



SUMITOMO

LS-78RH₅

Basic Machine



Upper Machinery

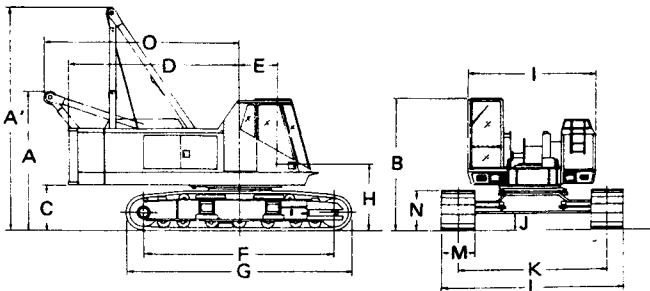
- UPPER FRAME:** All-welded, precision machined unit.
- TURNTABLE BEARING WITH INTEGRAL RING GEAR:** Outer race is bolted to upper frame, inner race with internal ring gear is bolted to lower frame. Swing pinion meshes with internal, integral ring gear. A machined surface is provided for mounting turntable 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:** System reducing pump displacement enables both minute operation and saving energy.
- HYDRAULIC SYSTEM:** System combining variable displacement axial pumps and 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. Spring-set/hydraulically-released multiple disc brakes are fitted.
- Hydraulic oil reservoir** — 160 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 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.
- Brake** — Spring applied, hydraulically released multiple disc type.
- 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** — 3.4 rpm.
- OPERATOR'S CAB:** Full vision compartment with safety glass panels, the completely independent cab is insulated against noise and vibration.
- COUNTERWEIGHT:** Removable, 1 block mounted on rear of upper frame by bolts.
- POWER UNIT:**

Make & Model	HINO HO6CT
Type	Water-cooled, 4-cycle diesel engine
No. of cylinders	6
Bore & Stroke	108mm x 118mm
Displacement	6,485 cc
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.
- ROLLERS:** Heat treated, mounted on bushings with floating seals requiring no further lubrication.
- Bottom** — 7 pcs. per side frame.
- Top** — 2 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, two lug type, multiple hinged shoes, 52 pcs. per side frame.
- Shoe width** — 760 mm
- Tractor type link shoe (60 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** — Two speed range
- 2.0 km/h ----- Pump control "OFF" (ordinary)
- 0.4 km/h ----- Pump control "ON"

General Dimensions		LS-78RH
A	: Height over low gantry unit	3.190m
A'	: Height over high gantry unit	5.120m
B	: Height of cab	3.045m
C	: Counterweight ground clearance	1.040m
D	: Radius of rear end	3.900m
E	: Center of rotation to boom foot pin	0.900m
F	: Center to center distance of tumbler	4.210m
G	: Overall length of crawler	5.030m
H	: Height from ground to boom foot pin	1.540m
I	: Overall width of house	2.980m
J	: Ground clearance	0.375m
K	: Center to center distance of crawler	
	extended	3.300m
	retracted	2.540m
L	: Overall width of crawler	
	extended	4.060m
	retracted	3.300m
M	: Shoe width	0.760m
N	: Height of shoe	0.920m
O	: Tail swing radius at low gantry	4.475m





SUMITOMO

LS-78RH₅ Crane 35 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, 10.0m basic length; 5.0m base and 5.0m top section; 1.0m deep and 1.0m wide at connections.
- Boom point machinery Four head sheaves mounted on antifriction bearings.
- Boom extensions Available in 3.0m and 6.0m, lengths with pendants. Maximum boom length 43.0m.
- Jib Two-piece; 6.1m basic length with 3.05m long base and top sections, available in 3.05m jib extension. Maximum jib length 15.25m.
- Boom plus jib length 31.0m + 15.25m
34.0m + 12.20m

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

HOOK BLOCK:

- 35 t, three sheaves Standard
- 15 t, one sheave Optional extra
- 5 t, no sheave Standard for jib

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)	400mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	20mm
Aux. hoist (Rear)	400mm	Parallel grooved	High 80 m/min Low 40 m/min	High 15 m/min Low 7.5 m/min	20mm
3rd drum (option)	320mm	Parallel grooved	65 m/min	12 m/min	16mm
Boom hoist	280mm	Parallel grooved	64 m/min	12 m/min	14mm

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

HOIST REEVING:

Main hoist							
No. of parts of line	7	6	5	4	3	2	1
Max. load (t)	35.0	33.6	28.0	22.4	16.8	11.2	5.6

WORKING WEIGHT AND GROUND PRESSURE:

Shoe width	Weight	Pressure
760mm	37.5t	0.55 kg/cm ²

- With basic boom and counterweight.
- Weight without counterweight and front attachment: approx. 25.8 t

COUNTERWEIGHT: Total . . . 9.6 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 safety valve in hydraulic circuit, swing alarm, load moment limiter (optional extra).

GRADEABILITY: 40% (22°)
with basic boom and counterweight



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LS-78RH₅**LS-78RH₅ CRANE CAPACITIES:**

(in metric tons)

Working radius (m)	Boom length (m)											
	10.0	13.0	16.0	19.0	22.0	25.0	28.0	31.0	34.0	37.0	40.0	43.0
3.0	35.00											
3.5	35.00	35.00										
4.0	29.50	29.40	29.35									
4.5	24.95	24.90	24.85	24.80								
5.0	21.15	21.05	20.95	20.90	20.65							
6.0	16.35	16.25	16.20	16.15	16.10	16.05	16.00					
7.0	12.95	12.85	12.75	12.70	12.65	12.60	12.55	12.50	12.45			
8.0	10.75	10.65	10.55	10.50	10.45	10.40	10.35	10.25	10.20	10.15	10.10	
9.0	9.20	9.10	9.05	9.00	8.90	8.85	8.75	8.70	8.65	8.55	8.50	8.35
10.0	8.35/9.7	8.00	7.90	7.85	7.75	7.70	7.60	7.55	7.50	7.45	7.35	7.25
12.0		6.30	6.20	6.15	6.05	6.00	5.90	5.85	5.80	5.70	5.60	5.50
14.0		6.00/12.3	5.00	4.90	4.85	4.75	4.65	4.60	4.50	4.45	4.35	4.25
16.0			4.70/14.8	4.10	4.00	3.90	3.85	3.80	3.75	3.65	3.55	3.45
18.0				3.70/17.5	3.45	3.35	3.25	3.20	3.15	3.05	2.95	2.85
20.0					2.95	2.85	2.75	2.70	2.65	2.60	2.50	2.40
22.0						2.55	2.50	2.40	2.30	2.20	2.10	2.00
24.0						2.40/22.7	2.10	2.00	1.90	1.85	1.80	1.70
26.0							1.90/25.3	1.75	1.65	1.60	1.50	1.40
28.0								1.55/27.9	1.45	1.35	1.25	1.20
30.0									1.25	1.20	1.10	1.00
32.0										1.00	0.90	0.80

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	35 t	15 t	5 t
Weight of hook block (t)	0.30	0.30	0.12

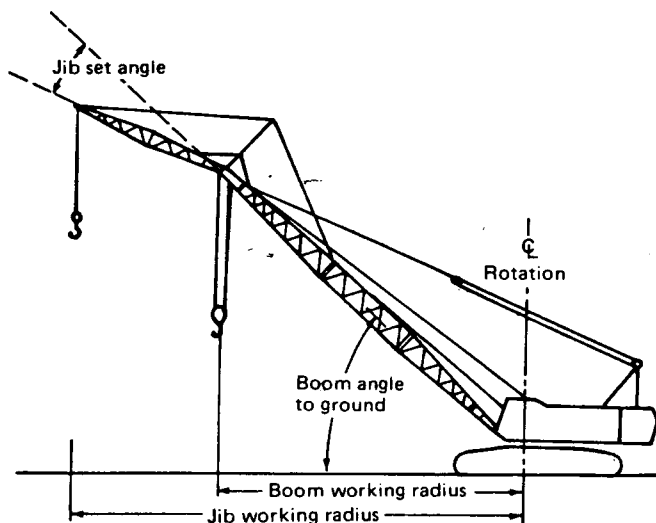
- When operating of the main boom peak sheaves with jib on boom the following deductions in machine lifting capacities must be made:

Jib length (m)	6.10	9.15	12.20	15.25
Weight to be deducted (t)	0.75	0.90	1.05	1.20

LS-78RH₅ JIB CAPACITIES:

(in metric tons)

Jib length (m)	Jib set angle	Max. jib Capacities
6.10	10°	5.0
	30°	5.0
9.15	10°	5.0
	30°	5.0
12.20	10°	4.1
	30°	4.1
15.25	10°	3.3
	30°	3.3

**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 (0.12 t).
- Available boom length to attach the jib is from 19.0m to 34.0m. The maximum jib length is 15.25m.
- The jib set angle to boom must not exceed 30°.



Crane 35 metric tons

LS-78RH5 CRANE WORKING RANGES:

