

## 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 and travel. Mechanical linkage type for swing. Working speed can be precisely controlled by lever stroke.

**PUMP CONTROL SYSTEM:** System reducing pump displacement enables both minute operation and saving energy.

**HYDRAULIC SYSTEM:** System combining two variable displacement axial piston pumps and three (four; option) fixed displacement gear pumps provides both independent and combined operations of all functions.

**Main hoist/aux. hoist/boom hoist** – Axial piston motor with counterbalance valve.

**Swing motor** – Axial piston motor, 2 pcs.

**Travel motor** – Axial piston motors with brake valves. Spring-set/hydraulic-released multiple disc brakes are fitted.

**Hydraulic oil reservoir** – 300 liter capacity.

**LOAD HOIST ASSEMBLY:** Front (main) and rear (aux.) operating drums. Each driven by the bi-directional, axial piston motor through reduction gear powering the rope drum in either direction for hoisting or lowering load. 3rd drum equipped as optional extra.

**Clutches** – Power hydraulic actuated, internal expanding, self adjusting 2-shoe type.

**Brakes** – External contracting band type operated by foot pedal with locking latch. For crane lifting operation, 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.

**Brake** – Spring applied, hydraulically released multiple disc brake.

**Lock** – Electrically operated drum lock pawl.

**SWING:** Driven by axial piston motor, through reduction gear.

**Brake** – Brake is applied by spring and released by hydraulic cylinder.

**Lock** – Mechanically operated pin connection frame lock.

**Speed** – 3.0 rpm

**OPERATOR'S CAB:** Full vision compartment with safety glass panels, the completely independent cab is insulated against noise and vibration.

**COUNTERWEIGHT:** Removable, 2 blocks mounted on rear end of upper frame by bolts.

Counterweight removal device is available as option.

**POWER UNIT:**

Make & Model	mitsubishi 6D22T
Type	Water-cooled, 4-cycle diesel engine
No. of cylinders	6
Rated output	250 ps/2,200 rpm
Max. torque	120 kgm/1,200 rpm
Fuel tank	450 liters

## Lower Machinery

**LOWER FRAME:** All welded robust rolled steel, box construction.

**SIDE FRAMES:** All welded robust rolled steel. Connected to lower frame by links & pins. Retracted or extended by hydraulic cylinder.

**ROLLERS:** Heat treated, double flanged, mounted on bushings with floating seals requiring no further lubrication.

**Bottom** – 10 pcs. per side frame.

**Top** – 3 pcs. per side frame.

**DRIVE SPROCKETS:** Heat treated, involute splined to drive shaft mounted on antifriction bearings.

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

**TRACKS:** Heat treated, self cleaning, single lug, multiple hinged shoes, 50 pcs. per side frame.

**Shoe width** – 810 mm (standard)

915 mm (optional extra)

**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:** 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.

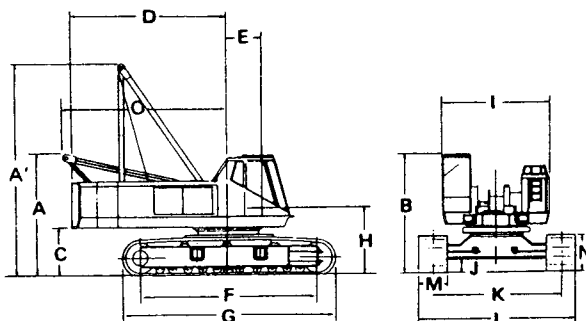
**Speed** – 4 speed range

1.7/1.0 km/h ... Pump control "OFF" (ordinary)

0.4/0.19 kg/h ... Pump control "ON"

## General Dimensions

A:	Height over low gantry unit	3.395m
A':	Height over high gantry unit	5.595m
B:	Height of cab	3.215m
C:	Counterweight ground clearance	1.120m
D:	Radius of rear end	4.165m
E:	Center of rotation to boom foot pin	1.000m
F:	Center to center distance of tumbler	5.000m
G:	Overall length of crawler	5.925m
H:	Height from ground to boom foot pin	1.735m
I:	Overall width of house	3.235m
J:	Ground clearance	0.410m
K:	Center to center distance of crawler	extended ... 3.850m
		retracted ... 2.660m
L:	Overall width of crawler	extended ... 4.660m
		retracted ... 3.470m
M:	Shoe width	0.810m
N:	Height of shoe (standard)	1.025m
O:	Tail swing radius at low gantry	4.790m



Change of name

The current LS-138RHD-5 name has been changed to **SC 700DD**

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

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

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Printed in Japan



**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-pieces, 12.2m basic length; 6.1m base and 6.1m top section; 1.2m deep and 1.27m wide at connections.

Boom point machinery . . . . . Four head sheaves mounted on antifriction bearings.

Boom extensions . . . . . Available in 3.05m, 6.1m and 9.15m lengths with pendants. Maximum boom length 54.85m.

Jib . . . . . Two-pieces; 9.15m basic length with 4.6m long base and top sections, available in 4.6 m jib extension. Maximum jib length 18.3 m.

Boom plus jib length . . . . . 42.70m + 18.3m

**HOOK BLOCK:**

70 t, five sheaves . . . . . Standard

20 t, one sheave . . . . . Optional extra

6.5 t, no sheave . . . . . Optional extra

**HIGH GANTRY:** Retractable high gantry.

**LINE SPEED:**

Drums	Root dia.	Type	Line speed (Hoisting, Lowering)		Cable dia.
			Pump control "OFF" (Ordinary)	Pump control "ON"	
Main hoist (Front)	520mm	Spiral grooved	High 60 m/min Low 30 m/min	High 20 m/min Low 10 m/min	26mm
Aux. hoist (Rear)	520mm	Spiral grooved	High 60 m/min Low 30 m/min	High 20 m/min Low 10 m/min	26mm
3rd drum (option)	320mm	Parallel grooved	65 m/min	12 m/min	16mm
Boom hoist	272mm	Parallel grooved	62 m/min	12 m/min	16mm

Hoisting line speed varies with load.

**HOIST REEVING:**

No. of parts of line	Main hoist						
	7	6	5	4	3	2	1
Max. load (t)	70	60	50	40	30	20	10

**WORKING WEIGHT AND GROUND PRESSURE:**

Shoe width	Weight	Pressure
810mm (standard)	63.4t	0.73 kg/cm <sup>2</sup>
915mm (option)	64.2t	0.66 kg/cm <sup>2</sup>

With basic boom and counterweight.

With basic boom and counterweight.

Weight without counterweight and front attachment: approx. 37.4t (with standard shoe)

**COUNTERWEIGHT:** "A" 10.85 t, "B" 9.15 t. Total 20 t

**SAFETY DEVICE:** Hook over hoist limiting device, boom over hoist limiting device, boom angle indicator, boom back stop, drum pawl lock for main, aux. and boom hoist drum, load moment limiter (option)

**GRADEABILITY:** 30% (17°)

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LS-138RHD-5 CRANE CAPACITIES:

(in metric tons)

Working radius (m)	Boom length (m)														
	12.20	15.25	18.30	21.35	24.40	27.45	30.50	33.55	36.60	39.65	42.70	45.75	48.80	51.85	54.85
3.7	70.0														
4.0	68.0	68.0													
4.5	55.0	54.4													
5.0	45.0	45.0	45.0												
5.5	38.8	38.8	38.8	38.8											
6.0	33.6	33.5	34.4	33.5	33.5										
7.0	26.7	26.6	26.5	26.5	26.5	26.4	26.2								
8.0	22.1	22.0	21.9	21.8	21.7	21.7	21.6	21.5	21.4						
9.0	18.9	18.8	18.7	18.6	18.5	18.4	18.3	18.3	18.2	18.2	18.1				
10.0	16.5	16.4	16.3	16.2	16.1	16.0	15.9	15.9	15.8	15.8	15.7	15.6	15.2		
12.0	13.4/11.7	12.8	12.7	12.6	12.5	12.4	12.3	12.3	12.3	12.2	12.1	12.1	12.0	11.6	
14.0		10.5	10.4	10.3	10.2	10.1	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2
16.0			8.7	8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5
18.0				7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.7	6.6	6.5	6.4	6.3
20.0				6.6/19.6	6.3	6.2	6.1	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3
22.0					5.5	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.5
24.0						4.7	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8
26.0						4.3/24.9	4.1	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3
28.0							3.7/27.5	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9
30.0								3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5
32.0									2.8	2.7	2.6	2.5	2.4	2.3	2.2
34.0										2.5	2.4	2.3	2.2	2.1	1.0
36.0										2.2/35.4	2.2	2.1	2.0	1.9	1.8
38.0											2.0	1.9	1.8	1.7	1.6

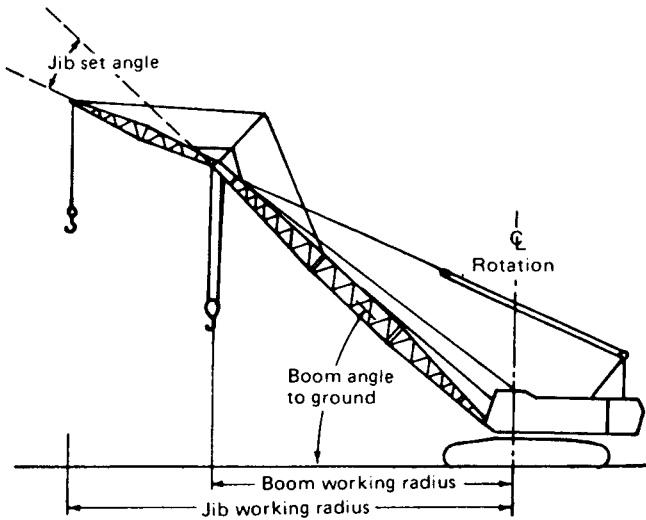
Notes:

- Capacities shown are in metric tons and are based on 75% of minimum tipping loads – over the side – with machine standing level on firm supporting surface under ideal job conditions. Deductions from the lifting crane capacities must be made for weight of hook block.

Kind of hook block	70t	20t	6.5t
Weight of hook block (t)	1.23	0.4	0.3

- 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)	9.15	13.70	18.30
Weight to be deducted (t)	1.5	2.1	2.8



LS-138RHD-5 JIB CAPACITIES:

(in metric tons)

Jib length (m)	Jib set angle	Max. jib Capacities
9.15	10°	6.5
	30°	5.0
13.70	10°	6.5
	30°	5.0
18.30	10°	4.5
	30°	3.2

Notes:

- The jib capacities are equal to the crane lifting capacities of the main boom on which the jib is fixed except that they are restricted by the maximum jib capacities shown left.
- Jib working radius does not exceed the working radius of the main boom which fits the jib.
- Deductions from the jib capacities must be made for weight of jib hook block (0.33 t).
- Available boom length to attach the jib is from 21.35m to 42.70m. The maximum jib length is 18.30m.
- The jib set angle to boom must not exceed 30°

# Crane 70 metric tons



LS-138RHD-5 CRANE WORKING RANGES:

