P&H® OMEGA®-18

18-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:
A) Three (3) section boom with manual extension, 26.23' (8.0) 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:
B) 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:
C) 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.
18 Ton — 3 sheave with swivel hook and safety latch, for 1/2" (12.7 mm) wire rope.

COUNTERWEIGHTS: For all boom options (except 3 section full power) — 3874 lb. (1757 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, only 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. (Liters)	159 (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

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.

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.

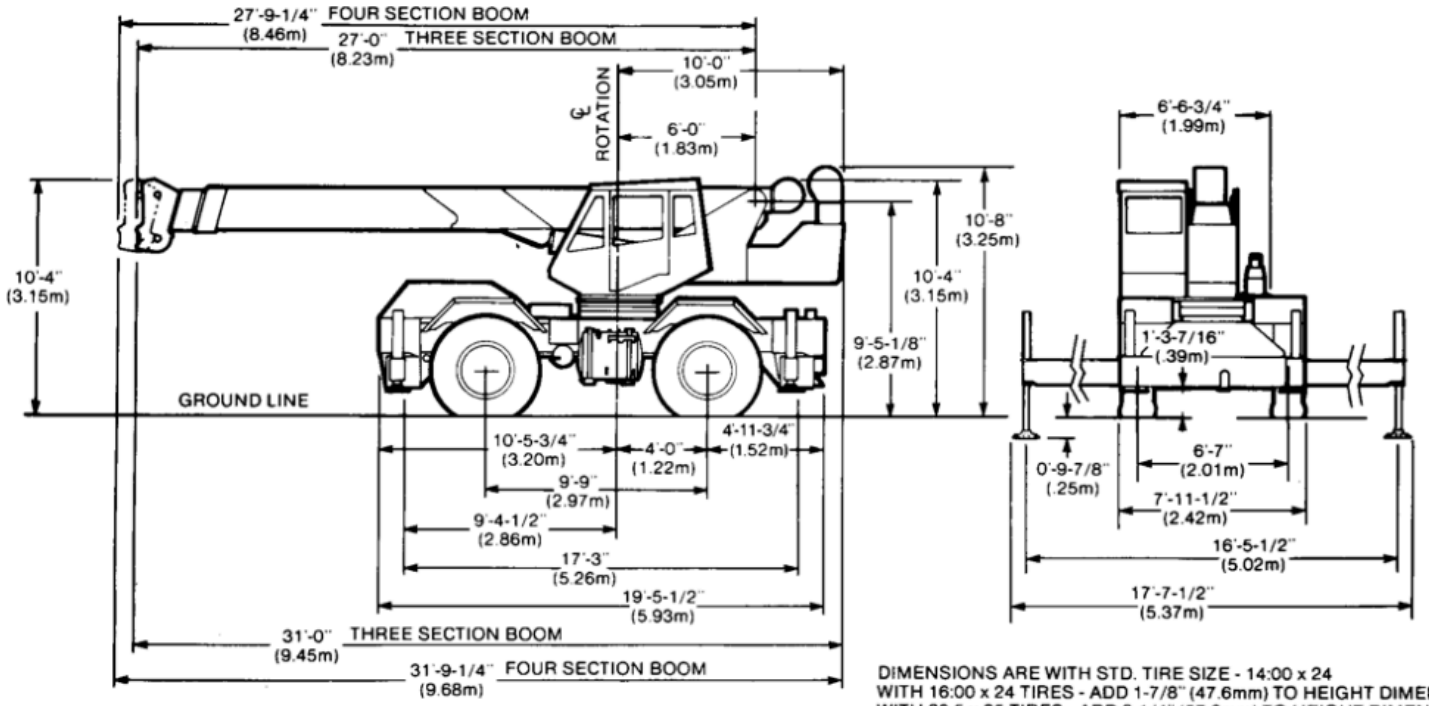
PERFORMANCE: Six (6) forward speeds, 6 reverse speeds. Performance in highest and lowest gear based on engine at full load rpm, 43,000 lb. gross vehicle weight, 14:00 x 24 tires, and good surface road. Maximum grade is under ideal conditions and limited by tire slip.

Low Range Speeds		High Range Speeds	
1st	1.9 mph (3.1 Kmph)	1st	4.6 mph (7.4 Kmph)
2nd	3.7 mph (6.0 Kmph)	2nd	8.8 mph (14.2 Kmph)
3rd	10.9 mph (17.5 Kmph)	3rd	25.8 mph (41.5 Kmph)

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, 4x4x4 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, Three Section Full Power Boom (26.23' - 62.23'), Auxiliary Boom Point Sheave, 18 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
	42,880 lbs. (19,447 kg)	19,770 lbs. (8,966 kg)	23,110 lbs. (10,481 kg)
Effect on Axle Loading by Adding:			
Auxiliary Winch w/340' x 1/2" dia. Cable	+ 99 lb. (45 kg)	- 175 lb. (- 79 kg)	+ 274 lb. (124 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')	- 4139 lb. (- 1877 kg)	- 1322 lb. (- 600 kg)	- 2817 lb. (- 1277 kg)
Three Section Boom (1 Power, 1 Manual) (26.23' - 62.23')	- 2779 lb. (- 1260 kg)	- 282 lb. (- 128 kg)	- 2497 lb. (- 1132 kg)
Four Section Boom (2 Power, 1 Manual) (27' - 80')	- 539 lb. (- 244 kg)	2233 lb. (1013 kg)	- 2772 lb. (- 1257 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)
18 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)