

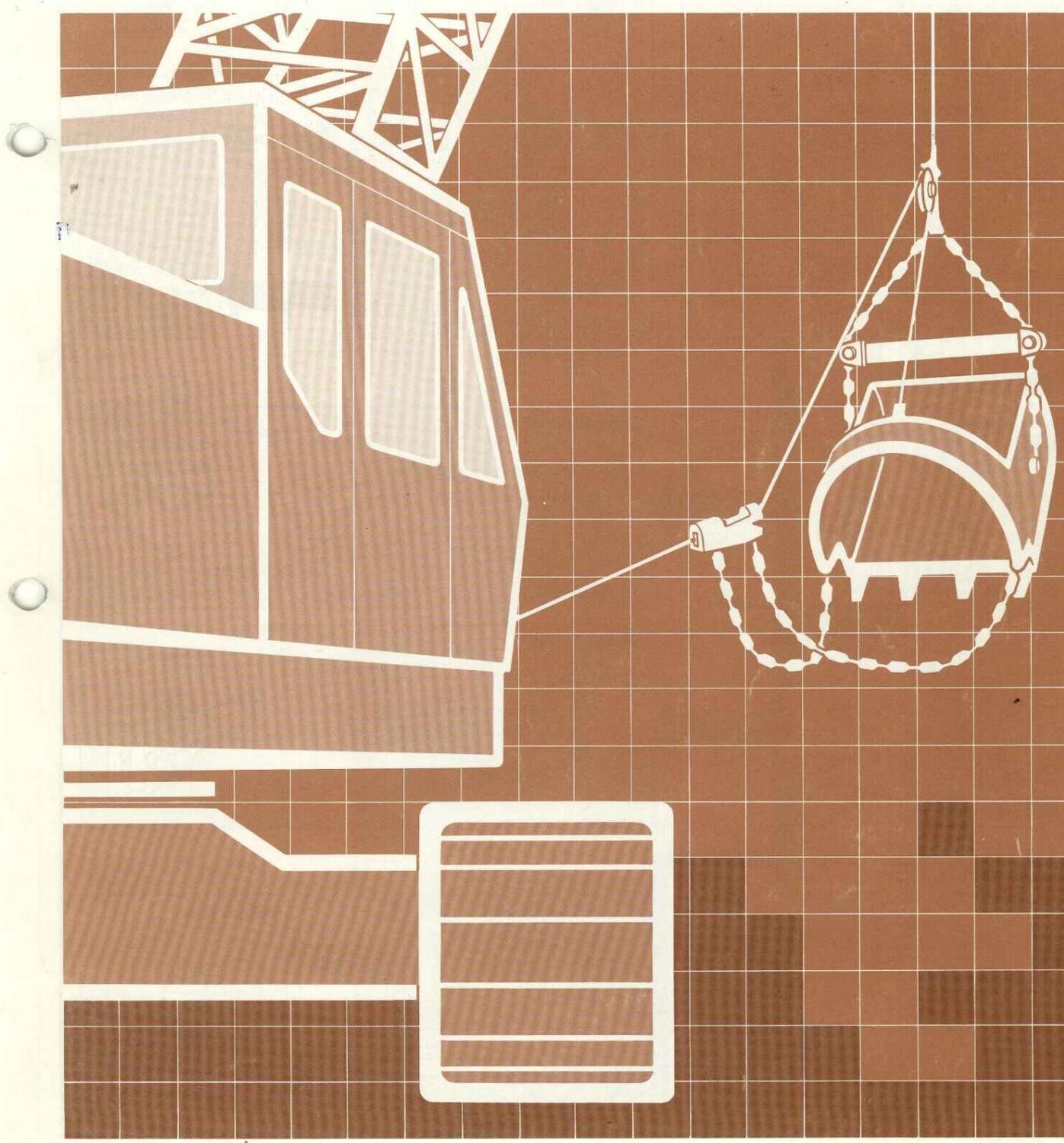
SPECIFICATIONS

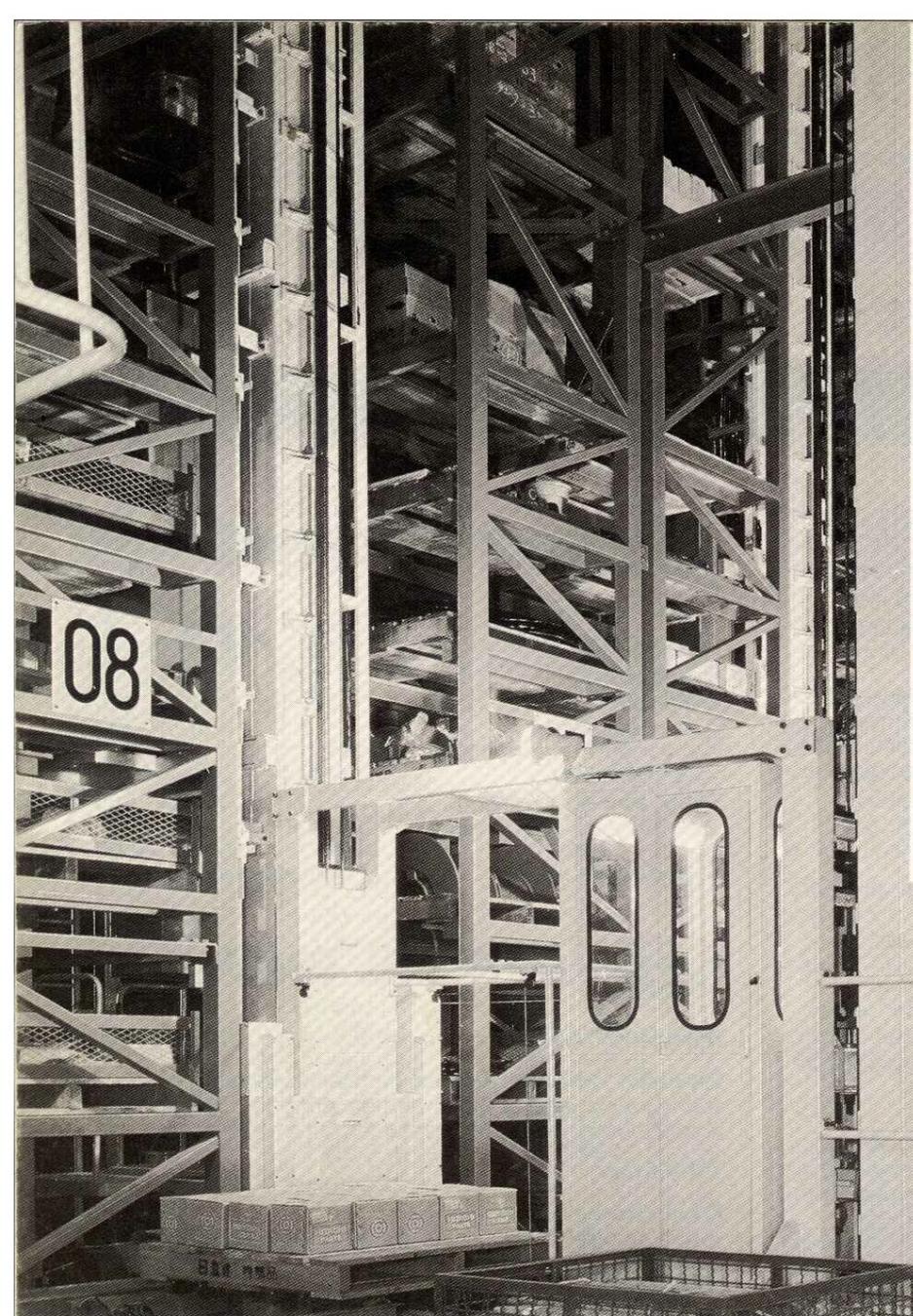


KH100-2

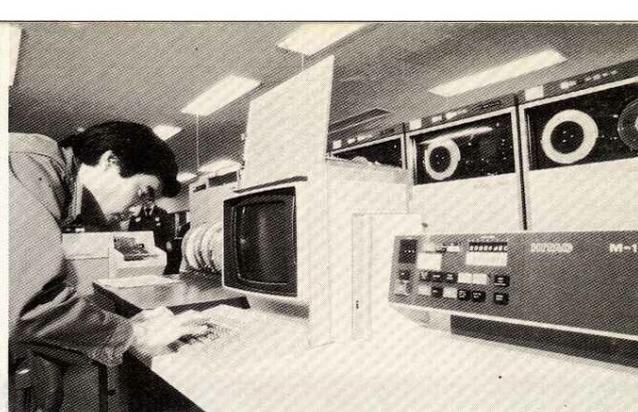
HYDRAULIC CRAWLER CRANE

Max. Lifting Capacity: 30 000 kg





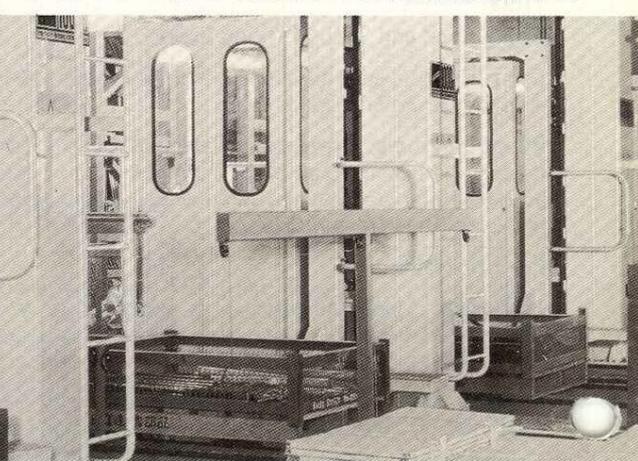
Multi-story automatic warehouse



Local on-site data gathering provides essential feed back for computer analysis .



Computerized parts supply ... video data terminal.



Better After-Sales Service Assures Higher Availability.

These specifications are subject to change without notice.

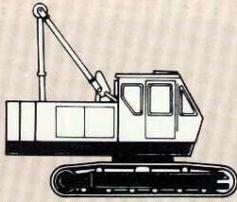
Hitachi Construction Machinery Co.,Ltd.

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Cable Address: "TOKHITACHIKENKI"
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Front Attachments

Basic Machine

STD. Basic Machine



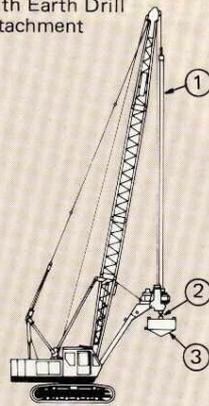
Boom



Lift crane	10 – 37 m (32'10" – 121'6")
Pile driver	10 – 16 m (32'10" – 52'6")
Clamshell	10 – 19 m (32'10" – 62'4")
Dragline	10 – 19 m (32'10" – 62'4")

Earth Drill

Basic Machine with Earth Drill attachment



Boom length: 19 m (62'4")

Kelly bar

①

Stem rod

②

Drill Buckets

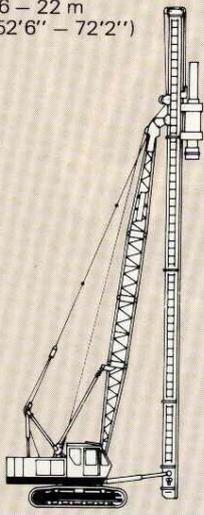


W (mm)	Capacity (m ³)
1 700	0.86
1 600	0.83
1 500	0.94
1 400	0.87
1 300	0.8
1 200	0.8
1 100	0.57
1 000	0.54
Max. drilling depth	
①	33 m
① + ②	43 m

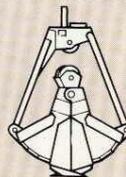
Attachment

Leader for piledriving

16 – 22 m
(52'6" – 72'2")

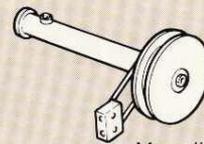


Clamshell bucket



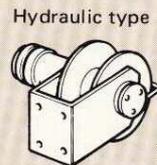
0.6 – 1.2 m³
(3/4 – 1-1/2 cu yd)

Spring type



Max. digging depth
12 m (39'4")

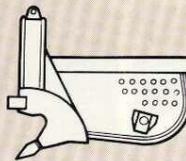
Tagline



Hydraulic type

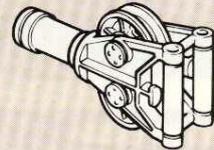
Max. digging depth
36 m (118'1")

Dragline bucket



0.6 – 0.96 m³
(3/4 – 1-1/4 cu yd)

Fair-lead

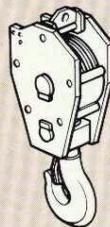


Hook Blocks

15-tonne



30-tonne



Auxiliary jib



Jib

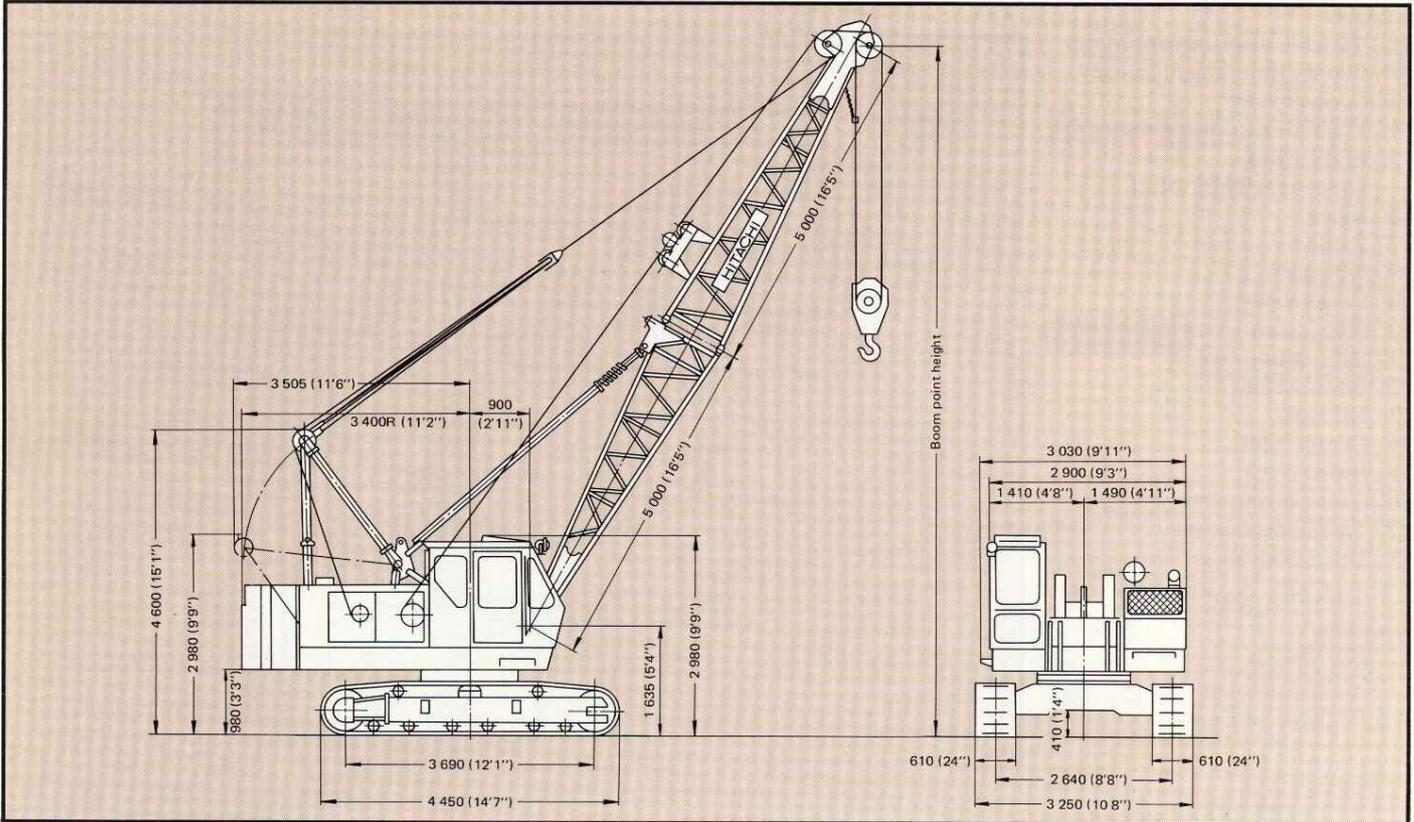
6.10 – 9.15 m (20' – 30')

5-tonne hook



CRAWLER CRANE

Dimensions

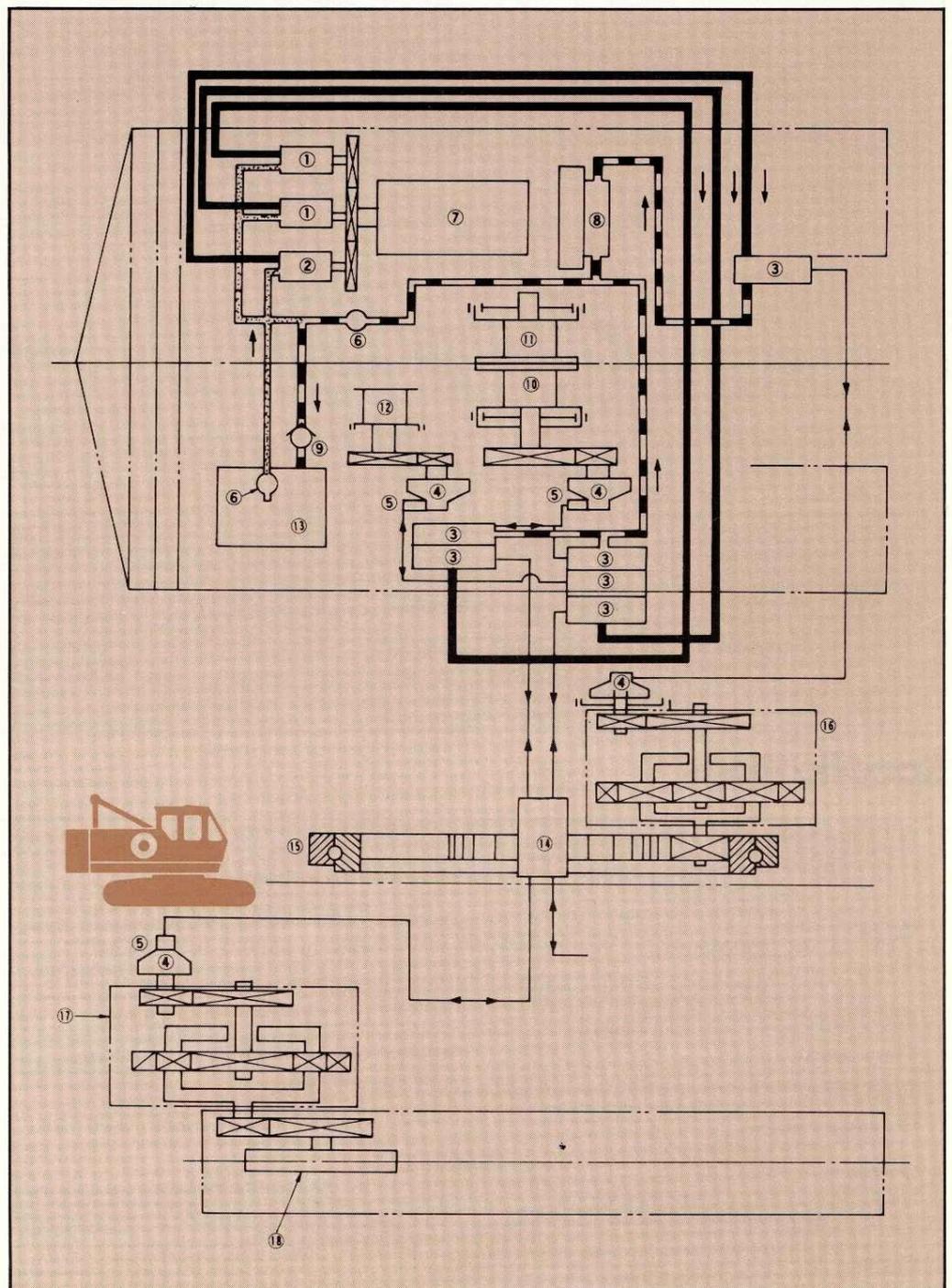


Specifications

Maximum rated load		30 000 kg (66 100 lb) at 3.0 m (9'10") working radius
Boom	Basic boom length	10.0 m (32'10")
	Max. boom length	37.0 m (121'5")
	Jib length	6.10 m (20'0"), 9.15 m (30'0")
	Max. boom with jib length	40.15 m (131'9") [31.0 m (101'8") + 9.15 m (30'0")]
Swing speed		0 – 3.8 min ⁻¹ (0 – 3.8 rpm)
Travel speed		0 – 1.3 km/h (0 – 0.81 mph)
Gradeability		22° (40%)
Ground pressure		0.63 bar (0.63 kgf/cm ² , 8.96 psi)
Operating weight	Equipped with basic boom, 30 000 kg (66 100 lb) capacity hook and 8 400 kg (18 500 lb) counterweight	30 800 kg (67 900 lb)
Engine	Model	HINO EL100
	Rated horsepower	90 kW (122 PS) at 2 000 min ⁻¹ (2 000 rpm)

Power Transmission Mechanism and Hydraulic System

- 1 Variable displacement pump
- 2 Fixed displacement pump
- 3 Control valve
- 4 Fixed displacement motor
- 5 Brake valve (counterbalance valve)
- 6 Filter
- 7 Engine
- 8 Oil cooler
- 9 Check valve
- 10 Main drum
- 11 Aux. drum
- 12 Boom drum
- 13 Oil tank
- 14 Center joint
- 15 Swing circle
- 16 Swing mechanism
- 17 Tarvel mechanism
- 18 Drive tumbler



HYDRAULIC SYSTEM

2 variable displacement piston pumps + 1 gear pump hydraulic system allows both independent and combined operations of all functions. Variable-displacement piston pumps not only adequately control operating speeds, but also utilize engine horsepower to maximum.

	Pump-1	Pump-2
Type of pump	Variable displacement pump	
Pressure setting	250 bar (250 kgf/cm ² , 3 560 psi)	250 bar (250 kgf/cm ² , 3 560 psi)
Oil flow	183 l/min (40.3 Imp gpm, 48.3 U.S. gpm)	183 l/min (40.3 Imp gpm, 48.3 U.S. gpm)
Use	<ul style="list-style-type: none"> • Travel (right) • Main hoist (high) • Aux. hoist (high) • Boom hoist 	<ul style="list-style-type: none"> • Travel (left) • Main hoist (low) • Aux. hoist (low)

	Pump-3	Pump-4
Type of pump	Gear pump	Vane pump
Pressure setting	185 bar (185 kgf/cm ² , 2 630 psi)	40 bar (40 kgf/cm ² , 570 psi)
Oil flow	125 l/min (27.5 Imp gpm, 33.0 U.S. gpm)	14 l/min (3.08 Imp gpm, 3.70 U.S. gpm)
Use	<ul style="list-style-type: none"> • Swing • Third drum (optional) 	<ul style="list-style-type: none"> • Remote-controlled hydraulic servo system. • Main and Aux. clutches • Main and Aux. brakes

Main and Auxiliary Hoist Motor (Common Motor) Radial piston motor with counterbalance valve.

Boom Hoist Motor Radial piston motor with counterbalance valve.

Swing Motor High torque radial piston motor.

Traction Motor Low-speed high-torque radial piston motor with brake valve and spring-set/hydraulic-released multiplate disc brake.

Relief and Brake Valves Each hydraulic circuit incorporates large-capacity relief valves to protect circuit from overload or shock load. Counterbalance valves (compensates safe, positive load lowering and prevents accidental load drop when hydraulic power is suddenly reduced) are provided for hoist motor. Brake valves (consisting of relief valve and counterbalance valve) are provided for travel circuit.

Pressure Setting

MAIN CIRCUIT

- Main relief valves
 - Hoist (main and aux.) travel and boom 250 bar
(250 kgf/cm², 3 560 psi)
 - Swing 185 bar
(185 kgf/cm², 2 630 psi)
- Overload relief valves
 - Hoist (main and aux.) circuit 250 bar
(250 kgf/cm², 3 560 psi)
 - Boom hoist circuit . . . 160 bar (160 kgf/cm², 2 280 psi)
 - Travel circuit 230 bar (230 kgf/cm², 3 270 psi)

PILOT CIRCUIT

- Main relief valve 40 bar (40 kgf/cm², 570 psi)

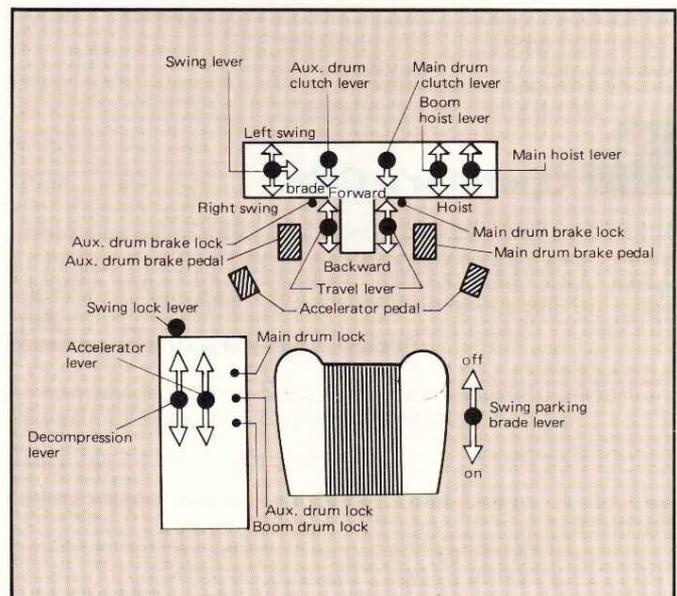
Line Filters High filtration 10 μ full-flow filter element is provided to keep hydraulic oil clean and ensure long-term, trouble-free operation. Pilot filter and suction filter are provided for each circuit.

CONTROLS

Boom, Main and Auxiliary Hoist and Travel Remote controlled hydraulic servo. Working speed can be precisely controlled by changing lever stroke.

Swing Mechanical linkage type.

Fuel Control Tow foot throttles and hand throttle controls equipped as standard.



Specifications



SUPERSTRUCTURE



Engine

Model	HINO EL 100
Type	Water-cooled, 4-cycle, 6-cylinder, direct fuel injection type diesel engine
Rated horsepower	90 kW (122 PS) at (DIN 6 270, Net) 2 000 min ⁻¹ (2 000 rpm)
Maximum torque	461 Nm (47 kgf·m, 340 ft·lbf) at 1 400 min ⁻¹ (1 400 rpm)
Piston displacement	7.86 l (479 cu in)
Fuel tank capacity	250 l (55 Imp gal, 66 U.S. gal)
Electric system	24 V AC generating



Main and Auxiliary Hoist Mechanism

Hoist mechanism consists of main and auxiliary drums installed on an axis. Load hoisting/lowering is done by normal/reverse driving of the high-torque piston motor. Smooth, precise power lowering is made possible through the hydraulic system. A single lever gives a choice of two speeds, high or low, for hoisting/lowering.

Hoisting/lowering speeds are proportionally related to the lever stroke, making it easier to match exact job conditions.

Clutches Main hoist and auxiliary hoist clutches are of internal expanding friction band type, powered by hydraulic clutch cylinders. Spring type accumulator is provided to produce boost pressure when engine stops.

Brakes External contracting friction band-type mechanical brakes, integrated with link lever, etc., when under normal load. When under a larger load, spring-set auxiliary device actuates depending on the load. Offers positive and smooth braking operation with moderate foot pedal force. Mechanical brake locks are equipped as standard.

Drums Main hoist and auxiliary hoist drums are of special alloy cast iron.

Drum Locks Main and auxiliary drum pawl locks are manually controlled from operator's seat.



Boom Hoist Mechanism

Completely independent operation.

Boom hoisting/lowering is done by normal/reverse driving of the high-torque piston motor. Boom lowering is made by power lowering through the hydraulic system. Instant hoisting/lowering of boom is possible. Both hydraulic brake and spring-set hydraulic-released band-type brake offer positive and safe stopping of boom. When boom is hoisted or lowered, brakes are automatically released.

Boom Drum Brakes Spring-set, hydraulic-released external contracting friction band type. Brake is automatically actuated when control lever is at neutral position.

Drum Locks Drum pawl lock is manually controlled from operator's seat.



Swing Mechanism

Completely independent operation. Driven by high-torque piston motor through reduction gear, swing speeds are freely controllable within the 0 to maximum speed with single lever stroking.

Swing Brake A disc type swing brake can be hydraulically actuated by shifting the swing lever from neutral position toward the right.

Swing Parking Brake A disc type swing brake is mechanically actuated by lifting up the swing parking brake lever located at the right side of operator's seat.

Swing Lock Manually operated mechanical lock with a rod tip which is engaged in a holder of track frame during transportation.

Swing Circle Single-row shear-type ball bearing with heat-treated internal gear.

Swing speed 0 – 3.8 min⁻¹ (0 – 3.8 rpm)



Revolving Frame

All steel welded construction, stress-relieved, precision-machined unit, especially designed for rigidity and strength.

Gantry Lowerable for transportation.

Counterweight Welded structure. Total weight 8 400 kg (18 500 lb)

Consists of two sections: one: 4 500 kg (9 920 lb)
one: 3 900 kg (8 600 lb)



Boom

Angle Chord CRANE Boom 973 mm (38") wide by, 973 mm (38") deep at connection, lattice construction, high tensile strength steel angle chord.

- Basic boom 2-piece, total length 10.0 m (32'10"); upper section 5.0 m (16'5") and lower section 5.0 m (16'5").
- Boom point Offset boom point, 3 sheaves [400 mm (16") p.c.d.] mounted on anti-friction bearings on boom peak.
- Boom insert 3.0 m (9'10") and 6.0 m (19'8") long available with appurtenant pendants.
- Connection type Pin-connected
- Boom backstop Dual-rail, telescopic tubular construction with spring bumper.
- Boom hoist bridle . . . Serves as connection between pendants and boom hoist wire rope reeving, equipped with 5 sheaves [230 mm (9") p.c.d.] for 10-part boom hoist wire rope reeving.

Crane Jib 550 mm (22") wide by 480 mm (19") deep at connection, lattice construction, high tensile strength steel tubular chord.

- Basic jib 2-piece, total length 6.10 m (20'0"), upper section 3.05 m (10'0"), and lower section 3.05 m (10'0").
- Jib point 1 sheave [400 mm (16") p.c.d.] mounted on anti-friction bearings on jib peak.
- Jib insert 3.05 m (10'0") long available.
- Connection type Pin-connected
- Auxiliary jib Optional



Operator's Cab

All-weather, well-ventilated, all-round visibility, roomy operator's cab. The completely independent cab is insulated against noise and vibration. Sliding, fold-in front window swings up and stores in roof. Fully adjustable reclining seat.



UNDERCARRIAGE

Traction mechanism Each track is driven by a high-torque piston motor through reduction gear. This mechanism allows counter-rotation of tracks for maximum maneuverability in close quarters. When lever is at neutral position, both hydraulic brake and spring-set/hydraulic-released multiplate disc brake are automatically actuated to effect reliable stopping. Upper and lower rollers, sprockets and idlers are lifetime-lubricated.

- Gradeability 22° (40%)
- Travel speed 0 – 1.3 km/h (0 – 0.81 mph)

Track Frame All-welded, stress relieved, box section construction.

Side Frame Side frames of all-welded robust rolled steel, stress-relieved, box section construction.

Rollers and Tumblers All rollers and tumblers are sealed with floating seals, requiring no lubricating until overhaul. All shafts are made of alloy steel and induction-hardened for maximum wear resistance.

Track Tension Adjuster Adjusting bolts are immersed in lubricant for full protection.

Track Shoes Heat treated alloy steel castings with induction hardened roller path and driving lugs. Shoes are connected by induction-hardened steel pins.

- No. of upper rollers (on each side) 2
- No. of lower rollers (on each side) 6
- No. of track shoes (on each side) 52
- Shoe width 610 mm (24")
760 mm (30")
Optional



SAFETY DEVICES

Boom Angle Indicator Mechanical type boom angle indicator is provided at boom foot.

Counterbalance Valve (Brake Valve) A counterbalance valve is incorporated in travel motors, boom hoist motor, main and auxiliary hoist motor respectively. In case the hydraulic line is broken, this valve is automatically actuated to prevent accidents.

Spring-set/Hydraulic-released Multiplate Disc Type Travel Brakes

Swing Lock and Swing Parking Brake

Drum Lock A pawl type drum lock is adopted for main drum, auxiliary drum and boom drum.

Boom Overhoist Prevention Device When the boom reaches its safety angle limit, a buzzer alarm sounds and boom hoisting automatically stops at the same time. A telescope type boom backstop is also installed.

For Lift crane

- **Electric Load Indicator** This indicator is an electrically operated type that reads the weight of a suspended load. The load pick-up device is installed on the upper boom.
- **Hook Overhoist Prevention Device** When the hook reaches its safety hoist limit, an alarm bell rings and an auto-stop device auto-matically stops at the same time.



SERVICE REFILL CAPACITIES

	Liters	Imp gal	U.S. gal
Fuel tank	250.0	55.00	66.00
Engine coolant	40.0	8.80	10.60
Engine oil	20.0	4.40	5.28
Pump transmission	2.3	0.51	0.61
Boom and winch hoist motor reduction device	40.0	8.80	10.60
Swing reduction device	4.0	0.88	1.06
Travel final device (On each)	20.0	4.40	5.28
Hydraulic system	387.0	85.10	102.00
Hydraulic tank	300.0	66.00	79.30



OPTIONAL EQUIPMENT

Operator's Cab Cab heater, electric fan, car radio, cab cooler

Spring-Set Hydraulic Released Automatic Hoist Brake Spring-set/hydraulic-released external-contracting friction band type automatic hoist brakes are available.

Third Drum

P.T.O. Driving a generator.
A built-in type lifting magnet or a welder can be installed.

Auxiliary Jib Can be attached to the top of main boom for auxiliary hook-hoisting operation.

HOOKS

Capacity	Weight	Number of hoist reeving and maximum rated loads						
		6	5	4	3	2	1	
30 000 kg (66 100 lb)	400 kg (880 lb)	30 000 kg (66 100 lb)	25 000 kg (55 100 lb)	20 000 kg (44 100 lb)	15 000 kg (33 100 lb)	10 000 kg (22 000 lb)	5 000 kg (11 000 lb)	Standard for main boom
15 000 kg (33 100 lb)	300 kg (660 lb)				15 000 kg (33 100 lb)	10 000 kg (22 000 lb)	5 000 kg (11 000 lb)	Optional for main boom
5 000 kg (11 000 lb)	130 kg (290 lb)						5 000 kg (11 000 lb)	Optional for jib or aux. jib

DRUMS

Dimensions

	Rope dia.	Width	Drum p.c.d.	Max. rope capacity
Main hoist drum	20 mm (0.787")	264 mm (10.39")	400 mm (15.75")	180 m (590')
Aux. hoist drum	20 mm (0.787")	264 mm (10.39")	400 mm (15.75")	180 m (590')

Line speed and line pull

H: High speed range L: Low speed range

	Max. line speed m/min (ft/min)				Effective line pull	@	Line speed	Max. line pull
	Hoisting		Lowering					
Main hoist drum	H	60 (197)	H	60 (197)	80.4 kN (8 200 kgf) (18 100 lbf)	@	35 m/min (115 ft/min)	125 kN (12 700 kgf) (28 000 lbf)
	L	30 (98)	L	30 (98)				
Aux. hoist drum	H	60 (197)	H	60 (197)	80.4 kN (8 200 kgf) (18 100 lbf)	@	35 m/min (115 ft/min)	125 kN (12 700 kgf) (28 000 lbf)
	L	30 (98)	L	30 (98)				

Notes:

- Line speed and line pull are based on first layer of winding at rated engine rpm.
- Hoisting line speed varies with load.
- Line pull is based on a single line pull in high speed range.
- Effective line pull is equivalent to available line pull of mechanical drive winch.

OPTION

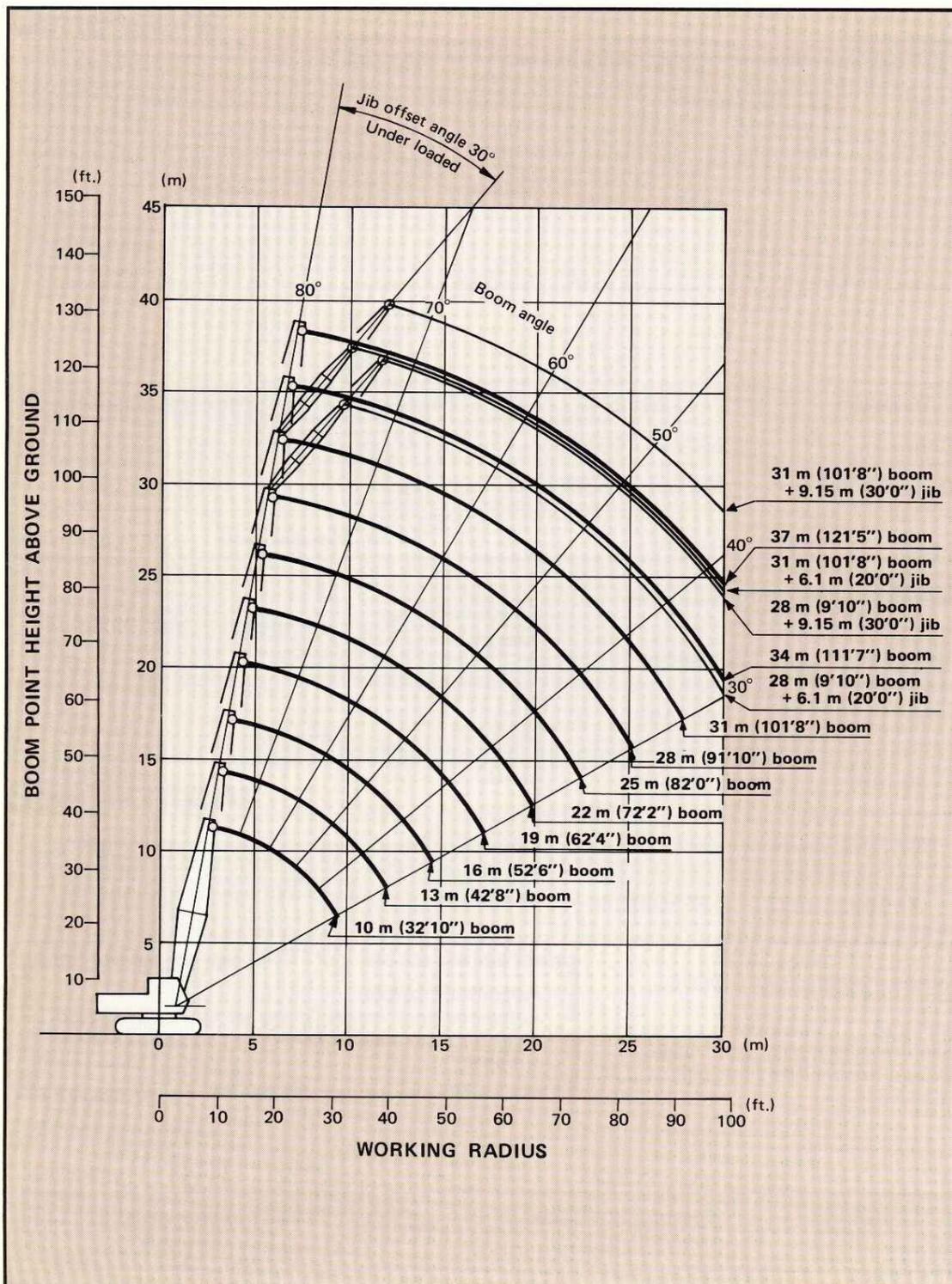
Automatic brake

Automatic hoist brakes (spring-set hydraulic released type) for main and auxiliary drums are available as an optional.

BOOM HOIST DRUM

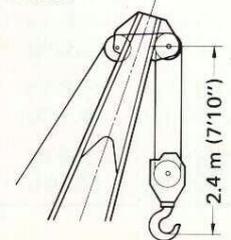
Rope diameter	Hoisting line speed	Lowering line speed
14 mm (0.551")	43 m/min (141 ft/min)	43 m/min (141 ft/min)

Working Ranges



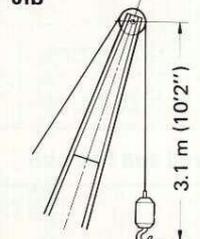
Hook Clearance

Boom



30 000 kg (66 100 lb)
Capacity hook

Jib



5 000 kg (11 000 lb)
Capacity hook

Crane Ratings

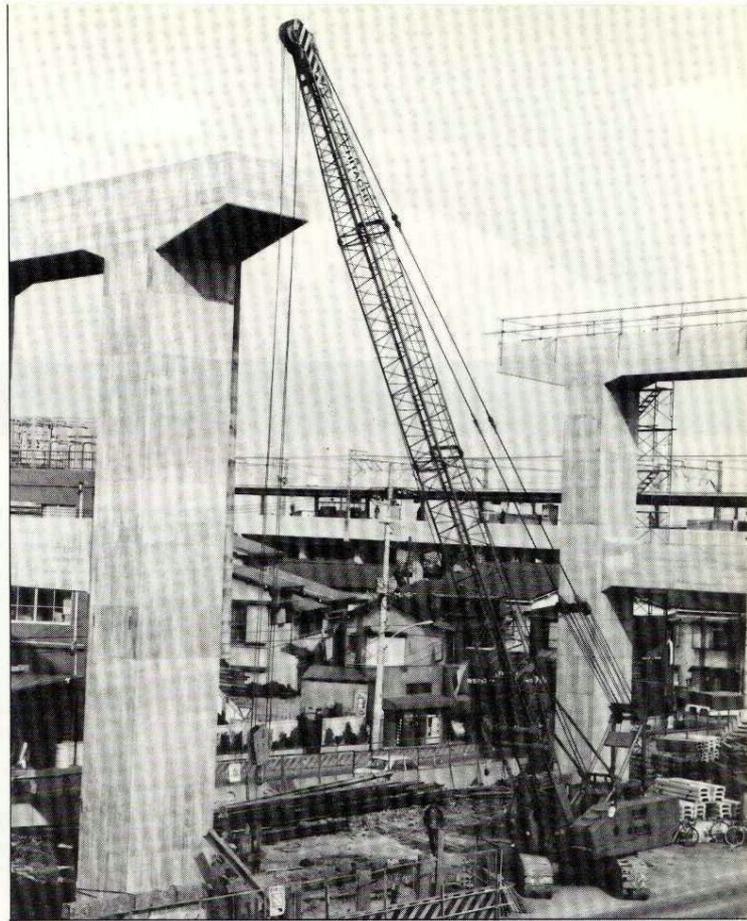
BS Rating:

The rated loads are determined according to BS (British Standard) and do not exceed the following limits on condition that the machine is standing on firm, level ground:

- 1) 66-2/3 % of tipping load when the rated load is less than 8 ton.
- 2) Tipping load minus 4 ton when the rated load is 8 ton to 12 ton.
- 3) 75 % of tipping load when the rated load is more than 12 ton.

PCSA Rating:

The rated loads, listed are determined according to PCSA (Power Crane and Shovel Association in U.S.A.) and do not exceed 75 % of tipping load on condition that the machine is stationed on firm, level ground.



Tubular chord crane boom in 360° working area

Continued

Boom length m (ft in.)	Working radius m ft in.		Boom angle degree	Boom point height m ft in.		Rated loads			
						BS rating		PCSA rating (75%)	
						kg	lb	kg	lb
10.0 (32'10")	3.0	9'10"	79.3	11.4	37'5"	30 000	66 100	30 000	66 100
	3.5	11'6"	76.3	11.3	37'1"	23 600	52 000	23 600	52 000
	4.0	13'1"	73.3	11.1	36'5"	19 000	41 900	19 000	41 900
	4.5	14'9"	70.3	11.0	36'1"	15 850	34 900	15 850	34 900
	5.0	16'5"	67.2	10.8	35'5"	13 600	30 000	13 600	30 000
	6.0	19'8"	60.7	10.2	33'6"	10 000	22 000	10 500	23 100
	7.0	23'0"	53.8	9.6	31'6"	7 600	16 800	8 500	18 700
	8.0	26'3"	46.2	8.7	28'7"	6 350	14 000	7 150	15 800
	9.0	29'6"	37.3	7.5	24'7"	5 450	12 000	6 100	13 400
9.6	31'6"	30.9	6.6	21'8"	4 950	10 900	5 550	12 200	
13.0 (42'8")	3.5	11'6"	79.5	14.4	47'3"	23 550	51 900	23 550	51 900
	4.0	13'1"	77.3	14.3	46'11"	18 950	41 800	18 950	41 800
	4.5	14'9"	75.0	14.1	46'3"	15 800	34 800	15 800	34 800
	5.0	16'5"	72.7	14.0	45'11"	13 550	29 900	13 550	29 900
	6.0	19'8"	68.0	13.6	44'7"	9 950	21 900	10 450	23 000
	7.0	23'0"	63.1	13.1	43'0"	7 500	16 500	8 450	18 600
	8.0	26'3"	58.0	12.5	41'0"	6 300	13 900	7 050	15 500
	9.0	29'6"	52.5	11.8	38'9"	5 350	11 800	6 050	13 300
	10.0	32'10"	46.6	10.9	35'9"	4 650	10 300	5 250	11 600
	12.0	39'5"	32.4	8.4	27'7"	3 650	8 050	4 100	9 040
12.2	40'0"	30.7	8.1	26'7"	3 550	7 830	4 000	8 820	
16.0 (52'6")	4.0	13'1"	79.7	17.3	56'9"	18 900	41 700	18 900	41 700
	4.5	14'9"	77.9	17.2	56'5"	15 750	34 700	15 750	34 700
	5.0	16'5"	76.0	17.1	56'1"	13 450	29 700	13 450	29 700
	6.0	19'8"	72.3	16.8	55'1"	9 850	21 700	10 400	22 900
	7.0	23'0"	68.5	16.4	53'10"	7 450	16 400	8 400	18 500
	8.0	26'3"	64.5	16.0	52'6"	6 200	13 700	7 000	15 400
	9.0	29'6"	60.4	15.4	50'6"	5 300	11 700	5 950	13 100
	10.0	32'10"	56.2	14.8	48'7"	4 600	10 100	5 200	11 500
	12.0	39'5"	46.9	13.2	43'4"	3 600	7 940	4 050	8 930
	14.0	45'11"	35.9	10.8	35'5"	2 900	6 390	3 300	7 280
14.8	48'7"	30.6	9.6	31'10"	2 700	5 950	3 000	6 610	
19.0 (62'4")	4.5	14'9"	79.8	20.3	66'7"	15 700	34 600	15 700	34 600
	5.0	16'5"	78.3	20.2	66'3"	13 450	29 700	13 450	29 700
	6.0	19'8"	75.2	19.9	65'4"	9 800	21 600	10 350	22 800
	7.0	23'0"	72.0	19.6	64'4"	7 450	16 400	8 350	18 400
	8.0	26'3"	68.8	19.3	63'4"	6 200	13 700	6 950	15 300
	9.0	29'6"	65.5	18.8	61'8"	5 300	11 700	5 950	13 100
	10.0	32'10"	62.1	18.3	60'1"	4 600	10 100	5 150	11 400
	12.0	39'5"	55.0	17.1	56'1"	3 550	7 830	4 000	8 820
	14.0	45'11"	47.1	15.4	50'6"	2 900	6 390	3 250	7 160
	16.0	52'6"	38.1	13.2	43'4"	2 400	5 290	2 700	5 950
17.4	57'1"	30.5	11.1	36'5"	2 100	4 630	2 350	5 180	

Boom length m (ft in.)	Working radius		Boom angle degree	Boom point height		Rated loads			
	m	ft in.		m	ft in.	BS rating		PCSA rating (75%)	
						kg	lb	kg	lb
22.0 (72'2")	5.0	16'5"	79.9	23.3	76'5"	13 350	29 400	13 350	29 400
	6.0	19'8"	77.2	23.0	75'6"	9 700	21 400	10 300	22 700
	7.0	23'0"	74.5	22.8	74'10"	7 350	16 200	8 300	18 300
	8.0	26'3"	71.8	22.5	73'10"	6 150	13 600	6 900	15 200
	9.0	29'6"	69.0	22.1	72'6"	5 200	11 500	5 850	12 900
	10.0	32'10"	66.2	21.7	71'2"	4 500	9 920	5 050	11 100
	12.0	39'5"	60.3	20.6	67'7"	3 500	7 720	3 950	8 710
	14.0	45'11"	54.1	19.3	63'4"	2 800	6 170	3 150	6 940
	16.0	52'6"	47.3	17.6	57'9"	2 300	5 070	2 600	5 730
	18.0	59'1"	39.6	15.5	50'10"	1 950	4 300	2 150	4 740
	20.0	65'7"	30.4	12.6	41'4"	1 650	3 640	1 850	4 080
25.0 (82'0")	6.0	19'8"	78.8	26.1	85'8"	9 650	21 300	10 250	22 600
	7.0	23'0"	76.4	25.9	85'0"	7 300	16 100	8 250	18 200
	8.0	26'3"	74.1	25.6	84'0"	6 100	13 400	6 850	15 100
	9.0	29'6"	71.6	25.3	83'0"	5 150	11 400	5 800	12 800
	10.0	32'10"	69.2	24.9	81'8"	4 450	9 810	5 050	11 100
	12.0	39'5"	64.2	24.0	78'9"	3 450	7 610	3 900	8 600
	14.0	45'11"	59.0	22.9	75'2"	2 750	6 060	3 100	6 830
	16.0	52'6"	53.4	21.6	70'10"	2 250	4 960	2 550	5 620
	18.0	59'1"	47.4	19.9	65'4"	1 900	4 190	2 150	4 740
	20.0	65'7"	40.7	17.8	58'5"	1 600	3 530	1 800	3 970
	22.0	72'2"	33.0	15.0	49'3"	1 350	2 980	1 500	3 310
22.6	74'2"	30.3	14.1	46'3"	1 300	2 870	1 450	3 200	
28.0 (91'10")	6.0	19'8"	80.0	29.2	95'10"	9 550	21 100	10 150	22 400
	7.0	23'0"	77.9	29.0	95'2"	7 250	16 000	8 150	18 000
	8.0	26'3"	75.8	28.7	94'2"	6 000	13 200	6 800	15 000
	9.0	29'6"	73.7	28.4	93'2"	5 100	11 200	5 750	12 700
	10.0	32'10"	71.5	28.1	92'2"	4 400	9 700	4 950	10 900
	12.0	39'5"	67.1	27.3	89'7"	3 400	7 500	3 800	8 380
	14.0	45'11"	62.6	26.4	86'7"	2 700	5 950	3 050	6 720
	16.0	52'6"	57.9	25.2	82'8"	2 200	4 850	2 500	5 510
	18.0	59'1"	52.9	23.8	78'1"	1 800	3 970	2 050	4 520
	20.0	65'7"	47.5	22.1	72'6"	1 500	3 310	1 700	3 750
	22.0	72'2"	41.6	20.0	65'7"	1 300	2 870	1 450	3 200
24.0	78'9"	34.9	17.5	57'5"	1 100	2 430	1 200	2 650	
25.2	82'8"	30.3	15.5	50'10"	1 000	2 200	1 100	2 430	
31.0 (101'8")	7.0	23'0"	79.1	32.0	105'0"	7 200	15 900	8 100	17 900
	8.0	26'3"	77.2	31.8	104'4"	6 000	13 200	6 750	14 900
	9.0	29'6"	75.3	31.6	103'8"	5 050	11 100	5 700	12 600
	10.0	32'10"	73.4	31.3	102'8"	4 350	9 590	4 900	10 800
	12.0	39'5"	69.5	30.6	100'5"	3 350	7 390	3 750	8 270
	14.0	45'11"	65.4	29.7	97'5"	2 650	5 840	3 000	6 610
	16.0	52'6"	61.3	28.7	94'2"	2 150	4 740	2 450	5 400
	18.0	59'1"	57.0	27.5	90'3"	1 800	3 970	2 000	4 410
	20.0	65'7"	52.4	26.1	85'8"	1 500	3 310	1 650	3 640
	22.0	72'2"	47.6	24.3	79'9"	1 250	2 760	1 400	3 090
	24.0	78'9"	42.3	22.3	73'2"	1 050	2 310	1 150	2 540
26.0	85'4"	36.4	19.8	65'0"	850	1 870	1 000	2 200	
27.8	91'3"	30.2	17.0	55'9"	750	1 650	850	1 870	
34.0 (111'7")	7.1	23'4"	79.9	35.1	115'2"	6 950	15 300	7 850	17 300
	8.0	26'3"	78.4	34.9	114'6"	5 900	13 000	6 650	14 700
	9.0	29'6"	76.6	34.7	113'10"	5 000	11 000	5 650	12 500
	10.0	32'10"	74.9	34.4	112'10"	4 300	9 480	4 850	10 700
	12.0	39'5"	71.4	33.8	110'11"	3 300	7 280	3 700	8 160
	14.0	45'11"	67.7	33.0	108'3"	2 600	5 730	2 900	6 390
	16.0	52'6"	64.0	32.1	105'4"	2 100	4 630	2 350	5 180
	18.0	59'1"	60.2	31.0	101'9"	1 700	3 750	1 900	4 190
	20.0	65'7"	56.2	29.8	97'9"	1 400	3 090	1 600	3 530
	22.0	72'2"	52.0	28.3	92'10"	1 150	2 540	1 300	2 870
	24.0	78'9"	47.6	26.6	87'3"	950	2 090	1 100	2 430
26.0	85'4"	42.8	24.6	80'9"	800	1 760	900	1 980	
28.0	91'10"	37.6	22.2	72'10"	650	1 430	750	1 650	
30.0	98'5"	31.5	19.2	63'0"	550	1 210	600	1 320	

Boom length	Working radius		Boom angle	Boom point height		Rated loads			
						BS rating		PCSA rating (75%)	
						m	ft in.	kg	lb
37.0 (121'5")	8.0	26'3"	79.3	37.9	124'4"	5 850	12 900	6 600	14 600
	9.0	29'6"	77.7	37.7	123'8"	4 950	10 900	5 550	12 200
	10.0	32'10"	76.1	37.5	123'0"	4 250	9 370	4 800	10 600
	12.0	39'5"	72.9	36.9	121'1"	3 250	7 160	3 650	8 050
	14.0	45'11"	69.6	36.2	118'9"	2 550	5 620	2 850	6 280
	16.0	52'6"	66.3	35.4	116'2"	2 050	4 520	2 300	5 070
	18.0	59'1"	62.8	34.4	112'10"	1 650	3 640	1 850	4 080
	20.0	65'7"	59.3	33.3	109'3"	1 350	2 980	1 550	3 420
	22.0	72'2"	55.6	32.0	105'0"	1 100	2 430	1 250	2 760
	24.0	78'9"	51.7	30.5	100'1"	900	1 980	1 050	2 310
	26.0	85'4"	47.7	28.8	94'6"	750	1 650	850	1 870
	28.0	91'10"	43.3	26.8	87'11"	600	1 320	700	1 540
	30.0	98'5"	38.5	24.5	80'5"	500	1 100	550	1 210

Rated Load for Main Boom

Notes:

- The rated loads shown are based on the machine on firm level ground without traveling.
- The rated loads shown include the weights of all lifting attachments, such as hook and bucket. The load to be actually lifted is the rated load minus the weight of all lifting attachments.
- When the jib or the auxiliary jib is attached, the load to be actually lifted is the rated load minus the weight listed below.

Jib length	6.10 m (20'0")	9.15 m (30'0")	Aux. jib
Weight to be reduced	700 kg (1 540 lb)	850 kg (1 870 lb)	200 kg (440 lb)

- The jib can be attached to boom of 25.0 m (82'0") to 31.0 m (101'8") long.
- The auxiliary jib can be attached to boom of 10.0 m (32'10") to 34.0 m (111'7") long.
- The rated load for auxiliary jib is equal to that of main boom at the same working radius, but do not exceed maximum rated load 4 000 kg (8 820 lb).
- Counterweight is 8 400 kg (18 500 lb).

Rated Load for Jib

Maximum jib rating

Jib length	6.10 m (20'0")	9.15 (30'0")
Max. rated load	4 000 kg (8 820 lb)	3 600 kg (7 940 lb)

Notes:

- The rated load for jib is equal to that of the main boom at the same working radius, but should not exceed maximum jib ratings shown.
The jib offset angle to the main boom is 30° under loaded condition.
- The maximum working radius of the jib do not exceed that of the main boom used.

Main Boom & Jib Construction

Main Boom Construction

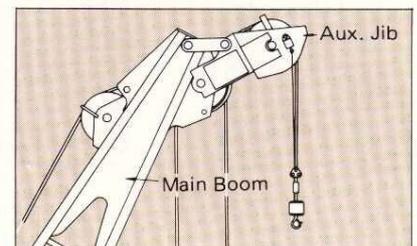
Boom length Element	10.0 m (32'10")	13.0 m (42'8")	16.0 m (52'6")	19.0 m (62'4")	22.0 m (72'2")	25.0 m (82'0")	28.0 m (91'10")	31.0 m (101'8")	34.0 m (111'7")	37.0 m (121'5")
Upper boom 5.0 m (16'5")	1	1	1	1	1	1	1	1	1	1
Lower boom 5.0 m (16'5")	1	1	1	1	1	1	1	1	1	1
Boom insert 3.0 m (9'10")	—	1	2	1	2	1	2	1	2	1
Boom insert 6.0 m (19'8")	—	—	—	1	1	2	2	3	3	4
Available hook	30 000 kg (66 100 lb) hook					15 000 kg (33 100 lb) hook				
Number of rope reeving	6	5	4	4	3	2	2	2	2	2
Boom available with jib										
						Jib length 6.10m (20'0") 9.15 m (30'0")				

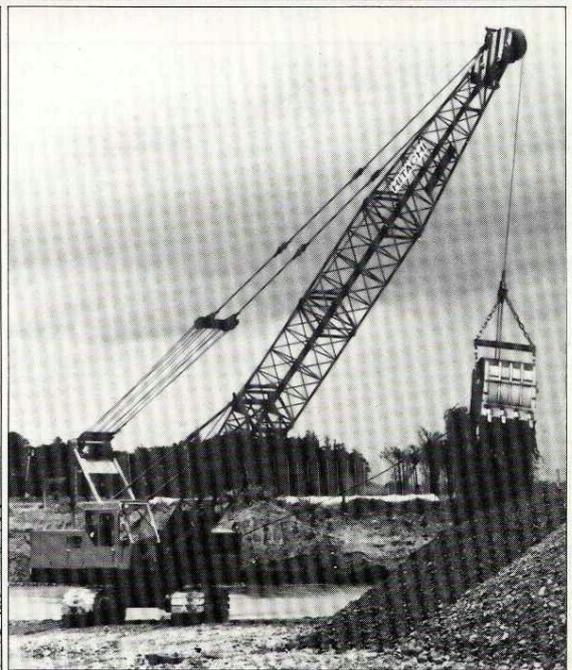
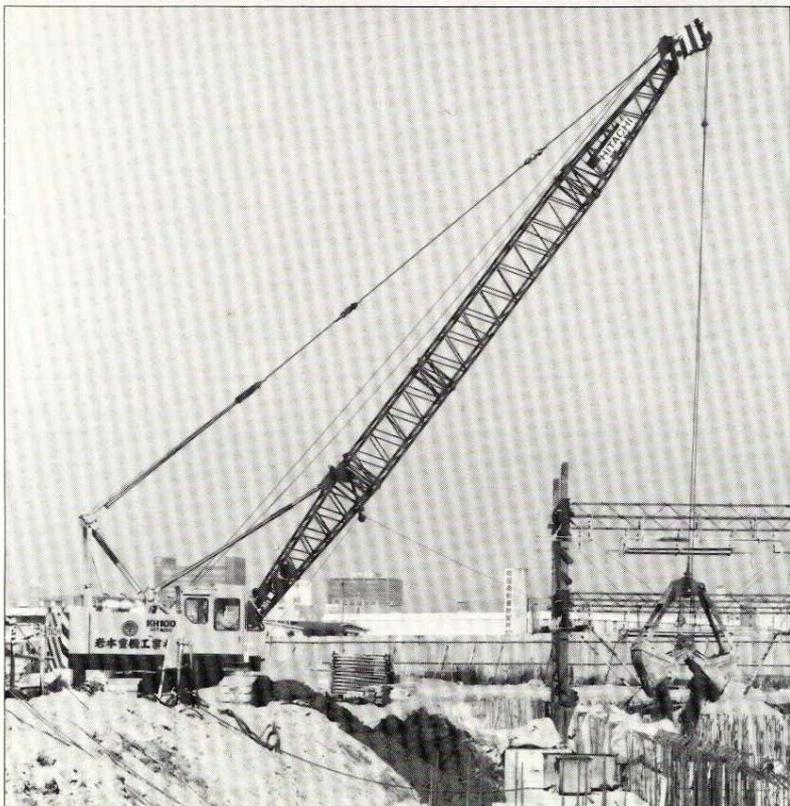
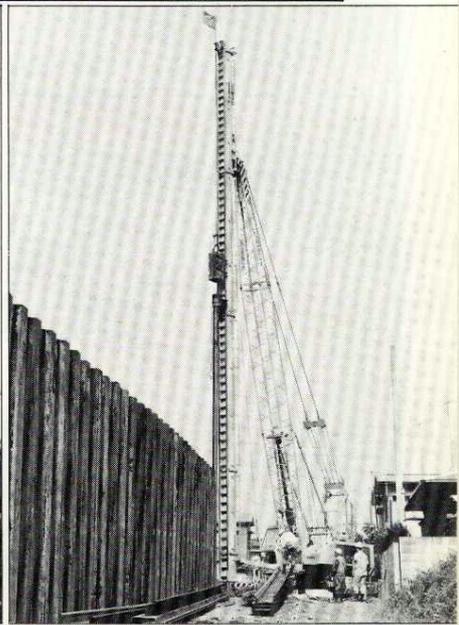
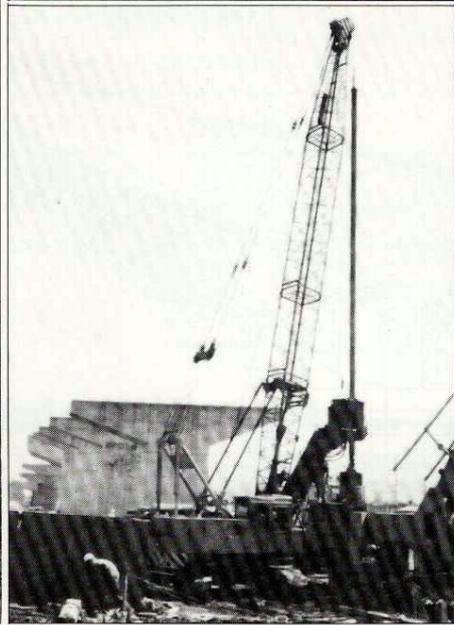
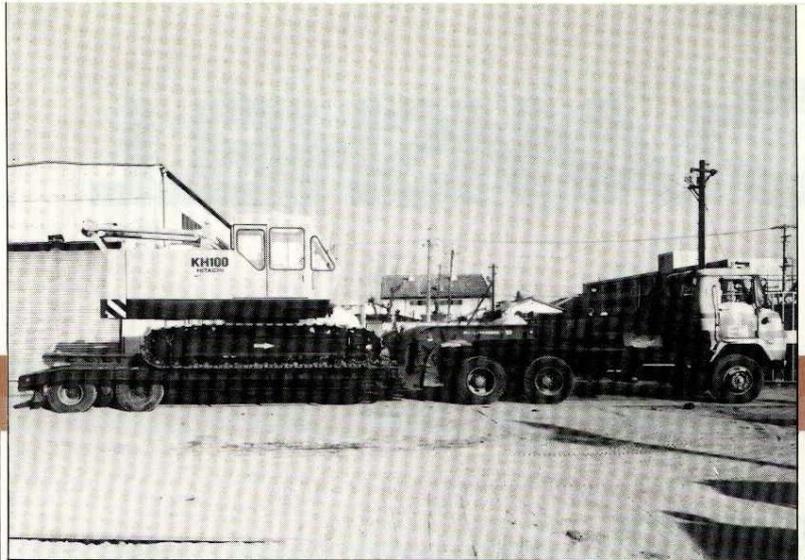
Jib Construction

Element	Jib length	6.10 m (20'0")	9.15 m (30'0")
Lower jib	3.05 m (10'0")	1	1
Upper jib	3.05 m (10'0")	1	1
Jib insert	3.05 m (10'0")	—	1

Auxiliary jib Optional

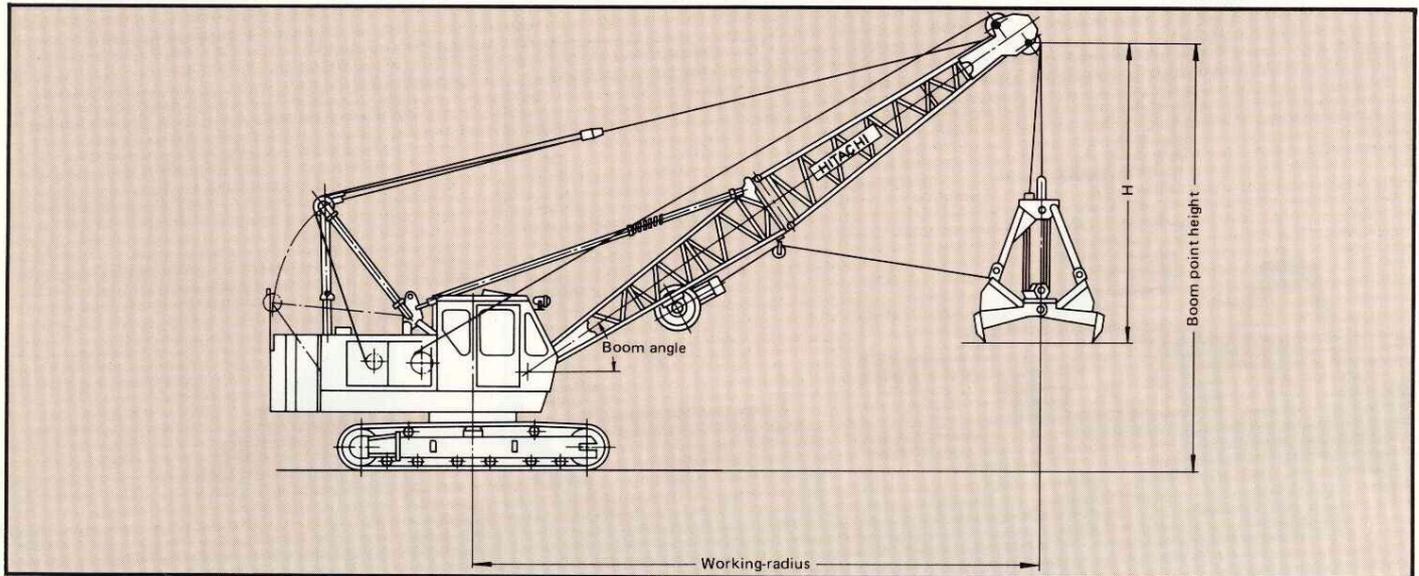
Attachable to main boom top for hoisting lightweight load quickly with a single rope used. (Never use the main and auxiliary hooks at the same time.)





CLAMSHELL

Dimensions



Specifications

Bucket capacity	0.6 m ³ (3/4 cu yd), 0.8 m ³ (1 cu yd), 1.0 m ³ (1-1/4 cu yd), 1.2 m ³ (1-5/8 cu yd)
Boom length	10.0 m (32'10"), 13.0 m (42'8"), 16.0 m (52'6"), 19.0 m (62'4")
Swing speed	0 – 3.8 min ⁻¹ (0 – 3.8 rpm)
Travel speed	0 – 1.3 km/h (0 – 0.81 mph)
Gradeability	22° (40%)
Ground pressure	0.67 bar (0.67 kgf/cm ² , 9.53 psi)
Operating weight	32 600 kg (71 900 lb) When equipped with 10.0 m (32'10") boom, 1.0 m ³ (1-1/4 cu yd) bucket and 8 400 kg (18 500 lb) counterweight

DRUMS

H: High speed range

L: Low speed range

	Rope dia.	Max. line speed m/min (ft/min)	Effective line pull	@	Line speed	Max. line pull
Main hoist drum	20 mm (0.787")	H 60 (197)	80.4 kN (8 200 kgf 18 100 lbf)	@	35 m/min (115 ft/min)	125 kN (12 700 kgf 28 000 lbf)
		L 30 (98)				
Aux. hoist drum	20 mm (0.787")	H 60 (197)	80.4 kN (8 200 kgf 18 100 lbf)	@	35 m/min (115 ft/min)	125 kN (12 700 kgf 28 000 lbf)
		L 30 (98)				

Notes:

- Line speed and line pull are based on first layer of winding drum at rated engine rpm.
- Hoisting line speed varies with load.
- Line pull is based on a single line pull in high speed range.
- Effective line pull is equivalent to available line pull of mechanical drive winch.

BOOM HOIST DRUM

Rope diameter	Hoisting line speed	Lowering line speed
14 mm (0.551")	43 m/min (141 ft/min)	43 m/min (141 ft/min)

BUCKETS

Capacity	Self weight	Bucket clearance : H
0.6 m ³ (3/4 cu yd)	1 550 kg (3 420 lb)	5.1 m (16'9")
0.8 m ³ (1 cu yd)	1 950 kg (4 300 lb)	5.3 m (17'5")
1.0 m ³ (1-1/4 cu yd)	2 100 kg (4 630 lb)	5.5 m (18'1")
*1.2 m ³ (1-1/2 cu yd)	2 300 kg (5 070 lb)	5.7 m (18'8")

*1.2 m³ (1-1/2 cu yd) bucket is light-duty service.

TAGLINE

	Maximum digging depth
Standard spring type	12.0 m (39'5")
Optional hydraulic operated type	36.0 m (118'1")

Clamshell Ratings and Working Ranges

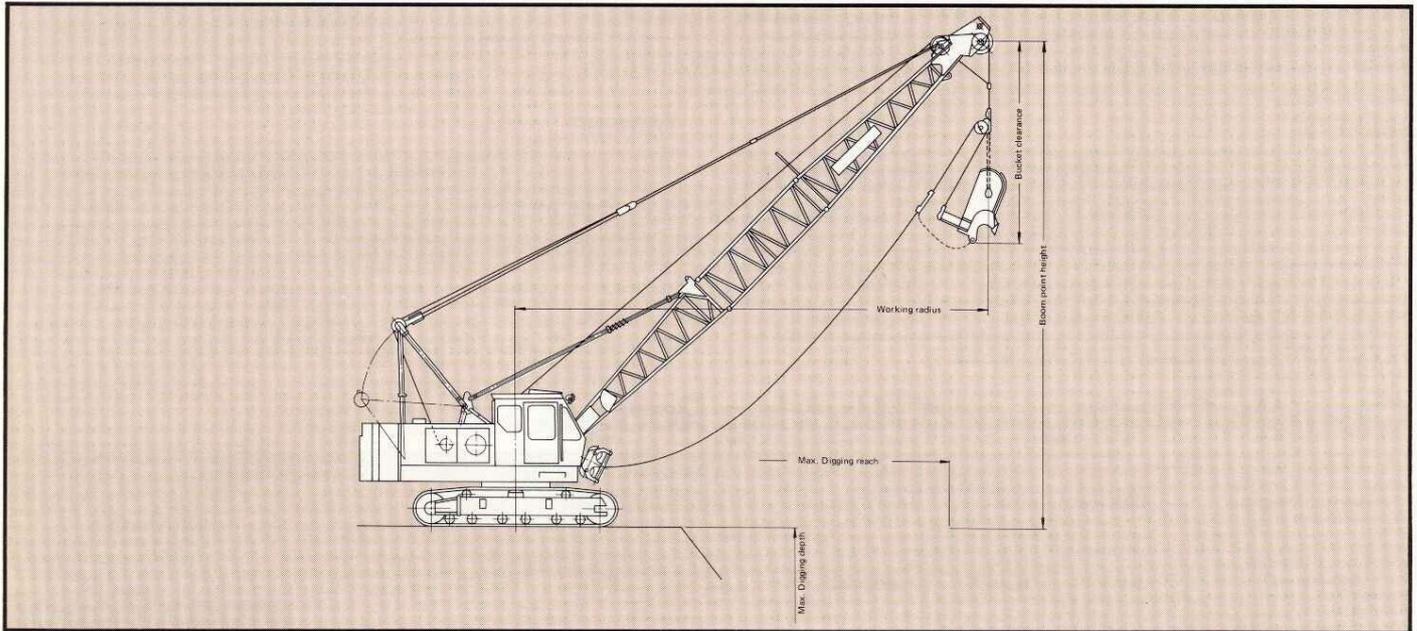
Boom length	Working radius		Boom angle	Boom point height		Rated loads			
						BS rating		PCSA rating	
m (ft in.)	m	ft in.	degree	m	ft in.	kg	lb	kg	lb
10.0 (32'10")	5.5	18'1"	65	10.6	34'9"	4 000	8 820	4 000	8 820
	7.0	23'0"	55	9.7	31'10"	4 000	8 820	4 000	8 820
	8.3	27'3"	45	8.5	27'11"	4 000	8 820	4 000	8 820
	9.4	30'10"	35	7.2	23'7"	4 000	8 820	4 000	8 820
13.0 (42'8")	6.7	22'0"	65	13.3	43'8"	4 000	8 820	4 000	8 820
	8.7	28'7"	55	12.1	39'8"	4 000	8 820	4 000	8 820
	10.4	34'2"	45	10.7	35'1"	3 500	7 720	4 000	8 820
	11.8	38'9"	35	8.9	29'2"	2 950	6 500	3 750	8 270
16.0 (52'6")	8.0	26'3"	65	16.0	52'6"	4 000	8 820	4 000	8 820
	10.4	34'2"	55	14.6	47'11"	3 500	7 720	4 000	8 820
	12.6	41'5"	45	12.8	42'0"	2 650	5 840	3 350	7 390
	14.3	46'11"	35	10.6	34'9"	2 250	4 960	2 800	6 170
19.0 (62'4")	9.3	30'6"	65	18.8	61'8"	4 000	8 820	4 000	8 820
	12.2	40'1"	55	17.1	56'1"	2 850	6 280	3 450	7 610
	14.7	48'3"	45	14.9	48'11"	2 150*	4 740	2 700	5 950
	16.8	55'2"	35	12.3	40'4"	1 750	3 860	2 200	4 850

Notes:

1. The rated loads shown include the bucket weight. The load to be actually lifted is the rated load minus bucket weight.
2. Counterweight is 8 400 kg (18 500 lb)

DRAGLINE

Dimensions



Specifications

Max. rated load	4 450 kg (9 810 lb)
Boom length	10 m (32'10'') – 19 m (62'4'')
Swing speed	0 – 3.8 min ⁻¹ (0 – 3.8 rpm)
Travel speed	0 – 1.3 km/h (0 – 0.81 mph)
Gradeability	22° (40%)
Operating weight with 19 m (62'4'') boom	32 750 kg (72 200 lb) with 0.8 m ³ (1 cu yd) bucket
Ground pressure	0.67 bar (0.67 kgf/cm ² , 9.53 psi)

Buckets

Capacity	Self weight	Bucket clearance : H
0.6 m ³ (3/4 cu yd)*	760 kg (1 680 lb)	3.6 m (11'10'')
0.6 m ³ (3/4 cu yd)	1 020 kg (2 250 lb)	3.6 m (11'10'')
0.8 m ³ (1 cu yd)*	870 kg (1 920 lb)	3.8 m (12'6'')
0.8 m ³ (1 cu yd)	1 070 kg (2 360 lb)	3.8 m (12'6'')
0.96 m ³ (1-1/4 cu yd)*	1 030 kg (2 270 lb)	4.2 m (13'9'')

*Medium duty service

DRUMS

H: High speed range

L: Low speed range

	Rope dia.	Max. line speed m/min (ft/min)		Effective line pull	@	Line speed	Max. line pull
Main hoist drum	20 mm (0.787")	H	60 (197)	80.4 kN 8 200 kgf (18 100 lbf)	@	35 m/min (115 ft/min)	125 kN (12 700 kgf) (28 000 lbf)
		L	30 (98)				
Aux. hoist drum	20 mm (0.787")	H	60 (197)	80.4 kN 8 200 kgf (18 100 lbf)	@	35 m/min (115 ft/min)	125 kN (12 700 kgf) (28 000 lbf)
		L	30 (98)				

Notes:

- Line speed and line pull are based on first layer of winding drum at rated engine rpm.
- Hoisting line speed varies with load.
- Line pull is based on a single line pull in high speed range.
- Effective line pull is equivalent to available line pull of mechanical drive winch.

BOOM HOIST DRUM

Rope diameter	Hoisting line speed	Lowering line speed
14 mm (0.551")	43 m/min (141 ft/min)	43 m/min (141 ft/min)

Dragline Ratings and Working Ranges

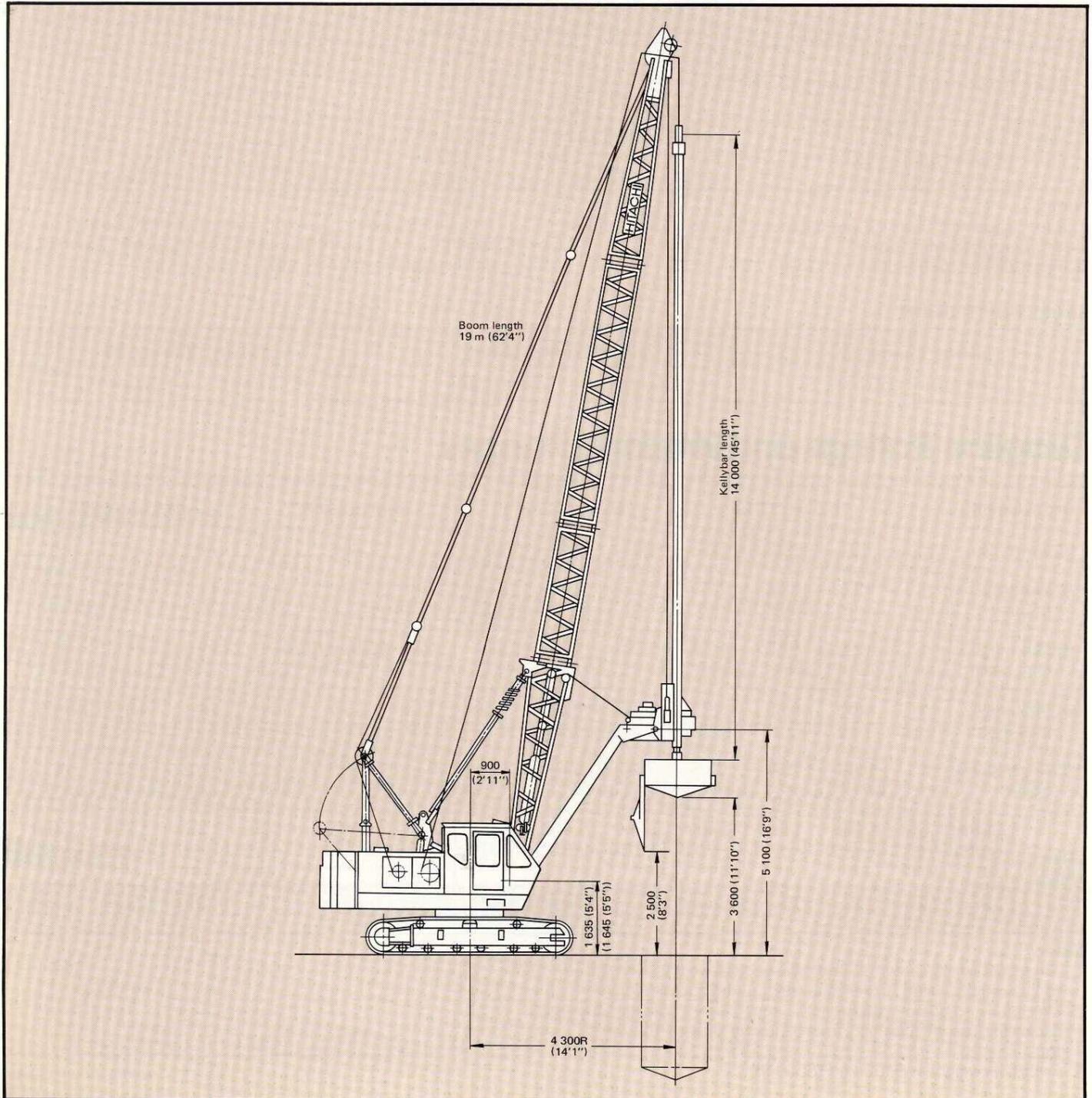
Boom length		10.0 m (32'10")			13.0 m (42'8")			16.0 m (52'6")			19.0 m (62'4")			
Boom angle	degree	30°	40°	50°	30°	40°	50°	30°	40°	50°	30°	40°	50°	
A: Working radius	m (ft in.)	9.88 (32'5")	8.91 (29'3")	7.70 (25'3")	12.5 (41'0")	11.3 (37'1")	9.60 (31'6")	15.1 (49'6")	13.5 (44'3")	11.6 (38'1")	17.7 (58'1")	15.8 (51'10")	13.5 (44'3")	
B: Max. digging reach	m (ft in.)	12.8 (42'0")	12.5 (41'0")	11.8 (38'9")	16.1 (52'10")	15.7 (51'6")	14.7 (48'3")	19.3 (63'4")	18.8 (61'8")	17.8 (58'5")	22.6 (74'2")	21.9 (71'10")	20.7 (67'11")	
C: Max. digging depth	m (ft in.)	6.65 (21'10")	6.43 (21'1")	5.90 (19'4")	9.13 (29'11")	8.83 (29'0")	8.08 (26'6")	11.5 (37'9")	11.2 (36'9")	10.4 (34'1")	14.0 (45'11")	13.5 (44'3")	12.6 (41'4")	
D: Boom point height	m (ft in.)	6.43 (21'1")	7.88 (25'10")	9.15 (30'0")	7.93 (26'0")	9.81 (32'2")	11.4 (37'5")	9.43 (30'11")	11.7 (38'5")	13.7 (44'11")	10.9 (35'9")	13.7 (44'11")	16.0 (52'6")	
Rated loads	PCSA rating	kg (lb)	4 450 (9 810)	4 450 (9 810)	4 450 (9 810)	3 750 (8 270)	4 450 (9 810)	4 450 (9 810)	2 850 (6 280)	3 400 (7 500)	4 300 (9 480)	2 250 (4 960)	2 700 (5 950)	3 400 (7 500)
	BS rating	kg (lb)	4 450 (9 810)	4 450 (9 810)	4 450 (9 810)	3 400 (7 500)	3 950 (8 710)	4 450 (9 810)	2 600 (5 730)	3 050 (6 720)	3 750 (8 270)	2 000 (4 410)	2 400 (5 290)	3 050 (6 720)

Notes:

- The rated loads shown include the bucket weight. The load to be actually lifted is the rated load minus bucket weight.
- Maximum digging reach/depth may vary considerable depending on digging condition and the skill of the operator.
- Counterweight is 8400 kg (18500 lb)

EARTH DRILL

Dimensions



Specifications

Boom length		19.0 m (62'4")
Drilling diameter	Common earth	1 500 mm (4'11")
	Loam or soft silt	1 700 mm (5'7") 2 000 mm (6'7") (with reamer knife)* ¹
Drilling depth	Without stem	33.0 m (108'3")
	With stem	43.0 m (141'1")
Bucket rotation * ³		High: 26 min ⁻¹ (26 rpm) Low: 13 min ⁻¹ (13 rpm)
Bucket rotation torque		39.2 kN-m (4 000 kgf-m, 28 900 ft-lbf) 49.1 kN-m (5 000 kgf-m, 36 200 ft-lbf), reverse
Bucket hoist line pull		118 kN (12 000 kgf, 26 400 lbf)
Auxiliary hoisting load * ²		Max. 5 000 kg (11 000 lb)
Speeds	Bucket hoist (line speed)* ³	High: 60 m/min (197 ft/min) Low: 30 m/min (98 ft/min)
	Auxiliary drum hoist (line speed)* ³	High: 60 m/min (197 ft/min) Low: 30 m/min (98 ft/min)
	Boom hoist (line speed)* ³	43 m/min (141 ft/min)
	Swing	0 – 3.8 min ⁻¹ (0 – 3.8 rpm)
	Travel* ³	0 – 1.3 km/h (0 – 0.81 mph)
Counterweight		8 400 kg (18 500 lb)
Ground pressure		0.82 bar (0.82 kfg/cm ² , 11.7 psi)
Operating weight		39 400 kg (86 900 lb)
		When equipped with 610 mm (24") shoes

Notes:

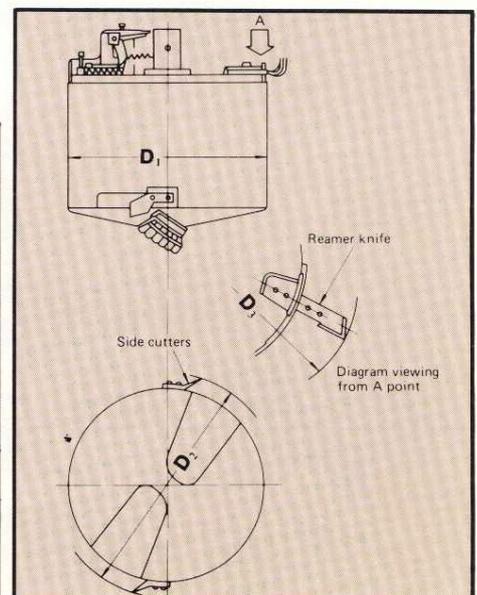
*1. When a reamer knife is employed, two-step drilling or other engineering technique may be required depending on soil.

*2. Auxiliary hoisting load varies according to boom angle. Auxiliary hoisting job of casings of reinforced cage, tremie pipe in earth drill jobs.

*3. Bucket rotation and line speeds may vary with load.

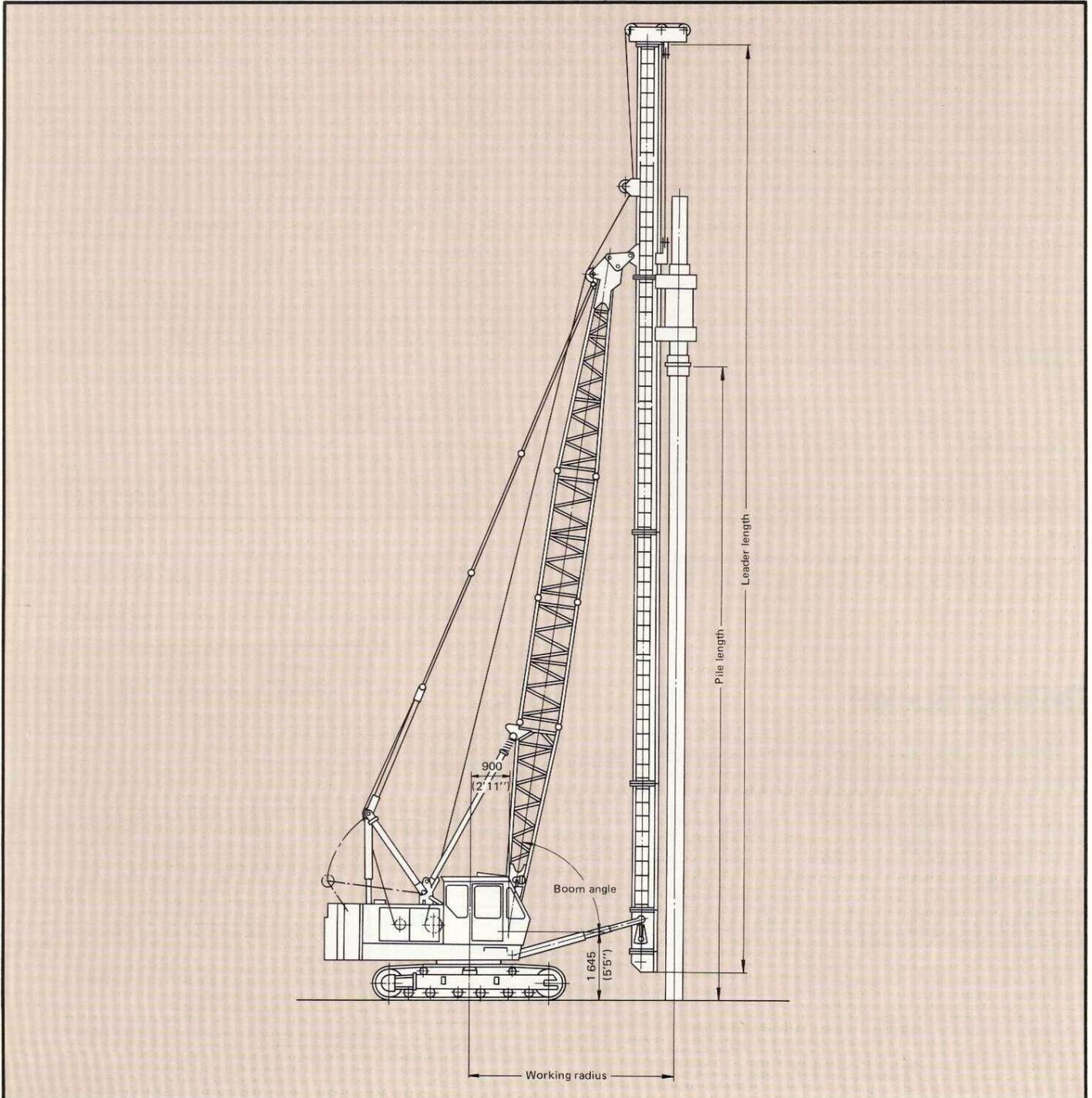
Drilling Bucket

Bucket D ₁ mm (ft in.)	Side cutter D ₂ mm (ft in.)	Reamer knife D ₃ mm (ft in.)	Capacity m ³ (cu.yd)	Weight kg (lb)	Remarks
1 580 (5'2")	1 700 (5'7")	2 000 (6'7")	0.86 (1-1/8 cu.yd)	1 100 (2 420)	Light duty work
1 480 (4'10")	1 600 (5'3")	1 900 (6'3")	0.83 (1 cu.yd)	930 (2 050)	Light duty work
1 380 (4'6")	1 500 (4'11")	1 800 (5'11")	0.94 (1-1/4 cu.yd)	900 (1 980)	
1 280 (4'2")	1 400 (4'7")	1 700 (5'7")	0.87 (1-1/8 cu.yd)	830 (1 830)	
1 180 (3'11")	1 300 (4'3")	1 600 (5'3")	0.8 (1 cu.yd)	770 (1 690)	
1 080 (3'7")	1 200 (3'11")	1 500 (4'11")	0.8 (1 cu.yd)	730 (1 610)	
980 (3'3")	1 100 (3'7")	1 400 (4'7")	0.57 (3/4 cu.yd)	655 (1 440)	
880 (2'11")	1 000 (3'3")	1 300 (4'3")	0.54 (11/16 cu.yd)	490 (1 080)	



BOOM-SUPPORT TYPE PILE DRIVER

Dimensions



Specifications

Leader		35S									
Counterweight	kg (lb)	10 400 kg (22 900 lb)									
Hammer		25					35				
Hammer weight	kg (lb)	5 500 (12 100)					8 500 (18 700)				
Cap weight	kg (lb)	500 (1 100)					1 000 (2 200)				
Boom length	m (ft in.)	10 (32'10")	13 (42'8")	16 (52'6")	10 (32'10")	13 (42'8")	16 (52'6")	10 (32'10")	13 (42'8")	16 (52'6")	10 (32'10")
Leader length	m (ft in.)	16 (52'6")	19 (62'4")	22 (72'2")	16 (52'6")	19 (62'4")	22 (72'2")	16 (52'6")	19 (62'4")	22 (72'2")	16 (52'6")
Allowable pile length	m (ft in.)	9 (29'6")	12 (39'4")	15 (49'3")	9 (29'6")	12 (39'4")	15 (49'3")	8 (26'3")	11 (36'1")	14 (45'7")	17 (55'9")
		R	W	R	W	R	W	R	W	R	W
Boom angle (degree)	82	3.9 (12'10")	5.0 (11.0)	4.3 (14'1")	5.0 (11.0)	4.7 (15'5")	5.0 (11.0)	3.9 (12'10")	7.0 (15.4)	4.4 (14'5")	5.4 (11.9)
	81	4.1 (13'5")	5.0 (11.0)	4.6 (15'1")	5.0 (11.0)	5.0 (16'5")	4.8 (10.6)	4.1 (13'5")	7.0 (15.4)	4.6 (15'1")	4.2 (9.2)
	80	4.3 (14'1")	5.0 (11.0)	4.8 (15'9")	5.0 (11.0)	5.3 (17'5")	3.8 (8.4)	4.3 (14'1")	7.0 (15.4)	4.8 (15'9")	3.1 (6.8)
	79	4.4 (14'5")	5.0 (11.0)	5.0 (16'5")	5.0 (11.0)			4.5 (14'9")	6.6 (14.6)	5.0 (16'5")	2.2 (4.9)
	78	4.6 (15'1")	5.0 (11.0)	5.2 (17'1")	5.0 (11.0)			4.6 (15'1")	5.6 (12.3)	5.3 (17'5")	1.3 (2.9)
	77	4.8 (15'9")	5.0 (11.0)	5.5 (18'1")	4.5 (9.9)			4.8 (15'9")	4.8 (10.6)		
	76	5.0 (16'5")	5.0 (11.0)					5.0 (16'5")	4.0 (8.8)		
	75	5.1 (16'9")	5.0 (11.0)					5.2 (17'1")	3.2 (7.1)		
	74	5.3 (17'5")	5.0 (11.0)					5.3 (17'5")	2.5 (5.5)		
	73	5.5 (18'1")	5.0 (11.0)					5.5 (18'1")	1.9 (4.2)		
72	5.6 (18'4")	5.0 (11.0)									
Operating weight (Excluding pile weight)	kg (lb)	43 700 – 45 100 (96 300 – 99 400)					47 200 – 48 000 (104 000 – 106 000)				
Ground pressure	bar (kgf/cm ² , psi)	0.73 – 0.75 (0.73 – 0.75, 10.4 – 10.7)					0.79 – 0.80 (0.79 – 0.80, 11.2 – 11.4)				

Note: R Working radius: m (ft in.)
W Rated load: 1 000 x kg (1 000 x lb)