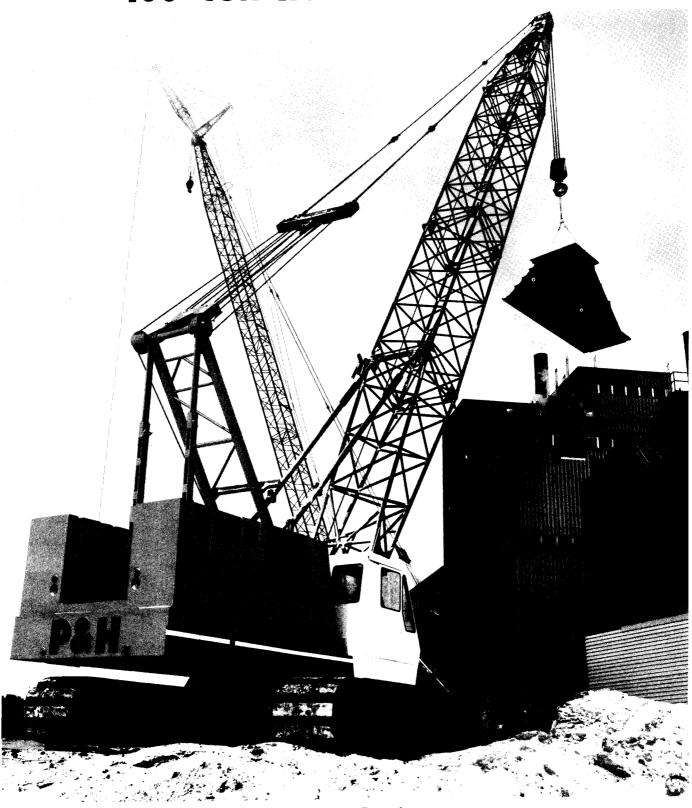
P&H[®] 5100

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 contourcut 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	230' (70m) Boom or	170' (51.8m) Boom or
with	210' (64m) Boom and	140' (42.6m) Boom and
Crawlers Blocked	20-60' (6-18.2m) Jib	20-60' (6-18.2m) Jib
Over End or Side	200' (61m) Boom or	170' (51.8m) Boom or
with	180' (55m) Boom and	130' (39.6m) Boom and
Crawlers Extended	20-60' (6-18.2m) Jib	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.)	WEIGHT	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. Sevenway 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 188 @ 3000

(Flywheel)

Net HP @ RPM 133 @ 1800 (Converter Output Shaft) Full Load)
Altitude Range 0-7500' (0-228

Altitude Range 0-7500' (0-2286 M)

Temp. Range in F. 30° to 115° w/o starting aid

(C.) (-1.1° to 46°)

ACCESSORIES:

Starting

Cooling Liquid, recirculating bypass

Radiator Tube and fin type, thermostat controlled,

rubber mounted

Fan 8 blade, 26 inch (660 mm) diameter

suction type 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 require-

ments, 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.

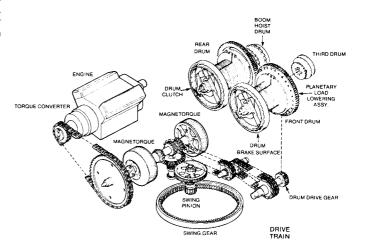
 $\label{likelihood} \textbf{Lube oil capacity} \leftarrow \text{Engine - 5 gallons (19 liters)}. \ \text{Filter - 2.9 gallons (11 liters)}.$

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/cm⁻). 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								
LINEPULL		MAXIMUM LINE SPEED						
Lbs.	Kg.	1st Layer FPM MPM			3rd Layer FPM MPM		6th Layer FPM MPM	
5,000	2,268	165	50.3	193	58.8	235	71.6	
10,000	4,536	165	50.3	193	58.8	235	71.6	
15,000	6,804	165	50.3	193	58.8	235	71.6	
20,000 Front 20,000 Rear	9,072 9,072	165 165	50.3 50.3	193 190	58.9 57.9	205 198	62.5 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 Lbs. Kg.		3rd Layer Lbs. Kg.		5th L Lbs.	ayer Kg.			
Available Hoisting Line Pull*	27,130	12,306	23,800	10,796	21,210	9,621			
	FPM	МРМ	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	7th LAYER FPM MPM				
HOISTING*	123 37.5	159 48.5	195 59.4				
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 workmotion 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 $^{\circ}$ ". 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.

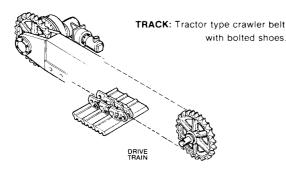
CRAWLER:

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.



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

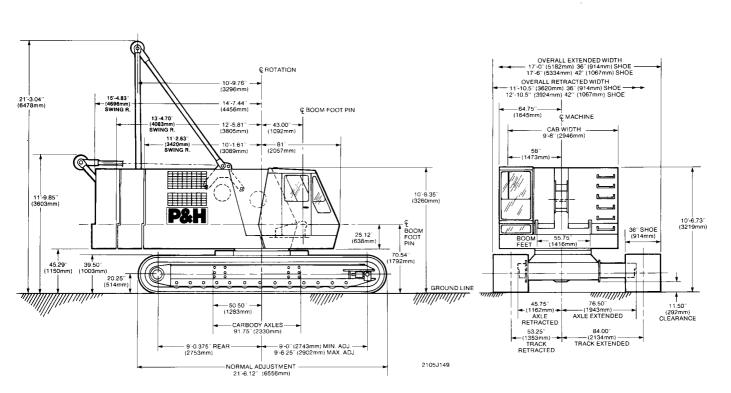
OPTIONAL EQUIPMENT: Load moment device, load indicating device, anti-two block device, spreader control, magnet and controls, two-speed hoist, hydraulic boom foot pin assembly, automatic brakes, dead-man controls, light and generating package (either automotive or 110V-AC), dragline bucket, and clamshell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

WEIGHTS:

Basic machine, with 50 gallons fuel, two counterweights, 36" shoes, 50 foot boom, 3 part hoist rope, 30 ton hook block	(78,376 Kg)
Basic machine with one counterweight142,286 lbs. Upper structure (basic machine) with 50 gallons fuel. 3 part hoist rope, gantry.	
backstops, cab but less counterweight 39,389 lbs. Lower machine with crawlers, 36" shoes 65,286 lbs. Carbody with Swing Circle*, cylinders,	
axles	(10,802 Kg)
Counterweight (each)	(13,835 Kg)
Boom Base with pins	(1,225 Kg)
Boom tip with pendants, pins3,161 lbs.	(1,434 Kg)
10 foot insert with pendants, pins960 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	(150 Kg)
Jib Tip with pins	(183 Kg)
Jib Strut with pins415 lbs.	(188 Kg)
10 foot insert with pins	(81 Kg)
20 foot insert with pins	(145 Kg)
AVERAGE GROUND BEARING PRESSURE	
BASIC MACHINE: PSI	Kg/cm ²
with 2 counterweights, 36" shoes 10.24 42" shoes 9.23	0.72 0.65

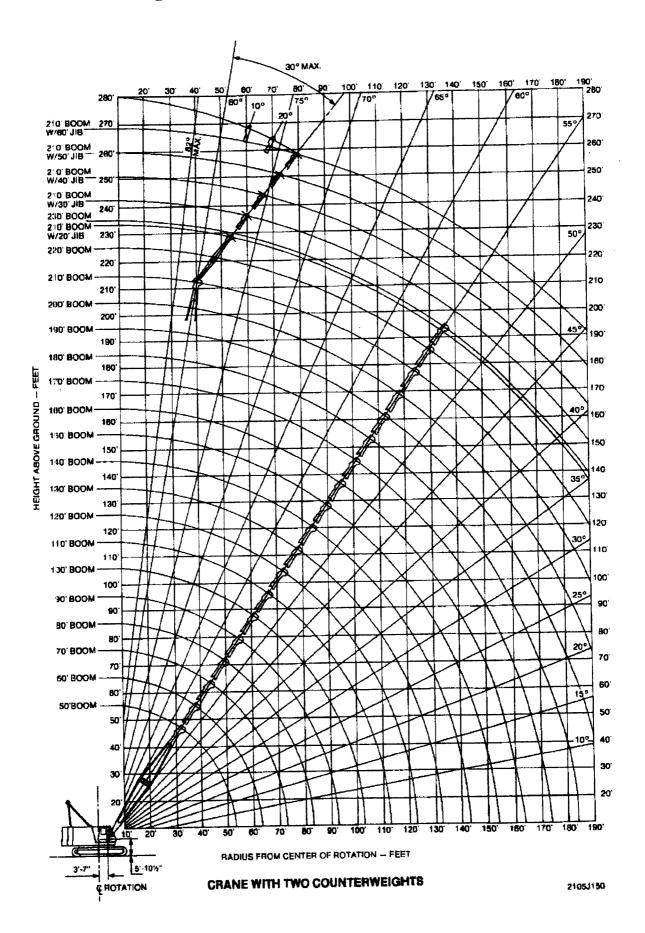
TRAVEL SPEED: 1.09 mph (1.75 km/h) approximate. Maximum grade recommended for travel is 20%.

with 1 counterweight. 36" shoes



0.59 0.54

working ranges





RATINGS LIFT CRANE SERVICE



62" x 62" boom

crawlers fully extended

two counterweights

1	WO (coun	terw	eigni	3		U	
Γ	75º/a	stabilit	y				rate	ed
	Boom Length	Load Radius (H)	Boom Angle	Boom Point Elev (ft)	360° Rated Load (lbs)		Boom Length (ft)	Ra (
	(ft) 50	11 12	82 81 78	56 9 56 7 56 2	200,000 200,000 160,600		110	
		15 20 25 30	72 66 59	54.9 53.0 50.5	113,900 80,800 62,300			
		35 40 45	52 44 35	47 0 42.5 36 3	50,400 42,300 36,200			
-	50	50 15 20	23 80 75	26 8 66 4 65 3	31.600 159,500 113,800			1
		25 30 35	70 65 59	62.8 51.8 59.1	80,700 62,200 50,300		120	
		40 45 50	53 47 40	55.8 51.6 46.3	42,100 36,000 31,400			
	70	15 20	81 77	28.6 76.5 75.6	24,700 159,200 113,700			
		25 30 35	73 68 64	743 726 705 67.8	80,600 62,100 50,200 42,000			
		40 45 50 60	59 54 49 37	64 5 60 6 49.7	35,900 31,300 24,600		130	
	80	70 20	79 75	32 5 85.8 84.7	20,590 113,600 80,500			
		25 30 35 40	71 67 64	83.2 81.4 79.1	61,900 50,000 41,900			
		45 50 60	59 55 46	76.4 73.2 64.9	35.800 31,100 24,500			
	90	70 80 20	35 20 80	54.0 34.3 96.0	20,300 16,900 113,500	!	140	
		25 30 35	77 73 70 67	95 0 93 7 92 1 90 1	80,300 61,700 49,800 41,600			
		40 45 50 60	63 59 52	87 8 85 1 78 2	35.500 30,900 24,200			
		70 80 90	44 33 18	69 8 57.0 35.9	20,100 16,700 14,200			
	100	20 25 30	81 78 75	106.1 105.2 104.1	100,000 80,100 61,600			
		35 40 45 50	72 69 66 63	102.6 100.9 98.9 96.5	49,600 41,500 35,400 30,700			
		60 70 80	56 49 41	90.6 83.6 73.6	24,000 19,900 16,500			
		90	32	59.9	14,000			

ed boo	m load	ls in po	unds
		Boom	360°
Load	Boom	Point	Rated
Radius	Angle	Elev	Load
(ff)	4	(ft)	(lbs)
20	82	116 2	100,000
25	79	-	79,900
30		1	61,300 49,400
	I	-	41.200
	ŀ	P. Control of the Con	35,100
_	I .	107.6	30,500
l	60	102.4	23,800
70	54	95 4	19,700
80	47	88.0	16,300
90	39		13,700
100		1	11,700
	 		79,800
			61,200
1			49,300
40	73	122.0	41,100
45	70	120.4	35,000
50	68	1	30,300 23,700
1	1	1 -	19,500
1	1	1	16,200
1	1	1	13,600
	1	80.7	11,600
110	29	65 2	10,000
120	16	402	8,600
25	81	135.7	79,600 61,000
_	_		49,000
			40,900
1	,		34,800
		129.2	30,100
60	65	125.0	23,400
70	60	120.2	19,300
80	55		15,900
90			11,300
	1		9,700
1	1	67.6	8,300
130	15	41.5	7,200
25	82	145.8	79,400
30	79	145.0	60,800
35	77	144 0	48,800
40	1		40,700 34,600
1		1	29,900
1		1	23,200
1	1	131.6	19,100
	58	125 B	15,700
90	53	118 9	13,200
100	47	110.4	11,200
110			9,500 8,200
1 -			7,100
1.30	15	42.8	6,200
	Load Radius (ii) 20 25 30 35 40 45 50 60 70 80 90 100 110 20 35 40 45 50 60 70 80 90 100 120 120 120 130 25 30 35 40 45 50 60 70 80 90 100 120 120 120 120 120 120 120 120 12	Load Radius (ii) Angle (iii) A	Load Boom Point Elev (th) Angle Elev (th) Elev (th)

			Boom	360°
Воот	Losd	Boom	Point	Rated
Length	Radius	Angle	Elev.	Load
(f1)	{ft }	Λ.	(ft)	(lbs)
150	30	80	155.1	60,000
	35	78	154.2	48,600 40,500
	40	75	153.1 151.8	34,300
	45 50	74 72	150 3	29,700
	50 60	68	146 B	23,000
	70	64	142.8	18,900
	80	60	137.5	15,500
	90	56	131 2	13,000
	100	51	123.7	11,000
	110	46	114.7	9,300
	120	40	103 8	000,8
	130	33	90.2	6,900
	140	26	72.3	6,000
	150	14	44.0	5,200
160	30	81	165.3	80,000
	35	79	164.4	48,400
	40	77	163.4 162.2	40,200 34,100
	45	75	160.B	29,400
	50	73 70	157.5	22,700
	60 70	66	153.8	18,600
	80	62	148.9	15,300
	90	58	143.2	12,700
	100	54	136 4	10,700
	110	49	128.3	9,000
	120	44	118.8	7,700
	130	39	107.3	6,600
İ	140	32	93.1	5,700
	150	25	74.5	4,900
l _	160	14	45.2	4,200
170	30	81	175.4	66,000
ł	35	80	174.6	48,200
1	40	78	173.6	40,100 33,900
1	45	76	172.5	29,200
	50	74	171.2 168.1	22,500
1	60	68	164.6	18,500
	70 80	64	160.2	15,100
	90	60	154.8	12,500
	100	56	148.6	10,500
	110	52	141 3	8,900
	120	47	132.8	7,500
1	130	43	122.7	6,400
	140	37	110.7	5,500
1	150	31	95.9	4,700
	160	24	76.6	4,080 3,400
	170	18	46.4	3,400

328549 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.	1
DEDUCT LBS	2100	2300	2800	3300	3800	1



100

12,000

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.



BEGROOM FOR THE PARTY

RATINGS LIFT CRANE SERVICE



two counterweights

62" x 62" boom

crawlers fully extended

360° Rater Load (165) Rater Load (167) Rater Load (168) R
lev Load (196) 25.2 29.10 25.2 27.80 25.3 6 25.00 20.5 21.30 17.7 17.40 14.00 10.5 11.40 9.30 20.9 7.70
(lbs) (lbs) (25.2 29.10 (25.2 29.2 29.10 (25.2 29.10 (25.2 29.10 (25.2 29.10 (25.2 29.10 (25.2 29.10 (25.2 29.10 (
25.2 29.10 24.4 27.60 23.6 26.20 22.6 25.00 20.5 21.30 17.7 17.40 14.4 14.00 10.5 11.40 9.30 9.30 9.770
24.4 27,60 23.6 26,20 22.6 25,00 20.5 21,30 17.7 17,40 14.4 14,00 10.5 11,40 9,30 7,70
23 6 26,20 22 6 25,00 20 5 21,30 17 7 17,40 14 4 14,00 10 5 11,40 9,30 00 9 7,70
22.6 25,00 20.5 21,30 17.7 17,40 14.4 14,00 10.5 11,40 06.0 9,30 00.9 7,70
20.5 21,30 17.7 17,40 14.4 14,00 10.5 11,40 06.0 9,30 00.9 7,70
17 7 17,40 14.4 14,00 10.5 11,40 10.6 0 9,30 10.9 7,70
14.4 14,00 10.5 11,40 06.0 9,30 00.9 7,70
105 11,40 060 9,30 009 7,70
06 0 9,30 00 9 7,70
00 9 7,70
52 6.40
38.7 5,30
31.3 4,30
73.1 3,50
63.7 2,80
53.0 2,20
34.6 25,30
33 7 24,66
32 8 25,70
30.5 20,5 0
28 1 17,10
249 13,70
21.3 11,10
17.0 9.10
12.2 7.5
06.8 6,10
00 7 5,00
938 4,1
86.1 3.3
77.5 2,6
678 1,9
-A
1 1 1

2,400

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



170

180

30 23

80.7

48.6

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.

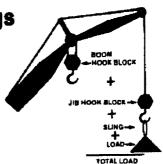
1,900

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



ilb 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 sleps 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 jlb 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
- 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 A

- 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
- 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

Olfset Angle of Jib to Boom Under Full Load	20 Foot Jib	30 foot Jib	40 Foot Jib	50 Foot Jib	60 Foot Jib
10° 20° 30°	22,000 * 16,000 13,000	20,000 14,500 11,000	16,000 12,000 8,500	12,000 9,500 7,000	8,000 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 dla. 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

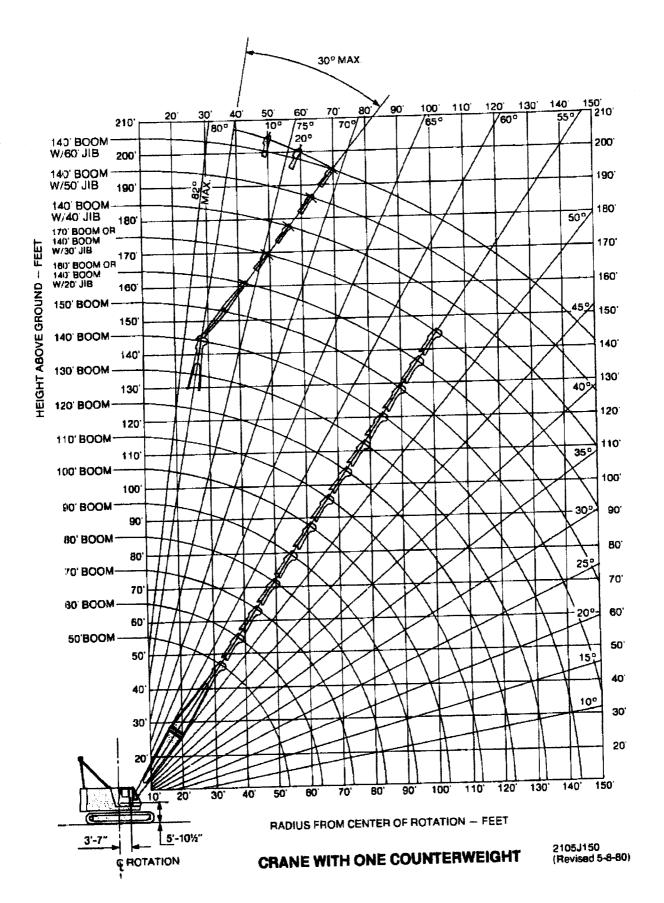
rated jib loads in pounds

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	9.600	5,400
20°	12.800	11,600	9,600	7,600	5,600
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 dla. 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 tope.

working ranges





one counterweight

RATINGS LIFT CRANE SERVICE

62" x 62" boom



crawlers fully extended

75%	stabili	ty			rate	d boon	n load:	s in poi	JNOS			r		
Boom ength	Load Radius	Boom Angle	Boom Point Elev.	360° Rated Load	Boom Length	Load Radius	Boom Angle	Boom Point Elev	360° Rated Load (ibs)	Boom Length (ft)	Load Radius	Boom Angle	Boom Point Elev (ft)	360° Rated Load (lbs)
(ff)	(11)	∆.º	(ft)	(tbs)	(ft)	(ff)	Δ'	(f1)	75,900	150	30	80	155 1	40,400
50	11	82	56.9	200,000	110	20	82 79	1162 1154	53.800	'50	35	78	154 2	32,000
	12	81	56.7	184,400		25 30	79	1144	41,100		40	76	153.1	26,300
	15	78	56.2 54.9	130,000 77,400		35	74	113.1	32,800		45	74	151.8	22,000 19,500
	20 25	72 66	53.04	54,600		40	71	1115	27,000		50 60	73 69	150.6 147.1	14,700
	30	59	50.5	41,900		45	68	109 7	22,800		70	64	142.8	11,400
	35	52	470	33,700		50	66	107.9	20,200 15,400		80	60	137.5	9,000
	40	44	42.5	28,100	-	60	50 54	102.9 96.4	12,200		90	56	131.2	7,300
	45	35	36.3	23.900		70 80	47	880	9,800	į	100	51	123.7	5,900
	50	25	28.7	21,200		90	39	77 3	8,000	1	110	46	114.7 103.8	4,800 3,900
60	15	80	66.4	130,100		100	30	62 6	6,700		120 130	40 33	90.2	3,100
	30	75	65 3	77,400 54,500		110	17	38.8	5,500	1	140	26	72.3	2,500
	25	70 65	63.8 61.8	41,800	120	25	80	125.6	53,700		150	14	44.0	1,900
	30 35	59	59.1	33,600	120	30	78	124 6	40,900	160	30	81	165.3	40,200
	40	53	55 8	27,900		35	75	123.4	32,700	100	35	79	164.4	31,800
	45	47	51.6	23,700	Į	40	73	122 0	26,900		40	77	163 4	25,000
	50	41	47.2	21,000	-	45	70	120 4 118.8	22,700 20,100		45	76	162.4	21,800
	50	23	30 7	16,300	1	50 60	68 63	114.3	15,300		50	74	161.0	19,200
70	. 15	81	76.5	130,100		70	57	108.5	12,100		60	70	157 8	14,400
	20	77	75 6	77,400		80	51	101 3	9,700		70	66 62	153.8	8,800
	25	73	74.3	54,500 41,700	Į.	90	45	92.3	8,000		90	58	143 2	7,000
	30	68 64	72.6 70.5	33,500	-	100	38	80 7	6,600		100	54	136.4	5,600
	35 40	59	67.8	27.800		110	29	65.2	5,500		110	49	128.3	4,500
	45	54	64.5	23,600		120	16	40.2	4,600	- 1	120	44	118.8	3,600
	50	50	61.2	21,000	130	25	81	135.7 134.8	53,500 40,800		130	39	107.3	2,800
	60	38	50.7	16,200	ļ	30 35	79 76	133.7	32,500		140	32 25	74.5	1,600
	70	21	32 5	13,000	İ	40	74	132.5	26,700				175 4	40,000
80	20	79	85.8	77,300		45	72	130.9	22,500	170	30 35	81 80	174.6	31,700
	25	75	84.7	54,400 41,600		50	70	129.5	19,900		40	78	173.6	25,900
	30	71 67	83.2 81.4	33,400	ļ	60	65	125 4	15,000		45	76	1727	21,400
	35 40	64	79 1	27,700		70	60	120.2	11,800		50	75	171.4	19,100
	45	59	76.4	23,500		80	55	1138	9,400		60	71	168 4	14,30
	50	56	73.8	20,800		90 100	49	96.3	6,200		70	68	164.6	11,00
	60	47	65 7	16,100		110	36	84 0	5,100		08	64 60	160.2 154.8	6,80
	70	35	54.0	12,800 10,500		120	28	676	4,200		100	56	148 6	5,40
	80	20	34 3			130	15	415	3,400		110	52	141.3	4,30
90	20	80	96.0	77,200 54,200	140	25	82	145 B	53,400		120	47	132.8	3,40
	25	77	95 0 93.7	41,400	. 1	30	79	145 0	49,600		130	43	122.7	2,60
	30 35	73 70	92 1	33,200		35	77	144.0	32,300 26,500		140	37	110.7	2,00
	40	67	90.1	27,406		40	75 73	141.4	22,300	L				
	45	63	87 8	23,200		50	71	140.1	19,700				121549 A	
	50	60	85.6	20,600		50	67	136 3	14,900	1				
	60	52	78.9	15,800		70	62	131 6	11,600					
	70	44	698	12,600 10,300		80	58	125.8	9,300	1				
	80	33	57.0 35.9	8,500		90	53	118.9	7,500	1				
	90	18			1	100	47	110 4	6,100 5,000					
100	20	81	106.1	77,000 54,000		110	35	87.2	4,100					
	25	78 75	105.2	41,300	!	120	27	70.0	3,300					
	30 35	72	102.6	33,000		140	15	42.8	2,700	1				

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

JIB LENGTH				50 FT.	
DEDUCT - LBS	2100	2300	2800	3300	3800



40

45

50

60 70

80

90



59

66

63

57

49

100 9

98.9

96.9

91 1

83 6

73.6

59.9

27,300

23,100

20,400

15,700

12,400

10,100

8,300

5,900

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

FROM-CAL CRANE



RATINGS LIFT CRANE SERVICE

one counterweight

62" x 62" boom

crawlers retracted

75 %	stabili	ıy					W.C. D.		ads in						0	B	
Воот	Load	Boom	Boom Point		Load	Boom Length	Load Radius	Boom Angle	Boom Point		i.oad os)	Boom Length	Load Radius	Boom Angle	Boom Point	Rated (Its Civer	
ength	Radius	Angle	Elev	Over	Over	Lengin	.,	-	Elev	Over	Over			Δ.	Elev.	Side	End
do	(ft)	Δ.	(11)	Side	End	(n)	(ft)	4	(ft)	Side	End	(f1)	(ft)				41,100
(ft)		<u> </u>	56.9	122,000	200.000	110	20	82	118.2	47,100	78,200	150	30	80	155.1	25,900 21,500	32,700
50	11	82	56.7	104,800	184,500	} ' ''	25	79	115.4	34,500	54,880		35	79	154.4	17,700	26.800
	12 15	81 78	56.2	73,200	132,100	!	30	77	114.4	26,700	41,800		40	77 75	153.3 152.0	14,800	22,500
	20	72	54.9	48.100	78,800	l l	35	74	113.1	21,608	33,400	ŀ	45 50	73	150.6	12,500	19,900
	25	66	53.0	35,500	55,600		40	71	111.5	18,500	27,600	11	60	69	147.1	\$1,200	15,000
	30	59	50.5	27,800	42,700		45	68	109.7	15,500	23,300	i i	70	64	1428	6.900	11,700
	35	52	47.0	22,700	34,400	1	50	66	107.9	13,300	20,600 15,800	1	80	60	137.5	5,200	9,300
	40	44	42.5	19,600	28,600		60	60	102.9	10,000	12,500	ii .	90	56	131.2	4,000	7,506
	45	35	36.3	16,700	24,400		70	54	96.4	7,700	10,100		100	51	123.7	3,000	6,100
	50	25	28.7	14,408	21,600	1	80	47	88.0 77.3	6,100 4,800	8,300	li	110	46	114.7	2,200	4,900
60	15	80	66.4	73,100	132,200		90	39 30	62.6	3,800	6,800	H	120	40	103.B	1,500	4,000
-	20	75	65.3	48,000	78,800		100	17	38.8	3,000	5,700	11	130	33	90.2	-	3,200
	25	70	63.8	35,300	55,500	<u> </u>	110		 		54,700	11	140	26	72.3	-	2,600
	30	65	61.8	27,500	42,600	120	25	80	125.6	34,300	41,700		150	14	44.0	<u> </u>	2,000
	35	59	59 1	22,500	34,200	1	30	78	124.6	26,600 21,500	33,300	160	30	81	165.3	25,700	40,900
	40	53	55.8	19,400	28,400		35	76	123.6	18,400	27,500		35	79	164.5	21,400	32,50
	45	47	51.6	16,500	24,200		40	73	122.3	15,400	23,200	11	40	77	163.5	17,400	26,60
	50	41	47.2	14,200	21,400		45	71 68	120 7 118 8	13,100	20,500	11	45	76	162.4	14,500	22,30
	60	23	30.7	10,900	15,500	!	50 60	63	114.3	9.800	15,600	{	50	74	1610	1;2,200	19,700
70	15	81	76.5	73,000	132,200		70	57	108.5	7,600	12,300		60	70	157.8	8,900	14,800
	20	77	75.6	47,900	78,700		80	51	101.3	5,900	9,900		70	66	153.8	6,600	11,400
	25	73	74.3	35,300	55,500	il	90	45	92.3	4,600	8,100	H	80	62	148.9	5,000	9,000
	30	68	72.6	27,500	42,500 34,100	!	100	38	80.7	3,600	6,700	11	90	58	143.2	3,700	7,200 5.800
	35	64	70.5	22,400	26,300		110	29	65.2	2,800	5,600	11	100	54	136 4	1,900	4,700
	40	59	67.8 64.5	19,300	24,100		120	16	402	2,100	4,600	Ш	110	49	128.3 118.8	1,500	3,700
	45 50	54 50	61.2	14,100	21,400	130	25	81	135.7	34,100	54,500	TI .	120 130	44 39	107.3	=	3,000
	60	38	7 0،	10,800	16,500	11 130	30	79	134 8	26,400	41,500	11	140	32	93.1	_	2,300
	70	21	32.5	8,600	13,300		35	77	133 9	21,500	33,100	11	150	25	74.5	_	1,700
		79	85 8	47,800	78,600	11	40	74	132.7	18,100	27,300	1		B1	1754	25,500	40.800
80	20	75	84.7	35,100	55,300		45	72	131.2	15,200	23,000	170	30 35	80	1747	21,200	32,300
	25 30	71	83.2	27,400	42,400	11	50	70	129.5	13,000	22,900	11	40	78	173 B	17,300	26,400
	35	67	81.4	22,200	1 .	[]	60	65	125.4	9,700	15,400	1	45	76	172.7	14,300	22,100
	40	64	79.1	19,100			70	60	120 2	7,400	12,100 9,600	11	50	75	1714	12,100	19,50
	45	59	76.4	16,200		11	80	55	113.8	5,700	7,800	11	60	71	168 4	B,700	14,50
	50	56	73.8	13,900	21,200	II	90	49	106.0	4,500 3,500	6,400	11	70	68	164 6	6,400	11,300
	60	47	65.7	10,600		11	100	43 36	96.3 84.0	2,700	5,300	11	80	64	160.2	4,800	8,900
	70	35	54.0	8,300	13,100		120	28	67.6	2,000	4,300		90	60	154 8	3,500	7,10
	80	20	34.3	5,700	19,700	_ا ا	130	15	41.5	1,500	3,600		100	56	148.6	2,500	5,60
90	20	80	96.0	47,600	78,500	 					54,300	⊣ !	110	52	1413	1,700	4,50
90	25	77	95.0	34,900			25	82	145 8	33,900 28,100	41,300		120	47	132.8	-	3,60
	30	73	93.7	27,100			30	79	145.0	25,100	32,900		130	43	122.7	-	2,80
	35	70	92.1	22,000	33,800	1	35	78 76	144.2	17,900	27,000		140	37	110.7	-	2,10
	40	67	90.1	18,900	28,000		40	73	143.0	15,000	22,700		150	21	95.9		1,60
	45	63	87.8	16,000			45 50	73	140.1	12,700	20,100		**+				
	50	60	85.6	13,700			60	67	136 3	9,400	15,200						
	60	52	78.9	10,40			70	62	131.6	7,100	11,900			329	549-A		
	70	44	69.8	8,10			80	58	125.8	5,500	9,500						
	80	33	57.0				90	53	118.9	4,200	7,700	1					
	90	18	35.9	5,20	0 8,700	41	100	47	110.4	3,200) [

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

5,200

4,200

3,500

2,400

1,700

JIB LENGTH	20 FT.	30 FT	40 FT	50 FT.	60 FT.
DEDUCT - LBS	2100	2300	2800	3300	3000



100

20

25

30

35

40

45

50

60

70

80

90

78,300

55,000

42,000

33,500

27,800

23,500

20,900

16,000

12,700

10,300

8,500

7,100

47,400

34,700

27,000

21,500

18,700

15,900

13,500

10,300

B,000

6,300

5.000

4,000

106 1

105.2

104 1

1026

100.9

98 9

96.9

91 1

83.6

73.6

59.9

78

75

72

69

66

63

49

41

32

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.

41 35

27

110

120

130

100.1

B7.2

700

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

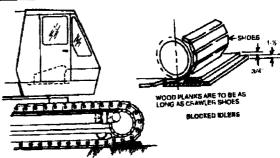
(MAXIMUM LENGTHS THAT CAN BE RAISED)

	BOO	M ONLY	BOOM A	NO JIB
BOOM POSITION	Two Counterweights	Ohe 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 counterveights and crawlers retracted - Crane may tip backwards	140'	Do not swing over side with two counterweights and crawlers retracted - Crane may tip backwards	100' boom plus 20' 'to 60' jib

WARNINGS A

Do not attempt to erect more than the maximum boom (or maximum boom with jib 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 INSER	TARRANGEMENT	BOOM F	OLLERS	JIB STRUT PENDANT
BOOM LENGTH (FEET)	Base (25') = B Tip (25	i') = T	No.	From Boom Point	CONNECTION TO BOOM Distance From Boom Point
1	RECOMMENDED	ALTERNATE	Required	(Feet)	(Feet)
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
	B + 50' + T	B + 20' + 30' + T	0		75
100	B + 10' + 50' + T	B + 10' + 20' + 30' + T	0	i —	76
_	B + 20' + 50' + T	B + 20' + 30' + T	0	-	76
120	B + 30' + 50' + T	B + 10' + 20' + 20' + 30' + T	0	! —	76
130		_	0	1 —	76
140	B + 10' + 30' + 50' + T	B + 20" + 30" + 50" + T	1 1	124	76
150	8 + 50' + 50' + T	B + 10' + 20' + 30' + 50' + T	1	124	76
160	B + 10' + 50' + 50' + T	B + 10' + 30' + 30' + 50' + T	1	124	76
170	B + 20' + 50' + 50' + T	B + 20' + 30' + 30' + 50' + T	1 1	124	76
180	B + 30' + 50' + 50' + T	B + 40' + 30' + 30' + 30' + 50' +	n 1	124	76
190		B + 10' + 20' + 30' + 30' + 50' + T	1	124	76
200	B + 50' + 50' + 50' + T	5 - 30 + 30' + 50' + 50' + T	1	124	76
210	B + 10" + 50" + 50" + 50" + T	15 + 30 + 30 + 30 + 50 + 50 + 50 +	1 2	124 8 174	Do Not
220	IB + 20' + 50' + 50' + 50' + 1	B + 10" + 30" + 30" + 50" + 50" + 50" +	1 2	124 8 174	
230	1B + 30' + 50' + 50' + 50' + T	B + 20' + 30' + 30' + 50' + 50' +	<u> </u>	1,-,-,-	1

WARNINGS A

- 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

200 CONTROL OF STREET S

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 A

- 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 dismeter P&H independent wire rope of 79,600 pound minimum	core)	wire prefor	med extra im	proved plow	steel with
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 wire rope core) ● 79,600 pound minimum bi		preformed extra im	proved plow steel independent
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) • 59,000 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 Total Maximum 11,800 Lifted Load (Lbs.)

WARNING A

Do not attempt to lift more than rated loads shown in sheded 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)

192,000 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 Lift Crane Service)

				(+01 Fit	Cian								
		RO	PE				ROP	LEN	51H (FEET)			
	воом	P&H	DIA.				P/	ARTS	OF LIN				 -
USE	LENGTH	TYPE	IN.	1	2	3	4	5	6	7	8	9	10
BOOM HOIST	ALL BOOM LENGTHS	27D	3/4				(10 P					FCK	620
	50 60	25 25	7/8 7/8	125 145	180 210	235 275	290 340	345 405	400 470	455 535	510 600	565	1 620
	70	25	7/8	165	240 270	315 355	390 440	455 525	540 610	615	680		
	80 90	25 25	7/8	185 205	300	395	490	585	680	1			
	100	25	7/8	225	330	435	540	645 705	_	Į			
HOIST	110	25	7/8	245	360	475 515	590 640	705					
LINE	120 130	25 25	7/8	265 285	390 420	555	690						
(FRONT	140	25	7/8	305	450	595	740						
DRUM)	150	25	7/8	325	480	635	1						
1	160	25	7/8	345	510 540	675 715							
ļ	170	25	7/8	365 385	570	755	1						
	180	25	7/8	405	600								
	190 200	25 25	7/8	425	630		1						
1	210	25	7/B	445	660		E	tra Ro	pe Le	ngth is	Requ	ired fo	r
1	220	25	7/8	465	690		(Operat	ing Be	elow G	round	Level	
	230	25	7/8	485	720		ــــــــــــــــــــــــــــــــــــــ						

	200									
								LENGTH (F		
		RO	PE [P/	ARTS OF LIN		
Ì	воом	P&H	DIA.	20.	JIB	30'	JIB	40' J1B	50' JIB	60. JIB
USE	LENGTH	TYPE	IN.	1	2	1	2	1 2	1 2	1 2
		25	7/B	165	240	185		205	225	245
ļ	50 60	25	7/8	185	270	205		225	245	265
	70	25	7/8	205	300	225		245	265	280
j ,	80	25	7/8	225	330	245		265	290	300
!	90	25	7/B	245	360	265		280	300	320
1 1	100	25	7/8	265	390	280		300	320	340
JIB	110	25	7/8	285	420	300		320	340	360
HOIST	120	25	7/8	305	445	320		340	360	380
LINE	130	25	7/8	320	475	340		360	380	400
I INCAR	140	25	7/8	340	505	360		360	400	420
(REAR	150	25	7/8	360	535	380		400	420	440
DRUM)	160	25	7/8	380	565	400		420	440	460
[]	170	25	7/8	400	595	420		440	460	480
1	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		25	3/4	-	50'		70'	90'	110'	130'
JIB TO		1		1						
STRUT	1	1	1					1	ــــــــــــــــــــــــــــــــــــــ	<u> </u>
	50'	25	3/4				65′			
PENDANT		25	3/4	1			85'			
	70'	25	3/4	1			05'			
STRUT	80.	25	3/4	1			25'			
то	90'	25	3/4			1	45′			2185N218
ВООМ	100'-210'	25	3/4	1			165'			
	1 100 72 10									

HOIST TACKLE DATA

HOOK	BLOCKS		Weight (Pounds)			
	acities	Number of Sheaves	Johnson Blocks	Miller Blocks		
Tons	Pounds	Oudavos		4600		
100 70 30 0.5	200,000 140,000 60,000 19,000	5 3 1 Ball Hook	1887 1268 593 451	1600 1450 765 —		



RATINGS **CLAMSHELL SERVICE** (Clamshell, Magnet, Grapple)



one counterweight

67.5% Stability

62" x 62" boom

crawlers fully extended

rated loads in pounds									
Boom Length Ft.	Load Radius Ft.	Boom Angle	Dust Brakes	Singl e Brak es					
50	25 30 35 40 45	67* 60* 53° 45° 36°	17,000 17,000 17,000 17,000 17,000	13,500 13,500 13,500 13,500 13,500					
60	30 35 40 45 50 55	65° 60° 54° 48° 41° 33°	17,000 17,000 17,000 17,000 17,000	13,500 13,500 13,500 13,500 13,500					
70	35 40 45 50 55 60 65	85° 60° 55° 50° 44° 38° 31°	17,000 17,000 17,000 17,000 16,700 14,500 13,100	13,500 13,500 13,500 13,500 13,500 13,100					
80 Max. Length	35 40 45 50 55 60 65 70	68° 64° 60° 56° 51° 46° 41° 35°	17,000 17,000 17,000 17,000 16,500 14,400 12,900 11,500	13,500 13,500 13,500 13,500 13,500 13,500 12,900 11,500					

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WARNING A

Hated 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 toad 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 pinlons (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 270 (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

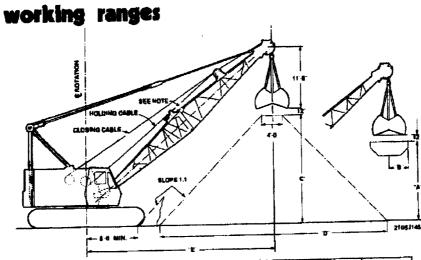
- 1-3/8 inch diameter P&H type 25 (6 x 25 filler wire preformed extra improved plow steel with independent wire rope core)
- 192,000 pound minimum breaking strength.
- Must be replaced in matched pairs. Refer to Parts Book

EBON-CAL CRANE

WIRE ROPE LENGTH CHART

(FOR CLAMSHELL SERVICE)

		RO	PE		ROPE LENG	GTH (FT.)
USE	USE BOOM LENGTH	P&H TYPE	DIA. IN.	FIRST LAYER	SECOND LAYER	
CLOSING LINE	50'	25 25	7/8 7/8	108	128	
(REAR DRUM)	70° 80'	25 25	7/8 7/8	=_	147' 171'	EXTRA ROPE
HOLDING LINE (FRONT DRUM)	50' 60' 70' 80'	25 25 25 25 25	7/8 7/8 7/8 7/8	102' 	121' 141' 164'	LENGTH REQUIRED FOR OPERATING BELOW GROUND LEVEL
TAGLINE	50° 60° 70° 80°	12 12 12 12	3/8 3/8 3/8 3/8	70° 70° 70° 70°	70' 70' 70'	21 05N21 1



BOOM	LOAD RADIUS IN PEET	HEIGHT			& WIDTH CKPILE	RADIUS
LENGTH FT.		"A"	***	.,C.	"D.	"E"
50	25	38-3	4'-7"	26'-6"	57	366
1	30	35-7	5'-4"			1
- 1	35	31'-9"	B-4"		Ī	1
	40	27'-4"	11'-3"			
1	45	21-7"	15'-6"			
80	30	45'-11"	4'-9"	33-7	71'-2"	45 -7"
	35	43'-9"	6'-2"		1	1
	40	40'-11"	7:11"		l	ì
	45	36'-5"	10:0			
	50	31'-6"	12'-11"		l	1
	55	24'-9"	17-4"			54-8
70	35	55'-1"	4'-10"	41'-8"	87-4"	54 40
	40	52'-11"	6'-2"]	1	
	45	49'-2"	7'-6"]	1	
	50	45'-9"	9.4"]	1	
	55	40'-7"	11'-5"]		
	60	35'-0"	14-5"	1	1	
	85	27'-7"	19-0"		1	60'-9"
80	35	88'-0"	3-11	47'-9"	99:-6"	90-9
	40	84'-4"	4-11"]	1	
	45	61-0	6'-0"	1	1	
	50	58'-5"	7-3"	1	1	
	55	54-2	8-9	1	1	1
	60	49-10	10-2"	1	Į.	1
	65	44-8"	12-7"	1	1	
	70	38'-3"	15'-7"	<u> </u>		

Note: Remove standard idler sheave ass'y for clamshell operation

	SHOE WIDTH		
AVERAGE GROUND PRESSURE	38" FLAT FORGED	42" FLAT FORGED	
Machine Weight* (Less Bucket) — Pounds Ground Bearing Ares (Sq. Inches) Ground Pressure (Ave.) — Lb/Sq. In.	142,571 16,870 8.45	151,421 19,681 7.59	



one counterweight

RATINGS DRAGLINE SERVICE 62" x 62" boom

75% stability									
	Front and	Rear Drums Equi	pped With		et - ula				
	Boom Length Ft.	Load Radius Ft.	Boom Angle మ	Duel Load Brakes	Single Load Brakes				
crawlers	50	35 40 45 50	53° 45° 36° 25°	14,500 14,500 14,500 14,500	11,500 11,500 11,500 11,500				
fully extended	60'	40 45 50 55	54° 48° 41° 33°	14,500 14,500 14,500 14,500	11,500 11,500 11,500 11,500				
	70′	50 55 60 65	50° 44° 38° 31°	14,500 14,500 14,500 14,500	11,500 11,500 11,500 11,500				
	80'	55 60 65 70 75	51° 46° 41° 35° 28°	14,500 14,500 14,500 12,800 11,600	11,500 11,500 11,500 12,500 11,500				
crawlers retracted	50	35 40 45 50	53° 45" 36° 25°	14,500 14,500 14,500 14,500	11,500 11,500 11,500 11,500				
360°	60'	40 . 45 50 55	54° 48° 41° 33°	14,500 14,500 14,200 12,500	11,500 11,500 11,500 11,500				
	70'	50 55 60 65	50° 44° 38° 31°	14,500 12,400 10,800 9,700	11,500 10,600 9,700				
	. 80'	55 60 65 70 75	51° 46° 41° 35° 28°	12,200 10,600 9,400 8,300 7,000	11,500 10,800 9,400 8,300 7,000				

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WARNING A

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
- 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-langlay, 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 holst reeving is 10 parts reeved as shown in the Operators Manual.

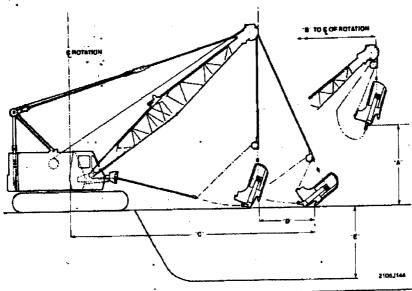
BOOM PENDANTS

- 1-3/5 inch diameter P&H type 25 (5 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)

		(FOR E	// WYGE !! YE	02:::-02/			
		AC	PE		ROPE LENGTH (FT.)		
USE	BOOM LENGTH	P&H TYPE	DIA. IN.	FIRST LAYER	SECOND LAYER		
HOIST LINE (HEAR DRUM)	50° 70° 80°	25 25 25 25 25	7/8 1/8 7/8 7/8	118' 128' 	134' 163' 193' 213'		
DIGGING LINE (FRONT DRUM)	50° 60° 70° 80°	21A 21A 21A 21A	1 1 1	84' 84'	74' 91' 109' 112'	2105A(218	

working ranges



MOOM LENGTH	LOAD MADNIS IN PERT	A. CHIPINIO THOUSH	UUMPINA RADIUS	DIGGING REACH	CABTING CABTING DISTANCE	MAS. DIGGING SEPTH	ALIUM DONING PARTIES DANIES			OHT	
50 35 30-8 36 40 28 41 45 19-90 46	40-10 14-19 53-4 13-4 56-3 11-2 58-2 6-2	13-4	28:1 31:4	-A" DUMMING HEIGHT	CIVERNING RACIVE	METCH DIGGING .C.	CASTING DISTANCE	MAS. DIDOM(DEPTH			
80	50 40 45 50	39-5 35-2 29-10	41 46 51	57-10" 81-5" \$4-7 87-3"	17-10 18-5 14-7	20°-3 24-8 30-0 36-0	29-5 25-2 29-10 22-9	45-0 48-0 51-0 56-0	97-10 81-5 84-7 81-3	17'-10' 16-5 14-7' 12-3'	26'-8' 30'-8' 38'-0' 42'-0
70	50 55 60 65	22-9 44-2 36-3 30-3 25-3	51 96 61	69-3 172-4 172-4 172-4	17-3 417-4 412-4 47-4	18-8 20-4 26-8 34-2	44-2" 30-3" 33-3" 25-3	51-0 56-0 81-0 66 0	69-3" 72-9" 75-9" 76-0"	19-3 17-9 15-9 13-1	\$4.6 39.4 45.4 52.0
640	95 60 65 70	53 48-8 43-0 38-4 27-8	56 - 61 - 66 - 71 - 78	972'4' 972-4 972-4 972'4' 972'4	917-4 912-4 97-4 92-4 90-0	8-6 11-0 16-6 23-0 \$32-0	53-0 48-8 43-0 38-4 27-8	96-0 61-0 95-0 71-0 76-0	77-3 60-9 84-0 86-7 89-0	22-3 20-7 19-0 18-7 14-0	38-4 42-8 48-4 54-6 81-0

*Cooling Distance limited by Disgling Drum Cable: Caterity Alleguines Double Wrapping on Digging Grum

AVERAGE GROUND PRESSURE	SHOE WIDTH	
	38" FLAT FORGED	42" FLAT FORGED
Machine Weight* (Less Bucket) — Pounds Ground Bearing Area (Sq. Inches) Ground Pressure (Ave.) — Lb/Sq. In.	143,246 16,670 8,49	152,096 19,881 7.73