



P&H[®] 5100

100-ton Crawler Crane



- Hydraulically Retractable Crawlers
- Torque Converter Transmission
- Longest Boom in Class
- Hydrostatic Propel
- Short Lever Controls
- Super-Quiet Modular Cab

Specifications



Specifications

BOOM



Boom is of open throat, lattice construction, fabricated from round tubular 100,000 PSI yield strength alloy steel chord members, and reinforced with contour-cut tubular lacings. Sections are pin connected and furnished with appropriate load line guide rollers and pin connected 1.375" (34.9mm) dia. boom pendants. Maximum cross-section of 3.5" (89mm) O.D. chord members is 62" x 62" (1.575M x 1.575M).

50' (15.2m) basic boom consists of the base and tip sections.

BASE SECTION: 25' (7.6m) long tapered section with pin connected feet on 62" (1.575m) centers. Boom angle indicator (pendulum type) is mounted on leg adjacent to operator's cab.

TIP SECTION: 25' (7.6m) long tapered section has an open throat and five offset boom point sheaves, 18.625" (473mm) P.D. with roller bearings for .875" (22mm) hoist rope (21.3:1 rope ratio).

BOOM INSERT SECTIONS (OPTIONAL): Available in 10' (3m), 20' (6m), 30' (9m) and 50' (15.2m) lengths. Boom is extendible to 230' (70m).

JIB (OPTIONAL): Jib is of open throat, lattice construction, fabricated from round tubular alloy steel chord members and reinforced with contour-cut tubular lacings. Sections are pin connected. Furnished with compression strut and appropriate front and back stay pendants of .75" (19mm) 6x25 E.I.P.S. I.W.R.C. rope. Maximum cross-section of 1.75" (44mm) O.D. chord members is 24" x 22" (609mm x 558mm).

20' (6m) basic jib consists of 10' (3m) long tapered lattice base section and a 10' (3m) long tapered tip section with an open throat and a single 18.625" P.D. point sheave on roller bearings for .875" (22mm) jib hoist rope (21.3:1 rope ratio). Anchor provided at tip for 2 part hoist rope.

JIB INSERT SECTIONS (OPTIONAL): Available in 10' (3m) and 20' (6m) lengths. Jib is extendible to 60' (18.2m).

BOOM POINT EXTENSION (OPTIONAL): A short jib with a single 18.625" (473mm) P.D. sheave on roller bearings for .875" (22mm) jib hoist rope (21.3:1 rope ratio). Anchor provided at tip for 2 part hoist rope.

BOOM POINT SHEAVE GUARD (OPTIONAL): Roller type.

BOOM BACKSTOPS: Dual lever type, with spring-loaded shock absorber ends.

BOOM HOIST KICKOUT: Restricts raising boom at angles greater than recommended.

BOOM ANGLE INDICATOR: Mechanical pendulum type mounted on boom base section. Electronic type is optional.

BOOM MIDPOINT SUSPENSION PENDANTS (OPTIONAL): Required only for the 230' (70m) long boom.

BOOM AND JIB ERECTION: Maximum boom combinations that can be self-erected.

Position of Boom	Two Counterweights (61,000 lbs.) 27,670 Kg.	One Counterweight (30,500 lbs.) 13,835 Kg.
Over Front with Crawlers Blocked	230' (70m) Boom or 210' (64m) Boom and 20-60' (6-18.2m) Jib	170' (51.8m) Boom or 140' (42.6m) Boom and 20-60' (6-18.2m) Jib
Over End or Side with Crawlers Extended	200' (61m) Boom or 180' (55m) Boom and 20-60' (6-18.2m) Jib	170' (51.8m) Boom or 130' (39.6m) Boom and 20-60' (6-18.2m) Jib
Over Side with Crawlers Retracted		140' (42.6m) Boom or 100' (30.5m) Boom and 20-60' (6-18.2m) Jib

HOOK BLOCKS (OPTIONAL):

BLOCK CAPACITY	SHEAVES	WIRE ROPE SIZE INCHES	RATIO ROPE TO SHEAVE	JOHNSON BLOCK WEIGHT
24,000 lb. (10,886 kg.)	WEIGHTED HOOK WITH SWIVEL			451 lb. (205 kg.)
60,000 lb. (27,216 kg.)	1	.875	16.143:1	593 lb. (269 kg.)
140,000 lb. (63,504 kg.)	3	.875	18.429:1	1268 lb. (575 kg.)
200,000 lb. (90,720 kg.)	5	.875	18.429:1	1887 lb. (856 kg.)

UPPERSTRUCTURE



FRAME AND TRANSMISSION: All welded frame and integral sealed "powerbox" transmission case constructed of heavy, high strength steel plate is precision machined for proper alignment of all components. Transmission shaft mountings are line bored to insure precise alignment. Involute splined shafts turn in roller and ball bearings. Hardened gears and roller chains are sealed and splash lubricated in oil tight "powerbox" for long trouble-free operation. Load drums are mounted above transmission on "powerbox" side frames.

MACHINERY CAB: Low profile, steel construction with access panels on both sides and rear to machinery. No lines pass through cab. Machinery is in compact arrangement, easy to maintain and repair. Deck covered with non-skid paint. Roof top access ladder. Counterweights attach to rear of cab.

GANTRY: Two position, telescopic gantry supports boom suspension and is raised and lowered by boom hoist ropes.

BOOM HOIST SPREADERS: Lower spreader assembly is pinned to gantry and contains 6 sheaves 12.75" (324mm) P.D. with roller bearings for 10-part .75" (19mm) dia. wire rope boom hoist reeving to upper spreader. (17:1 rope ratio.)

Upper spreader assembly serves as connection for boom suspension pendants. Contains 6 sheaves 12.75" (324mm) P.D. with roller bearings for 10-part boom hoist reeving.

COUNTERWEIGHTS: One or two piece, located behind rear of machinery cab, bolt connected with shear ledge support. Each piece is 30,500 lbs. (13,835 Kg). Quickly installed or removed by use of rope pendants from gantry. One piece is standard, second piece is optional as crane attachment.

OPERATORS CAB: Environmental, modular type isolated from machinery cab, detachable for transportation. Rubber mounted and foam insulated for sound suppression. Full vision cab has safety glass in all windows; sliding door, tilt-back ceiling window and self-storing front window. Seven-way adjustable seat has cushion head and armrests. Standard equipment includes insulated floor mat, electric windshield wipers, (front and top windows) dome light, signal horn, circular level, gauge light dimmer switch, coat hanger, circuit breakers for electrical protection and quick disconnects for hydraulic and electrical connections. All wiring is coded for easy servicing. Optional equipment includes heater, defroster, fire extinguisher, catwalks, air conditioner, elevated cab platform, seat belt, drum mirror and tool kit.

DBA ratings in cab —

Door Closed Door Open

Engine at low idle —

61.0 67.5

Engine at high idle —

74.0 82.0



CONTROLS: In front of operator are foot pedals for throttle, front and rear drum brakes. Drum brake pedals are short stroke and power-assisted. Console mounted short stroke levers are for front and rear drum controls and boom hoist control. Move lever backward to raise load (or boom) — move forward to lower load (or boom). Front drum turn indicator is located on lever (optional rear drive turn indicator is also available.) A signal horn button is mounted on the boom hoist lever.

At operators left are console mounted swing control lever and optional third drum control lever. A twist grip throttle control as well as a swing brake control switch are located on the swing lever. Move lever forward to swing



left — move backward to swing right. Console mounted equipment includes hourmeter, optional tachometer and switches for ignition, cold weather starting aid, panel light dimmer, engine clutch (with signal light), boom hoist override, rear drum pawl, front drum pawl, rear drum holding brake and front drum holding brake. Other switches and gauges located above and alongside left side window include windshield wipers (top and front), heater (opt.), defroster fan (opt.), overhoist safety light and buzzer (opt.), engine fault warning light and buzzer (opt.), engine oil pressure gauge, water temperature gauge, voltmeter, fuel gauge, torque converter oil temperature gauge, converter charge pressure gauge and hydraulic system pressure gauge. Gauges have both English and Metric scales and international symbols.

On the left side console wall behind the operator is the electrical system circuit breaker panel protecting the various upper circuits. Mounted on the lower right side of operators seat are the propel control joystick and the propel holding brake switch. Forward or backward movement of the joystick controls speed and direction of both crawlers. Movement to right or left controls steering (both skid and counter-rotational steering.)

HYDRAULIC SYSTEM: Full flow hydraulic system provides power to front and rear drum clutches and boom hoist brakes and clutches. Front and rear drum brakes are power-assisted providing smooth, positive feel (similar to power brakes on automobiles). Full flow system operates at 1500 psi (105 Kg/cm) line pressure. Response is instant, positive and smooth. Pumped fluid is filtered, stored in an accumulator under pressure, cooled in 15 gal. (57 liter) reservoir and filtered again before returning to pump.

**POWER PLANT:****ENGINE:**

Make	Cummins
Model	VT-555
Type	Diesel
No. of Cylinders	8
Bore x Stroke, In.	4.625 x 4.125
mm	117.5 x 104.8
Displacement, In. ³	555
liters	9.1
Cycles	4
Air Induction	Turbo-Charged

TRANSMISSION:

Make	Twin Disc
Model	4-SDO-1622-1, type 4-MS305
Type	Torque converter, stationary housing type with integral drives for propel, control and converter charging pumps. Has dump valve as disconnect clutch.

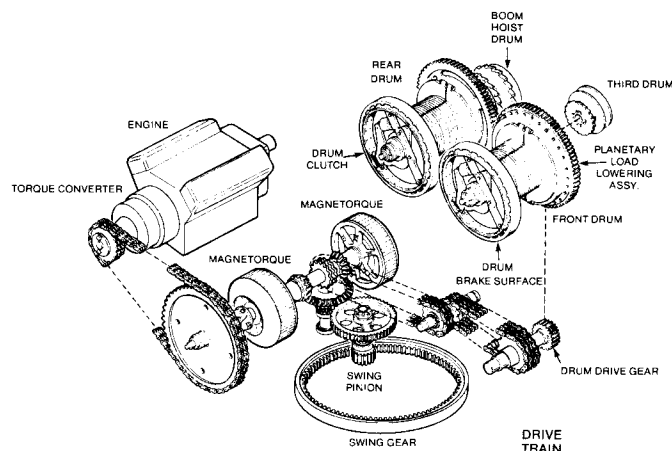
RATINGS:

NET HP @ RPM (Flywheel)	188 @ 3000
Net HP @ RPM (Converter Output Shaft)	133 @ 1800 (O.P.S. Gov. Full Load)
Altitude Range	0-7500' (0-2286 M)
Temp. Range in F. (C.)	30° to 115° w/o starting aid (-1.1° to 46°)

ACCESSORIES:

Cooling Radiator	Liquid, recirculating bypass Tube and fin type, thermostat controlled, rubber mounted
Fan	8 blade, 26 inch (660 mm) diameter suction type
Starting	24 volt motor Cold weather starting aid
Electrical System	24 volt 50 amp. alternator and 2-215 amp. hr. @ 20 hour rate batteries, 12 volt series connected

- Fuel Tank** 100 gal. (379 liters). Meets FHWA requirements, siphon-proof.
- Air Cleaner** Panel type, two stage dry
- Lube oil filter** — Remote mounted - replaceable. Full flow and by-pass.
- Fuel filter** — Dual spin-on - replaceable.
- Lube oil capacity** — Engine - 5 gallons (19 liters). Filter - 2.9 gallons (11 liters).
- Coolant capacity** — Engine - 4 gallons (15.1 liters). Radiator 5.95 gallons (21.7 liters).
- Converter charging hydraulic system** — Gear type pump charges converter. Oil to water heater exchanger cools fluid. Filtered with full flow pressure filters with replaceable paper elements. Reservoir holds 25 gals. (95 L).
- Propel pumps** — All driven from heavy duty 2-station pump drive. Propel pumps — two variable displacement piston type pumps, one for each crawler drive.
- Propel (crawler) drive** — Closed loop system. Maximum pressure rating 5500 PSI (387 kg/cm²). Oil to air heat exchanger cools fluid. Filtered with full flow pressure filters with replaceable paper elements. Reservoir with cool weather by-pass holds 25 gal. (94 L) to provide make-up oil.

**LOAD HOIST SYSTEM**

Independent work-motion system consisting of two drums in tandem, powered by enclosed chain transmission and gearing from engine driven torque converter. Front drum underwinds and rear drum overwinds. Each drum is a one-piece fabrication consisting of brake/clutch drum (left) load drum (center) and planetary lowering (or optional brake) drum (right) mounted on a drum shaft and supported by grease lubricated roller bearings.

CRANE LOAD DRUMS (FRONT & REAR): 18.375 (467 mm) P.D. x 13.62" (346 mm) long Lebus style grooved lagging bolted to drum. For .875" (22 mm) dia. wire rope (21:1 rope ratio). Rope capacity is 635' (193.5 M) storage, 526' (160.3 M) working length. Supplied with 230' (70 M) or 3 parts of wire rope for basic boom.

CLAMSHELL LOAD DRUMS (FRONT & REAR): 18.375" (467 mm) P.D. x 13.875" (352 mm) long spiral grooved lagging bolted to drum. For .875" (22 mm) dia. wire rope (21:1 rope ratio). First layer rope capacity is 62' (18.9 M). Supplied with 165' (50.3 M) closing line and 135' (41.1 M) holding line for basic boom.

DRAGLINE LOAD DRUMS (FRONT): 18.5" (470 mm) P.D. x 13.875 (352 mm) long spiral grooved lagging bolted to drum. For 1.0" (25 mm) dia. wire rope (18.5:1 rope ratio). First layer rope capacity is 55' (16.8 M). Supplied with 70' (21.3 M) digging line for basic boom. In-haul max. speed is 166 FPM (50.6 MPM), available line pull is 23,653 lbs. (10, 726 kg.).

(REAR): 18.375" (467 mm) P.D. x 13.875" (352 mm) long spiral grooved lagging bolted to drum. For .875" (22 mm) dia. wire rope (21:1 rope ratio). First layer rope capacity is 62' (18.9 M). Supplied with 130' (39.6 M) hoist line for basic boom.



DRUM CLUTCHES: 28" (711 mm) dia. x 4" (102 mm) wide, internal expanding full band type, involute splined on shaft. Hydraulically actuated by clutch lever.



DRUM BRAKES: 32.5" (825 mm) dia. x 5" (127 mm) wide, external contracting full-wrapped band type, automatic safety brake hydraulically set with additional spring set-hydraulically released lock actuated by foot pedal. Hydraulically controlled safety pawl for locking drum.



PLANETARY POWER LOAD LOWERING: Rapid, controlled safe lowering through reverse planetary gearing in drum using engine power. 32.5" (825 mm) dia. x 5" (127 mm) wide, external contracting full-wrapped band brake engages planetary gears.

DUAL BRAKES (OPTIONAL): For duty cycle work (free-fall loads). Replaces planetary power load lowering on either drum.

DRUM ROTATION INDICATORS (FRONT STD. — REAR OPTIONAL): Clutch control lever handles pulsate per drum revolution, in either direction.

LOAD DRUM HOIST PERFORMANCE					
LINE PULL		MAXIMUM LINE SPEED			
Lbs.	Kg.	1st Layer FPM MPM		3rd Layer FPM MPM	
5,000	2,268	165	50.3	193	58.8
10,000	4,536	165	50.3	193	58.8
15,000	6,804	165	50.3	193	58.8
20,000 Front	9,072	165	50.3	193	58.9
20,000 Rear	9,072	165	50.3	190	57.9
				205	62.5
				198	60.4

FRONT DRUM — Available Line Pull 23,814 lb. (10,802 Kg.)

REAR DRUM — Available Line Pull 23,110 lb. (10,483 Kg.)

TAGLINE WINDER (Supplied with Clamshell Attachment): McCaffrey Rud-O-Matic, spring type #1248, with 70' (21.3 M) .375" (9 mm) tagline wire rope.

FAIRLEAD (Supplied with Dragline Attachment): Two sheave swivel type, with 2 front guide rollers, roller bearings, dirt guard. Sheaves are 15.5" (394 mm) P.D. for 1.0" (25 mm) digging line (15.5:1 rope ratio).



THIRD DRUM (OPTIONAL): 16.125" (409 mm) P.D. x 6" (152 mm) long for .625" (16 mm) dia. wire rope (25.8:1 rope ratio). Rope capacity is 263' (80 M) storage. 212' (64.5 M) working length. Rope not supplied. Drum mounts on extension of drum shaft to left of front drum.

Does not interfere with any machine function or attachment. Design and control similar to load drums.



CLUTCH: 23" (584 mm) dia. x 4" (102 mm) wide internal expanding full band type, involute splined on shaft. Hydraulically actuated by clutch lever.



BRAKE: 25.5" (648 mm) dia. x 3" (76 mm) wide external contracting full-wrapped band type. Hydraulically actuated by foot pedal.

THIRD DRUM HOIST PERFORMANCE						
	1st Layer		3rd Layer		5th Layer	
	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
Available Hoisting Line Pull*	27,130	12,306	23,800	10,796	21,210	9,621
	FPM	MPM	FPM	MPM	FPM	MPM
Available Hoisting Line Speed	145	44.2	165	50.3	185	56.4

*Permissible Line Pull is 8,000 Lbs. (3,629 Kg) Per Part of Line for .625" (16 mm) dia. wire rope.

BOOM HOIST SYSTEM



An independent work-motion system — driven by and supported by rear load drum shaft. Controlled raising and lowering of boom with engine power — raising through clutch engagement, lowering through low speed planetary gear drive, with automatic safety pawls always engaged during raising, lowering, or holding operations.

BOOM HOIST DRUM: Single drum is a one-piece fabrication consisting of planetary hub, load drum center and brake/clutch drum. The drum as well as planetary spider have ratchet teeth which engaged the locking pawls.

Drum is 13.75" (349 mm) P.D. x 7" (178 mm) long, grooved for .75" (19 mm) dia. wire rope (18.33:1 rope ratio). Rope capacity is 400' (122 M) storage, 333' (101 M) working length. Supplied with 465' (142 M) or 10 parts of wire rope.



DRUM CLUTCH: 23" (584 mm) dia. x 4" (102 mm) wide, internal expanding full band type, involute splined on shaft. Hydraulically actuated by boom hoist lever being moved rearward.



DRUM BRAKE (Lowering): 25.5" (647 mm) dia. x 3" (76 mm) wide, external contracting, full wrapped band type automatic safety brake, spring-set — hydraulically released, actuated by boom hoist lever being returned to neutral position.



PLANETARY BRAKE (Lowering): 25.5" (647 mm) dia. x 3" (76 mm) wide, external contracting, full wrapped band type. Hydraulically set-spring released, actuated by forward movement of boom hoist lever. As drum brake is released hydraulically, hoist pawl is automatically released, planetary pawl is automatically engaged and planetary brake is set. As the brake is set, planetary gears reverse drum rotation, lowering the boom by engine power through the planetary.

BOOM HOIST DRUM PERFORMANCE				
MAXIMUM LINE SPEED	1st LAYER FPM MPM		4th LAYER FPM MPM	
HOISTING*	123	37.5	159	48.5
LOWERING	80	24.4	100	30.5
			128	39.0

*Based on engine full load HP at governed RPM.

SWING SYSTEM



"Magnetorque®" Swing Drive is an independent work-motion system and consists of driving and driven members coupled by magnetic force through an air gap. Driving member is chain driven from rear of engine. Driven member drives swing gear through bevel and spur gears. Lever controlled excitation.

COUPLING: 2-26" (660 mm) dia. x 6.25" (159 mm) wide, electromagnetic "Magnetorque®". Powered by engine driven alternator.



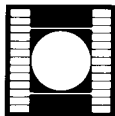
BRAKE: 18" (457 mm) dia. x 2.5" (64 mm) wide, band type, external contracting. Hydraulic release, spring set.

SWING GEAR: Internal cut teeth, 48.82" (1240 mm) P.D.

SWING PERFORMANCE		
Swing Speed	Maximum rpm	4.79

FASTENING TO UNDERCARRIAGE: P&H Triple row roller bearing 63.84" (1620 mm) O.D. Swing Circle® with swing gear integral. Bolted to both upperstructure and undercarriage.

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

**UNDERCARRIAGE**

CAR BODY: Car body of Alloy Steel welded construction with double axle housing integral and hydraulic swivel for crawler drive. Crawler frames shear mounted and bolted to end of extendible axles.

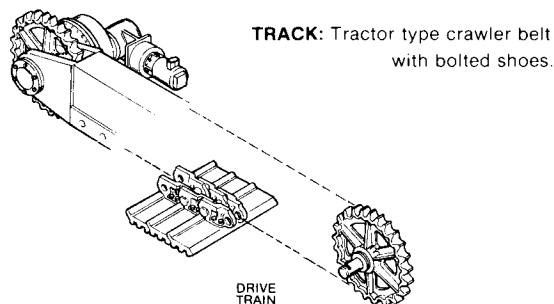
CRAWLER:

Crawler side frames are extendible and retractable by means of hydraulic cylinders to convert from wide track operating condition to a narrower overall width for travel and transportation. Two banks of valves, one on each end of the car body, control the extension cylinders to each side frame. A valve in the upper diverts fluid from the upper control system to the extension cylinders. Jacks are not needed to extend or retract crawlers. Crawlers designed with quick hydraulic line disconnect feature for individual removal as a unit from axles. Crawler belt tension maintained by shims between track adjusting bearing block and frame. 13 lower rollers in each frame, with double rolling surfaces, 11.5" (279 mm) dia.

CRAWLER DRIVE: Independent hydraulic propel drive built into each crawler side frame. Each drive consists of a piston type motor propelling a driving sprocket (wheel) through a planetary gear box. Self-contained system eliminates gear and chain drives in carbody and shaft extensions when axles are extended.

CRAWLER BRAKES: Spring set, hydraulically released parking brakes are built into each propel drive.

STEERING MECHANISM: The hydraulic propel system provides both differential speed steering (driving one track faster than the other) and counter-rotating steering (driving each track in opposite direction) with single joystick control.



TRACK: Tractor type crawler belt with bolted shoes.

CRAWLER SHOES: Total number 118 both sides. 36" (914 mm) flat forged (std.). 42" (1067 mm) flat forged optional extra.

OPTIONAL EQUIPMENT: Load moment device, load indicating device, anti-two block device, spreader control, magnet and controls, two-speed hoist, hydraulic boom foot pin assembly, automatic brakes, dead-man controls, light and generating package (either automotive or 110V-AC), dragline bucket, and clamshell bucket.

WEIGHTS:

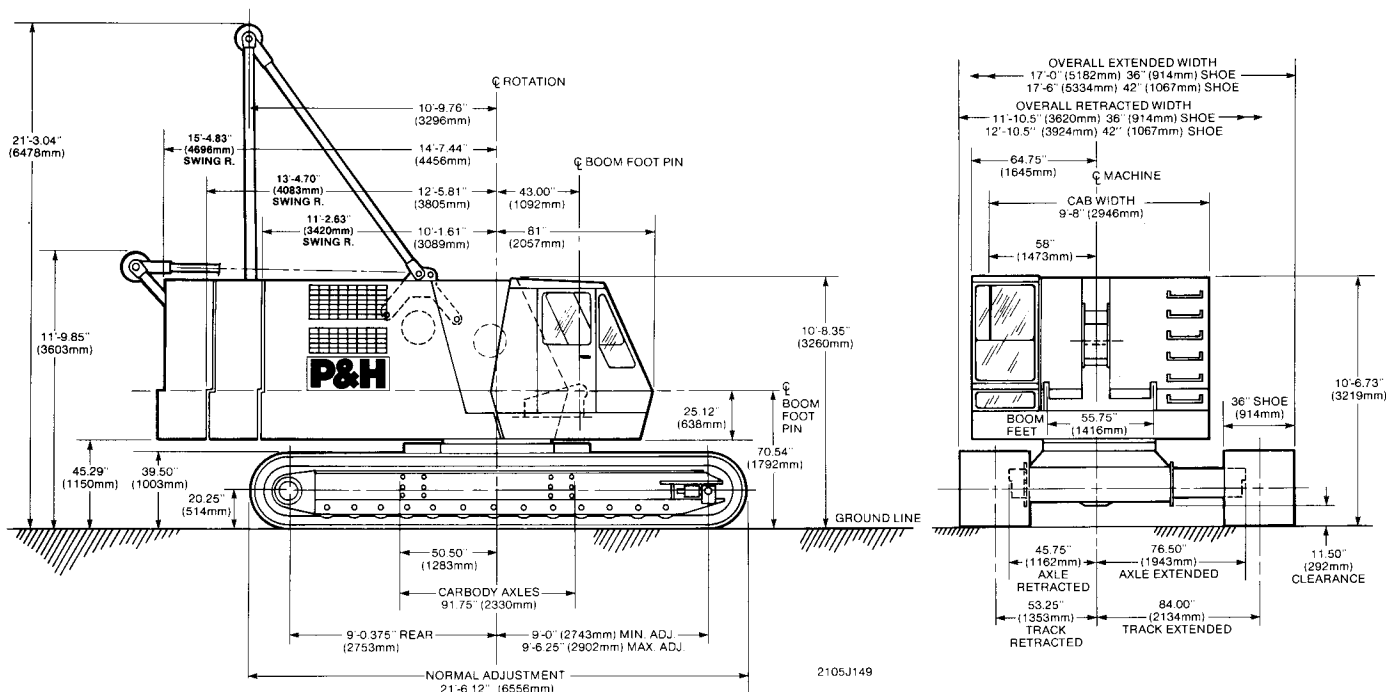
Basic machine, with 50 gallons fuel,	
two counterweights, 36" shoes, 50	
foot boom, 3 part hoist rope, 30 ton	
hook block	172,786 lbs. (78,376 Kg)
Basic machine with one counterweight	142,286 lbs. (64,541 Kg)
Upper structure (basic machine) with 50	
gallons fuel, 3 part hoist rope, gantry,	
backstops, cab but less counterweight	39,389 lbs. (17,867 Kg)
Lower machine with crawlers, 36" shoes	65,286 lbs. (29,614 Kg)
Carbody with Swing Circle*, cylinders,	
axles	19,010 lbs. (8,623 Kg)
Crawler side frame with 36" shoes	23,813 lbs. (10,802 Kg)
Crawler side frame with 42" shoes	28,238 lbs. (12,809 Kg)
Counterweight (each)	30,500 lbs. (13,835 Kg)
Boom Weights:	
Boom Base with pins	2,700 lbs. (1,225 Kg)
Boom tip with pendants, pins	3,161 lbs. (1,434 Kg)
10 foot insert with pendants, pins	.960 lbs. (435 Kg)
20 foot insert with pendants, pins	1,480 lbs. (671 Kg)
30 foot insert with pendants, pins	2,010 lbs. (912 Kg)
50 foot insert with pendants, pins	3,000 lbs. (1,361 Kg)
Jib weights:	
Jib Base with pins	.330 lbs. (150 Kg)
Jib Tip with pins	.404 lbs. (183 Kg)
Jib Strut with pins	.415 lbs. (188 Kg)
10 foot insert with pins	.178 lbs. (81 Kg)
20 foot insert with pins	.320 lbs. (145 Kg)

AVERAGE GROUND BEARING PRESSURE

BASIC MACHINE:	PSI	Kg/cm ²
with 2 counterweights, 36" shoes	10.24	0.72
42" shoes	9.23	0.65
with 1 counterweight, 36" shoes	8.43	0.59
42" shoes	7.68	0.54

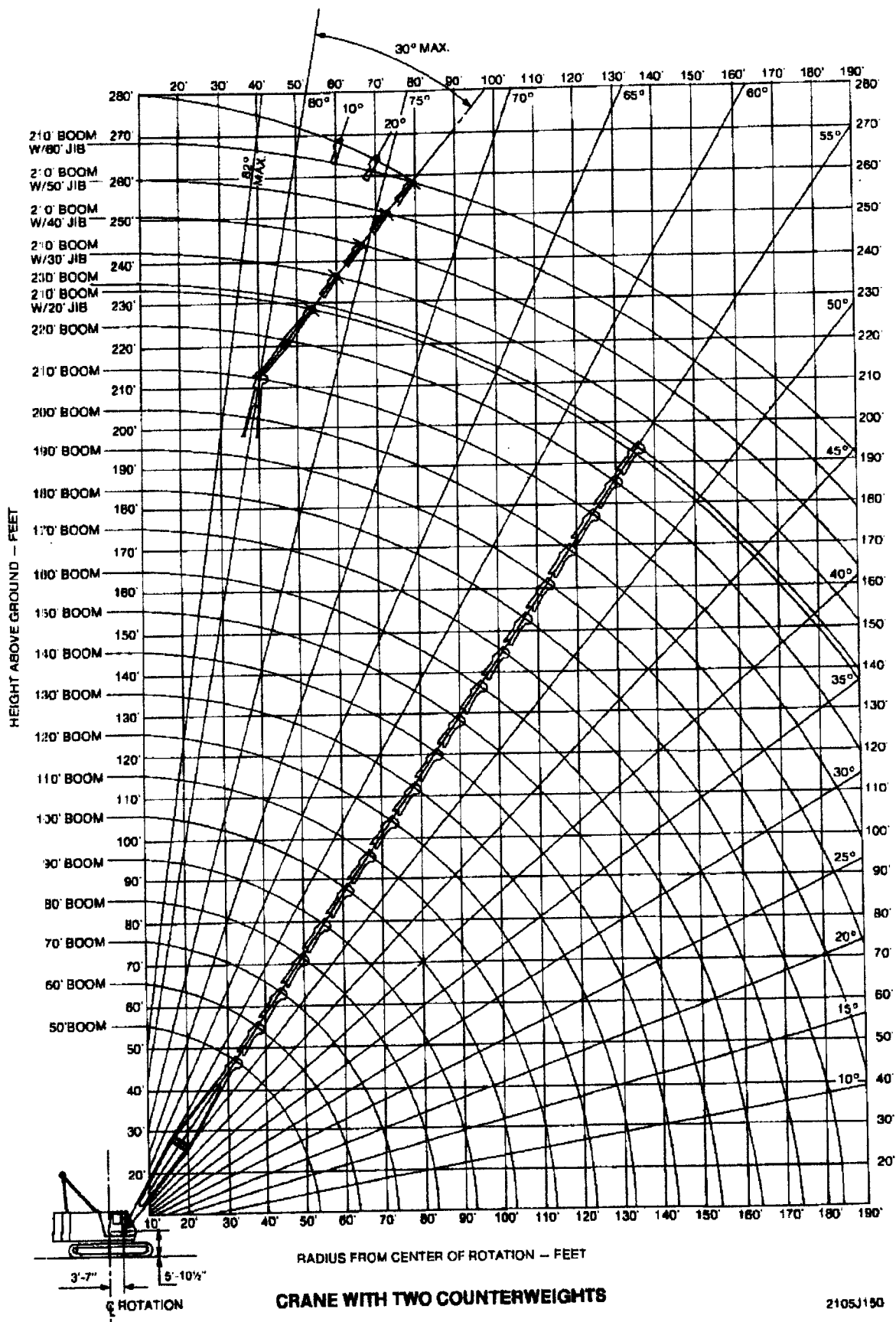
TRAVEL SPEED: 1.09 mph (1.75 km/h) approximate.

Maximum grade recommended for travel is 20%.





working ranges



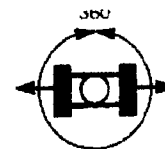


two counterweights

RATINGS

LIFT CRANE SERVICE

62" x 62" boom



crawlers fully extended

75% stability					rated boom loads in pounds														
Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev (ft)	360° Rated Load (lbs)	Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev (ft)	360° Rated Load (lbs)	Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev (ft)	360° Rated Load (lbs)					
50	11	82	56.9	200,000	110	20	82	116.2	100,000	150	30	80	155.1	60,000					
	12	81	56.7	200,000		25	79	115.4	79,900		35	78	154.2	48,600					
	15	78	56.2	160,000		30	77	114.4	61,300		40	76	153.1	40,500					
	20	72	54.9	113,900		35	74	113.1	49,400		45	74	151.8	34,300					
	25	66	53.0	80,800		40	71	111.5	41,200		50	72	150.3	29,700					
	30	59	50.5	62,300		45	68	109.7	35,100		60	68	146.8	23,000					
	35	52	47.0	50,400		50	65	107.6	30,500		70	64	142.8	18,900					
	40	44	42.5	42,300		60	60	102.4	23,800		80	60	137.5	15,500					
	45	35	36.3	36,200		70	54	95.4	19,700		90	56	131.2	13,000					
	50	23	26.8	31,600		80	47	88.0	16,300		100	51	123.7	11,000					
60	15	80	66.4	159,500	120	20	80	125.6	79,800	160	30	81	165.3	60,000					
	20	75	65.3	113,800		30	78	124.6	61,200		35	79	164.4	48,400					
	25	70	62.8	80,700		35	75	123.4	49,300		40	77	163.4	40,200					
	30	65	61.8	62,200		40	73	122.0	41,100		45	75	162.2	34,100					
	35	59	59.1	50,300		45	70	120.4	35,000		50	73	160.8	29,400					
	40	53	55.8	42,100		50	68	118.5	30,300		60	70	157.5	22,700					
	45	47	51.6	36,000		60	62	113.9	23,700		70	66	153.8	18,600					
	50	40	46.3	31,400		70	57	108.5	19,500		80	62	148.9	15,300					
70	60	21	28.6	24,700	130	25	81	135.7	79,600	170	30	81	175.4	60,000					
	15	81	76.5	159,200		30	79	134.8	61,000		35	80	174.6	48,200					
	20	77	75.6	113,700		35	76	133.7	49,000		40	78	173.6	40,100					
	25	73	74.3	80,600		40	74	132.5	40,900		45	76	172.5	33,900					
	30	68	72.6	62,100		45	72	130.9	34,800		50	74	171.2	29,200					
	35	64	70.5	50,200		50	69	129.2	30,100		55	71	168.1	22,500					
	40	59	67.8	42,000		60	65	125.0	23,400		60	68	164.6	18,500					
	45	54	64.5	35,900		70	60	120.2	19,300		70	64	160.2	15,100					
80	50	49	60.6	31,300	140	25	81	145.8	79,400	80	60	154.8	12,500						
	60	37	49.7	24,600		30	79	145.0	60,800	90	56	148.6	10,500						
	70	21	32.5	20,500		35	76	144.0	48,800	100	52	141.3	8,900						
	15	79	85.8	113,600		40	74	142.8	40,700	110	47	132.8	7,500						
	25	75	84.7	80,500		45	73	141.4	34,600	120	43	122.7	6,400						
	30	71	83.2	61,900		50	71	139.8	29,900	130	37	110.7	5,500						
	35	67	81.4	50,000		60	67	136.0	23,200	140	31	95.9	4,700						
	40	64	79.1	41,900		70	62	131.6	19,100	150	24	76.6	4,000						
90	45	59	76.4	35,800	150	25	82	145.8	79,400	160	18	46.4	3,400						
	55	55	73.2	31,100		30	79	145.0	60,800	32R549 A									
	60	46	64.9	24,500		35	77	144.0	48,800										
	70	35	54.0	20,300		40	75	142.8	40,700										
	80	20	34.3	16,900		45	73	141.4	34,600										
	15	80	96.0	113,500		50	71	139.8	29,900										
	25	77	95.0	80,300		60	67	136.0	23,200										
	30	73	93.7	61,700		70	62	131.6	19,100										
100	35	70	92.1	49,800	160	25	82	145.8	79,400										
	40	67	90.1	41,600		30	79	145.0	60,800										
	45	63	87.8	35,500		35	77	144.0	48,800										
	50	59	85.1	30,900		40	75	142.8	40,700										
	60	52	78.2	24,200		45	73	141.4	34,600										
	70	44	69.8	20,100		50	71	139.8	29,900										
	80	33	57.0	16,700		60	67	136.0	23,200										
	90	18	35.9	14,200		70	62	131.6	19,100										
	15	81	106.1	100,000		80	58	125.8	15,700										
	25	78	105.2	80,100		90	53	118.9	13,200										
	30	75	104.1	61,600		100	47	110.4	11,200										
	35	72	102.6	49,600		110	41	100.1	9,500										
	40	69	100.9	41,500		120	35	87.2	8,200										
	45	66	98.9	35,400		130	27	70.0	7,100										
	50	63	96.5	30,700		140	15	42.8	6,200										
	60	56	90.6	24,000															

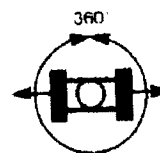


two counterweights

RATINGS LIFT CRANE SERVICE

62" x 62" boom

crawlers fully extended



75% stability					rated boom loads in pounds				
Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	360° Rated Load (lbs)	Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	360° Rated Load (lbs)
180	30	82	185.5	52,700	200	35	81	205.0	37,900
	35	80	184.7	47,900		40	80	204.1	35,900
	40	79	183.8	39,900		45	78	203.2	33,200
	45	77	182.7	33,700		50	77	202.1	28,500
	50	75	181.5	29,000		60	74	199.8	21,400
	60	72	178.6	22,300		70	71	196.7	17,800
	70	69	175.4	18,300		80	68	193.0	14,400
	80	65	171.2	14,900		90	65	188.6	11,800
	90	62	166.3	12,300		100	62	183.6	9,800
	100	58	160.5	10,300		110	58	177.8	8,200
	110	54	153.8	8,800		120	55	171.3	6,800
	120	50	146.1	7,300		130	51	163.7	5,700
	130	46	137.1	6,200		140	48	155.2	4,800
	140	41	126.6	5,300		150	44	145.3	4,000
	150	36	114.0	4,400		160	39	133.8	3,300
	160	30	98.7	3,800		170	34	120.3	2,700
	170	23	78.7	3,200		180	29	103.9	2,200
	180	13	47.5	2,800		190	22	82.6	1,700
190	35	81	194.8	40,000	210	35	82	215.1	33,200
	40	79	194.0	39,600		40	80	214.3	31,700
	45	78	193.0	33,500		45	79	213.4	30,400
	50	76	191.8	28,800		50	77	212.4	28,300
	60	73	189.1	22,000		60	75	210.1	21,400
	70	70	186.1	18,000		70	72	207.2	17,600
	80	67	182.1	14,600		80	69	203.7	14,200
	90	63	177.5	12,100		90	66	199.6	11,600
	100	60	172.2	10,000		100	63	194.9	9,600
	110	56	166.0	8,400		110	60	189.5	8,000
	120	53	158.9	7,100		120	57	183.3	6,600
	130	49	150.7	6,000		130	54	176.4	5,500
	140	45	141.3	5,000		140	50	168.5	4,600
	150	40	130.3	4,200		150	46	159.5	3,800
	160	35	117.2	3,500		160	42	149.2	3,100
	170	30	101.3	2,900		170	38	137.3	2,500
	180	23	80.7	2,400		180	33	123.4	1,900
	190	13	48.6	1,900					

DEDUCTION FROM RATED BOOM LOADS WHEN LIFTING OVER BOOM POINT WITH JIB ATTACHED

JIB LENGTH	20 FT.	30 FT.	40 FT.	50 FT.	60 FT.
DEDUCT — LBS.	2100	2300	2800	3300	3800

WARNING

Do not attempt to lift more than **rated load** at **load radius** shown, or lift where no radius or load is listed, as crane may tip or collapse.

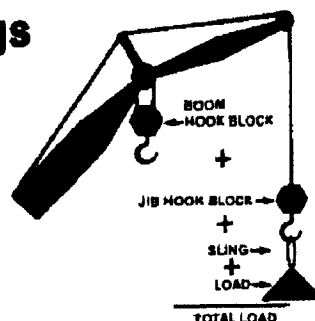
Do not attempt to lift more than rated loads shown in **shaded areas** — a machine failure may occur.



Jib ratings

Jib ratings

The total load that can be lifted over a jib is limited by either the rated jib loads or by the rated boom loads on which the jib is mounted.





Follow these steps to determine the total load that can be lifted over the jib:

- Step 1. **Measure the jib load radius.** The load radius must not be longer than the longest radius in the rated boom load chart for the length of boom on which the jib is mounted.
- Step 2. **Determine the load rating of the boom** at the jib load radius by using the rated boom load chart for the counterweight, crawler extension, work area and length of boom (without jib) being used.
- Step 3. **Determine jib rating** for the length and offset of the jib from the rated jib load chart.
- Step 4. **The total load that can be lifted is the lower of the two ratings determined in Steps 2 and 3.**

WARNINGS

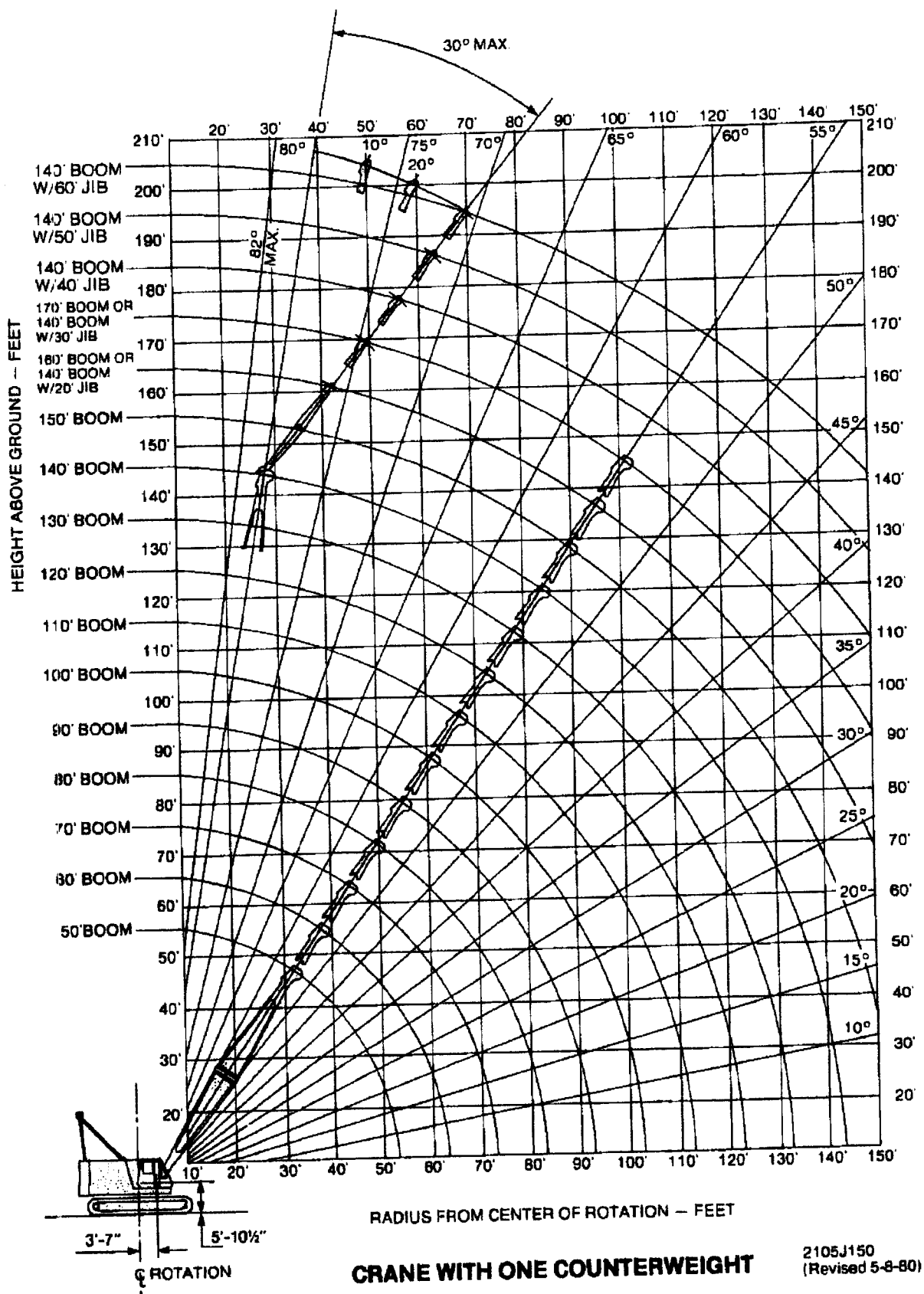
- Do not attempt to lift more with the jib (at any radius) than the rated load for the boom at that radius, as crane may tip or collapse.
- Do not attempt to lift more than rated jib loads shown in shaded areas — jib may collapse before crane tips.
- When lifting over jib point with hook block suspended from boom point, include the weight of the boom hook block as a part of the total load.

Jib Ratings For LIFT CRANE SERVICE					
rated jib loads in pounds					
Offset Angle of Jib to Boom Under Full Load	20 Foot Jib	30 foot Jib	40 Foot Jib	50 Foot Jib	60 Foot Jib
10°	22,000*	20,000	16,000	12,000	8,000
20°	16,000	14,500	12,000	9,500	7,000
30°	13,000	11,000	8,500	7,000	6,000
Standard Wire Rope — 7/8 inch dia. Type 25 * Use 2 part of line for loads above 20,000 lbs.					
Optional Wire Rope — 7/8 inch dia. Type 11 (Non-Rotating)  Use only 1 part of line. Loads not to exceed 11,800 lbs. Use of swivel is not approved with this rope.					

Jib Ratings For CONCRETE BUCKET SERVICE					
rated jib loads in pounds					
Offset Angle of Jib to Boom Under Full Load	20 Foot Jib	30 Foot Jib	40 Foot Jib	50 Foot Jib	60 Foot Jib
10°	16,000	16,000	12,800	8,600	5,400
20°	12,800	11,600	9,600	7,600	5,800
30°	10,400	8,800	6,800	5,600	4,800
Standard Wire Rope — 7/8 inch dia. Type 25 Use 1 part of line.					
Optional Wire Rope — 7/8 inch dia. Type 11 (Non-Rotating)  Use only 1 part of line. Loads not to exceed 11,800 lbs. Use of swivel is not approved with this rope.					



working ranges

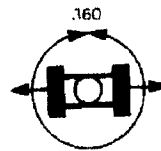




one counterweight

**RATINGS
LIFT CRANE SERVICE****62" x 62" boom**

crawlers fully extended



75% stability					rated boom loads in pounds									
Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	360° Rated Load (lbs)	Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	360° Rated Load (lbs)	Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	360° Rated Load (lbs)
50	11	82	56.9	200,000	110	20	82	116.2	75,900	150	30	80	155.1	40,400
	12	81	56.7	184,400		25	79	115.4	53,800		35	78	154.2	32,000
	15	78	56.2	130,000		30	77	114.4	41,100		40	76	153.1	26,300
	20	72	54.9	77,400		35	74	113.1	32,800		45	74	151.8	22,000
	25	66	53.04	54,600		40	71	111.5	27,000		50	73	150.6	19,500
	30	59	50.5	41,900		45	68	109.7	22,800		60	69	147.1	14,700
	35	52	47.0	33,700		50	66	107.9	20,200		70	64	142.8	11,400
	40	44	42.5	28,100		60	60	102.9	15,400		80	60	137.5	9,000
	45	35	36.3	23,900		70	54	96.4	12,200		90	56	131.2	7,300
	50	25	28.7	21,200		80	47	88.0	9,800		100	51	123.7	5,900
60	15	80	66.4	130,100	120	25	80	125.6	53,700	160	30	81	165.3	40,200
	20	75	65.3	77,400		30	78	124.6	40,900		35	79	164.4	31,800
	25	70	63.8	54,500		35	75	123.4	32,700		40	77	163.4	26,000
	30	65	61.8	41,800		40	73	122.0	26,900		45	76	162.4	21,800
	35	59	59.1	33,600		45	70	120.4	22,700		50	74	161.0	19,200
	40	53	55.8	27,900		50	68	118.8	20,100		60	70	157.8	14,400
	45	47	51.6	23,700		60	63	114.3	15,300		70	66	153.8	11,200
	50	41	47.2	21,000		70	57	108.5	12,100		80	62	148.9	8,800
70	15	81	76.5	130,100	130	25	81	135.7	53,500	170	30	81	175.4	40,000
	20	77	75.6	77,400		30	79	134.8	40,800		35	80	174.6	31,700
	25	73	74.3	54,500		35	76	133.7	32,500		40	78	173.6	25,900
	30	68	72.6	41,700		40	74	132.5	26,700		45	76	172.7	21,400
	35	64	70.5	33,500		45	72	130.9	22,500		50	75	171.4	19,100
	40	59	67.8	27,800		50	70	129.5	19,900		60	71	168.4	14,300
	45	54	64.5	23,600		60	65	125.4	15,000		70	68	164.6	11,000
	50	50	61.2	21,000		70	60	120.2	11,800		80	64	160.2	8,600
80	20	79	85.8	77,300	140	25	82	145.8	53,400	140	30	81	175.4	40,000
	25	75	84.7	54,400		30	79	145.0	40,600		35	80	174.6	31,700
	30	71	83.2	41,600		35	77	144.0	32,300		40	78	173.6	25,900
	35	67	81.4	33,400		40	75	142.8	26,500		45	76	172.7	21,400
	40	64	79.1	27,700		45	73	141.4	22,300		50	75	171.4	19,100
	45	59	76.4	23,500		50	71	140.1	19,700		60	71	168.4	14,300
	50	56	73.8	20,800		60	67	136.3	14,900		70	68	164.6	11,000
	60	47	65.7	16,100		70	62	131.6	11,600		80	64	160.2	8,600
90	20	80	96.0	77,200	140	70	58	125.8	9,300	140	90	60	154.8	6,800
	25	77	95.0	54,200		80	55	113.8	9,400		100	56	148.6	5,400
	30	73	93.7	41,400		90	49	106.0	7,600		110	52	141.3	4,300
	35	70	92.1	33,200		100	43	96.3	6,200		120	47	132.8	3,400
	40	67	90.1	27,400		110	36	84.0	5,100		130	43	122.7	2,600
	45	63	87.8	23,200		120	28	67.6	4,200		140	37	110.7	2,000
	50	60	85.6	20,600		130	15	41.5	3,400					
	60	52	78.9	15,800										
100	20	81	106.1	77,000	140	25	82	145.8	53,400	140	30	81	175.4	40,000
	25	78	105.2	54,000		30	79	145.0	40,600		35	80	174.6	31,700
	30	75	104.1	41,200		35	77	144.0	32,300		40	78	173.6	25,900
	35	72	102.6	33,000		40	75	142.8	26,500		45	76	172.7	21,400
	40	69	100.9	27,300		45	73	141.4	22,300		50	75	171.4	19,100
	45	66	98.9	23,100		50	71	140.1	19,700		60	71	168.4	14,300
	50	63	96.9	20,400		60	67	136.3	14,900		70	68	164.6	11,000
	60	57	91.1	15,700		70	62	131.6	11,600		80	64	160.2	8,600
	70	49	83.6	12,400		80	58	125.8	9,300		90	60	154.8	6,800
	80	41	73.6	10,100		90	53	118.9	7,500		100	56	148.6	5,400
	90	32	59.9	8,300		100	47	110.4	6,100		110	52	141.3	4,300
	100	17	37.4	6,900		110	41	100.1	5,000		120	47	132.8	3,400

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DEDUCTION FROM RATED BOOM LOADS WHEN LIFTING OVER BOOM POINT WITH JIB ATTACHED

JIB LENGTH	20 FT.	30 FT.	40 FT.	50 FT.	60 FT.
2000	2100	2300	2800	3300	3800



one counterweight

RATINGS

LIFT CRANE SERVICE

62" x 62" boom

crawlers retracted



75% stability

rated boom loads in pounds

Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	Rated Load (lbs)		Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	Rated Load (lbs)		Boom Length (ft)	Load Radius (ft)	Boom Angle Δ°	Boom Point Elev. (ft)	Rated Load (lbs)	
				Over Side	Over End					Over Side	Over End					Over Side	Over End
50	11	82	56.9	122,000	200,000	110	20	82	118.2	47,100	78,200	150	30	80	155.1	25,900	41,100
	12	81	56.7	104,800	184,500		25	79	115.4	34,500	54,800		35	79	154.4	21,500	32,700
	15	78	56.2	73,200	132,100		30	77	114.4	26,700	41,800		40	77	153.3	17,700	26,800
	20	72	54.9	48,100	78,800		35	74	113.1	21,600	33,400		45	75	152.0	14,800	22,500
	25	66	53.0	35,500	55,800		40	71	111.5	18,500	27,800		50	73	150.6	12,500	19,900
	30	59	50.5	27,800	42,700		45	68	109.7	15,500	23,300		60	69	147.1	9,200	15,000
	35	52	47.0	22,700	34,400		50	66	107.9	13,300	20,600		70	64	142.8	6,900	11,700
	40	44	42.5	19,800	28,600		60	60	102.9	10,000	15,800		80	60	137.5	5,200	9,300
	45	35	36.3	16,700	24,400		70	54	96.4	7,700	12,500		90	56	131.2	4,000	7,500
	50	25	28.7	14,400	21,600		80	47	88.0	6,100	10,100		100	51	123.7	3,000	6,100
60	15	80	66.4	73,100	132,200	120	25	80	125.6	34,300	54,700	160	30	81	165.3	25,700	40,900
	20	75	65.3	48,000	78,800		30	78	124.6	26,600	41,700		35	79	164.5	21,400	32,500
	25	70	63.8	35,300	55,500		35	76	123.6	21,500	33,300		40	77	163.5	17,400	26,800
	30	65	61.8	27,600	42,600		40	73	122.3	18,400	27,500		45	76	162.4	14,500	22,300
	35	59	59.1	22,500	34,200		45	71	120.7	15,400	23,200		50	74	161.0	12,200	19,700
	40	53	55.8	19,400	28,400		50	68	118.8	13,100	20,500		60	70	157.8	8,900	14,800
	45	47	51.6	16,500	24,200		60	63	114.3	9,800	15,600		70	66	153.8	6,600	11,400
	50	41	47.2	14,200	21,400		70	57	108.5	7,600	12,300		80	62	148.9	5,000	9,000
	60	23	30.7	10,900	16,600		80	51	101.3	5,900	9,900		90	58	143.2	3,700	7,200
							90	45	92.3	4,800	8,100		100	54	138.4	2,700	5,800
70	15	81	76.5	73,000	132,200	130	25	81	135.7	34,100	54,500	170	30	81	175.4	25,500	40,800
	20	77	75.6	47,900	78,700		30	79	134.8	26,400	41,500		35	80	174.7	21,200	32,300
	25	73	74.3	35,300	55,500		35	77	133.9	21,500	33,100		40	78	173.8	17,300	26,400
	30	68	72.6	27,500	42,500		40	74	132.7	18,100	27,300		45	76	172.7	14,300	22,100
	35	64	70.5	22,400	34,100		45	72	131.2	15,200	23,000		50	75	171.4	12,100	19,500
	40	59	67.8	19,300	28,300		50	70	129.5	13,000	22,900		60	71	168.4	8,700	14,600
	45	54	64.5	16,400	24,100		60	65	125.4	9,700	15,400		70	68	164.6	6,400	11,300
	50	50	61.2	14,100	21,400		70	60	120.2	7,400	12,100		80	64	160.2	4,800	8,900
	60	38	50.7	10,800	16,500		80	55	113.8	5,700	9,600		90	60	154.8	3,500	7,100
	70	21	32.5	8,600	13,300		90	49	106.0	4,500	7,800		100	56	148.6	2,500	5,800
80	20	79	85.8	47,800	78,800	140	25	82	145.8	33,900	54,300		110	52	141.3	1,700	4,500
	25	75	84.7	35,100	55,300		30	79	145.0	28,100	41,300		120	47	132.8	—	3,600
	30	71	83.2	27,400	42,400		35	78	144.2	21,500	32,900		130	43	122.7	—	2,800
	35	67	81.4	22,200	34,000		40	76	143.0	17,900	27,000		140	37	110.7	—	2,100
	40	64	79.1	19,100	28,200		45	73	141.6	15,000	22,700		150	21	95.9	—	1,600
	45	59	76.4	16,200	23,900		50	71	140.1	12,700	20,100						
	50	56	73.8	13,900	21,200		60	67	136.3	9,400	15,200						
	60	47	65.7	10,600	16,400		70	62	131.6	7,100	11,900						
	70	35	54.0	8,300	13,100		80	58	125.8	5,500	9,500						
	80	20	34.3	6,700	10,700		90	53	118.9	4,200	7,700						
90	20	80	96.0	47,600	78,500		100	47	110.4	3,200	6,300						
	25	77	95.0	34,900	55,200		110	41	100.1	2,400	5,200						
	30	73	93.7	27,100	42,200		120	35	87.2	1,700	4,200						
	35	70	92.1	22,000	33,800		130	27	70.0	—	3,500						
	40	67	90.1	18,900	28,000		140	15	42.8	—	2,800						
	45	63	87.8	16,000	23,700												
	50	60	85.6	13,700	21,000												
	60	52	78.9	10,400	16,200												
	70	44	69.8	8,100	12,900												
	80	33	57.0	6,500	10,500												
100	20	81	106.1	47,400	78,300												
	25	78	105.2	34,700	55,000												
	30	75	104.1	27,000	42,000												
	35	72	102.6	21,800	33,600												
	40	69	100.9	18,700	27,800												
	45	66	98.9	15,900	23,500												
	50	63	96.9	13,500	20,900												
	60	57	91.1	10,300	16,000												
	70	49	83.6	8,000	12,700												
	80	41	73.6	6,300	10,300												
100	90	32	59.9	5,000	8,500												
	100	17	37.4	4,000	7,100												

32R548-A

DEDUCTION FROM RATED BOOM LOADS WHEN LIFTING OVER BOOM POINT WITH JIB ATTACHED

JIB LENGTH	20 FT.	30 FT.	40 FT.	50 FT.	60 FT.
DEDUCT — LBS	2100	2300	2800	3300	3800

WARNING



Do not attempt to lift more than rated load at load radius shown, or lift where no radius or load is listed, as crane may tip or collapse.



Do not attempt to lift more than rated loads shown in shaded areas — a machine failure may occur.

information

See Operators Manual For Boom Erection Procedure

BOOM ERECTION

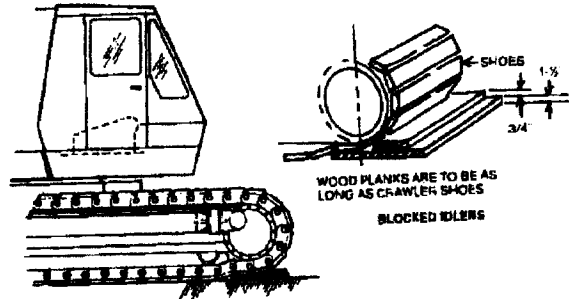
(MAXIMUM LENGTHS THAT CAN BE RAISED)

(MAXIMUM LENGTHS THAT CAN BE USED)				
	BOOM ONLY		BOOM AND JIB	
BOOM POSITION	Two Counterweights	One Counterweight	Two Counterweights	One Counterweight
Over front end with idlers blocked (shown below)	230'	170'	210' boom plus 20' to 60' jib	140' boom plus 20' to 60' jib
Over end or Over side with crawlers extended	200'	170'	180' boom plus 20' to 60' jib	130' boom plus 20' to 60' jib
Over side with crawlers retracted	WARNING  Do not swing over side with two counterweights and crawlers retracted - Crane may tip backwards	140'	WARNING  Do not swing over side with two counterweights and crawlers retracted - Crane may tip backwards	100' boom plus 20' to 60' jib


WARNINGS

Do not attempt to erect more than the maximum boom (or maximum boom with job combination) because tipping or structural damage may occur.

Front idlers must be blocked as shown. When idlers are blocked, erection and lowering must be done into the wind (a strong backwind may cause crane to tip.)



BOOM MAKE-UP ARRANGEMENT

BOOM LENGTH (FEET)	BOOM INSERT ARRANGEMENT		BOOM ROLLERS		JIB STRUT PENDANT CONNECTION TO BOOM
	Base (25') = B Tip (25') = T		No. Required	Distance From Boom Point (Feet)	Distance From Boom Point (Feet)
	RECOMMENDED	ALTERNATE			
50	B + T	—	0	—	25
60	B + 10' + T	—	0	—	35
70	B + 20' + T	—	0	—	45
80	B + 30' + T	B + 10' + 20' + T	0	—	55
90	B + 10' + 30' + T	—	0	—	65
100	B + 50' + T	B + 20' + 30' + T	0	—	75
110	B + 10' + 50' + T	B + 10' + 20' + 30' + T	0	—	76
120	B + 20' + 50' + T	B + 20' + 30' + T	0	—	76
130	B + 30' + 50' + T	B + 10' + 20' + 20' + 30' + T	0	—	76
140	B + 10' + 30' + 50' + T	—	0	—	76
150	B + 50' + 50' + T	B + 20' + 30' + 50' + T	1	124	76
160	B + 10' + 50' + 50' + T	B + 10' + 20' + 30' + 50' + T	1	124	76
170	B + 20' + 50' + 50' + T	B + 10' + 30' + 30' + 50' + T	1	124	76
180	B + 30' + 50' + 50' + T	B + 20' + 30' + 30' + 50' + T	1	124	76
190	B + 10' + 30' + 50' + 50' + T	B + 10' + 20' + 30' + 30' + 50' + T	1	124	76
200	B + 50' + 50' + 50' + T	B + 20' + 30' + 50' + 50' + T	1	124	76
210	B + 10' + 50' + 50' + 50' + T	B + 30' + 30' + 50' + 50' + T	2	124 & 174	 Do Not Attach Jibs
220	B + 20' + 50' + 50' + 50' + T	B + 10' + 30' + 30' + 50' + 50' + T	2	124 & 174	
230	B + 30' + 50' + 50' + 50' + T	B + 20' + 30' + 30' + 50' + 50' + T	2	124 & 174	

WARNINGS

- Boom inserts must be arranged as indicated above or crane may tip or collapse.
- Arrange boom insert pendant lengths to match insert lengths. Tip pendants are 24 feet 1 inch long. For pendant information, refer to Parts Book.
- Mid point suspension pendant is required for 210, 220 and 230 foot boom. Refer to Parts Book.
- Jibs are not permitted on 220 and 230 foot booms.



Information

JIB MAKE-UP ARRANGEMENT CHART

JIB LENGTH (FEET)	JIB INSERT ARRANGEMENT
20	Base (10') + Tip (10')
30	Base + 10' + Tip
40	Base + 20' + Tip
50	Base + 10' + 20' + Tip
60	Base + 20' + 20' + Tip

WARNINGS

- Jib inserts must be arranged as indicated above or crane may tip or collapse.
- Jib strut must divide the angle between jib and boom into two equal parts.

WIRE ROPE DATA

MAIN HOIST ROPE

7/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core) ● 79,600 pound minimum breaking strength					
PARTS OF LINE	1	2	3	4	5
Total Maximum Lifted Load (Lbs.)	20,000	40,000	60,000	80,000	100,000

PARTS OF LINE	6	7	8	9	10
Total Maximum Lifted Load (Lbs.)	120,000	140,000	160,000	180,000	200,000

JIB HOIST ROPE — STANDARD

7/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel independent wire rope core) ● 79,600 pound minimum breaking strength		
PARTS OF LINE	1	2
Total Maximum Lifted Load (Lbs.)	20,000	22,000

JIB HOIST ROPE — OPTIONAL (NON-ROTATING)

7/8 inch diameter P&H type 11 (18 x 7 Non-rotating preformed improved plow steel with fibre core) ● 58,000 pound minimum breaking strength ● use of swivel is not approved with this rope ● not approved for more than single part of line	
PARTS OF LINE	1
Total Maximum Lifted Load (Lbs.)	11,800

WARNING

Do not attempt to lift more than rated loads shown in shaded areas — a machine failure may occur.

BOOM HOIST ROPE

3/4 inch diameter type 27D (6 x 26 Warrington Seale preformed extra improved plow steel right alternate lay with independent wire rope core) ● 58,800 pound minimum breaking strength ● Boom hoist reaving is 10 parts reeved as shown in the Operators Manual
--

BOOM PENDANTS

1-3/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core) ● 182,000 pound minimum breaking strength. ● Must be replaced in matched pairs. Refer to Parts Book.

MIDPOINT SUSPENSION PENDANTS

3/4 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core) ● 58,800 pound minimum breaking strength ● Matched sets, 83 feet 4 inches long between centerlines of sockets. Refer to Parts Book.
--



Information

JIB PENDANTS

- 3/4 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core)
- 58,800 pound minimum breaking strength
 - Various lengths depending on boom and jib lengths

WIRE ROPE LENGTH CHART

(For LIT Crane Service)

USE	BOOM LENGTH	ROPE		ROPE LENGTH (FEET)									
		P&H TYPE	DIA. IN.	PARTS OF LINE									
				1	2	3	4	5	6	7	8	9	10
BOOM HOIST	ALL BOOM LENGTHS	27D	3/4	465' (10 PART REEVING)									
HOIST LINE (FRONT DRUM)	50	25	7/8	125	180	235	290	345	400	455	510	565	620
	60	25	7/8	145	210	275	340	405	470	535	600		
	70	25	7/8	165	240	315	390	455	540	615	680		
	80	25	7/8	185	270	355	440	525	610				
	90	25	7/8	205	300	395	490	585	680				
	100	25	7/8	225	330	435	540	645					
	110	25	7/8	245	360	475	590	705					
	120	25	7/8	265	390	515	640						
	130	25	7/8	285	420	555	690						
	140	25	7/8	305	450	595	740						
	150	25	7/8	325	480	635							
	160	25	7/8	345	510	675							
	170	25	7/8	365	540	715							
	180	25	7/8	385	570	755							
	190	25	7/8	405	600								
	200	25	7/8	425	630								
	210	25	7/8	445	660								
	220	25	7/8	465	690								
	230	25	7/8	485	720								

Extra Rope Length is Required for Operating Below Ground Level

USE	BOOM LENGTH	ROPE		ROPE LENGTH (FEET)									
		P&H TYPE	DIA. IN.	PARTS OF LINE									
				20' JIB		30' JIB		40' JIB		50' JIB		60' JIB	
JIB HOIST LINE (REAR DRUM)	50	25	7/8	165	240	185		205		225		245	
	60	25	7/8	185	270	205		225		245		265	
	70	25	7/8	205	300	225		245		265		280	
	80	25	7/8	225	330	245		265		280		300	
	90	25	7/8	245	360	265		280		300		320	
	100	25	7/8	265	390	280		300		320		340	
	110	25	7/8	285	420	300		320		340		360	
	120	25	7/8	305	445	320		340		360		380	
	130	25	7/8	320	475	340		360		380		400	
	140	25	7/8	340	505	360		380		400		420	
	150	25	7/8	360	535	380		400		420		440	
	160	25	7/8	380	565	400		420		440		460	
	170	25	7/8	400	595	420		440		460		480	
	180	25	7/8	420	625	440		460		480		500	
	190	25	7/8	440	655	460		480		500		520	
	200	25	7/8	460	685	480		500		520		540	
	210	25	7/8	480	715	500		520		540		560	
PENDANT JIB TO STRUT	50'-210'	25	3/4	50'		70'		90'		110'		130'	
PENDANT STRUT TO BOOM	50'	25	3/4			65'							
	60'	25	3/4			85'							
	70'	25	3/4			105'							
	80'	25	3/4			125'							
	90'	25	3/4			145'							
	100'-210'	25	3/4			165'							

2185N218

HOIST TACKLE DATA

HOOK BLOCKS			Weight (Pounds)	
Capacities		Number of Sheaves	Johnson Blocks	Miller Blocks
Tons	Pounds			
100	200,000	5	1887	1600
70	140,000	3	1288	1450
30	60,000	1	583	765
9.5	19,000	Ball Hook	451	—



one counterweight

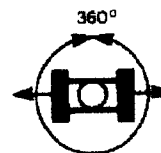
RATINGS

CLAMSHELL SERVICE

(Clamshell, Magnet, Grapple)

62" x 62" boom

crawlers fully extended



67.5% Stability

rated loads in pounds				
Boom Length Ft.	Load Radius Ft.	Boom Angle Δ°	Dual Brakes	Single Brakes
50	25	67°	17,000	13,500
	30	60°	17,000	13,500
	35	53°	17,000	13,500
	40	45°	17,000	13,500
	45	36°	17,000	13,500
60	30	65°	17,000	13,500
	35	60°	17,000	13,500
	40	54°	17,000	13,500
	45	48°	17,000	13,500
	50	41°	17,000	13,500
70	35	65°	17,000	13,500
	40	60°	17,000	13,500
	45	55°	17,000	13,500
	50	50°	17,000	13,500
	55	44°	16,700	13,500
80	40	60°	17,000	13,500
	45	55°	17,000	13,500
	50	50°	17,000	13,500
	55	44°	16,700	13,500
	60	38°	14,500	13,500
Max. Length	65	31°	13,100	13,100
	35	68°	17,000	13,500
	40	64°	17,000	13,500
	45	60°	17,000	13,500
	50	56°	17,000	13,500
	55	51°	16,500	13,500
	60	46°	14,400	13,500
	65	41°	12,900	12,900
	70	35°	11,500	11,500

32R549-A

WARNING

Rated loads shown are gross allowable, freely suspended loads that include weight of material and the load handling bucket, magnet, chains, etc. and apply to all Material Handling Operations (Clamshell, Magnet, Grapple, etc.) except Dragline.

Do not attempt to lift more than rated load at load radius shown or lift where no radius is listed, as crane may tip or collapse.

Do not attempt to lift more than rated loads shown in shaded areas — a machine failure may occur.

This machine is to be equipped as follows for this service:

1. Maximum boom length must not exceed 80 feet.
2. Crawlers must be locked-in the extended position.
3. Maximum counterweight must not exceed 30,500 lbs.
4. Load drum laggings must be 18-3/8" pitch dia. by 13-7/8" long with spiral grooving for 7/8" dia. wire rope for proper operation.
5. Planetary pinions (if machine is furnished with planetary power load lowering) must be removed from both load drums for proper operation.
6. The following wire rope should be used for proper operation

MAIN HOIST ROPE (CLOSING AND HOLDING)

- 7/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core)
- 79,600 pound minimum breaking strength.

TAGLINE ROPE

- 3/8 inch diameter P&H type 12 (6 x 37 filler wire preformed improved plow steel with fiber core)
- 11,540 pound minimum breaking strength.

BOOM HOIST ROPE

- 3/4 inch diameter type 27D (6 x 26 Warrington Seale preformed extra improved plow steel right alternate lay with independent wire rope cord)
- 58,800 pound minimum breaking strength.
- Boom hoist reeving is 10 parts reeved as shown in the Operators Manual.

BOOM PENDANTS

- 1-3/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core)
- 192,000 pound minimum breaking strength.
- Must be replaced in matched pairs. Refer to Parts Book.

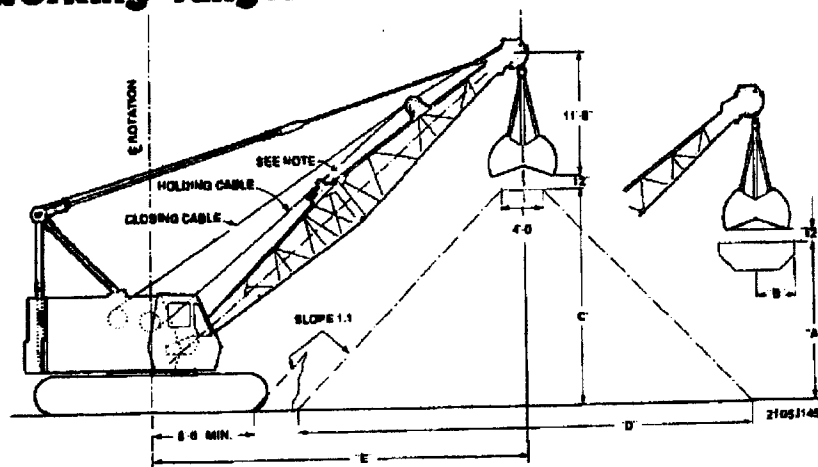


WIRE ROPE LENGTH CHART (FOR CLAMSHELL SERVICE)

USE	BOOM LENGTH	ROPE		ROPE LENGTH (FT.)		
		P&H TYPE	DIA. IN.	FIRST LAYER	SECOND LAYER	
CLOSING LINE (REAR DRUM)	50'	25	7/8	108'	—	EXTRA ROPE LENGTH REQUIRED FOR OPERATING BELOW GROUND LEVEL
	60'	25	7/8	—	128'	
	70'	25	7/8	—	147'	
	80'	25	7/8	—	171'	
HOLDING LINE (FRONT DRUM)	50'	25	7/8	102'	—	
	60'	25	7/8	—	121'	
	70'	25	7/8	—	141'	
	80'	25	7/8	—	164'	
TAGLINE	50'	12	3/8	70'	70'	
	60'	12	3/8	70'	70'	
	70'	12	3/8	70'	70'	
	80'	12	3/8	70'	70'	

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working ranges



BOOM LENGTH FT.	LOAD RADIUS IN FEET	HEIGHT & HALF WIDTH OF BIN		HEIGHT & WIDTH OF STOCKPILE		RADIUS "E"
		"A"	"B"	"C"	"D"	
50	25	38'-3"	4'-7"	26'-6"	57'	39'-6"
	30	35'-7"	6'-4"			
	35	31'-8"	8'-4"			
	40	27'-4"	11'-3"			
	45	21'-7"	15'-6"			
60	30	45'-11"	4'-9"	33'-7"	71'-2"	46'-7"
	35	43'-9"	6'-2"			
	40	40'-11"	7'-11"			
	45	36'-5"	10'-0"			
	50	31'-8"	12'-11"			
70	35	55'-1"	4'-10"	41'-8"	87'-4"	54'-8"
	40	52'-11"	6'-2"			
	45	49'-2"	7'-8"			
	50	45'-9"	9'-4"			
	55	40'-7"	11'-5"			
80	35	68'-0"	3'-11"	47'-9"	98'-8"	60'-9"
	40	64'-4"	4'-11"			
	45	61'-0"	6'-0"			
	50	58'-5"	7'-3"			
	55	54'-2"	8'-9"			

Note:
Remove standard idler sheave
assembly for clamshell operation

AVERAGE GROUND PRESSURE	SHOE WIDTH	
	36" FLAT FORGED	42" FLAT FORGED
Machine Weight* (Less Bucket) — Pounds	142,571	151,421
Ground Bearing Area (Sq. Inches)	18,870	19,681
Ground Pressure (Avg.) — Lb/Sq. In.	8.45	7.69

*Based on 50 foot boom

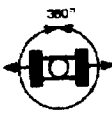
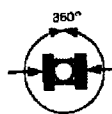


one counterweight

RATINGS

DRAGLINE SERVICE

62" x 62" boom

75% stability		rated loads in pounds			
	Front and Rear Drums Equipped With			Dual Load Brakes	Single Load Brakes
	Boom Length Ft.	Load Radius Ft.	Boom Angle Δ°		
crawlers fully extended 	50'	35	53°	14,500	11,500
		40	45°	14,500	11,500
		45	38°	14,500	11,500
		50	25°	14,500	11,500
	60'	40	54°	14,500	11,500
		45	48°	14,500	11,500
		50	41°	14,500	11,500
		55	33°	14,500	11,500
	70'	50	50°	14,500	11,500
		55	44°	14,500	11,500
		60	38°	14,500	11,500
		65	31°	14,500	11,500
	80'	55	51°	14,500	11,500
		60	46°	14,500	11,500
		65	41°	14,500	11,500
		70	35°	12,800	11,500
		75	28°	11,600	11,500
crawlers retracted 	50'	35	53°	14,500	11,500
		40	45°	14,500	11,500
		45	36°	14,500	11,500
		50	25°	14,500	11,500
	60'	40	54°	14,500	11,500
		45	48°	14,500	11,500
		50	41°	14,200	11,500
		55	33°	12,500	11,500
	70'	50	50°	14,500	11,500
		55	44°	12,400	11,500
		60	38°	10,800	10,800
		65	31°	9,700	9,700
	80'	55	51°	12,200	11,500
		60	46°	10,600	10,600
		65	41°	9,400	9,400
		70	35°	8,300	8,300
		75	28°	7,000	7,000

32RS49-A

WARNING

Rated loads shown are gross allowable, freely suspended loads that include weight of material and the load handling bucket, chains, etc.

Do not attempt to lift more than rated load at load radius shown, or lift where no radius or load is listed, as crane may tip or collapse.

Do not attempt to lift more than rated loads shown in shaded areas — a machine failure may occur.

This machine is to be equipped as follows for this service:

1. Maximum boom length must not exceed 80 feet.
2. Crawlers must be locked.
3. Maximum counterweight must not exceed 30,500 lbs.
4. Load drum laggings must be as follows for proper operation —
 Front (Digging) — 18-1/2" pitch dia. by 13-7/8" long with spiral grooving for 1" dia. wire rope
 Rear (Hoisting) — 18-3/8" pitch dia. by 13-7/8" long with spiral grooving for 7/8" dia. wire rope
5. Planetary pinions (if machine is furnished with planetary power load lowering) must be removed from both load drums for proper operation.
6. The following wire rope should be used for proper operation.

DIGGING ROPE

One inch diameter P&H type 21A (6 x 21 with filler wire, right-langle, preformed extra improved plow steel with independent wire rope core.)
 ● 103,400 pound minimum breaking strength.

HOIST ROPE

7/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core.)
 ● 79,600 pound minimum breaking strength.

**BOOM HOIST ROPE**

- 3/4 inch diameter type 27D (6 x 26 Warrington Seale performed extra improved plow steel right alternate lay with independent wire rope cord)
- 56,800 pound minimum breaking strength.
 - Boom hoist reeving is 10 parts reeved as shown in the Operators Manual.

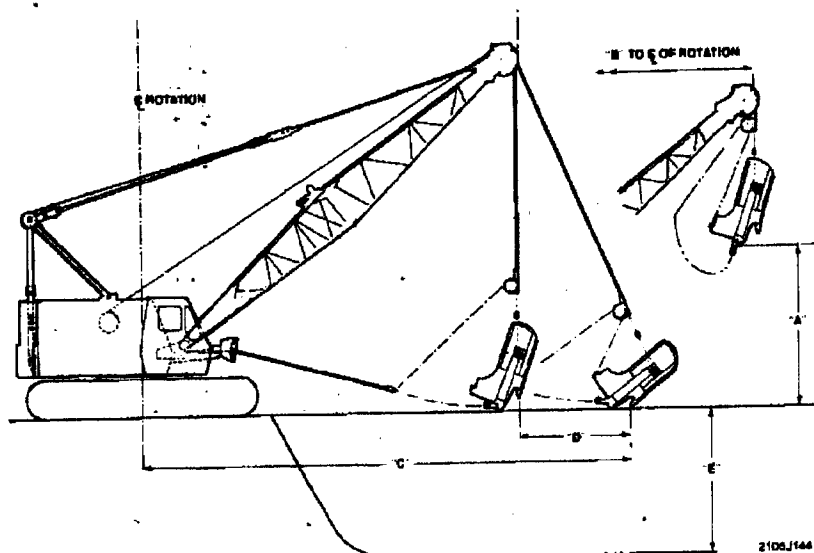
BOOM PENDANTS

- 1-3/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core)
- 192,000 pound minimum breaking strength.
 - Must be replaced in matched pairs. Refer to Parts Book.

WIRE ROPE LENGTH CHART
 (FOR DRAGLINE SERVICE)

USE	BOOM LENGTH	ROPE		ROPE LENGTH (FT.)	
		P&H TYPE	DIA. IN.	FIRST LAYER	SECOND LAYER
HOIST LINE (REAR DRUM)	50'	25	7/8	118'	134'
	60'	25	7/8	128'	163'
	70'	25	7/8	—	193'
	80'	25	7/8	—	213'
DIGGING LINE (FRONT DRUM)	50'	21A	1	84'	74'
	60'	21A	1	84'	91'
	70'	21A	1	—	108'
	80'	21A	1	—	112'

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working ranges

2105J144

BOOM LENGTH FT.	LOAD RADIUS IN FEET	ALLOW DOUBLE WRAPPING ON HOIST DIGGING DRUM				
		"A" DUMPING HEIGHT	"B" DUMPING RADIUS	"C" DIGGING REACH	"D" CASTING DISTANCE	"E" MAX. DIGGING DEPTH
50	35	30'-8"	38	48'-10"	14'-10"	22'-0"
	40	28	41	53'-4"	13'-4"	28'-1"
	45	19'-10"	48	56'-3"	11'-3"	31'-4"
	50	10'-4"	51	58'-2"	8'-2"	34'-2"
60	40	28'-5"	41	57'-10"	17'-10"	20'-3"
	45	25'-2"	48	61'-5"	16'-5"	24'-8"
	50	29'-10"	51	64'-7"	14'-7"	30'-0"
	55	22'-8"	56	67'-3"	12'-3"	36'-0"
70	50	44'-2"	51	69'-3"	17'-3"	19'-8"
	55	38'-3"	58	72'-4"	17'-4"	20'-4"
	60	33'-3"	61	72'-4"	12'-4"	28'-6"
	65	25'-3"	66	72'-4"	7'-4"	34'-2"
80	55	53	56	72'-4"	17'-4"	8'-6"
	60	48'-8"	61	72'-4"	12'-4"	11'-0"
	65	43'-0"	66	72'-4"	7'-4"	16'-6"
	70	38'-4"	71	72'-4"	2'-4"	23'-0"
75	27'-6"	76	72'-4"	72'-4"	0'-0"	32'-0"

*Casting Distance limited by Digging Drum Cable Capacity
 †Requires Double Wrapping on Digging Drum

AVERAGE GROUND PRESSURE	SHOE WIDTH	
	36" FLAT FORGED	42" FLAT FORGED
Machine Weight* (Less Bucket) — Pounds	143,246	152,096
Ground Bearing Area (Sq. Inches)	16,870	18,661
Ground Pressure (Ave.) — Lb/Sq. In.	8.49	7.73

*Based on 50 Foot Boom