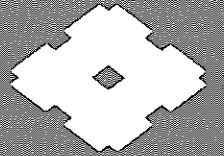


SUMITOMO SC 500-2

Note: We are constantly improving our products and therefore reserve the right to change designs and specifications without notice.

SUMITOMO



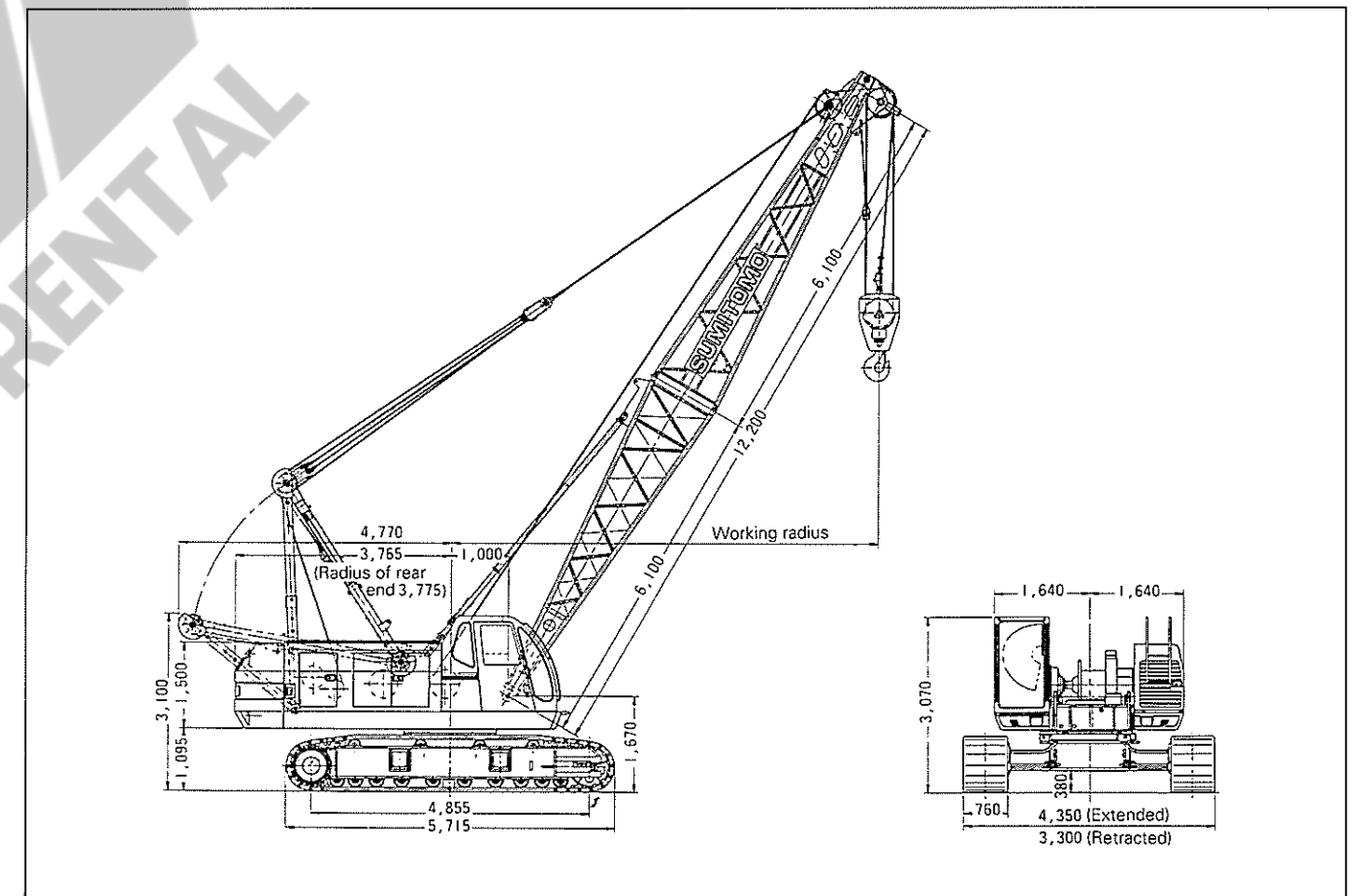
PAX Series

SC 500-2

50-M ton Hydraulic Crawler Crane

General Specifications & Crane Capacities

General Dimensions:



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

K & T Bldg.,
1-28-44 Shinkawa, Chuo-ku, Tokyo 104, Japan
Phone: 03-3297-8833
Facsimile: 03-3297-9849
Telex: J27961 SHIKENKI

Address Inquires to:

Basic Machine

Upper Machinery

UPPER FRAME:

All-welded, 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 for main hoist, aux. hoist, boom hoist and travel. Mechanical linkage type for swing. Working speed can be precisely controlled by lever stroke.

PUMP CONTROL SYSTEM:

Motor cycle type SC throttle control provides two modes of engine and pump control.

Mode I — The SC controller is normally programmed to vary engine and pump discharge simultaneously, which enables both minute operation and maximum speed operation. This mode is suitable to precision crane work.

Mode II — By activating a switch, only pump discharge can be varied by means of the grip throttle, while keeping engine speed fixed. Mode II is convenient for operation such as bucket work and lifting magnet etc., where engine is normally run at full throttle.

HYDRAULIC SYSTEM:

System combining three units of variable displacement axial pumps and one unit of fixed displacement gear pumps provides both independent and combined operations of all functions.

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

Boom hoist motor — Axial piston motor with spring applied/hydraulically released multiple disc brake.

Swing motor — Axial piston motor with spring applied/hydraulically released multiple disc brake.

Travel motor — Axial piston motors (2-speed) with brake valve. Spring applied/hydraulically released multiple disc brake is fitted.

Hydraulic oil reservoir — 300 liters capacity.

LOAD HOIST ASSEMBLY:

Front (main) and rear (aux.) operating drums. Each driven by the bi-directional, variable displacement axial piston motor through reduction gear powering the rope drum in either direction for hoisting or lowering load. Third drum is available as an optional extra.

Clutches — Spring loaded, internal expanding, hydraulically released clutches with non-asbestos linings.

Brakes — External contracting band type with non-asbestos lining operated by hydraulically assisted foot pedal with locking latch. For crane mode, automatic brake (spring applied, hydraulically released) is applied when control lever in neutral position. For bucket mode, free-fall is available when control lever in neutral position.

Locks — Electrically operated drum lock pawl.

BOOM HOIST ASSEMBLY:

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

Brakes — Spring applied, hydraulically released multiple disc type.

Locks — Electrically operated drum lock pawl.

SWING:

Driven by axial piston motor, through reduction gear.

Brakes — Brake is applied by spring and released by hydraulic cylinder.

Locks — Mechanically operated pin connection house lock.

Speed — 4.3 rpm.

Constant speed swing mechanism (option) — 4.3 rpm/1.2 rpm.

OPERATOR'S CAB:

All new stamped automotive type fully air-conditioned full-vision, full compartment cab with large curved front window; the completely independent and rubber isolation mounted cab is insulated against noise and vibration.

COUNTERWEIGHT:

Removable, 2-block, mounted on rear of upper frame by bolts.

POWER UNIT:

Make & Model	HINO HO7CT
Type	Water-cooled, 4-cycle, turbo-charged, diesel engine with auto cooling fan.
No. of cylinders	6
Bore & Stroke	110 mm x 118 mm
Displacement	6,728 cc
Rated output	180 ps/2,100 rpm
Maximum torque	67 kg-m/1,600 rpm
Fuel tank	290 liters

Lower Machinery

LOWER FRAME:

All-welded robust rolled steel, box construction.

SIDE FRAME:

All-welded robust rolled steel. Connected to lower frame by links and pins.

ROLLERS:

Heat treated, mounted on bushings with floating seal requiring no further lubrication.

Bottom — 10 pcs. per side frame.

Top — 4 pcs. per side frame.

DRIVE SPROCKETS:

Heat treated, involute splined to drive shaft mounted on anti-friction bearings.

IDLERS:

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

TRACKS:

Heat treated, self cleaning, two lug type, multiple hinged shoes, 59 pcs. per side frame.

Shoe width — 760 mm.

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:

Compact arrangement of axial 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 — Two speed range.

2.1 km/hr. — High speed position.

1.6 km/hr. — Low speed position.

Crane Attachment

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, 12.20 m basic length: 6.10 m base and 6.10 m top section; 1,200 mm deep and 1,270 mm wide at connections.

Boom point machinery — Five head sheaves mounted on antifriction bearings.

Boom extensions — Optional extra; available in 3.05 m and 6.10 m lengths with pendants. Maximum boom length 51.80 m.

Basic fly Jib — Optional extra; two-piece; 6.10 m basic length with 3.05 m long base and top sections, 500 mm deep and 610 mm wide at connections.

Fly jib extension — Optional extra; available in 3.05m. Maximum fly jib length 15.25 m.

Boom plus fly jib length — 42.65m+15.25m (max.)

HOOK BLOCKS:

50 t with four sheaves — Standard.

15 t with one sheave — Optional extra.

5.8 t ball hook — Optional extra.

TAGLINE WINDER:

Optional extra; available in three (3) kinds of types for clamshell bucket job application.

Hydraulic type — mounted in front of upper revolving frame.

Mechanical type — spring-wound, single stage drum type, mounted on boom.

Mechanical type — spring-wound, double stage drum type, mounted on boom.

FIARLEAD:

Optional extra; full-revolving type; available for dragline bucket job application.

GANTRY:

Retractable high gantry.

DRUM DATA:

Drums	Root dia.	Type	Line Speed (Hoisting, Lowering)	Cable dia.
Main hoist (Front)	480 mm	Parallel grooved	100~3.5 m/min.	20.0 mm
Aux. hoist (Rear)	480 mm	Parallel grooved	100~3.5 m/min.	20.0 mm
3rd drum	400 mm	Parallel grooved	60~4 m/min.	20 mm
Boom hoist	320 mm	Parallel grooved	62~4 m/min.	16 mm

- Notes: 1. Above line speed varies with load.
2. Above line speed is based on first layer.

HOIST REEVING:

No. of parts of line	Main hoist								Aux. hoist
	9	8	7	6	5	4	3	2	1
Max. load (t)	50.0	44.8	39.2	33.6	28.0	22.4	16.8	11.2	5.8

WORKING WEIGHT AND GROUND PRESSURE:

Shoe width	Weight	Pressure
760 mm	51.7 t	0.65 kg/cm ²

With basic boom and counterweight.

COUNTERWEIGHT:

16.0t in total.

SAFETY DEVICES:

Hook over hoist limiting device, dual boom over hoist and lowering limiting device, boom angle indicator, boom back stop, electrically operated drum pawl lock for main/aux. and boom hoist drum, audio visual type swing alarm, fool proof shut off main hydraulic line, individual control lever locks, safe and durable non-asbestos lining, key lock mode selector switch, non-skid surfaces on roof, Load Moment Limiter with annunciator-type overload preventing system and optional three color percentage indicator on load weighing device.

GRADEABILITY:

40% (22°) with basic boom and counterweight.

CRANE CAPACITIES :

Working radius (m)	Boom length														Working radius (m)
	12.20	15.25	18.30	21.35	24.40	27.45	30.50	33.55	36.60	39.60	42.65	45.70	48.75	51.80	
3.7	※50.00														3.7
4.0	※48.90	45.00/4.1													4.0
4.5	39.90	39.80	37.10/4.7												4.5
5.0	33.40	33.30	33.20	31.30/5.2	26.90/5.7										5.0
6.0	24.90	24.80	24.70	24.60	24.50	22.90/6.3									6.0
7.0	19.90	19.80	19.70	19.60	19.50	19.40	19.30	17.90/7.3							7.0
8.0	16.90	16.80	16.70	16.60	16.50	16.40	16.30	16.20	16.10	14.70/8.4					8.0
9.0	14.40	14.30	14.20	14.10	14.00	13.90	13.80	13.70	13.60	13.50	13.40	12.10/9.5			9.0
10.0	12.50	12.40	12.30	12.20	12.10	12.00	11.90	11.80	11.70	11.60	11.50	11.40	9.70		10.0
12.0	10.30/11.6	9.90	9.80	9.70	9.60	9.50	9.40	9.30	9.20	9.10	9.00	8.90	8.50	7.20	12.0
14.0		8.10	8.00	7.90	7.80	7.70	7.60	7.50	7.40	7.30	7.20	7.10	7.00	6.40	14.0
16.0		7.80/14.3	6.80	6.70	6.60	6.50	6.40	6.30	6.20	6.10	6.00	5.90	5.80	5.70	16.0
18.0			6.30/16.9	5.70	5.60	5.50	5.40	5.30	5.20	5.10	5.00	4.90	4.80	4.70	18.0
20.0				5.10/19.6	4.90	4.80	4.70	4.60	4.50	4.40	4.30	4.20	4.10	4.00	20.0
22.0					4.30	4.20	4.10	4.00	3.90	3.80	3.70	3.60	3.50	3.40	22.0
24.0					4.20/22.2	3.70	3.60	3.50	3.40	3.30	3.20	3.10	3.00	2.90	24.0
26.0						3.50/24.9	3.10	3.00	2.95	2.85	2.75	2.65	2.55	2.45	26.0
28.0							2.85/27.5	2.70	2.60	2.50	2.40	2.30	2.20	2.10	28.0
30.0								2.35	2.25	2.20	2.10	2.00	1.90	1.80	30.0
32.0									1.95	1.90	1.80	1.70	1.60	1.50	32.0
34.0										1.85/32.8	1.60	1.50	1.40	1.35	34.0

Notes:

- Capacities shown are in metric tons and are based on 78% of minimum tipping loads — over the side — with machine standing level on firm supporting surface under ideal job conditions unless marked with an asterisk (※) that indicates capacities are based on factors other than those which would cause a tipping condition. Deductions from the lifting crane capacities must be made for weight of hook block, or other suspended gear.

Kind of hook block	50 t	15 t	5.8 t
Weight of hook block (t)	0.75	0.35	0.12

- Side frame must be extended for all operating conditions.
- When handling loads by main hoist line on boom with jib fitted, the following deductions must be made from above crane capacities.

Jib length (m)	6.10	9.15	12.20	15.25	Aux. short jib
Weight to be deducted (t)	0.75	0.90	1.05	1.20	0.3

FLY JIB CAPACITIES :

Boom length (m)	21.35								24.40								27.45							
Jib length (m)	6.10		9.15		12.20		15.25		6.10		9.15		12.20		15.25		6.10		9.15		12.20		15.25	
Jib offset angle (°)	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30
Working radius (m)																								
7.5	5.00																							
8.0	5.00																							
9.0	5.00																							
10.0	5.00																							
12.0	5.00																							
14.0	5.00																							
16.0	5.00																							
18.0	5.00																							
20.0	5.00																							
22.0	5.00																							
24.0	5.00																							
26.0	5.00																							
28.0	5.00																							
30.0	5.00																							
32.0	5.00																							
34.0	5.00																							

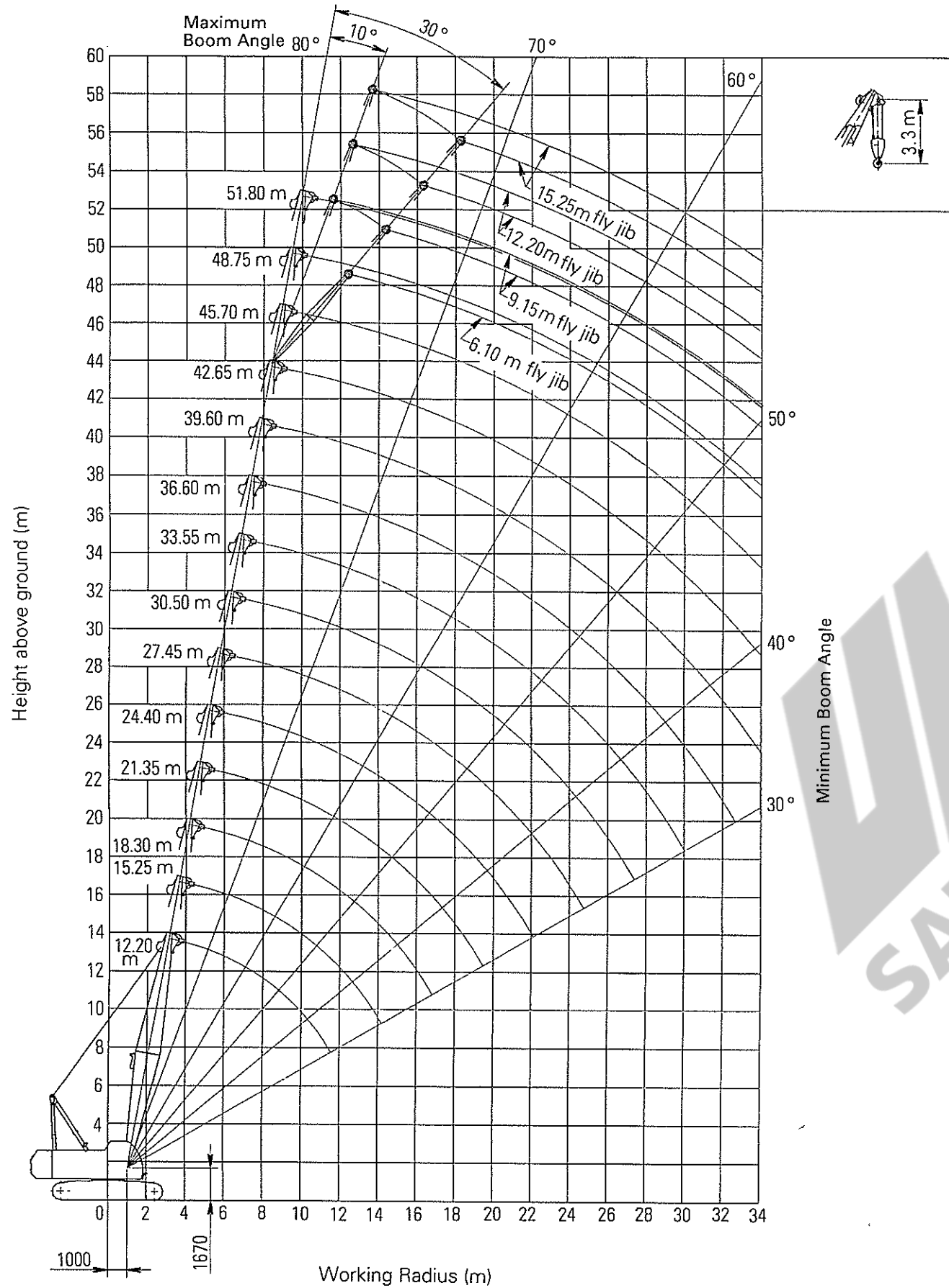
Boom length (m)	39.60								42.65							
Jib length (m)	6.10		9.15		12.20		15.25		6.10		9.15		12.20		15.25	
Jib offset angle (°)	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30
Working radius (m)																
9.0	5.00															
9.5	5.00															
10.0	5.00															
12.0	5.00															
14.0	5.00															
16.0	5.00															
18.0	5.00															
20.0	5.00															
22.0	5.00															
24.0	5.00															
26.0	5.00															
28.0	5.00															
30.0	5.00															
32.0	5.00															
34.0	5.00															

Boom length (m)	30.50								33.50								36.55							
Jib length (m)	6.10		9.15		12.20		15.25		6.10		9.15		12.20		15.25		6.10		9.15		12.20		15.25	
Jib offset angle (°)	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30
Working radius (m)																								
9.0	5.00																							
9.5	5.00																							
10.0	5.00																							
12.0	5.00																							
14.0	5.00																							
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34.0	5.00																							

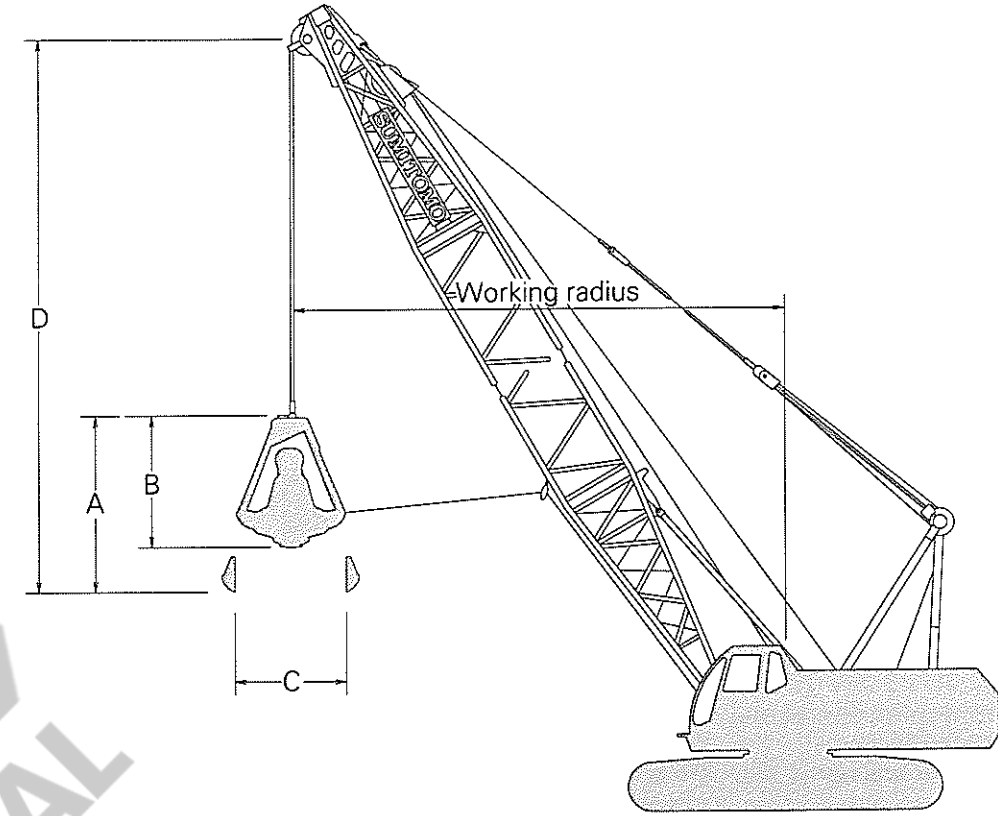
Notes:

1. Capacities shown are in metric tons and are based on 78% of minimum tipping loads –over the side– with machine standing level on firm supporting surface under ideal job conditions. Deductions from the fly jib capacities must be made for weight of jib hook block (0.12t), and or other suspended gear.
2. Side frame must be extended for all operating conditions.

■ **WORKING RANGES :**



■ **CLAMSHELL :**



■ **CLAMSHELL CAPACITIES :**

(in metric tons)

Boom length (m)								
12.20			15.25			18.3		
R (m)	A (°)	L (t)	R (m)	A (°)	L (t)	R (m)	A (°)	L (t)
7.0	63.7	5.0						
8.0	58.2	5.0	8.0	65.2	5.0			
9.0	52.3	5.0	9.0	60.9	5.0	9.0	66.1	5.0
10.0	45.9	5.0	10.0	56.4	5.0	10.0	62.6	5.0
12.0	29.9	5.0	12.0	46.6	5.0	12.0	55.2	5.0
			14.0	34.7	5.0	14.0	47.0	5.0
						16.0	37.4	5.0

(ECA00334A)
R: Working radius A: Boom angle L: Rated load

Notes:

- Following weight of bucket plus load should not exceed above rated loads.
- Boom length shall not exceed 18.30 m.
- Apparent specific gravity of lifting material:
Earth 1.7~1.8 t/m³
Gravel 1.8~2.0 t/m³
- High gantry is required and side frames must be extended for all operating conditions.

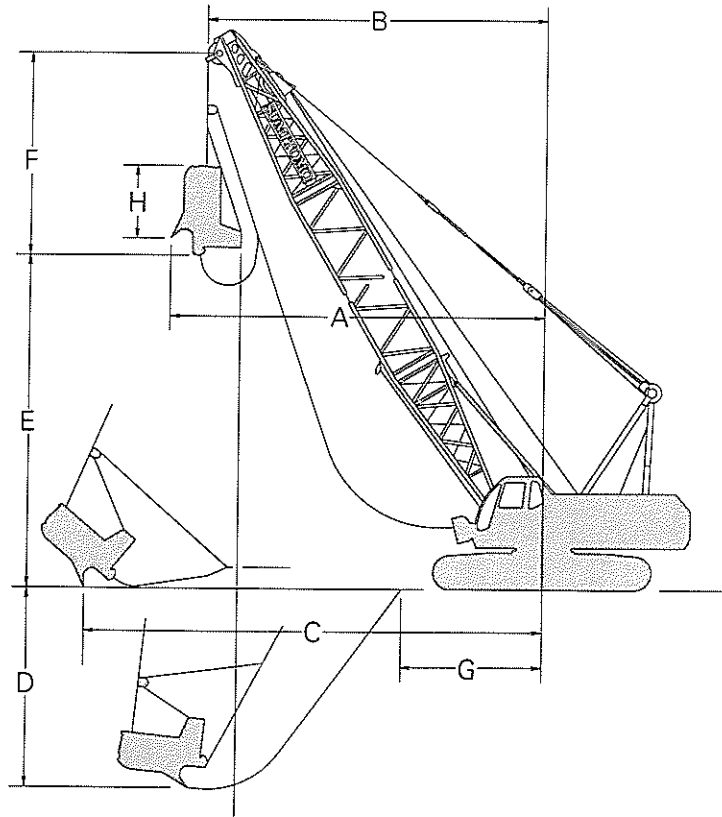
■ **BUCKET DATA :**

(In meters)

	Bucket capacity	0.6 m ³	0.8 m ³	1.0 m ³	※1.2 m ³
A	Bucket overall height (opened)	2.8	3.3	3.3	3.2
B	Bucket overall height (closed)	2.4	2.7	2.8	2.8
C	Bucket opening width	2.3	2.5	2.5	2.9
D	Bucket clearance	4.6	5.1	5.1	5.0

※ Light duty service

■ **DRAGLINE :**



DRAGLINE CAPACITIES :

Boom length (m)		12.20			15.25			18.30			
Boom angle (°)		30	40	50	30	40	50	30	40	50	
Rated load (t)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
A	Max. dumping radius (m)	0.6 m ³	12.5	11.3	9.9	15.1	13.7	11.8	17.8	16.0	13.8
		0.8 ~ 1.0 m ³	12.8	11.6	10.2	15.4	14.0	12.1	18.1	16.3	14.1
		1.2 m ³	12.7	11.5	10.1	15.3	13.0	12.0	18.0	16.2	14.0
B	Working radius (m)	12.0	10.8	9.4	14.6	13.2	11.3	17.3	15.5	13.3	
C	Digging radius on G. L. (m)	15.4	15.0	14.2	18.7	18.2	17.2	22.1	21.4	20.2	
D	Digging depth (m)	8.3	8.0	7.4	10.8	10.4	9.6	13.3	12.8	11.9	
E	Dumping height (m)	0.6 ~ 0.8 m ³	3.6	5.3	6.8	5.1	7.3	9.1	6.7	9.2	11.4
		1.0 ~ 1.2 m ³	2.8	4.5	6.0	4.3	6.5	8.3	5.9	8.4	10.6
F	Bucket clearance(m)	0.6 ~ 0.8 m ³	3.95								
		1.0 ~ 1.2 m ³	4.75								

(ECA06335A)

- Weight of bucket plus material shall not exceed above rated loads.
- Boom length shall not exceed 18.30 m.
- High gantry is required and 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:
Earth1.7~1.8 t/m³
Gravel.....1.8~2.0 t/m³

BUCKET DATA:

Bucket capacity (m ³)	Weight (t)
0.6	0.93
0.8	1.17
1.0	1.40
※ 1.2	1.60

※ Medium or light duty service

■ **STANDARD AND OPTIONAL EQUIPMENT :**



STANDARD EQUIPMENT

Basic Machine:

- SC grip controller
- Foot throttle
- Electric fuel transfer pump
- Wiper with washers for front window and skylight
- Back mirrors both right and left
- Standard tools with tool box
- Air-conditioner with defroster
- AM/FM radio with clock
- Engine tacho indicator
- Depth and lifting height indicator
- Service monitor
- Engine coolant temperature meter
- Hydraulic oil temperature meter
- Fuel meter
- Front head lights
- Level gauge
- Sunvisor
- Sunshade (skylight and rear window)
- Cup holder
- Book holder
- Ash tray
- Cigar lighter
- Side pockets
- Slide out storage box
- Rubber covered pedals
- Floor mat

Safety Devices:

- Load moment limiter
- Annunciator-type overload warning system
- Hook over hoist limiting device
- Dual boom hoist lowering limiting device
- Boom angle indicator
- Boom back-stop
- Electrically operated drum lock pawl on front, rear and boom hoist drum
- Audio visual type swing alarm
- Fool proof shut off system for main hydraulic line
- Individual control level locks
- Travelling alarm
- Safe and durable non-asbestos linings
- Key lock mode selector switch
- Non-skid surfaces on roof



OPTIONAL EQUIPMENT

- Foot step for side frame
- Foot step for operator cab
- Catwalk (right side)
- Catwalk (left side)
- Third drum winch with hydraulic motor
- Third drum cable
- Drum roller
- Hydraulic tagline
- Disk type swing brake
- Front and rear drum speed balancer
- Constant speed swing mechanism
- Drum mirror
- Stone guard
- Microphone & loud-speaker
- Drum light
- Boom light
- Three color percentage indicator on load weighing device
- Annunciator-type swing warning
- Extinguisher



OPTIONAL ATTACHMENTS

- 3.05 m boom extension
- 6.10 m boom extension
- Aux. short jib
- 6.10 m basic fly jib
- 3.05 m jib extension
- 35 ton hook block
- 15 ton hook block
- 5.8 ton hook block
- Boom top protector
- Skywalk

We are constantly improving our products and therefore reserve the right to change and designs and specification without notice.