## LS-120RH5 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 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 two (three; 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.

Travel motor — Axial piston motors with brake valves. Springset/hydraulic-released multiple disc brakes are fitted.

Hydraulic oil reservoir - 295 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 - 2.8 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	HINO HO6CT
Туре	Water-cooled, 4-cycle diesel engine
No. of cylinders	6
Rated output	150 ps/2,100 rpm
Max. torque	52 kg-m/1,600 rpm
Fuel tank	290 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)

Tractor type link shoe (55 pcs. per side frame) is available as option.

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.

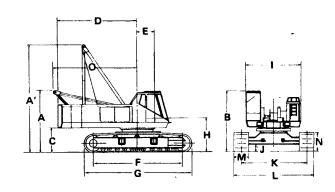
Brake — Spring applied, hydraulically released multiple disc brakes applied automatically when control lever in neutral position.

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
Α':	Height over high gantry unit 5.595m
<b>B</b> :	Height of cab
C:	Counterweight ground clearance 1.120m
D:	Radius of rear end 4.165m
Ε:	Center of rotation to boom foot pin 1.000m
F:	Center to center distance of tambler 5.000m
G:	Overall length of crawler 5.925m
H:	Height from ground to boom foot pin 1.735m
1:	Overall width of house
J:	Ground clearance
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
N:	Height of shoe (standard) 1.025m
0:	Tail swing radius at low gantry 4.790m



We are constantly improving our products and therefore reserve the right to change designs and specifications.

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

# LS-120RH<sub>5</sub>

## Crane 65 metric tons



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, 12.2m basic length; 6.1m base

and 6.1m top section; 1.2m deep and

1.27m wide at connections.

Boom point machinery...... Five head sheaves mounted on antifric-

tion bearings.

Boom extensions..... Available in 3,05m, 6,1m and 9,15m

lengths with pendants. Maximum boom

length 54,85m,

Jib . . . . . . . . . . . . . . . . . Two-piece; 9.15 m 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

Angle main chords, with bracing of angle steel is available as option.

**HOOK BLOCK:** 

HIGH GANTRY: Retractable high gantry.

LINE SPEED:

			Line speed (Hois	ting, Lowering)	
Main hoist (Front)	Root dia.	Туре	Pump control "OFF" (Ordinary)	Pump control "ON"	Cable dia.
	448mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	22.4mm
Aux. hoist (Rear)	448mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	22.4mm
3rd drum	320mm	Parallel grooved	65 m/min	12 m/min	16mm
Boom hoist	320mm	Parallel grooved	66 m/min	12 m/min	16mm

Hoisting line speed varies with load.

#### **HOIST REEVING:**

		Main hoist									
No. of parts of line	10	9	8	7	6	5	4	3	2	1	
Max. load (t)	65	58.5	52	45,5	39	32,5	26	19.5	13	6.5	

#### **WORKING WEIGHT AND GROUND PRESSURE:**

Shoe width	Weight	Pressure
810mm (standard)	58,5t	0.67 kg/cm <sup>2</sup>
810mm (tractor type)	61,5t	0,71 kg/cm²

With basic boom and counterweight.

Weight without counterweight and front attachment: approx. 34t (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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CLAMSHELL BOOMS: Lattice construction; round tubular main chords, alloy hi-ten steel, with bracing of round steel

Boom connections . . . In-line pin connections.

Basic boom . . . Two-piece, 12.2m basic length, 6.1 m base and 6.1m top section; 1.2m deep and 1.27m wide at connections.

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

Boom extensions . . . Available in 3.05m, 6.10m and 9.15m lengths with pendants. Maximum boom length

MAXIMUM CLAMSHELL RATING: 6.5t.

COUNTERWEIGHT: 10.85t

SAFETY DEVICE: Boom over hoist limiting device, drum pawl lock for closing, holding and boom hoist drum, swing lock, safety valve in hydraulic circuit, boom angle indicator, boom back stop.

TAGLINE WINDER: Spring-wound, drum type mounted on boom, single stage or double stage type.

Hydraulic motor driven tagline, mounted on revolving frame.

GRADEABILITY: 30% (17°)

With basic boom, 1.0 m3 bucket and counterweight.

#### LINE SPEED:

			Line speed (Hoisting, Lowering)						
Drums	Root dia.	Type Pump control "OFF" (Ordinary)		Pump control "ON"	Cable dia.				
Holding	448mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	22.4mm				
Closing	448mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	22.4mm				
3rd drum (option)	320mm	Parallel grooved	65 m/min	12 m/min	16mm				
Boom hoist	320mm	Parallel grooved	66 m/min	12 m/min	16mm				

#### Notes:

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

GANTRY: Retractable high gantry

#### WORKING WEIGHT AND GROUND PRESSURE:

Shoe width	Weight	Pressure
810 mm	51.4 t	0.59 kg/cm²

#### Notes:

- With basic boom, 1.0m3 bucket and counterweight.
- 2. Weight without counterweight and front attachment: approx. 34t

#### LS-120RH-5 CLAMSHELL CAPACITIES AND WORKING RANGES:

									(in n	netric	tons	
	Boom length (m)											
1	2.20		1	5.25			18.3		2	1.35		
R (m)	A (°)	L (t)	R (m)	A (°)	L (t)	R (m)	A (°)	L (t)	R (m)	A (°)	L (t)	
5.5	70	6.5						1				
6.0	67	6.5			,#1.7°						特特	
7.0	62	6.5	7.0	68	6.5							
8.0	57	6.5	8.0	64	6.5	8.0	69	6.5			*	
9.0	51	6.5	9.0	60	6.5	9.0	65	6.5	9.0	69	6.5	
10.0	44	6.5	10.0	55	6.5	10.0	62	6.5	10.0	66	6.5	
11.7	30	6.5	12.0	45	6,5	12.0	54	6.5	12.0	60	6.5	
			14.0	33	6.0	14.0	46	5.8	14.0	53	5.7	
			14.3	30	5.8	16.0	36	4.8	16.0	46	4.7	
						16.9	30	4.5	18.0	38	4.0	
									19.6	30	3.7	

R: Working radius

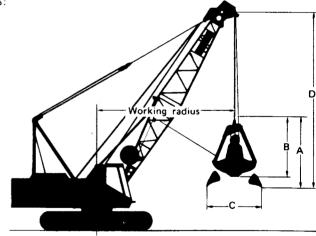
A: Boom angle

L: Rated load

Capacities shown are in metric tons and are determined according to British Standard.

#### Notes:

- 1. Total weight of bucket and load shall not exceed above rated loads.
- Boom length shall not exceed 21.35m.
- 3. Apparent specific gravity of lifting material: Earth . . . . . . . . . . . . . . . . . 1.7~1.8t/m<sup>3</sup> Gravel ..... 1.8~2.0t/m<sup>3</sup>
- 4. High gantry is required and side frames must be extended for all operating conditions.



(in meters)

	Bucket capacity	0.6m³	0.8m³	1.0m <sup>3</sup>	1.2m <sup>3</sup>
Α	Bucket overall height (opened)	2.8	3.3	3.3	3.2
В	Bucket overall height (closed)	2.4	2.7	2.8	2.8
С	Bucket opening width	2.3	2.5	2.5	2.9
D	Bucket clearance	4.6	5.1	5.1	5.0

(Based on manufacturer's std. bucket)

Designs and specifications subject to change without notice. Illustrations not binding in detail.

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

International sales Div., 1-21, Kanda, Nishiki-cho, Chiyoda-ku, Tokyo, Japan

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Telex: J27961 (AAB: SHIKENKI) Fax.: Tokyo (03)-233-0138 Phone: Tokyo (03)-296-5284

# -120RH5 Dragline 0.6~1.2 m<sup>3</sup>



DRAGLING BOOMS: Lattice construction; round tubular main chords, alloy, hi-ten steel, with bracing of round steel tubina.

Boom connections . . . in-line pin connections.

Basic boom . . . Two-piece, 12.2m basic length; 6.1m base and 6.1m top section; 1.2m deep and 1.27m wide at connections.

Boom point machinery . . . One head sheave mounted on antifriction bearings.

Boom extensions . . . Available in 3.05m, 6.1m and 9.14m lengths with pendants.

Angle main chords, with bracing of angle steel is available as option. SAFETY DEVICE: Boom hoist limiting device, boom angle MAXIMUM DRAGLINE RATING: 5.5t

GANTRY: Retractable high gantry. **WORKING WEIGHT AND GROUND PRESSURE:** 

Shoe width	Weight	Pressure
810mm	50.6 t with basic boom	0.58 kg/cm <sup>2</sup>
31311111	51.4t with 21.35m boom	0.59 kg/cm <sup>2</sup>

(With boom, 1.0m3 bucket and counterweight "A")

COUNTERWEIGHT: "A" 10.85t

indicator, boom back stop, drum lock pawl for front, rear and boom hoist.

FAIRLEAD: Full-revolving type. GRADEABILITY: 30% (17°)

#### LINE SPEED:

			Line speed (Hoist			
In haul Hoisting	Root dia.	Туре	Pump control "OFF" (Ordinary)	Pump control	Line pull	Cable dia.
In haul	448mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	15.0	22.4mm
Hoisting	448mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	15.0	22.4mm
3rd drum (option)	320mm	Parallel grooved	65 m/min	12 m/min	_	16mm
Boom hoist	320mm	Parallel grooved	66 m/min	12 m/min	_	16mm

Above line speed varies with load.

#### LS-120RH5 DRAGLINE CAPACITIES AND WORKING RANGES:

(in metric tons)

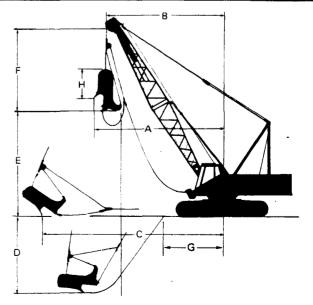
	Boom leng	ıth (m)		12.20			15.25			18.30			21.35	
Boom angle (° )			30	40	50	30	40	50	30	40	50	30	40	50
	Rated load (t)			5.5	5.5	5.5	5.5	5.5	4.7	5.4	5.5	3.8	4.4	5.5
		0.6m³	12.4	11.2	9.7	15.0	13.5	11.7	17.6	15.8	13.6	20.3	18.2	15.6
Α	Max. dumping	0.8~1.0m <sup>3</sup>	12.5	11.3	9.8	15.1	13,6	11.8	17.7	15.9	13.7	20.4	18.3	į 15.7
	radius (m)	1.2m³	12.6	11.4	9.9	15.2	13.7	11.9	17.8	16.0	13.8	20.5	18.4	15.8
В	Working radius (m)		12.0	10.8	9.3	14.6	13,1	11,3	17.2	15.4	13.2	19.9	17.8	15.2
С	Digging radius	on G.L. (m)	15.4	15.0	14.2	18.7	18.2	17.2	22.0	21.4	20.2	25.3	24.6	23.3
D	Digging depth	,(w)	8.3	8.1	7.5	10.8	10.5	9.8	13.4	12.9	12.0	15.9	15.3	14.3
Ε	Dumping	0.6~0.8m³	3.6	5.4	6.9	5.1	7.3	9.2	6.6	9.3	11.6	8.1	11.2	13.9
=	height (m)	1.0~1.2m <sup>3</sup>	2.8	4.6	6.1	4.3	6.5	8.4	5.8	8.5	10.8	7.3	10.4	13.1
F	Bucket	0.6~0.8m³						3.	95					
۲	clearance (m)	1.0~1.2m <sup>3</sup>						4.	75					

- 1. Weight of bucket plus material shall not exceed above rated loads
- 2. Boom length shall not exceed 21,35m.
- 3. High gantry is required and side frame must be extended for all operating conditions.
- 4. Dimension C and D vary considerably depending on digging conditions and skill of the operator.
- 5. Apparent specific gravity of lifting material:

Earth ------ 1.7 ~ 1.8 t/m<sup>3</sup> Gravel ----- 1.8 ~ 2.0 t/m<sup>3</sup>

Kind of bucket (Manufacturer's specification)

Bucket capacity (m3)	Weight (t)
0.6	0.93
0.8	1.17
1.0	1.40
1.2	1.60



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#### LS-120RH-5 CRANE CAPACITIES (WITH CRANE BOOM):

(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	54,90
3.7	65.00														
4,0	65.00	60.30													
4.5	56.55	55.55													
5.0	47.20	47.00	46.90												
5.5	40.40	40.30	40.20	40.05											
6.0	35.35	35.20	35.10	35.00	34.85										
7.0	28.10	28.00	27.90	27.80	27.65	27.45	27.35								
8.0	23.25	23.15	23.00	22.90	22.80	22.65	22.55	22.45	22.35						
9.0	19.80	19.65	19.55	19.45	19.35	19.20	19.10	19.00	18.90	18.75	18.55				
10.0	17.25	17.15	17.00	16.90	16.80	16.70	16.55	16.45	16.35	16.20	16.10	16.00	15.35		
12.0	13.9/11.7	13.35	13.25	13.15	13.05	12.90	12.80	12.70	12.60	12.45	12.35	12.25	12.10	11.20	
14.0		10.95	10.80	10.70	10.60	10.50	10.35	10.25	10.15	10.05	9.90	9.80	9.70	9.55	8.45
16.0			9.00	8.90	8.75	8.65	8.55	8.40	8.30	8.20	8.10	7.95	7.85	7.75	7.55
18.0				7.65	7.55	7.45	7.30	7.20	7.05	6.95	6.80	6.70	6.60	6.50	6.30
20.0				6.85/19.6	6.55	6.30	6.20	6.10	6.00	5.85	5.75	5.65	5.50	5.40	5.30
22.0					5.60	5.50	5.40	5.25	5.15	5.05	4.95	4.80	4.70	4.60	4.45
24.0						4.80	4.70	4.55	4.45	4.35	4.20	4.10	4.00	3.90	3.70
26.0						4.4/24.9	4.15	4.05	3.95	3.80	3.60	3.50	3.40	3.25	3.15
28.0							3.65/27.5	3.55	3.45	3.30	3.10	3.00	2.85	2.75	2.65
30.0		•						3.15	3.05	2.90	2.75	2.60	2.40	2.35	2.20
32.0		-							2.70	2.60	2.40	2.25	2.05	1.95	1.75
34.0										2.30	2.10	1.95	1.75	1.60	1.40
36.0										2.1/35.4	1.80	1.65	1.40	1.25	1.10
38.0											1.50	1.35	1.15	0.95	0.80

#### Notes:

1. Capacities shown are in metric tons and are determined according to BS (British Standard, 1981) — 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	65 t	20 t	6.5 t
Weight of hook block (t)	0.8 t	0.4 t	0.3 t

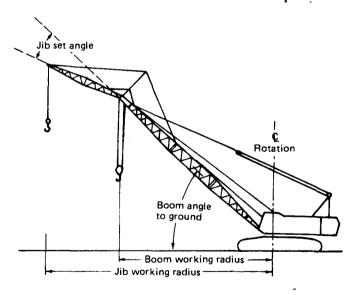
- 2. Side frame must be extended for all operating conditions.
- 3. When handing loads by main hoist line on boom with jib fited, the following deductions must be made from above crane capacity.

Jib length (m)	9.15	13.70	18.30
Weight to be deducted (t)	1.5	2.1	2.8

#### LS-120RH.5 JIB CAPACITIES:

(in metric tons)

Jib length (m)	Jib set angle	Max. jib Capacities		
0.15	10°	6.5		
9.15	30°	5.0		
13.70	10°	6.5		
13.70	30°	5.0		
18.30	10°	4.5		
	30°	3.2		



#### Notes:

- 1. 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.
- 2. Jib working radius does not exceed the working radius of the main boom which fits the jib.

  3. Deductions from the jib capacities must be made for weight of
- jib hook block (0.3 t).
- 4. Available boom length to attach the jib is from 21.35m to 42.7m. The maximum jib length is 18.30m.
- 5. The jib set angle to boom must not exceed 30°

We are constantly improving our products and therefore reserve the right to change designs and specifications.

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

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LS-120RH5 CRANE WORKING RANGES:

