



## 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 counter-balance valve.

**Swing motor** – Axial piston motor.

**Travel motor** – Axial piston motors with brake valves. Spring-applied/hydraulic-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** – 3.0min<sup>-1</sup> (3.0rpm)

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

**COUNTERWEIGHT:** Removable, 4 blocks mounted on rear of upper frame by bolts.

**POWER UNIT:**

|                  |  |
|------------------|--|
| Make & Model     | HINO HO8CT                                       |
| Type             | Water-cooled, 4-cycle diesel engine              |
| No. of cylinders | 8  |
| Bore & Stroke    | 108mm × 118mm                                    |
| Displacement     | 6,485 cc   |
| Rated output     | 110.3kW/2,100min <sup>-1</sup> (150ps/2,100rpm)  |
| Max. torque      | 510N·m/1,600min <sup>-1</sup> (52kgf·m/1,600rpm) |
| 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 and pins.

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

**Bottom** – 9 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, two lug type, multiple hinged shoes, 59 pcs. per side frame.

**Shoe width** – 760 mm

Tractor type link shoe (58 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.

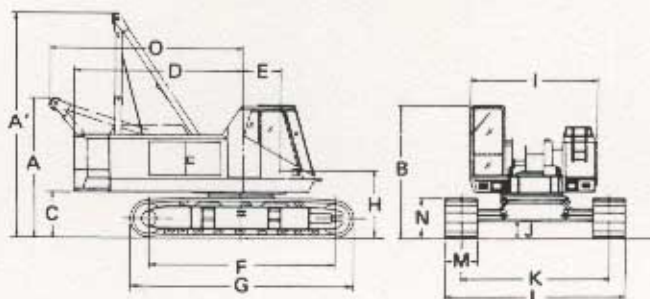
**TRAVEL AND STEER:** Axial piston motor with reduction gear is located at inner drive end of each crawler side frame. Each track is driven simultaneously or individually for straight-line travel, or pivot turn, or the tracks can be counter-rotated for spin turns.

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

**Speed** – Two speed range  
2.0/1.2 km/h ..... Pump control "OFF" (ordinary)  
0.4/0.2 km/h ..... Pump control "ON"

General Dimensions

|    |  |        |
|----|--|--------|
| A  | : Height over low gantry unit          | 3.290m |
| A' | : Height over high gantry unit         | 5.485m |
| B  | : Height of cab                        | 3.100m |
| C  | : Counterweight ground clearance       | 1.095m |
| D  | : Radius of rear end                   | 3.900m |
| E  | : Center of rotation to boom foot pin  | 0.950m |
| F  | : Center to center distance of tumbler | 4.840m |
| G  | : Overall length of crawler            | 5.725m |
| H  | : Height from ground to boom foot pin  | 1.850m |
| I  | : Overall width of house               | 3.090m |
| J  | : Ground clearance                     | 0.410m |
| K  | : Center to center distance of crawler |        |
|    | extended                               | 3.590m |
|    | retracted                              | 2.540m |
| L  | : Overall width of crawler             |        |
|    | extended                               | 4.350m |
|    | retracted                              | 3.300m |
| M  | : Shoe width                           | 0.760m |
| N  | : Height of shoe                       | 0.985m |
| O  | : Tail swing radius at low gantry      | 4.780m |



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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**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 antifriction bearings.  |
| Boom extensions .....      | Available in 3.05m, 6.1m and 9.15m lengths with pendants. Maximum boom length 51.85m.                        |
| Jib .....                  | Two-piece; 6.1m basic length with 3.05m long base and top sections, 0.5m deep and 0.61m wide at connections. |
| Jib extensions .....       | Available in 3.05m jib extensions. Maximum jib length 15.25m.  |
| Boom plus jib length ..... | 42.70m + 15.25m  |

**HOOK BLOCK:**

|                          |                  |
|--------------------------|------------------|
| 50 t, four sheaves ..... | Standard         |
| 15 t, one sheave .....   | Optional extra   |
| 5t, no sheave .....      | Standard for jib |

**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<br>Low 40 m/min   | High 15 m/min<br>Low 7.5 m/min | 20mm       |
| Aux. hoist (Rear)  | 400mm     | Parallel grooved | High 80 m/min<br>Low 40 m/min   | High 15 m/min<br>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 is based on first layer.
2. Above line speed varies with load.

**HOIST REEVING:**

| No. of parts of line | Main hoist |      |      |      |      |      |      |      |     | Aux. hoist |
|----------------------|------------|------|------|------|------|------|------|------|-----|------------|
|                      | 9          | 8    | 7    | 6    | 5    | 4    | 3    | 2    | 1   | 1          |
| Max. load (t)        | 50.0       | 44.8 | 39.2 | 33.6 | 28.0 | 22.4 | 16.8 | 11.2 | 5.6 | 5.0        |

**WORKING WEIGHT AND GROUND PRESSURE:**

| Shoe width | Weight | Pressure                           |
|------------|--------|------------------------------------|
| 760 mm     | 51.3 t | 63.7 kPa (0.85kg/cm <sup>2</sup> ) |

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

Weight without counterweight and front attachment: approx. 32.5t

**COUNTERWEIGHT:** "A" (6,100 kg) + "B" (2,600 kg) + "C" (2,600 kg) + "D" (4,600 kg) Total 15,900 kg

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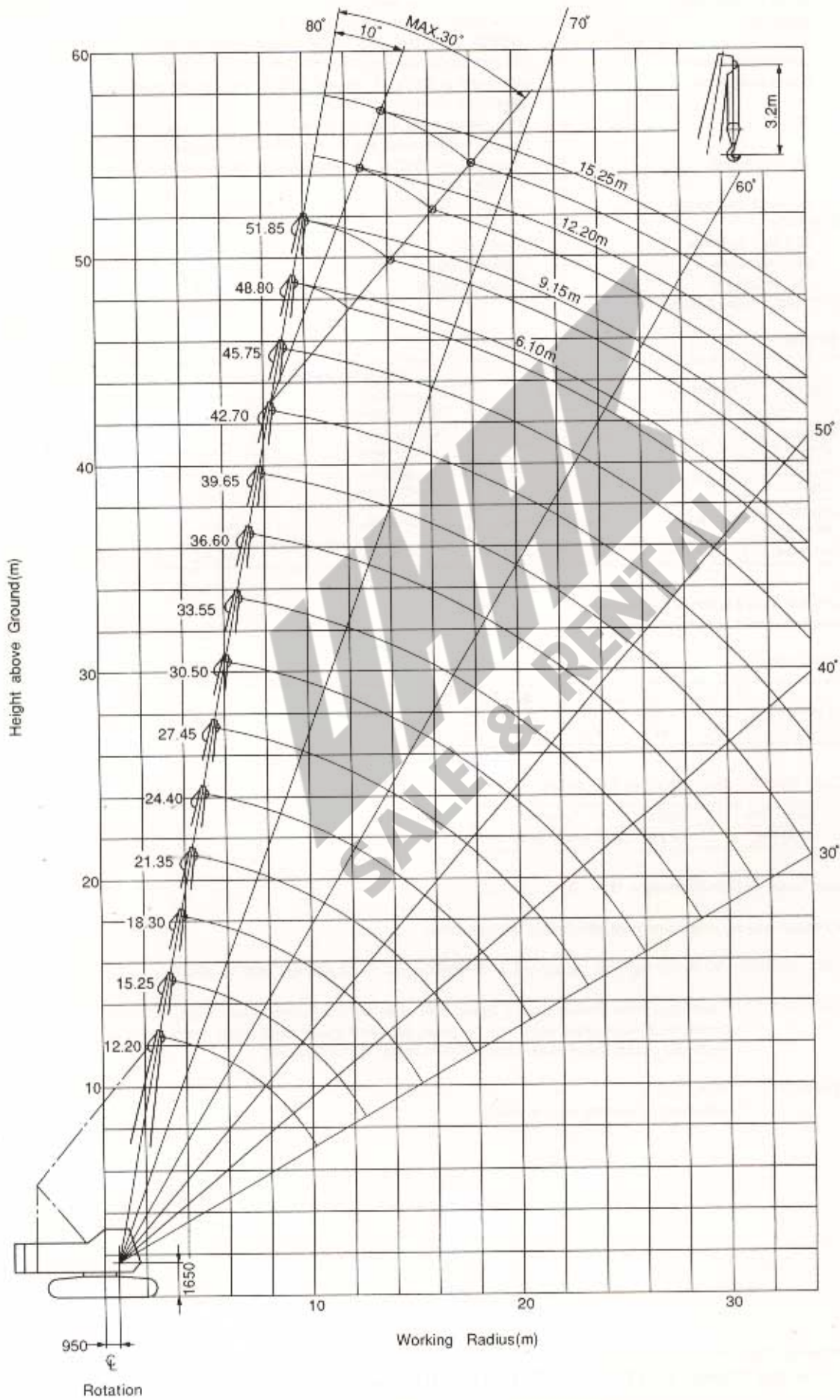
**SUMITOMO (S.H.I.) CONSTRUCTION MACHINERY CO., LTD.**

K & T Bldg. 1-28-44, Shinkawa, Chuo-ku, Tokyo 104, Japan

# Crane 50 metric tons



## SC500 CRANE WORKING RANGES





## SC500 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    | 33.50    | 36.60    | 39.65    | 42.70 | 45.75    | 48.80 | 51.85 |
| 3.7                | 50.0            | 45.4/3.9 |          |          |          |          |          |          |          |          |       |          |       |       |
| 4.0                | 46.6            | 44.5     |          |          |          |          |          |          |          |          |       |          |       |       |
| 4.5                | 38.0            | 37.9     | 37.8     |          |          |          |          |          |          |          |       |          |       |       |
| 5.0                | 31.8            | 31.7     | 31.6     | 31.5     |          |          |          |          |          |          |       |          |       |       |
| 5.5                | 27.5            | 27.4     | 27.3     | 27.2     | 27.1     |          |          |          |          |          |       |          |       |       |
| 6.0                | 23.7            | 23.6     | 23.5     | 23.4     | 23.3     | 23.2     | 20.0/6.6 |          |          |          |       |          |       |       |
| 7.0                | 19.0            | 18.9     | 18.8     | 18.7     | 18.6     | 18.5     | 18.4     | 17.7/7.1 | 16.0/7.6 |          |       |          |       |       |
| 8.0                | 16.1            | 16.0     | 15.9     | 15.8     | 15.7     | 15.6     | 15.5     | 15.4     | 15.3     | 14.4/8.2 |       |          |       |       |
| 9.0                | 13.7            | 13.6     | 13.5     | 13.4     | 13.3     | 13.2     | 13.1     | 13.0     | 13.0     | 12.9     | 12.8  | 11.9/9.2 |       |       |
| 10.0               | 11.9            | 11.8     | 11.7     | 11.6     | 11.5     | 11.4     | 11.3     | 11.2     | 11.1     | 11.0     | 11.0  | 10.9     | 10.3  |       |
| 12.0               | 9.8/11.6        | 9.4      | 9.3      | 9.2      | 9.1      | 9.0      | 9.0      | 8.9      | 8.8      | 8.7      | 8.6   | 8.5      | 8.4   | 7.6   |
| 14.0               |                 | 7.7      | 7.6      | 7.5      | 7.4      | 7.3      | 7.2      | 7.1      | 7.0      | 7.0      | 6.9   | 6.8      | 6.7   | 6.4   |
| 16.0               |                 | 7.4/14.3 | 6.5      | 6.4      | 6.3      | 6.2      | 6.1      | 6.0      | 5.9      | 5.8      | 5.7   | 5.6      | 5.5   | 5.4   |
| 18.0               |                 |          | 6.0/16.9 | 5.4      | 5.3      | 5.2      | 5.1      | 5.0      | 5.0      | 4.9      | 4.8   | 4.7      | 4.6   | 4.5   |
| 20.0               |                 |          |          | 4.9/19.6 | 4.7      | 4.6      | 4.5      | 4.4      | 4.3      | 4.2      | 4.1   | 4.0      | 3.9   | 3.8   |
| 22.0               |                 |          |          |          | 4.1      | 4.0      | 3.9      | 3.8      | 3.7      | 3.6      | 3.5   | 3.4      | 3.3   | 3.2   |
| 24.0               |                 |          |          |          | 4.0/22.2 | 3.5      | 3.4      | 3.3      | 3.2      | 3.1      | 3.0   | 3.0      | 2.9   | 2.8   |
| 26.0               |                 |          |          |          |          | 3.3/24.9 | 3.0      | 2.9      | 2.8      | 2.7      | 2.6   | 2.5      | 2.4   | 2.3   |
| 28.0               |                 |          |          |          |          |          | 2.7/27.5 | 2.6      | 2.5      | 2.4      | 2.3   | 2.2      | 2.1   | 2.0   |
| 30.0               |                 |          |          |          |          |          |          | 2.2      | 2.1      | 2.1      | 2.0   | 1.9      | 1.8   | 1.7   |
| 32.0               |                 |          |          |          |          |          |          |          | 1.9      | 1.8      | 1.7   | 1.6      | 1.5   | 1.4   |
| 34.0               |                 |          |          |          |          |          |          |          | 1.8/32.8 | 1.5      | 1.4   | 1.3      | 1.3   | 1.2   |

### 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       | 50 t   | 15 t   | 5 t    |
| Weight of hook block (t) | 0.75 t | 0.30 t | 0.12 t |

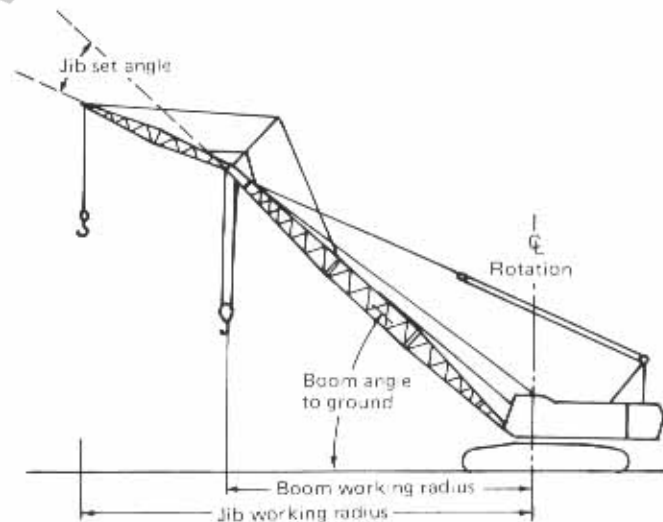
- When operating of the main boom peak sheaves with jib on boom the following deductions in machine lifting capacities must be made.

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

## SC500 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 21.35 m to 42.70 m. The maximum jib length is 15.25 m.
- The jib set angle to boom must not exceed 30°.