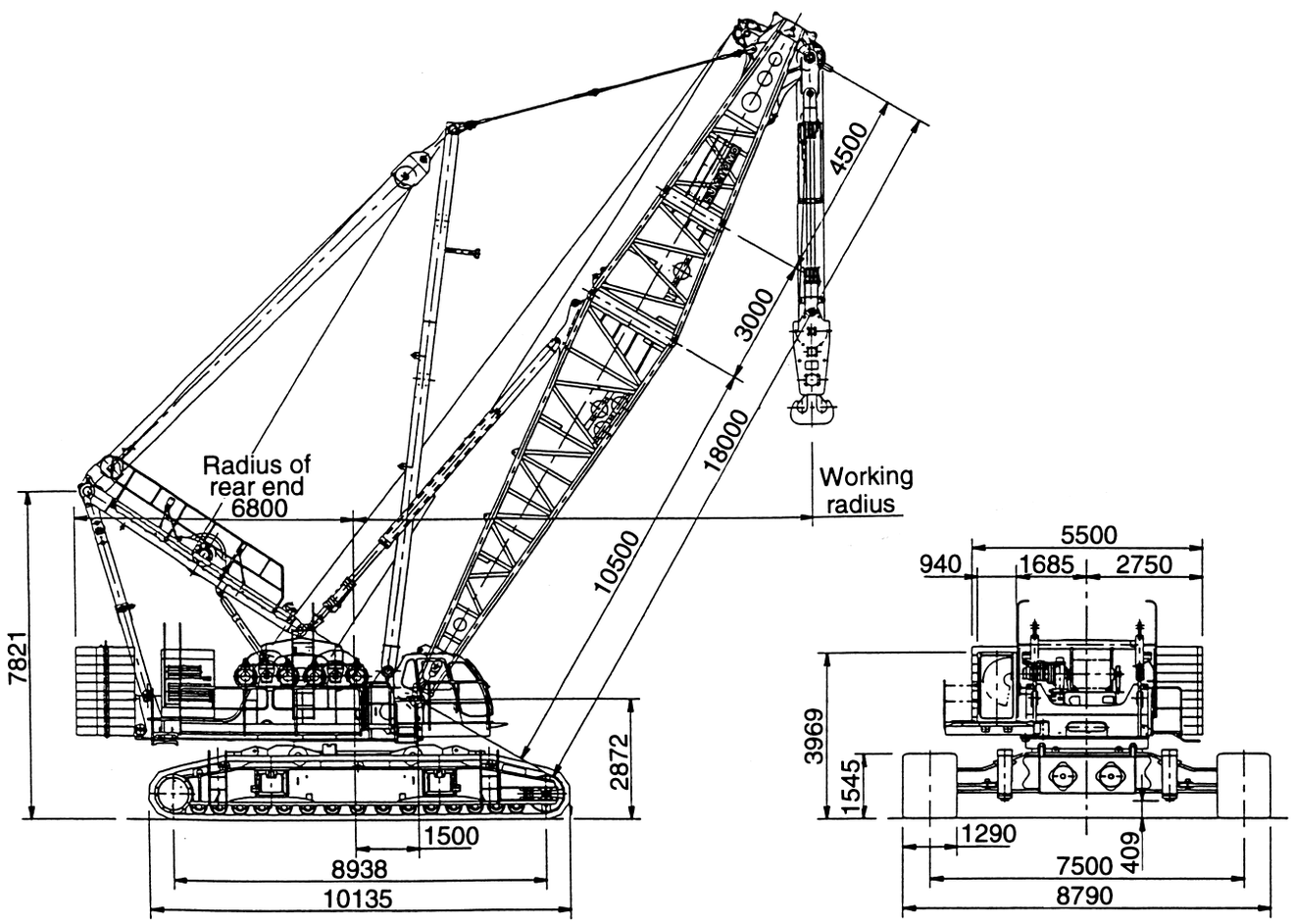
SPECIFICATIONS

HITACHI SUMITOMO

SCX3500

350-M ton Hydraulic Crawler Crane
& Cable Excavator

General Dimensions:



(SA998001)

(in mm)

1st Edition

Specifications

HITACHI SUMITOMO

SCX3500

Basic Machine

Superstructure

UPPER REVOLVING FRAME:
Computer-analyzed design; all-welded, precision machined, robust construction with lug plates to power hydraulically pin sub-frame mounting load hoist ass'y and diesel-hydraulic power pack at four corners. A machined surface provided for mounting on turntable bearing.

SUB-FRAME:
All-melded, precision machined, box type construction. Mounts load hoist assembly of front and rear main operating drum winches, and diesel-hydraulic power pack.

TURNTABLE BEARING WITH INTERNAL SWING GEAR:
Double-row roller type; inner race of turntable bearing with integral, internal swing (ring) gear bolted to carbody frame, and outer race of turntable bearing bolted to upper revolving frame.

CONTROL SYSTEM:
System contains one set of triplicate, and three sets of duplicate tandem valves which direct oil to various machine function and are actuated by control levers via remote controlled hydraulic servo for all motions. Working speeds can be precisely controlled by motorcycle type throttle and conventional type floor levers in cooperation with "SC" controller that varies engine rpm and hyd. pump discharge simultaneously, or varies just hyd. pump discharge while keeping engine rpm. System also takes unique EEPSA (Electrical Engine Pump Sensing Analyzer) to maximizes drum horsepower, and reduces horsepower loss with eliminating the possibility of engine stall.

Pump control system — By "SC" controller that provides two modes of engine-pump control.

MODE I:
The SC Controller is normally programmed to vary the engine speed and pump discharge simultaneously. Simply twisting the grip advances the engine to maximum speed and the hydraulic pumps to maximum flow at the same time. This mode is suitable to precision crane work.

MODE II:
By activating a switch, it is able to vary just the pump discharge by means of the grip throttle, while keeping engine speed fixed. Mode II is convenient for working speed control by grip throttle where the engine is normally run at full throttle.

HYDRAULIC SYSTEM:
System provided with two duplicate tandem variable displacement axial piston pumps and one guadruplicate tandem pump including one variable displacement axial piston pump and one fixed displacement triplicate tandem gear pump for both independent and combined

operations of all functions. Gear pump also used for system valves and cylinder controls.

Main/aux. crane hoist motors — Two each; variable displacement axial piston motor with counterbalance valve and spring-applied/hydraulically released multiple wet-disc type automatic brake.

Boom hoist motor — Two; axial piston type with counterbalance valve and spring-applied/hydraulically released multiple wet-disc type automatic brake.

Third drum motor — Optional extra; axial piston type with counterbalance valve and spring-applied/hydraulically released multiple wet-disc type automatic brake; required when machine operated with luffing towercrane attachments.

Swing motor — Three; axial piston type with spring-applied/hydraulically released multiple wet-disc type manually controlled brake.

Travel motors — Shoe-in design; 2-speed type, axial piston motor with brake valve and spring-applied/hy-draulically released multiple wet-disc type automatic brake.

Independent hyd. circuits — Available in between hyd. circuits of front/rear and boom hoist drum winches.

Hydraulic oil reservoir — 650 liters capacity.

LOAD HOIST ASSEMBLY:

Module-design together with diesel-hydraulic power unit; mounted on sub-frame. This assembly provided with front and rear main operating drums each driven by two independent hydraulic motor of bi-directional, variable displacement axial piston motor through a planetary-and-spur reduction gear units powering the rope drum in either direction for hoisting and lowering load. Each of drum sized in same dimension.

Brakes — Spring-applied, power hydraulically released multiple wet-disc type automatic brake on each motor.

Drums — One piece, parallel grooved lagging with locking ratchet wheel cast integral; mounted on drum shaft through anti-friction bearings.

Drum locks — Electrically operated pawl (w/automatic locking device).

Drum rollers — Available for right cable winding onto drums.

BOOM HOIST ASSEMBLY:

Twin-drum design; driven by two bi-directional, axial piston hydraulic motor through 2-stage planetary reduction gear unit powering the rope drum in either direction for hoisting and lowering boom; mounted on A-frame gantry for a good unit assembling/dis-assembling and transportation altogether.

Brake — Spring-applied, power hydraulically released multiple wet-disc type automatic brake on each motor.

Drum — One piece, twin-designed, parallel grooved lagging with locking ratchet wheel cast integral; bolted to each of planetary reduction gear unit outer case.

Drum lock — Electrically operated pawl (w/automatic locking device).

Drum roller — Available for right cable winding onto drums.

THIRD DRUM WINCH MECHANISM:

Optional extra; driven by bi-directional, axial piston hydraulic motor through 2-stage planetary reduction gear unit powering the rope drum in either direction for hoisting and lowering tower jib; required when machine operated with luffing towercrane attachment. This third drum winch mechanism mounted on an upper part of tower boom bottom section for more safety and easy erection work of luffing towercrane attachment.

Brake — Spring-applied, power hydraulically released multiple wet-disc type automatic brake; provided within hydraulic motor.

Drum — One piece, parallel grooved lagging with locking ratchet wheel cast integral; bolted to planetary reduction gear unit outer case.

Drum lock — Electrically operated pawl (w/automatic locking device).

Drum roller — Available for right cable winding onto drums.

SWING:

Driven by three units of bi-directional, axial piston hydraulic motors through a spur-and-planetary reduction gear unit powering swing pinion. Swing pinion meshes with internal teeth of swing (ring) gear of turntable bearing inner race.

Brakes — Manually controlled; spring-applied, power hydraulically released multiple wet-disc type; provided on each of hydraulic motor.

Constant swing speed mechanism — Provided as std.; available for a better swinging without load shaking.

Lock — Mechanically operated drop pin.

Speed — 1.6min.$^{-1}$ <1.6rpm>.

GANTRY:

A-frame type; raised and lowered by power hydraulic cylinders. Six of pins to upper revolving frame all power hydraulically placed and displaced. Mounts boom hoist drum winch unit.

OPERATOR'S CAB:

Swing-away design; 940mm wide, acoustically treated, all new stamped, automotive type, full-vision, cushion rubber mounted, well-ventilated, full compartment, roomy operator's cab with large curved front window; provided with an arrangement of "SC" control/swing lever, floor type drum control levers, travel control levers, built-in type air-conditioning with defroster fan, sunvisor, sunshade, rear-view mirrors, intermittent window shield wiper with washer on both front and roof windows, and roll-down window on sliding door.

Instrument panel — Contains engine monitoring lamps, display panel of SML-10 Load Moment Limiter, and other necessary controllers and switches; all located at left-hand side of operator.

Operator's seat — Six- plus eleven-way full adjustable reclining seat with both R/H and L/H side arm rests.

Anemometer — Optional extra; recommended for luffing towercrane attachment.

Monitor TV — Optional extra; industrial type.

AM/FM radio — Provided as std.

Fire extinguisher — Optional extra; powder type with 1kg capacity.

CATWALKS AND RAILINGS:
Hitched in place along both sides each of superstructure, engine house and A-frame gantry for easy machinery access.

WIRE REEVING WINCH:
Optional extra; available for crane hoist cable handling ease.

UPPER COUNTERWEIGHT:
Removable; weighs 99ton with a 10-piece steel plate mounted on rear of upper revolving frames. Base counterweight power hydraulically pinned to rear end of upper revolving frame.

ELECTRICAL SYSTEM:
24-volt negative ground system; provided with two maintenance free 12-volt batteries.

LIGHTING SYSTEM:
Includes following lights.
- Two 70 W working lights;
- One 10 W interior cab light.

POWER UNIT:

Make & Model	Mitsubishi 8DC9T-CE
Type	Water-cooled, 4-cycle, direct injection, turbo-charged, diesel, w/inter-cooler
No. of Cylinders	Eight (8)
Bore & Stroke	135 mm × 140 mm
Displacement	16,031 cc
Rated Output	302 kW/2,200 min^{-1} 〈410 ps/2,200 rpm〉
Maximum Torque	1,579 N·m/1,600 min^{-1} 〈161 kgf-m/1,600 rpm〉
Fuel Tank	600 liters

Undercarriage

CARBODY FRAME:
All-welded, precision machined, box type construction; provided with connecting lug plates in four corners to power hydraulically pin axle beams. A machined surface provided for mounting turntable bearing.

CARBODY JACK-UP DEVICE:
This device contains four hydraulic jack cylinders attached on carbody axle beams for disassembling/assembling ease of crawler side frames.

Pontoon — All-welded construction; four pontoons each attached on carbody weight.

Remote control unit — Available to control carbody jack cylinders.

AXLE BEAMS:
All-welded, box construction; Power hydraulically pinned to carbody frame. Axle pin placement/displacement manipulated by means of hydraulic pin placement unit as a std. accessory.

CARBODY WEIGHT:
Removable; weighs 20ton, made of steel scrap with concrete pouring. Ten ton each mounted at front and rear of carbody frame.

CRAWLER SIDE FRAMES:
All-welded, box type construction, precision machined; positioned on axle beam by plate links and held in place with plate shim adjustment per side frame.

Removal cylinders — Available for assisting in removing side frames.

Crawler side steps and railings — Provided at both ends of the frames for easy access to superstructure.

DRIVE SPROCKETS:
Cast steel, heat treated; one per side frame. Track drive sprocket assembly bolt-coupled to 3-stage planetary reduction gear unit outer case as an integral part of shoe-in type traction motor. Sealed between parts of rotation and non-rotation of the motor with floating seal.

IDLER WHEELS:
Cast steel, heat treated; one per side frame. Mounted on two bronze bushings with floating seals for lifetime lubrication.

TRACK ROLLERS:
Fifteen per side frame; each cast steel, double flanged and heat treated. All rollers mounted on two bronze bushings with floating seals for lifetime lubrication.

CARRIER ROLLERS:
Three per side frame; cast steel and heat treated. All rollers mounted on bronze bushing, with floating seals for lifetime lubrication.

TRACKS:
1,290mm wide, heat treated, self-cleaning, multiple hinged track shoes joined by full floating pins; 64 pcs. per side frame.

Track adjustment — By manually adjusted with no. of shim plate provided at each idler wheel block in cooperation with hyd. pin placement unit.

TRAVEL AND STEERING:
Hydrostatic drive; a bi-directional, 2-speed, shoe-in type axial piston hydraulic motor bolt-couples drive sprocket thru 3-stage planetary reduction gear unit outer case at each crawler side frame end for travel and steer. Straight-line travel (forward or reverse), pivot or differential turns, and counter-rotation for spin turns available.

Brake — Spring-applied, hydraulically released multiple wet-disc type automatic brake; located within hydraulic motor. Brakes automatically set when travel levers are in neutral or when engine is shut down.

Travel speed — 1.0km/hr. (High), 0.65km/hr. (Low). **—** based on flat, level and firm supporting surface, and under the conditions that no load must be applied and front-end att. must be the 18.0m basic boom only.

Gradeability — 30% (17°) permissible based on basic machine without front-end attachment.

Safety Devices

SML-10 LOAD MOMENT LIMITER:
This is a fully computerized total safe operation control system, and automatic over-load preventing system as standard equipment.

Construction (standard version) — Comprises (1) load detecting device, (2) boom angle detector, (3) amplifier, and (4) display panel with computerized Micro processing Unit (M.P.U).

Functions — This system functions that if a lifting load reaches a 90% of the rated one specified in the crane capacity chart, an annunciating pre-warning is given; if it is an 100%, a warning is given by red lamp, and annunciating warning, and all peril side motions are automatically stopped. The machine, however, can be operated in safety side motions.

Display panel design — The SML-10 is designed to be able to input the operating conditions/data by setting keys on LCD 1, and to indicate the present lifting conditions/data like “lifting load” , “rated load”, “working radius” “boom angle”, “engine rpm”, “lifting height (opt.)” and so forth on LCD 2 thru LCD 5. Also, the LCD 1 indicates “load ratio”, and letter messages when the machine becomes abnormal.

HOOK OVER-HOIST LIMITING DEVICE:
Limit switch type. Available to prevent hook over-hoisting with functions of automatic drum braking with hydraulic lock, and warnings by red lamp and annunciating alarm.

BOOM OVER-HOIST AND -LOWERING LIMITING DEVICE:
Available in two kinds of devices; one is limit switch located on a part of boom foot for preventing boom over-hoisting, and the other is the safety function of the SML-10 available to automatically prevent boom over-hoisting and -lowering with the functions of automatic drum braking with hydraulic lock, and warnings by red lamp and annunciating alarm. Further boom protection from rapid boom over-hoist by hook over-hoist motion under mal-function of hook over-hoist limiting device is available as one of functions of the SML-10.

BOOM BACKSTOPS:
Dual; telescopic design with spring buffers.

DUAL BOOM OVER-HOIST LIMITING DEVICE:
Additional limit switch located on boom backstops; this is as a further safety device for redundant boom protection.

SWING LOCK:
Mechanically operated drop pin; available to firmly lock superstructure in four positions of facing front or rear or left or right to undercarriage.

DRUM LOCKS:
Electrically operated pawl locks; available on front and rear main, boom hoist and optional 3rd drums. All drum pawl-lockings are automatically done when control lever returns into neutral position.

BOOM ANGLE INDICATOR:
Pendulum type; mounted on right-hand side of bottom section of crane main boom.

HOOK LATCH:
Provided on every kinds of hook to prevent out of place of cable from hook.

LEVEL GAUGES:
Bubble type; both located on operator’s cab floor of superstructure, and on a part of undercarriage.

LEVER LOCKS:
Provided on drum control levers to lock in neutral position, and/or to prevent stroke to either direction of lowering or hoisting side.

SWING ALARM:
This is by buzzer, and flasher lamps located on both sides of machinery cab.

ANNUNCIATING ALARMS:
This is one of functions of the SML-10; provided with ten and some kinds of alarms.

SPEED SLOWDOWN DEVICE:
This is for speed slowdown of hoisting and lowering motions of crane main boom (and/or tower jib in case of luffing towercrane att.) which are available just before automatic stopping to prevent a shock.

BOOM LIVE MAST LIMIT SWITCH:
Available to avoid a flapping of boom live mast when assembling/disassembling boom bottom section.

SWING BRAKE LAMP:
Provided on operator’s cab instrument panel; this is available to confirm whether or not swing brake is applied.

SIGNAL HORN:
Available as warning just before every kinds of motions from operator.

FOOL PROOF SHUT-OFF SYSTEM:
Located in the cab exit; this is available to automatically deactives and locks hydraulic system.

TRAVEL ALARM:
Buzzer warns when travel motion is initiated.

LIFTING HEIGHT METER:
Available to indicate lifting height above ground or depth below ground on LCD 2 of SML-10 Load Moment Limiter display panel. Also, hook hoisting speed slowdown function is available just before automatic stopping at a desired height under hook height setting before operation.

ENGINE SERVICE MONITOR:
Available for checking engine operating conditions like fuel level, engine oil temp., radiator coolant level, and so on.

MICROPHONE & LOUD-SPEAKER:
This is for operator's convenience for loud speaking.

DRUM MIRROR:
Available for checking rope winding onto front and/or rear drum(s).

EMERGENCY MACHINE STOP BUTTONS:
Four; three located on super-structure, and the other one located on center rotary joint of carbody frame. Available when it is necessary to stop all machine motion.

REAR VIEW MIRRORS:
Two each provided on front-left and-right corners of super-structure.

THREE COLOR PERCENTAGE INDICATOR:
Optional extra; this is with three colours of Green, Yellow and Red. Each colour indicates the load percentage to rated capacity; Green shows less than 90% as safety, Yellow shows 90 to 99% as marginal, and Red shows over 100% as over-loading. As further function, Red lamp comes on automatically when operator cuts off safety device switch absent-mindedly.

DRUM LIGHT:
Optional extra; available for checking front/rear drum rope winding when night operation.

RADIOPHONE:
Optional extra; available for a good correspondence among operator, signalman and other worker (or between operator and signalman).

MONITOR TV SYSTEM:
Optional extra; this is also for operator's convenience for checking hook and load position thru monitor TV in operator's cab.

ANNUNCIATING SWING ALARM:
Optional extra; this is additional alarm for swing motion with a caution voice of "now swing, keep clear please!".

AIRCRAFT WARNING LIGHT:
Optional extra; fitted on top of liftcrane boom/tower jib to give a warning to aircrafts by a 100W red-color light.

AUX. CRANE HOOK OVER-HOIST LIMITING DEVICE:
Optional extra; this is available for auxiliary crane hoist with optional aux. short jib. Performs the same function as that of "Hook over-hoist limiting device" mentioned before.

In addition to the above, following safety devices are standard for luffing towercrane attachment.

TOWER JIB ANGLE DETECTOR:
This is one of key safety device in a case of luffing towercrane attachment.

TOWERCRANE LOAD DETECTOR:
This is also important safety device when luffing towercrane attachment is required.

TOWER JIB OVER-HOIST AND -LOWERING LIMITING DEVICE:
Performs all the same function as that of "Boom over-hoist and -lowering limiting device" stated before.

TOWER JIB HOOK OVER-HOIST LIMITING DEVICE:
Performs the same function as that of "Hook over-hoist limiting device" described before.

TOWERCRANE ATT. SELF-ERECTION MODE:
This is an internal, integral mode as one of key function of the SML-10 for safe self-erection and -laying down of luffing towercrane attachment without fail.

THIRD DRUM LOCK:
Provided with automatic pawl-locking device like other drum pawl-lockings.

TOWER JIB BACKSTOPS:
Dual; telescopic design with spring buffers.

DUAL TOWER JIB OVER-HOIST LIMITING DEVICE:
Additional limit switch located on tower jib backstops; this is as a further safety device for redundant tower jib protection.

REAR POST BACKSTOPS:
Dual; round tubular design with spring buffers at front end, and grease cylinders at rear end.

Liftcrane 350 metric tons

CRANE BOOM:

Lattice construction, round tubular main chords, alloy, hi-ten steel, with bracing of round steel tubing.

Boom connections ..... In-line pin connections at 2.3m deep by 2.5m wide for heavy-duty booms, and 1.6m deep by 1.85m wide for light-duty booms.

Basic boom ..... Three-piece, 18.0m basic length; 10.5m bottom section, 3.0m tapered boom extension and 4.5m tapered crane top section. Boom foot pin placed and displaced by hyd. pin placement unit.

Boom head machinery ..... Seven head sheaves and two guide sheaves mounted on anti-friction bearings.

Add. head sheave block ..... Optional extra; pinned to boom head shaft. Nine sheaves each mounted on anti-friction bearings. This required when lifting load exceeds 180ton.

Heavy-duty boom extensions ..... Optional extra; available in 6.0m and 12.0m lengths with dual pendants.

Light-duty boom extension ..... Optional extra; available in 6.0m and 12.0m lengths with dual pendants.

Maximum boom length 96.0m

AUXILIARY SHORT JIB:

Optional extra; all-welded construction having single sheave head machinery. Pinned to 4.5m tapered top section. Available for 13.5ton lift as maximum with single part hoist line.

HOOK BLOCKS:

350t, eight sheaves plus a 9-hanger sheave block with duplex hook ..... Optional extra.

180t, eight sheaves with duplex hook ..... Optional extra; available from a 350ton hook block by dismounting a nine-hanger sheave block.

100t, five sheaves with duplex hook ..... Optional extra.

65t, three sheaves ..... Optional extra.

13.5t, ball hook ..... Optional extra.

BOOM LIVE MAST:

All-welded, box type construction, pinned in front of upper revolving frame. This mast attaches bridle with larger sheaves of a 21.4 D/d ratio for 28-part boom hoist rope reeving. Foot pin placed and displaced by hyd. pin placement unit.

MID-POINT SUSPENSION CABLE:

Optional extra; required when boom length exceeds 90.0m

BAIL AND BRIDLE:

All-welded construction; provided with larger sheaves of a 21.4 D/d ratio on both bail and bridle for 28-part boom hoist rope reeving. Bail pinned to A-frame gantry, and bridle pinned to boom live mast.

DRUM DATA:

Drum	Root dia.	Type	Line speed (Hoisting, Lowering)	Cable
Front (main crane hoist)	672mm	Parallel grooved	130mpm	28mm
Rear (aux. crane hoist)	672mm	Parallel grooved	130mpm	28mm
Boom hoist	R/H - 541mm L/H - 528mm	Parallel grooved	43mpm × 2-line	24mm

Notes:

1. Line speed is based on drum first layer and rated engine rpm.
2. Hoisting line speed varies under load and operating conditions.

HOIST REEVING:

	Main crane hoist															
No. of part line	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Max. load (ton)	350.0	348.1	339.9	331.5	323.0	314.4	305.5	296.5	287.3	277.9	268.3	258.5	248.5	238.3	227.9	217.3

	Main crane hoist																Aux. crane hoist
No. of part line	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	1
Max. load (ton)	208.4	195.4	185.9	174.3	162.5	150.4	138.0	125.5	112.6	99.5	86.1	72.5	58.6	44.4	29.9	15.1	13.5

CABLES:

For front drum·····Nuflex rope with construction of “PS19+39×P7”, spin-resistant type, 28mm dia./660m long, breaking load 77.0ton.

For rear drum·····Optional extra; Nuflex rope with construction of “PS19+39×P7”, spin-resistant type, 28mm dia./660m long, breaking load 77.0ton.

For boom hoist drum·····Sraf rope with construction of “IWRC 6×PWS (31)”, 24mm dia./600m long, breaking load 48.0ton.

WORKING WEIGHT:

With 18.0m basic boom, 99ton upper counterweight, 20t carbody weight, 1,290mm wide track shoes and optional 350ton hook block: Approx. 294ton.

GROUND PRESSURE:

119.6kPa <1.22kg/cm^2> under a 294ton working weight mentioned above.

Liftcrane Capacities

■ w/ Add. Head Sheave Block

Boom length (m) / Working radius (m)	18.0	24.0	30.0	36.0
5.0	350.0			
6.0	275.0	259.7/6.4		
7.0	239.4	259.7	202.3/7.4	
8.0	203.5	228.0	200.0	192.0/8.5
9.0	172.4	196.2	196.2	192.0
10.0	150.1	169.4	169.4	169.4
12.0	115.6	131.8	136.9	137.9
14.0	92.3	106.4	110.0	110.0
16.0	71.4	88.3	91.2	91.2
18.0		74.5	77.6	77.4
20.0		63.5	67.3	67.1
22.0		54.5	59.3	59.0
24.0		51.8/22.6	52.8	52.4
26.0			47.5	47.2
28.0			42.4/27.8	42.7
30.0				39.0
34.0				33.7/33.0

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■ w/o Add. Head Sheave Block

Boom length (m) / Working radius (m)	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0	66.0	72.0	78.0	84.0	90.0	96.0
5.0	180.0													
6.0	180.0	180.0/6.4												
7.0	180.0	180.0	180.0/7.4											
8.0	180.0/8.7	180.0	180.0	180.0/8.5										
9.0	172.4	180.0/9.6	180.0/9.5	180.0/9.5	168.0/9.5									
10.0	150.1	169.4	169.4	169.4	168.0	131.8/10.6	130.8/11.6							
12.0	115.6	131.8	136.9	137.0	137.6	131.8	130.8	105.1/12.7	104.4/13.7					
14.0	92.3	106.4	110.0	110.0	109.7	109.6	109.3	105.1	104.0	79.3/14.7	67.5/15.8			
16.0	71.4	88.3	91.2	91.2	90.7	90.6	90.4	89.8	85.7	76.6	67.4	54.0/16.8	46.9/17.9	
18.0		74.5	77.6	77.4	77.0	76.9	76.6	76.0	75.5	72.4	66.4	54.0	46.8	38.9/18.9
20.0		63.5	67.3	67.1	66.6	66.5	66.1	65.5	65.0	64.6	61.3	52.8	45.7	38.3
22.0		54.5	59.3	59.0	58.4	58.3	58.0	57.4	56.8	56.3	55.9	49.0	42.2	37.3
24.0		51.8/22.6	52.8	52.4	52.0	51.7	51.4	50.8	50.2	49.7	49.3	45.4	39.6	34.6
26.0			47.5	47.2	46.6	46.4	46.0	45.4	44.8	44.3	43.8	42.1	37.2	32.4
28.0			42.4/27.8	42.7	42.0	41.9	41.4	40.8	40.2	39.7	39.2	38.9	34.9	30.4
30.0				39.0	38.3	38.0	37.6	37.0	36.4	35.9	35.4	34.9	32.6	28.7
34.0				33.7/33.0	32.2	32.0	31.4	30.8	30.1	29.6	29.2	28.7	28.3	25.0
38.0					27.6	27.4	26.8	26.0	25.4	24.8	24.4	23.9	23.5	21.5
42.0					27.4/38.2	23.9	23.0	22.3	21.7	21.1	20.6	20.2	19.7	18.7
46.0						22.7/43.4	20.2	19.4	18.7	18.1	17.5	17.0	16.6	16.1
50.0							18.1/48.6	16.9	16.2	15.6	15.0	14.5	14.0	13.4
54.0								14.9/53.8	14.2	13.6	13.0	12.4	12.0	11.4
58.0									12.5	11.8	11.2	10.6	10.1	9.5
62.0									12.0/59.0	10.2	9.6	9.0	8.5	7.9
66.0										9.2/64.2	8.3	7.3	7.2	6.2
70.0											7.2/69.3	6.0	6.0	4.8
74.0													4.9	3.4

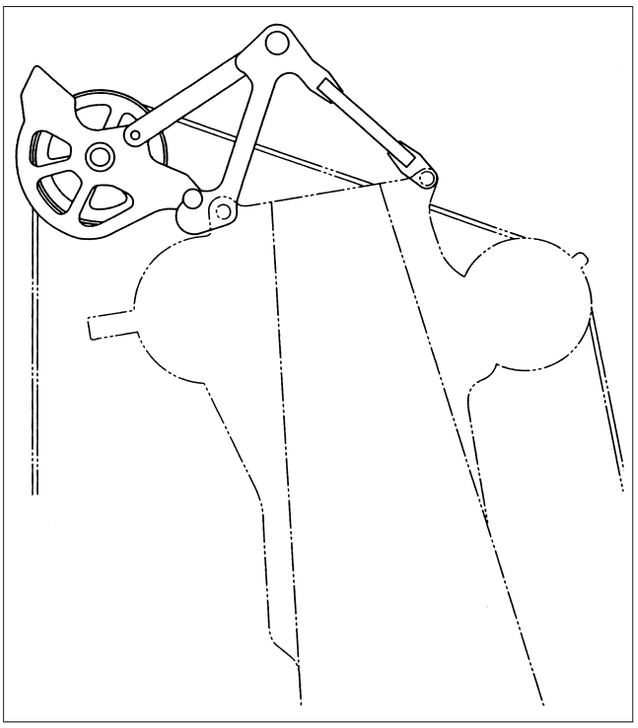
(EC498003)

Notes — Liftcrane capacities

1. Capacities included in these charts are the maximum allowable, and are based on machine standing level on firm supporting surface under ideal job conditions.
2. Capacities are in metric tons, and are not more than 78% of minimum tipping loads, or based on the other factor of machine structural strength limitation.
3. Capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deduction from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, or other suspended gear.
   Hook block weight is as follows:
   350t·····6.1ton 180t ·····4.9ton 100t ·····2.2ton
   65t·····1.4ton 13.5t ·····0.5ton
4. All capacities are rated for 360° swing.
5. Least stable rated condition is over the side.
6. Boom live mast is required for all operating conditions.
7. Counterweight arrangement must be 99ton on superstructure and 20ton on carbody frame.
8. Mid-point suspension cable is required when boom length exceeds 90.0m.
9. Attachment must be erected and lowered over the ends of the crawler mounting.
10. Main boom length must not exceed 96.0m.
    Maximum boom length when mounting auxiliary short jib is 90.0m.
11. When handling load off main boom head sheaves in case of mounting auxiliary short jib, a 900kg plus 13.5t hook block weight deduction in liftcrane capacities must be made.
12. Boom combination shall be in accordance with manufacture's standard described here in "Boom Combination Diagram".

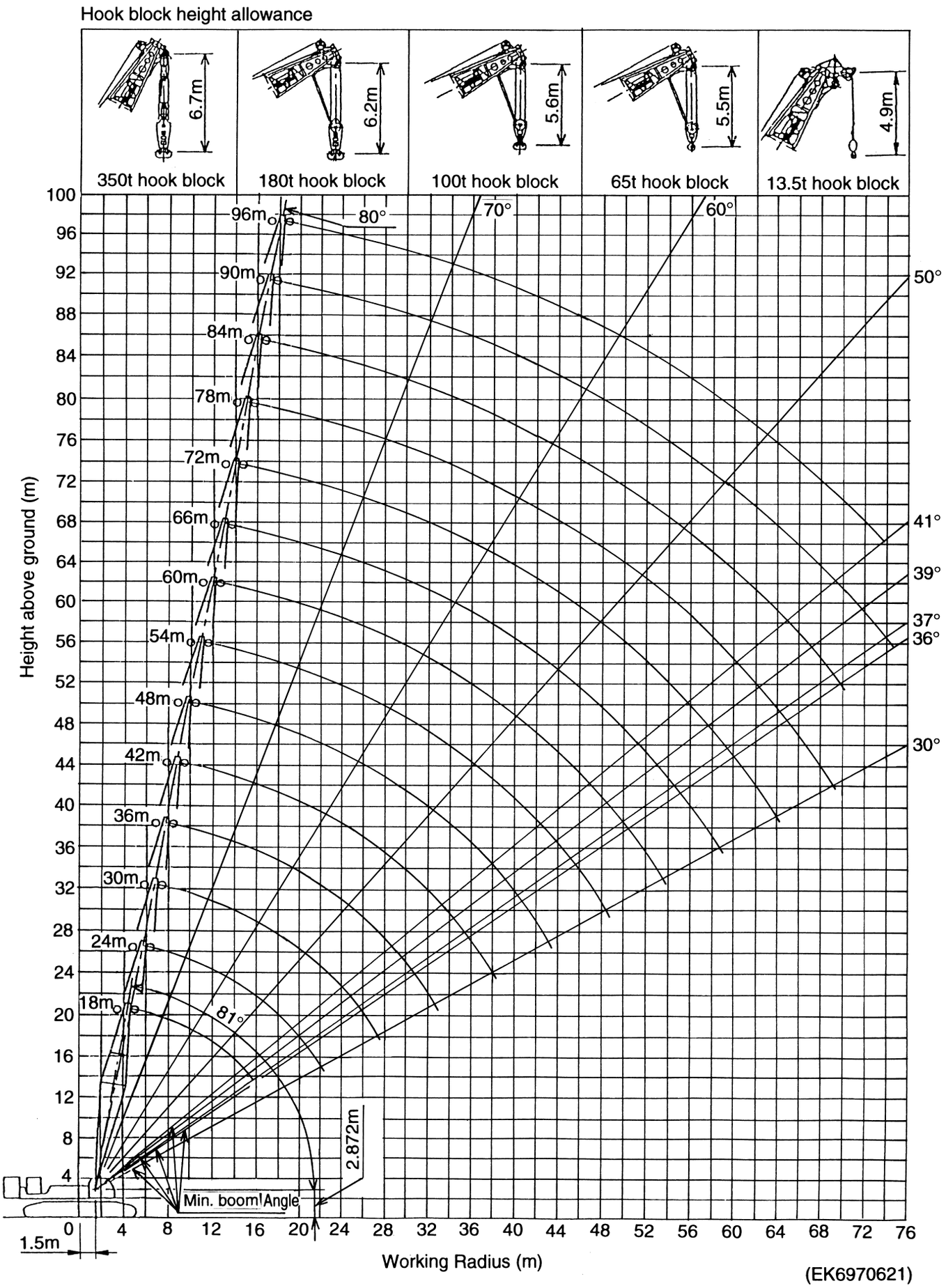
SCX3500 AUXILIARY SHORT JIB CAPACITIES: Max. 13.5ton

Note: Jib capacities equal the figures of the liftcrane capacities for boom length up to 90.0m unless restricted by the maximum jib capacity shown above.

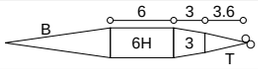
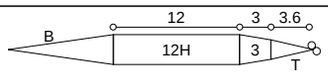
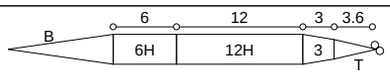
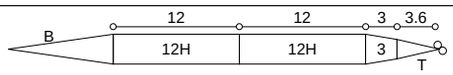
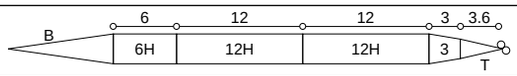
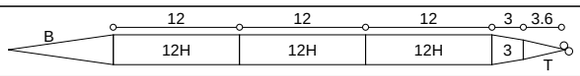
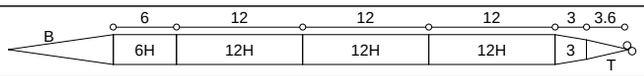
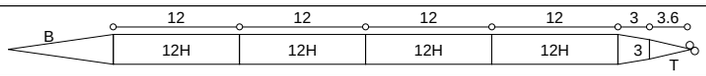
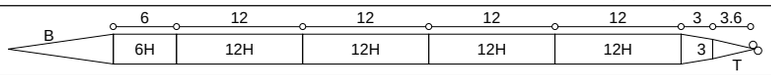
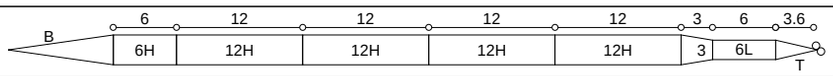
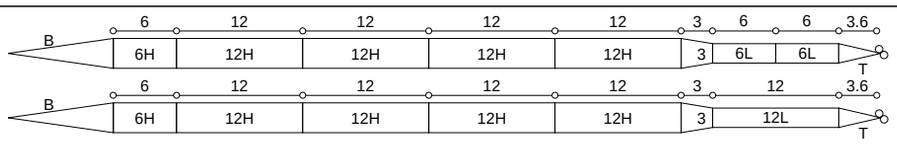
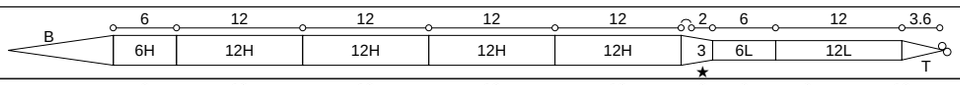
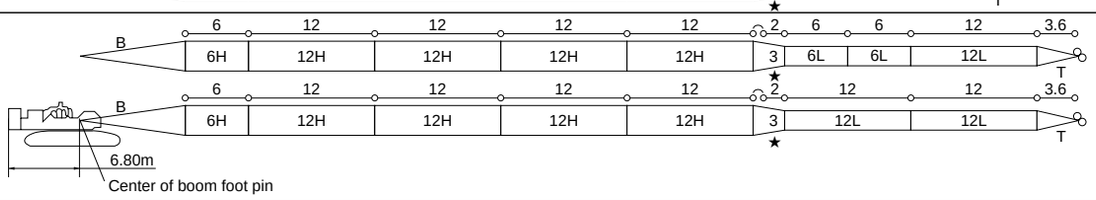


Auxiliary short jib (Option)

Liftcrane Working Ranges



Boom Combination Diagram

Boom length (m)	Boom configuration
18.0	
24.0	
30.0	
36.0	
42.0	
48.0	
54.0	
60.0	
66.0	
72.0	
78.0	
84.0	
90.0	
96.0	

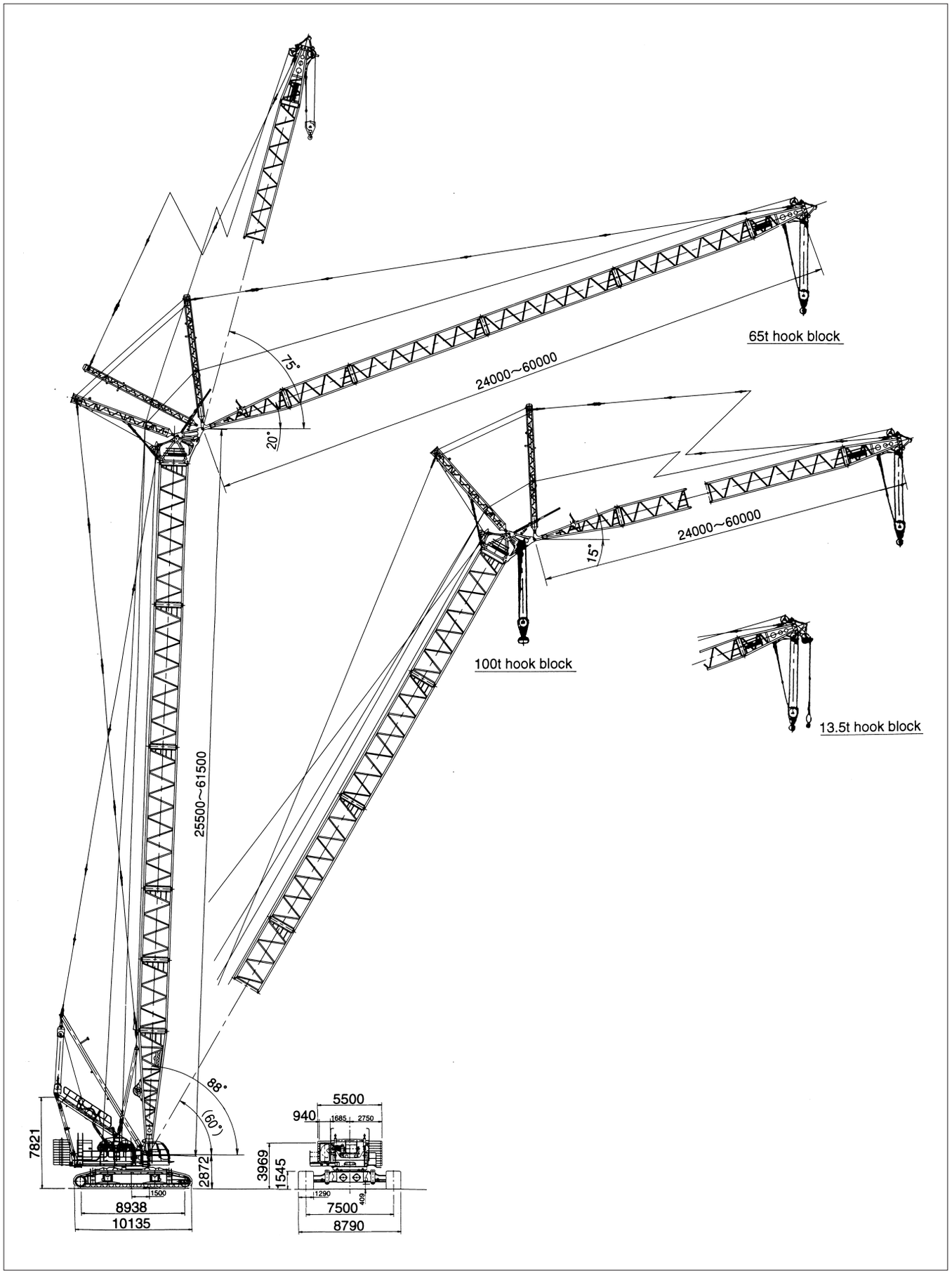
Note:
The meanings of figures and symbols shown above are as follows:

- B : 10.5m bottom section
- 6H : 6.0m heavy-duty boom extension
- 12H : 12.0m heavy-duty boom extension
- 3 : 3.0m tapered boom extension
- 6L : 6.0m light-duty boom extension
- 12L : 12.0m light-duty boom extension
- T : 4.5m tapered top section
- 3 ★ : Midpoint suspension cable installing position; it is required to install midpoint suspension cable when boom length exceeds 90.0m.

: Extender cables w/two dual of 42mm dia.; the figure each shows the length as follows:

12 : 12.00m
6 : 6.00m
3 : 3.00m
3.6: 3.65m
2 : 2.10m

Luffing Towercrane General Arrangement



Luffing Towercrane 100 metric tons

TOWER BOOM:

Lattice construction, round tubular main chords, alloy, hi-ten steel, with bracing of round steel tubing.

Tower boom connections ····· In-line pin connections at 2.3m deep by 2.5m wide.

Tower head section ····· 3.0m long, lattice construction; pinned to top of tower boom. This section pins tower jib bottom section and a 8.9m rear post. Provided with 4-sheave head machinery for 100ton lift, and two guide sheaves for hoist ropes.

Tower boom length ····· Available from min. 25.5m to max. 61.5m.

Tower boom luffing angle ····· Available from 88° thru 60° steplessly.

*Tower boom extensions of 6.0m and 12.0m long, and bottom section of 10.5m long as necessary other than the above for completing the tower boom are available from heavy-duty boom extensions and bottom section of the CRANE BOOM mentioned in to “Crane 350metric tons”, and vice-versa.

TOWER JIB:

Lattice construction, round tubular main chords, alloy, hi-ten steel, with bracing of round steel tubing.

Tower jib connections ····· In-line pin connections at 1.6m deep by 1.85m wide.

Basic tower jib ····· Three-piece, 24.0m basic length; 7.5m bottom section, one 6.0m tower jib extension and 10.5m tower jib top section.

Tower jib top head machinery ····· Four head and two guide sheaves mounted on anti-friction bearings.

Tower jib extensions ····· Available in 6.0m and 12.0m lengths with pendants.

Maximum tower jib length ····· 60.0m.

Maximum tower boom plus jib length ····· 61.5m + 60.0m.

Tower jib angle ····· Available from 15° thru 75° (to ground).

*Tower jib extensions of 6.0m and 12.0m shown above as necessary for completing tower jib are common to light-duty boom extensions of the CRANE BOOM mentioned in to “Crane 350metric tons”.

AUXILIARY SHORT JIB:

Pinned to a 10.5m tower jib top section. Available for 13.5ton lift as maximum with single part hoist line. Common to that of liftcrane attachment.

FRONT AND REAR POSTS:

10.4m (front)/8.9 (rear) long, all-welded lattice construction; pinned to tower jib bottom section and tower head section respectively. The posts each provided with sheave machinery for 20-part rope reeving between posts, and rope guide sheave machinery for towercrane hoist cable.

HOOK BLOCKS:

Both 100/65ton hook block and 13.5ton ball hook to be necessary for luffing towercrane operation are available from the HOOK BLOCKS mentioned in to “Crane 350metric tons”.

DRUM DATA:

Drum	Root dia.	Type	Line speed (Hoisting, Lowering)	Cable
Front (aux. crane hoist)	672mm	Parallel grooved	130mpm	28mm
Rear (towercrane hoist)	672mm	Parallel grooved	130mpm	28mm
Boom hoist (tower boom hoist)	R/H - 528mm L/H - 541mm	Parallel grooved	43mpm × 2-line	24mm
Third (tower jib hoist)	528mm	Parallel grooved	43mpm	24mm

Notes:

1. Line speed is based on drum first layer and rated engine rpm.
2. Hoisting line speed varies under load and operating conditions.

HOIST REEVING:

	Towercrane hoist								Aux. crane hoist
No. of part line	8	7	6	5	4	3	2	1	1
Max. load (ton)	100.0	99.5	86.1	72.5	58.6	44.4	29.9	15.1	13.5

CABLES:

For front drum……Nuflex rope with construction of “PS19+39×P7”, spin-resistant type, 28mm dia./660m long, breaking load 77.0ton.

For rear drum ……Nuflex rope with construction of “SP19+39×P7”, spin-resistant type, 28mm dia./660m long, breaking load 77.0ton.

For boom hoist drum……Sraf rope with construction of “IWRC 6×PWS (31)”, 24mm dia./600m long, breaking load 48.0ton.

For third drum……XP rope with construction of “IWRC 6×PWS (31)”, 24mm dia./540m long, breaking load 42.5ton.

WORKING WEIGHT:

With 61.5m tower boom, 60.0m tower jib, 99ton upper counterweight, 20ton carbody weight, 1,290mm wide track shoes and 100t hook block: Approx. 330ton.

GROUND PRESSURE:

134.3kPa <1.37kg/cm^2> under a 330ton working weight mentioned above.

Luffing Towercrane Capacities

■ w/25.5m Tower

Jib length (m)	24				30				36				42		
Tower angle (°) / Working radius (m)	88	80	70	60	88	80	70	60	88	80	70	60	88	80	
10.0	100.0/11.7														
12.0	100.0				93.0/13.3										
14.0	97.0				91.9				90.0/14.8						
16.0	87.9				87.9				85.3				71.0/16.4		
18.0	77.4	68.0/18.4			77.3				76.7				67.9		
20.0	69.2	67.2			68.6	60.0/20.7			68.0				64.2		
22.0	62.6	59.6			61.6	59.2			60.9	53.0/23.0			60.4		
24.0	56.7	53.2			56.0	52.8			54.9	52.3			54.3	47.0/25.4	
26.0	49.0	43.0	41.0/26.2		51.0	47.6			47.5	47.0			49.2	46.6	
28.0	40.8/27.5	40.0	40.0		46.4	43.2	37.0/29.4		43.0	42.6			44.9	42.2	
30.0		39.8	37.3	31.0/33.2	42.4	36.5	36.5		40.0	38.9	31.0/32.7		41.3	38.5	
34.0		38.0/31.6	32.0	30.6	31.9/33.2	30.7	30.7	26.6/37.3	33.5	32.9	30.7		35.4	32.6	
38.0			30.4/35.8	25.5		30.3/37.4	27.9	26.1	27.7	25.9	25.9	22.6/41.4	29.9	28.1	
42.0				25.0/39.6			24.7/41.6	22.8	25.7/38.8	24.8	23.1	22.2	25.2	21.8	
46.0								20.5/45.4		24.7/43.2	21.1	19.6	21.0/44.4	20.4	
50.0											20.2/47.4	16.4		20.4/49.0	
54.0												16.4/51.2			
58.0															
62.0															
66.0															
70.0															
74.0															
78.0															
82.0															

■ w/31.5m Tower

Jib length (m)	24				30				36				42		
Tower angle (°) / Working radius (m)	88	80	70	60	88	80	70	60	88	80	70	60	88	80	
10.0	94.0/11.9														
12.0	94.0				93.0/13.5										
14.0	91.9				91.9				89.0/15.0						
16.0	87.9				87.9				86.2				68.0/16.6		
18.0	83.0	67.0/19.4			82.7				78.8				66.7		
20.0	71.9	66.9			71.7	59.0/21.7			71.3				64.5		
22.0	63.3	59.0			63.2	58.6			62.8				62.3		
24.0	56.5	52.6			56.4	52.2			56.0	47.0/24.1			56.1		
26.0	50.8	46.7			50.8	47.0			50.4	46.5			50.5	42.0/26.4	
28.0	42.8/27.7	42.1	37.0/28.2		46.1	42.7			45.8	42.1			45.9	41.7	
30.0		39.9	36.3		42.2	38.0	31.0/31.5		41.9	38.4			41.9	38.0	
34.0		36.1/32.6	31.6	25.5/36.2	34.2/33.4	33.5	30.3		35.7	32.5	26.0/34.8		35.7	32.1	
38.0			27.5/37.8	25.2		28.5	26.1	22.1/40.3	30.6	28.0	25.5		30.8	27.6	
42.0				21.1		28.0/38.4	22.7	21.6	28.7/39.0	24.6	22.2	19.2/44.4	26.6	24.0	
46.0				21.1/42.6			22.0/43.6	18.2		23.6/44.2	19.7	18.5	23.6/44.6	21.8	
50.0								17.7/48.4			18.4/49.4	16.4		19.6/50.0	
54.0												13.6			
58.0												13.6/54.2			
62.0															
66.0															
70.0															
74.0															
78.0															
82.0															

42		48				54				60				Jib length (m)
70	60	88	80	70	60	88	80	70	60	88	80	70	60	Tower angle (°) / Working radius (m)
														10.0
														12.0
														14.0
		55.0/17.9												16.0
		55.0				48.0/19.5								18.0
		53.9				48.0				39.0/21.0				20.0
		52.5				44.9				38.7				22.0
		51.1				41.9				37.8				24.0
		48.5	42.0/27.7			39.3				36.8				26.0
		44.1	41.7			36.9				35.4				28.0
		40.3	38.0			34.8	32.0/30.1			34.0	32.0/32.4			30.0
26.0/36.0		34.1	32.0			32.2	31.6			32.0	31.1			34.0
25.9		29.5	27.6	22.0/39.2		28.1	27.3			27.5	26.5			38.0
21.8	19.5/45.5	25.1	24.2	21.9		24.6	23.9	19.0/42.5		23.5	22.9	19.0/45.8		42.0
20.2	19.1	21.4	21.4	19.8	16.6/49.6	21.3	20.8	18.7		20.6	20.0	18.1		46.0
18.4	17.0	17.1	16.9	16.9	16.4	18.3	17.2	17.2	14.2/53.7	17.7	16.5	15.9		50.0
16.8/53.2	15.0	16.9/50.1	16.0	15.9	14.6	15.7	14.2	14.2	14.1	15.2	14.7	14.7	12.0/57.8	54.0
	13.9/57.0		16.0/54.8	14.3	13.0	13.9/55.7	13.5	13.5	12.6	13.0	12.2	12.2	11.8	58.0
				13.9/59.0	10.7		13.5/60.6	12.5	11.2	11.1/61.3	10.8	10.8	10.6	62.0
					10.7/62.8			11.5/64.8	9.1		10.5	10.0	9.5	66.0
									9.1/68.6		10.0/66.4	8.8	8.3	70.0
												8.0/70.6	6.6	74.0
													6.6/74.4	78.0
														82.0

42		48				54				60				Jib length (m)
70	60	88	80	70	60	88	80	70	60	88	80	70	60	Tower angle (°) / Working radius (m)
														10.0
														12.0
														14.0
														16.0
		54.5/18.1				48.0/19.7								18.0
		53.7				47.9				39.0/21.2				20.0
		52.5				45.2				38.7				22.0
		51.3				42.4				37.8				24.0
		49.7				39.7				36.8				26.0
		45.5	38.0/28.8			37.3				35.0				28.0
		41.6	37.5			35.1	32.0/31.1			33.8	31.0/33.5			30.0
		35.2	31.6			31.4	31.1			31.3	30.6			34.0
22.0/38.0		30.3	26.8	22.0/41.3		28.4	26.6			27.0	26.1			38.0
21.7		26.5	23.5	21.1		25.8	23.3	19.0/44.6		23.5	22.5			42.0
19.1	16.6/48.5	22.6	20.7	18.6		22.5	20.6	18.0		20.6	19.6	16.0/47.8		46.0
17.8	15.9	19.3	18.6	16.5	14.1/52.6	19.4	18.4	16.3		18.0	17.2	15.1		50.0
15.7	14.2	19.0/50.3	17.1	14.8	13.5	16.6	15.4	14.6	12.1/56.7	15.7	15.0	14.3		54.0
15.0/55.2	11.8		16.3/55.8	13.7	12.1	15.2/55.9	14.9	13.2	11.6	13.9	13.0	12.7	10.1/60.8	58.0
	11.7/60.0			12.6/61.0	10.0		13.6/61.6	11.9	10.3	12.1/61.6	12.0	11.3	9.7	62.0
					9.7/65.8			10.7	9.2		11.0	10.1	8.6	66.0
								10.0/66.8	7.7		10.5/67.4	9.0	7.6	70.0
									7.3/71.6			8.4/72.6	6.3	74.0
													6.0/77.4	78.0
														82.0

■ w/37.5m Tower

Jib length (m)	24				30				36				42	
Tower angle (°) / Working radius (m)	88	80	70	60	88	80	70	60	88	80	70	60	88	80
10.0														
12.0	93.0/12.1				93.0/13.7									
14.0	91.9				91.9				88.0/15.2					
16.0	87.9				87.9				86.6				68.0/16.8	
18.0	82.5				82.3				78.8				67.1	
20.0	71.5	59.0/20.4			71.3				70.9				64.8	
22.0	63.0	58.2			62.8	52.0/22.8			62.4				62.5	
24.0	56.2	51.9			56.0	51.5			55.7	46.0/25.1			55.8	
26.0	50.5	46.8			50.5	46.4			50.1	45.8			50.2	42.0/27.5
28.0	45.9/27.9	43.5			45.9	42.1			45.5	41.5			45.6	41.1
30.0		37.7	31.0/30.3		41.9	38.5	30.0/33.5		41.6	37.9			41.7	37.5
34.0		34.2/33.7	30.6		35.7/33.6	33.6	29.2		35.4	32.1	25.0/36.8		35.5	31.6
38.0			24.6	20.0/39.2		28.9	26.1		30.7	27.6	24.5		30.7	27.2
42.0			24.5/39.9	19.8		27.5/39.5	21.5	18.4/43.3	29.2/39.2	23.7	21.3		27.0	23.6
46.0				18.5/45.6			20.3/45.7	17.9		22.5/45.3	19.6	15.9/47.4	22.5/44.9	21.7
50.0								15.3			16.4	15.2		18.8
54.0								14.9/51.4			16.0/51.5	13.2		18.0/51.1
58.0												12.4/57.2		
62.0														
66.0														
70.0														
74.0														
78.0														
82.0														

■ w/43.5m Tower

Jib length (m)	24				30				36				42	
Tower angle (°) / Working radius (m)	88	80	70	60	88	80	70	60	88	80	70	60	88	80
10.0														
12.0	93.5/12.3				93.0/13.9									
14.0	93.0				93.0				88.0/15.5					
16.0	91.9				86.6				86.6				69.0/17.0	
18.0	82.0				78.8				78.8				68.4	
20.0	71.1	58.0/21.5			70.9				70.5				65.2	
22.0	62.6	57.4			62.4	51.0/23.8			62.0				62.1	
24.0	55.8	51.2			55.7	50.8			55.2				55.3	
26.0	50.2	46.1			50.1	45.7			49.7	41.0/26.2			49.8	
28.0	45.1	41.9			45.5	41.5			45.2	40.9			45.3	37.0/28.5
30.0	44.3/28.1	38.0	29.0/32.3		41.6	37.9			41.3	37.3			41.4	36.8
34.0		33.2	28.5		35.4/33.8	33.1	25.0/35.6		35.1	31.5			35.2	31.1
38.0		32.5/34.7	24.3			27.5	24.1		30.3	27.1	21.0/38.9		30.5	26.7
42.0			22.3/41.9	16.2/42.2		26.2/40.5	21.9		28.7/39.4	23.5	20.3		26.7	23.2
46.0				16.0			18.1	13.8/46.3		21.5	17.8		23.3/45.1	21.4
50.0				15.7/48.6			18.0/47.7	13.8		20.0/46.3	15.2	13.1/50.4		17.9
54.0								12.2			15.0/53.5	12.4		17.0/52.1
58.0								12.2/54.4				10.2		
62.0												10.2/60.2		
66.0														
70.0														
74.0														
78.0														
82.0														

42		48				54				60				Jib length (m)
70	60	88	80	70	60	88	80	70	60	88	80	70	60	Tower angle (°) / Working radius (m)
														10.0
														12.0
														14.0
														16.0
		54.5/18.3				48.5/19.9								18.0
		53.4				48.5				39.0/21.5				20.0
		52.5				45.8				38.7				22.0
		51.6				42.9				37.8				24.0
		49.8				40.1				36.8				26.0
		45.2	37.0/29.8			37.6				34.0				28.0
		41.3	36.9			35.4	31.0/32.2			32.5				30.0
		35.1	31.1			31.7	30.6			30.0	26.0/34.5			34.0
21.0/40.1		30.3	26.6			28.6	26.2			27.0	25.6			38.0
20.8		26.6	23.1	18.0/43.4		26.0	22.7			23.5	22.1			42.0
18.2		23.2	20.2	17.5		23.3	19.8	15.0/46.6		20.3	19.2	15.0/49.9		46.0
16.0	14.1/51.5	19.9	17.9	15.4		20.0	17.6	14.9		18.0	16.9	14.3		50.0
14.6	13.1	19.4/50.5	16.5	13.7	11.8/55.6	17.2	15.8	13.5		15.7	14.9	12.5		54.0
13.8/57.3	11.7		15.5/56.9	13.0	11.0	15.8/56.1	14.7	12.0	10.0/59.7	14.2	13.5	11.8		58.0
	9.7			11.5	9.8		13.2	10.9	9.3	12.0/61.8	11.9	10.6	8.2/63.8	62.0
	9.5/63.0			11.0/63.1	8.1		12.0/62.7	10.1	8.3		10.7	9.5	7.6	66.0
					7.8/68.8			9.3/68.9	6.8		10.0/68.5	8.4	6.7	70.0
									6.1			7.5	5.9	74.0
									5.6/74.6			7.2/74.7	4.6	78.0
													4.0/80.4	82.0

42		48				54				60				Jib length (m)
70	60	88	80	70	60	88	80	70	60	88	80	70	60	Tower angle (°) / Working radius (m)
														10.0
														12.0
														14.0
														16.0
		56.0/18.6												18.0
		55.4				48.0/20.1				39.0/21.7				20.0
		53.7				46.3				38.7				22.0
		51.9				43.5				37.8				24.0
		49.4				40.6				36.8				26.0
		44.8				38.0				33.8				28.0
		41.0	31.0/30.9			35.8	30.0/33.2			32.0				30.0
		34.8	30.5			31.9	30.0			29.7	26.0/35.5			34.0
		30.0	26.1			28.8	25.7			26.0	25.0			38.0
18.0/42.1		26.4	22.6	17.0/45.4		26.1	22.2			22.5	21.6			42.0
17.3		23.3	19.8	16.6		23.2	19.4	15.0/48.7		19.8	18.8			46.0
15.2		20.4	17.5	14.6		20.5	17.0	14.1		17.2	16.5	12.0/51.9		50.0
13.5	11.7/54.5	19.6/50.7	15.7	12.8		17.7	15.1	12.3		15.5	14.9	11.7		54.0
11.9	10.6		14.8/57.9	12.3	9.7/58.6	16.0/56.3	13.9	10.9		14.2	13.4	10.3		58.0
11.0/59.3	8.7			10.1	8.8		12.7	9.8	8.1/62.7	11.9/62.0	11.9	9.1		62.0
	8.4/66.0			10.0/65.1	7.8		12.0/63.7	8.6	7.3		10.6	8.1	6.2/66.8	66.0
					6.5			7.8	6.5		10.0/69.5	7.8	5.5	70.0
					6.0/71.8			7.0/70.9	5.1			6.5	4.5	74.0
									4.6/77.6			6.0/76.7	3.4/78.0	78.0
														82.0

■ w/49.5m Tower

Jib length (m)	24				30				36				42	
Tower angle (°) / Working radius (m)	88	80	70	60	88	80	70	60	88	80	70	60	88	80
10.0														
12.0	90.0/12.6													
14.0	90.0				90.0/14.1				74.0/15.7					
16.0	84.0				87.2				73.4				76.0/17.2	
18.0	79.0				78.8				69.5				73.5	
20.0	71.0				70.4				65.6				67.3	
22.0	62.0	49.0/22.5			61.8				61.7				61.1	
24.0	55.0	48.0			55.1	45.0/24.9			55.0				54.9	
26.0	50.0	46.0			49.7	44.9			49.5	41.0/27.2			49.5	
28.0	46.0	41.0			45.0	40.7			44.9	40.1			44.8	37.0/29.6
30.0	43.9/28.4	38.0			41.3	37.2			41.1	36.6			41.0	36.1
34.0		32.5	24.0/34.4		35.1/34.0	32.5	23.0/37.7		35.0	30.9			34.9	30.5
38.0		30.6/35.8	23.0			25.8	22.9		30.2	26.6	20.0/40.9		30.1	26.1
42.0			21.0	16.0/45.2		24.9/41.6	20.8		28.4/39.6	22.2	19.2		26.5	22.7
46.0			19.9/44.0	15.6			16.9	13.5/49.3		19.7	16.8		23.4/45.3	20.9
50.0				13.9			16.4/49.8	13.4		19.5/47.4	14.5	10.7/53.4		17.2
54.0				13.2/51.6				11.0			13.0	10.6		17.0/53.1
58.0								10.8/57.4			13.0/55.6	9.3		
62.0												8.3		
66.0												8.3/63.2		
70.0														
74.0														
78.0														
82.0														

■ w/55.5m Tower

Jib length (m)	24				30				36				42	
Tower angle (°) / Working radius (m)	88	80	70	60	88	80	70	60	88	80	70	60	88	80
10.0														
12.0	88.0/12.8													
14.0	87.4				77.9/14.3				71.0/15.9					
16.0	78.0				74.2				70.7				62.4/17.4	
18.0	72.3				69.9				70.0				62.4	
20.0	66.4				65.6				65.6				61.7	
22.0	61.5	47.0/23.6			61.3				61.2				60.5	
24.0	54.8	46.7			54.7	45.0/25.9			54.5				54.4	
26.0	49.4	44.2			49.2	44.1			49.0				48.9	
28.0	44.7	40.0			44.6	40.0			44.5	36.0/28.3			44.4	
30.0	42.4/28.6	36.5			40.8	36.5			40.6	34.0			40.6	30.0/30.6
34.0		31.0	22.0/36.4		34.7	30.9			34.5	29.4			34.4	28.7
38.0		29.0/36.8	21.3		34.3/34.2	25.5	19.0/39.7		29.9	25.5			29.8	24.6
42.0			18.5			22.3	18.0		27.8/39.8	22.0	16.0/43.0		26.1	21.9
46.0			17.8/46.0	11.7/48.2		22.0/42.6	16.0			19.1	15.5		23.2/45.5	20.4
50.0				11.7			14.3	9.8/52.3		19.0/48.4	14.8			16.7
54.0				10.3			14.0/51.8	9.8			12.2	8.5/56.4		14.8
58.0				10.3/54.6				8.7			11.9/57.6	8.1		14.5/54.2
62.0								8.6/60.4				7.2		
66.0												6.2		
70.0												6.0/66.2		
74.0														
78.0														
82.0														

	42		48				54				60			Jib length (m)
	70	60	88	80	70	60	88	80	70	60	88	80	70	Tower angle (°) / Working radius (m)
														10.0
														12.0
														14.0
														16.0
			56.7/18.8											18.0
			55.7				49.4/20.3				39.0/21.9			20.0
			53.9				46.9				38.7			22.0
			52.1				44.0				37.8			24.0
			48.9				41.1				36.8			26.0
			44.4				38.4				33.8			28.0
			40.5	30.0/31.9			36.1				31.7			30.0
			34.4	29.8			32.2	26.0/34.2			29.0	25.0/36.6		34.0
			29.7	25.5			29.0	25.1			26.0	23.5		38.0
	17.0/44.2		26.0	22.1			25.9	21.7			22.1	20.4		42.0
	16.3		23.1	19.3	14.0/47.5		23.0	18.9			19.0	17.7		46.0
	14.3		20.6	17.0	13.6		20.5	16.6	12.0/50.7		16.9	15.7		50.0
	13.6	8.9/57.5	19.7/50.9	14.9	12.0		18.0	14.7	11.5		15.5	14.0	10.0/54.0	54.0
	11.2	8.8		13.4	10.7	7.2/61.6	15.3/56.5	14.0	10.1		14.2	12.5	9.5	58.0
	11.0/61.4	8.4		13.0/58.9	9.5	7.1		12.0	9.0	5.5/65.7	11.9	11.0	8.4	62.0
		6.9			8.5	6.2		11.5/64.7	8.7	5.4	11.8/62.2	10.5	7.5	66.0
		6.8/69.0			8.0/67.2	5.3			7.2	4.5		9.5	6.6	70.0
						4.4			7.0/73.0	3.8		9.0/70.5	5.8	74.0
						4.0/74.8				3.2/78.0			5.0	78.0
													4.5/78.8	82.0

	42		48			54			60			Jib length (m)
	70	60	88	80	70	88	80	70	88	80	70	Tower angle (°) / Working radius (m)
												10.0
												12.0
												14.0
												16.0
			54.5/19.0									18.0
			54.4			48.8/20.5						20.0
			53.6			46.8			38.0/22.1			22.0
			52.2			44.2			37.8			24.0
			48.8			41.6			36.8			26.0
			44.3			39.0			33.8			28.0
			40.4	29.0/32.9		36.5			31.3			30.0
			34.3	28.5		32.6	25.0/35.3		28.0	24.0/37.6		34.0
			29.7	24.5		29.2	23.7		25.2	23.1		38.0
			26.0	21.3		25.6	20.5		22.0	20.2		42.0
	14.0/46.2		23.0	18.9	13.0/49.5	22.7	17.9		18.6	17.8		46.0
	13.4		20.6	16.6	12.6	20.3	16.0	11.0/52.8	16.9	15.6		50.0
	11.8		19.8/51.1	14.4	11.1	18.2	14.3	10.6	15.5	13.7	9.0/56.0	54.0
	10.4	7.0/60.5		13.7	9.8	15.4/56.8	13.6	9.4	14.2	12.1	8.7	58.0
	9.2	6.4		13.3/60.0	9.5		11.2	8.3	11.9	10.7	7.6	62.0
	9.0/63.4	5.4			7.8		11.0/65.8	8.0	11.6/62.4	9.5	6.7	66.0
		4.6			7.5/69.2			6.5		8.7	5.8	70.0
		4.4/72.0						5.8		8.5/71.6	5.0	74.0
								5.5/75.0			4.2/78.0	78.0
												82.0

■ w/61.5m Tower

Jib length (m)	30			36			42			48			54		
Tower angle (°) / Working radius (m)	88	80	70	88	80	70	88	80	70	88	80	70	88	80	
10.0															
12.0															
14.0	66.4/14.5														
16.0	66.0			59.3/16.1			50.0/17.6								
18.0	65.6			57.2			50.0			43.6/19.2					
20.0	65.2			56.4			50.0			43.6			39.4/20.7		
22.0	60.7			54.8			50.0			43.6			39.4		
24.0	54.1			54.0			50.0			43.6			39.4		
26.0	48.7	40.0/26.9		48.5			48.4			43.6			39.4		
28.0	44.2	39.1		44.0	36.0/29.3		44.0			43.5			39.4		
30.0	40.3	35.7		40.2	35.0		40.1	30.0/31.6		39.7			37.0		
34.0	34.2	30.2		34.1	29.6		34.1	29.1		33.6	25.0/34.0		32.8	24.0/36.3	
38.0	33.6/34.4	25.0	18.0/41.8	29.5	25.4		29.5	24.9		29.0	24.3		29.0	23.8	
42.0		21.7	17.6	25.8/40.1	23.0	15.0/45.0	25.8	21.6		25.4	21.0		25.3	20.5	
46.0		21.0/43.6	16.3		18.8	14.7	22.9/45.7	19.9	13.0/48.3	22.5	18.3		22.4	17.9	
50.0			13.6		18.3/49.4	13.8		16.5	12.3	20.1	16.1	11.0/51.6	20.0	15.7	
54.0			12.9/53.9			11.3		14.5	10.8	19.3/51.3	14.0	10.2	18.0	13.8	
58.0						10.2		14.0/55.2	10.4		12.5	8.9	15.6/57.0	13.2	
62.0						10.0/59.7			8.6		12.0/61.0	8.6		10.9	
66.0									8.2/65.5			7.1		9.8	
70.0												6.2		9.5/66.8	
74.0												6.0/71.3			
78.0															
82.0															

	54	60			Jib length (m)
	70	88	80	70	Tower angle (°) / Working radius (m)
					10.0
					12.0
					14.0
					16.0
					18.0
					20.0
		33.8/22.3			22.0
		33.8			24.0
		31.6			26.0
		31.1			28.0
		29.1			30.0
		25.7			34.0
		22.9	20.0/38.7		38.0
		20.6	19.9		42.0
		18.7	17.2		46.0
		17.0	15.1		50.0
	9.0/54.8	15.6	13.2		54.0
	8.5	14.3	11.6	7.7/58.1	58.0
	7.4	12.0	10.3	6.7	62.0
	6.3	11.6/62.6	9.3	5.6	66.0
	5.3		8.3	4.6	70.0
	4.5		8.0/72.6	4.0	74.0
	4.0/77.1			3.1/78.0	78.0
					82.0

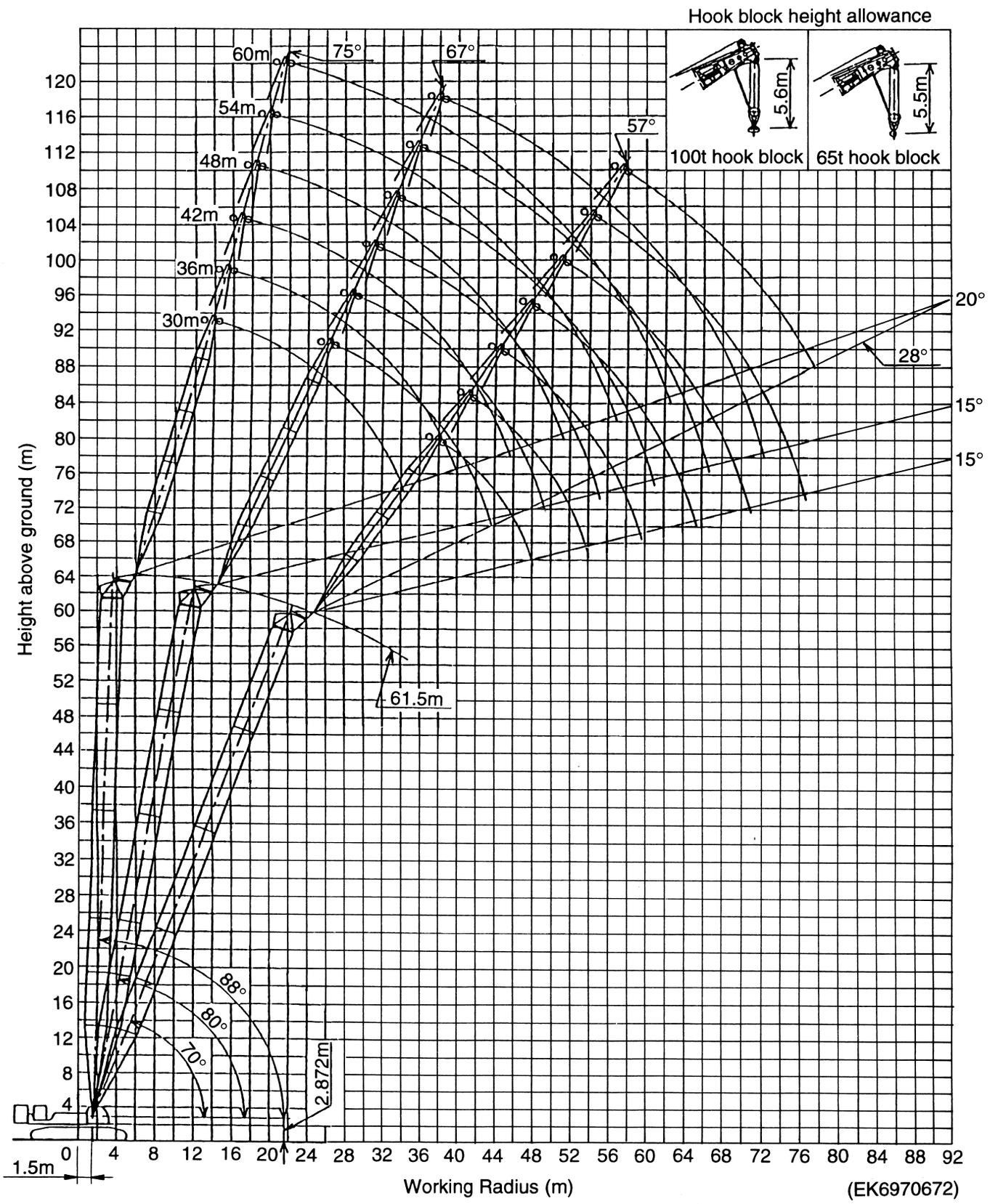
Notes — Towercrane capacities

1. Capacities included in these charts are the maximum allowable, and are based on machine standing level on firm supporting surface under ideal job conditions.
2. Capacities are in metric tons, and are based on 78% of minimum tipping loads or based on the other factor of machine structural strength limitation.
3. Capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deduction from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, or other suspended gear. Hook block weight is as follows;
   100·····2.2ton 65t·····1.4ton 13.5t·····0.5ton
4. All capacities are rated for 360°swing.
5. Least stable rated condition is over the side.
6. Boom live mast is required for all operating conditions.
7. Counterweight arrangement must be 99ton on superstructure, and 20ton on carbody frame.
8. Attachment must be erected and lowered over the front of the crawler mounting. When lifting off ground the attachment without any outside assistance, two steel blocks be placed under track idler wheels each of crawler are required.
9. Maximum tower boom and jib combination length permitted is 61.5m tower boom plus 60.0m tower jib. In all tower boom and jib combination up to the avove, auxiliary short jib can be attached on top of tower jib.
10. When handling load off tower jib head sheaves in a case of mounting auxiliary short jib, a 900kg plus 13.5t hook block weight deduction in towercrane capacities must be made.
11. Configuration of attachment shall be in accordance with manufacturer's standard described here in “Tower Boom and Jib Combination Table”.

SCX3500 AUXILIARY SHORT JIB CAPACITIES:
Max. 13.5ton

Note: Jib capacities equal the figures of the luffing towercrane capacities for all tower boom and jib combination up to 61.5m plus 61.0m unless restricted by the maximum jib capacity shown above.

Luffing Towercrane Working Ranges



Note: The above working range is just under max. tower boom and jib combination i.e. 61.5m tower boom plus 60.0m tower jib.

Tower Boom Head Crane Capacities (I)

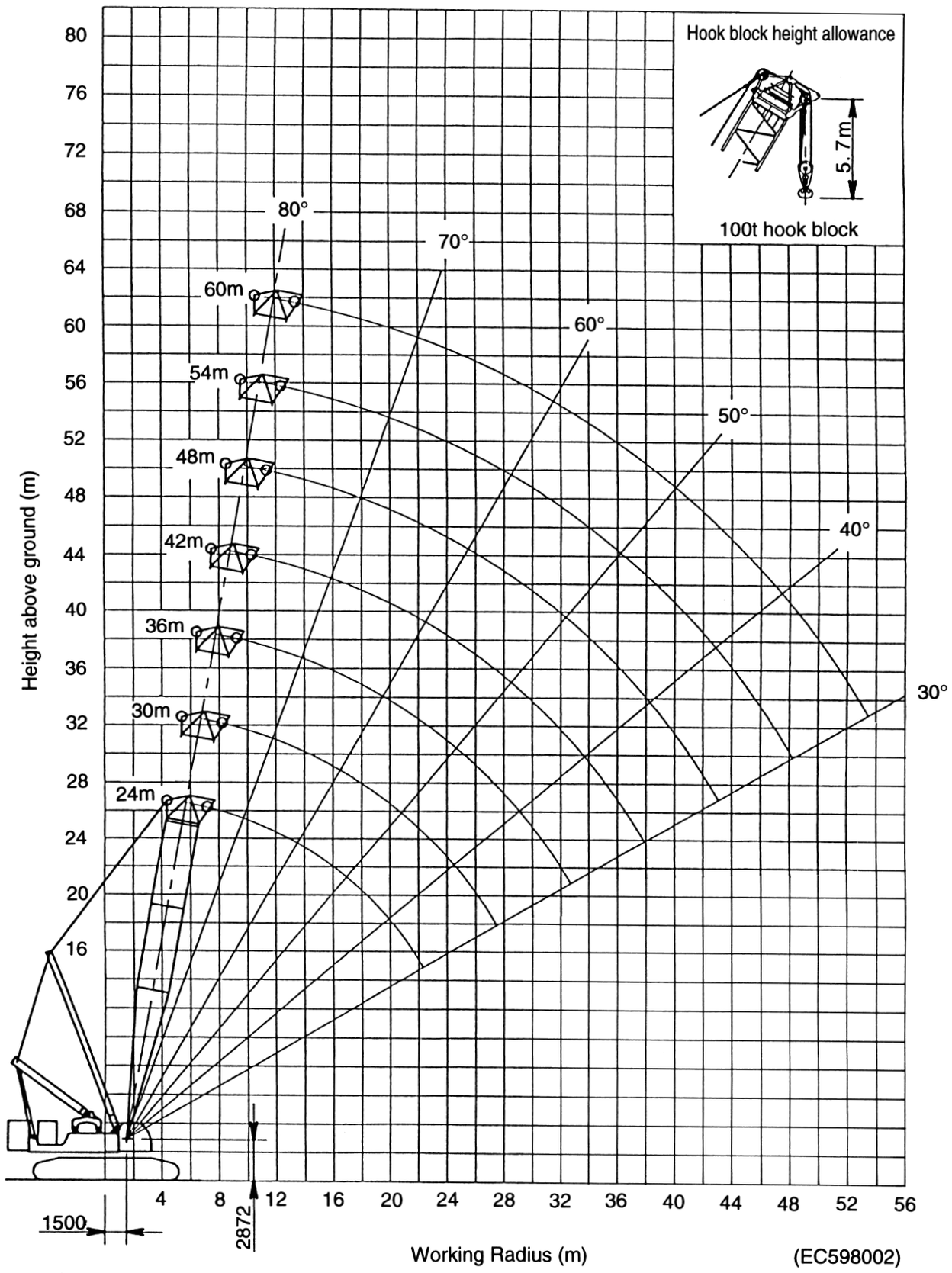
Tower Boom length (m) / Working radius (m)	24	30	36	42	48	54	60
5.0							
6.0							
7.0	100.0/7.2						
8.0	100.0	100.0/8.2					
9.0	100.0	100.0	100.0/9.3				
10.0	100.0	100.0	100.0	100.0/10.3	100.0/11.4		
12.0	100.0	100.0	100.0	100.0	100.0	100.0/12.4	100.0/13.4
14.0	100.0/14.6	100.0/15.0	100.0/15.0	100.0/14.8	100.0/14.8	100.0/14.7	100.0/14.5
16.0	88.3	91.2	91.2	90.7	90.6	90.4	89.8
18.0	74.5	77.6	77.4	77.0	76.9	76.6	76.0
20.0	63.5	67.3	67.1	66.6	66.5	66.1	65.5
22.0	54.5	59.3	59.0	58.4	58.3	58.0	57.4
24.0	50.8/23.0	52.8	52.4	52.0	51.7	51.4	50.8
26.0		47.5	47.2	46.6	46.4	46.0	45.4
28.0		42.0	42.7	42.0	41.9	41.4	40.8
30.0		41.5/28.2	39.0	38.3	38.0	37.6	37.0
34.0			33.4/33.4	32.2	32.0	31.4	30.8
38.0				27.6	27.4	26.8	26.0
42.0				27.1/38.6	23.9	23.0	22.3
46.0					22.5/43.8	20.2	19.4
50.0						17.9/49.0	16.9
54.0							14.9
58.0							14.7/54.2
62.0							
66.0							
70.0							
74.0							

(EC198012-16)

Notes — Tower boom head crane capacities (I)

1. Capacities included in this chart is the maximum allowable, and are based on machine standing level on firm supporting surface under ideal job conditions.
2. Capacities are in metric tons, and are not more than 78% of minimum tipping loads, or based on the other factor of machine structural strength limitation.
3. Capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deduction from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, or other suspended gear.
   Hook block weight is as follows:
   100t ·····2.2ton 65t·····1.4ton 13.5t·····0.5ton
4. All capacities are rated for 360° swing.
5. Least stable rated condition is over the side.
6. Boom live mast is required for all operating conditions.
7. Counterweight arrangement must be 99ton on superstructure and 20ton on carbody frame.
8. Attachment must be erected and lowered over the ends of the crawler mounting.
9. Tower boom length must not exceed 60.0m.
10. Boom combination shall be in accordance with manufacture's standard described here in "Tower Boom and Jib Combination Table".

Tower Boom Head Crane Working Ranges



Tower Boom Head Crane Capacities (II)

■ w/24.0m Tower Jib

Working radius (m)	Tower boom length (m)					
	25.5	31.5	37.5	43.5	49.5	55.5
7.0	100.0/7.2					
8.0	100.0	100.0/8.2				
9.0	100.0	100.0	100.0/9.3			
10.0	100.0	100.0	100.0	100.0/10.3	100.0/11.4	
12.0	100.0	100.0	100.0	100.0	100.0	81.5/12.4
14.0	84.3	86.4	87.6	88.4	88.9	74.7
16.0	76.9/14.7	67.4	68.5	69.2	69.6	67.4
18.0		55.5/17.7	54.7	55.4	55.7	56.0
20.0			44.3	45.0	45.3	45.5
22.0			41.3/20.7	36.9	37.1	37.3
24.0				31.2/23.7	30.6	30.7
26.0					25.1	25.2
28.0					23.0/26.7	19.6
30.0						15.5/29.7

■ w/30.0m Tower Jib

Working radius (m)	Tower boom length (m)						
	25.5	31.5	37.5	43.5	49.5	55.5	61.5
7.0	100.0/7.2						
8.0	100.0	100.0/8.2					
9.0	100.0	100.0	100.0/9.3				
10.0	100.0	100.0	100.0	100.0/10.3	96.3/11.4		
12.0	100.0	100.0	100.0	100.0	94.8	78.2/12.4	55.0/13.4
14.0	80.0	82.6	84.1	85.1	85.7	71.6	53.0
16.0	72.7/14.7	63.8	65.2	66.1	66.7	64.3	47.3
18.0		52.0/17.7	51.6	52.5	53.0	53.4	42.0
20.0			41.3	42.2	42.6	43.0	37.8
22.0			38.3/20.7	34.2	34.6	34.9	33.9
24.0				28.6/23.7	28.1	28.4	30.2/23.4
26.0					21.5	21.8	
28.0					19.5/26.7	16.3	
30.0						12.2/29.7	

■ w/36.0m Tower Jib

Working radius (m)	Tower boom length (m)						
	25.5	31.5	37.5	43.5	49.5	55.5	61.5
7.0	100.0/7.2						
8.0	100.0	100.0/8.2					
9.0	100.0	100.0	100.0/9.3				
10.0	100.0	100.0	100.0	100.0/10.3	92.4/11.4		
12.0	100.0	100.0	100.0	100.0	90.6	74.8/12.4	51.0/13.4
14.0	74.9	77.9	79.8	81.1	81.9	68.4	49.2
16.0	67.7/14.7	59.4	61.1	62.4	63.1	61.2	43.5
18.0		47.8/17.7	47.7	48.9	49.6	50.1	38.7
20.0			37.6	38.7	39.4	39.8	34.6
22.0			34.6/20.7	30.8	31.4	31.8	30.7
24.0				24.0/23.7	23.6	24.1	26.4/23.4
26.0					17.1	17.6	
28.0					15.1/26.7	12.2	
30.0						8.2/29.7	

■ w/42.0m Tower Jib

Working radius (m)	Tower boom length (m)						
	25.5	31.5	37.5	43.5	49.5	55.5	61.5
7.0	100.0/7.2						
8.0	100.0	100.0/8.2					
9.0	100.0	100.0	100.0/9.3				
10.0	100.0	100.0	100.0	100.0/10.3	85.4/11.4		
12.0	96.9	100.0	100.0	100.0	83.5	69.5/12.4	48.2/13.4
14.0	70.0	73.6	75.8	77.4	78.1	65.1	46.4
16.0	62.9/14.7	55.3	57.4	58.8	59.8	58.1	40.5
18.0		43.9/17.7	44.2	45.6	46.5	47.1	35.8
20.0			34.2	35.6	36.4	37.0	31.5
22.0			30.6/20.7	26.3	27.3	28.1	27.8
24.0				19.7/23.7	19.5	20.2	22.7/23.4
26.0					13.2	13.8	
28.0					11.2/26.7	8.5	
30.0						4.6/29.7	

■ w/48.0m Tower Jib

Working radius (m)	Tower boom length (m)						
	25.5	31.5	37.5	43.5	49.5	55.5	61.5
7.0	100.0/7.2						
8.0	100.0	100.0/8.2					
9.0	100.0	100.0	100.0/9.3				
10.0	100.0	100.0	100.0	100.0/10.3	81.0/11.4		
12.0	93.7	97.8	100.0	94.8	80.2	65.0/12.4	46.7/13.4
14.0	67.0	70.9	73.4	75.1	73.0	61.2	44.7
16.0	60.0/14.7	52.8	55.1	56.8	57.8	55.9	39.1
18.0		41.5/17.7	42.0	43.6	44.6	45.3	34.4
20.0			31.2	33.3	34.5	35.3	30.0
22.0			27.7/20.7	23.7	24.9	28.9/21.3	26.2
24.0				17.1/23.7	17.1		20.5/23.4
26.0					10.8		
28.0					8.9/26.7		
30.0							

■ w/54.0m Tower Jib

Working radius (m)	Tower boom length (m)						
	25.5	31.5	37.5	43.5	49.5	55.5	61.5
7.0	100.0/7.2						
8.0	100.0	100.0/8.2					
9.0	100.0	100.0	100.0/9.3				
10.0	100.0	100.0	100.0	96.1/10.3	77.1/11.4		
12.0	89.0	93.6	96.6	88.1	75.0	60.2/12.4	44.2/13.4
14.0	62.6	67.1	69.8	71.8	68.3	55.5	42.3
16.0	55.7/14.7	49.2	51.8	53.7	54.9	51.2	36.7
18.0		37.5/17.7	38.9	40.7	41.8	42.7	31.8
20.0			26.9	29.2	30.7	31.8	27.6
22.0			23.4/20.7	19.8	21.2	25.3/21.3	22.8
24.0				13.3/23.7	13.6		17.3/23.4
26.0					7.4		
28.0					5.5/26.7		
30.0							

■ w/60.0m Tower Jib

Working radius (m)	Tower boom length (m)						
	25.5	31.5	37.5	43.5	49.5	55.5	61.5
7.0	100.0/7.2						
8.0	100.0	100.0/8.2					
9.0	100.0	100.0	100.0/9.3				
10.0	100.0	100.0	100.0	91.3/10.3	69.8/11.4		
12.0	83.1	88.4	91.7	82.3	67.8	53.9/12.4	39.8/13.4
14.0	57.2	62.2	65.4	67.7	61.4	49.7	38.3
16.0	50.4/14.7	44.6	47.7	49.8	51.3	44.7	32.9
18.0		31.2/17.7	33.2	36.0	37.8	39.2	28.2
20.0			21.4	24.1	29.7/19.3	27.2	24.2
22.0			18.0/20.7	14.9		20.9/21.3	18.6
24.0				8.5/23.7			13.2/23.4
26.0							
28.0							
30.0							

Notes — Tower boom head crane capacities (II)

1. These capacities shown above apply to the operation of handling load off tower boom head sheaves under the condition that tower jib is attached on tower boom, and its offset angle is 13 degrees to tower boom.
2. Capacities included in these charts are the maximum allowable, and are based on machine standing level on firm supporting surface under ideal job conditions.
3. Capacities are in metric tons, and are not more than 78% of minimum tipping loads, or based on the other factor of machine structural strength limitation.
4. Capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, and operating speeds. Operator must reduce load ratings to take such conditions into account. Deduction from rated capacities must be made for weight of hook block, weighted ball/hook, sling, spreader bar, or other suspended gear.
   Hook block weight is as follows:
   100t·····2.2ton 65tz·····1.4ton 13.5t·····0.5ton
5. All capacities are rated for 360° swing.
6. Least stable rated condition is over the side.
7. Boom live mast is required for all operating conditions.
8. Counterweight arrangement must be 99ton on superstructure and 20ton on carbody frame.
9. Attachment must be erected and lowered over the ends of the crawler mounting.
10. Tower boom length must not exceed 61.5m.
11. Boom combination shall be in accordance with manufacture's standard described here in "Tower Boom and Jib Combination Table".

Tower Boom and Jib Combination Table

■ Combination Table

Jib length (m) / Tower length (m)	24.0	30.0	36.0	42.0	48.0	54.0	60.0
25.5	◎	◎	◎	◎	◎	◎	◎
31.5	◎	◎	◎	◎	◎	◎	◎
37.5	◎	◎	◎	◎	◎	◎	◎
43.5	◎	◎	◎	◎	◎	◎	◎
49.5	◎	◎	◎	◎	◎	◎	○
55.5	◎	◎	◎	◎	○	○	○
61.5	×	○	○	○	○	○	○

Note:
The meanings of symbols shown in the above table is as follows;
1. Symbol of "◎":Possible to luff tower boom between 88° thru 60°;
2. Symbol of "○":Possible to luff tower boom between 88° thru 70°;
3. Symbol of "×":Impossible to make its tower boom and jib combination.
4. Combinations surrounded by bold line indicate that it is possible to internally store the jib under the tower boom.

■ Tower Boom Configuration

Length (m)	Configuration
25.5	B 12H 3 — Jib extender cable configuration; Boom extender cable configuration
31.5	B 6H 12H 3
37.5	B 12H 12H 3
43.5	B 6H 12H 12H 3
49.5	B 12H 12H 12H 3
55.5	B 6H 12H 12H 12H 3
61.5	B 12H 12H 12H 12H 3; 6.80m; Center of boom foot pin

Note:
The meanings of figures and symbols shown above are as follows:

- B : 10.5m tower boom bottom section
- 6H : 6.0m heavy-duty boom extension
- 12H : 12.0m heavy-duty boom extension
- 3 : 3.0m tower head section
- : Jib extender cable w/two of 54mm dia.; the figure each shows the length in meter.
- : Boom extender cable w/two dual of 42mm dia.; the figure each shows the length in meter.

■ Tower Jib Configuration

Length (m)	Configuration
24.0	JB 6 T — Extender cable configuration
30.0	JB 6 6 T; JB 12 T
36.0	JB 6 12 T
42.0	JB 6 6 12 T; JB 12 12 T
48.0	JB 6 12 12 T
54.0	JB 6 6 12 12 T; JB 12 12 12 T
60.0	JB 6 12 12 12 T

Note:
The meanings of figures and symbols shown above are as follows:

- JB : 7.5m tower jib bottom section
- 6L : 6.0m light-duty boom extension
- 12L : 12.0m light-duty boom extension
- T : 10.5m tower jib top section
- 9.6 : 9.65m tower jib extender cable w/two dual of 42mm dia.
- 6 : 6.00m tower jib extender cable w/two dual of 42mm dia.
- 12 : 12.00 tower jib extender cable w/two dual of 42mm dia.
- 4.9 : 4.90m tower jib extender cable w/two of 54mm dia.

Standard and Optional Equipment

	Standard equipment	Optional equipment
Superstructure	● Mitsubishi 8DC9T-CE diesel engine with a 302kW <410ps> rated output; ● Hydraulic system with two duplicate tandem variable displacement axial piston pumps and one guadruplicate tandem pump including one variable displacement axial piston pump and one fixed displacement triplicate tandem gear pump; ● Control system with one set of triplicate and three sets of duplicate tandem valves and floor type control levers; ● Motorcycle type “SC” controller (easy-precise-minute engine rpm and hyd. pump oil flow control device); ● Front and rear main operating drum winches with 672mm dia. drum lagging driven by two independent variable hyd. motors; provided with automatic brake and drum roller; ● Hydrostatic boom hoist mechanism with a twin drum driven by two hyd. motors with automatic brake; provided with drum roller. Mounted on A-frame gantry; ● Hydrostatic swing mechanism with double-row roller type turntable bearing; driven by three hyd. motors w/manually controlled multiple wet-disc brake; provided with constant swing speed mechanism; ● Power hydraulically retractable A-frame gantry with bail assembly; ● All new stamped, automotive type, full-vision, swing-away operator's cab with large curved front window; provided with an arrangement of control system and instrument panel; ● 99ton upper counterweight; ● Catwalk and railings w/steps along both sides each of machinery cab and A-frame gantry; ● 24-volt electrical system with two 12-volt batteries; ● Lighting system: • Two 70W working lights; • One 10W interior cab light; ● Accessories: • Built-in type full air-conditioning; • Engine tachometer; • Fuel gauge; • Thermometer; • Hyd. oil temp. gauge; • Pilot line pressure gauge; • DC 24-volt electric wall outlet; • Foot throttle; • Intermittent window shield wipers with washers; • AM/FM radio w/clock; • Re-fuel pump; • Cigar lighter; • Ash tray; • Book holder; • Sunvisor; • Sunshade; • Cup Holder; • Cab front step; • Cab floor mat; • Hydraulic pin placement unit; • Superstructure under-cover; • Special instruments/tools for machine assembling; • Std. spare parts and tools.	● Wire reeving winch w/8mm dia. by 250m long cable; ● Anemometer; recommended for tower crane operation; ● Fire extinguisher; ● Monitor TV system;

	Standard equipment	Optional equipment
Undercarriage	● 7,500mm gauge by 10,135mm long crawler lower with removable side frames and axle beams; ● Hydrostatic crawler drive units with shoe-in type 2-speed traction motor with wet-disc type automatic brakes; ● Carbody jack-up device w/4-vertical hyd. jack-up cylinder and remote control unit; ● Side frame removal/retract cylinders; ● 20ton carbody weight; ● 1,290mm wide track shoes; ● Lifetime lubricated track components; ● Crawler side steps and railings;	
Liftcrane Att.	● 18.0m basic crane boom; 10.5m bottom section, 3.0m tapered boom extension and 4.5m tapered crane top section w/seven head and two guide sheaves; ● Boom live mast with bail and bridle assembly; ● Main crane hoist cable; 28mm dia./660m long; ● Boom hoist cable; 24mm dia./600m long.	● 6.0m heavy-duty boom extension; ● 12.0m heavy-duty boom extension; ● 6.0m light-duty boom extension; ● 12.0m light-duty boom extension; ● Auxiliary short jib; ● 350ton hook block; ● 180ton hook block; available from 350ton hook block; ● 100ton hook block; ● 65ton hook block; ● 13.5ton ball hook; ● Add. head sheave block; required when lifting load exceeds 180ton together with 350ton hook block; ● Mid-point suspension cable; required when boom length exceeds 90.0m. ● Aux. crane hoist cable, 28mm dia./660m long;

	Standard equipment	Optional equipment
Luffing Towercrane Att.		• 3.0m tower head section; • Front and rear posts; • 24.0m basic tower jib; 7.5m bottom section, one 6.0m jib extension and 10.5m top section; • 6.0m tower jib extension; • 12.0m tower jib extension; • Hydrostatic third drum winch mechanism with automatic brake; • Third drum winch cable, 24mm dia./540m long; • Towercrane hoist cable, 28mm dia./660m (as same as optional aux. crane hoist cable of 28mm dia./660m long of liftcrane att.); • 100ton hook block (as same as optional 100ton hook block of liftcrane att.); Note: 1. Boom bottom section of 10.5m and HD boom extensions of 6.0m and 12.0m as necessary to complete tower boom are available from those of liftcrane att. except 3.0m tower head section. 2. Tower jib extensions of 6.0m and 12.0m, are same as those of light-duty boom extensions of 6.0m and 12.0m, of liftcrane att.
Safety Devices	• SML-10 Load Moment Limiter; this is a computerized automatic over-load preventing system with an all-machine-control purpose computer; • Lifting height meter; • Three color percentage indicator; • Sixteen kinds of annunciating alarms; • Main and aux. drum pawl locks (w/automatic pawl-locking device); • Boom hoist drum pawl lock (w/automatic pawl-locking device); • Swing lock; • Swing alarm; • Hook over-hoist limiting device; • Boom over-hoist and -lowering limiting device; • Dual boom over-hoist limiting device; • Boom backstops; • Boom live mast limit switch; • Speed slowdown device; • Boom angle indicator; • Level gauge; fitted on both floor of operator's cab, and on carbody axle beam; • Swing brake lamp; • Signal horn; • Travel alarm; • Hook latch; • Control lever locks; • Fool proof shut-off system; • Engine service monitor. • Microphone & loud-speaker; • Drum mirror; • Emergency machine stop buttons; • Rear view mirrors.	• Monitor TV system; • Annunciating swing alarm; • Aux. hook over-hoist limiting device; • Drum light. Followings are standard in case of luffing tower-crane attachment: • Tower jib angle detector; • Towercrane load detector; • Tower jib hook over-hoist limiting device; • Tower jib over-hoist and -lowering limiting device; • Towercrane att. self-erection mode; • Third drum pawl lock (w/automatic pawl-locking device); • Tower jib backstops; • Dual tower jib over-hoist limiting device; • Rear post backstops.

Transport Data

	Description		Q'ty	Dimensions L × W × H (cm)	Net weight (kg)
Basic machine	Basic machine (w/carbody frame & operator's cab)		1	988 × 320 × 335	32000
	Sub frame ass'y (w/F&R drums and diesel-hyd. power pack)		1	578 × 320 × 202	24000
	Crawler side frame		2	@1014 × 129 × 155	@30000
	Crawler axle beam (w/carbody jack-up cyl.)		2	@805 × 200 × 139	@12700
	Counterweight (base)		1	550 × 172 × 139	10800
	Counterweight (mid.)		8	@550 × 144 × 32	@9800
	Counterweight (top)		1	550 × 144 × 32	9800
	Carbody weight		2	@232 × 121 × 118	@10000
	A-frame ass'y (w/BH drum & bail/bridle ass'y)		1	755 × 316 × 217	15200
Luffing towercrane/Liftcrane attachments	Bottom sect.	(w/backstops)	1	1075 × 264 × 270	7200
		(w/backstops & 3rd drum winch unit)			10100
	Top sect. (w/pendant ropes)		1	527 × 200 × 256	3100
	3m tapered boom ext. (w/pendant ropes)		1	336 × 199 × 244	1400
	6m HD boom ext. (w/pendant ropes)		1	615 × 264 × 244	2190
	12m HD boom ext. (w/pendant ropes)		1	1215 × 264 × 244	3850
	6m LD boom ext. (w/pendant ropes)		1	615 × 199 × 174	1640
	12m LD boom ext. (w/pendant ropes)		1	1215 × 199 × 174	2890
	350t hook block		1	376 × 222 × 88	6100
	180t hook block		1	289 × 104 × 88	4900
	100t hook block		1	239 × 86 × 88	2200
	65t hook block		1	215 × 52 × 84	1400
	13.5t ball hook		1	129 × 42 × 42	500
	Aux. short jib		1	153 × 130 × 116	410
	Boom live mast		1	1340 × 270 × 122	5000
	Tower head sect.		1	374 × 264 × 228	3240
	Tower jib top sect.		1	1150 × 200 × 235	4100
	Tower jib bottom sect. (w/F&R posts)		1	1185 × 262 × 362	8950

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