

# SUMITOMO SC 500-3

Note: 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.

PAK Series

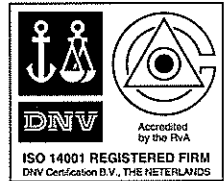
# SC 500-3

## 50-M ton Hydraulic Crawler Crane & Cable Excavator



Certificate No. 45125

Certificate No. 45125



Certificate No. EMSC-1242



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

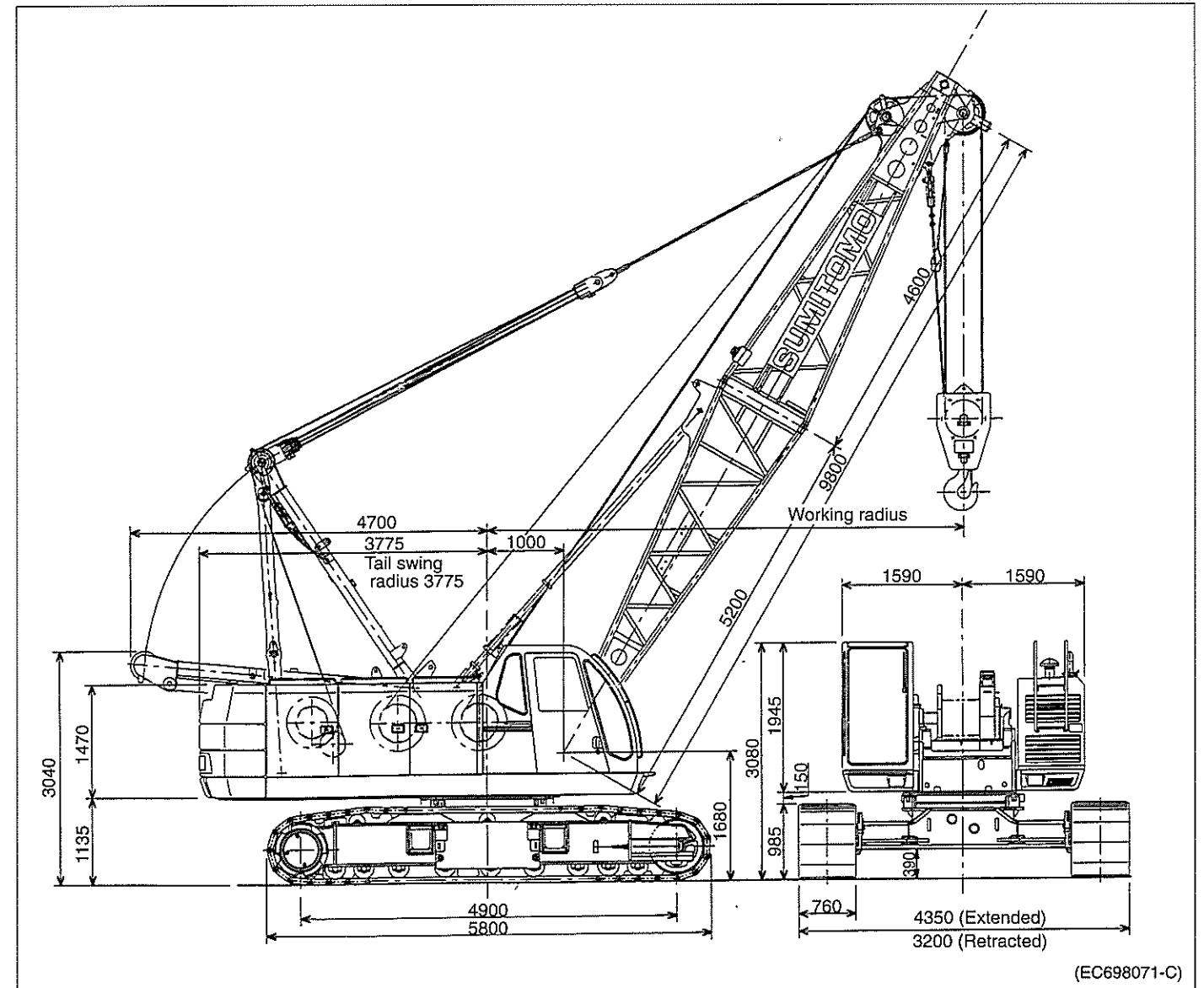
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Address Inquires to:

## Technical Data

### General Dimensions:

(in mm)



(EC698071-C)

2nd Edition

# SUMITOMO

# Specifications

## SUMITOMO

### SC 500-3

## Basic Machine

### Superstructure

#### UPPER REVOLVING FRAME:

All-welded, precision machined, robust construction. A machined surface provided for mounting load hoist and boom hoist assemblies, and mounting itself on turntable bearing.

#### TURNTABLE BEARING WITH INTERNAL SWING GEAR:

Single shear ball type; inner race of turntable bearing with integral, internal swing (ring) gear bolted to carbody frame, and outer race of turntable bearing bolted to upper revolving frame.

#### CONTROL SYSTEM:

System contains one set each of duplicate and triplicate tandem valves which direct oil to various machine function and are actuated by control levers via remote controlled hydraulic servo for all motions except swinging which are controlled via mechanical linkage. Working speeds can be precisely controlled by motorcycle type throttle and conventional type floor levers in cooperation with SUMITOMO's patented "SC" controller that varies engine rpm, hyd. pump discharge, and hyd. motor oil absorbing capacity of front /rear main and 3rd drum winches simultaneously, or varies just hyd. pump discharge while keeping engine rpm. System also takes SUMITOMO's unique EEP SA (Electrical Engine Pump Sensing Analyzer) to maximize drum horsepower, and reduces horsepower loss with eliminating the possibility of engine stall.

**Pump control system** — By SUMITOMO's patented "SC" controller that provides two modes of engine-pump control.

#### MODE I:

The SC Controller is normally programmed to vary the engine speed, pump discharge, and hyd. motor oil absorbing capacity of front /rear main and 3rd drum winches simultaneously. Simply twisting the grip advances the engine to maximum speed and the hydraulic pumps to maximum flow at the same time. This mode is suitable to precision crane work.

#### MODE II:

By activating a switch, it is able to vary the pump discharge, and hyd. motor oil absorbing capacity of front/rear main and 3rd drum winches simultaneously, by means of the grip throttle, while keeping engine speed fixed. Mode II is convenient for operations such as lifting magnet and bucket work, where the engine is normally run at full throttle.

#### HYDRAULIC SYSTEM:

System provided with three variable displacement axial piston pumps for both independent and combined operations of all functions and one fixed displacement gear pump for system valve and cylinder controls.

**Main/aux. crane hoist motors** — Variable displacement axial piston motor with counterbalance valve.

**Boom hoist motor** — Axial piston type with counterbalance valve and spring-applied/hydraulically released multiple wet-disc type automatic brake.

**Third drum motor** — Optional extra; variable displacement axial piston type with counterbalance valve;

**Swing motor** — Axial piston type with spring-applied/hydraulically released multiple wet-disc type manually controlled brake.

**Travel motors** — Shoe-in design; 2-speed type, variable displacement axial piston motor with brake valve and spring-applied/hydraulically released multiple wet-disc type automatic brake.

**Independent hyd. circuits** — Available in between hydraulic circuits of P1 main pump and front main drum winch motor, and between P2 main pump and rear main drum winch motor.

**Hydraulic oil reservoir** — 400 liters capacity.

#### LOAD HOIST ASSEMBLY:

Front and rear main operating drums driven by independent hydraulic motor of bi-directional, variable displacement axial piston motor through planetary and spur reduction gear units powering the rope drum in either direction for hoisting and lowering load. Each of drum sized in same dimension.

**Clutches** — Internal expanding, self-adjusting, mono-band design with non-asbestos lining; spring-applied, power hydraulically released.

**Brakes** — 965mm dia. by 127mm wide brake drum; external contracting band type with non-asbestos lining; operated by power hydraulically assisted foot pedal with locking latch. Two brake modes are available; for crane operation, automatic brake, spring-applied, power hydraulically released is applied when control lever is in neutral position, and for bucket operation, free-fall is available in the above control lever position.

**Drums** — One piece, parallel grooved lagging with locking ratchet wheel cast integral; mounted on drum shaft through anti-friction bearings.

**Drum locks** — Electrically operated pawl.

**Drum rollers** — Optional extra; available for right cable winding onto drums.

#### BOOM HOIST ASSEMBLY:

Driven by bi-directional, axial piston hydraulic motor through 2-stage planetary reduction gear unit powering the rope drum in either direction for hoisting and lowering boom.

**Brake** — Spring-applied, power hydraulically released multiple wet-disc type automatic brake.

**Drum** — One piece, parallel grooved lagging with locking ratchet wheel cast integral; mounted on drum shaft through anti-friction bearings.

**Drum lock** — Power hydraulically operated pawl (w/automatic locking device).

#### THIRD DRUM WINCH MECHANISM:

Optional extra; available in two kinds of types. One is heavy duty type of max. 17.4ton line

pull with 22.4mm dia. cable, and the other one is conventional type of max. 8.5ton line pull with 18mm dia. cable with a two-brake mode function of "automatic" and "free-fall" like front/rear main operating drums.

#### SWING:

Driven by bi-directional, axial piston hydraulic motors through 2-stage planetary reduction gear unit powering swing pinion. Swing pinion meshes with internal teeth of swing (ring) gear of turntable bearing inner race.

**Brakes** — Spring-applied, power hydraulically released multiple wet-disc.

**Lock** — Mechanically operated drop pin.

**Speed** — 3.8min.<sup>-1</sup> <3.8rpm>.

#### GANTRY:

Retractable A-frame design. Pins bail frame.

#### OPERATOR'S CAB:

940mm wide; acoustically treated, all new stamped, automotive type, full-vision, cushion rubber mounted, well-ventilated, full compartment, roomy operator's cab with large curved green-glass front window; provided with an arrangement of "SC" control/swing lever, three floor type drum control levers, two travel control levers (located at right-hand side of operator's seat), hot water type heater, sunvisor, sunshade, rear-view mirrors, two front and one roof window shield wipers of intermittent type with washer, and roll-down window on sliding door.

**Instrument panel** — Contains engine monitoring lamps, display panel of SUMITOMO Model SML-10 Load Moment Limiter, and other necessary controllers and switches with panel cover; all located at left-hand side of operator.

**Operator's seat** — Four way full adjustable reclining seat with both R/H and L/H side arm rests.

**Anemometer** — Optional extra; recommended for luffing towercrane attachment.

**Excavating mode switch** — Optional extra; available to cut off SML-10 automatic stopping circuits during operation under bucket applications except hook over-hoist, and boom over-hoisting and -lowering limiting circuits; a warning buzzer is only available when switch goes on.

**Stone guard** — Optional extra; stainless steel-make. This is available for operator's cab protection from outside obstacles.

**Air-conditioner** — Optional extra; built-in type full air-conditioning. In a case that an optional air-conditioner is installed, no heater as std. is provided.

**Electric cab fan** — Optional extra; wind-direction adjustable type.

**AM/FM radio** — Provided as std. with clock.

**Fire extinguisher** — Optional extra; powder type with 1kg capacity.

#### MACHINERY CAB:

Equipped with hinged doors on both sides for machinery access and inspection; tape-type non-skid material applied to the roof.

#### CATWALKS:

Optional extra; hitched in place along both sides of machinery cab.

**OPERATOR'S CAB SIDESTEP:**

Optional extra; hitched in place along operator's cab.

**HYDRAULIC TAGLINE WINDER:**

Optional extra; provided in front of upper revolving frame, and this is available for preventing a shake of suspended load like clamshell bucket by an 10mm dia. tug cable with light force.

**FAIRLEAD:**

Optional extra; full-revolving type. Required in a case of dragline application.

**COUNTERWEIGHT:**

Weighs 18.3ton; 4-block, removable, cast iron-make with corner-rounded design with tail swing radius of 3,775mm. Consists of "A" (3,400kg), "B" (4,800kg), "C" (5,000kg) and "D" (5,100kg).

**Counterweight self-removal device** — Optional extra; raises and lowers counterweight by retractable A-frame gantry with power hyd. cylinder.

**AUXILIARY WEIGHT:**

Optional extra; weighs 1.9ton. Required in a case of optional HD type boom, and mounted on part of optional 3rd drum location; if 3rd drum optionally required, no this 1.9ton weight is required even optional HD type boom application.

**ELECTRICAL SYSTEM:**

24-volt negative ground system; provided with two maintenance free 12-volt batteries.

**LIGHTING SYSTEM:**

Includes following lights.  
• Two 70 W working lights;  
• One 10 W interior cab light.

**POWER UNIT:****Standard:**

Make & Model	Hino H07CT
Type	Water-cooled, 4-cycle, direct injection, turbo-charged, diesel w/automatic cooling fan
No. of Cylinders	Six (6)
Bore & Stroke	110 mm x 118 mm
Displacement	6,728 cc
Rated Output	133 kW/2,200 min <sup>-1</sup> < 180 ps/2,200 rpm >
Maximum Torque	657 N·m/1,600 min <sup>-1</sup> < 67 kgf·m/1,600 rpm >
Fuel Tank	290 liters

**Optional:**

Make & Model	MITSUBISHI 6D24-T
Type	Water-cooled, 4-cycle, turbo-charged, diesel engine with auto cooling fan
No. of Cylinders	Six (6)
Bore & Stroke	130 mm x 150 mm
Displacement	11,945 cc
Rated Output	184 kW/2,000 min <sup>-1</sup> < 250 ps/2,000 rpm >
Maximum Torque	981 N·m/1,400 min <sup>-1</sup> < 100 kgf·m/1,400 rpm >
Fuel Tank	290 liters

## Undercarriage

**CARBODY FRAME:**

All-welded, precision machined, box type construction; provided with longer axles with folding type extensions reaching around 70mm over center of crawler side frame for better fitting between axles and crawler side frame boxes, and for prevention of "V"-shape of crawler side frame in its fully extended position as well as a 3.2m overall width of crawler can be realized in its fully retracted position. A machined surface provided for mounting turntable bearing.

**CRAWLER SIDE FRAMES:**

All-welded, box type construction, precision machined; provided with crawler axles' boxes to extend and retract on carbody frame axles, and held in place by plate links.

**Removal cylinders** — Available for extending/retracting side frames, and assisting in removing side frames.

**Side weight** — Weighs 1.86ton in total. One 0.93ton weight block attached onto each crawler side frame.

**Crawler side steps** — Provided at both ends of the frames for easy access to superstructure.

**DRIVE SPROCKETS:**

Cast steel, heat treated; one per side frame. Track drive sprocket assembly bolt-coupled to 3-stage planetary reduction gear unit outer case as an integral part of shoe-in type traction motor. Sealed between parts of rotation and non-rotation of the motor with floating seal.

**IDLER WHEELS:**

Cast steel, heat treated; one per side frame. Mounted on two bronze bushings with floating seals for lifetime lubrication.

**TRACK ROLLERS:**

Nine per side frame; each cast steel, double flanged, heat treated. All rollers mounted on two bronze bushings with floating seals for lifetime lubrication.

**CARRIER ROLLERS:**

Three per side frame; each cast steel, double flanged and heat treated. All rollers mounted on two bronze bushings with floating seals for lifetime lubrication.

**TRACKS:**

Heat treated, self-cleaning, multiple hinged track shoes joined by full floating pins; 49 pcs. per side frame.

**Shoe width** — 760mm wide.

**Track adjustment** — Manual adjustment device with oil jack and shim plate packs is standardized. As an optional extra, that idler wheels automatically adjusted while operation by means of hyd. cylinders actuated by power hydraulic supplied from operational hyd. pumps of superstructure is available instead.

**TRAVEL AND STEERING:**

Hydrostatic drive; a bi-directional, shoe-in type

axial piston hydraulic motor bolt-couples drive sprocket thru 3-stage planetary reduction gear unit outer case at each crawler side frame end for travel and steer. Straight-line travel (forward or reverse), pivot or differential turns, and counter-rotation for spin turns available.

**Brake** — Spring-applied, hydraulically released multiple wet-disc type automatic brake; located within hydraulic motor. Brakes automatically set when travel levers are in neutral or when engine is shut down.

**Travel speed** — 2.2/1.4km/hr.

**Gradeability** — 40% (22°) permissible based on basic machine without front-end attachment.

## Safety Devices

**SUMITOMO MODEL SML-10 LOAD MOMENT LIMITER:**

This is a fully computerized total safe operation control system, and automatic over-load preventing system as standard equipment.

**Construction (standard version)** — Comprises (1) load detecting device with amplifier for general crane application (except luffing towercrane application), (2) angle detector for crane main boom/luffing towercrane boom (except tower jib), (3) computerized Micro Processing Unit (M.P.U.), and (4) display panel.

**Functions** — This system functions that if a lifting load moment (lifting load x working radius) reaches a 90% of the rated one specified in the crane capacity chart, an annunciating pre-warning (it is soon stopping automatically) is given; if it is an 100%, a warning is given by red lamp, and annunciating warning (it is over-loading), and all peril side motions are automatically stopped. The machine, however, can be operated in safety side motions.

**Display panel indications** — Followings are indication details on LCD 1 thru LCD 5:

- After operation modes were set by means of mode setting keys on panel, LCD 1 indicates:
  - liftcrane/luffing towercrane boom length;
  - kind of hook block (for boom of item 1);
  - no. of part-line (for hook block of item 2);
  - tower jib length;
  - kind of hook block (for tower jib of item 4);
  - no. of part-line (for hook block of item 5);
  - liftcrane boom/tower jib upper limit setting angle;
  - liftcrane boom/tower jib lower limit setting angle;
  - lifting curve number ("01" to "03");
  - "attached or non" of aux. short jib, and
  - lifting load ratio indication with 3 kinds of

color lamping (green, yellow and red).

b. LCD 2 indicates:

- engine rpm, or
- lifting height.

c. LCD 3 indicates:

- present lifting load, or
- rated load, or
- remaining load.

d. LCD 4 indicates:

- liftcrane/luffing towercrane boom angle.

e. LCD 5 indicates:

- tower jib angle, or
- fly jib offset angle;
- present working radius, or
- remaining working radius.

Display panel also provided with a fourteen-kind of indication lamp, and a function to indicate letter message on LCD 1 when machine becomes abnormal.

**NON FREE-FALL OPERATION SWITCH:**

This is for keeping non free-fall operation during operation when it is necessary. Provided with key for switch on-off control.

**HOOK OVER-HOIST LIMITING DEVICE:**

Interlocked with the SML-10 for automatically preventing a hook over-hoist of crane main boom with functions of automatic drum braking, and warnings by red lamp and annunciating alarm.

**BOOM OVER-HOIST AND -LOWERING LIMITING DEVICE:**

This is one of key safety devices; interlocked with the SML-10 also for automatically preventing boom over-hoist and -lowering with functions of automatic drum braking, and warnings by red lamp and annunciating alarm. Further boom protection from rapid boom over-hoist by hook over-hoist motion under mal-function of hook over-hoist limiting device is available as one of functions of the SML-10.

**BOOM BACKSTOPS:**

Dual; telescopic design with spring buffers.

**DUAL BOOM OVER-HOIST LIMITING DEVICE:**

Additional limit switch located on boom backstops; this is as a further safety device for redundant boom protection.

**SWING LOCK:**

Mechanically operated drop pin; available to firmly lock superstructure in four positions of facing front or rear or left or right to undercarriage.

**DRUM LOCKS:**

Electrically operated pawl locks is available on front and rear main drums while power hydraulically operated pawl lock is available on boom hoist drum with an automatic locking device as std.

**THIRD DRUM LOCK:**

Provided as std. when an optional 3rd drum winch is provided.

**BOOM ANGLE INDICATOR:**

Pendulum type; mounted on right-hand side of bottom section of crane main boom.

**HOOK LATCH:**

Provided on every kinds of hook to prevent

# Liftcrane 50 metric tons

out of place of cable from hook.

## LEVEL GAUGES:

Bubble type; both located on operator's cab floor of superstructure, and on a part of undercarriage.

## LEVER LOCKS:

Provided on all control levers (except swing lever) to lock levers in neutral.

## SWING ALARM:

This is by buzzer, and flasher lamps located on both sides of machinery cab.

## ANNUNCIATING ALARMS:

This is one of functions of the SML-10; provided with fifteen kinds of the alarm like "it is soon stopping automatically".

## SPEED SLOWDOWN DEVICE:

This is for speed slowdown of hoisting and lowering motions of crane main boom (and/or tower jib in case of luffing towercrane att.) which are available just before automatic stopping to prevent a shock.

## SWING BRAKE LAMP:

Provided on operator's cab instrument panel; this is available to confirm whether or not swing brake is applied.

## SIGNAL HORN:

Available as warning just before every kinds of motions from operator.

## FOOL PROOF SHUT-OFF SYSTEM:

Located in the cab exit; this is available to automatically deactives and locks hydraulic system.

## TRAVEL ALARM:

Buzzer warns when travel motion is initiated.

## ENGINE MONITORING LAMPS:

Available for checking engine operating conditions like battery charge, engine oil pressure, radiator coolant level, oil filter clogging, air filter clogging, and battery electrolyte amount.

## EMERGENCY MACHINE STOP BUTTONS:

Two; each located nearby front main and boom hoist drums. Available when it is necessary to stop all machine motion.

## REAR VIEW MIRRORS:

Two each provided on front-left and -right corners of super-structure.

## THREE COLOR PERCENTAGE INDICATOR:

Optional extra; this is with three colours of Green, Yellow and Red. Each colour indicates the load percentage to rated capacity; Green shows less than 90% as safety, Yellow shows 90 to 99% as marginal, and Red shows over 100% as over-loading. As further function, Red lamp comes on automatically when operator cuts off safety device switch absent-mindedly.

## LIFTING HEIGHT METER:

Optional extra; available to indicate lifting height above ground or depth below ground on display "LCD 2" of SML-10 Load Moment Limiter display panel.

## MICROPHONE & LOUD-SPEAKER:

Optional extra; this is for operator's convenience for loud speaking.

## ANNUNCIATING SWING ALARM:

Optional extra; this is additional alarm for swing motion with a caution voice of "now swing, keep clear please!".

## DRUM LIGHT & MIRROR:

Optional extra; these are available for checking rope winding onto front and/or rear drum(s).

## AUX. CRANE HOOK OVER-HOIST LIMITING DEVICE:

Optional extra; this is available for auxiliary crane hoist with optional aux. short jib and/or fly jib. Performs the same function as that of "Hook over-hoist limiting device" mentioned before.

In addition to the above, following safety devices are standard for luffing towercrane attachment.

## TOWER JIB ANGLE DETECTOR:

This is one of key safety device in a case of luffing towercrane attachment.

## TOWERCRANE LOAD DETECTOR:

This is also important safety device when luffing towercrane attachment is required.

## TOWER JIB OVER-HOIST AND -LOWERING LIMITING DEVICE:

Performs all the same function as that of "Boom over-hoist and -lowering limiting device" stated before.

## TOWER JIB HOOK OVER-HOIST LIMITING DEVICE:

Performs the same function as that of "Hook over-hoist limiting device" described before.

## TOWERCRANE ATT. SELF-ERECTION MODE:

This is an internal, integral mode as one of key function of the SML-10 for safe self-erection and -laying down of luffing towercrane attachment without fail.

## TOWER JIB BACKSTOPS:

Dual; telescopic design with spring buffers.

## DUAL TOWER JIB OVER-HOIST LIMITING DEVICE:

Additional limit switch located on tower jib backstops; this is as a further safety device for redundant tower jib protection.

## CRANE BOOM:

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

Boom connections .....In-line pin connections; available in two kinds of sections.  
 Std. LD type boom — 1.20m deep by 1.27m wide; available for liftcrane version only.  
 Opt. HD type boom — 1.27m deep by 1.27m wide; available for both liftcrane and luffing towercrane versions.  
 Basic boom.....Two-piece, 9.8m basic length; 5.2m bottom section and 4.6m tapered crane top section for both std. LD type and opt. HD type booms.  
 Boom head machinery.....Four head sheaves and two guide sheaves mounted on anti-friction bearings; available in both std. LD type and opt. HD type booms.  
 Boom extensions .....Optional extra; available in two kinds of types, and in length of 3.05m, 6.10m and 9.15m with pendants.  
 Std. LD type extension — Available for liftcrane version only.  
 Opt. HD type extension — Available for both liftcrane and luffing towercrane versions.  
 Maximum boom length .....52.45m; available in both std. LD type and opt. HD type booms.

## FLY JIB:

Optional extra; lattice construction, round tubular main chords, alloy hi-ten steel, with bracing of round steel tubing having in-line pin connections at 0.50m deep by 0.61m wide, and jib head machinery with single sheave mounted on anti-friction bearings. Provided with jib strut, jib backstops, and jib/boom guyline pendants. Mounted on 4.6m tapered crane top section, and is available for light load lifting operation with less than 6.6ton with single part hoist line.  
 Basic fly jib .....Two-piece, 6.10m basic length; 3.05m bottom and top sections.  
 Fly jib extensions .....Available in 3.05m length with pendants.  
 Maximum fly jib length .....15.25m.  
 Boom plus fly jib length .....Max. 43.30m + 15.25m.

## AUXILIARY SHORT JIB:

Optional extra; all-welded construction having single sheave head machinery. Pinned to 4.6m tapered crane top section. Available for 6.6ton lift as maximum with single part hoist line.

## HOOK BLOCKS:

50t, four sheaves .....Std.  
 35t, three sheaves .....Optional extra.  
 20t, one sheave .....Optional extra.  
 6.6t, ball hook .....Optional extra.

## BAIL AND BRIDLE:

All-welded construction; provided with larger sheaves of a 21.4 D/d ratio on both bail and bridle for 12-part boom hoist rope reeving. Bail pinned to A-frame gantry, and bridle suspended between a 12-part boom hoist rope and pendant ropes connecting to tip of 4.6m tapered crane top section.

## DRUM DATA:

Drum	Root dia.	Type	Line speed (Hoisting, Lowering)	Cable	Max. line pull
Front (main crane hoist) (towercrane hoist) (h/grab crown holding via hook) (c/bucket holding) (d/bucket inhaul) (MHL bucket hoist)	458mm	Parallel grooved	120 ~ 2mpm	22.4mm	17.5ton
Rear (aux. crane hoist) (tower jib hoist) (h/grab holding & closing) (c/bucket closing) (d/bucket lift) (MHL bucket hoist)	458mm	Parallel grooved	120 ~ 2mpm *40 ~ 2mpm	22.4mm	17.5ton
Boom hoist	320mm	Parallel grooved	60 ~ 3mpm	16.0mm	7.0ton
Opt. 3rd (heavy duty type)	458mm	Parallel grooved	120 ~ 2mpm	22.4mm	17.4ton
Opt. 3rd (conventional type)	360mm	Parallel grooved	83 ~ 4mpm	18.0mm	8.5ton

## Notes:

- Line speed is based on drum first layer and rated engine rpm.
- Hoisting line speed varies under load and operating conditions.
- The figures with asterisk mark (\*) indicate rope line speed in a case of luffing towercrane application.

# Liftcrane Capacities

## HOIST REEVING:

No. of part line	Main hoist							Aux. hoist
	8	7	6	5	4	3	2	1
Max. load (ton)	50.0	46.2	39.6	33.0	26.4	19.8	13.2	6.6

## CABLES:

Front drum .....XP rope with construction of IWRC 6xWS (26), spin-resistant type, 22.4mm dia./195m long, breaking load 367kN (37.4t).  
 Rear drum.....Optional extra; XP rope with construction of IWRC 6xWS (26), non-resistant type, 22.4mm dia./150m long, breaking load 367kN (37.4t).  
 Boom hoist drum .....XP rope with construction of IWRC 6xWS (31), 16mm dia./150m long, breaking load 187kN (19.1t).

## WORKING WEIGHT & GROUND PRESSURE:

Type of boom	Shoe width	Weight	Pressure
LD type (std.)	760mm	55.0t	67.7kPa <0.69kg/cm <sup>2</sup> >
HD type (opt.)	760mm	57.0t	69.7kPa <0.72kg/cm <sup>2</sup> >

Note: Working weights shown above are with 9.8m basic boom, 18.3ton counterweight, 1.86ton side weight, and 50t hook block. For HD type boom, a 57.0ton working weight also includes an 1.9ton auxiliary weight (or opt. 3rd drum).

## ■ w/Std. LD Type Boom

Boom length (m) Working radius (m)	9.80	12.85	15.90	18.95	22.00	25.05	28.10	31.15	34.20	37.25	40.30	43.30	46.35	49.40	52.45
3.1	50.0	50.0/3.6													
4.0	50.0	50.0	47.2/4.2												
4.5	43.4	43.4	43.4	40.5/4.7											
5.0	37.1	37.0	36.9	36.6	33.1/5.3	29.4/5.8									
6.0	27.6	27.6	27.4	27.3	27.2	27.1	25.3/6.3	22.4/6.8							
7.0	22.1	22.1	21.9	21.8	21.7	21.5	21.5	21.4	19.9/7.4	18.0/7.9					
8.0	18.4	18.4	18.2	18.1	17.9	17.9	17.8	17.7	17.7	17.6	16.4/8.4				
9.0	15.7	15.7	15.5	15.4	15.3	15.2	15.1	15.1	15.0	14.9	14.8	14.7	12.1/9.5		
10.0	14.5/9.6	13.7	13.5	13.4	13.3	13.2	13.2	13.1	13.0	12.9	12.8	12.8	11.7	9.8	7.8/10.6
12.0		10.8	10.6	10.6	10.5	10.4	10.3	10.2	10.2	10.1	10.0	9.9	9.8	8.6	7.1
14.0		10.7/12.3	8.7	8.7	8.6	8.5	8.4	8.3	8.3	8.2	8.1	8.0	7.9	7.6	6.2
16.0			8.0/14.9	7.3	7.2	7.1	7.0	7.0	6.9	6.8	6.7	6.6	6.5	6.4	5.5
18.0				6.5/17.6	6.2	6.1	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3	4.9
20.0					5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4
22.0					5.3/20.2	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7
24.0						4.4/22.8	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2
26.0							3.6/25.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7
28.0								3.1	3.0	2.8	2.8	2.6	2.5	2.5	2.4
30.0								3.0/28.1	2.6	2.5	2.4	2.3	2.2	2.1	2.0
32.0									2.5/30.8	2.2	2.1	2.0	1.9	1.8	1.6
34.0										2.0/33.4	1.9	1.7	1.6	1.5	1.3
36.0											1.6	1.4	1.3	1.2	1.1
38.0												1.2	1.1	1.0	
40.0												1.1/38.7			
No. of part line	8	8	8	7	6	5	4	4	4	3	3	3	2	2	2

(EC498068)

## ■ w/Opt. HD Type Boom

Boom length (m) Working radius (m)	9.80	12.85	15.90	18.95	22.00	25.05	28.10	31.15	34.20	37.25	40.30	43.30	46.35	49.40	52.45
3.1	50.0	50.0/3.7													
4.0	50.0	50.0	47.7/4.2												
4.5	43.4	43.4	43.4	40.5/4.7											
5.0	37.1	37.0	36.9	36.6	33.1/5.3	29.4/5.8									
6.0	27.6	27.6	27.4	27.3	27.2	27.1	25.3/6.3	22.4/6.8							
7.0	22.1	22.1	21.9	21.8	21.7	21.5	21.5	21.4	19.9/7.4	18.0/7.9					
8.0	18.4	18.4	18.2	18.1	17.9	17.9	17.8	17.7	17.7	17.6	16.4/8.4				
9.0	15.7	15.7	15.5	15.4	15.3	15.2	15.1	15.1	15.0	14.9	14.8	14.7	13.0/9.5		
10.0	14.5/9.6	13.7	13.5	13.4	13.3	13.2	13.2	13.1	13.0	12.9	12.8	12.8	12.5	12.4	11.0/10.6
12.0		10.8	10.6	10.6	10.5	10.4	10.3	10.2	10.2	10.1	10.0	9.9	9.8	9.8	9.5
14.0		10.7/12.3	8.7	8.7	8.6	8.5	8.4	8.3	8.3	8.2	8.1	8.0	7.9	7.8	7.7
16.0			8.0/14.9	7.3	7.2	7.1	7.0	7.0	6.9	6.8	6.7	6.6	6.5	6.4	6.3
18.0				6.5/17.6	6.2	6.1	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3	5.2
20.0					5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4
22.0					5.3/20.2	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7
24.0						4.4/22.8	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2
26.0							3.6/25.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7
28.0								3.1	3.0	2.8	2.8	2.6	2.5	2.4	2.2
30.0								3.0/28.1	2.6	2.5	2.4	2.2	2.1	2.0	1.8
32.0									2.5/30.8	2.2	2.0	1.9	1.8	1.6	1.5
34.0										2.0/33.4	1.7	1.6	1.5	1.3	1.2
36.0											1.5	1.3	1.2	1.1	0.9
38.0												1.1	1.0	0.8	
40.0												1.0/38.7			
No. of part line	8	8	8	7	6	5	4	4	4	3	3	3	2	2	2

(EC498073)

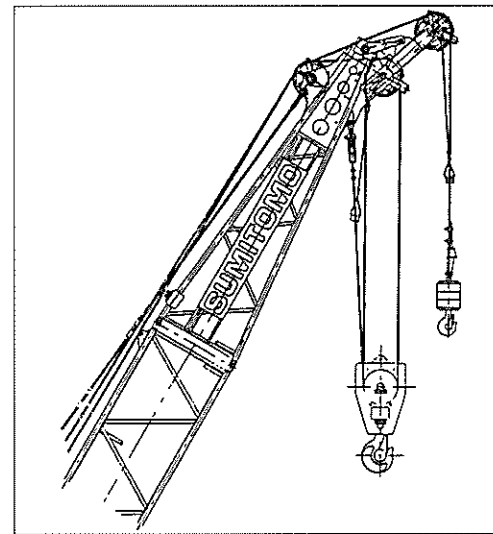
# Liftcrane Working Ranges

## Notes — Liftcrane capacities

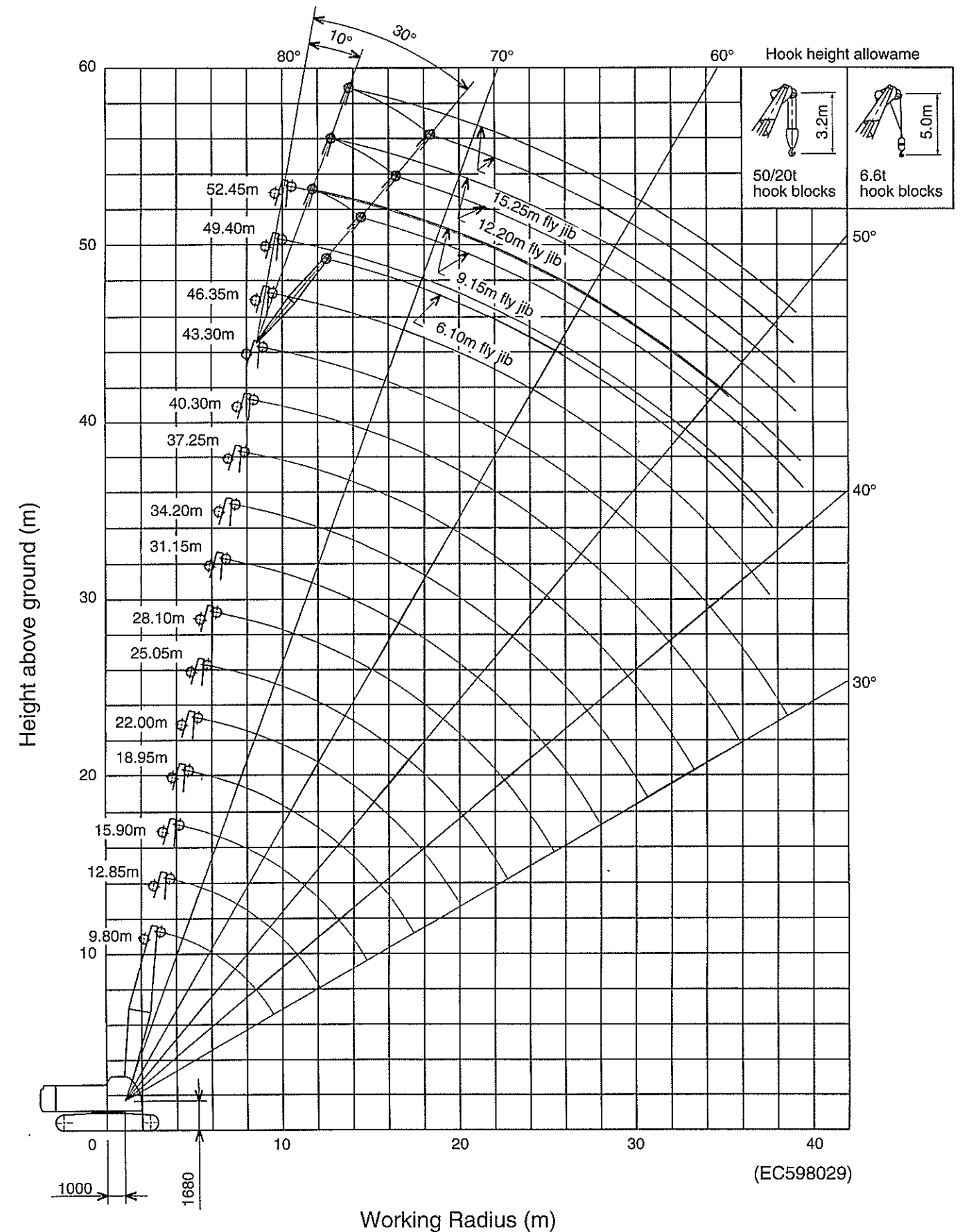
1. Capacities included in this chart are the maximum allowable, and are based on machine standing level on firm supporting surface under ideal job conditions.
2. Capacities are in metric tons, and are not more than 78% of minimum tipping loads, or based on machine structural strength limitation.
3. Capacities 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:  
50t .....0.70ton    35t .....0.50ton    20t .....0.40ton  
6.6t .....0.26ton
4. All capacities are rated for 360° swing.
5. Least stable rated condition is over the side.
6. An 18.3ton counterweight and 1.86ton side weight are required for all capacities on these chart. For capacities under HD type boom, an 1.9ton auxiliary weight (or opt. 3rd durrn) is additionally required.
7. Crawler side frame must be fully extended for all operating conditions.
8. Attachment must be erected and lowered over the ends of the crawler mounting.
9. Main boom length must not exceed 52.45m.  
Maximum fly jib length permitted—15.25m.  
Maximum boom and fly jib combination length permitted—43.30m+15.25m.  
Maximum boom length when mounting auxiliary short jib is 49.40m.
10. 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.
11. Capacities apply only to machine as originally manufactured and normally equipped by Sumitomo (S.H.I.) Construction Machinery Co., Ltd.

## SC500-3 AUXILIARY SHORT JIB CAPACITIES: Max. 6.6ton

**Note:** Jib capacities is almost equal to the figures made by the deduction of an 200kg from the liftcrane capacities for boom length up to 49.40m unless restricted by the maximum jib capacity shown above. As to the details, please consult us or nearest distributor.

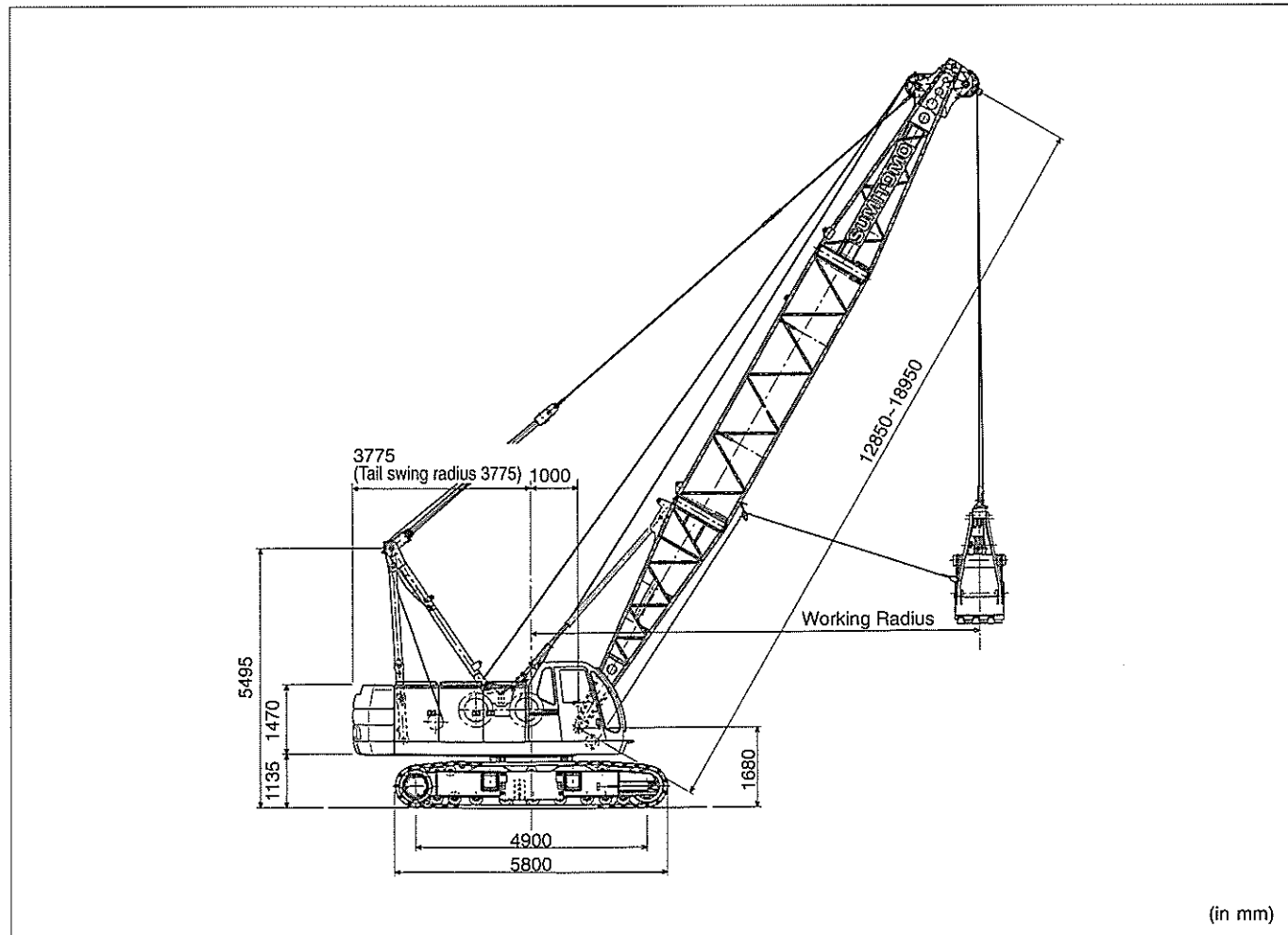


Auxiliary short jib (Option)





# Clamshell 1.2m<sup>3</sup> over



(in mm)

## Clamshell Capacities:

Boom length (m)	12.85	15.90	18.95
Working radius (m)			
7.0	6.5/7.1		
8.0	6.5	6.5/8.4	
9.0	6.5	6.5	6.5/9.7
10.0	6.5	6.5	6.5
12.0	6.5	6.5	6.5
14.0		6.5	6.5
16.0		6.5/14.5	6.5
18.0			6.5/16.9

(EC498100)

### Notes:

- Max. clamshell rating is 6.5ton.
- Capacities are in metric tons, and are not more than 78% of minimum tipping load.
- The above clamshell capacities are available under both LD and HD type booms.
- Following weight of bucket plus load should not exceed clamshell capacities shown above.

Bucket capacity	0.8m <sup>3</sup>	1.0m <sup>3</sup>	1.2m <sup>3</sup>
Bucket weight	2.1t	2.5t	3.1t

- Boom length shall not exceed 18.95m.
- Apparent specific gravity of lifting material:  
Earth .....1.7~1.8t/m<sup>3</sup>  
Gravel .....1.8~2.0t/m<sup>3</sup>
- Crawler side frame must be extended for all operating conditions.

## Bucket Dimensions:

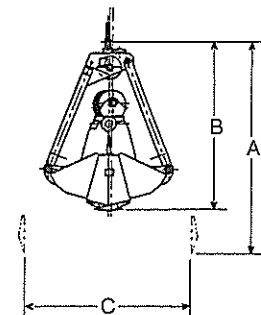
(EC698081)

(in m)

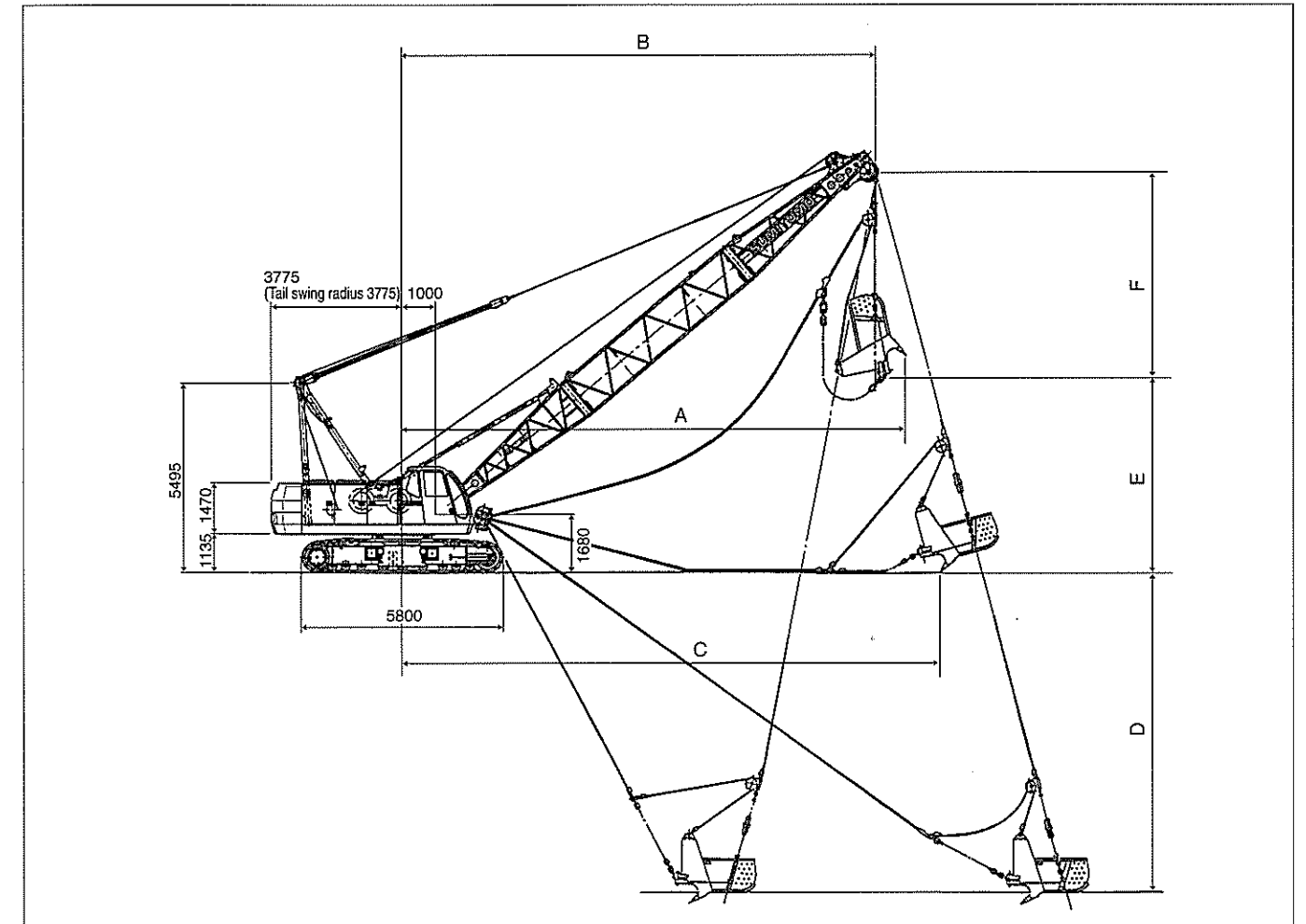
		0.8m <sup>3</sup>	1.0m <sup>3</sup>	1.2m <sup>3</sup>
A	Bucket overall height (opened)	3.3	3.3	3.7
B	Bucket overall height (closed)	2.7	2.8	3.1
C	Bucket opening width	2.5	2.5	2.6

### Notes:

- Buckets shown above are for general excavating purpose.
- A bucket with larger capacity for light-duty service is available.



# Dragline 1.2m<sup>3</sup> over



(EC698089)

## Dragline Capacities & Working Ranges:

Boom length (m)		12.85			15.90			18.95			
Boom angle (°)		30	40	50	30	40	50	30	40	50	
Rated load (t)		6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.5	6.5	
A	Max. dumping radius (m)	0.8 ~ 1.0 m <sup>3</sup>	13.1	11.9	10.4	15.8	14.2	12.3	18.4	16.6	14.3
		1.2 m <sup>3</sup>	13.2	12.0	10.4	15.8	14.3	12.4	18.5	16.7	14.4
		1.9 m <sup>3</sup>	13.3	12.1	10.6	16.0	14.4	12.5	18.6	16.8	14.5
B	Working radius (m)	12.6	11.3	9.8	15.2	13.7	11.8	17.8	16.0	13.7	
C	Digging radius on G. L. (m)	16.1	15.7	14.9	19.4	18.9	17.9	22.7	22.1	20.9	
D	Digging depth (m)	8.5	8.2	7.6	11.0	10.6	9.9	13.5	13.0	12.1	
E	Dumping height (m)	0.8 ~ 1.0 m <sup>3</sup>	2.7	4.6	6.2	4.3	6.6	8.6	5.8	8.5	10.9
		1.2 m <sup>3</sup>	2.7	4.5	6.2	4.2	6.5	8.5	5.7	8.5	10.8
		1.9 m <sup>3</sup>	1.4	3.2	4.9	2.9	5.2	7.2	4.4	7.2	9.5
F	Bucket clearance(m)	0.8 ~ 1.0 m <sup>3</sup>	5.0								
		1.2 m <sup>3</sup>	5.1								
		1.9 m <sup>3</sup>	6.4								

(EC498102)

### Notes:

- Max. dragline rating is 6.5ton.
- Rated loads shown above are in metric tons, and are not more than 78% of minimum tipping load.
- The above dragline capacities are available under both LD and HD type booms.
- Weight of bucket shown right plus material shall not exceed dragline capacities shown above.
- Boom length shall not exceed 18.95 m.
- Crawler side frame must be extended for all operating conditions
- Dimension C and D vary considerably depending on digging conditions and skill of the operator.
- Apparent specific gravity of lifting material:  
Earth .....1.7~1.8t/m<sup>3</sup>  
Gravel .....1.8~2.0t/m<sup>3</sup>

## Bucket Data:

Bucket capacity (m <sup>3</sup> )	Weight (t)
0.8	1.17
1.0	1.40
1.2	1.60
※ 1.5	1.60
※ 2.0	1.90

※Medium or light duty service



# Standard and Optional Equipment

	Standard equipment	Optional equipment
<b>Superstructure</b>	<ul style="list-style-type: none"> <li>• Hino H07CT diesel engine with an 133kW &lt;180ps&gt; rated output;</li> <li>• Hydraulic system with three variable displacement axial piston pumps and one fixed displacement gear pump;</li> <li>• Control system with one each of duplicate and triplicate tandem valves and floor type control levers;</li> <li>• Motorcycle type "SC" controller (easy-precise-minute engine rpm and hyd. pump oil flow control device);</li> <li>• Front and rear main operating drum winches of 17.5ton line pull with 458mm dia. drum lagging driven by independent variable hyd. motor with independent hyd. circuit; provided with an 965mm dia. by 127mm wide external contracting band brake capable of two functions of automatic and free-fall mode, with hyd. booster;</li> <li>• Hydrostatic boom hoist mechanism driven by hyd. motor with automatic brake;</li> <li>• Hydrostatic swing mechanism with turntable bearing; driven by hyd. motor w/spring-applied, hydraulically released multiple wet-disc brake;</li> <li>• All new stamped, automotive type, full-vision operator's cab with large curved front window; provided with an arrangement of control system and instrument panel;</li> <li>• 18.3ton counterweight w/ a 3,775mm tail swing radius;</li> <li>• Machinery cab with hinged doors;</li> <li>• 24-volt electrical system with two 12-volt batteries;</li> <li>• Lighting system: <ul style="list-style-type: none"> <li>• Two 70W working lights;</li> <li>• One 10W interior cab light;</li> </ul> </li> <li>• Accessories: <ul style="list-style-type: none"> <li>• Hot water type heater; if opt. air-conditioner is installed, no hot water type heater is provided;</li> <li>• AM/FM radio w/clock;</li> <li>• Engine hourmeter;</li> <li>• Engine tachometer;</li> <li>• Fuel gauge;</li> <li>• Thermometer;</li> <li>• Hyd. oil temp. gauge;</li> <li>• Pilot line pressure gauge;</li> <li>• Foot throttle;</li> <li>• Intermittent window shield wipers with washers;</li> <li>• Cigar lighter;</li> <li>• Ash tray;</li> <li>• Sunvisor;</li> <li>• Sunshade;</li> <li>• Cup Holder;</li> <li>• Non-skid surfaces;</li> <li>• Cab front step;</li> <li>• Cab floor mat;</li> <li>• Superstructure under-cover;</li> <li>• Std. spare parts and tools.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Hydrostatic third drum winch (heavy duty type);</li> <li>• Hydrostatic third drum winch (conventional type);</li> <li>• Hydraulic tagline winder;</li> <li>• Fairlead;</li> <li>• Anemometer; recommended for luffing tower crane operation;</li> <li>• Drum rollers; available on front/rear main, and 3rd drums;</li> <li>• Stone guard; this is for operator's cab;</li> <li>• Fire extinguisher;</li> <li>• Catwalk, along both sides of machinery cab;</li> <li>• Excavating mode switch;</li> <li>• Re-fuel pump;</li> <li>• Operator's cab sidestep;</li> <li>• Mitsubishi 6D24T with an 184kW &lt;250ps&gt; rated output, instead of Hino H07CT;</li> <li>• Built-in type full air-conditioning;</li> <li>• Counterweight self-removal device;</li> <li>• 1.9ton auxiliary weight; required when HD type boom (but, no optional 3rd drum winch);</li> <li>• Electric cab fan.</li> </ul>

	Standard equipment	Optional equipment
<b>Undercarriage</b>	<ul style="list-style-type: none"> <li>• 3,590mm gauge by 5,800mm long crawler lower with power hydraulically retractable/extendible crawler side frames;</li> <li>• Hydrostatic crawler drive units with shoe-in type traction motor with wet-disc type automatic brakes;</li> <li>• 760mm wide track shoes;</li> <li>• Manual track tension adjusting devices;</li> <li>• 1.86ton side weight;</li> <li>• Lifetime lubricated track components;</li> <li>• Crawler side steps.</li> </ul>	<ul style="list-style-type: none"> <li>• Automatic track tension adjusting device, i/o manual one as std.;</li> </ul>
<b>Liftcrane Att.</b>	<ul style="list-style-type: none"> <li>• 9.80m LD type basic crane boom; 5.2m bottom section and 4.6m tapered crane top section w/four head and two guide sheaves;</li> <li>• 50ton hook block;</li> <li>• Bail and bridle assemblies;</li> <li>• Main crane hoist cable; 22.4mm dia./195m long;</li> <li>• Boom hoist cable; 16mm dia./150m long.</li> </ul>	<ul style="list-style-type: none"> <li>• 3.05m LD boom extension;</li> <li>• 6.10m LD boom extension;</li> <li>• 9.15m LD boom extension;</li> <li>• 9.80m HD type basic boom;</li> <li>• 3.05m HD boom extension;</li> <li>• 6.10m HD boom extension;</li> <li>• 9.15m HD boom extension;</li> <li>• 6.10m basic fly jib; 3.05m bottom and top sections with strut and guyline pendants;</li> <li>• 3.05m fly jib extension;</li> <li>• Auxiliary short jib;</li> <li>• 35t hook block;</li> <li>• 20t hook block;</li> <li>• 6.6t ball hook;</li> <li>• Aux. crane hoist cable, 22.4mm dia./150m long.</li> </ul>

