



SC500-3

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

SUMITOMO (S.H.I.) CONSTRUCTION MACHINERY CO., LTD.

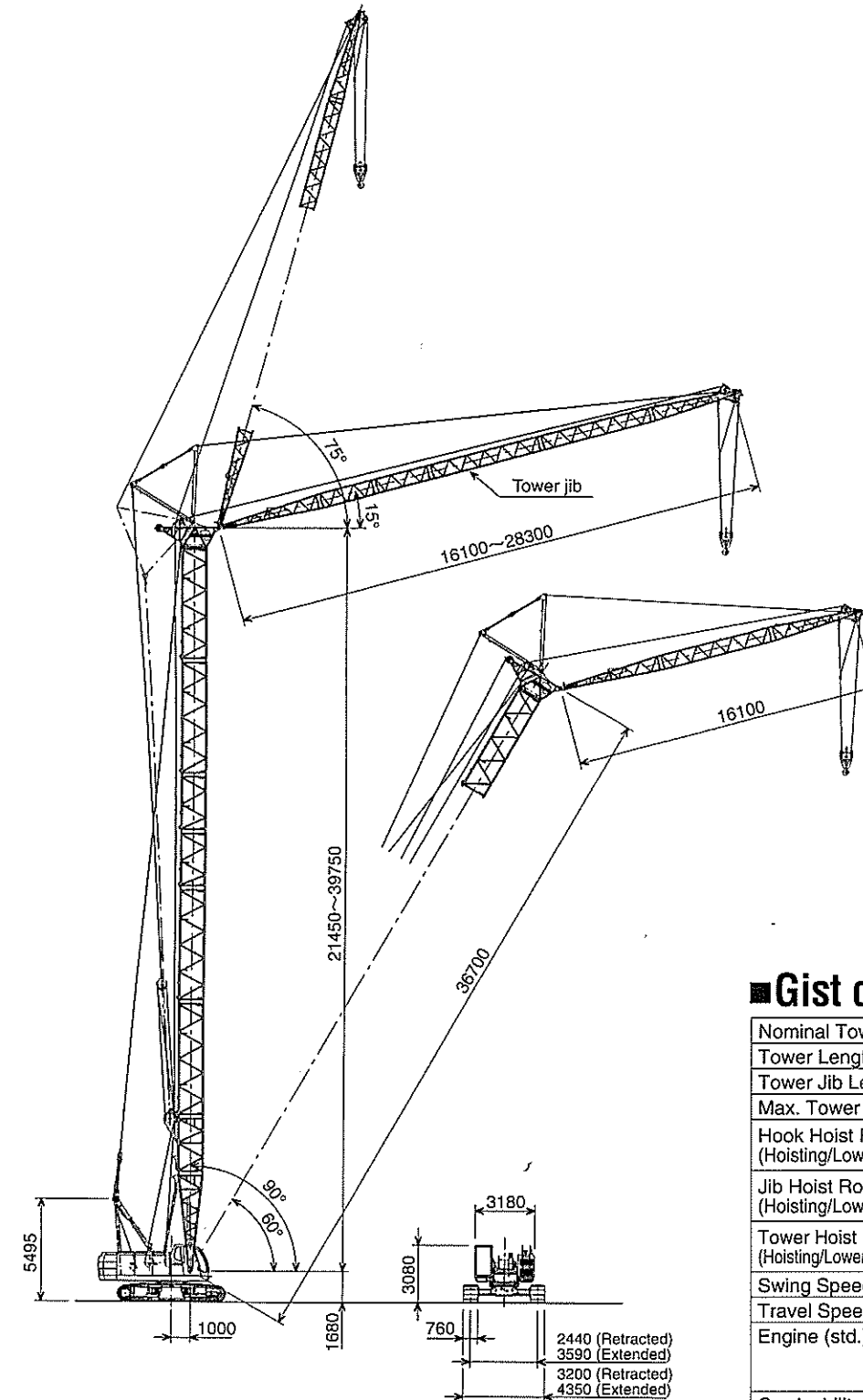
No. 5-3, Tatsumi 3-chome, Koto-ku, Tokyo 135-0053, Japan
 Phone: (03) 5569-2370
 Facsimile: (03) 5569-2327



Nagoya Plant obtained approval of ISO9001 as an international standard for the quality management system to design and manufacture of cranes and foundation equipment.

- 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:



Gist of Specification

Nominal Towercrane Cap.	12.0 t x 10.0 m
Tower Length	21.45 m~39.75 m
Tower Jib Length	16.10 m~28.30 m
Max. Tower + Jib Length	39.75 m + 28.30 m
Hook Hoist Rope Line Speed (Hoisting/Lowering-Front Drum)	120~2.0 m/min
Jib Hoist Rope Line Speed (Hoisting/Lowering-Rear Drum)	40~2.0 m/min
Tower Hoist Rope Line Speed (Hoisting/Lowering-Boom Hoist Drum)	60~3.0 m/min
Swing Speed	3.8 min. ⁻¹ (3.8 rpm)
Travel Speed	2.2/1.4 kph
Engine (std.)	Hino H07CT 133kW/2,200min. ⁻¹ <180 ps/2,200rpm>
Gradeability	22° (40%)

Luffing Towercrane 12 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 1.27m deep by 1.27m wide.

Special tower boom extension.....3.05m long, lattice construction; mounts tower jib bail assembly on upper part, and just pinned next to 5.2m bottom section. Available to use as liftcrane boom extension under HD type boom version.

Tower boom extensions.....HD type; 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 under HD type boom version.

Tower head section.....1.05m 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.....21.45m to 39.75m; the configuration of a 39.75m tower boom as maximum is as under:
 (1) 5.20m bottom section + (2) 3.05m special boom ext. + (3) 3.05m HD ext. x 2 pcs. + (4) 6.10m HD ext. x 1 pc. + (5) 9.15m HD ext. x 2 pcs. + (6) 1.05m head section.

Tower boom luffing angle.....90° thru 60° steplessly.

Note:

Bottom section of 5.2m long and HD boom extensions of 3.05m, 6.10m and 9.15m long as necessary to complete luffing towercrane boom attachment are available from those of liftcrane boom attachment with HD type boom extensions.

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 0.762m deep by 0.914m wide.

Basic tower jib.....Four-piece, 16.10m basic length; 5.5m bottom sections, two 3.05m extension and 4.5m 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 length with pendants.

Maximum tower jib length.....28.30m; a 28.30m tower jib as maximum consists of (1) 5.5m bottom section + (2) 3.05m jib ext. x 6 pcs. + (3) 4.5m top section.

Tower jib angle.....Available from 15° thru 75° (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 a 3.05m special tower boom extension, and bridle suspended between an 8-part tower jib hoist rope and pendant ropes connecting to tower post.

HOOK BLOCKS:

Both 20ton hook block and 6.6ton ball hook to be necessary for luffing towercrane operation are same as those of the HOOK BLOCKS mentioned in to "Crane 50 metric tons".

DRUM DATA:

See DRUM DATA mentioned into page 7 of separate SC500-3 Technical Data.

HOIST REEVING:

	Towercrane hoist	
	2	1
No. of part line	2	1
Max. load (ton)	12.0	6.6

CABLES:

Front drum.....Sraf Nuflex rope with construction of "SS19+39x7", spin-resistant type, 22.4mm dia./225m long with a 44.8ton breaking load.

Rear drum.....Same as that of liftcrane application.

Boom hoist drum.....Same as that of liftcrane application.

Optional 3rd drum.....Same as that of liftcrane application.

WORKING WEIGHT:

Approx. 62.8ton with 39.80m tower boom, 28.30m tower jib, 18.3ton std. counterweight, 1.86ton side weight, 1.9ton auxiliary weight, 760mm wide track shoes and 20t hook block.

GROUND PRESSURE:

77.4kPa <0.79kg/cm²> under a 62.8ton working weight mentioned above.

Luffing Towercrane Capacities

■ w/21.45m Tower

Jib length (m)	16.10				19.15			
	90	80	70	60	90	80	70	60
6.6	12.0							
7.0	12.0				12.0/7.4			
8.0	12.0				12.0			
9.0	12.0				12.0			
10.0	12.0				12.0			
12.0	11.0	10.2/12.1			10.8	8.9/13.3		
14.0	9.6	8.4			9.4	8.3		
16.0	8.2	7.2			8.1	7.1		
18.0	6.6/17.5	6.2	5.8/18.1		7.1	6.2	5.1/19.7	
20.0		5.4	5.1		5.9	5.4	5.0	
22.0		5.0/21.2	4.6	3.7/23.6	5.3/20.5	4.8	4.5	
24.0			4.1	3.6		4.3	4.0	3.3/25.6
26.0			3.9/24.8	3.3		4.2/24.2	3.6	3.2
28.0				3.0			3.3/27.7	2.9
30.0				3.0/28.1				2.6
32.0								2.5/31.0
34.0								

(EC498078)

■ w/24.50m Tower

Jib length (m)	16.10				19.15				22.20			
	90	80	70	60	90	80	70	60	90	80	70	60
6.6	12.0											
7.0	12.0				12.0/7.4							
8.0	12.0				12.0				11.8/8.2			
9.0	12.0				12.0				11.6			
10.0	12.0				12.0				11.3			
12.0	11.0	9.4/12.7			10.7	8.4/13.8			10.3			
14.0	9.6	8.2			9.4	8.1			9.2	7.5/14.9		
16.0	8.2	7.0			8.1	6.9			8.1	6.8		
18.0	6.7/17.5	6.1	5.2/19.2		7.2	6.0			7.2	5.9		
20.0		5.3	5.0		5.9	5.2	4.6/20.8		6.3	5.2		
22.0		4.8/21.7	4.4		5.5/20.5	4.7	4.3		5.4	4.6	4.2/22.4	
24.0			3.9	3.3/25.1		4.2	3.9		4.8/23.4	4.1	3.8	
26.0			3.5/25.8	3.1		4.1/24.7	3.5	2.8/27.1		3.7	3.4	
28.0				2.8			3.1	2.7		3.4/27.6	3.1	2.5/29.2
30.0				2.6/29.6			3.0/28.8	2.5			2.8	2.3
32.0								2.3			2.6/31.7	2.1
34.0								2.2/32.5				2.0
36.0												1.9/35.5

(EC498078)

Luffing Towercrane Working Ranges

w/39.75m Tower

Jib length (m)	16.10			19.15			22.20			25.25			28.30		
Tower angle (°)	90	80	70	90	80	70	90	80	70	90	80	70	90	80	70
Working radius (m)															
6.6	11.8														
7.0	11.8			9.9/7.4											
8.0	11.8			9.9			8.5/8.2								
9.0	11.8			9.9			8.5			7.0			6.4/9.8		
10.0	11.6			9.9			8.5			7.0			6.4		
12.0	10.6			9.9			8.5			7.0			6.4		
14.0	9.5	6.8/15.3		9.2			8.5			7.0			6.2		
16.0	8.2	6.4		8.1	6.1/16.4		8.1	5.5/17.6		7.0			5.7		
18.0	7.0/17.5	5.5		7.2	5.3		7.2	5.3		6.5	5.1/18.7		5.2	4.5/19.9	
20.0		4.9		6.1	4.7		6.3	4.7		5.9	4.6		4.6	4.5	
22.0		4.3		5.9/20.5	4.1		5.4	4.1		5.3	4.1		4.2	4.0	
24.0		3.9	2.9/24.4		3.7		4.9/23.4	3.7		4.7	3.7		3.8	3.6	
26.0		3.8/24.4	2.6		3.3	2.5		3.3	2.1/27.6	4.1	3.3		3.4	3.2	
28.0			2.4		3.1/27.3	2.3		3.0	2.1	4.0/26.3	2.9	1.9/29.2	3.1	2.9	
30.0			2.1			2.0		2.7	1.9		2.7	1.8	2.9/29.3	2.6	1.4/30.8
32.0			2.0/31.0			1.8		2.7/30.3	1.7		2.4	1.6		2.4	1.3
34.0						1.7			1.5		2.3/33.2	1.4		2.2	1.2
36.0									1.4			1.3		2.0/36.2	1.1
38.0									1.3/36.9			1.1			1.0
40.0												1.0/39.9			0.9
42.0															
44.0															
46.0															

(EC498078)

Notes:

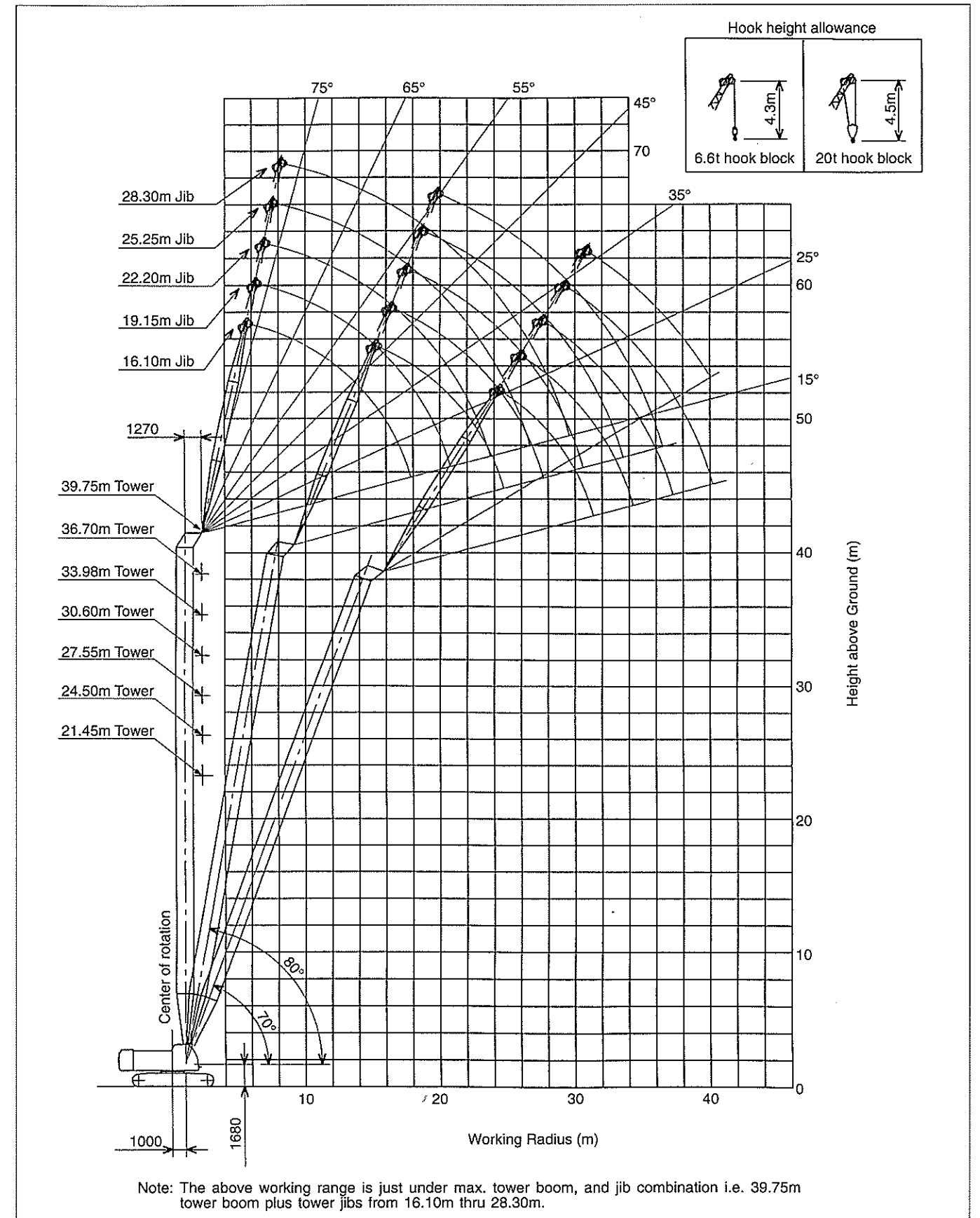
- Capacities included in these charts are the maximum allowable, and are based on machine standing level on firm supporting surface under ideal job conditions.
- Capacities are in metric tons, and are based on 78% of minimum tipping load, or based on the other factor of machine structural strength limitation.
- Capacities are under crawler extended condition with 3,590mm gauge.
- 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:
20t0.41ton 6.6t0.26ton
- An 18.3ton counterweight, 1.86ton side weight and 1.9ton auxiliary weight (or opt. 3rd drum) are required.
- All capacities are rated for 360° swing.
- Least stable rated condition is over the side.
- Attachment must be erected and lowered over the front of the crawler mounting.
- Working radii shown above are at loading condition.
- The machine can be steplessly operated at tower angle between 60 and 90 degrees safely; towercrane capacities available under any tower angle are automatically set up by a computerized automatic over-load preventing system, SUMITOMO Model SML-10.
- The machine must be operated in accordance with correct tower boom and jib combination shown right.
- Capacities apply only to the machine as originally manufactured and normally equipped by Sumitomo (S.H.I.) Construction Machinery Co., Ltd.

Combination Table

Jib length (m)	16.10	19.15	22.20	25.25	28.30
21.45	⊙	⊙	×	×	×
24.50	⊙	⊙	⊙	×	×
27.55	⊙	⊙	⊙	⊙	×
30.60	⊙	⊙	⊙	⊙	○
33.65	⊙	⊙	○	○	○
36.70	⊙	○	○	○	○
39.75	○	○	○	○	○

Notes:

- The meaning of symbols shown in the above table is as follows;
- Symbol of "⊙" : Possible to luff tower between 90° thru 60°;
 - Symbol of "○" : Possible to luff tower between 90° thru 70°;
 - Symbol of "×" : Impossible to make any of tower boom and jib combination.



(EC598022)