SUMITOMO Link-Belt

# LS-418J Basic Machine

## Upper Machinery

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

TURNTABLE ROLLERS: Eight adjustable, heat treated, conical, hook-type rollers mounted on tapered roller bearings.

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 released. Mounted on deck of upper frame.

**Lock** --- Mechanically controlled double pawl.

**Speed** --- 3.1 r.p.m.

**Independent swing/travel** --- Standard.

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

Removable, held in place by "T-bolt"; Counterweight is power raised with rear drum hoist clutch and lowered against rear drum brake.

CATWALKS AND RAILINGS: Optional extra.

POWER UNITS:

| | Standard | Optional | Optional |
|---|---|---|---|
| Make & Model | Mitsubishi 8DC9C | Cummins NTO-6 | GM8V-71 |
| Type | Water-cooled, 4-cycle diesel engine | Walter-cooled, 4-cycle, diesel engine | Water-cooled, 2-cycle, diesel engine |
| No. of cylinders | 8 | 6 | 8 |
| Bore & Stroke | 135 x 140mm | 130 x 152mm | 108 x 125mm |
| Displacement | 16,031 cc | 12,170 cc | 9,308 cc |
| Rated output | 255 PS/ 2,000 r.p.m. | 236 PS/ 2,000 r.p.m. | 256 PS/ 1,960 r.p.m. |
| Maximum torque | 95 kg-m/ 1,400 r.p.m. | 92 kg-m/ 1,200 r.p.m. | 106.5 kg-m/ 1,200 r.p.m. |
| Fuel tank | 378 liters | 378 liters | 378 liters |
| Power take-off | Torque converter | Torque converter | Torque converter |
| 2-speed transmission | Standard | Non | Optional extra |

## Lower Machinery

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

ROLLER PATH WITH INTEGRAL RING GEAR: Double flanged, machined roller path; swing pinion meshes with internal, integral ring gear.

TRACK ROLLERS:

**Bottom** --- Heat treated, mounted on bushings, eleven per side frame.

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

TRACKS: Heat treated, self-cleaning, multiple hinged shoes; 48 per side frame.

**965 mm** --- Standard.

**1,120 mm** --- Optional extra.

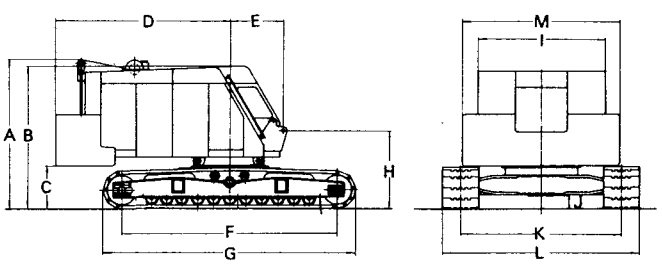
POWER HYDRAULIC STEER/TRAVEL: For travel or steer, jaw clutches of traction shaft are power hydraulically engaged with jaws on brake drums, automatically releasing spring-applied steer/digging brakes. Brakes are external contracting band type.

TRAVEL SPEED: 1.6 km/h.

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

## General Dimensions

A: Height, over boom hoist unit ..... 4.060 m
B: Height of cab ..... 3.790 m
C: Counterweight ground clearance (with counterweight "A" + "B") ..... 1.150 m
D: Radius of rear end (with counterweight "A" + "B") ..... 4.630 m
E: Center of rotation to boom foot pin ..... 1.395 m
F: Center to center distance of tambler ..... 5.820 m
G: Overall length of crawler ..... 6.805 m
H: Height from ground to boom foot pin ..... 2.060 m
I: Overall width of cab ..... 3.355 m
J: Ground clearance ..... 0.355 m
K: Center to center distance of crawler ..... 4.270 m
L: Overall width of crawler (with 965 mm shoe) ..... 5.235 m
M: Overall width of upper machine ..... 4.185 m



SUMITOMO Link-Belt

# LS-418J

## Crane 100 metric tons

(With tubular hi-ten boom)

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, **15.25 m** basic length; 7.6 m base and 7.6 m top section; 1.37 m deep and 1.52 m wide at connections. |
| Boom point machinery | Four head sheaves mounted on anti-friction bearings. |
| Boom extensions | Available in 3.05 m, 6.1 m and 9.15 m lengths with pendants. Maximum boom length **61 m**. |
| Jib | Two-piece; 9.15 m basic length with 4.55 m long base and top sections, available in 4.55 m jib extension. |
| Boom plus jib length | 61 m + 9.15 m.<br>61 m + 13.725 m.<br>61 m + 18.3 m (max.). |

HOOK BLOCK:

| | |
|---|---|
| 100 t, four sheaves | Standard. |
| 65 t, 35 t | Optional extra. |
| 9 t | Standard for jib. |

BOOM LIVE MAST: Mounts on front of upper frame.

BOOM HOIST ASSEMBLY: With power lowering clutch.

| | |
|---|---|
| 14-part boom hoist reeving | Standard. |
| Boom hoist line speed (raising) | @19.3 m/min. |
| Boom hoist line speed (lowering) | @22.3 m/min. |

LINE PULL AND LINE SPEED:

| Drums | Root dia. | Type | Line pull | Line speed | Cable dia. |
|---|---|---|---|---|---|
| Front (aux. hoist) | 619 mm | Smooth | 19,020 kg | @45.8 m/min | 25 mm |
| Rear (main hoist) | 619 mm | Smooth | 18,310 kg | @46.1 m/min | 30 mm |

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

HOIST REEVING:

| | Main hoist | | | | | | | | Aux. hoist |
|---|---|---|---|---|---|---|---|---|---|
| No. of parts of line | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 1 |
| Max. load (t) | 100.0 | 87.5 | 75.0 | 62.5 | 50.0 | 37.5 | 25.0 | 12.5 | 9.0 |

WORKING WEIGHT AND GROUND PRESSURE:

| Shoe width | Weight | Pressure |
|---|---|---|
| 965 mm | 95.0 t | 0.80 kg/cm² |
| 1,118 mm | 96.3 t | 0.70 kg/cm² |

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

COUNTERWEIGHT: "A" (10,900 kg) + "B" (17,700 kg).

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

GRADEABILITY: 30% (17°).

POWER LOAD LOWERING CLUTCH:

| | |
|---|---|
| On front drum | Optional extra. |
| On rear drum | Standard. |

LOAD INDICAOTR: Optional extra.

LOAD MOMENT ALARM: Optional extra.

## LS-418J CRANE CAPACITIES: (With tubular hi-ten boom)

| Working radius (m) | Boom length (m) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15.25 | 18.3 | 21.35 | 24.4 | 27.45 | 30.5 | 33.55 | 36.6 | 39.65 | 42.7 | 45.75 |
| 3.9 | 100.0 | | | | | | | | | | |
| 4.0 | 100.0 | 94.8/4.3 | 83.5/4.9 | | | | | | | | |
| 5.0 | 88.5 | 88.0 | 82.7 | 74.7/5.2 | 65.9/5.8 | | | | | | |
| 6.0 | 66.5 | 66.5 | 66.5 | 66.5 | 65.5 | 59.5/6.1 | | | | | |
| 7.0 | 52.5 | 52.5 | 52.5 | 52.5 | 52.5 | 51.5 | 46.6/7.6 | 46.5/7.6 | 42.6/7.6 | | |
| 8.0 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 40.5 | | |
| 9.0 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.4 | 35.6/9.1 | 32.9/9.1 |
| 10.0 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.4 | 31.3 | 30.2 |
| 12.0 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.5 | 24.4 | 24.3 |
| 14.0 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.1 | 20.1 | 20.0 | 19.9 | 19.8 |
| 16.0 | 18.2/15.0 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.8 | 16.8 | 16.7 | 16.6 | 16.5 |
| 18.0 | | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.4 | 14.4 | 14.3 | 14.2 | 14.1 |
| 20.0 | | | 12.6 | 12.6 | 12.6 | 12.6 | 12.5 | 12.5 | 12.4 | 12.3 | 12.2 |
| 22.0 | | | 11.8/21.0 | 11.0 | 11.0 | 11.0 | 10.9 | 10.9 | 10.8 | 10.7 | 10.6 |
| 24.0 | | | | 9.8 | 9.8 | 9.8 | 9.7 | 9.7 | 9.6 | 9.5 | 9.4 |
| 26.0 | | | | | 8.7 | 8.7 | 8.6 | 8.6 | 8.5 | 8.4 | 8.3 |
| 28.0 | | | | | 8.3/27.0 | 7.9 | 7.8 | 7.8 | 7.7 | 7.6 | 7.5 |
| 30.0 | | | | | | 7.1 | 7.0 | 7.0 | 6.9 | 6.8 | 6.7 |
| 32.0 | | | | | | | 6.4 | 6.4 | 6.3 | 6.2 | 6.1 |
| 34.0 | | | | | | | | 5.9 | 5.8 | 5.7 | 5.6 |
| 36.0 | | | | | | | | | 5.3 | 5.2 | 5.1 |
| 38.0 | | | | | | | | | 4.8 | 4.7 | 4.6 |
| 40.0 | | | | | | | | | | 4.3 | 4.2 |
| 42.0 | | | | | | | | | | | 3.9 |
| 44.0 | | | | | | | | | | | 3.5 |
| 46.0 | | | | | | | | | | | |
| 48.0 | | | | | | | | | | | |
| 50.0 | | | | | | | | | | | |
| 52.0 | | | | | | | | | | | |
| 54.0 | | | | | | | | | | | |
| 56.0 | | | | | | | | | | | |
| 58.0 | | | | | | | | | | | |



**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 | 100t | 65t | 35t | 9t |
|---|---|---|---|---|
| Weight of hook block (t) | 1.04 | 0.79 | 0.8 | 0.26 |

2. When operating off the main boom peak sheaves with jib on boom, the following deductions in machine lifting capacities must be made.

| Jib length (m) | 9.15 | 13.7 | 18.3 |
|---|---|---|---|
| Weight to be deducted (t) | 1.0 | 1.22 | 1.45 |

## LS-418J CRANE WORKING RANGES: