

**SANY**<sup>®</sup>

# SPECIFICATION



 220t

 75.5m

 107m

# SAC2200S7

SANY ALL TERRAIN CRANE

QUALITY CHANGES THE WORLD

[crane.sanyglobal.com](http://crane.sanyglobal.com)

V1.2

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.



SANY CRANE



# SAC2200S7

SANY ALL TERRAIN CRANE  
220 TON LIFTING CAPACITY

7-section oval boom with a full-extension length of 75.5m, standard jib of 22m long, and optional extensions (2 × 7m) with a maximum length of 36m, ensuring high lifting length, height and capacity.

70t full counterweight, traveling with 18t counterweights allowed with uniform axle load.

Robust powertrain: BENZ OM460LA.E3A/1 + ZF automatic transmission (with hydraulic retarder) + Kessler transfer case + Kessler axle (all-axle disc brake).

5-axle all-terrain chassis, 4 drive axles. H-shaped outriggers, hydro-pneumatic suspension, all-wheel steer, 6 steering modes, and minimum steering radius of 9.65m.

Independent hydraulic system for superstructure and chassis, providing high transmission efficiency.

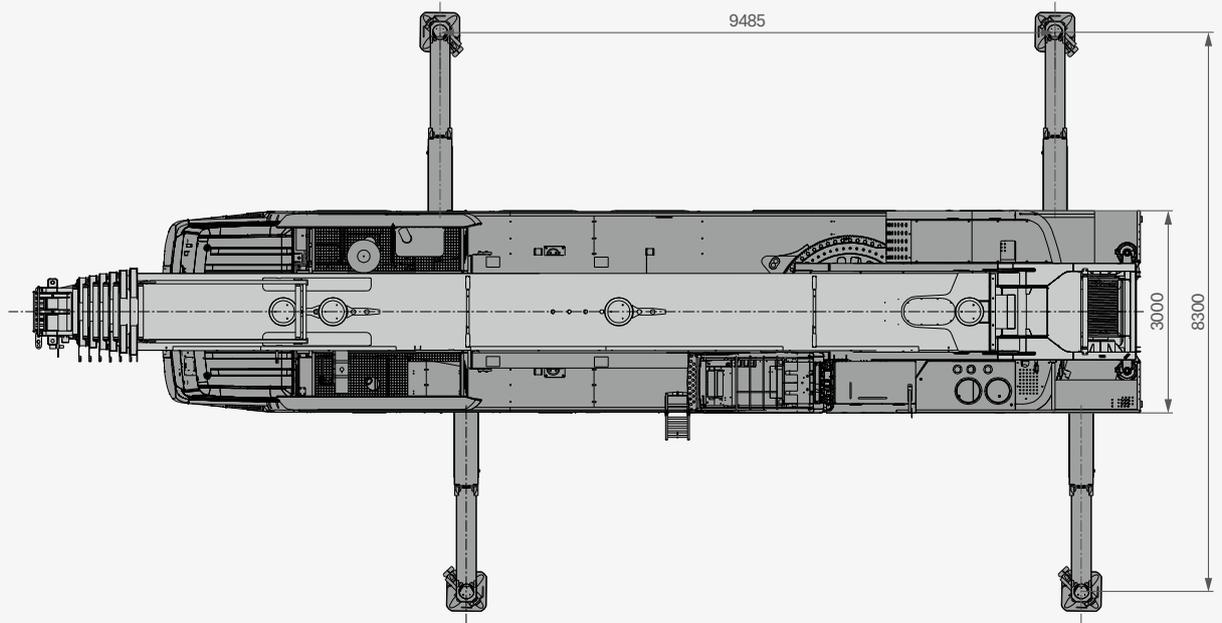
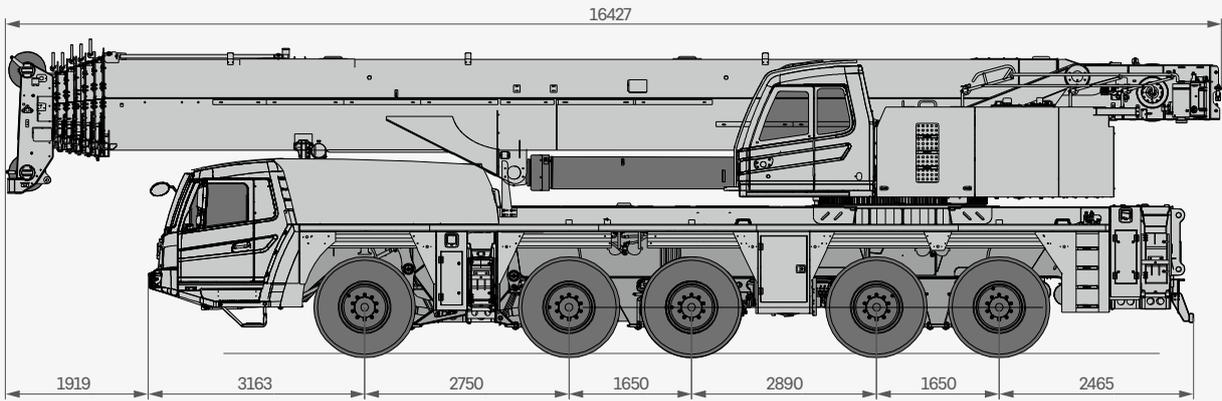
Superstructure cable wiring with higher reliability.

All-aluminum closures and walking deck, light, beautiful and rust resistance.





# Overall Dimensions



# Technical Specification

| CATEGORY                                   | ITEM  | UNIT                          | VALUE               |                                  |
|--|---|-------------------------------|---------------------|----------------------------------|
| CAPACITY                                   | Max. lifting capacity   | t                             | 220                 |                                  |
| POWER                                      | Power   | kW/rpm                        | 360/1800            |                                  |
|  | Torque  | N·m/rpm                       | 2200/1300           |                                  |
| DIMENSIONS                                 | Overall length  | mm                            | 16427               |                                  |
|  | Overall width   | mm                            | 3000                |                                  |
|  | Overall height  | mm                            | 4000                |                                  |
| WEIGHT                                     | Gross weight  | kg                            | 63000               |                                  |
| TRAVEL                                     | Max. travel speed   | km/h                          | 80                  |                                  |
|  | Min. steering radius (at wheels)                                  | m                             | 9.65                |                                  |
|  | Wheel fomula  | -                             | 10 × 8 × 10         |                                  |
|  | Max. gradeability   | %                             | 45                  |                                  |
|  | Fuel consumption per 100km  | L                             | 70                  |                                  |
| MAIN PERFORMANCE                           | Min. rated radius   | m                             | 3                   |                                  |
|  | Tail slewing radius   | m                             | 4.86                |                                  |
|  | Number of boom sections   | -                             | 7                   |                                  |
|  | Boom shape  | -                             | Oval                |                                  |
|  | Max. lifting moment   | Basic boom                    | t·m                 | 680                              |
|  |   | Full-extension boom           | t·m                 | 280                              |
|  | Boom length   | Basic boom                    | m                   | 14.1                             |
|  |   | Full-extension boom           | m                   | 75.5                             |
|  |   | Max. combination of boom +jib | m                   | Standard: 92.6m/Optional: 106.6m |
|  | Max. lifting height   | Basic boom                    | m                   | 14.5                             |
|  |   | Full-extension boom           | m                   | 76                               |
|  |   | Max. combination of boom +jib | m                   | Standard: 93 /Optional: 107      |
| Outrigger span (longitudinal × transverse) | m   | 9.5 × 8.3                     |                     |                                  |
| Jib offset                                 | °   | 0, 20, 40                     |                     |                                  |
| OPERATION SPEED                            | Max. lifting speed of single rope of main winch (empty load)      | m/min                         | 130                 |                                  |
|  | Max. lifting speed of single rope of auxiliary winch (empty load) | m/min                         | 130                 |                                  |
|  | Fully extension/retraction time of boom                           | s                             | 660/660             |                                  |
|  | Full luffing up/down time of boom                                 | s                             | 60/115              |                                  |
|  | Slewing speed   | r/min                         | 1.5                 |                                  |
| AIRCONDITIONER                             | Superstructure  | -                             | Heating and cooling |                                  |
|  | Chassis   | -                             | Heating and cooling |                                  |

# Technical Specification



## Axle Load

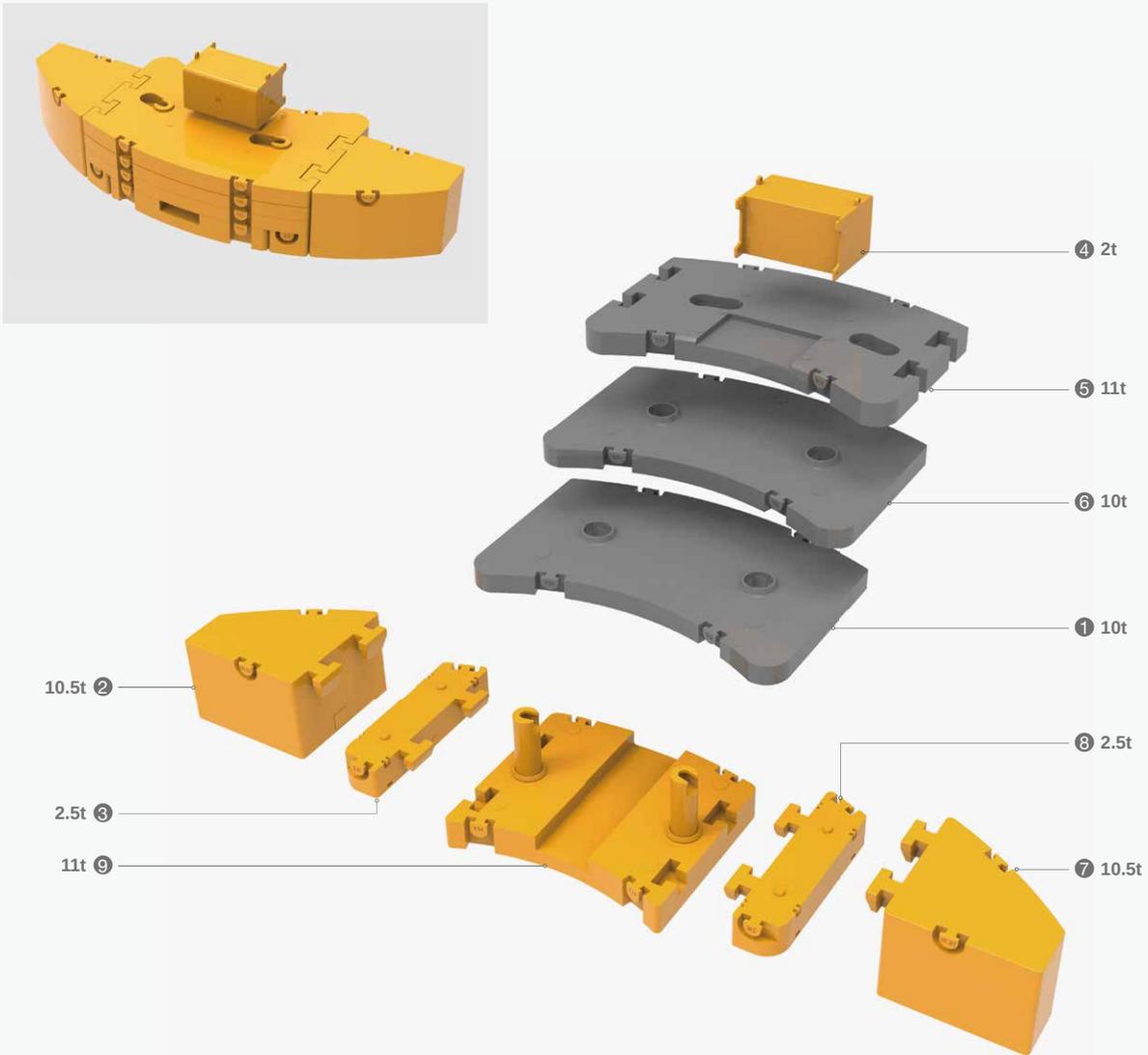
| Axle          | 1   | 2   | 3   | 4   | 5   | Gross weight |
|---------------|---|-----|-----|-----|-----|--------------|
| Axle load (t) | ≤12   | ≤12 | ≤12 | ≤12 | ≤12 | 55           |
| Remark        | 55t condition: without jib, hook, counterweight, spare tyre, winch rope, and with front/rear movable outrigger removed. |     |     |     |     |              |



## Hook

| Rated load (t)    | Number of sheaves | Rope rate | Hook weight (kg) |
|-------------------|-------------------|-----------|------------------|
| 125 (double eyes) | 7                 | 14        | 1443             |
| 80 (double eyes)  | 3                 | 7         | 695              |
| 12.5              | -                 | 1         | 270              |

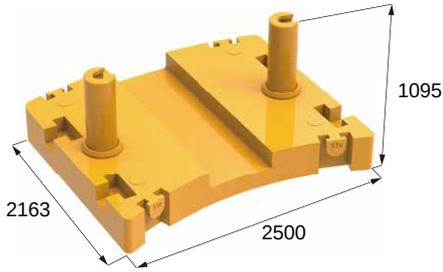
# Counterweight Combinations



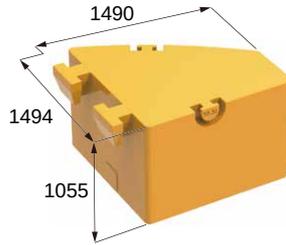
| Total weight | ①<br>10t | ②<br>10.5t | ③<br>2.5t | ④<br>2t | ⑤<br>11t | ⑥<br>10t | ⑦<br>10.5t | ⑧<br>2.5t | ⑨<br>11t |
|--------------|----------|------------|-----------|---------|----------|----------|------------|-----------|----------|
| 0t           |          |            |           |         |          |          |            |           |          |
| 11t          |          |            |           |         |          |          |            |           | •        |
| 16t          |          |            | •         |         |          |          |            | •         | •        |
| 18t          |          |            | •         | •       |          |          |            | •         | •        |
| 28t          | •        |            | •         | •       |          |          |            | •         | •        |
| 38t          | •        |            | •         | •       |          | •        |            | •         | •        |
| 49t          | •        |            | •         | •       | •        | •        |            | •         | •        |
| 70t          | •        | •          | •         | •       | •        | •        | •          | •         | •        |

# Transport Dimensions

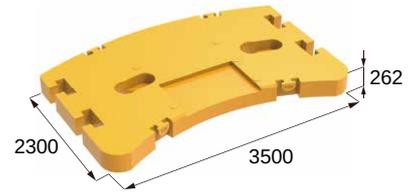
Unit:mm



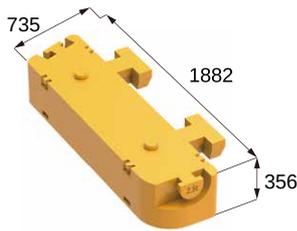
11t



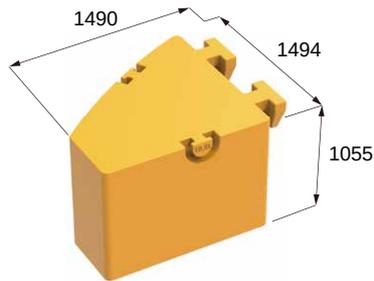
10.5t



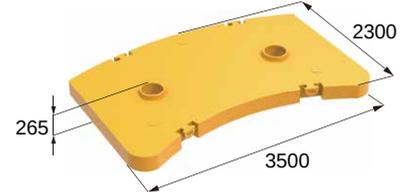
11t



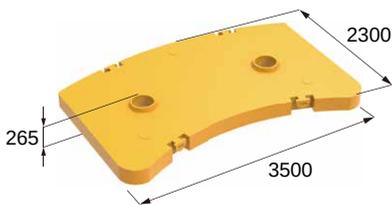
2.5t



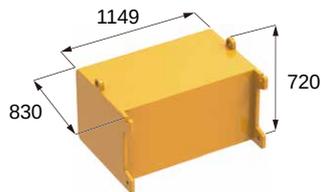
10.5t



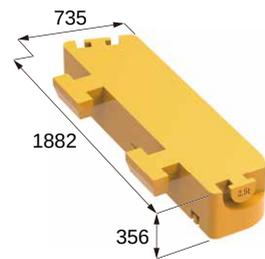
10t



10t

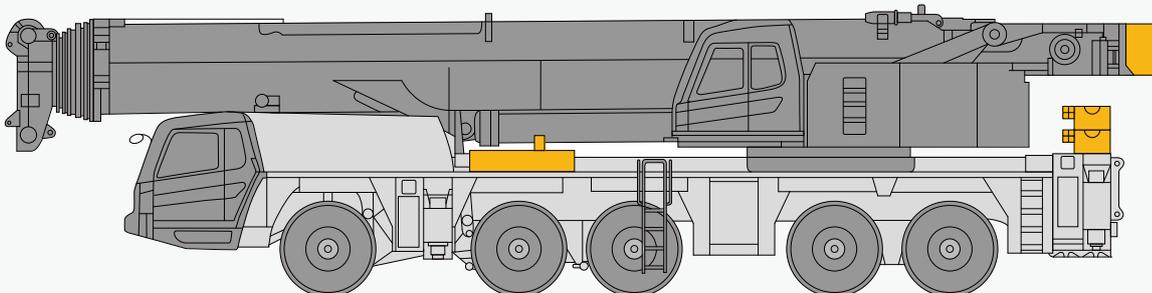


2t



2.5t

## On-site transfer with 18t CW



18t

# Crane Introduction

Carrier

## Driver's cab

- Independently developed by Sany, it is of new steel structure, enabling high damping and sealing performance. It is configured with outward opening doors on both sides, air-suspension driver seat and passenger's seat, adjustable steering wheel, wide-angle rearview mirror, comfortable driver seat headrest, antifogging fan, HVAC, stereo radio, and a complete set of controls and instruments, creating a more comfortable, safe and user-friendly driving environment.

## Carrier frame

- Designed and manufactured by Sany, it is a anti-torsion box structure welded by fine-grained high-strength steel plates with strong load-bearing capacity.

## Engine

- Model: Benz OM460LA.E3A/1 six-cylinder, water-cooled, supercharged intercooler, diesel engine.
- Rated power:360kW/1800rpm.
- Max. torque: 2200N·m/1300rpm.
- Emission standard: EU Stage III A.
- Fuel reservoir capacity: 500L.

## Transmission

- ZF AMT (with hydraulic retarder to allow easy long downhill driving), having 12 forward gears and 2 reverse gears.

## Axle

- Kessler axles are adopted, with all axles available for steering, and axles 1, 2, 4 and 5 for driving. Axles 1 and 2 are equipped with linkage-feedback hydraulic power steering system, and axles 3, 4 and 5 are equipped with electro-hydraulic steering system, providing steering control assist and several special steering modes for your option, and ensuring nimble steering and flexible control.

## Drive/Steering

- 10 × 8.

## Suspension system

- All axles adopt height-adjustable hydro-pneumatic suspension with hydraulic lock. The suspension can be adjusted up by 140mm and down by 150mm, and has such modes including suspension, rigid locking, automatic leveling, vehicle lifting/lowering to adapt to various harsh working conditions and road surfaces, ensuring good NVH and lateral stability, and making the driving more comfortable.

## Tires

- Techking 10 × 14.00R25 radial tubeless tire.

## Brake

- Parking brake: acting on axles 2-5 through spring-loaded air chamber controlled by valve.
- Service brake: All wheels employ air servo brakes, forming a dual-circuit braking system. Disc brake is applied for all wheels.
- Auxiliary brake: The auxiliary brake is realized by transmission hydraulic retarder, engine brake and exhaust brake, reducing the wear of brake components, and saving the operation cost.

## Steering

- Servo power steering gear, dual-circuit hydraulic power steering system with emergency steering pump.
- 6 steering modes: 1) on-road steer (default); 2) all-wheel steer; 3) crab; 4) anti-yaw steer; 5) independent rear axle steer; 6) rear axle lock steer.

## Outrigger

- H-shaped outriggers with a longitudinal and transverse span of 9.5m × 8.3m and automatic leveling function are equipped, and they are extended and retracted by the fully hydraulic horizontal/vertical outrigger cylinders.

## Electrical system

- Modern data bus system, 24V DC power supply, and 2 battery packs with a single capacity of 180AH are provided, allowing for power cutoff of chassis.
- The chassis adopts CAN bus system, multi-functional centralized display system with low power consumption, and LCD screen with contrast adjustable.

# Crane Introduction

superstructure



## Operator's cab

- With the angle adjustable within 0°~20°, it adopts the corrosion-resistant steel plate, and is equipped with full-coverage softening interior decoration, panoramic skylight, adjustable seat and other user-friendly designs, making operation more comfortable and easier. The moment limiter display is configured to realize the coordination of the console and the operation display system, so that all working condition data can be clear at a glance.



## Boom system

- Boom: 7-section boom of oval cross section made of fine-grained high-strength steel plate, with a full-extension length of 75.5m.
- Jib: 22m long jib of mechanical luffing is installed as standard, and two extensions of 7m long are optional, with offsets of 0°/20°/40° available.
- Telescopic mechanism: The independent hydraulic telescopic mechanism allows for a full extension/retraction time down to 660s, more efficient, safe and reliable.



## Hoist

- The main winch adopts an electric proportional variable plunger motor, providing good hoisting micromobility and stability.



## Luffing system

- The self-weight luffing down system is more energy saving. The single cylinder + front hinged support arrangement makes the luffing more labor-saving and improves the stressing condition of the boom; an electric proportional control balance valve is adopted.



## Slewing

- The slewing system is applied with piston main pump, and supports 360° slew at a speed of 0-1.5r/min; the electric proportional closed hydraulic circuit and electric proportional pedal are applied for emergency braking.



## Slewing platform

- Independently designed by Sany, it is made of fine-grained high-strength steel plates, with optimized structure.



## Counterweight

- Combined counterweight of 70t are applied, and traveling with 18t counterweights is allowed; the loading and unloading of counterweight is realized by wireless remote control.



## Hydraulics

- Key hydraulic elements including main pump, slewing pump, main valve, winch motor and balance are of high quality, ensuring the stability and reliability of the hydraulic system; the accurate parameter matching further improves the operation performance valve; Electric proportional displacement piston pump is applied, and the pump displacement is adjusted in real-time by changing the opening of electric control lever, realizing high-precision flow control and reducing the energy consumption; Innovative dual-pump shunt/confluence main valve enables higher dual-pump confluence efficiency in case of single action and better dual-pump shunt control in case of combined actions.
- Self-weight compensated luffing down hydraulic system is adopted, ensuring better luffing-down micromobility and stability.
- Single-cylinder bolt telescoping system is applied for the boom.
- The slewing system is of closed type, and the flow rate and the flowing direction are changed by adjusting the variable pump swash plate, providing better slewing micromobility and stability.



## Control system

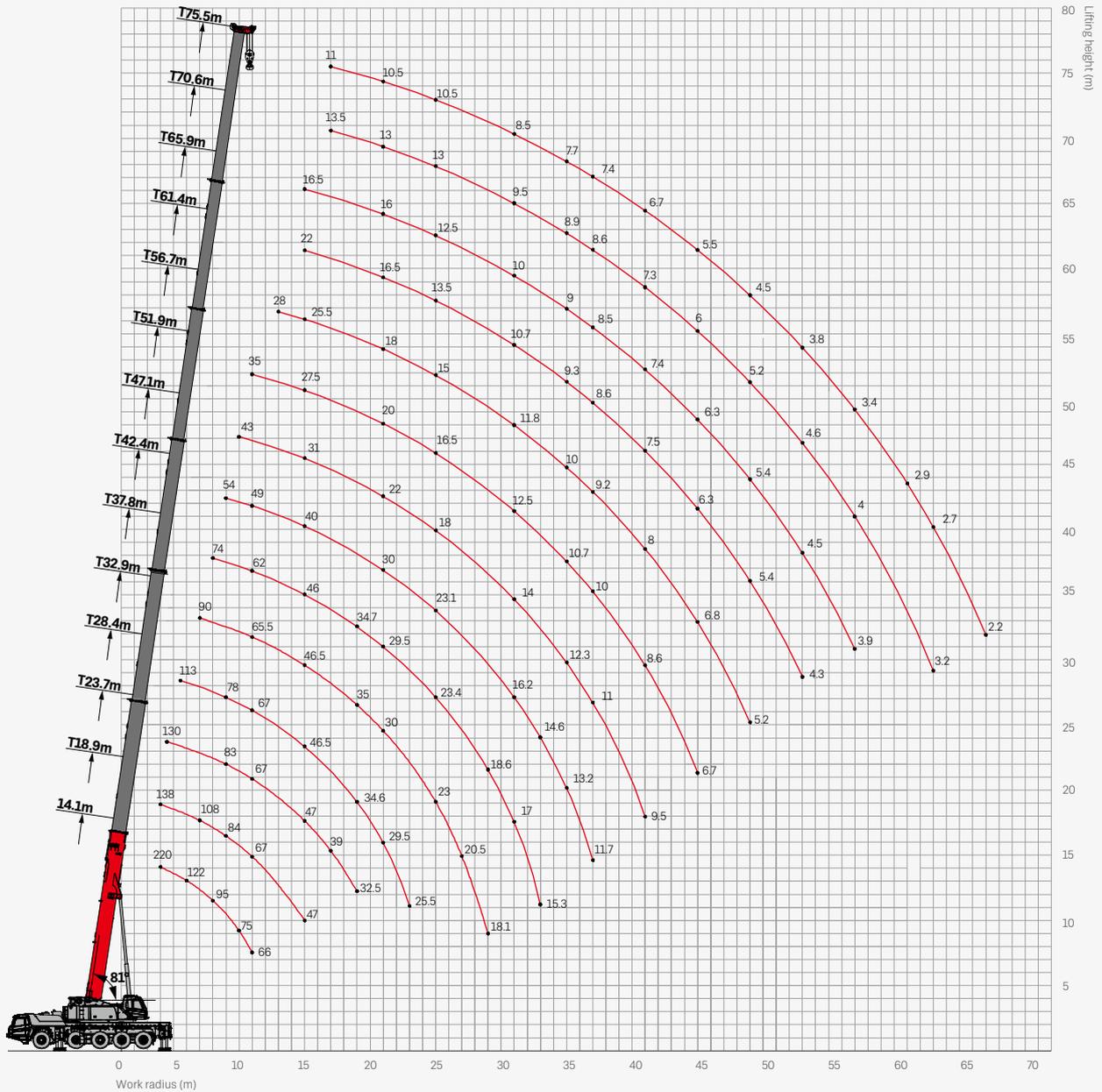
- The crane is electronically controlled through the moment limiter system (PLC control); two multi-directional levers can return to the original position automatically; the movement of the crane is adjusted by regulating the hydraulic pump, and the speed is adjusted by regulating the speed of the engine.



## Safety equipment

- Moment limiter: The moment limiter calculation system is developed by using the mechanics analysis method based on the hoisting mechanical model, and the rated hoisting accuracy is controlled within  $\pm 5\%$  through online no-load calibration, enabling all-round protection for the hoisting operations; in case of overloading operations, the system will send an alarm automatically to provide safety guarantee for operations.
- Hydraulic balance valve, overflow valve, two-way hydraulic lock and other elements provided for the hydraulic system, ensuring good stability and reliability of the hydraulic system.
- 3rd wrap indicator of main winch to prevent rollover of wire rope.
- A2B limit switch mounted at tip of boom and jib to prevent over-hoisting of the wire rope.
- Anemometer mounted at tip of boom to check if the wind speed is out of the allowable operating range of the crane.

# Operating Range - Telescopic Boom



# Load Chart-Telescopic Boom

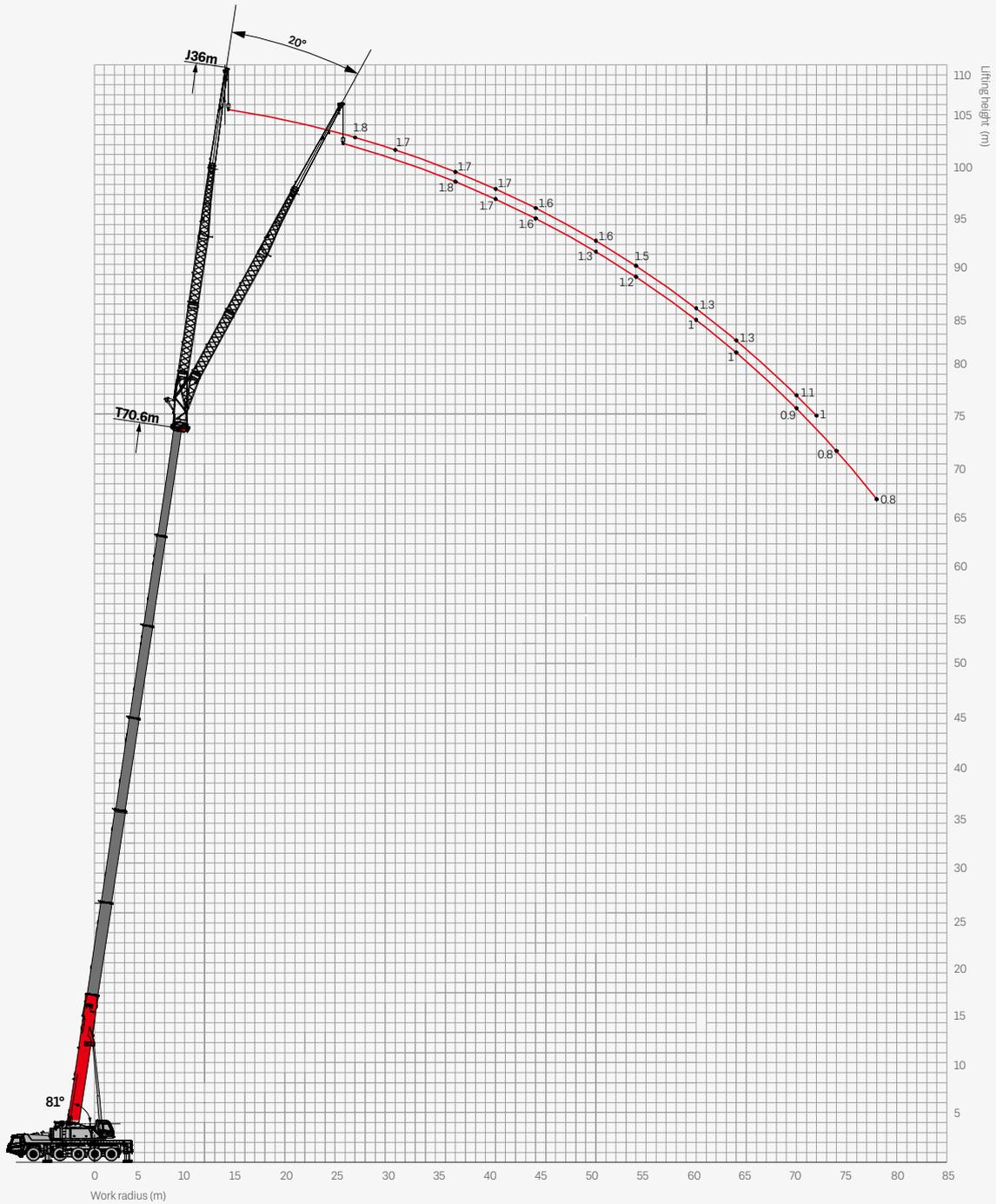
Unit: t



| Radius (m) | 14.1 | 18.9 | 23.7 | 28.4 | 33.2 | 37.8 | 42.4 | 47.1 | 51.9 | 56.7 | 61.4 | 66.1 | 70.6 | 75.5 | Radius (m) |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| 3          | 220* | 138  |      |      |      |      |      |      |      |      |      |      |      |      | 3          |
| 3.5        | 145  | 136  | 130  |      |      |      |      |      |      |      |      |      |      |      | 3.5        |
| 4          | 136  | 130  | 130  |      |      |      |      |      |      |      |      |      |      |      | 4          |
| 4.5        | 129  | 127  | 125  | 113  |      |      |      |      |      |      |      |      |      |      | 4.5        |
| 5          | 122  | 120  | 116  | 105  |      |      |      |      |      |      |      |      |      |      | 5          |
| 6          | 109  | 108  | 103  | 95   | 90   |      |      |      |      |      |      |      |      |      | 6          |
| 7          | 95   | 94   | 92   | 86   | 85   | 74   |      |      |      |      |      |      |      |      | 7          |
| 8          | 85   | 84   | 83   | 78   | 79   | 71   | 54   |      |      |      |      |      |      |      | 8          |
| 9          | 75   | 75   | 74   | 72   | 72   | 67   | 52   | 43   |      |      |      |      |      |      | 9          |
| 10         | 66   | 67   | 67   | 67   | 65.5 | 62   | 49   | 40   | 35   |      |      |      |      |      | 10         |
| 12         |      | 54.5 | 55.5 | 54   | 55   | 54.5 | 44   | 35   | 32   | 28   |      |      |      |      | 12         |
| 14         |      | 47   | 47   | 46.5 | 46.5 | 46   | 40   | 31   | 27.5 | 25.5 | 22   | 16.5 |      |      | 14         |
| 16         |      |      | 39   | 40   | 40   | 41   | 36.5 | 27.5 | 24.5 | 23.5 | 21   | 16.5 | 13.5 | 11   | 16         |
| 18         |      |      | 32.5 | 34.6 | 35   | 34.7 | 33   | 25   | 22   | 21   | 19   | 16.5 | 13   | 11   | 18         |
| 20         |      |      |      | 29.5 | 30   | 29.5 | 30   | 22   | 20   | 18   | 16.5 | 16   | 13   | 10.5 | 20         |
| 22         |      |      |      | 25.5 | 26.5 | 25.5 | 26.4 | 20   | 18   | 16.6 | 14.5 | 13.5 | 13   | 10.5 | 22         |
| 24         |      |      |      |      | 23   | 23.4 | 23.1 | 18   | 16.5 | 15   | 13.5 | 12.5 | 13   | 10.5 | 24         |
| 26         |      |      |      |      | 20.5 | 20.8 | 20.4 | 16.5 | 15   | 13.8 | 12.5 | 11.5 | 10.5 | 10.5 | 26         |
| 28         |      |      |      |      | 18.1 | 18.6 | 18.2 | 15   | 13.5 | 12.8 | 11.5 | 10.5 | 10   | 10   | 28         |
| 30         |      |      |      |      |      | 17   | 16.2 | 14   | 12.5 | 11.8 | 10.7 | 10   | 9.5  | 8.5  | 30         |
| 32         |      |      |      |      |      | 15.3 | 14.6 | 13   | 11.5 | 10.8 | 10   | 9.5  | 9.2  | 8.1  | 32         |
| 34         |      |      |      |      |      |      | 13.2 | 12.3 | 10.7 | 10   | 9.3  | 9    | 8.9  | 7.7  | 34         |
| 36         |      |      |      |      |      |      | 11.7 | 11   | 10   | 9.2  | 8.6  | 8.5  | 8.6  | 7.4  | 36         |
| 38         |      |      |      |      |      |      |      | 10   | 9.3  | 8.6  | 8    | 8    | 8    | 7    | 38         |
| 40         |      |      |      |      |      |      |      | 9.5  | 8.6  | 8    | 7.5  | 7.4  | 7.3  | 6.7  | 40         |
| 42         |      |      |      |      |      |      |      |      | 8    | 7.3  | 6.8  | 6.8  | 6.6  | 6    | 42         |
| 44         |      |      |      |      |      |      |      |      | 6.7  | 6.8  | 6.3  | 6.3  | 6    | 5.5  | 44         |
| 46         |      |      |      |      |      |      |      |      |      | 6.3  | 5.8  | 5.8  | 5.6  | 4.9  | 46         |
| 48         |      |      |      |      |      |      |      |      |      | 5.2  | 5.4  | 5.4  | 5.2  | 4.5  | 48         |
| 50         |      |      |      |      |      |      |      |      |      |      | 5    | 5    | 4.8  | 4.1  | 50         |
| 52         |      |      |      |      |      |      |      |      |      |      | 4.3  | 4.5  | 4.6  | 3.8  | 52         |
| 54         |      |      |      |      |      |      |      |      |      |      |      | 4.2  | 4.4  | 3.6  | 54         |
| 56         |      |      |      |      |      |      |      |      |      |      |      | 3.9  | 4    | 3.4  | 56         |
| 58         |      |      |      |      |      |      |      |      |      |      |      |      | 3.7  | 3.1  | 58         |
| 60         |      |      |      |      |      |      |      |      |      |      |      |      | 3.4  | 2.9  | 60         |
| 62         |      |      |      |      |      |      |      |      |      |      |      |      | 3.2  | 2.7  | 62         |
| 64         |      |      |      |      |      |      |      |      |      |      |      |      |      | 2.4  | 64         |
| 66         |      |      |      |      |      |      |      |      |      |      |      |      |      | 2.2  | 66         |
| Rope rate  | 14   | 14   | 12   | 12   | 10   | 8    | 6    | 5    | 4    | 4    | 3    | 3    | 3    | 2    | Rope rate  |

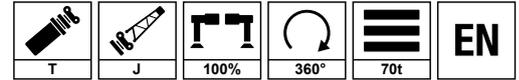
Remark:  
 1. The rating marked with \* indicates load over rear with additional equipment.  
 2. The ratings above are given in the condition of counterweight moved rearward by 500mm.

# Operating Range - Fixed Jib



# Load Chart - Fixed Jib

Unit: t



| Radius (m)         | 61.4m+36m |     | 66.1m+36m |     | 70.6m+36m |     | Radius (m)         |
|--------------------|-----------|-----|-----------|-----|-----------|-----|--------------------|
|                    | 0°        | 20° | 0°        | 20° | 0°        | 20° |                    |
| 20                 | 2.2       |     | 2.1       |     |           |     | 20                 |
| 22                 | 2.2       |     | 2         |     |           |     | 22                 |
| 24                 | 2.2       |     | 2         |     | 1.8       |     | 24                 |
| 26                 | 2.1       |     | 2         |     | 1.8       |     | 26                 |
| 28                 | 2.1       | 2   | 2         |     | 1.8       |     | 28                 |
| 30                 | 2         | 2   | 1.9       |     | 1.7       |     | 30                 |
| 32                 | 2         | 1.9 | 1.9       |     | 1.7       |     | 32                 |
| 34                 | 2         | 1.9 | 1.9       | 1.9 | 1.7       |     | 34                 |
| 36                 | 1.9       | 1.8 | 1.8       | 1.8 | 1.7       | 1.8 | 36                 |
| 38                 | 1.9       | 1.8 | 1.8       | 1.8 | 1.7       | 1.8 | 38                 |
| 40                 | 1.8       | 1.7 | 1.8       | 1.7 | 1.7       | 1.7 | 40                 |
| 42                 | 1.8       | 1.7 | 1.7       | 1.7 | 1.7       | 1.6 | 42                 |
| 44                 | 1.7       | 1.6 | 1.7       | 1.6 | 1.6       | 1.6 | 44                 |
| 46                 | 1.7       | 1.6 | 1.7       | 1.5 | 1.6       | 1.5 | 46                 |
| 48                 | 1.7       | 1.5 | 1.6       | 1.5 | 1.6       | 1.4 | 48                 |
| 50                 | 1.6       | 1.5 | 1.6       | 1.4 | 1.6       | 1.3 | 50                 |
| 52                 | 1.6       | 1.4 | 1.6       | 1.3 | 1.6       | 1.3 | 52                 |
| 54                 | 1.5       | 1.3 | 1.5       | 1.3 | 1.5       | 1.2 | 54                 |
| 56                 | 1.5       | 1.3 | 1.5       | 1.2 | 1.4       | 1.1 | 56                 |
| 58                 | 1.4       | 1.3 | 1.4       | 1.1 | 1.4       | 1   | 58                 |
| 60                 | 1.4       | 1.2 | 1.3       | 1.1 | 1.3       | 1   | 60                 |
| 62                 | 1.3       | 1.2 | 1.3       | 1   | 1.3       | 1   | 62                 |
| 64                 | 1.3       | 1.1 | 1.2       | 1   | 1.2       | 1   | 64                 |
| 66                 | 1.3       | 1.1 | 1.2       | 1   | 1.2       | 0.9 | 66                 |
| 68                 | 1.2       | 1.1 | 1.1       | 1   | 1.1       | 0.9 | 68                 |
| 70                 | 1.1       | 1   | 1.1       | 0.9 | 1.1       | 0.9 | 70                 |
| 72                 |           | 1   | 0.9       | 0.9 | 1         | 0.9 | 72                 |
| 74                 |           | 0.9 |           | 0.9 |           | 0.8 | 74                 |
| 76                 |           |     |           | 0.9 |           | 0.8 | 76                 |
| 78                 |           |     |           |     |           | 0.8 | 78                 |
| 80                 |           |     |           |     |           |     | 80                 |
| Telescoping status | 222211    |     | 222221    |     | 222222    |     | Telescoping status |
| Rope rate          | 1         | 1   | 1         | 1   | 1         | 1   | Rope rate          |



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**Reminder:**

Any change in the technical parameters and configuration due to product modification or upgrade may occur without prior notice.  
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