SANY®

SPECIFICATION

BETTER WORLD, BETTER SANY CRANE

SAC1600C7-8

SANY ALL TERRAIN CRANE

160 t

74.8 m

87.9 m / 103.9 m* (*optional)

www.sanyglobal.com

QUALITY CHANGES THE WORLD

V1.0

It is one of the core business units in SANY Group, specializing in the development and manufacturing of high-end wheel cranes, crawler cranes and tower cranes, including the complete range of wheel cranes from 8 to 2400t, crawler cranes from 25 to 4500t and tower cranes from 6 to 185t.

BETTER WORLD, BETTER SANY CRANE

SANY CRANE

QUALITY CHANGES THE WORLD

7-section oval shape 74.8m boom, max. lifting moment 525t.m, standard 18m jib (8m*2 extensions optional), ensuring unmatched lifting range, height and capacity. Double engine drive: WP7G270E301 powering crane operation, fuel consumption lowered by 30% than hydraulic single engine system. Chassis WP13G530E310 engine + FAST auto transmission with hydraulic retarder + HANDE axles with disc brakes, max. speed 80km/h, max. gradient 46%. 5-axle all-terrain chassis, H-type outriggers, hydro-pneumatic suspension, all-wheel steering, 6 steering modes. The min. steering radius is as small as 8.8m, delivering 15% higher flexibility among same class in industry. 53t full counterweight, traveling with 20.5t counterweight allowed with well distributed axle load. Crane harness wiring of higher reliability.

Double engine drive

74.8m
Full-extension boom

46%
Max. gradeability

80km/h
Max. travel speed

SAC1600C7-8
SANY ALL TERRAIN CRANE


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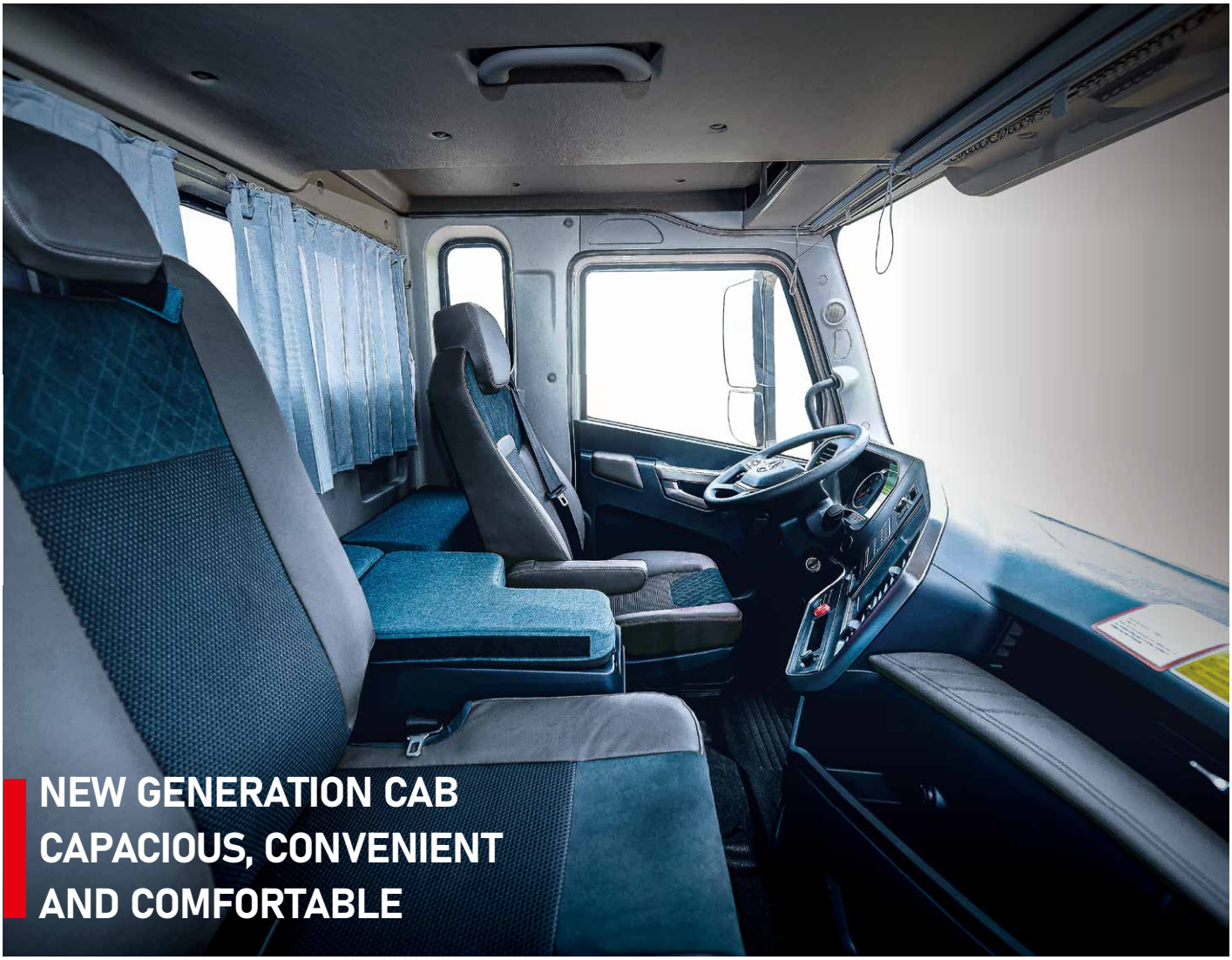
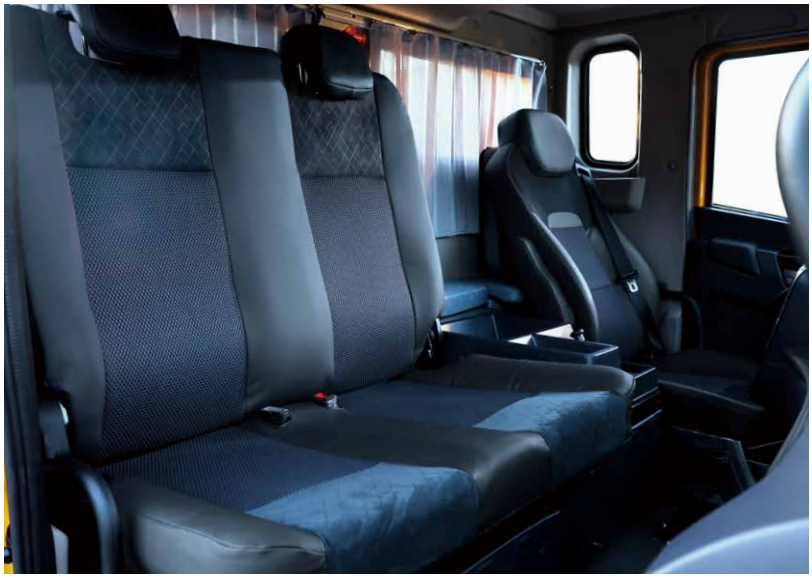


NEW GENERATION CAB CAPACIOUS, CONVENIENT AND COMFORTABLE

iCab

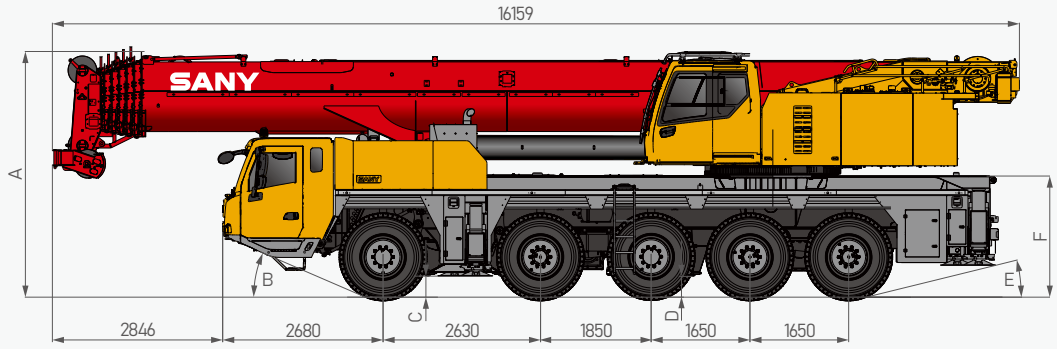
- Multi-function driver's seat with air suspension.
- Double passenger seats foldable to make a berth.
- 10.1-inch touch screen integrated with reversing image and multi-media.
- Large-field-of-vision rearview mirror with electric heating.
- Adjustable high-brightness LED headlamps/fog lamps, providing clear vision at night.
- Fully-automatic HVAC.

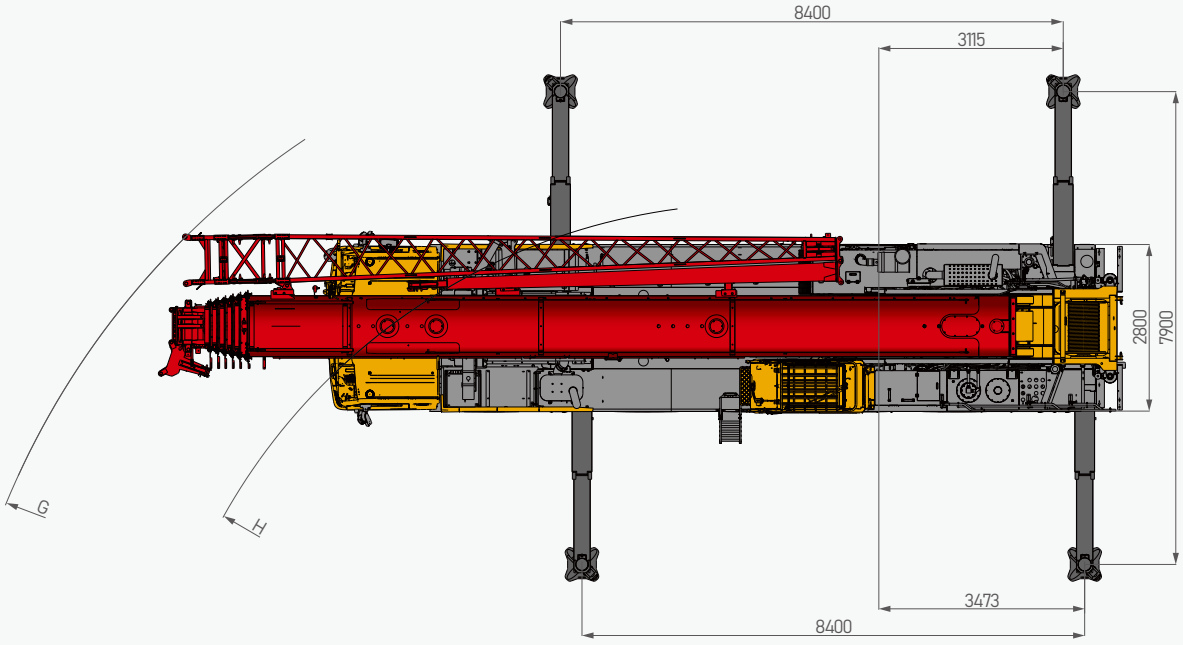


iCab

- 0~20° tiltable
- 70° openable front window
- Sliding door, sliding side step
- 10.4-inch LMI display
- Electronic control joysticks
- Adjustable seat with maximum inclination of 140°
- Seat widened to 480mm, legroom increased by 30%
- Fully-automatic HVAC.

Overall Dimensions





Tire size	A	B	C	D	E	F	G	H
Unit	mm	°	mm	mm	°	mm	mm	mm
385	4000	22	298	294	13	1971	12560	8766
445	4050	23	348	344	14	2021	13763	10358

Technical Specification

CATEGORY	ITEM		UNIT	VALUE
CAPACITY	Max. lifting capacity		t	160
WEIGHT	Gross weight		kg	60000
POWER CHASSIS	Engine model		-	WP13G530E310
	Max. engine power		kW/rpm	390/2100
	Max. engine torque		N·m/rpm	2300/(1200~1600)
POWER SUPERSTRUCTURE	Engine model		-	WP7G270E301
	Max. engine power		kW/rpm	199/2000
	Max. engine torque		N·m/rpm	1200/(1200~1500)
DIMENSIONS	Overall length		mm	16159
	Overall width		mm	2800
	Overall height		mm	4000 (385/ 95 R25)
TRAVEL	Max. travel speed		km/h	80
	Steering radius	Min.steering radius	m	8.8
		Min.steering radius of boom tip	m	12.6
	Wheel formula		-	10×6×10
	Min.ground clearance		mm	294
	Approach angle		°	22
	Departure angle		°	13
	Max.gradeability		-	46%
	Fuel consumption per 100km		L	≤80
MAIN PERFORMANCE	Working temperature range		℃	-20~+40
	Min.rated lifting radius		m	3
	Tail slewing radius		m	4.86
	Boom sections (Qty.)		-	7
	Boom shape		-	U Shape
	Max.lifting moment	Basic boom	kN.m	5145
		Full-extension boom	kN.m	2217
	Boom length	Basic boom	m	14
		Full-extension boom	m	74.8
		Full-extension boom+jib	m	87.9(standard), 103.9(optional)
	Max. lifting height	Basic boom	m	14.7
		Max. combination of boom	m	75.5
		Max. combination of boom + jib	m	87.2(standard), 103(optional)
	Outrigger span (Longitudinal×Transverse)		m	8.4×7.9
AIRCONDITIONER	In operator's cab		-	Heating & Cooling
	In driver's cab		-	Heating & Cooling

Technical Specification

Axle Load

Axle	1	2	3	4	5	Gross weight
Axle load /t	≤12	≤12	≤12	≤12	≤12	60

Hook

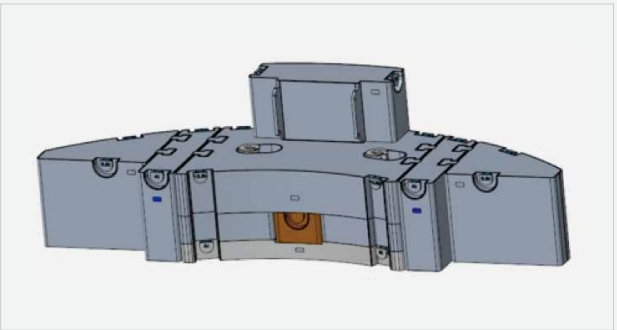
Rated load/t		Number of sheaves	Rope rate	Hook weight/kg
125	○	7	15	1443
100	○	5	11	1243
80	●	3	7	695
32	○	1	3	484
12.5	●	-	1	270

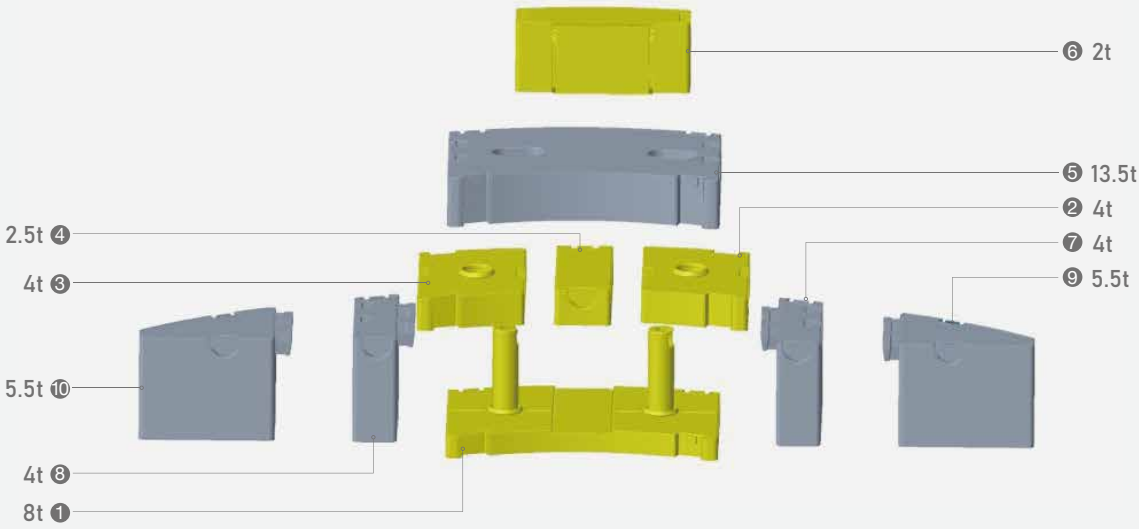
● Standard ○ Optional

Operations

Item		Max.single rope lifting speed (empty load)	Rope diameter/length	Max. single line pull
Main winch		130m/min	22mm/280m	10.5t
Auxiliary winch		130m/min	22mm/210m	10.5t
Slewing speed		1.2~1.5r/min		
Full luffing up/down time of boom		57s/80s		
Full extension/retraction time of boom		550s		
Outrigger jack	Extension	30s		
	Retraction	35s		
Outrigger beam	Extension	30s		
	Retraction	45s		

Counterweight Combinations





Total weight	① 8t	② 4t	③ 4t	④ 2.5t	⑤ 13.5t	⑥ 2t	⑦ 4t	⑧ 4t	⑨ 5.5t	⑩ 5.5t
0t										
2t						•				
8t	•									
10t	•					•				
16t	•	•	•							
18t	•	•	•			•				
20.5t	•	•	•	•		•				
34t	•	•	•	•	•	•				
42t	•	•	•	•	•	•	•	•		
53t	•	•	•	•	•	•	•	•	•	•

Crane Introduction

Carrier

Driver's cab

- Three seats with a folding berth. It's soundproofing performance meets the standard of heavy duty trucks. Air suspension seat features shock absorption, back adjustment, lumbar support and other ergonomic designs. Virtual LCD instrument and 12.1" console screen integrate auto control of air conditioning. Indoor temperature can be adjusted precisely and smoothly. LED headlights, electrically heated rear-view mirrors, multifunction steering wheel. The multimedia equipment can be controlled by the buttons integrated in the steering wheel.

Carrier frame

- The frame is a box-shape structure welded by high-strength steel plates with strong bearing capacity.

Engine

- Model: WP13G530E310 inline six cylinder, water-cooling, turbocharged inter-cooling diesel.
- Emission standard: EU Stage III A.
- Fuel reservoir capacity: 550L.

Transmission

- FAST 12-speed AT with hydraulic retarder, adaptable to driving down long slope.

Axle

- All-axle steering with disc brakes, driven by axles 2, 4 and 5, hydraulic power steering system of linkage feedback for axles 1 and 2, and electro-hydraulic control steering for axles 3, 4 and 5; the speed control assistance and optional special steering mode facilitate the control and steering.

Suspension system

- All axles equipped with hydro-pneumatic suspension with hydraulic lockout, height adjustable up by 190mm and down by 100mm. Variable modes incl. rigid lockout, auto leveling, whole machine rise & lower, single point rise & lower. Ride comfort and vehicle lateral stability are ensured regardless of any rough terrains.

Steering

- It is equipped with servo power steering, dual-circuit system hydraulic steering with emergency steering pump.
- Six types of steering modes: 1. on-road driving mode (default mode); 2. all-wheel steering mode; 3. crab mode; 4. Reduced swingout steering mode; 5. independent rear axle steering mode; 6. rear axle locking steering mode.

Tires

- Ten radial tires sized 14.00R25.

Wheel formula

- 10×6.

Brake

- Parking brake: actuated by the accumulator on the second to fifth axles.
- Service brake: all wheels use air servo brakes, dual-circuit brake system, and all wheels are equipped with disc brakes.
- Assist brake: the engine is equipped with engine brake, hydraulic retarder brake and exhaust brake, which can reduce the wear of brake components and save the cost.

Outrigger

- H type outriggers spanning 8.4m×7.9m, full hydraulic telescoping, auto leveling.

Electrical system

- CAN bus system, 24V DC power supply, 2 sets of battery packs, 180Ah each. It can cut off the power supply of carrier.
- The chassis adopts CAN bus system; multi-functional integrated display system; LCD, the contrast can be adjusted.

Crane Introduction

Operator's cab

- Curved track sliding door, foldable front step and remote-controlled electric side step. The seat and armrest box can be adjusted in multi dimensions. Auto air conditioning system gives out airflow from various outlets once pressing the virtual key. Windshield wiper covers large area, ensuing clear vision in heavy rains. 10.1" frameless display of all new UI is equipped. Operation is made via touchscreen, knob and buttons.

Superstructure engine

- Model: WP7G270E301 inline six cylinder, water-cooling, turbocharged inter-cooling diesel.

Boom & telescoping system

- Main boom: seven-section 74.8m, made of high-strength welded structural steel, oval shape.
- Jib: standard 18m, with optional extension up to 34m. 0°, 15°, 30° mechanical adjustment.
- Independent hydraulic telescoping, full extending and retracting time 550s, which is simple, efficient, safe and reliable.

Hoist

- The main hoist adopts electro proportional variable motor, featuring stability and inching mobility. Main wire rope diameter 22mm, length 280m.

Luffing system

- Passive luffing down, more energy-efficient. Single-cylinder with front hinge arranged, the force of the boom is optimized. The electric proportional control balance valve is adopted.

Slewing

- Electro proportional variable piston oil pump applied, 360° slewing, 0~1.5r/min. The electric proportional closed hydraulic circuit and the electric proportional pedal can realize emergency braking.

Counterweight

- Movable counterweight totaling 53t, traveling with 20.5t counterweight allowed with well distributed axle load, prolonging service life of axles. CW assembly and disassembly controlled by remote device.

Hydraulics

- With the use of high-quality variable piston main oil pump, slewing pump, main valve, winch motor, balance valve and other key hydraulic components, it ensures that the hydraulic system is stable and reliable; with accurate parameter matching, the operation performance is superior.
- With electric proportional variable displacement piston pump to adjust the displacement of the oil pump in real time through the change of the opening degree of the joystick, it realizes high-precision flow control without energy loss.
- With self-developed double-pump flow confluence / shunt main valve, higher efficiency of single motion and better control of combined motions are realized.
- Passive luffing down with hydraulic compensation ensures excellent inching motion and stability.
- Boom telescopes via single cylinder pin mechanism.

Control system

- Electronic control of the crane through the SYMC load moment indicator independently developed by Sany. Crane motion is adjusted by hydraulic pump; and the operation speed is adjusted by engine speed.

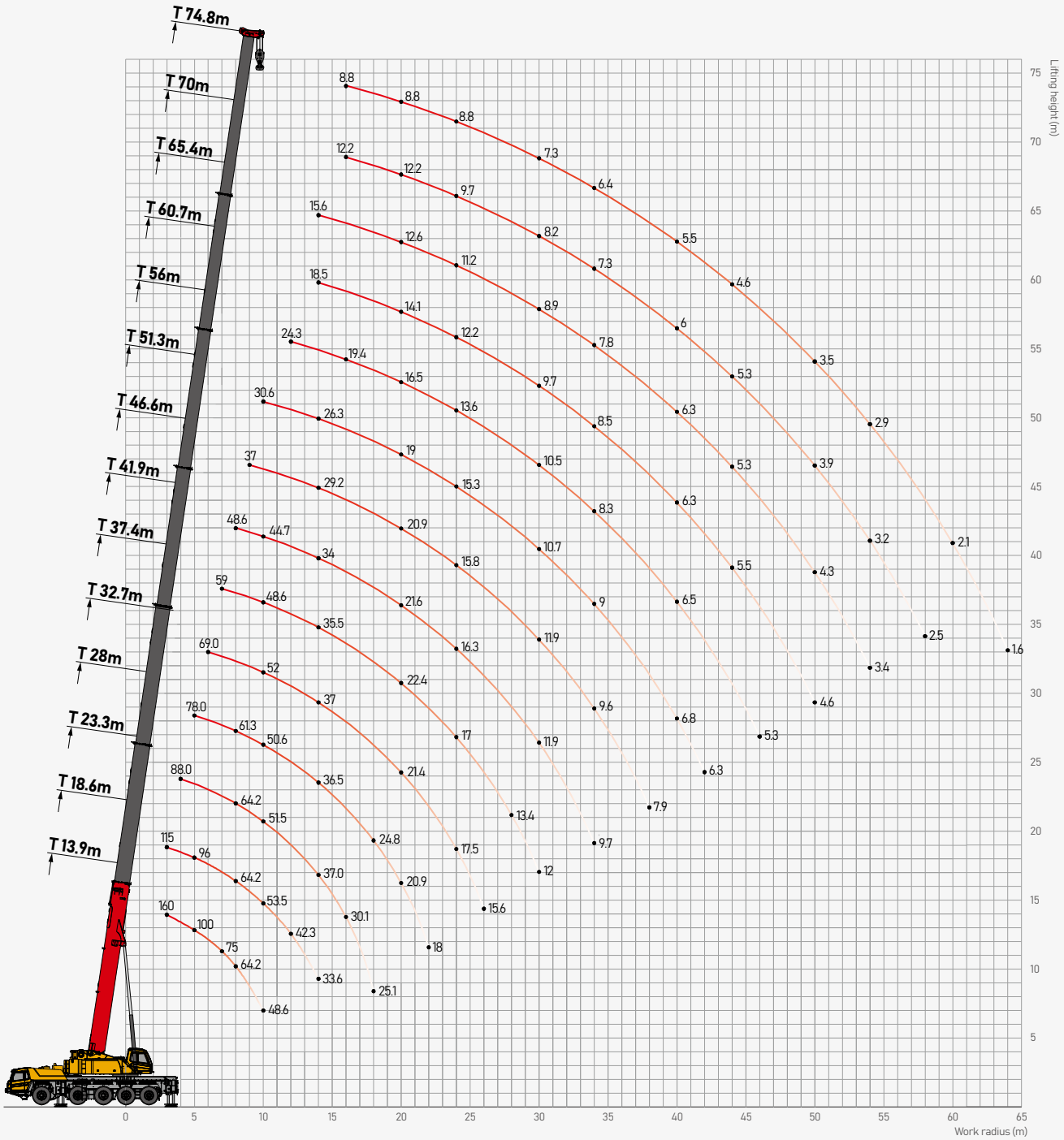
Safety equipment

- LMI: using the analytical mechanics method, the LMI calculation system based on the hoisting mechanics model is built. The rated load accuracy is ±5% by online empty-load calibration, and the hoisting operation is fully protected. When overloading, the system gives auto alarm for 100% safety.
- The hydraulic system is equipped with hydraulic balance valve, relief valve and two-way hydraulic lock to achieve system reliability.
- The main and auxiliary hoists are equipped with three-circle protectors to prevent the wire rope from over-hoisting down.
- Height limit switches are arranged at boom head and jib head to prevent the wire rope from over-hoisting up.
- An anemometer is installed at boom head to detect whether the wind speed exceeds the allowable range of operation.

Optional equipment at extra fees

- 125t hook block
- 100t hook block
- 32t hook block
- Boom extension 8m×2
- Auxiliary winch
- Boom tip camera
- Tri-color warning lights of Singapore standard
- Spark arrester
- Air intake shutoff valve
- Fan in operator's cab
- 445/95R25 tires
- Spare tire bracket
- Outrigger pads

Operating Range - Telescopic Boom (T)

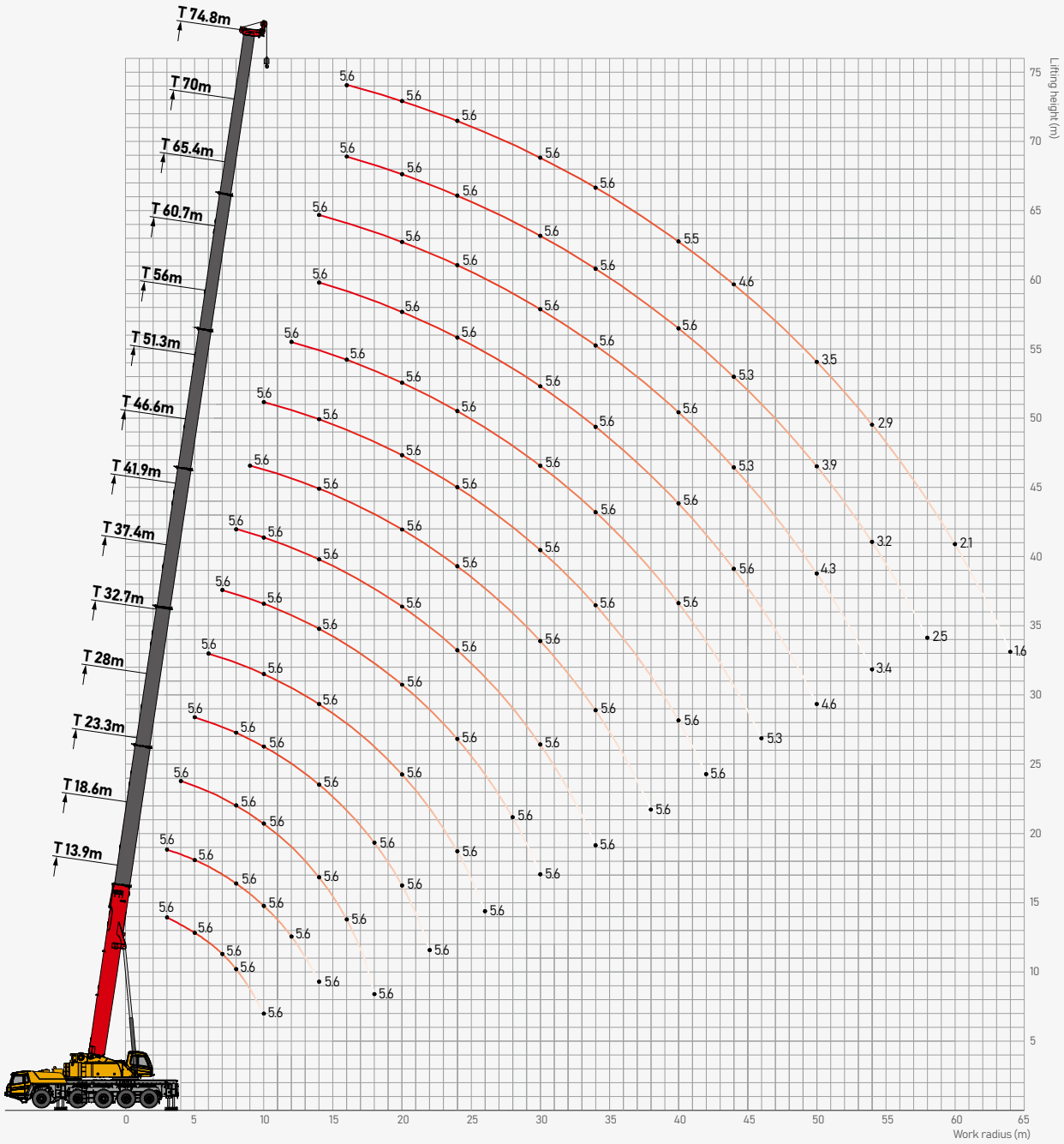


Load Chart - Telescopic Boom (T)

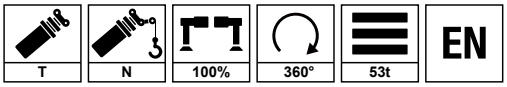
Unit: t

m	13.9	18.6	23.3	28.0	32.7	37.4	41.9	46.6	51.3	56.0	60.7	65.4	69.9	74.8	m
3.0	160.0	115.0													3.0
3.5	126.0	110.0	88.0												3.5
4.0	117.0	106.0	88.0												4.0
4.5	109.0	101.0	88.0												4.5
5.0	100.0	96.0	88.0	78.0											5.0
6.0	87.0	85.0	78.0	78.0	69.0										6.0
7.0	75.0	75.0	72.0	70.0	69.0	59.0									7.0
8.0	64.2	64.2	64.2	61.3	62.7	54.5	48.6								8.0
9.0	56.4	58.3	58.3	55.4	56.9	52.0	47.7	37.4							9.0
10.0	48.6	53.5	51.5	50.6	52.0	48.6	44.7	37.0	30.6						10.0
12.0		42.3	43.8	43.8	44.7	41.8	40.4	34.0	28.7	41.8					12.0
14.0		33.6	37.0	36.5	37.0	35.5	34.0	29.2	26.3	35.5	18.5	15.6			14.0
16.0			30.1	29.7	30.1	30.1	29.7	26.3	23.3	30.1	17.5	14.6	12.2	8.8	16.0
18.0			25.1	24.8	25.3	26.3	25.3	23.3	20.9	26.3	16.0	13.6	12.2	8.8	18.0
20.0				20.9	21.4	22.4	21.6	20.9	19.0	22.4	14.1	12.6	12.2	8.8	20.0
22.0				18.0	19.0	19.4	18.7	18.1	17.0	19.4	13.1	12.2	11.2	8.8	22.0
24.0					17.5	17.0	16.3	15.8	15.3	17.0	12.2	11.2	9.7	8.8	24.0
26.0					15.6	15.1	14.4	14.1	13.3	15.1	11.2	10.2	9.2	8.3	26.0
28.0						13.4	13.1	12.8	11.9	13.4	10.5	9.7	8.8	7.8	28.0
30.0						12.0	11.9	11.9	10.7	12.0	9.7	8.9	8.2	7.3	30.0
32.0							11.2	10.7	9.7	11.2	9.0	8.3	7.8	6.8	32.0
34.0							9.7	9.6	9.0	9.7	8.5	7.8	7.3	6.4	34.0
36.0								8.8	8.3	8.8	7.6	7.3	6.8	6.1	36.0
38.0								7.9	7.4	7.9	6.8	6.8	6.3	5.8	38.0
40.0									6.8	6.8	6.3	6.3	6.0	5.5	40.0
42.0									6.3	6.3	5.8	5.6	5.6	5.1	42.0
44.0										0.0	5.6	5.3	5.3	4.6	44.0
46.0										0.0	5.3	5.0	4.9	4.4	46.0
48.0											4.9	4.7	4.4	3.9	48.0
50.0											4.6	4.3	3.9	3.5	50.0
52.0												3.9	3.4	3.1	52.0
54.0												3.4	3.2	2.9	54.0
56.0													2.9	2.6	56.0
58.0													2.5	2.3	58.0
60.0														2.1	60.0
62.0														1.8	62.0
64.0														1.6	64.0

Operating Range - Telescopic Boom with Auxiliary Boom Nose (TN)



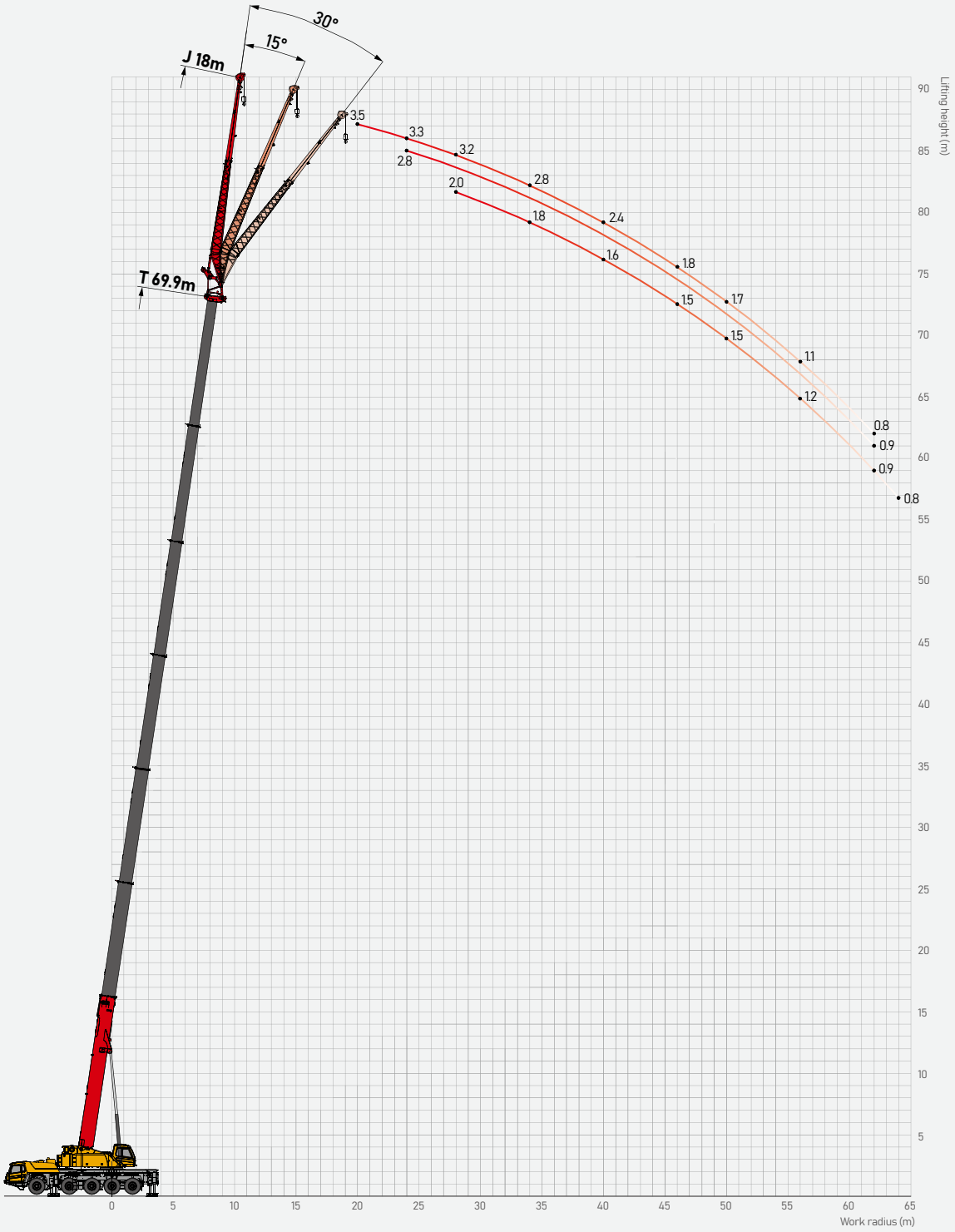
Load Chart - Telescopic Boom with Auxiliary Boom Nose (TN)



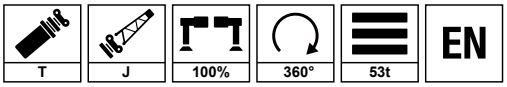
Unit: t

m	13.9	18.6	23.3	28.0	32.7	37.4	41.9	46.6	51.3	56.0	60.7	65.4	69.9	74.8	m
3.0	5.6	5.6													3.0
3.5	5.6	5.6	5.6												3.5
4.0	5.6	5.6	5.6												4.0
4.5	5.6	5.6	5.6												4.5
5.0	5.6	5.6	5.6	5.6											5.0
6.0	5.6	5.6	5.6	5.6	5.6										6.0
7.0	5.6	5.6	5.6	5.6	5.6	5.6									7.0
8.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6								8.0
9.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6							9.0
10.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6						10.0
12.0		5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6					12.0
14.0		5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6			14.0
16.0			5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	16.0
18.0			5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	18.0
20.0				5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	20.0
22.0				5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	22.0
24.0					5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	24.0
26.0					5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	26.0
28.0						5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	28.0
30.0						5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	30.0
32.0							5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	32.0
34.0							5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	34.0
36.0								5.6	5.6	5.6	5.6	5.6	5.6	5.6	36.0
38.0								5.6	5.6	5.6	5.6	5.6	5.6	5.6	38.0
40.0									5.6	5.6	5.6	5.6	5.6	5.5	40.0
42.0									5.6	5.6	5.6	5.6	5.6	5.1	42.0
44.0										5.6	5.6	5.3	5.3	4.6	44.0
46.0										5.3	5.3	5.0	4.9	4.4	46.0
48.0											4.9	4.7	4.4	3.9	48.0
50.0											4.6	4.3	3.9	3.5	50.0
52.0												3.9	3.4	3.1	52.0
54.0												3.4	3.2	2.9	54.0
56.0													2.9	2.6	56.0
58.0													2.5	2.3	58.0
60.0														2.1	60.0
62.0														1.8	62.0
64.0														1.6	64.0

Operating Range - Telescopic Boom + Fixed Jib (TJ)



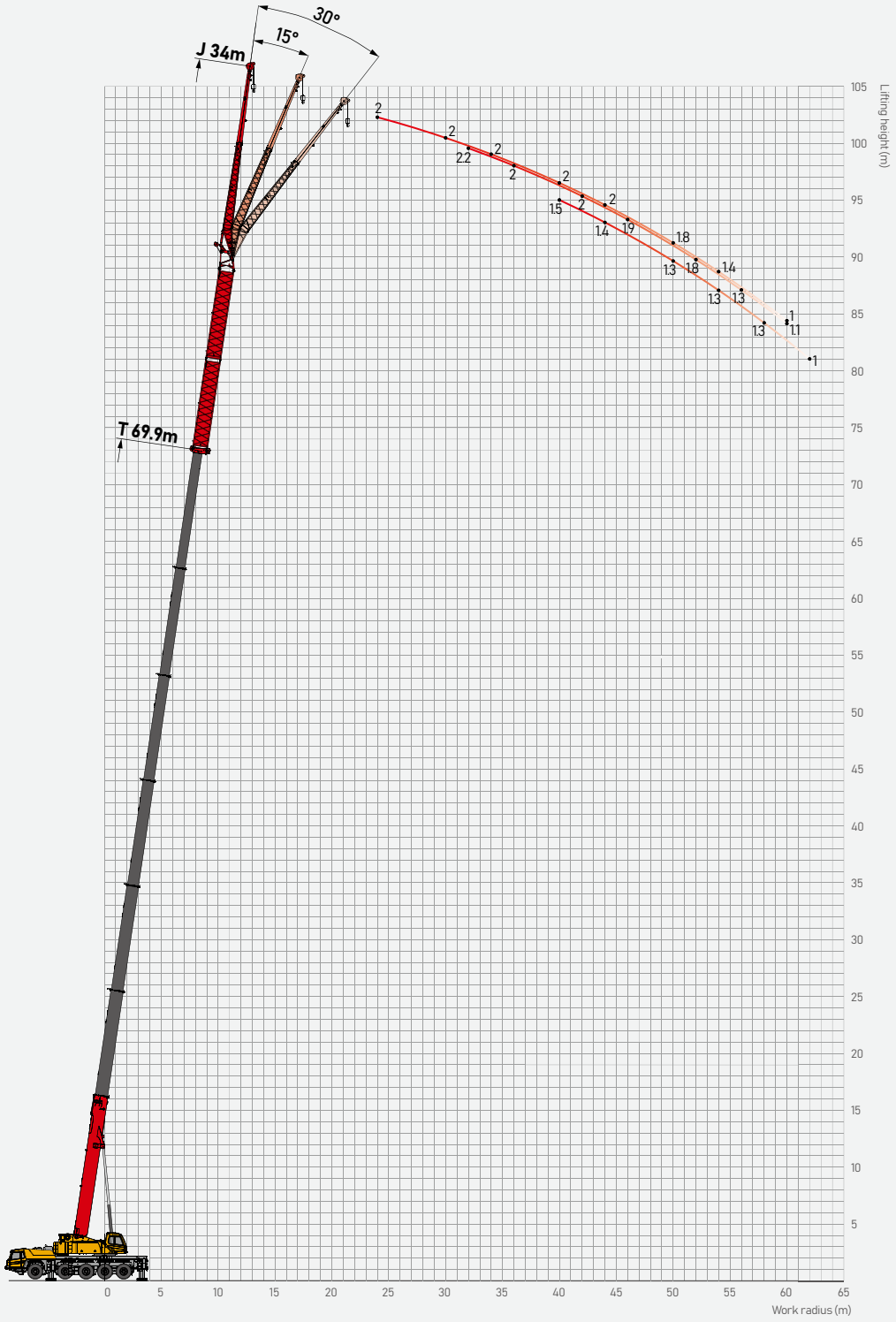
Load Chart - Telescopic Boom + Fixed Jib (TJ)



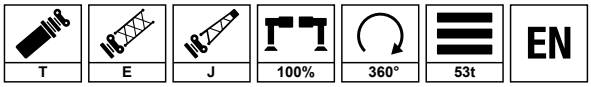
Unit: t

	60.7m + 18m			65.4m + 18m			69.9m + 18m			
	0	15	30	0	15	30	0	15	30	
14.0										14.0
16.0										16.0
18.0	6.8	5.8		6.8			6.6			18.0
20.0	6.5	5.5	4.4	6.5	5.4		6.4	5.3		20.0
22.0	6.0	5.3	4.3	6.0	5.3	4.4	6.0	5.2	4.2	22.0
24.0	5.8	5.1	4.1	5.6	5.2	4.2	5.5	5.0	4.1	24.0
26.0	5.5	4.9	3.9	5.4	5.0	4.1	5.2	4.9	4.0	26.0
28.0	5.3	4.6	3.8	4.9	4.9	4.0	4.7	4.5	3.9	28.0
30.0	4.9	4.4	3.6	4.4	4.4	3.8	4.2	4.2	3.7	30.0
32.0	4.4	4.2	3.5	4.0	4.1	3.6	3.7	3.9	3.6	32.0
34.0	3.9	4.0	3.4	3.5	3.9	3.5	3.3	3.4	3.4	34.0
36.0	3.4	3.5	3.2	3.3	3.5	3.4	2.9	3.1	3.1	36.0
38.0	3.0	3.1	3.0	3.0	3.2	3.2	2.6	2.8	2.7	38.0
40.0	2.7	2.8	2.7	2.8	2.9	2.9	2.4	2.6	2.4	40.0
42.0	2.5	2.4	2.4	2.6	2.6	2.7	2.2	2.4	2.2	42.0
44.0	2.1	2.1	2.1	2.4	2.4	2.5	2.0	2.2	2.0	44.0
46.0	1.9	1.9	1.9	2.1	2.1	2.3	1.8	2.0	1.8	46.0
48.0	1.7	1.7	1.8	1.8	1.9	2.0	1.7	1.8	1.7	48.0
50.0	1.5	1.5	1.5	1.7	1.8	1.8	1.5	1.7	1.6	50.0
52.0	1.3	1.3	1.3	1.4	1.5	1.5	1.3	1.5	1.5	52.0
54.0	1.0	1.1	1.2	1.2	1.2	1.3	1.1	1.3	1.3	54.0
56.0	1.0	1.0	1.1	0.9	1.0	1.1	0.9	1.1	1.1	56.0
58.0		0.8	0.9		0.9	0.9		0.9	0.9	58.0
60.0									0.9	60.0

Operating Range - Telescopic Boom + Boom Extension + Fixed Jib (TEJ)



Load Chart - Telescopic Boom + Boom Extension + Fixed Jib (TEJ)



Unit: t

	60.7m + 34m			65.4m + 34m			69.9m + 34m			
	0	15	30	0	15	30	0	15	30	
14.0										14.0
16.0										16.0
18.0										18.0
20.0										20.0
22.0	3.2									22.0
24.0	3.0			2.8			2.0			24.0
26.0	3.0			2.8			2.0			26.0
28.0	3.0			2.8			2.0			28.0
30.0	3.0	2.5		2.8			2.0			30.0
32.0	3.0	2.4		2.8	2.5		2.0	2.0		32.0
34.0	3.0	2.2		2.8	2.5		2.0	2.0		34.0
36.0	3.0	2.1	1.5	2.7	2.3		2.0	2.0		36.0
38.0	2.9	2.0	1.4	2.7	2.1	1.5	2.0	2.0		38.0
40.0	2.9	1.9	1.4	2.7	2.0	1.5	2.0	2.0	1.5	40.0
42.0	2.8	1.9	1.4	2.7	1.9	1.4	2.0	2.0	1.5	42.0
44.0	2.8	1.8	1.3	2.6	1.9	1.4	2.0	2.0	1.4	44.0
46.0	2.7	1.7	1.3	2.5	1.8	1.4	2.0	1.9	1.4	46.0
48.0	2.6	1.7	1.3	2.3	1.8	1.4	2.0	1.9	1.4	48.0
50.0	2.5	1.7	1.3	2.1	1.7	1.3	1.8	1.8	1.3	50.0
52.0	2.3	1.6	1.2	1.8	1.7	1.3	1.6	1.8	1.3	52.0
54.0	2.1	1.6	1.2	1.7	1.6	1.2	1.4	1.6	1.3	54.0
56.0	1.9	1.5	1.1	1.5	1.6	1.2	1.2	1.3	1.3	56.0
58.0	1.7	1.5	1.1	1.3	1.4	1.2	1.1	1.2	1.3	58.0
60.0	1.5	1.4	1.0	1.2	1.3	1.1	1.0	1.1	1.2	60.0
62.0	1.3	1.4	1.0	1.0	1.2	1.0			1.0	62.0
64.0		1.3	1.0		1.0	1.0				64.0
66.0		1.0								66.0

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