

SUMITOMO



PAX Series

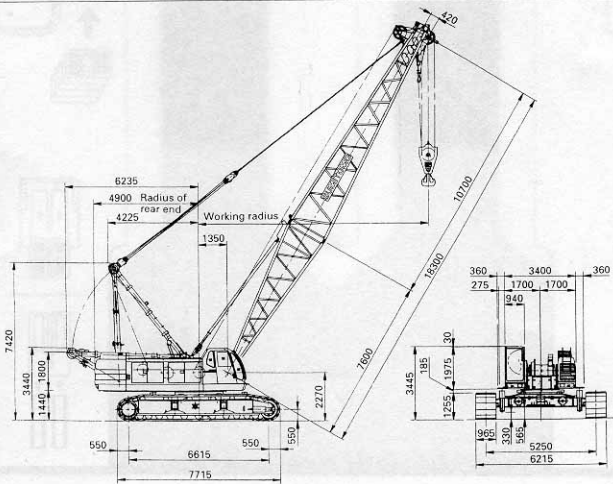
SC 1000-2

100-M ton Hydraulic Crawler Crane

General Specifications & Crane/Luffing Tower Capacities

■General Dimensions:

(in mm)



Basic Machine

Upper Machinery

UPPER FRAME:

All-welded, precision machined unit.

TURNABLE 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, travel and swing. Working speed can be precisely controlled by grip type throttle.

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 with brake valve. Spring applied/hydraulically released multiple disc brake is fitted.

Hydraulic oil reservoir — 380 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 two units of 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 — 2.1 rpm.

Constant speed swing mechanism (option) — Selected with a switch, four modes of "constant speed" can be employed to prevent other operations.

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

Make & Model	mitsubishi 6D22T
Type	Water-cooled, 4-cycle, turbo-charged, diesel engine with auto cooling fan.
No. of Cylinders	6
Bore & Stroke	130 mm × 140 mm
Displacement	11,149 cc
Rated Output	250 ps/2,050 rpm
Maximum Torque	105 kg-m/1,400 rpm
Fuel Tank	410 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 — 11 pcs. per side frame.

Top — 6 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, one lug type, multiple hinged shoes, 54 pcs. per side frame.

Shoe width — 965 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 — 1.4/1.0 km/hr.

Crane

Crane Attachment

CRANE BOOMS:

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

Boom connections — In-line pin connections.

Basic Boom — Two-piece, 18.30 m basic length; 7.60 m bottom and 10.70 m top section; 1,850 mm deep and 1,850 mm wide at connections.

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

Boom extensions — Optional extra; available in 3.05 m, 6.10 m and 9.15 m lengths with pendants. Maximum boom length 73.15 m.

Basic fly jib — Optional extra; two-piece; 12.20 m basic length with 6.10 m long bottom and top sections, 760 mm deep and 910 mm wide at connections.

Fly jib extension — Optional extra; available in 6.10 m. Maximum fly jib length 24.40 m.

Boom plus fly jib length — 39.60 m + 24.40 m/64.00 m + 18.30 m (max.)

HOOK BLOCKS:

100 t with five sheaves — Optional extra.

50 t with two sheaves — Optional extra.

30 t with one sheave — Optional extra.

11 t ball hook — Optional extra.

TAGLINE WINDER:

Optional extra; for clamshell bucket job application.

Hydraulic type — mounted in front of upper revolving frame.

GANTRY:

Retractable high gantry.

DRUM DATA:

Drums	Root dia.	Type	Line Speed (Hoisting, lowering)	Cable dia.
Main hoist (Front)	530 mm	Parallel grooved	90 ~ 2 m/min.	26 mm
Aux. hoist (Rear)	530 mm	Parallel grooved	90 ~ 2 m/min.	26 mm
3rd drum	457 mm	Parallel grooved	65 ~ 4 m/min.	22.4 mm
Boom hoist	504 mm	Parallel grooved	46 ~ 2 m/min.	22.4 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	Max. load (t)									
	10	9	8	7	6	5	4	3	2	1
100 t hook	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	11.0
50 t hook	—	—	—	—	—	50.0	40.0	—	—	11.0
30/20 t hook	—	—	—	—	—	—	—	30.0	20.0	11.0
11 t hook	—	—	—	—	—	—	—	—	—	11.0

WORKING WEIGHT AND GROUND PRESSURE:

Shoe width	Weight	Pressure
965 mm	111.5 t	0.83 kg/cm ²

With basic boom and counterweight.

COUNTERWEIGHT:

43.5 t in total.

SAFETY DEVICES:

Hook over hoist limiting device, dual boom over hoist limiting device, boom angle indicator, boom backstops, electrically operated drum pawl lock for main/aux. and boom hoist drum, swing warning flash lamps with buzzer, 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:

30% (17°) with basic boom and counterweight.

■ CRANE CAPACITIES :

Working radius (m)	Boom length (m)																			
	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	
5.0	100.0/5.1																			
5.5	100.0	90.0/5.7																		
6.0	90.8	90.0	80.0	70.0/6.7																
7.0	75.1	75.0	74.9	70.0	60.0/7.2	53.1/7.7														
8.0	60.6	61.0	60.8	60.7	60.0	52.7	50.0/8.3	42.4/8.8												
9.0	50.6	52.1	52.0	51.8	51.7	50.1	50.0	42.1	40.0/9.3	40.0/9.8										
10.0	43.4	45.4	45.3	45.1	45.0	44.8	44.6	40.8	40.0	40.0	30.0/10.3	30.0/10.9	25.0/11.4	25.0/11.9						
12.0	33.7	36.0	35.9	35.7	35.5	35.4	35.2	35.0	34.8	34.7	30.0	30.0	25.0	25.0	20.0/12.4	20.0/12.9	18.0/13.5			
14.0	27.4	29.4	29.2	29.1	28.9	28.7	28.5	28.2	28.0	27.8	27.7	25.0	25.0	20.0	20.0	20.0	18.0	16.0	15.7/14.5	
16.0	22.9	24.4	24.2	24.1	23.9	23.7	23.5	23.3	23.2	23.0	22.8	22.5	22.4	22.3	20.0	20.0	18.0	16.0	14.5	
18.0	21.2/17.3	21.0	20.8	20.6	20.5	20.3	20.1	19.9	19.7	19.5	19.3	19.2	19.0	18.8	18.6	18.4	16.2	15.0	13.0	
20.0		19.0	18.0	17.8	17.7	17.5	17.3	17.1	16.9	16.7	16.6	16.4	16.2	16.0	15.8	15.6	15.4	13.5	11.7	
22.0			15.8	15.7	15.6	15.4	15.2	15.0	14.8	14.6	14.4	14.3	14.1	13.9	13.7	13.5	13.3	12.3	10.5	
24.0			15.3/22.5	13.9	13.7	13.6	13.4	13.2	13.0	12.8	12.6	12.4	12.2	12.1	11.9	11.7	11.5	11.3	9.8	
26.0				13.1/25.0	12.2	12.1	11.9	11.7	11.5	11.3	11.1	10.9	10.7	10.5	10.4	10.2	10.0	9.8	8.8	
28.0					11.3/27.5	10.9	10.7	10.5	10.3	10.1	9.9	9.7	9.5	9.3	9.1	9.0	8.8	8.6	8.0	
30.0						9.9	9.5	9.3	9.1	8.9	8.7	8.5	8.3	8.1	7.9	7.8	7.7	7.5	7.3	
32.0						9.7/30.4	8.6	8.4	8.2	8.0	7.8	7.6	7.4	7.3	7.1	7.0	6.8	6.7	6.5	
34.0							8.2/33.0	7.6	7.4	7.2	7.1	6.9	6.8	6.6	6.5	6.3	6.1	5.9	5.7	
36.0								7.1/35.6	6.9	6.7	6.5	6.4	6.2	6.0	5.8	5.6	5.4	5.2	5.0	
38.0									6.4	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.8	4.6	4.4	
40.0									6.3/38.3	5.7	5.5	5.3	5.1	4.9	4.7	4.5	4.3	4.1	3.9	
42.0										5.4/40.9	5.1	4.8	4.6	4.4	4.2	4.0	3.8	3.6	3.4	
44.0											4.7/43.5	4.3	4.2	3.9	3.7	3.5	3.3	3.0	2.8	
46.0												3.9	3.8	3.5	3.3	3.0	2.8	2.6		
48.0													3.9/46.2	3.4	3.1	2.9	2.6	2.4		
50.0														3.3/48.8	2.8	2.5	2.3			
52.0															2.5/51.5	2.2				

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 a shaded color (□) 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, and other suspended gear.

Kind of hook block	100 t	50 t	30 t	11 t
Weight of hook block (t)	1.4	0.9	0.73	0.4

- Gantry must be set to high position for all operating conditions.
- Capacities shown above are based on 43.5t counterweight.
- All capacities are rated for 360° swing.

■ WORKING RANGES FOR CRAWLER CRANE :

