

SC 1200

120-M ton Hyd. Crawler Crane Luffing Towercrane Att.

SUMITOMO HEAVY INDUSTRIES CONSTRUCTION CRANE CO., LTD.

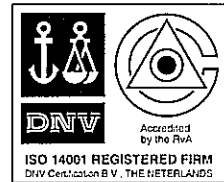
5-9-11, Kita-shinagawa, Shinagawa-ku, Tokyo 141-8686, Japan
 Phone: 81-3-5421-8586
 Facsimile: 81-3-5798-4264



Certificate No. 45125



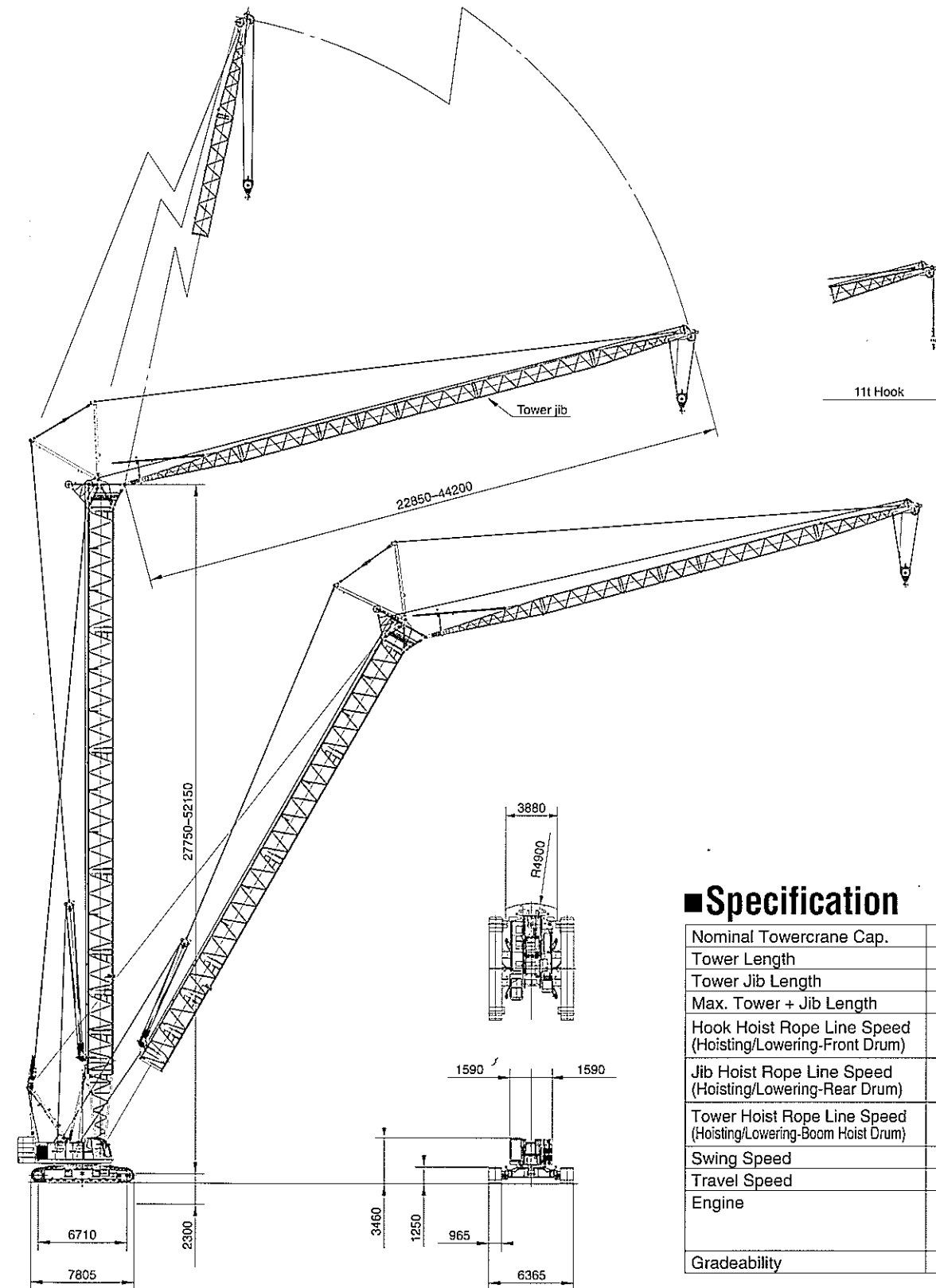
Certificate No. 45125



Certificate No. EMSC-1242

- We are constantly improving our products and therefore reserve the right to change designs and specifications without notice.
- Units in this specification are shown under International System of Units; the figures in parenthesis are under Gravitational System of Units as old one.

Address Inquires to:



■ Specification

Nominal Towercrane Cap.	20.0 t × 14.0 m
Tower Length	27.75 m~52.15 m
Tower Jib Length	22.85 m~44.20 m
Max. Tower + Jib Length	52.15 m + 44.20 m
Hook Hoist Rope Line Speed (Hoisting/Lowering-Front Drum)	120~2.0 m/min
Jib Hoist Rope Line Speed (Hoisting/Lowering-Rear Drum)	48~2.0 m/min
Tower Hoist Rope Line Speed (Hoisting/Lowering-Boom Hoist Drum)	51~2.0 m/min
Swing Speed	2.1 min. ⁻¹ < 2.1 rpm >
Travel Speed	1.5/1.1 kph
Engine	Mitsubishi 6D24-T 184kW/2,000min. ⁻¹ < 250 ps/2,000rpm >
Gradeability	17° (30%)

Luffing Towercrane 20 metric tons

TOWER BOOM:

Lattice construction, round tubular main chords, alloy, hi-ten steel, with bracing of round steel tubing.
 Tower boom connections.....In-line pin connections at 1.85m deep by 1.85m wide.
 Special tower boom extensions.....0.90m and 2.15m long, lattice construction; mounts tower jib bail assembly on upper part, and just pinned next to 7.60m bottom section. Available to use as liftcrane boom extension.
 Tower boom extensions.....Available in length of 3.05m, 6.10m and 9.15m with tower boom/tower jib hoist pendants. Available to use as liftcrane boom extension.
 Tower head section.....1.85m long, lattice construction; pinned on top of tower boom. This section pins tower jib and fan-shaped post, and provides one guide sheaves for hoist cable and two guide rollers for tower jib hoist pendant ropes.
 Tower boom length.....27.75m to 52.15m; the configuration of a 52.15m tower boom as maximum is as under:
 (1) 7.60m bottom section + (2) 0.90m and 2.15m special ext. + (3) 3.05m ext. x 1 pc. + (4) 9.15m ext. x 1 pc. + (5) 9.15m ext. x 1 pc. (w/expanded metal) + (6) 9.15m ext. x 2 pcs. + (7) 1.85m head section.
 Tower boom luffing angle.....90° thru 60° steplessly.

Note:
 1. Bottom section of 7.60m long and boom extensions of 3.05m, 6.10m and 9.15m long as necessary to complete liftcrane boom attachment are available from those of luffing towercrane boom attachment.
 2. In a case of converting luffing towercrane boom attachment of 52.15m as max. to liftcrane boom attachment of 73.15m as maximum as available, three items of one 9.15m boom extension, 6.10m boom extension and 7.60m tapered crane top section are only additionally required.

TOWER JIB:

Lattice construction, round tubular main chords, alloy hi-ten steel, with bracing of round steel tubing.
 Tower jib connections.....In-line pin connections at 1.20m deep by 1.27m wide.
 Basic tower jib.....Three-piece, 22.85m basic length; 9.15m bottom sections, one 6.10m tapered extension and 7.60m tower jib top section.
 Tower jib top head machinery.....Single head and one guide sheaves mounted on anti-friction bearings.
 Tower jib extensions.....Available in 3.05m, 6.10m and 9.15m lengths with pendants.
 Maximum tower jib length.....44.20m; a 44.20m tower jib as maximum consists of (1) 9.15m bottom section + (2) 6.10m tapered ext. x 1 pc. + (3) 3.05m ext. x 2 pcs. +(4) 6.10m ext. x 1pc. + (5) 9.15m ext x 1 pc. + (6) 7.60m top section.
 Tower jib angle.....Available from 15° thru 78° (to ground).

FAN-SHAPED POST:

All-welded construction; pinned to tower head section. This serves as mechanical connection for tower jib hoisting and lowering motions.

TOWER JIB BAIL AND BRIDLE:

All-welded construction; provided with larger sheaves of a 21.4 D/d ratio on both bail and bridle for 8-part tower jib hoist rope reeving. Bail mounted on 0.90m and 2.15m special tower boom extensions, and bridle suspended between an 8-part tower jib hoist rope and pendant ropes connecting to tower post.

HOOK BLOCKS:

To be selected from 30ton and 11ton hook blocks (as same as those of the HOOK BLOCKS mentioned in to "Crane 120 metric tons" of separate SC1200 Technical Data).

DRUM DATA:

See DRUM DATA mentioned into page 7 of separate SC1200 Technical Data. In case that machine is operated under luffing towercrane attachment, rope line speed of rear main drum (as used for tower jib hoisting/lowering motion) must be changed to "48-2.0mpm".

HOIST REEVING:

No. of part line	Towercrane hoist	
	2	1
Max. load (ton)	20.0	11.0

CABLES:

Front drum.....PS19+39xP7, non-spin type, 26mm dia./300m long, breaking load 651kN (66.4t).
 Rear drum.....IWRC 6xP-WS (31), 26mm dia./200m long, breaking load 557kN(56.8t).
 Boom hoist drum.....Same as that of liftcrane application.
 Optional 3rd drum.....Same as that of liftcrane application.

WORKING WEIGHT:

Approx. 129.0ton with 52.15m tower boom, 44.20m tower jib, 45.0ton counterweight, 1.5ton auxiliary weight, 965mm wide back shoes and 20t hook block.

GROUND PRESSURE:

at 0.1Pa <0.94kg/cm²> under a 129.0ton working weight mentioned above.

Luffing Towercrane Capacities

■ w/27.75m Tower

Jib length (m)	22.85			
	90	80	70	60
8.0	20.0/8.1			
9.0	20.0			
10.0	20.0			
12.0	20.0			
14.0	20.0			
15.0	18.6			
16.0	17.5	16.9/16.6		
18.0	15.5	15.5		
20.0	14.0	14.0		
22.0	12.5	12.5		
24.0	10.7	10.7	10.5/24.6	
26.0	9.2/24.6	10.3	10.3	
28.0		10.1	10.1	
30.0		9.6/29.4	9.3	9.1/31.9
32.0			9.1	9.1
34.0			8.8/33.9	8.5
36.0				7.9
38.0				7.4
40.0				7.3/38.2

(EC400112)

■ w/30.80m Tower

Jib length (m)	22.85				25.90			
	90	80	70	60	90	80	70	60
8.0	20.0/8.1				18.6/8.7			
9.0	20.0				18.6			
10.0	20.0				18.6			
12.0	20.0				18.6			
14.0	20.0				18.6			
15.0	18.6				18.6			
16.0	17.5	16.4/17.1			17.5			
18.0	15.5	15.5			15.5	15.3/18.2		
20.0	14.0	14.0			14.0	14.0		
22.0	12.5	12.5			12.5	12.5		
24.0	10.9	10.9	10.2/25.6		11.2	11.2		
26.0	9.3/24.6	10.1	10.1		10.2	10.2	9.7/27.2	
28.0		9.6	9.6		8.2/27.5	9.5	9.5	
30.0		9.3/29.9	9.2			9.1	9.1	
32.0			9.0	8.4/33.4		8.4	8.4	
34.0			8.7	8.2		8.2/32.8	7.9	7.6/35.4
36.0			8.3/35.0	7.6			7.5	7.5
38.0				7.1			7.2/37.9	7.0
40.0				6.7/39.7				6.5
42.0								6.1
44.0								6.0/42.7

(EC400112)

■ w/33.85m Tower

Jib length (m)	22.85				25.90				28.95			
Tower angle (°)	90	80	70	60	90	80	70	60	90	80	70	60
Working radius (m)												
8.0	20.0/8.1				18.6/8.7							
9.0	20.0				18.6				15.4/9.4			
10.0	20.0				18.6				15.4			
12.0	20.0				18.6				15.4			
14.0	20.0				18.6				15.4			
15.0	18.6				18.6				15.4			
16.0	17.5	15.9/17.6			17.5				15.4			
18.0	15.5	15.5			15.5	14.9/18.8			15.4	14.0/19.9		
20.0	14.0	14.0			14.0	14.0			14.0	14.0		
22.0	12.5	12.5			12.5	12.5			12.4	12.4		
24.0	11.0	11.0			11.2	11.2			11.2	11.2		
26.0	9.5/24.6	10.5	10.3/26.6		10.2	10.2			10.1	10.1		
28.0		9.9	9.9		8.4/27.5	9.4	9.3/28.3		9.2	9.2	8.0/29.9	
30.0		9.1	9.1			8.8	8.8		8.0	8.0	8.0	
32.0		9.0/30.4	8.5			8.3	8.3		7.4/30.4	7.8	7.8	
34.0			8.1	7.6/34.9		8.1/33.4	8.0		7.5	7.5		
36.0			7.8	7.3			7.8	6.9/36.9		7.1	7.1	
38.0				6.8			7.2	6.7		7.0/36.3	6.8	6.3/39.0
40.0				6.4			7.0/39.0	6.2			6.7	6.1
42.0				6.1/41.2				5.8			6.3/41.9	5.7
44.0								5.5				5.3
46.0								5.4/44.2				5.0
48.0												4.9/47.1

(EC400112)

■ w/39.95m Tower

Jib length (m)	22.85				25.90				28.95				32.00				35.05			
Tower angle (°)	90	80	70	60	90	80	70	60	90	80	70	60	90	80	70	60	90	80	70	60
Working radius (m)																				
8.0	17.5/8.1				16.0/8.7															
9.0	17.5				16.0				15.0/9.4											
10.0	17.5				16.0				15.0				14.0				12.5/10.6			
12.0	17.5				16.0				15.0				14.0				12.5			
14.0	17.5				16.0				15.0				14.0				12.5			
15.0	17.5				16.0				15.0				14.0				12.5			
16.0	17.5				16.0				15.0				14.0				12.5			
18.0	15.5	14.9/18.7			15.5	14.1/19.8			15.0				14.0				12.5			
20.0	14.0	14.0			14.0	14.0			14.0	13.2/21.0			14.0				12.5			
22.0	12.5	12.5			12.5	12.5			12.4	12.4			12.4	12.3/22.1			12.3	11.5/23.2		
24.0	11.3	11.3			11.3	11.3			11.2	11.2			11.1	11.1			11.1	11.1		
26.0	9.7/24.6	10.7			10.2	10.2			10.1	10.1			10.1	10.1			10.0	10.0		
28.0		9.7	9.4/28.7		8.5/27.5	9.6			9.2	9.2			9.2	9.4			9.1	9.1		
30.0		8.8	8.9			8.8	8.7/30.3		7.8	7.8			8.4	8.4			8.4	8.4		
32.0		8.5/31.5	8.4			8.1	8.1		7.5/30.4	7.6	7.6		7.8	7.8	7.4/33.6		7.7	7.7		
34.0			8.0			7.6	7.6		7.4	7.4			6.2/33.4	7.4	7.4		7.1	7.1	6.5/35.2	
36.0			7.5			7.5/34.4	7.1			6.9	6.9			6.9	6.9		5.8	6.1	6.1	
38.0			7.0	6.2			6.8			6.7/37.4	6.6			6.4	6.4		5.5/36.3	5.7	5.7	
40.0			6.9/38.1	5.8			6.4	5.6			6.3			6.0	6.0		5.4	5.4		
42.0				5.4			6.2/41.1	5.3			5.9	5.1		5.9/40.3	5.8		5.2	5.2		
44.0				5.1				4.9			5.5	4.8			5.4	4.7/44.1		5.1/43.2	5.0	
46.0				5.0/44.3				4.7				4.5			5.1	4.4		4.8	4.2/46.1	
48.0								4.5/47.2				4.2			5.0/46.9	4.1		4.6	4.0	
50.0												4.0				3.9		4.4/49.9	3.7	
52.0												4.0/50.2				3.7			3.5	
54.0																3.6/53.1			3.3	
56.0																			3.1	
58.0																			3.1/56.1	

(EC400112)

■ w/36.90m Tower

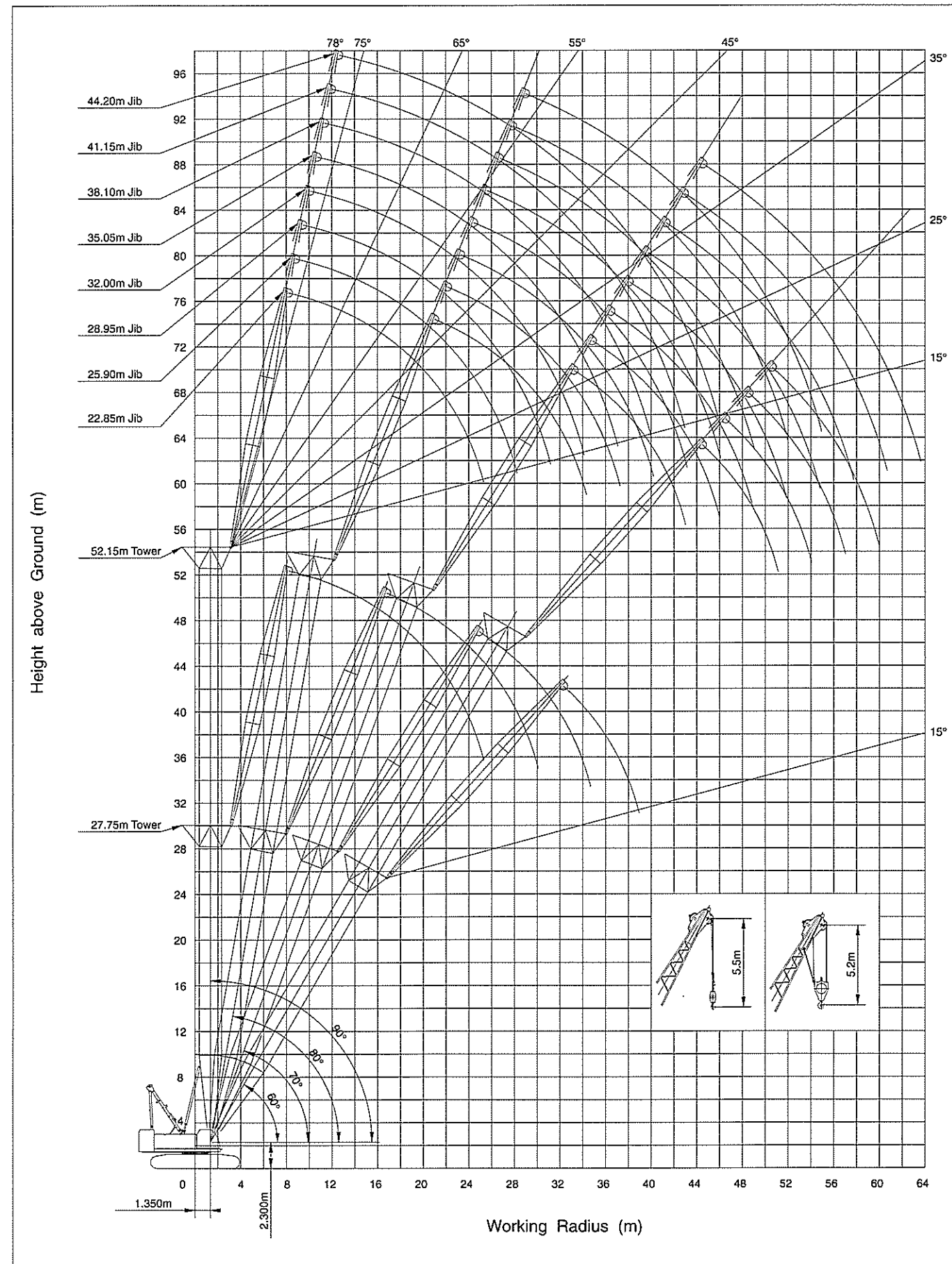
Jib length (m)	22.85				25.90				28.95				32.00			
Tower angle (°)	90	80	70	60	90	80	70	60	90	80	70	60	90	80	70	60
Working radius (m)																
8.0	20.0/8.1				18.6/8.7											
9.0	20.0				18.6				15.4/9.4							
10.0	20.0				18.6				15.4				14.6			
12.0	20.0				18.6				15.4				14.6			
14.0	20.0				18.6				15.4				14.6			
15.0	18.6				18.6				15.4				14.6			
16.0	17.5				17.5				15.4				14.6			
18.0	15.5	15.4/18.1			15.5	14.5/19.3			15.4				14.6			
20.0	14.0	14.0			14.0	14.0			14.0	13.6/20.4			14.0	12.7/21.6		
22.0	12.5	12.5			12.5	12.5			12.4	12.4			12.4	12.4		
24.0	11.2	11.2			11.2	11.2			11.2	11.2			11.1	11.1		
26.0	9.6/24.6	10.5	9.7/27.7		10.2	10.2			10.1	10.1			10.1	10.1		
28.0		9.6	9.6		8.5/27.5	9.5	8.8/29.3		9.2	9.2			9.2	9.2		
30.0		8.9	8.9			8.5	8.5		8.1	8.1	7.9/30.9		8.4	8.4		
32.0		8.8/30.9	8.5			8.1	8.1		7.5/30.4	7.8	7.8		7.8	7.8	8.2/32.5	
34.0			8.3			7.9/33.9	7.8		7.5	7.5			6.5/33.4	7.2	7.2	
36.0			7.7	6.9/36.4			7.6		7.0	7.0			7.0	7.0		
38.0			7.4/37.1	6.5			7.1	6.2/38.5		6.9/36.8	6.7			6.5	6.5	
40.0				6.1			6.6	5.9		6.5	5.7/40.5			6.2/39.8	6.1	
42.0				5.7				5.6		6.1	5.4			6.0	5.2/42.5	
44.0				5.6/42.8				5.2		5.9/43.0	5.1			5.6	5.0	
46.0								5.0/45.7			4.8			5.3/45.9	4.7	
48.0											4.5				4.4	
50.0											4.4/48.7				4.1	
52.0															3.9/51.6	

(EC400112)

■ w/43.00m Tower

Jib length (m)	22.85				25.90				28.95				32.00				35.05				38.10			
Tower angle (°)	90	80	70	60	90	80	70	60	90	80	70	60	90	80	70	60	90	80	70	60	90	80	70	60
Working radius (m)																								
8.0	17.5/8.1				16.0/8.7																			
9.0	17.5				16.0				15.0/9.4															
10.0	17.5				16.0				15.0				14.0				12.5/10.6				11.0/11.3			
12.0	17.5				16.0				15.0				14.0				12.5				11.0			
14.0	17.5				16.0				15.0				14.0				12.5				11.0			
15.0	17.5				16.0				15.0				14.0				12.5				11.0			
16.0	17.5				16.0				15.0				14.0				12.5				11.0			
18.0	15.5	14.6/19.2			15.5				15.0				14.0				12.5				11.0			
20.0	14.0	14.0			14.0	13.7/20.3			14.0	12.8/21.5			14.0				12.5				11.0			
22.0	12.5	12.5			12.5	12.5			12.4	12.4			12.4	12.0/22.6			12.4	11.3/23.8			11.0			
24.0	11.0	11.0			11.3	11.3			11.2	11.2			11.2	11.3			11.1	11.1			11.0	10.5/24.9		
26.0	9.4/24.6	10.5			10.2	10.2			10.2	10.2			10.1	10.2			10.0	10.0			10.0	10.0		
28.0		9.5	8.9/29.8		8.3/27.5	9.5			9.3	9.3			9.2	9.3			9.1	9.1			9.1	9.1		
30.0		8.8	8.8			8.7	8.2/31.4		7.9	8.1			8.5	8.5			8.4	8.4			8.3	8.3		
32.0		8.1	8.1			8.0	8.0		7.3/30.4	7.9	7.8/33.0		7.8	7.9			7.7	7.7			7.7	7.7		
34.0			7.8			7.4	7.4			7.4	7.4		6.3/33.4	7.3	7.2/34.6									

Luffing Towercrane Working Ranges



Liftcrane Capacities

w/0.91m & 2.13m Special Tower Boom Extensions

Boom length (m) Working radius (m)	15.25	18.30	21.35	24.40	27.45	30.50	33.50	36.55	39.60	42.65	45.70	48.75	51.80	54.85	57.90	60.95	64.00	67.05	70.10	73.15	
4.5	120.0																				
5.0	117.0	105.5/5.1																			
5.5	107.1	103.6	93.8/5.6																		
6.0	98.7	98.1	92.2	83.8/6.1	73.9/6.7																
7.0	85.3	84.7	84.5	80.4	73.0	65.9/7.2	59.5/7.7														
8.0	71.9	71.7	71.7	71.6	70.3	64.1	58.9	53.4/8.3	48.4/8.8												
9.0	60.0	59.8	59.8	59.7	59.7	59.6	57.0	52.3	48.1	43.6/9.3	39.6/9.8										
10.0	51.4	51.2	51.1	51.0	51.0	50.9	50.8	50.1	46.8	42.8	39.4	33.0/10.4	32.0/10.9	29.1/11.4							
12.0	39.8	39.5	39.4	39.3	39.3	39.2	39.0	39.0	38.8	38.8	37.6	33.0	31.2	28.7	26.3	22.0/12.5	21.4/13.1	19.3/13.6			
14.0	32.3	31.9	31.8	31.7	31.7	31.6	31.4	31.3	31.2	31.2	31.0	31.0	29.9	27.5	25.2	22.0	20.1	18.4	17.4/14.1	15.7/14.6	
16.0	30.0/14.8	26.7	26.6	26.4	26.4	26.2	26.1	26.0	25.8	25.8	25.7	25.6	25.5	25.3	24.1	22.0	20.1	18.4	16.7	15.2	
18.0		24.0/17.4	22.7	22.5	22.4	22.3	22.1	22.1	21.9	21.9	21.7	21.6	21.5	21.4	21.2	21.1	19.3	17.6	16.1	14.6	
20.0			19.8	19.6	19.5	19.4	19.2	19.1	19.0	18.9	18.7	18.6	18.5	18.3	18.1	18.1	18.0	16.9	15.2	13.4	
22.0				17.3	17.2	17.0	16.9	16.8	16.5	16.4	16.4	16.2	16.0	15.9	15.7	15.7	15.5	15.4	13.9	12.2	
24.0				16.7/22.7	15.3	15.1	14.9	14.8	14.6	14.5	14.4	14.3	14.1	13.9	13.7	13.7	13.6	13.4	12.8	11.1	
26.0					14.3/25.3	13.5	13.4	13.3	13.0	12.9	12.8	12.7	12.6	12.3	12.1	12.1	11.9	11.7	11.6	10.2	
28.0						12.3	12.0	11.9	11.7	11.6	11.4	11.3	11.2	11.0	10.7	10.7	10.6	10.4	10.2	9.4	
30.0							10.9	10.8	10.5	10.4	10.2	10.1	10.0	9.8	9.6	9.6	9.5	9.3	9.1	8.6	
32.0								10.6/30.6	9.8	9.5	9.4	9.2	9.1	9.0	8.8	8.6	8.6	8.4	8.2	8.1	7.9
34.0									9.3/33.2	8.7	8.6	8.4	8.3	8.1	7.9	7.7	7.7	7.5	7.3	7.2	7.0
36.0										8.0/35.9	7.8	7.7	7.5	7.3	7.2	6.9	6.9	6.7	6.5	6.4	6.2
38.0											7.2	7.0	6.8	6.7	6.5	6.3	6.2	6.0	5.8	5.7	5.5
40.0										7.0/38.5	6.4	6.3	6.1	5.9	5.7	5.6	5.4	5.2	5.0	4.8	
42.0											6.1/41.1	5.7	5.6	5.4	5.1	5.0	4.8	4.5	4.3	4.1	
44.0												5.3/43.8	5.1	4.9	4.6	4.5	4.3	4.0	3.8	3.6	
46.0													4.6	4.4	4.1	4.0	3.8	3.5	3.3	3.1	
48.0													4.6/46.4	4.0	3.7	3.5	3.3	3.0	2.8	2.6	
50.0														3.7/49.1	3.3	3.1	2.9	2.6	2.4	2.2	
52.0															2.9/51.7	2.8	2.5	2.3	2.1		
54.0																2.4	2.2				
56.0																	2.2/54.1				

(EC400101)

Notes — Liftcrane capacities

- Capacities included in this chart are the maximum allowable, and are based on machine standing level on firm supporting surface under ideal job conditions.
- Capacities are in metric tons, and are not more than 78% of minimum tipping loads except the figures surrounded by bold lines which are based on other factor of machine structural strength limitation.
- Capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deduction from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, or other suspended gear. SUMITOMO's hook block weight is as follows:
120t.....1.4ton 50t.....0.9ton 30t.....0.73ton
11t.....0.4ton
- All capacities are rated for 360° swing.
- Least stable rated condition is over the side.
- Counterweight must be 45.0ton for all capacities on this chart together with 1.5ton auxiliary weight (or opt. 3rd drum winch).
- Attachment must be erected and lowered over the ends of the crawler mounting.
- Main boom length must not exceed 73.15m.
Maximum fly jib length permitted—24.40m.
Maximum boom and fly jib combination length permitted—60.95m+24.40m/64.00m+18.30m.
Maximum boom length when mounting auxiliary short jib is 70.10m.

9. Capacities when handling load off main boom head sheaves in case of mounting fly jib or auxiliary short jib on top of boom are detailed; if required, please consult us or nearest distributor.

10. Capacities apply only to machine as originally manufactured and normally equipped by Sumitomo Heavy Industries Construction Crane Co., Ltd.

11. Boom configuration of max. 73.15m liftcrane boom in a case of converting luffing towercrane boom of max. 52.15m must be as follows:

- 7.60m bottom section
- 0.90m boom ext. (special type)
- 2.15m boom ext. (special type)
- 3.05m boom ext. (conventional type)
- 6.10m boom ext. (conventional type)
- 9.15m boom ext. (conventional type)
- 9.15m boom ext. (with expanded metal)
- 9.15m boom ext. (conventional type)
- 9.15m boom ext. (conventional type as add. boom)
- 9.15m boom ext. (conventional type as add. boom)
- 7.60m crane top section (as add. boom)

Total: 73.15m with 11 sections.

