

SUNWARD

SWTC500E

SWTC500E Stage V
Crawler Crane With
Telescopic Boom



Maximum lifting torque of basic boom: 190t m
Full extension length of main boom: 44.5m

M Metron

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SWTC500E PRODUCT OVERVIEW

01 Product Overview

SWTC500E crane, equipped with self-propelled track chassis, which can rotate in place and move flexibly with load, is a new generation of crawler crane with telescopic boom of Sunward. The track has a large ground contact area and small ground pressure, so it can travel on various operating sites; it has a 45% gradeability and is equipped with a three-rib track shoe, which has a strong grip and does not slip when climbing steep slopes and has superior trafficability. It is suitable for uneven ground, especially muddy roads with poor access conditions, such as oil fields, fields, construction sites, cargo stations and docks, etc. In the swamp, desert and gobi area, it can give full play to its special performance. This machine is mainly used for lifting, loading and unloading of general construction machinery, and short-distance traveling with load. It is widely used in petroleum, chemical, mining, urban construction, water conservancy and other large projects, and also used as general lifting machinery for loading and unloading of goods, lifting, stacking, installation of equipment, etc. It is commonly used in pipeline, pile foundation, steel structure and other construction sites, can be used for laying, docking, installation, and repair of pipelines, and lifting of steel cage and steel structure, as well as equipment installation, etc. It has a wide range of applications, simple and comfortable operation, high operation efficiency and reliable performance.

The features of SWTC500E crawler crane with telescopic boom are as follows:

The telescopic boom, composed of five U-shaped enlarged sections, uses 800MPa grade high strength steel with strong lifting capacity; the full extension boom is 44.5m long with a lifting height of 44.8m, and the jib is 16m long with a maximum lifting height of 60m. The heavy-duty widened box structure return table uses a lot of HG70 high-strength steel for smooth rotation. The new reinforced frame uses a lot of HG70 high-strength steel for stronger resistance against walking impacts, which has innovative technology and patent protection. The lengthened track beam uses a lot of high strength steel such as HG70, Q460C, etc., and works together with the high strength frame. Its working width is 4.7 meters to ensure the stability of the whole machine; its transportation width is 2.99 meters to ensure that it does not exceed the 3-meter transport limit, so that the machine can be transported as a whole, which saves the transportation cost. There is no additional disassembly cost for its transportation to other sites thanks to the self-loading counterweight. The main control valve is operated by pilot hydraulic control valve, with good micro-motion performance and flexible operation. It's suitable for high-altitude lifting operation; the hydraulic valve block has a compact structure, with beautiful appearance and convenient maintenance. The whole machine is equipped with three video monitors, which can observe the winding of the winch steel wire rope in the cab to avoid the damage to the steel wire rope, and monitor the environmental situation at the front and right rear of the crane to avoid potential operational risks. The widened luxury cab has a beautiful appearance, large interior space, reasonable arrangement, and it's comfortable to drive and easy to maintain. It is equipped with heating and cooling air conditioner, which provides a comfortable working space for operators. The newly added guardrail design can effectively prevent the risk of falling from heights. The guardrail can be folded and is fixed with the pin. During transportation, the upper part of the guardrail is folded downward and fixed, so that the whole vehicle will not exceed the height limit; during operation, the guardrail is folded upward and fixed to ensure safety during maintenance.



02 Ambient conditions for operation

1. The ground shall be solid for standing with a pressure-bearing capacity not less than 3.5MPa, the whole machine shall be horizontal, and the ground shall not sink during the operation.
2. The ambient temperature during operations shall be -20°C~+40°C.
3. In case of storm or snow weather or when the wind speed is greater than 13.8m/s, the machine shall stop working immediately and put the boom to the horizontal state.

SWTC500E PRODUCT PERFORMANCE PARAMETERS

01 Performance parameter list of the whole machine

| ITEMS | | Unit | PARAMETERS |
|-----------------------------|---|-------|---------------------|
| Dimension parameters | Total length | mm | 14133 |
| | Total width | mm | 4700/2990 |
| | Total height | mm | 3180 |
| | Center distance between driving and driven wheels | mm | 4968 |
| | Track width | mm | 700 |
| Main performance parameters | Maximum rated lifting capacity | t | 50 |
| | Magnification at maximum rated lifting capacity | n | 12 |
| | Diameter of lifting wire rope | mm | Φ16 |
| | Maximum lifting moment of basic boom | t.m | 160 |
| | Fully-retracted length of main boom | m | 34 |
| | Fully-extended length of main boom | m | 11.4 |
| | Maximum working amplitude | m | 44.5 |
| | Length of jib | m | 9.2/16 |
| | Jib mounting angle | ° | 0, 15, 30 |
| Operating speed | Lifting/lowering time of main boom | s | 40/45 |
| | Full extension/retraction time of main boom | s | 98/100 |
| | Maximum slewing speed | r/min | 2.7 |
| | Boom lifting speed (four sections with no load) | m/min | 150 |
| | Jib lifting speed (four sections with no load) | m/min | 150 |
| Driving parameters | Driving speed | km/h | 3/1.24 |
| | Maximum gradeability | % | 45 |
| | Ground pressure | Mpa | 0.08 |
| Dynamic parameters | Engine model | | Cummins QSB6.7-C250 |
| | Engine power | kW | 186 |
| | Engine rated speed | r/min | 2200 |
| | Engine emission standard | | EU Stage V |
| Volume parameters | Hydraulic fuel tank volume | L | 650 |
| | Oil tank capacity | L | 400 |
| Weight parameters | Counterweight | t | 18 |
| | Total mass in driving state | t | 54.3 |

02 Parameter list of rated lifting capacity of main boom

SWTC500E Parameter list of rated lifting capacity of main boom (counterweight 18T) (Theoretical calculation data just for reference, Refer to GB/T14560-2016)

| Working range | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---------------------------------|------|-------|------|--------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| 3 | 11.4 | 15.54 | 17.6 | 19.675 | 21.74 | 23.8 | 25.88 | 27.95 | 30.02 | 32.09 | 34.56 | 36.65 | 38.74 | 40.83 | 44.5 |
| 3.5 | 50 | | | | | | | | | | | | | | |
| 4 | 46 | 36 | 20.5 | 29 | | | | | | | | | | | |
| 4.5 | 40 | 35 | 21 | 28.5 | 20.5 | 18.5 | | | | | | | | | |
| 5 | 39 | 33 | 20.8 | 28 | 21 | 16 | 20.2 | | | | | | | | |
| 5.5 | 38 | 30 | 20.7 | 27 | 20 | 15.5 | 20 | 19 | | | | | | | |
| 6 | 32 | 26.5 | 20.5 | 24.5 | 19.5 | 15 | 19 | 15.5 | 15 | | | | | | |
| 6 | 28 | 23.5 | 19.7 | 24 | 19 | 14.7 | 17.5 | 14.5 | 11.5 | 19 | | | | | |
| 7 | 23 | 18.5 | 18.5 | 18.5 | 18 | 14.5 | 16 | 13.7 | 11 | 15.2 | 14 | 9.5 | 13 | | |
| 8 | 18 | 14.5 | 16.5 | 14.5 | 15.5 | 14.5 | 15 | 12.5 | 10.5 | 13.7 | 10.5 | 8.2 | 10.2 | 9.5 | |
| 9 | 14 | 12 | 13.8 | 12 | 13 | 14.2 | 13 | 12 | 10 | 12 | 10 | 7.8 | 9.8 | 9 | 9.2 |
| 10 | | 10 | 11.7 | 10 | 10.8 | 12 | 11 | 11 | 9.5 | 10 | 9.5 | 7.7 | 9.2 | 8 | 8.5 |
| 12 | | 7.2 | 8.7 | 7 | 8 | 9 | 8 | 8.5 | 9 | 7.8 | 9 | 6.7 | 8 | 7 | 7.5 |
| 14 | | | 6.8 | 5.2 | 6 | 7 | 6 | 6.5 | 7.3 | 6 | 7 | 6.5 | 6.3 | 6.1 | 6.5 |
| 16 | | | | 3.9 | 4.6 | 5.5 | 4.6 | 5.1 | 5.8 | 4.8 | 5.5 | 6.1 | 5 | 5.5 | 5.6 |
| 18 | | | | | 3.9 | 4.5 | 3.5 | 4.1 | 4.8 | 3.8 | 4.5 | 5 | 4 | 4.9 | 4.5 |
| 20 | | | | | | 3.8 | 2.8 | 3.3 | 3.9 | 3.1 | 3.7 | 4.1 | 3.3 | 4 | 3.9 |
| 22 | | | | | | | | 2.6 | 3.3 | 2.5 | 3 | 3.4 | 2.7 | 3.3 | 3.2 |
| 24 | | | | | | | | | 2.7 | 2 | 2.5 | 2.9 | 2.2 | 2.7 | 2.5 |
| 26 | | | | | | | | | 2.3 | 1.6 | 2 | 2.4 | 1.8 | 2.3 | 2.1 |
| 28 | | | | | | | | | | | | 2.1 | 1.5 | 1.9 | 1.7 |
| 30 | | | | | | | | | | | | | 1.2 | 1.6 | 1.4 |
| 32 | | | | | | | | | | | | | | 1.3 | 1.2 |
| 34 | | | | | | | | | | | | | | 1.1 | 1.1 |
| 36 | | | | | | | | | | | | | | | 0.8 |
| Magnification n | 12 | 10 | 6 | 8 | 6 | 4 | 6 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 3 |
| Travelling with load | 75% | 65% | 50% | 65% | 50% | | | | | | | | | | Not allowed |
| Telescopic rate of each section | 0 | 50 | 0 | 100 | 50 | 0 | 100 | 50 | 0 | 100 | 50 | 0 | 100 | 50 | 100 |
| | 0 | 0 | 25 | 0 | 25 | 50 | 25 | 50 | 75 | 50 | 75 | 100 | 75 | 100 | 100 |
| | 0 | 0 | 25 | 0 | 25 | 50 | 25 | 50 | 75 | 50 | 75 | 100 | 75 | 100 | 100 |
| | 0 | 0 | 25 | 0 | 25 | 50 | 25 | 50 | 75 | 50 | 75 | 100 | 75 | 100 | 100 |

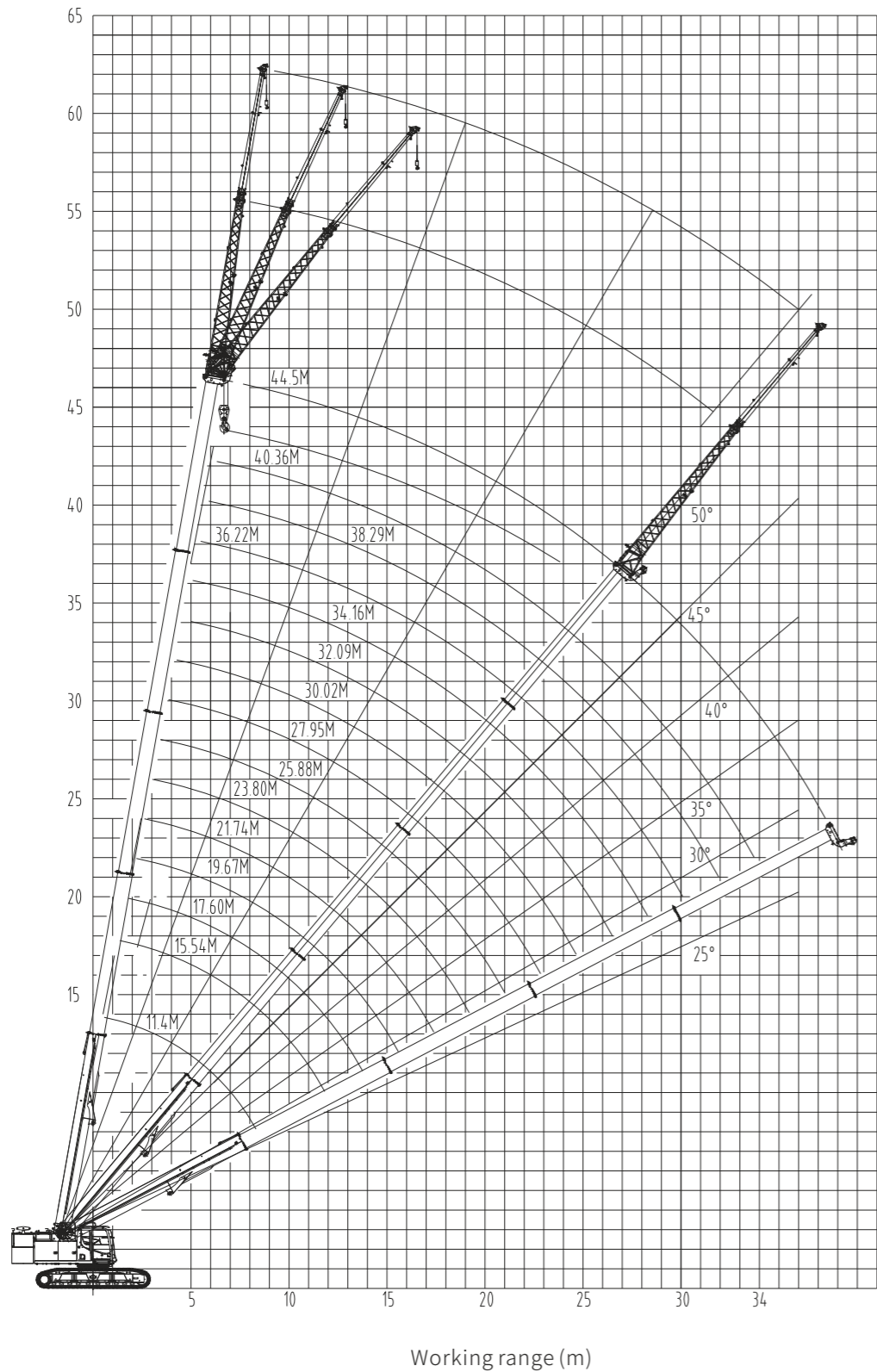
SWTC500E Jib load list

| Working conditions | | Working angle | | | | | | | |
|--------------------|-------|---------------|-----|------|-----|------|------|------|------|
| Length | Angle | 78 | 75 | 72 | 70 | 65 | 60 | 55 | 50 |
| 44.5+9.2 | 0 | 3.5 | 3.2 | 3.05 | 2.9 | 2.2 | 1.35 | 0.75 | 0.48 |
| 44.5+9.2 | 15 | 2.8 | 2.5 | 2.2 | 2 | 1.6 | 1.1 | 0.65 | 0.4 |
| 44.5+9.2 | 30 | 2.2 | 2 | 1.85 | 1.8 | 1.55 | 0.95 | 0.58 | |
| 44.5+16 | 0 | 2.2 | 2 | 1.8 | 1.6 | 1.35 | 0.95 | 0.5 | |
| 44.5+16 | 15 | 1.35 | 1.2 | 1.1 | 1 | 0.9 | 0.75 | 0.4 | |
| 44.5+16 | 30 | 0.95 | 0.9 | 0.84 | 0.8 | 0.72 | 0.67 | | |

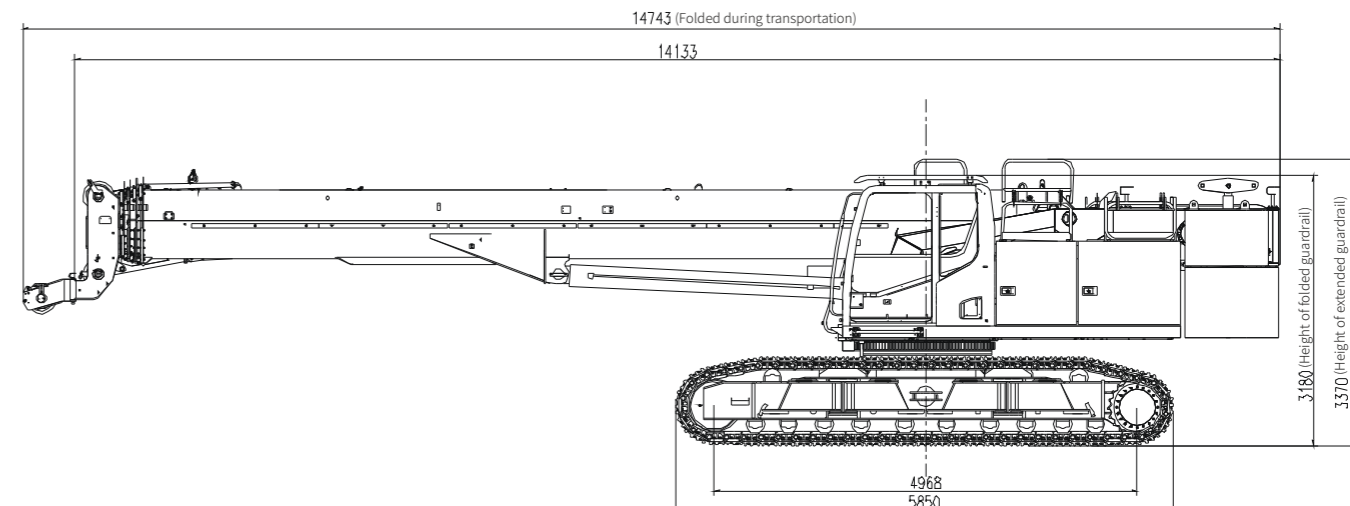
Note:

- The given values in the list are the rated lifting capacity of the whole crane on level ground. The working range in the list is the actual range after lifting.
- In the load list, the bolded values are determined by the stability, and the rest of the values are determined by the strength of the lifting boom.
- All the values in the load list are applicable to 360° rotation.
- The rated lifting capacity in the list includes the grabhook weight, of which the main hook weighs 400kg and the auxiliary hook 90kg.
- The rated lifting capacity shall not exceed 4.1t when using the boom tip pulley, and the rated lifting capacity of the main boom shall be reduced by 2t if the jib is in the extension state.
- When the actual boom length and working range are between the two values in the list, the lifting capacity shall be determined by the larger boom length and range value.
- When the ground clearance of the crane boom end is less than 30.02m, the crane is allowed to operate if the wind is not more than strong breeze; when the ground clearance of the crane boom end is greater than 30.02m, the crane is allowed to operate if the wind is not more than fresh breeze.
- When the main boom is fully retracted and traveling with load, the lifting capacity is 75% of the rated lifting capacity; the lifting capacity of half-retracted and fully retracted 2nd section when traveling with load is 65% of the rated lifting capacity. In the case of long boom operation, the lifting capacity when traveling with load is 50% of the rated lifting capacity, and it is prohibited to traveling with load when the boom length exceeds 38.29m.
- When climbing, the main boom is retracted and placed at the minimum angle, and the counterweight is placed in the uphill direction.
- The main engine counterweight is 13T.

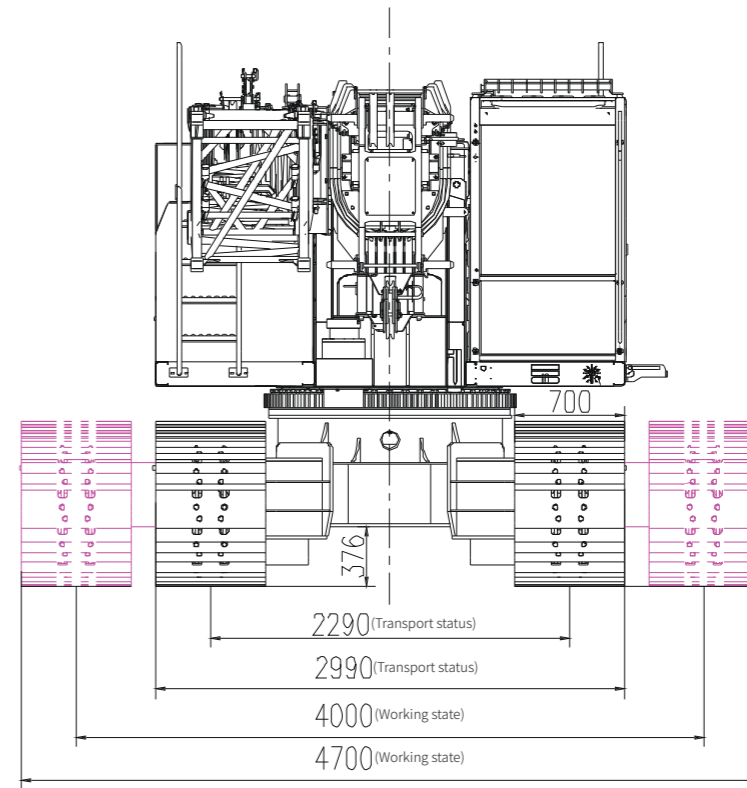
03 Lifting height curve



SWTC500E PRODUCT OVERALL DIMENSION



Front view of the whole machine



Rear view of the whole machine

Lifting height (m)

Working range (m)

IV. SWTC500E TECHNICAL ADVANTAGES

01 Leading lifting performance

Maximum lifting capacity: 50t

Maximum lifting torque: 160t.m, largest in the industry

Full extension main boom length: 44.5m, longest in the industry

Maximum lifting height of main boom: 44.8m, highest in the industry

Maximum lifting height of jib: 60m, highest in the industry

Working width of track: 4,700mm, widest in the industry

► Lifting boom: The cross-section of the enlarged lifting boom is 7% larger than that of competitive products, it uses 800MPa grade high-strength steel which has stronger traveling capacity with load.

► Turntable: The widened box structure turntable has good rigidity and stable rotation, and it uses a lot of HG70 high-strength steel, so it is suitable for heavy load conditions.

► Frame: The new multi-cavity overall strengthening frame with patented technology has stronger impact resistance, and it adopts Q460C and HG70 high strength steel, so the fatigue load resistance is significantly improved.

► Patent Application No.: 202110733214X, A frame welding method and frame.

► Patent Application No. 2021214628558, A frame and vehicle

► Track beam: The optimized and upgraded track beam mainly uses HG70 and Q460C high-strength steel, which is suitable for harsh working conditions. Its wheel base is 70mm longer than the wheel base of competitive products, its ground pressure is smaller, and its pressure against the ground is more dispersed.

► Working width: The working width of the crane is 4,700mm, which is 100mm wider than the competitive products, and the lifting load is more stable.

► Counterweight: The counterweight layout is optimized, counterweight anti-tipping moment is 3tm larger than the counterweight of competitive products anti-tipping moment, and the stability is better.

► Optimized layout: The whole vehicle is optimally arranged with compact structure and reasonable weight distribution of left and right platforms. The covering parts use closed structure with beautiful shape, reflecting the characteristics of Sunward.

02 High operation efficiency

► Lifting speed (fourth floor): 150m/min, better than the industrial speed.

► Rotary speed: 2.7rpm, faster rotation speed, which can effectively reduce the no-load preparation time.

► Variation time: 40S, smooth and fast boom raising, which saves work preparation time.

03 Good trafficability

► Climbing capacity: 45%, with strong driving ability and difficulty relief ability.

► Three ribbed crawler plate: strong grip, no fear of slipping, good gripper performance on mud.

► Maximum driving speed: 3km/h, fast transfer speed in the field.

04 Strong traveling capacity with load

► Basic boom: 75% of rated load for driving with load

► Single extension two-section boom: 65% of the rated load for driving with load

► Three, four or five section extension: 50% of the rated load for driving with load

► 38.29m boom length: 50% of the rated load for driving with load, 7m of range can lift 5.75ton to travel.

05 Boom length arbitrary expansion

► With the advantages of telescopic boom crane, the boom length switching is fast

► The double pull wire sensors can accurately measure the boom length status and deeply explore the performance potential of different boom length combinations.

06 Track retracts freely

In response to the painful point that the crawlers on the ground with high resistance are difficult to retract, the telescopic cylinder of the clogs is enlarged so that the crawlers can be retracted smoothly even under the condition of high resistance ground. Thus the customers can save the cost of selecting outriggers and retract without worrying about retraction.

07 Complete accessories and high reliability

► Weichai engine WP6G190E301 (Stage III) has strong power, good low-torque performance, and excellent performance.

► Torque limit of international famous brand WIKA (former Hirschmann)

► The complete configuration of the system ensures operational safety and reliability.

► The mature hydraulic parts have reliable performance with low cost of use and maintenance.

08 Convenient transportation

Overall transportation size of 14133×3180×2990mm, transport width of the whole machine of 3m that does not exceed the limit, low transportation cost, it can also be transported with self-disassembly counterweight, and the whole vehicle is not overweight.

09 Protection upgrade

The E series is a newly added with upper carriage guardrail, which can be quickly folded/unfolded to protect personnel from falling when starting operation. It's folded during transportation, and the whole vehicle will not exceed the height limit.

10 Monitoring without blind area

For the rear and right rear of the crane, there is a blind spot and pain point of potential risk. The crane is set up with video monitoring of winch work, status of right rear and rear of the crane with full coverage of the blind area of vision. The environment around the crane can be checked through the monitoring screen in the cab to avoid potential danger events.

11 Convenient ascent

► The patented technology climbing ladder does not affect the appearance or transportation, with no need to disassemble, the winch maintenance is convenient.

► Patent Application No. 20212223265.6, A cover with climbing ladder and a rotary machine installed with the cover with climbing ladder.

SWTC500E TECHNICAL ADVANTAGES

12 Sunward special cab

- ▶The widened luxury cab has a beautiful and comfortable appearance, large interior space, reasonable cloth net, it's comfortable to drive and easy to maintain.
- ▶It is equipped with heating and cooling air conditioning, which provides a comfortable working space for operators.
- ▶The skeleton type structure and top anti-falling device ensures safe operation. The autonomous patented flip-up windows allow for a wide operating view.
- ▶It uses servo manipulation handle, which is simple and effortless to manipulate. The high-quality interior parts and seals with good insulation and noise reduction performance make the internal noise lower than 75db, reaching the domestic first class level.

13 Electro-hydraulic control technology

- ▶The pilot oil source block with independent intellectual property rights, which has been awarded the national invention patent, has smoother operation and high safety.
- ▶It uses CAN bus electrical control system, which can realize energy-saving control, fine speed control, intelligent operation and fault management.
- ▶The electrical components and harness are arranged reasonably to facilitate maintenance and replacement.

14 New look

- ▶The E series has been newly upgraded and optimized layout, with simple and generous shape and has patent protection.
- ▶Patent Application No.: 2021305356969, Telescopic boom crawler crane.



Construction Cases



SWTC5 construction in the UK



SWTC75 construction in Malaysia



SWTC25 construction in Daqing oilfield site with traveling with load operation



SWTC75 construction for Qujing bypass expressway in Yunnan Province



SWTC30 construction in Baise, Guangxi



SWTC35B construction in Bangshan Ecological Smart City in Zhenxiang, Yunnan



SWTC35 & SWTC55 construction together with other Sunward products in Malaysia



SWTC55B construction in Shenzhen Hongling High School



After-sale service



Create value for customers

Sunward has set up parts warehouses all over the world, forming a four-in-one parts supply guarantee system including headquarters warehouse, regional center warehouses, provincial warehouses and prefecture-level warehouses, storing more than 20,000 kinds of parts worth hundreds of millions of yuan. There are 800 front-line service engineers, 200 service outlets, 300 service vehicles, and more than a hundred of service consultancies.



24-hour hotline

If you have any needs, just call the 24-hour after-sales service hotline: 400-887-8230.



Arrival in 2 hours

Our personnel will arrive at the scene in 2 hours within the city where the office is located, in 12 hours within the province, and in 48 hours outside the province.



Reply in 15 minutes

The after-sales service engineer will take the initiative to get in touch with you in 15 minutes to learn about your equipment conditions and service requirements, and remotely guide you to handle the problem through the phone.



Handling of major problems

In case of major and special problems, the service system will activate rapid response mechanism, expert support mechanism and green channel of parts.



Departure in 1 hour

If the fault cannot be handled through the guidance via the phone, the service engineer will carry maintenance tools to your site in one hour for on-site maintenance.



Return visit by phone

After the on-site service is completed, the Call Center of Sunward Headquarters will make a return visit by phone, to track the quality and completion of the service, listen to customers' opinions and suggestions, and give feedback to each functional department for implementation and improvement, so as to provide customers with better service.