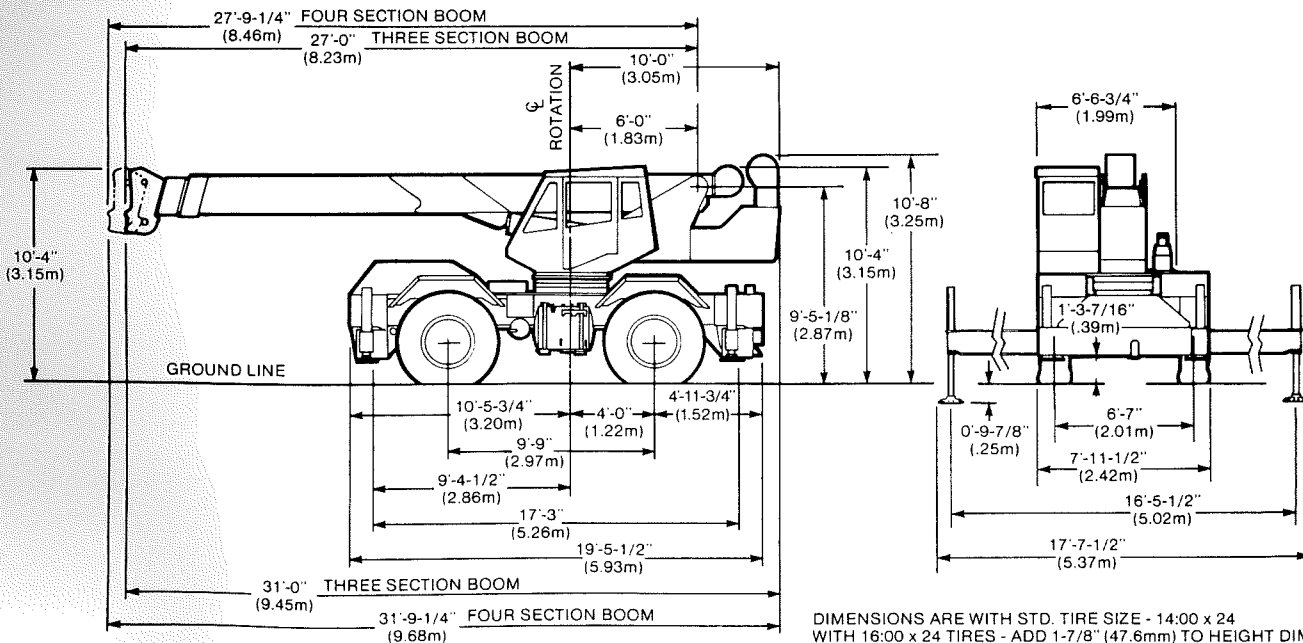


Model Funk
 Type Powershift with 12.75 in. (324 mm) torque converter, 6 speeds equal forward and reverse, with high-low range shift. Electrically controlled, pneumatically operated gear shift. Neutral safety start.
 Pump Drives Gear driven off transmission power take-offs. Right hand PTO drive (for standard winch, boom hoist and telescope) equipped with manual disconnect for highway travel and engine starting.

SHEAVE AND DRUM TO WIRE ROPE RATIOS: (Pitch Diameter)

	Sheave to Wire Rope	Drum to Wire Rope
Boom Main Sheave	23.8 to 1	---
Boom Idler Sheave	23.8 to 1	---
Boom Ext Sheave	23.8 to 1	---
Jib Sheave	23.8 to 1	---
Main Winch	---	19.3 to 1
Aux. Winch	---	19.3 to 1

dimensions



DIMENSIONS ARE WITH STD. TIRE SIZE - 14:00 x 24
 WITH 16:00 x 24 TIRES - ADD 1-7/8" (47.6mm) TO HEIGHT DIMENSIONS
 WITH 20.5 x 25 TIRES - ADD 2-1/4" (57.2mm) TO HEIGHT DIMENSIONS
 WITH 17.5 x 25 TIRES - SUBTRACT 1" (25.4mm) FROM HEIGHT DIMENSIONS

TIRES

	14:00 x 24	16.00 x 24	20.5 x 25	17.5 x 25
VEHICLE TURNING DIAMETER - 4-WHEEL STEER CRAMP	33'-11-1/2" (10.35m)	41'-2-5/8" (12.56m)	41'-5-3/4" (12.64m)	36'-0" (10.97m)
- FRONT AXLE STEER	56'-7-3/8" (17.26m)	71'-1-1/4" (21.67m)	71'-4-5/16" (21.75m)	60'-10-1/4" (18.55m)
VEHICLE CLEARANCE DIAMETER - 4-WHEEL STEER CRAMP	39'-2" (11.94m)	46'-0" (14.02m)	46'-0" (14.02m)	41'-2-7/8" (12.57m)
- FRONT AXLE STEER	61'-8" (18.80m)	75'-7-3/4" (23.05m)	75'-7-3/4" (23.05m)	65'-10-3/4" (20.08m)

VEHICLE WEIGHT:

Includes DD 3L-53T Engine with 6 Speed, 2 Range Powershift Transmission, 4x4 Drive/Steer Axles, Hydraulic Rear Axle Lockout, 16.00 x 24 - 16 PR Tires, Fenders, Hydraulic Outriggers, Pintle Hooks (Front & Rear), Hydraulic Oil Cooler, Air Dryer, Full Fuel and Hydraulic

Reservoir Tanks, Three Speed Main Winch with 400' x 1/2" diameter Cable, Four Section Boom (2 Power, 1 Manual) (27' - 80'), Auxiliary Boom Point Sheave, 20 Ton 3 Sheave Hook Block, Caliper Disc Swing Brake, Control Valve Cover, Cab Heater and Defroster Fan, Fire Extinguisher, and Counterweight:

	G.V.W.	Front Axle Loading	Rear Axle Loading
	43,245 lbs. (19,612 kg)	21,710 lbs. (9,846 kg)	21,535 lbs. (9,766 kg)
Effect on Axle Loading by Adding:			
Auxiliary winch w/340' x 1/2" dia. Cable	750 lb. (340 kg)	- 365 lb. (- 165 kg)	1115 lb. (505 kg)
22' Lattice Boom Extension	567 lb. (257 kg)	649 lb. (294 kg)	- 82 lb. (- 37 kg)
15' "A" Frame Jib	506 lb. (229 kg)	897 lb. (406 kg)	- 391 lb. (- 177 kg)
Effect on Axle Loading by Substituting:			
Two Section Full Power Boom (25.2' - 43.2')	- 3600 lb. (- 1633 kg)	- 3555 lb. (- 1612 kg)	- 45 lb. (- 21 kg)
Three Section Boom (1 Power, 1 Manual) (26.23' - 62.23')	- 2240 lb. (- 1016 kg)	- 2515 lb. (- 1141 kg)	275 lb. (125 kg)
Three Section Boom (Full Power) (27' - 80')	- 361 lb. (- 164 kg)	- 1942 lb. (- 881 kg)	1581 lb. (717 kg)
14:00 x 24 - 16 PR Tires	- 388 lb. (- 176 kg)	- 194 lb. (- 88 kg)	- 194 lb. (- 88 kg)
17.5 x 25 - 16 PR Tires	- 56 lb. (- 26 kg)	- 28 lb. (- 13 kg)	- 28 lb. (- 13 kg)
20.5 x 25 - 16 PR Tires	1240 lb. (562 kg)	620 lb. (281 kg)	620 lb. (281 kg)
Deutz F6L-912 Engine	- 234 lb. (- 106 kg)	- 122 lb. (- 55 kg)	- 112 lb. (- 51 kg)
Rear Non-steer/Drive Axle	- 93 lb. (- 42 kg)	- 4 lb. (- 2 kg)	- 89 lb. (- 40 kg)
Front Steer/Non-Drive Axle	- 363 lb. (- 165 kg)	- 363 lb. (- 165 kg)	0 lb. (0 kg)
Single Speed Main Winch	- 92 lb. (- 42 kg)	- 43 lb. (- 20 kg)	- 49 lb. (- 22 kg)
Effect on Axle Loading by Removing:			
Auxiliary Boom Point Sheave	- 66 lb. (- 30 kg)	- 173 lb. (- 78 kg)	107 lb. (48 kg)
Pintle Hooks (Front & Rear)	- 54 lb. (- 24 kg)	- 27 lb. (- 12 kg)	- 27 lb. (- 12 kg)
Air Dryer	- 50 lb. (- 23 kg)	- 64 lb. (- 29 kg)	14 lb. (6 kg)
Heater & Defroster Fan	- 70 lb. (- 32 kg)	0 lb. (0 kg)	- 70 lb. (- 32 kg)
20 Ton 3 Sheave Hook Block	- 400 (- 181)	661 (- 300)	- 261 (- 119)
Hydraulic Oil Cooler	- 80 lb. (- 36 kg)	- 91 lb. (- 41 kg)	11 lb. (5 kg)
Fenders	- 406 lb. (- 184 kg)	- 203 lb. (- 92 kg)	- 203 lb. (- 92 kg)
Control Valve Cover	- 62 lb. (- 28 kg)	- 7 lb. (- 3 kg)	- 55 lb. (- 25 kg)

Operating instructions

P&H crane meets the requirements of ANSI B30.15 (1973). Boom lattice (boom, lattice extension and jib) has been tested per SAE J1063, machine stability tested per SAE J765. LOAD RATINGS shown apply only to machine as originally manufactured and equipped by Harnischfeger Corporation.

WARNING: Operation of this machine in excess of rated loads, in areas of operation not rated, or with disregard of instructions voids this warranty.

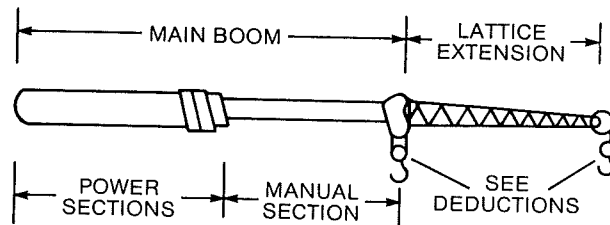
LOAD RADIUS is horizontal distance from axis of rotation (before loading) to center of vertical hoist line (after loading). Actual working radii should be an accurate measurement.

Boom, lattice extension and jib point height dimensions are measured from ground to center of load sheave.

LOADED BOOM ANGLE is the angle between the boom base section and the horizontal axis after lifting rated load at rated radius. Loaded boom angles shown are with rated loads applied and provide an **approximation** of the **LOAD RADIUS** at the specified **BOOM LENGTH** (includes lattice extension). The boom angle before loading should be slightly greater to account for boom deflection.

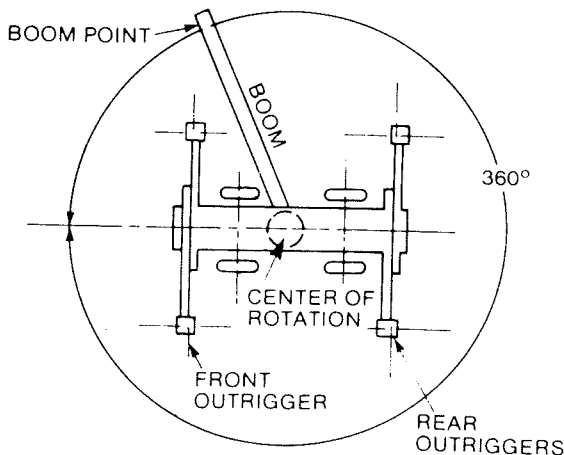
4. LOAD RATINGS shown are for machine with counterweight as shown, leveled and standing on firm, uniform supporting surface. Ratings are based on freely suspended loads and are not more than 85% of minimum tipping loads. Ratings above the bold horizontal line are based on machine's hydraulic or structural competence and not on machine stability (tipping conditions).
5. To determine LOAD RATINGS in-between those shown on chart, proceed as follows:
 - a. for boom lengths not shown, use rating of next longer rated boom:
 - b. for load radii not shown, use rating of next longer rated radius.
6. Deduct weight from LOAD RATINGS of all suspended load handling devices such as hooks, hookblocks, slings, buckets, etc. as they are considered part of the load. See table for deductions.

7. Deduct weight from LOAD RATINGS of fixed boom attachments (jib, boom extension) either stowed or erected, as they reduce capacity of boom. See table for deductions.
8. LOAD RATINGS shown make no allowance for such factors as wind effect on lifted loads, ground conditions, out-of-level, operating speed or conditions that could be detrimental to safe operation of this machine. The operator must judge these factors and reduce ratings accordingly.
9. "WITH OUTRIGGERS" LOAD RATINGS are based on outriggers fully extended and set at a distance of 8 ft. 2.75 in. (2.51 m) from longitudinal axis of carrier to vertical axis of outrigger float. Machine must be level and supported by outriggers with tires free of supporting surface.
10. "WITHOUT OUTRIGGERS" LOAD RATINGS are based on lift limitations and conditions of tires inflated to pressures shown in table, and apply only when rear axle lockouts are engaged. Over front "Pick and Carry" ratings are limited to travel speed less than 2½ mph (4 kmph) on firm, level ground with load centered over front of machine and load restrained from swinging.
11. Maximum JIB LOAD RATINGS are based on structural competence. Ratings at any radius shall not exceed BOOM LOAD RATINGS at same radius and shall not exceed maximum ratings shown.
12. Jibs are intended to increase lifting height — not load radius. Maximum JIB LOAD RADIUS shall not exceed maximum BOOM LOAD RADIUS of boom length on which jib is mounted.
13. For bucket ratings on jib, deduct 20% from maximum JIB LOAD RATINGS.
14. Method of telescoping boom is random with each section extendible a distance of 18 feet (5.49 m). Sections resynchronize when boom is fully retracted or extended.
15. The maximum load which may be telescoped is limited by hydraulic pressure, boom angle and lubrication. It is safe to telescope any load within limits of load rating chart.

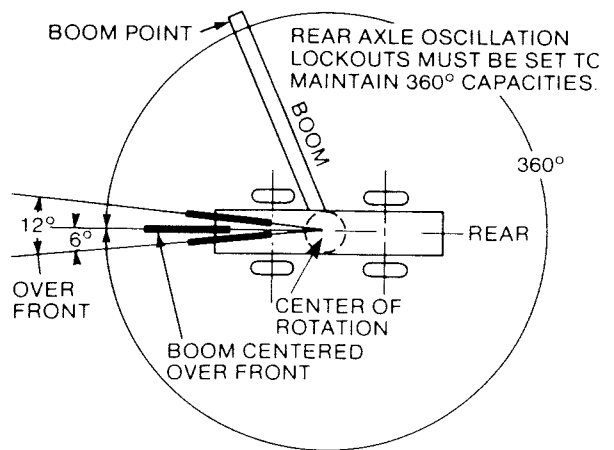


areas of operation

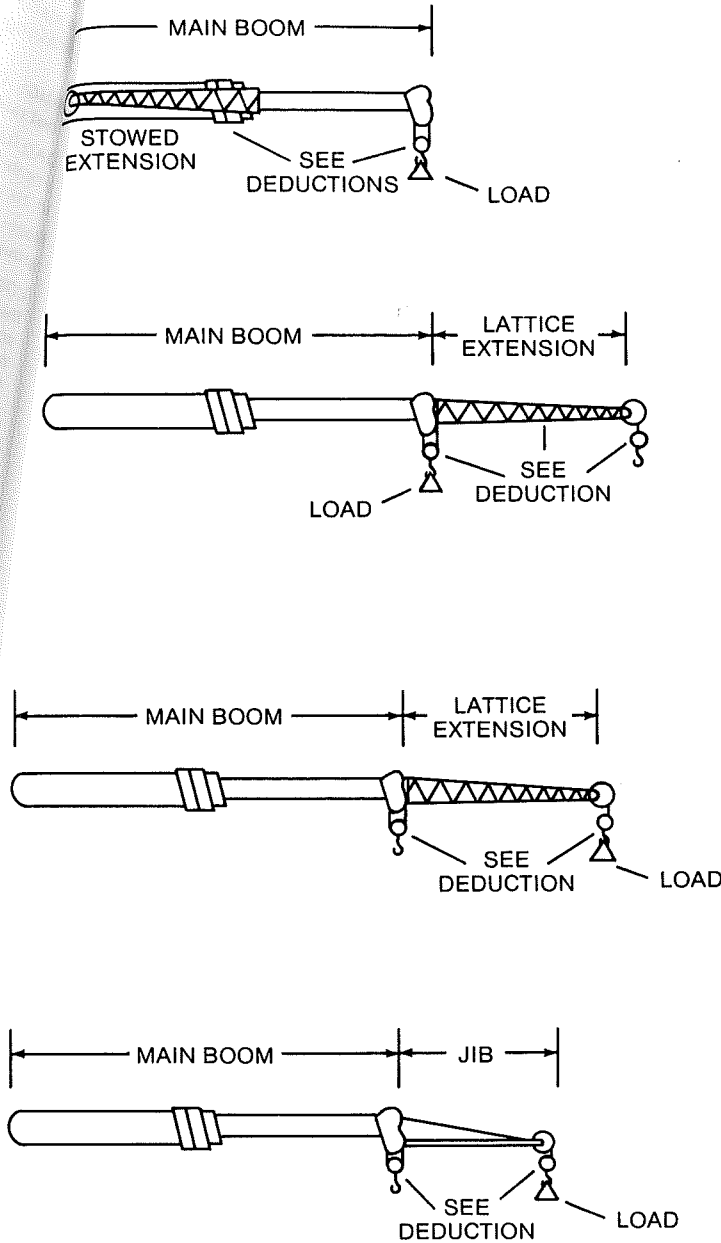
ON OUTRIGGERS



ON RUBBER



deductions to be made from rated loads



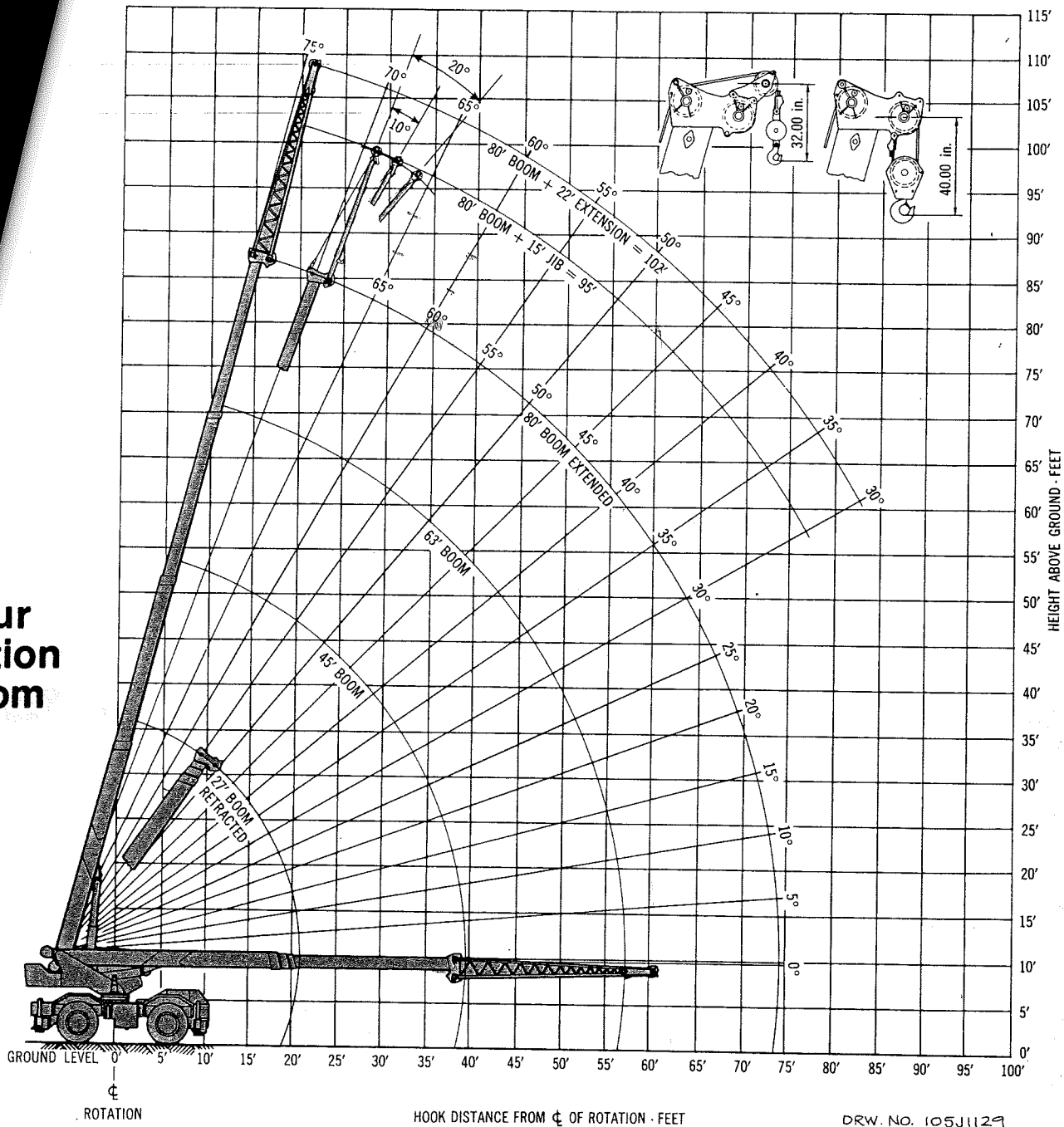
DEDUCTION TO BE MADE FROM MAIN BOOM RATED LOADS (IN POUNDS) (Hoisting From Boom Point)			
STOWED ATTACHMENT			
Lattice Extension (Stored on Boom Base)		400	
Jib (Stored on Boom Base)		400	
HOOK BLOCK ON BOOM POINT			
5 TON BALL HOOK	10 TON 1 SHEAVE	15 TON 2 SHEAVES	20 TON 3 SHEAVES
105	325	360	400
ERECTED ATTACHMENT			
	WITHOUT HOOK BLOCK	WITH 5 TON BALL HOOK	WITH 10 TON HOOK BLOCK
Lattice Extension	700	1000	1650
Jib	700	950	1450
DEDUCTION TO BE MADE FROM LATTICE EXTENSION RATED LOADS (IN POUNDS) (Hoisting From Extension Point)			
TOTAL DEDUCTION FOR ERECTED CONFIGURATION			
	Hook Block On Extension Point		
Hook Block On Boom Point	5 TON BALL HOOK ONE PART LINE	10 TON HOOK BLOCK TWO PART LINE	
20 Ton — 3 Sheaves	405	625	
15 Ton — 2 Sheaves	375	595	
10 Ton — 1 Sheave	350	570	
5 Ton Ball Hook	185	405	
DEDUCTION TO BE MADE FROM JIB RATED LOADS (IN POUNDS) (Hoisting From Jib Point)			
TOTAL DEDUCTION FOR ERECTED CONFIGURATION			
	Hook Block On Jib Point		
Hook Block On Boom Point	5 TON BALL HOOK ONE PART LINE	10 TON HOOK BLOCK TWO PART LINE	
20 Ton — 3 Sheaves	435	655	
15 Ton — 2 Sheaves	405	625	
10 Ton — 1 Sheave	375	595	
5 Ton Ball Hook	195	415	

PERMISSIBLE HOIST LINE LOAD IN POUNDS								
Parts Of Line	1	2	3	4	5	6	7	8
Main Winch or Auxiliary	6,000	12,000	18,000	24,000	30,000	36,000	40,000	—
½" Dia. wire rope — Breaking strength 23,400 lbs. (10,614 kg) — Permissible strength 6,686 lbs. (3,033 kg)								

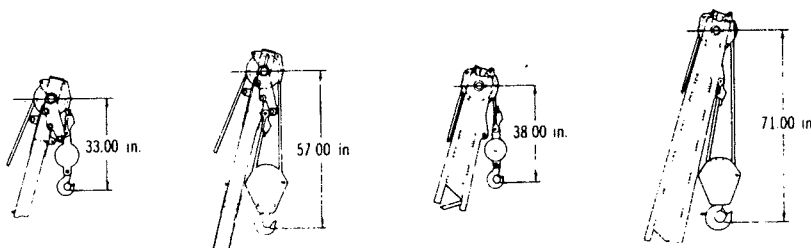
NOTE: OPERATION OF THIS EQUIPMENT IN EXCESS OF LOAD RATINGS AND DISREGARD OF INSTRUCTIONS VOIDS THE WARRANTY.

Working ranges

four section boom



WARNING: Do not exceed 90 ft. load radius with erected boom extension or jib or a tipping condition will occur.



DRW. NO. 105J1129

PCSA CLASS 10—60 four section boom with manual section and outriggers fully extended and set rated crane loads in pounds — boom in 360° work areas

LOAD RADIUS (FEET)	BOOM LENGTH (FEET)													
	MANUAL SECTION RETRACTED				SECTION EXTENDED				WITH LATTICE EXTENSION					
	45		63		80		85		102		102			
10	57	40000	72	33000	74	22000	71	13000	71	8000	75	7500	25	
12	52	32000	70	30000	69	18000	67	11500	67	7500	72	6500	30	
15	43	26000	65	25500	63	7100	63	8700	64	6500	69	5700	35	
20	20	20000	58	20000	58	6000	58	6800	60	5600	66	4900	40	
25	—	—	50	14000	46	39	4600	54	5400	56	4800	63	4300	45
30	TELESCOPE	9800	40	9800	30	3600	49	4400	51	4100	59	3700	50	
35	CYLINDERS MUST BE FULLY RETRACTED	7100	27	7100	17	2700	43	3500	46	3300	56	3200	55	
40	—	—	—	—	—	—	30	2900	41	2700	52	2800	60	
45	—	—	—	—	—	—	21	1800	29	1800	45	2100	70	
50	—	—	—	—	—	—	2	1500	22	1500	41	1800	75	
55	—	—	—	—	—	—	—	—	—	—	35	1400	80	
60	—	—	—	—	—	—	—	—	—	—	29	1100	85	
65	—	—	—	—	—	—	—	—	—	—	22	900	90	
70	—	—	—	—	—	—	—	—	—	—	—	—	—	
74	—	—	—	—	—	—	—	—	—	—	—	—	—	
80	—	—	—	—	—	—	—	—	—	—	—	—	—	
85	—	—	—	—	—	—	—	—	—	—	—	—	—	
90	—	—	—	—	—	—	—	—	—	—	—	—	—	

WARNINGS

- FOR BOOM LENGTHS LESS THAN 80 FEET WITH MANUAL SECTION EXTENDED, THE RATED LOADS ARE DETERMINED BY BOOM ANGLE ONLY IN THE COLUMN HEADED BY 80 FOOT BOOM. FOR BOOM ANGLES NOT SHOWN USE RATINGS OF NEXT LOWER BOOM ANGLE.
- FOR BOOM LENGTHS LESS THAN 85 FEET WITH MANUAL RETRACTED AND LESS THAN 102 FEET WITH MANUAL EXTENDED, THE LATTICE BOOM EXTENSION RATED LOADS ARE DETERMINED BY BOOM ANGLE ONLY IN THE COLUMN HEADED BY 85 FOOT BOOM AND 102 FOOT BOOM RESPECTIVELY. FOR ANGLES NOT SHOWN USE RATING OF NEXT LOWER BOOM ANGLE.

BOOM RATINGS MUST BE REDUCED BY WEIGHT OF BOOM ATTACHMENTS AND LOAD HANDLING DEVICES. SEE TABLE.

RATINGS ABOVE THE HEAVY LINE ARE BASED ON STRUCTURAL COMPETENCE AND NOT ON MACHINE STABILITY.

32U1592

- TO HELP PREVENT TIPPING CONDITIONS WHEN "LIFTING ON RUBBER", IT IS RECOMMENDED THAT —
- MINIMUM BOOM LENGTHS BE USED.
- OUTRIGGERS BE EXTENDED AS FAR AS POSSIBLE AND CLEAR OF GROUND.

WARNING: SEE AREAS OF OPERATION PLATE FOR WORKING RANGES. LEVEL SURFACE WITH MECHANICAL HOUSELOCK ENGAGED AND LOAD CENTERED OVER FRONT OF MACHINE AND RESTRAINED FROM SWINGING. DO NOT EXCEED 2 1/2 MPH (4 KMPH) VEHICLE SPEED. CREEP IS MOTION FOR LESS THAN 200 FT. IN A 30 MIN. PERIOD & NOT EXCEEDING 1 MPH.

WARNING: STABILITY RATINGS DO NOT EXCEED 85% OF TIPPING LOADS WITH AUXILIARY SHEAVE ON BOOM POINT AND STOWED BOOM EXTENSION.

WARNING: "WITHOUT OUTRIGGER" LIFTS WITH JIB OR BOOM EXTENSION WORKING POSITION ARE PROHIBITED.

WARNING:

LOAD RATINGS WITHOUT OUTRIGGERS DEPEND ON TIRE CAPACITY AND CONDITION, INFLATED PER TABLE, AND APPLY ONLY WHEN REAR AXLE LOCKOUTS ARE ENGAGED.

SIZE	TIRE INFLATION (PSI)		
	STAT.	CREEP	2 1/2 MPH (LOADING)
14:00x24	90	90	85
16:00x24	80	80	60
17:50x25	95	95	85
20:50x25	65	65	50

RATED LOADS FOR 16.00x24 — 16 PLY AND MICHELIN "XRB" TIRES				RATED LOADS FOR 14.00 x 24 — 16 PLY TIRES			
LOAD RADIUS (FEET)	STATIONARY	CREEP	2 1/2 MPH	LOAD RADIUS (FEET)	STATIONARY		2 1/2 MPH
					360° ARC OVER FRONT	360° ARC OVER FRONT	
31300	19600	29500	19400	10①	26900	17500	17800
26300	13800	25200	16400	12①	22800	13800	14900
19500	9100	19500	13000	15①	18200	9100	11800
10600	5100	10600	8700	20	10600	5100	7800
6700	2900	6700	6300	25	6700	2900	5500
4400	1400	4400	4400	30	4400	1400	3800
2800	—	2800	2800	35	2800	—	2600
2400	—	2400	2400	40	2400	—	2300
1600	—	1600	1600	45	1600	—	1600
1000	—	1000	1000	50	1000	—	1000

See back page for additional "On Rubber" charts

32O1053

32O1075

WARNING: DO NOT EXCEED RATED LOAD AT RADIUS SHOWN OR A TIPPING CONDITION WILL OCCUR

"on rubber" . . . four section boom

rated crane loads in pounds — main boom — without outriggers

RATED LOADS FOR 20.50 x 25 — 16 PLY TIRES				RATED LOADS FOR 17.50 x 25 — 20 PLY TIRES			
STATIONARY		CREEP	2 1/2 MPH	STATIONARY		CREEP	2 1/2 MPH
± 6° ARC OVER FRONT	360° ARC	BOOM CENTERED OVER FRONT	LOAD RADIUS (FEET)	± 6° ARC OVER FRONT	360° ARC	BOOM CENTERED OVER FRONT	LOAD RADIUS (FEET)
29700	19600	24900	10	29700	18700	25200	19100
25200	13800	21200	12	25200	13800	21400	16100
19500	9100	19500	15	19500	9100	19500	12700
10600	5100	10600	20	10600	5100	10600	8600
6700	2900	6700	25	6700	2900	6700	6100
4400	1400	4400	30	4400	1400	4400	4400
2800	—	2800	35	2800	—	2800	2800
2400	—	2400	40	2400	—	2400	2400
1600	—	1600	45	1600	—	1600	1600
1000	—	1000	50	1000	—	1000	1000

32Q1087

32Q1083

⊙ RATINGS LIMITED TO FULLY RETRACTED BOOM.

WARNING: DO NOT EXCEED RATED LOAD AT RADIUS SHOWN OR A TIPPING CONDITION WILL OCCUR.

Jib ratings

- 1 MAXIMUM JIB LOAD RATINGS ARE BASED ON STRUCTURAL COMPETENCE AND DO NOT EXCEED 85% OF TIPPING LOAD WITH FULLY EXTENDED OUTRIGGERS. USE OF OUTRIGGERS IS REQUIRED WHEN BOOM IS EQUIPPED WITH JIB.
- 2 FOR BUCKET RATINGS ON JIB, DEDUCT 20% FROM MAXIMUM JIB LOAD RATINGS.
- 3 WARNING: DO NOT LIFT WITH JIB AT BOOM ANGLES BELOW 30° LOSS OF STABILITY OCCURS RAPIDLY.

15' A-FRAME JIB			
MAXIMUM LOAD RATINGS IN POUNDS.			
Minimum Boom Angle	JIB ANGLE OFFSET		
	0°	10°	20°
75°	7500	6500	5500
70°	6500	5500	5000
65°	5500	5000	4500
60°	4500	4000	3500
55°	3700	3500	3000
50°	3000	2750	2500
45°	2450	2200	2000
40°	1900	1750	1500
35°	1550	1400	1250
30°	1350	1250	1150



Harnischfeger
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Milwaukee, Wisconsin 53201

NOTE: All designs, specifications and components of the equipment described above are subject to change at the manufacturer's sole discretion at any time without advance notice. Data published herein is informational in nature and shall not be construed to warrant suitability of the machine for any particular purpose as the manufacturer assumes no responsibility for the use of the equipment. The manufacturer's liability is limited to the warranty for this machine. Manufactured and sold in conformance with U.S. Department of Commerce Commercial Standard CS-90-58.

Address inquiries to

