STB1600T6

Telescopic Boom Crawler Crane
160 Tons Lifting Capacity

Quality Changes the World

Max. lifting moment: 600t·m
Max. boom length: 65m
Max. boom+jib length: 65m+18m

The parameters, pictures and standard/optional equipment are only for reference in this brochure, the actual machine is based on the effective price list and contract.

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TELESCOPIC BOOM CRAWLER CRANE
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Main Characteristics

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Product Specification

Engine

- Model: WEICHAI WP10HG336E470 diesel engine.
- Type: Four-stroke, water cooling, vertical 6-cylinder, direct injection, turbo supercharging, inter-cooling, Meet Non-road Emission Regulation of China (Tier III).
- Displacement: 9.5L.
- Rated power: 247kW/2000rpm.
- Maximum torque: 1600N·m/(1200-1400)rpm.
- Starting device: 24V-8.5kW.
- Radiator: Aluminium sheet fin type radiator core.
- Air filter: Dry type air filter system, fitted with main filter element, safety filter element and resistance indicator.
- Hand throttle: Rotary type hand throttle, electrically controlled.
- Fuel filter: With electric pumping oil, fuel heating, water removal filter functions.
- Batter: Two 12Vx180Ah capacity batteries, connected in series.
- Fuel tank: 400L.
- Urea tank: 60L.

Electrical control system

- Adopt SYIC-III integrated control system independently researched and developed by Sany. This system is featured by high integration level, accurate operation and reliable quality.
- Control system: Composed of power system, engine system, main control system, Load Moment Limiter, auxiliary system and safety monitoring system. Data communication among controller, display and engine is conducted by CAN bus technology.
- Display: It can display the engine rotating speed, fuel volume, engine oil pressure, servo pressure, wind speed, engine working time, load weight, boom angle and other working parameters and working conditions.
- Optional: Sky-eye system.

Hydraulic system

- Main pump: Adopt open piston pump with large variable displacement.
- Gear pump: Dual gear pump for slewing, heat radiating and servo.
- Control: The main piston pump of variable displacement, winch piston motor of limitless variable displacement, control system of hydraulic positive flow.
- Way of cooling: Adopt electric control 120kW high power radiator.
- Filter: Equipped with servo, oil return filter. Servo filter has bypass valve and transmitter, which can remind the user to replace the filter element in time.
- Max. pressure of system:
  Main load, aux. load, and travel system: 32MPa.
  Boom hoist cylinder lifting: 32MPa.
  Slewing system: 24MPa.
  Control system: 4.5MPa.
- Hydraulic oil tank capacity: 1050L.

Main and aux. load hoist mechanism

- Main and aux. hoist winches are driven separately by motor via gearbox. Operating winch handle can control the winch to rotate to two directions, which are lifting and lowering of hook. Excellent inching function is equipped on the machine.
- Branded anti-self-rotating high-strength steel rope.
- Drums with fold-line grooves can ensure the wire rope reeved in order in multilayers; Free fall for main/aux. load hoist is offered as optional.

Main lifting mechanism	Rope speed (outermost layer)	0~130m/min
	Diameter of wire rope	Φ22mm
	Overall length of wire rope	320m
	Rated tensile force of single rope	10.5t
Auxiliary lifting mechanism	Rope speed (outermost layer)	0~130m/min
	Diameter of wire rope	Φ22mm
	Overall length of wire rope	190m
	Rated tensile force of single rope	10.5t

Boom hoist mechanism

- Double acting single piston rod hydraulic cylinder, fitted with safety balance valve, luffing angle: 0°~80°, adopting dead-weight luffing system to reduce the energy consumption and improve the steadiness of luffing operation.

Slewing mechanism

- Slewing brake adopts concealed, normally closed, wet type and spring loaded disc brake, spring force braking oil pressure released.
- With integrated cushion valve, the slewing system has free slip function to realize steady slewing start and control, showing outstanding microinching performance.
- Unique slewing cushion design ensures more stable braking.
- Slewing drive: External gearing slewing drive, capable of conducting 360° rotation, maximum slewing speed 1.65r/min. The maximum driving pressure can reach 24MPa, providing torque of 17.85t·m.
- Branded motor reducer, more reliable.
- Slewing lockout: Locking device, to ensure that the superstructure can be locked in front and rear directions conveniently and reliably during off-work time and transportation.
- Slewing bearing: Three-row roller bearing.

Product Specification

Counterweight
- The easily self-assembled and self-disassembled counterweights facilitate transport.
- The counterweights and trays pile up, conducting easy assembly, disassembly, and transport.
- Rear counterweight: Total weight: 44t,performing self-assemble and self-disassemble function.
- Carbody counterweight: Fitted at front and rear of carbody, 4.5t×2.

Superstructure
- High strength steel welding frame structure, no torsional deformation, reasonable component layout, and convenient maintenance service.
- Low engine noise.

Cab and control
- Novelty in cab design, artistic modeling and trim and large area glass window; cab tiltable by 0-20°, fitted with low beam headlamp and rearview mirror to broaden horizon; installed with air conditioner and radio; the arrangement of seats, control handle and various control buttons is ergonomically designed to enable more conformable operation.
- Cab layout: Integrated touch screen of 10.4 inch, programmable smart buttons vibration handles are offered as optional and man-machine interaction interface are more perfect.
- Armrest box: Operation handle, electrical switch, emergency stop switch and ignition switch are installed on the left and right armrest boxes. The armrest box can be adjusted with the seat.
- Seat: Suspension type multi-mode multi-level regulated seat, fitted with unloading switch.
- Air conditioner: Cooling and heating air, optimized air passage and air port.
- Multiple cameras can be presented on the monitor at the same time to realize real-time monitoring of wire rope on each winch, conditions behind the counterweight and surrounding the machine.

Traveling drive
- Independent traveling drive device is adopted for each side of crawler frame, so as to realize straight travel, turning through reducer and drive wheel by travel motor.
- Traveling speed: The traveling can be switched between high speed and low speed, and the high speed can be up to 2.0km/h.
- Gradeability: 40%.

Traveling braking
- Concealed wet type and spring loaded fin type normally engaged brake, spring force braking, oil pressure released.

Telescopic crawler
- Pressure of 32MPa by aux. system pushes the cylinder to realize the extension and retracting of the crawlers. The crawlers are extended at work and retracted for transport with the whole basic machine.

Crawler tensioning
- The jack pushes the guiding wheel and insert shims to adjust the crawler tension.

Steering system
- It can realize single track turning and pivot turning in extended and intermediate crawler condition.

Track shoe
- High-strength alloy milled steel prolongs the service life of track shoes. Width 950mm, Qty 63×2.

Track roller
- Maintenance-free track roller.

Outrigger
- Outrigger cylinder is offered to facilitate the track frame disassembly during jobsite transfer.

Product Specification

Main boom

- The boom is made of high-strength steel structure with U-shape section area, with six sections, of which the basic boom is 13.8m and the max. boom length is 65m.
- Full power with single cylinder and plug for telescoping.

Fixed jib

- Fixed jib length 18m.
- Installation angle includes 0°, 15° and 30°.

Boom tip pulley

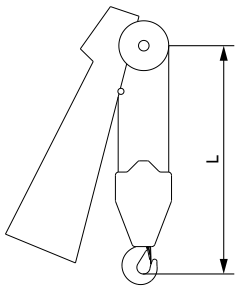
- Welding structure, connected with the boom through pin, and used for auxiliary hook operation.

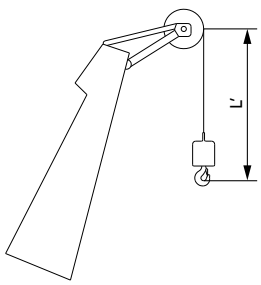
Lifting hook

Name	Capacity (t)	Pulley block	Weight (t)	Quantity
1	160 (optional)	9	3.03	1
2	130	7	1.40	1
3	80 (optional)	3	0.69	1
4	12.5	1	0.25	1

Note: the above-mentioned operating equipment is full-up configuration. The actual configurations are subject to contract.

Hook max. limit height





Hook	L	Hook	L'
130t	3.5m	12.5t	2.4m

Safety Device

Smart integrated load moment indicator

- The integrated LMI system is provided as standard offering to realize calibration-free and high safety and efficiency for equipment control to realize calibration-free and high safety and efficiency for equipment control.
- Based on lifting mechanics modes, the LMI computing system enables the loading precision, by no-loading calibration, to 0-10% and protects loading operation all-around; The system alarms once over-loaded to ensure safety.
- The LMI system can automatically detect the suspended load weight, working radius of the crane and the angle of boom, and compare rated load weight and actual load, working radius and boom angle. Under normal operation condition, it can intelligently judge and automatically cut off the crane action in dangerous direction, and have black box function to record the overload information.
- Its main components include: Monitor, controller, length and angle sensor, pressure sensor, etc.

Assembly/working mode switching switch

- In assembly mode, certain safety devices are disabled to facilitate crane assembly.
- In work mode, all safety limiting devices activate to protect the operation.

Emergency stop

- In emergency situation, this button is pressed down to cut off the power supply of the whole machine and all actions stop.

Over-hoist protection of the main/auxiliary load hoist

- Height limiter is equipped on the boom/jib tip, which prevents the hook lifting up too much. When the hook is lifted up to the limit height, the limit switch activates, alarm pops up on the monitor, buzzer on the right front control panel sends alarm, failure indicator light starts to flash and the hook hoisting action is cut off automatically.

Over-release protection of the main/auxiliary load hoist

- Three-wrap protector is installed on main and aux. load hoist to prevent over-release of wire rope. When the rope is paid out close to the last three wraps, the limit switch acts, and the system sends alarm through buzzer and show the alarm on the monitor, automatically cutting off the winch action.

Safety Device

Function lock
- If the function lock level is not in work position, all the other handles won't work, which prevents any mis-operation caused by accidental hitting.

Slewing lock
- Mechanical lock by pulling the pin, will lock the upperworks at the front part and the rear.

Hook latch
- The lifting hook is installed with a baffle plate to prevent wire rope from falling off.

Quick reeving
- In rope reeving operation, the boom head and the boom head pulley can pass through together with the wedge socket, making the disassembly and assembly more convenient and more efficient.

GPS monitoring system
- Standard remote monitoring system: It can provide functions like GPS locating, GPRS data transfer, machine status inquiry and statistics, operating data monitoring.

Tri-color load indicator
- The load indicator light has three colors, green, yellow and red, and the real time load status is presented on the display. When the actual load is smaller than 90% of rated load, the green light is on; when the actual load is larger than 90% and smaller than 100%, the yellow light is on, the alarm light flashes and sends out intermittent sirens; when the actual load reaches 100% of rated load, the red light is on, the alarm light flashes and sends out continuous sirens. When the actual load reaches 102%, the system will automatically cut off the crane's dangerous operation.

Flash alarm
- When the LMI is powered on, the flash alarm will turn on.

Slewing indicator light
- The slewing indicator light flashes during traveling or slewing.

Seat interlock
- If the operator leaves the seat, all control handles and switches will be disabled immediately to prevent any mis-operation due to accidental collision.

Illuminating light
- The machine is equipped with short-beam light in front of machine, lamps in operator's cab and lighting devices for night operation, as well as boom lights, so as to increase the visibility during work.

Rearview mirror
- It is installed at the front of the operator's cab, at the right handrail of the platform and near the winches.

Level indicator
- Electrical level indicator can show the inclination angle of superstructure on the monitor.

Closed circuit monitoring system
- There are two cameras and illuminating lights on the tail of rotating bed, which can show the rear part and winches working on the machine.

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STB1600T6
TELESCOPIC BOOM CRAWLER CRANE
160 TONS LIFTING CAPACITY

QUALITY CHANGES THE WORLD

Technical Parameters

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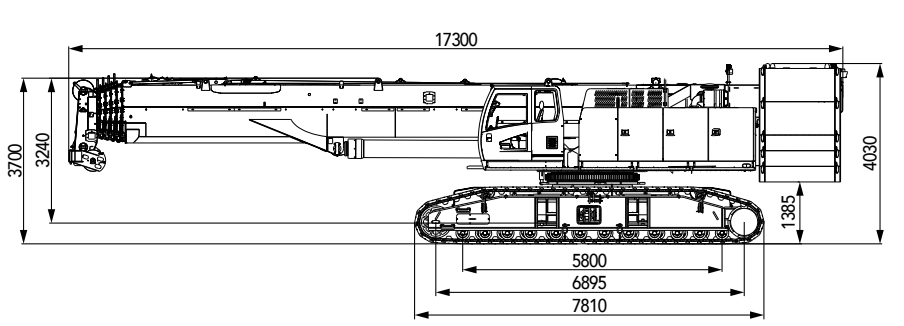
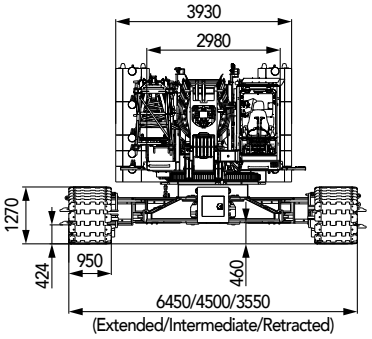
Major Performance & Specifications

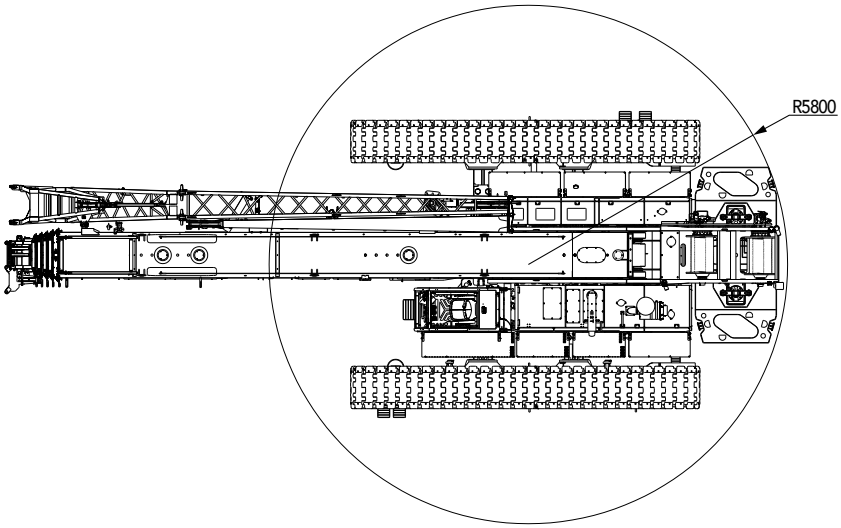
Major Performance & Specifications of STB1600T6			
Specification		Unit	Parameter
Outline dimension	Full length of the whole crane	mm	17300
	Width of the whole machine (extended / intermediate / retracted)	mm	6450/4500/3550
	Height of the whole machine	mm	3700
	Center distance of driving and engaged wheels	mm	5800
	Width of track shoe	mm	950
H (main boom) configuration	Maximum rated lifting weight	t	160
	Main boom length	m	13.8~65
	Main boom angle	°	0~80
	Maximum rated lifting moment	t·m	600
FJ (fixed jib) configuration	Longest main boom + longest jib	m	65+18
	Included angle between main boom and jib	°	0, 15, 30
Working speed	Main/aux. load hoist rope speed	m/min	0~130
	Time to fully boom up/down	s	80/110
	Time to fully extend/retract boom	s	480/480
	Slewing speed	rpm	0~1.65
	No-load traveling speed	km/h	0~2
Engine	Model	/	WEICHAI WP10HG336E470
	Rated power/speed	kW/rpm	247/2000
Wire rope	Diameter	mm	Φ22
Transportation parameters	Weight of the whole machine	t	135.1
	Maximum weight of single piece transportation	t	79.4
	Transportation dimension (long × width × height) (with crawler frame)	mm	17300×3550×3700
	Transportation dimension (long × width × height) (without crawler frame)	mm	17300×3000×3240
Other Parameters	Average ground bearing pressure	MPa	0.107
	Min. slewing radius	mm	5800

Unit:mm

Outline Dimension

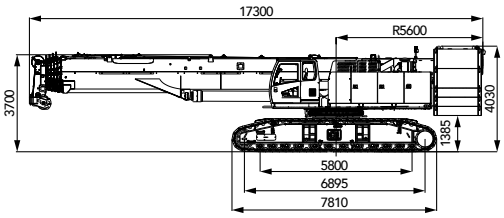




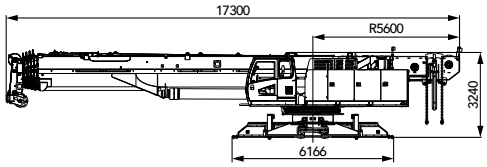


Transport Dimension

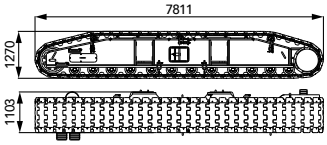
Note:
① . The component transportation dimension is schematic diagram, and is not drawn to scale. The marked dimension is design value, excluding the package.
② . The weight is design value, which may be slightly different because of manufacturing tolerance. Total rear counterweight: 44t, total carbody counterweight: 9t.
③ . After product upgrading of the Company, the outline dimension and weight of the components above may vary, and the new product shall prevail.



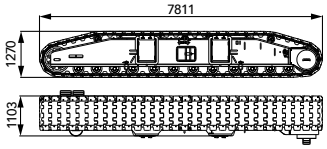
Basic machine (with jib and crawler)	×1
Length (L)	17.30m
Width (W)	3.50m
Height (H)	4.03m
Weight	135.06t



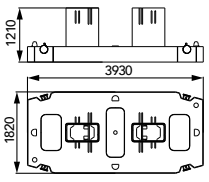
Basic machine (with jib, without crawler)	×1
Length (L)	17.30m
Width (W)	3.00m
Height (H)	3.24m
Weight	49.60t



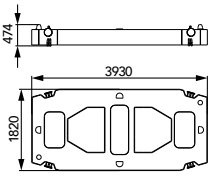
Left crawler	×1
Length (L)	7.81m
Width (W)	1.11m
Height (H)	1.27m
Weight	14.90t



Right crawler	×1
Length (L)	7.81m
Width (W)	1.11m
Height (H)	1.27m
Weight	14.90t

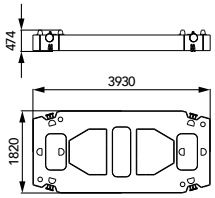


Counterweight tray	×1
Length (L)	3.93m
Width (W)	1.82m
Height (H)	1.21m
Weight	11.00t

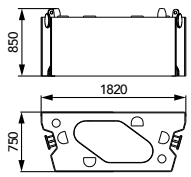


Rear counterweight	×1
Length (L)	3.93m
Width (W)	1.82m
Height (H)	0.47m
Weight	8.50t

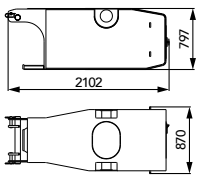
Transport Dimension



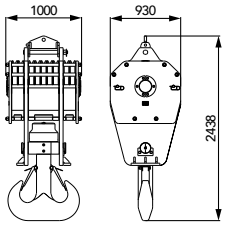
Rear counterweight	×1
Length (L)	3.93m
Width (W)	1.82m
Height (H)	0.47m
Weight	8.50t



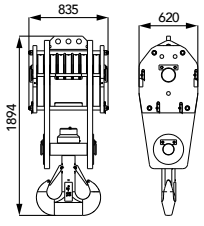
Rear counterweight	×4
Length (L)	1.82m
Width (W)	0.75m
Height (H)	0.85m
Weight	4.00t



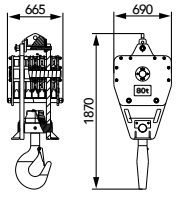
Carbody counterweight	×2
Length (L)	2.10m
Width (W)	0.87m
Height (H)	0.80m
Weight	4.50t



160t lifting hook (optional)	×2
Length (L)	2.44m
Width (W)	0.93m
Height (H)	1.00m
Weight	3.03t

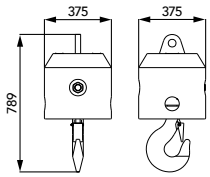


130t lifting hook	×1
Length (L)	1.89m
Width (W)	0.62m
Height (H)	0.84m
Weight	1.40t

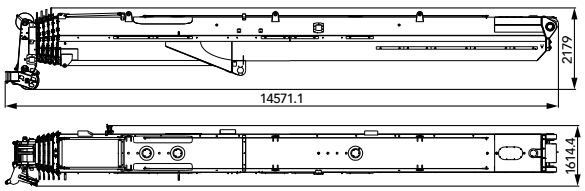


80t lifting hook (optional)	×1
Length (L)	1.87m
Width (W)	0.69m
Height (H)	0.67m
Weight	1.04t

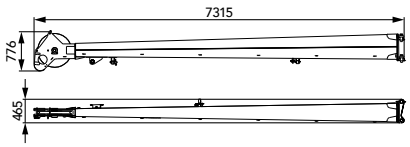
Transport Dimension



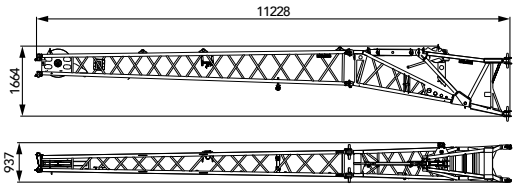
12.5t lifting hook	×1
Length (L)	0.79m
Width (W)	0.38m
Height (H)	0.38m
Weight	0.25t



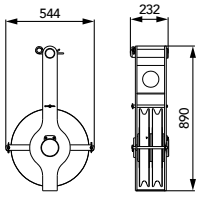
Boom	×1
Length (L)	14.57m
Width (W)	1.61m
Height (H)	2.18m
Weight	18.60t



Folding jib (optional)	×1
Length (L)	7.32m
Width (W)	0.47m
Height (H)	0.78m
Weight	0.50t



Lattice jib (optional)	×1
Length (L)	11.23m
Width (W)	0.94m
Height (H)	1.67m
Weight	1.30t



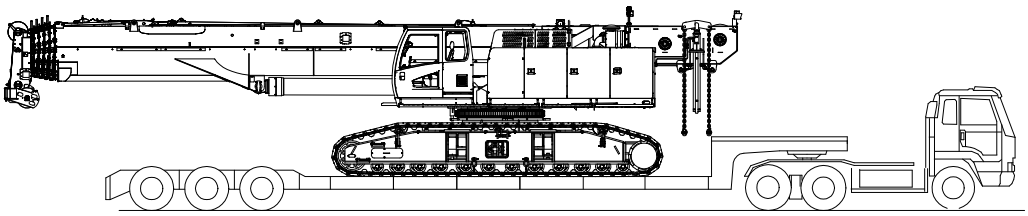
Auxiliary pulley (optional)	×2
Length (L)	0.89m
Width (W)	0.23m
Height (H)	0.54m
Weight	0.07t

Transport Plan

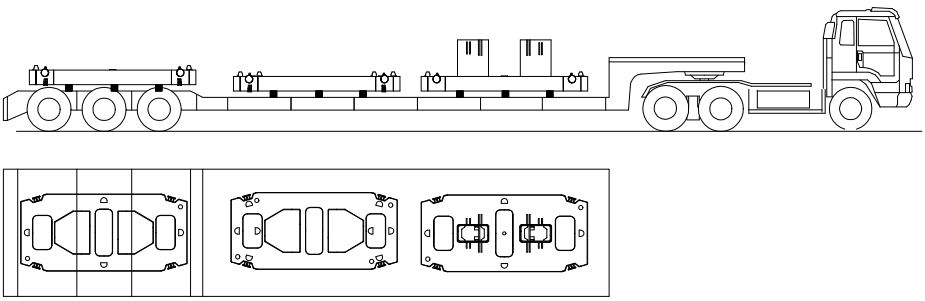
■ **Land transport:**

Transport 1: Three-truck transport (with crawler)

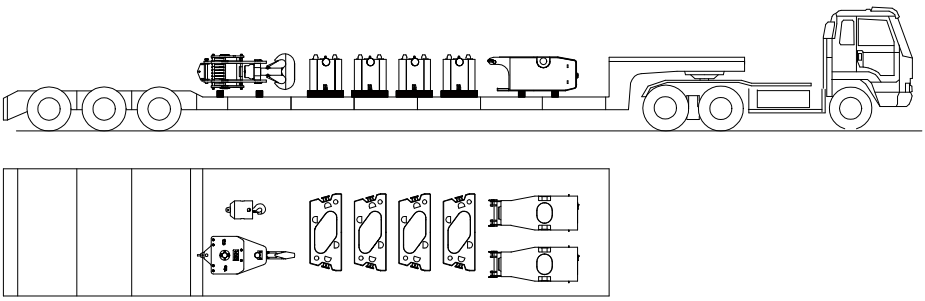
77.6t: Basic machine with crawler (weight including jib:79.4t).



28t: Counterweight block.



27.7t: Counterweight block + undercarriage counterweight + hook.

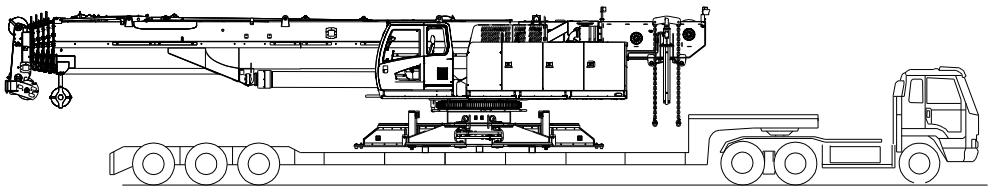


Transport Plan

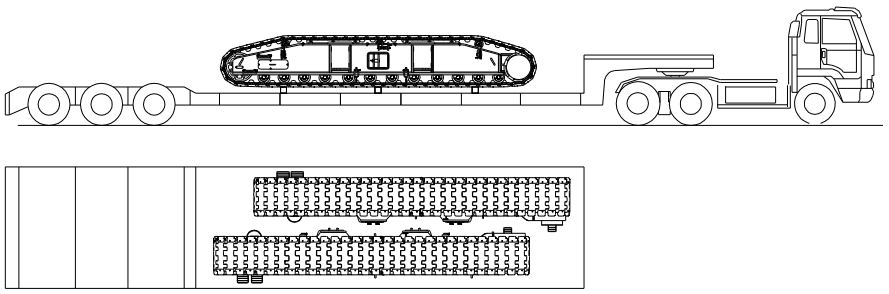
■ Land transport:

Transport 2: Four-truck transport (crawler removal)

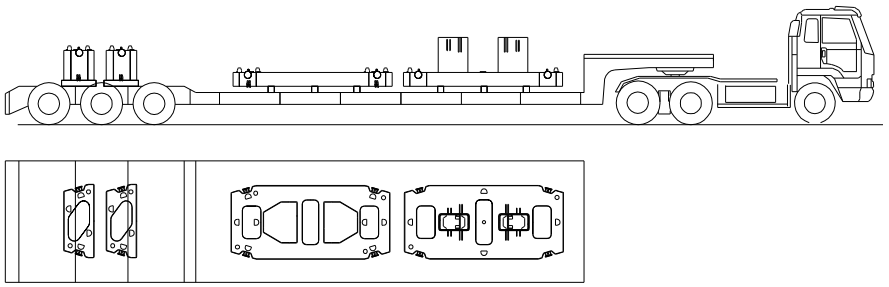
49.6t: Basic machine without crawler



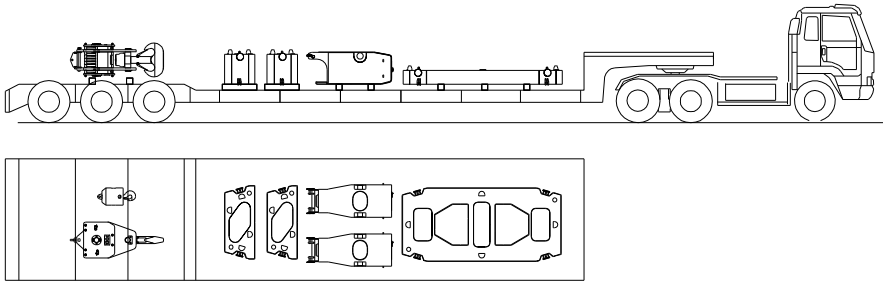
29.8t: Two crawlers.



27.5t: Counterweight block.



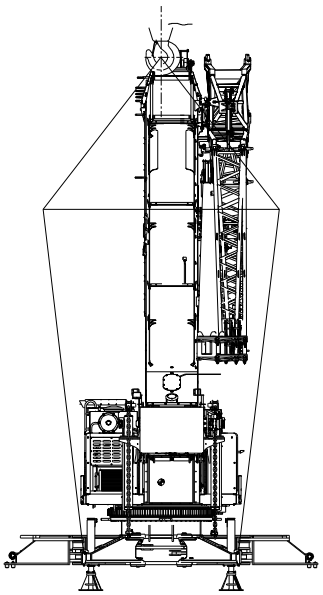
28.2t: Counterweight block + undercarriage counterweight + hook.

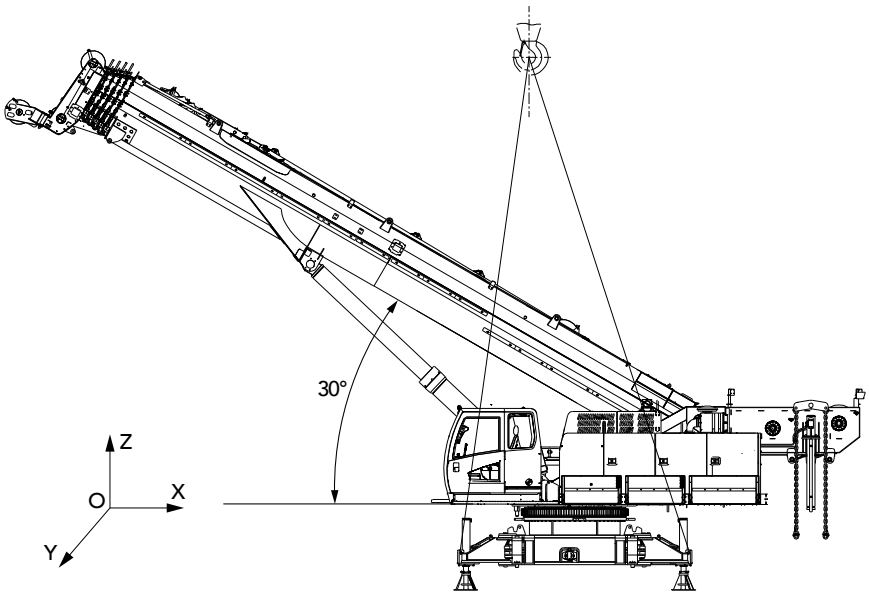


Transport Plan

■ Marine transport:

Basic machine: 49.6t.





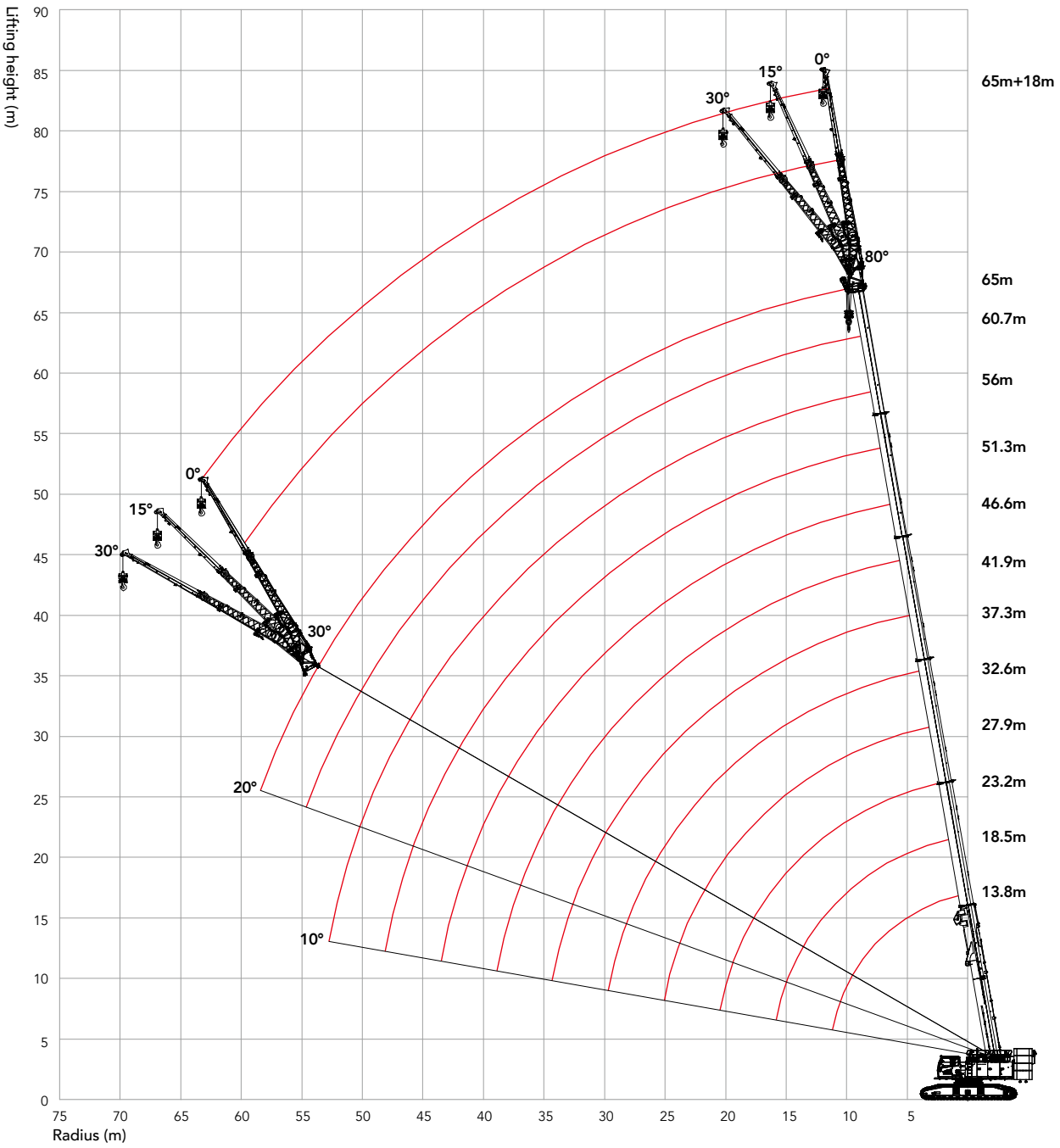
C

STB1600T6
TELESCOPIC BOOM CRAWLER CRANE
160 TONS LIFTING CAPACITY

QUALITY CHANGES THE WORLD

Cofigurations

Working range of H



Unit: t

Load Chart of H

H Configuration													
Rear counterweight: 44t, Carbody counterweight: 9t, track gauge: 5.73m (gradient: 0°)													
Radius(m)	13.8	18.5	23.2	27.9	32.6	37.2	41.9	46.6	51.3	56	60.7	65	Radius(m)
3	160*	120											3
3.5	138.1*	120	112										3.5
4	125	112	112										4
4.5	116	112	112	91.4									4.5
5	111	108.6	106.6	91.4									5
6	100	96.2	93.7	81.9	80.9								6
7	85	83.2	82.3	75.2	73.3	59.3							7
8	74	72.6	70.7	67.8	63.1	58.5	50						8
9	64	63.6	61.1	59	55.2	53.7	49	38					9
10	53.9	54	53.6	52.1	48.8	47.8	45.1	38	31.5				10
12		40.5	41.2	41.8	39.3	38.8	36.7	33	29	26	19		12
14		31.7	32.5	33.4	32.5	32.4	30.6	29.5	27	26	19	18	14
16			26.4	27.3	26.5	27.4	26	25.1	24	22	18	16	16
18			21.8	22.8	22.1	22.9	22.3	21.6	21.2	20	16.5	15	18
20			18.4	19.3	18.6	19.5	18.9	18.7	18.5	18	14.5	14	20
22				16.5	15.9	16.7	16.1	16	16.2	16.2	13.5	13.5	22
24				14.3	13.6	14.5	13.9	13.8	14	14.3	12.5	12	24
26					11.8	12.6	12.1	12	12.2	12.5	11.5	11	26
28					10.2	11.1	10.5	10.4	10.6	11	10.9	10	28
30						9.7	9.2	9.1	9.3	9	10.1	9.2	30
32						8.6	8.1	8	8.2	7.9	8.9	8.1	32
34						7.6	7.1	7	7.2	6.8	7.9	7	34
36							6.2	6.1	6.3	5.5	7.1	5.8	36
38							5.4	5.3	5.5	4.1	6.3	4.6	38
40								4.6	4.8	4.4	5.6	4.1	40
42								4	4.2	4.5	5	3.6	42
44									3.6	4	4.4	3.2	44
46									3.1	3.4	3.9	2.8	46
48									2.6	3	3.4	2.6	48
50										2.5	3	2.3	50
52										2.2	2.6	2	52
54											2.2	1.8	54
56											1.9	1.6	56
Parts of line	12	12	11	9	8	6	5	4	3	3	2	2	Parts of line
section 2	0	0	0	0	0.46	0.46	0.92	0.92	0.92	0.92	0.92	1	section 2
section 3	0	0.46	0.46	0.46	0.46	0.46	0.46	0.92	0.92	0.92	0.92	1	section 3
section 4	0	0	0.46	0.46	0.46	0.46	0.46	0.46	0.92	0.92	0.92	1	section 4
section 5	0	0	0	0.46	0.46	0.46	0.46	0.46	0.46	0.92	0.92	1	section 5
section 6	0	0	0	0	0	0.46	0.46	0.46	0.46	0.46	0.92	1	section 6

Note: * Marked load values need to be achieved by adding auxiliary pulley.

Unit: t

Load chart of FJ

FJ Configuration													
Carbody counterweight: 9t, Rear counterweight: 44t,track gauge: 5.5m (gradient: 0°)													
Boom angle (m)	60.7m boom + 10.5m jib			65m boom + 10.5m jib			60.7m boom + 18m jib			65m boom + 18m jib			Boom angle (m)
	0°	15°	30°	0°	15°	30°	0°	15°	30°	0°	15°	30°	
16	7.6						4.2			3.9			16
18	7	6		7			4	3.2		3.8			18
20	6.7	5.7	4.5	6.7	5.6		3.8	3.2		3.7	3.1		20
22	6.2	5.5	4.4	6.2	5.5	4.5	3.7	3.1	2.1	3.6	3.1	2.1	22
24	6	5.2	4.2	5.8	5.3	4.3	3.6	3	2.1	3.5	3	2.1	24
26	5.7	5	4	5.6	5.1	4.2	3.5	2.9	2.1	3.4	3	2.1	26
28	5.4	4.7	3.9	5.4	5	4.1	3.4	2.8	2.1	3.3	2.9	2.1	28
30	5.2	4.5	3.7	5.2	4.5	3.9	3.3	2.7	2.1	3.2	2.8	2.1	30
32	5	4.3	3.6	5.1	4.2	3.7	3.2	2.6	2	3.1	2.7	2	32
34	4.9	4.1	3.5	5	4	3.6	3.1	2.5	2	3	2.6	2	34
36	4.5	3.6	3.3	4.5	3.6	3.5	3	2.4	2	2.9	2.5	2	36
38	4	3.2	3.1	4.1	3.3	3.3	2.9	2.3	1.9	2.8	2.4	1.9	38
40	3.5	3	2.8	3.6	3	3	2.8	2.2	1.9	2.7	2.3	1.9	40
42	3.1	2.7	2.5	3.4	2.7	2.8	2.7	2.1	1.9	2.6	2.2	1.9	42
44	2.8	2.5	2.2	3.1	2.5	2.6	2.6	1.9	1.9	2.5	2.1	1.9	44
46	2.6	2.4	2.1	2.9	2.2	2.4	2.5	1.8	1.8	2.4	2	1.8	46
48	2.2	2.2	2	2.7	2.1	2.1	2.2	1.7	1.7	2.1	1.9	1.7	48
50	2	2	1.9	2.5	2	2	2.1	1.6	1.6	2	1.8	1.6	50
52	1.8	1.8	1.8	2.2	1.9	1.9	1.9	1.5	1.5	1.9	1.7	1.5	52
54	1.7	1.7	1.7	2	1.8	1.8	1.8	1.4	1.4	1.8	1.6	1.4	54
56	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.3	1.3	1.7	1.5	1.3	56
58	1.5	1.5	1.5	1.4	1.6	1.6	1.6	1.2	1.3	1.6	1.4	1.3	58
60	1.5	1.4	1.4	1.3	1.5	1.5	1.5	1.1	1.2	1.5	1.3	1.2	60
62		1.3	1.3	1.3	1.4	1.3	1.4	1	1.2	1.4	1.3	1.2	62
64							1.3	1	1.1	1.3	1.3	1.1	64
66							1.1	1	1.1	1.3	1.3	1.1	66
68								1	1.1			1.1	68
70													70
Parts of line (auxiliary hoist)	1												Parts of line (auxiliary hoist)
Auxiliary hook	12.5t												Auxiliary hook

Note:
① . The telescopic ratio of the 60.7m boom length is 92%, 92%, 92%, 92%, 92%.
② . The telescopic ratio of the 65m boom length is 100%, 100%, 100%, 100%.

SANY®

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