



### Upper Machinery

**UPPER FRAME:** All-welded, stress relieved, precision machined unit with integral machinery side housings.

**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:** "Speed-O-Matic" power hydraulic system that includes a gear pump to provide a constant flow of oil, an accumulator to maintain operating pressure and variable pressure control valves to regulate this pressure to all the clutches, and to release swing brake, boomhoist brake.

**CLUTCHES:** "Speed-O-Matic" power hydraulic actuated, internal expanding, self-adjusting 2-shoe type for all functions. Clutches are interchangeable.

**DRUMS:** Front and rear main, and optional third, operating drums.

**Drum laggings** — 2-piece, removable; bolted to the lagging adapter which is involute splined to shaft mounted in line bores on ball bearing.

**Brakes** — External contracting band; mechanically foot pedal operated, with locking latch.

**BOOM HOIST ASSEMBLY:**

**Independent boom hoist** — Dual drum and worm gear assembly; power raised and lowered through spur gear driven 2-shoe clutches.

**Brake** — Spring applied, hydraulically released band type with drum locking pawl.

**SWING:** 2 sets of "Speed-O-Matic" clutches transmit swing power smoothly into the swing pinion.

**Brake** — Two-directional, external contracting band, spring applied and power hydraulically release. Mounted on deck of upper frame.

**Lock** — Mechanically controlled double pawl.

**Speed** — 3.0 rpm (High), 0.9 rpm (Low)

**Independent swing/travel** — Standard.

**OPERATOR'S CAB:** Full-vision compartment with safety glass panels, separated from upper machinery.

**COUNTERWEIGHT:** Removable, 3 blocks ("A" + "B" + "C") mounted on rear of upper frame by bolts.

**CATWALKS AND RAILINGS:** Standard.

**POWER UNITS:**

	Standard	Optional
Make & Model	GM8V-71	Mitsubishi 8DC90C
Type	Water-cooled, 2-cycle, diesel engine	Water-cooled, 4-cycle diesel engine
No. of cylinders	8	8
Bore & Stroke	108 x 125 mm	135 x 140 mm
Displacement	9,308 cc	16,031 cc
Rated output	256 PS/1,960 r.p.m.	255 PS/2,000 r.p.m.
Maximum torque	106.5 kg-m/ 1,200 r.p.m.	95 kg-m/ 1,400 r.p.m.
Fuel tank	500 liters	500 liters
Power take-off	Torque converter	Torque converter
2-speed transmission	Standard	Standard
Retarder	Optional	Standard

### Lower Machinery

**LOWER FRAME:** All-welded, stress relieved, precision machined, line bored for horizontal traction shaft.

**TRACK ROLLERS:**

**Bottom** — Heat treated, mounted on bushings, thirteen per side frame.

**Top** — Two track carrier rollers per side frame, mounted on bushings.

**TRACKS:** Heat treated, self-cleaning, multiple hinged shoes; 54 per side frame.

**SHOE WIDTH:** 1,118 mm

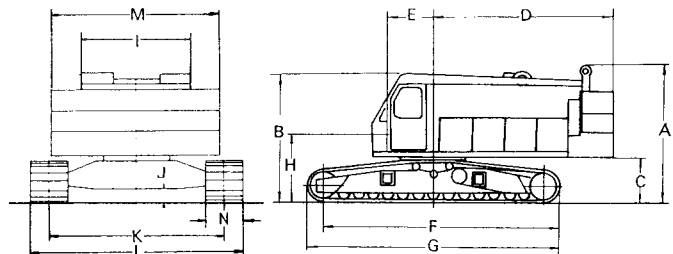
**POWER HYDRAULIC STEER/TRAVEL:** For travel or steer, jaw clutches of traction shaft are power hydraulically engaged with jaws on brake drums, automatically releasing spring-applied steer/digging brakes. Brakes are external contracting band type.

**TRAVEL SPEED:** 1.0 km/h. (High), 0.3 km/h. (Low)

**SIDE FRAMES:** Removable from lower frame, leaving track drive chains connected.

### General Dimensions

- A: Height, over boomhoist unit . . . . . 3.925 m
- B: Height of cab . . . . . 3.790 m
- C: Counterweight ground clearance  
(with counterweight "A" + "B" + "C") . . . 1.300 m
- D: Radius of rear end  
(with counterweight "A" + "B" + "C") . . . 5.600 m
- E: Center of rotation to boom foot pin . . . . . 1.400 m
- F: Center to center distance of tumbler . . . . . 6.717 m
- G: Overall length of crawler . . . . . 7.704 m
- H: Height from ground to boom foot pin . . . . . 2.000 m
- I: Overall width of cab . . . . . 3.357 m
- J: Ground clearance . . . . . 0.425 m
- K: Center to center distance of crawler . . . . . 5.307 m
- L: Overall width of crawler  
(with 1.118 mm shoe) . . . . . 6.425 m
- M: Overall width of upper machine . . . . . 5.130 m
- N: Shoe width . . . . . 1.118 m





**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, **18.3 m** basic length; 9.15 m base and 9.15 m top section; 2 m deep and 2 m wide at connections.
- Boom point machinery . . . . . Seven head sheaves mounted on anti-friction bearings.
- Boom extensions . . . . . Available in 3.05 m, 6.1 m, 9.15 m and 12.2 m lengths with pendants. Maximum boom length **79.30 m**.
- Jib . . . . . Two-piece; 9.15 m basic length with 4.55 m long base and top sections, available in 3.05 m and 6.1 m jib extensions.
- Boom plus jib length . . . . . 67.1 m + 27.45 m  
70.15 m + 24.40 m  
73.20 m + 9.15 m.

**HOOK BLOCK:**

- 150 t, six sheaves. . . . . Standard
- 100 t, four sheaves. . . . . Optional extra
- 65 t, three sheaves . . . . . Optional extra
- 35 t, two or single sheave, is recommended for machine with boom over 61.0 m . . . . . Optional extra
- 13 t, no sheave type . . . . . Standard for jib

**BOOM LIVE MAST:** Mounts on front of upper frame.

**BOOM HOIST ASSEMBLY:** With power lowering clutch.

- 22-part boom hoist reeving . . . . . Standard.
- Boom hoist line speed (raising) . . . . . @18.0 m/min (high),  
@5.4 m/min (low).
- Boom hoist line speed (lowering) . . . . . @21.0 m/min (high),  
@6.2 m/min (low).

**LINE PULL AND LINE SPEED:**

Drums	Root dia.	Type	Line pull	Line speed		Cable dia.
				Hoisting	Lowering	
Front (aux. hoist)	532 mm	Smooth	23,440 kg	@37.2 m/min (high) @11.2 m/min (low)	@56.9 m/min (high) @17.1 m/min (low)	28 mm
Rear (main hoist)	532 mm	Smooth	22,740 kg	@37.2 m/min (high) @11.2 m/min (low)	@44.0 m/min (high) @13.0 m/min (low)	28 mm

(Available line pull – Not based on wire rope strength)

**HOIST REEVING:**

No. of parts of line	Main hoist													Aux. hoist
	13	12	11	10	9	8	7	6	5	4	3	2	1	1
Max. load (t)	150.0	146.0	135.3	124.1	112.8	101.3	89.5	77.5	65.2	52.7	39.9	26.8	13.5	13.0

**WORKING WEIGHT AND GROUND PRESSURE:**

Shoe width	Weight	Pressure
1,118 mm	140.0 t	0.89 kg/cm <sup>2</sup>

With basic boom and counterweight "A" + "B" + "C"

**COUNTERWEIGHT:** "A" (19,400 kg) + "B" (15,000 kg) + "C" (10,600 kg)

**SAFETY DEVICE:** Hook over hoist alarm, boom hoist limiting device, boom angle indicator, boom back stop, boom live mast back stop.

**GRADEABILITY:** 30% (17°)

**POWER LOAD LOWERING CLUTCH:** On front drum . . . . . Optional extra.  
On rear drum . . . . . Standard.

**LOAD INDICATOR:** Optional extra.

**LOAD MOMENT ALARM:** Optional extra.

# LS-528S CRANE CAPACITIES :

Working radius (m)	Boom length (m)																			
	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	57.95	61.00	64.05	67.10	70.15	73.20	
4.8	150.0																			
5.0	147.6	129.6	<del>118.0</del> 5.5																	
6.0	128.1	126.0	117.0	106.4	98.0															
7.0	97.7	97.7	97.7	97.7	94.0	<del>83.6</del> 7.5														
8.0	78.5	78.5	78.5	78.5	78.5	78.5	75.6													
9.0	65.6	65.6	65.6	65.6	65.5	65.6	65.6	65.6	<del>60.8</del> 9.5											
10.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	54.6	<del>49.5</del> 10.5	<del>45.6</del> 11.0	<del>42.0</del> 11.5							
12.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	42.0	38.4	<del>35.0</del> 12.5	<del>32.0</del> 13.0	<del>29.5</del> 13.5			
14.0	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.6	34.5	32.0	29.0	27.0	<del>24.5</del> 14.5	
16.0	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.7	28.6	28.5	28.4	28.3	28.0	25.6	24.0	
18.0	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.4	24.3	24.2	24.1	24.0	23.9	23.7	23.5	22.8
20.0		21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.1	21.0	20.9	20.8	20.7	20.6	20.5	20.4	20.2	20.1	
22.0			18.7	18.7	18.7	18.7	18.7	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.8	17.7	17.6	17.4	17.3	
24.0			16.6	16.6	16.6	16.5	16.5	16.4	16.3	16.2	16.1	16.0	15.9	15.8	15.6	15.5	15.4	15.2	15.1	
26.0				14.9	14.8	14.7	14.7	14.7	14.6	14.5	14.4	14.3	14.2	14.0	13.8	13.6	13.5	13.3	13.2	
28.0					13.3	13.2	13.2	13.2	13.1	13.0	12.8	12.7	12.6	12.5	12.3	12.1	12.0	11.8	11.7	
30.0					12.1	12.0	11.9	11.8	11.7	11.6	11.5	11.4	11.3	11.2	11.0	10.8	10.7	10.5	10.4	
32.0						10.8	10.8	10.7	10.6	10.5	10.4	10.3	10.2	10.1	9.9	9.7	9.6	9.4	9.3	
34.0							9.9	9.8	9.7	9.6	9.4	9.3	9.2	9.1	8.9	8.7	8.5	8.3	8.2	
36.0								9.0	8.8	8.7	8.5	8.4	8.3	8.2	8.0	7.8	7.7	7.5	7.4	
38.0									8.1	8.0	7.8	7.7	7.6	7.5	7.3	7.1	7.0	6.8	6.7	
40.0									7.4	7.3	7.1	7.0	6.9	6.8	6.6	6.4	6.3	6.1	6.0	
42.0										6.7	6.5	6.4	6.3	6.1	6.0	5.8	5.7	5.5	5.4	
44.0											5.9	5.8	5.7	5.6	5.5	5.3	5.1	4.9	4.8	
46.0												5.5	5.4	5.3	5.1	5.0	4.8	4.6	4.4	
48.0													5.0	4.9	4.7	4.5	4.3	4.1	3.9	
50.0														4.5	4.2	4.0	3.8	3.6	3.4	
52.0															4.1	3.9	3.7	3.5	3.3	
54.0																3.6	3.3	3.1	2.9	
56.0																	3.3	3.0	2.7	
58.0																			2.4	
60.0																				2.1

**Notes:**

1. 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	150 t	100 t	65 t	35 t	13 t
Weight of hook block (t)	2.0	1.04	0.8	0.8	0.4

2. Boom live mast should be used always when operating of machine.
3. Mid point cable should be used when operate with over 64.05m boom length.
4. 35 t hook block should be used when boom length exceeds 61.0 m.
5. When operating of the main boom peak sheare with jib on boom, following deductions in machine lifting capacities must be made.

Jib length (m)	9.15	12.20	15.25	18.30	21.35	24.40	27.45
Weight to be deducted (t)	1.60	1.75	1.90	2.05	2.20	2.40	2.60



# LS-528S CRANE WORKING RANGES:

