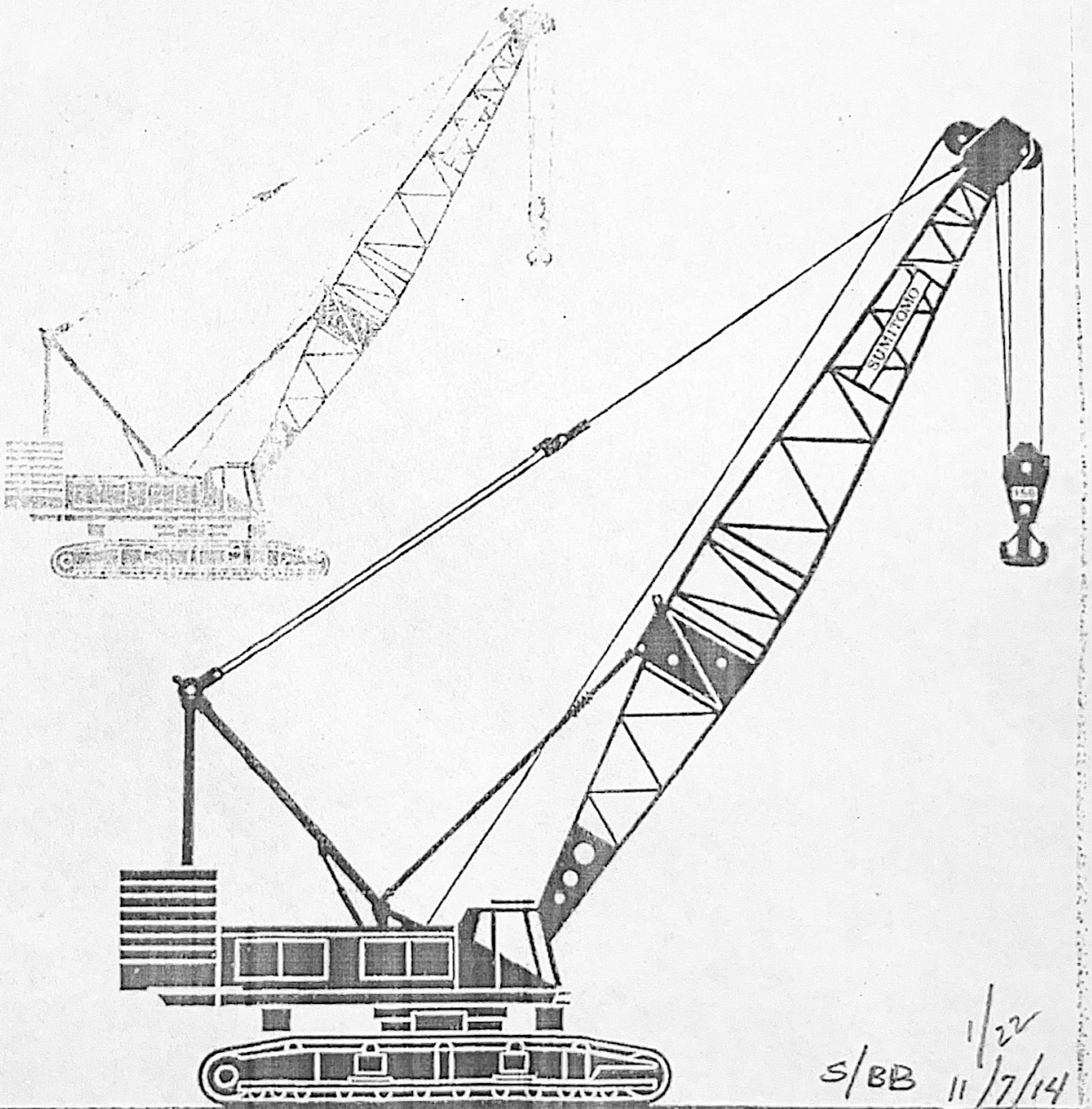
SUMITOMO

LS-248RH-2

150-M ton Hydraulic Crawler Crane



S/BB 1/22 11/7/14

HS-248RH-2 Basic Machine

ST J-2312 (4/13)

Upper Machinery

UPPER FRAME: All-welded, stress relieved, precision machined unit.

TURNTABLE BEARING WITH INTEGRAL RING GEAR: Outer race is bolted to upper frame, inner race with internal ring gear is bolted to lower frame. Swing pinion meshes with internal, integral ring gear. A machined surface is provided for mounting turntable bearing.

CONTROL SYSTEM: Remote controlled hydraulic servo. Working speed can be precisely controlled by lever stroke.

HYDRAULIC SYSTEM: System combining variable displacement axial pumps and fixed displacement gear pumps provides both independent and combined operations of all functions.

Main hoist/aux. hoist/boom hoist Radial piston motor with counterbalance valve.

Swing motor — Axial piston motors with brakes.

Travel motor — Radial piston motors with brake valves. Spring-set/hydraulic-released multiple disc brakes are fitted.

Hydraulic oil reservoir — 300 liter (66 Imp. gal., 79 u.s. gal) capacity.

LOAD HOIST ASSEMBLY: Front (main) and rear (aux.) operating drums. Each driven by the bi-directional, radial piston motor through reduction gear powering the rope drum in either direction for hoisting or lowering load.

Clutches — Hydraulic actuated, internal expanding, self adjusting 2-shoe type.

Brakes — External contracting band type, hydraulic assisted foot pedal with locking latch.

Locks — Mechanically operated drum lock pawl.

BOOM HOIST ASSEMBLY: Driven by the bi-directional, radial piston motor through reduction gear powering the rope drum in either direction for hoisting or lowering boom.

Brake — Spring applied, hydraulically released external contracting band type.

Lock — Mechanically operated drum lock pawl.

SWING: Driven by 2 sets of axial piston motor, through reduction gear.

Brakes — Positive (hydraulically applied) disc brake for operation, and negative (Spring applied, hydraulically released) disc brake for parking.

Lock — Mechanically operated pin connection house lock.

Speed — 1.9 rpm (High), 1.0 rpm (Low)

OPERATOR'S CAB: Full vision compartment with safety glass panels, the completely independent cab is insulated against noise and vibration.

COUNTERWEIGHT: Removable, 5 blocks mounted on rear of upper frame by bolts.

CATWALKS: Both sides of upper housing.

POWER UNIT:

Make & Model	Mitsubishi 8DC9C
Type	Water-cooled, 4-cycle diesel engine
No. of cylinders	8
Bore & Stroke	135 x 140mm (5.3" x 5.5")
Displacement	16,031 cc (978 cu. inch)
Rated output	250 ps/2,000 rpm (184 kW/2,000 rpm)
Max. torque	98 kg-m/1,400 rpm (709 ft-Lbs/1,400 rpm, 960 Nm)
Fuel tank	450 liters (100 Imp. gal., 120 u.s. gal.)

Lower Machinery

LOWER FRAME: All welded robust rolled steel, stress relived box construction.

AXLE BEAMS: All welded robust rolled steel, stress relieved. Pin connected to lower frame, removable for transportation.

SIDE FRAMES: All welded robust rolled steel. Connected to axle beams by axle shim packs, removable for transportation.

SELF LOADING DEVICE: Axle beams and side frames can be speedily removed and hydraulic jack cylinders allow base machine loaded onto a trailer. Travel motor pipings with self seal couplings provide quick disconnection.

ROLLERS: Heat treated, mounted on bushings with floating seals requiring no further lubrication. Double flange.

Bottom — 12 pcs. per side frame.

Top — 3 pcs. per side frame.

DRIVE SPROCKETS: Heat treated, involute splined to drive shaft mounted on antifriction bearings.

IDLERS: Heat treated, mounted on bushings with floating seals requiring no further lubrication.

TRACKS: Heat treated, self cleaning, one lug type, multiple hinged shoes, 62 pcs. per side frame.

Shoe width — 1,118 mm (3' 8")

TRACK TENSION ADJUSTER: Adjusted by hydraulic cylinders at the idler blocks. Tension can be automatically released when abnormal load occurred on tracks.

TRAVEL AND STEER: Radial piston motor with reduction gear is located at inner drive end of each crawler side frame. Each track is driven simultaneously or individually for straight-line travel, or pivot turn, or the tracks can be counter-rotated for spin turns.

Brake — Spring applied, hydraulically released multiple disc brakes applied automatically when control lever in neutral position.

Speed — 1.0 km/h (High), 0.4 km/h (Low)

248RH-2 Crane 150 metric tons (330,700 lbs)

ST J-2312 (3/13)

CRANE BOOMS: Lattice construction; round tubular main chords, alloy, hi-ten steel, with bracing of round steel tubing.

Boom connections . . . . In-line pin connections.
Basic boom . . . . . Two-piece, 18.30m (60') basic length; 9.15m (30') base and 9.15m (30') top section; 2.00m (6' 7") deep and 2.00m (6' 7") wide at connections.
Boom point machinery . Eight head sheaves mounted on antifriction bearings.
Boom extensions . . . . . Available in 3.05m, (10') 6.1m, (20') 9.15m, (30') and 12.2m, (40') lengths with pendants. Maximum boom length 82.30m (270').
Jib . . . . . Two-piece; 9.15m (30') basic length with 4.55m (15') long base and top sections, 0.76m (2' 6") deep and 0.91m (3') wide at connections.
Jib extensions . . . . . Available in 3.05m (10') and 6.1m (20') jib extensions. Maximum jib length 30.50m (100').
Boom plus jib length . . . 70.15m (230') + 30.50m (100')
73.20m (240') + 18.30m (60')

HOOK BLOCKS:

150 t, (330,700 lbs) eight sheaves	Standard
100 t, (220,500 lbs) five sheaves	Optional extra
60 t, (132,300 lbs) three sheaves	Optional extra
30 t, (66,100 lbs) one sheave	Optional extra
15 t, (33,100 lbs) one sheave	Standard for jib
10 t, (22,000 lbs) no sheave	Optional extra

BOOM LIVE MAST:
Mounted on front of upper frame.
HIGH GANTRY:
Raised and lowered by hydraulic cylinders operated inside cab.
MID POINT SUSPENSION:
Required when operate with 64.05m (210') or longer boom length.

LINE PULL AND LINE SPEED:

Drums	Root dia.	Type	Line pull	Line speed		Cable dia.
				Hoisting	Lowering	
Front (main hoist)	500mm (19.685")	Parallel grooved	15 tons (33,100 lbs)	60 m/min (197 ft/min) (high) 30 m/min (98 ft/min) (low)	60 m/min (197 ft/min) (high) 30 m/min (98 ft/min) (low)	26mm (1.024")
Rear (aux. hoist)	500mm (19.685")	Parallel grooved	15 tons (33,100 lbs)	60 m/min (197 ft/min) (high) 30 m/min (98 ft/min) (low)	60 m/min (197 ft/min) (high) 30 m/min (98 ft/min) (low)	26mm (1.024")
Boom hoist	345mm (13.583")	Parallel grooved		40 m/min (131ft/min)	40 m/min (131ft/min)	20mm (0.787")

NOTE:
1. Above Line pull and line speed are based on first layer.
2. Above line speed varies with load.

HOIST REEVING:

No. of parts of line	Main hoist										Aux. hoist	
	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	2	1
Max. load t (lbs)	150.0 (330,700)	148.5 (327,400)	140.0 (308,600)	131.3 (289,500)	122.4 (269,800)	113.4 (250,000)	103.9 (229,100)	94.4 (208,100)	84.8 (187,000)	74.9 (165,100)	64.8 (142,900)	53.5 (118,000)	44.1 (97,200)	33.4 (73,600)	22.5 (49,600)	11.3 (24,900)	15.0 (33,100)	11.3 (24,900)

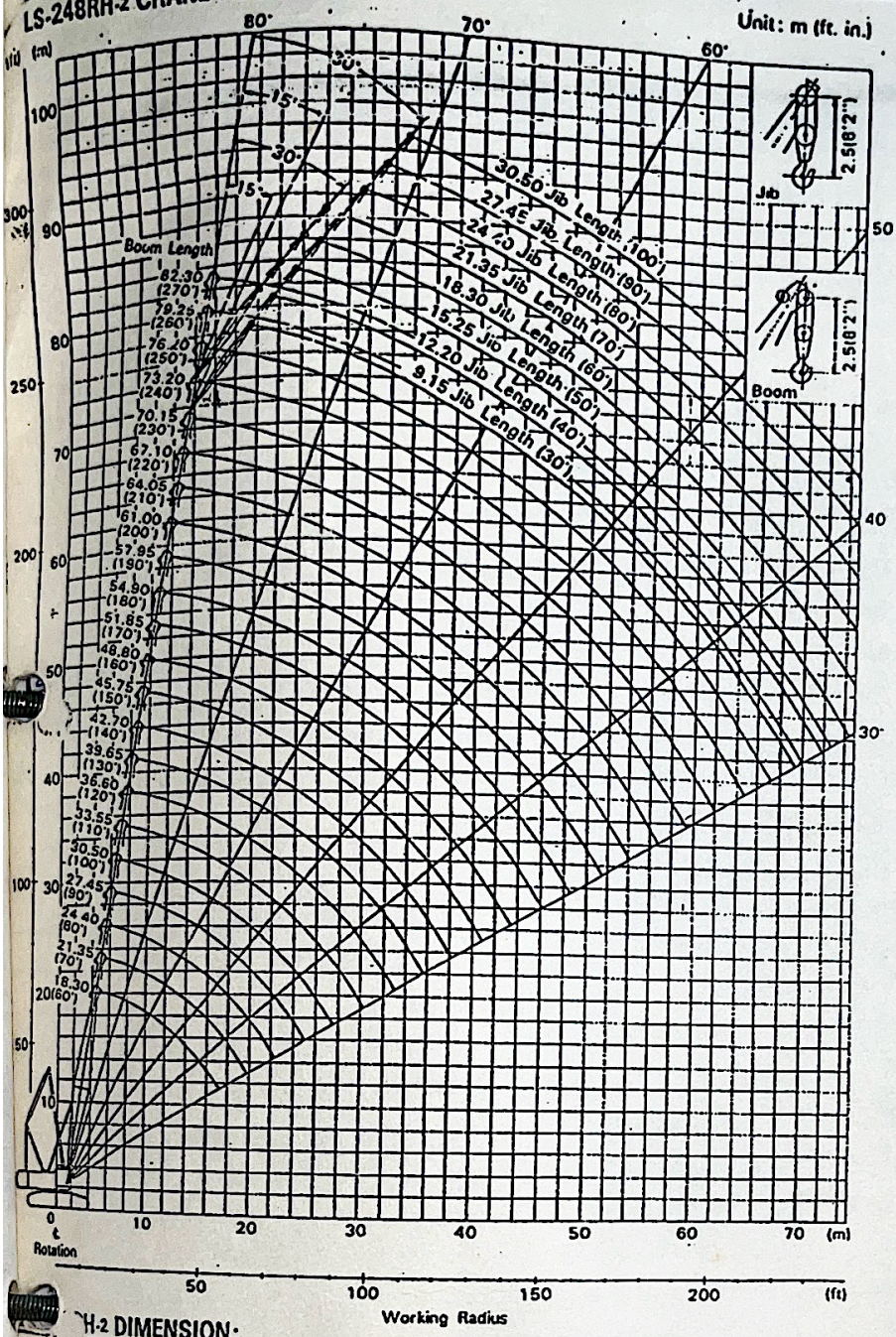
WORKING WEIGHT AND GROUND PRESSURE:

Shoe width	Weight	Pressure
1,118 mm (3' 8")	148 t (326,300 lbs)	0.81 kg/cm² (11.5 psi)

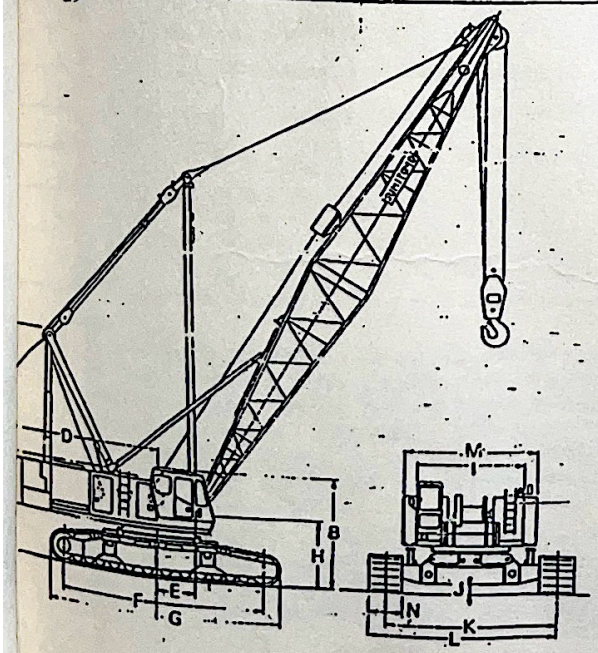
With basic boom and counterweight A, B, C, D, and E.
Weight without counterweight and front attachment: approx. 80 t. (176,400 lbs).

COUNTERWEIGHT:
A 12.4 t (27,300 lbs), B 8.8 t (19,400 lbs), C 9.4 t (20,700 lbs), D 10.0 t (22,000 lbs), E 15.2 t (33,500 lbs)
Total . . . 55.8 t (123,000 lbs)
SAFETY DEVICE:
Automatic hook overhoist preventing device, automatic boom overhoist preventing device, drum lock, swing lock, safety valve in hydraulic circuit, boom angle indicator, automatic overload preventing device (optional extra), swing alarming device (optional extra).
GRADEABILITY: 30% (17°)
With basic boom and counterweight A, B, C, D and E.

LS-248RH-2 CRANE WORKING RANGES:



RH-2 DIMENSION:



A : Height, over high gantry unit	7.728 m	(25' 4")
B : Height of cab	3.713 m	(12' 2")
C : Counterweight ground clearance	1.633 m	(5' 4")
D : Radius of rear end	5.885 m	(19' 4")
E : Center of rotation to boom foot pin	1.300 m	(4' 3")
F : Center to center distance of tambler	7.730 m	(25' 4")
G : Overall length of crawler	8.836 m	(29')
H : Height from ground to boom foot pin	2.283 m	(7' 6")
I : Overall width of house	3.370 m	(11' 1")
J : Ground clearance	0.378 m	(1' 3")
K : Center to center distance of crawler	5.550 m	(18' 3")
L : Overall width of crawler (with 1.118mm (3' 8") shoe)	6.668 m	(21' 11")
M : Overall width of upper machine	4.170 m	(13' 8")
N : Shoe width	1.118 m	(3' 8")

LS-248KH-2

ST J-2312 (5/13)

LS-248KH-2 CRANE CAPACITIES:

Working radius m(ft. in.)	Boom length 18.30 (60')	21.35 (70')	24.40 (80')	27.45 (90')	30.50 (100')	33.55 (110')	36.60 (120')	39.65 (130')	42.70 (140')	45.75 (150')	48.80 (160')	51.85 (170')	54.90 (180')	57.95 (190')
5.0 (16' 5")	150.0 (330,700)													
5.5 (18' 1")	143.5 (316,400)													
6.0 (19' 8")	137.0 (302,000)	126.0 (277,800)	116.5 (256,800)											
6.5 (21' 4")	130.0 (286,600)	122.0 (269,000)	113.5 (250,200)											
7.0 (23')	120.0 (264,600)	113.2 (249,600)	111.6 (246,000)	102.4 (225,800)	94.0 (207,200)									
7.5 (24' 7")	105.0 (231,500)	103.5 (228,200)	102.5 (226,000)	100.3 (221,100)	91.4 (201,500)									
8.0 (26' 3")	95.2 (209,900)	95.0 (209,400)	94.8 (209,000)	94.6 (208,600)	89.0 (196,200)	81.2 (179,000)	75.6 (166,700)							
9.0 (29' 6")	79.2 (174,600)	79.0 (174,200)	78.9 (173,900)	78.8 (173,700)	78.7 (173,500)	78.2 (172,400)	72.0 (158,700)	66.1 (145,700)	60.8 (134,000)					
10.0 (32' 10")	67.7 (149,300)	67.5 (148,800)	67.4 (148,600)	67.3 (148,400)	67.1 (147,900)	67.0 (147,700)	66.5 (146,600)	64.0 (141,100)	58.9 (129,900)	55.0 (121,300)	50.5 (111,300)	46.0/11.0 (101,400/36'1")		
12.0 (39' 4")	52.2 (115,100)	52.0 (114,600)	51.9 (114,400)	51.8 (114,200)	51.6 (113,800)	51.5 (113,500)	51.4 (113,300)	51.3 (113,100)	51.2 (112,900)	51.1 (112,700)	48.2 (106,300)	44.7 (98,500)	42.0 (92,600)	39.8 (87,700
14.0 (45' 11")	42.2 (93,000)	42.0 (92,600)	41.9 (92,400)	41.8 (92,200)	41.6 (91,700)	41.5 (91,500)	41.4 (91,300)	41.3 (91,100)	41.2 (90,800)	41.1 (90,600)	40.9 (90,200)	40.8 (89,900)	39.3 (86,600)	37.4 (82,500
16.0 (52' 6")	35.3 (77,800)	35.1 (77,400)	35.0 (77,200)	34.9 (76,900)	34.7 (76,500)	34.6 (76,300)	34.5 (76,100)	34.3 (75,600)	34.2 (75,400)	34.1 (75,200)	33.9 (74,700)	33.8 (74,500)	33.8 (74,500)	33.7 (74,300
18.0 (59' 1")	32.6/17.0 (71,900/55'9")	30.0 (66,100)	29.9 (65,900)	29.8 (65,700)	29.6 (65,300)	29.5 (65,000)	29.4 (64,800)	29.2 (64,400)	29.1 (64,200)	29.0 (63,900)	28.8 (63,500)	28.8 (63,500)	28.7 (63,300)	2 (62
20.0 (65' 7")		26.1 (57,500)	26.0 (57,300)	25.9 (57,100)	25.7 (56,700)	25.6 (56,400)	25.5 (56,200)	25.3 (55,800)	25.2 (55,600)	25.1 (55,300)	24.9 (54,900)	24.8 (54,700)	24.7 (54,500)	24.5 (54,000
22.0 (2' 2")			22.9 (50,500)	22.8 (50,300)	22.6 (49,800)	22.5 (49,600)	22.4 (49,400)	22.2 (48,900)	22.1 (48,700)	22.0 (48,500)	21.8 (48,100)	21.7 (47,800)	21.6 (47,600)	21.4 (47,200
24.0 (78' 9")				20.2 (44,500)	20.0 (44,100)	19.9 (43,900)	19.8 (43,700)	19.6 (43,200)	19.5 (43,000)	19.4 (42,800)	19.2 (42,300)	19.1 (42,100)	19.0 (42,900)	18.8 (41,400
26.0 (85' 4")					18.0 (39,700)	17.9 (39,500)	17.8 (39,200)	17.6 (38,800)	17.5 (38,600)	17.4 (38,400)	17.2 (37,900)	17.1 (37,700)	17.0 (37,500)	16.8 (37,000
28.0 (91' 10")						16.2 (35,700)	16.1 (35,500)	15.9 (35,100)	15.8 (34,800)	15.7 (34,600)	15.5 (34,200)	15.4 (34,000)	15.3 (33,700	15.1 (33,000
30.0 (98' 5")						14.6 (32,200)	14.5 (32,000)	14.3 (31,500)	14.2 (31,300)	14.1 (31,100)	13.9 (30,600)	13.8 (30,400)	13.8 (30,400)	13.6 (30,000
32.0 (105')							13.3 (29,300)	13.1 (28,900)	13.0 (28,700)	12.9 (28,400)	12.7 (28,000)	12.6 (27,800)	12.5 (27,600)	12.3 (27,100
34.0 (111' 7")								11.9 (26,200)	11.8 (26,000)	11.7 (25,800)	11.5 (25,400)	11.4 (25,100)	11.3 (24,900)	11.2 (24,700
36.0 (118' 1")									10.9 (24,000)	10.8 (23,800)	10.6 (23,400)	10.5 (23,100)	10.4 (22,900)	10.2 (22,500
38.0 (124' 8")									10.0 (22,000)	9.9 (21,800)	9.7 (21,400)	9.6 (21,200)	9.5 (20,900)	9.3 (20,500
40.0 (131' 3")										9.7 (21,400)	9.0 (19,800)	8.9 (19,600)	8.8 (19,400)	8.7 (19,200
42.0 (137' 10")											8.4 (18,500)	8.3 (18,300)	8.2 (18,100)	8.0 (17,600
44.0 (144' 4")												7.7 (17,000)	7.6 (16,800)	7.4 (16,300
46.0 (150' 11")													6.9 (15,200)	6 (13
48.0 (157' 6")													6.3 (13,900)	6.2 (13,700
50.0 (164' 1")														5.7 (12,600
52.0 (7")														
54.0 (177' 2")														
56.0 (183' 9")														
58.0 (190' 3")														
60.0 (196' 10")														
No. of parts of line	16	13	12	10	9	8	8	7	6	6	5	5	4	4

Notes:

1. Capacities shown are in metric tons (lbs) and are based on 75% of minimum tipping loads — over the side — with machine standing level on firm supporting surface under ideal job conditions. Deductions from the lifting crane capacities must be made for weight of hook block. Capacities shaded are limited by strength of boom, or factors other than stability.

Kind of hook block t (lbs)	150 (330,700)	100 (220,500)	60 (132,300)	30 (66,100)	15 (33,100)	10 (22,000)
Weight of hook block t (lbs)	2.1 (4,600)	1.3 (2,900)	1.0 (2,200)	0.85 (1,900)	0.8 (1,800)	0.4 (900)

2. Boom live mast is always required and gantry must be raised position for all operating conditions.
3. Mid point suspension should be used when operate with 64.05 m (210') or longer boom length.
4. When operating of the main boom peak sheave with jib on boom, following deductions in machine lifting capacities must be made.

Jib length m (ft)	9.15 (30')	12.20 (40')	15.25 (50')	18.30 (60')	21.35 (70')	24.40 (80')	27.45 (90')	30.50 (100')
Weight to be deducted t (lbs)	2.1 (4,600)	2.6 (5,700)	3.1 (6,800)	3.6 (7,900)	4.3 (9,500)	4.9 (10,800)	5.6 (12,300)	6.3 (13,900)

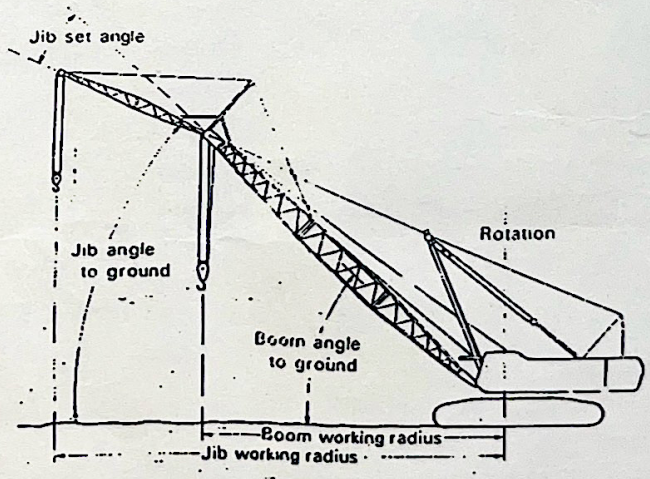
Unit: metric tons (lbs)

	64.05 (210')	67.10 (220')	70.15 (230')	73.20 (240')	76.20 (250')	79.25 (260')	82.30 (270')
9.0 (29'6")	34.0/13.0 (75,000/29')	31.0 (68,300)	28.1 (61,900)	26.0/15.0 (57,300/49'3")	23.1/15.0 (50,900/49'3")		
15.0 (49'2")	33.1 (73,000)						
18.3 (60')	31.2 (68,800)	29.7 (65,500)	27.6 (60,800)	25.7 (56,700)	22.9 (50,500)	21.0 (46,300)	20.0 (44,100)
21.3 (70')	28.2 (62,200)	27.9 (61,500)	27.2 (60,000)	25.2 (55,600)	22.6 (49,800)	20.6 (45,400)	19.6 (43,200)
24.4 (80')	24.2 (53,400)	24.0 (52,900)	23.8 (52,500)	23.7 (52,200)	22.4 (49,400)	20.2 (44,500)	19.2 (42,300)
27.4 (90')	21.2 (46,700)	21.0 (46,300)	20.8 (45,900)	20.6 (45,400)	20.5 (45,000)	19.7 (43,400)	18.9 (41,700)
30.5 (100')	18.6 (41,000)	18.4 (40,600)	18.2 (40,100)	18.0 (39,700)	17.8 (39,200)	17.5 (38,600)	17.2 (37,900)
33.5 (110')	16.5 (36,400)	16.3 (35,900)	16.2 (35,700)	16.0 (35,300)	15.8 (34,800)	15.5 (34,200)	15.2 (33,500)
36.6 (120')	14.8 (32,600)	14.6 (32,200)	14.4 (31,700)	14.2 (31,300)	14.0 (30,900)	13.8 (30,400)	13.5 (29,800)
39.6 (130')	13.3 (29,300)	13.1 (28,900)	12.9 (28,400)	12.7 (28,000)	12.5 (27,600)	12.2 (26,900)	11.9 (26,200)
42.7 (140')	12.0 (26,500)	11.8 (26,000)	11.6 (25,600)	11.4 (25,100)	11.3 (24,900)	11.0 (24,300)	10.7 (23,600)
45.7 (150')	10.9 (24,000)	10.7 (23,600)	10.5 (23,100)	10.3 (22,700)	10.1 (22,300)	9.8 (21,600)	9.5 (20,900)
48.8 (160')	9.9 (21,800)	9.7 (21,400)	9.5 (20,900)	9.3 (20,500)	9.1 (20,100)	8.8 (19,400)	8.6 (19,000)
51.8 (170')	9.0 (19,800)	8.8 (19,400)	8.7 (19,200)	8.5 (18,700)	8.3 (18,300)	8.0 (17,600)	7.7 (17,000)
54.9 (180')	8.4 (18,500)	8.2 (18,100)	8.0 (17,600)	7.8 (17,200)	7.6 (16,800)	7.3 (16,100)	7.0 (15,400)
57.9 (190')	7.7 (17,000)	7.5 (16,500)	7.3 (16,100)	7.1 (15,700)	6.9 (15,200)	6.6 (14,600)	6.3 (13,900)
61.0 (200')	7.1 (15,700)	6.9 (15,200)	6.7 (14,800)	6.5 (14,300)	6.3 (13,900)	6.1 (13,400)	5.8 (12,800)
64.0 (210')	6.4 (14,100)	6.3 (13,900)	6.1 (13,400)	5.9 (13,000)	5.7 (12,600)	5.4 (11,900)	5.1 (11,200)
67.1 (220')	5.9 (13,000)	5.7 (12,600)	5.5 (12,100)	5.3 (11,700)	5.1 (11,200)	4.8 (10,600)	4.5 (9,900)
70.1 (230')	5.4 (11,900)	5.2 (11,500)	5.0 (11,000)	4.8 (10,600)	4.6 (10,100)	4.3 (9,500)	4.0 (8,800)
73.2 (240')	4.9 (10,800)	4.7 (10,400)	4.5 (9,900)	4.3 (9,500)	4.1 (9,000)	3.8 (8,400)	3.6 (7,900)
76.2 (250')	4.4 (9,700)	4.2 (9,300)	4.0 (8,800)	3.8 (8,400)	3.7 (8,200)	3.4 (7,500)	3.1 (6,800)
79.2 (260')		3.8 (8,400)	3.7 (8,200)	3.5 (7,700)	3.5 (7,300)	3.0 (6,600)	2.7 (6,000)
82.3 (270')				3.2 (7,100)	3.0 (6,600)	2.7 (6,000)	2.4 (6,300)
85.3 (280')					2.7 (6,000)	2.4 (5,300)	2.1 (4,600)
	4	4	3	3	3	2	2

LS-248RH-2 JIB CAPACITIES:

Unit: metric tons (lbs)

Jib length m (ft)	Jib set angle	Max. jib Capacities
9.15 (30')	0°	15.0 (33,100)
	15°	15.0 (33,100)
	30°	14.5 (32,000)
12.20 (40')	0°	15.0 (33,100)
	15°	13.0 (28,700)
	30°	11.0 (24,300)
15.25 (50')	0°	13.0 (28,700)
	15°	11.0 (24,300)
	30°	8.5 (18,700)
18.30 (60')	0°	11.6 (25,600)
	15°	9.0 (19,800)
	30°	7.0 (15,400)
21.35 (70')	0°	8.4 (18,500)
	15°	7.6 (16,800)
	30°	5.7 (12,600)
24.40 (80')	0°	6.0 (13,200)
	15°	5.2 (11,500)
	30°	4.8 (10,600)
27.45 (90')	0°	4.5 (9,900)
	15°	3.8 (8,400)
	30°	3.2 (7,100)
30.50 (100')	0°	3.1 (6,800)
	15°	2.5 (5,500)
	30°	2.2 (4,900)



Notes:

1. The jib capacities are equal to the crane lifting capacities of the main boom on which the jib is fixed except that they are restricted by the maximum jib capacities shown above.
2. Jib working radius does not exceed the working radius of the main boom which fits the jib.
3. Deductions from the jib capacities must be made for weight of hook block.
4. Minimum boom length of jib setting is 36.60m (120').
5. The jib set angle to boom must not exceed 30°.