



SUNWARD INTELLIGENT EQUIPMENT CO.,LTD.

Add: Sunward Intelligent Industrial Park, Xingsha, Changsha, 410100, China.

Tel: (0086-731) 83572 828 Tel: (0086-731) 83572 661

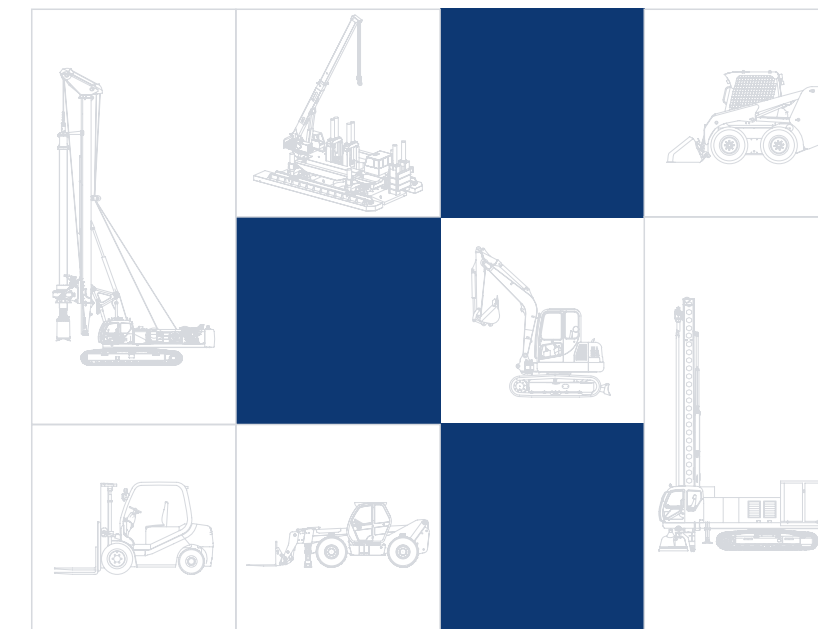
E-mail: international@sunward.com.cn

Web: www.sunward.com.cn

Please read the manual book and maintenance book before operation. Changes are periodically added to the information, and SUNWARD may change the products or services described in this book at any time without announcement. All rights of this manual book reserve to SUNWARD.

X-II-ZEN-2016-08

SUNWARD



FULL PRODUCTS LINE

SUNWARD INTELLIGENT EQUIPMENT CO., LTD.



Sunward Industrial Park No. 1 - Compact construction machinery

ABOUT SUNWARD

SUNWARD EQUIPMENT GROUP was founded in 1999. With the public company SUNWARD Intelligent Equipment Co.,Ltd as its main body, SUNWARD has established a number of subsidiaries in Changsha, Wuxi, Anhui, Tianjin and Europe. A SUNWARD Equipment Group majoring in construction machinery has formed gradually with own intellectual property rights and influence in domestic and overseas markets. The product has bulk excavator to more than 100 countries and areas. SUNWARD products cover more than 10 fields, such as large-scale piling machinery, compact construction machinery, full series excavator, modern drilling equipment, industrial vehicle, coal mining equipment, crane equipment, pavement construction machinery, hydraulic components, military construction machinery, general aviation equipment and so on.

SUNWARD is:
 The World Top 50 of Construction Machinery Manufacturers
 The World Top 20 of Excavator Brands
 The Biggest Manufacturer of Piling Machinery in China
 The State-accredited Enterprise R&D Center
 National Post-doctoral Scientific Research Station



CN. MT22. B03308



C0510W19SW09



0106Q11555ROM/4300

INDEPENDENT R&D

Developed from the Intelligent Machinery Academy of Central South University, SUNWARD R&D center is the group's shared technology platform. The R&D center currently has over 400 staff that include 14 professors and associate professors, 2 doctoral tutors, 16 doctors, 3 postdoctors, 3 experts who enjoy particular allowance of the State Council. Divided into ten institutes specialized in different product groups, the R&D center is equipped with modern design tools, which include Dynamic Modeling Tool, 3D Assembly Simulation, Engineering Analysis Software etc.

The innovation system is based on the four principles: Ingenious Innovation, Integrated Innovation, Open Innovation and Continuous Innovation.

As the group's most competitive department, the R&D center has obtained over 200 Chinese patents, completed over ten Government Sponsored R&D projects, and received a second Prize of National Scientific and Technological Progress.

The enterprise and R&D center are authorized as the State Accredited Corporate R&D Center and the State Accredited Post-Doctoral Study Center, as well as the international scientific and technological cooperation base, and National Center for mobilization of construction machinery.





Premier Mr. Li Keqiang visited Sunward



Former Premier Mr. Wen Jiabao visited Sunward



Sunward plans to invest 80 million US dollars for the construction of Sunward Industrial City, which covers an area of 1.8 square kilometers in Changsha. It will be established as the largest base of equipment manufacturing and the largest excavator manufacturing center in Central South of China.



SUNWARD INDUSTRIAL PARK 1



AUHUI SUNWARD MINING
EQUIPMENT CO.,LTD



HUNAN SUNWARD
SCIENCE & TECHNOLOGY CO., LTD.



Mini-excavator production line



Drilling machine production line



Skid steer loader production line



Hydraulic static pile driver production line



High Precision NC laser Cutter



NC double-sides boring & milling machine



Welding robot

LEAN MANUFACTURE

SUNWARD always regards achievement of lean manufacture as the foundation of the enterprise. Its core manufacture system composed of scientific, advanced, precise manufacturing crafts, and a number of numerical controlled special equipments are providing strong fabrication ability to guarantee the perfect present of the superexcellent design.

DEVELOPMENT COURSE



1999



Professor He Qinghua founded Changsha Sunward Construction Machinery Co., Ltd. (which is the predecessor of Sunward Intelligent Equipment Co., Ltd.). Prof. He leaded several teachers in Central South University, rented underutilized plant by the loan of RMB500,000.00 and embarked on independent innovation development, depending on the hydraulic static piling machine as a started product, which was integrated a number of technologies Professor He invented.

2001



Chinese excavator market was almost dominated by foreign brands and there was not a mature understanding to small excavator in domestic market in 2001. In such cases, Sunward started its research on whole series of Sunward Small Excavator and became the first private enterprise which mass-produced astonishingly modern excavator to the market.

2002



Sunward was moved to Sunward Industry Park, located in state-level Economic and Technological Development Zones in Changsha. Sunward Static Hydraulic Pile Driver has been awarded the second prize for Scientific and Technological Progress (top award in China Construction Machinery Industry in those years). Sunward launched the first integrated Sunward Down-the-Hole Drilling Rig, which is differentiated from foreign brand but better in energy saving.

2003



Sunward firstly mass-produced Sunward Rotary Drilling Rig, which equipped with independently developed special chassis and control system, better in stability.

2005



Sunward established a nationwide sales and service network. Sunward has initially set up a marketing service team and built a most-competent marketing team with modern marketing techniques. Sunward launched Sunward Skid Steer Loader through international technology cooperation. Sunward Small Excavator exported to Euramerican developed countries, which realized "Sunward" independent intellectual property brand.

2006

Sunward Stock was listed at Shenzhen Stock Exchange Center and its industrial groups took shape. State Council Vice Premier Ms. Wu Yi visited Sunward in 2006.

2007



Company trademark is identified as wellknown mark by China's SAIC. Sunward has expanded product range to hundreds of models and specifications including large-scale piling machinery, compact construction machinery, medium and large size excavator, modern rock drilling equipment, industrial vehicles, etc.

2008



Sunward No.3 industrial park and the Anhui Sunward Mining Equipment production base are starting construction.

2009

Launch the world's first intelligent unmanned excavator, Launch the first engineering hybrid excavator in China, Launch the 47ton large-size excavator, State leader Vice Premier Li Keqiang visits Sunward.

2010



The north R&D and production base of the group--Tianjin Sunward has successfully laid the foundation and started construction, State leader Premier Wen Jiabao visited Sunward. At Shanghai Bauma 2010, Sunward launched ten innovative products, praised by the mediums: "Sunward greatly supports the national industry of the construction equipment by Sunward Design"

2011



The group listing corporation section officially renamed as "Sunward Intelligent Equipment Co. Ltd." The group largest south production base "Sunward Industrial City" started construction. Sunward-Tech made "Aurora" became the first home-made light sport plane identified by CAAC. The company stepped forward to group development. State leader Zhang Gaoli visited Sunward.

2012



The current largest production base of Sunward Intelligent Equipment Group--Sunward Industrial City relocation and trial production. Sunward Aurora SA60L light sport plane won a gold medal of 2012 "China Outstanding Industrial Design Award". The north base of Sunward Intelligent Equipment Group successfully put into production.

2013

"The 9th Session of National Defense Mobilization Committee of Guangzhou Military Region" held in Changsha, Hunan, during "Xiang River-2013" Military and civilian integration equipment support mobilization exercises, Sunward Intelligent Equipment Group has showed serialized dual-use equipments.

INTERNATIONAL SALES & SERVICES NETWORK



SUNWARD has set up more than 30 offices & affiliates in China and about 60 dealers & distributors in the global markets. Nowadays SUNWARD construction equipments work at more than 60 countries & regions in Europe, America, Oceania and Asia.

Asia

Comodia
India
Indonesia
Iran
Japan
Korea
Malaysia
Mongolia
Myanmar
Saudi Arabia
Singapore
Thailand
U.A.E
Vietnam

Europe

Austria
Belgium
Bulgaria
Czech Republic
Croatia
Estonia
Finland
France
Germany
Greece
Hungary
Italy
Latvia
Lithuania

Netherland
Norway
Poland
Portugal
Romania
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzland
Turkey
U.K

America

Argentina
Brazil
Canada
Chile
Columbia
Mexico
U.S.A
Venezuela

Oceania

Australia
New Zealand

Africa

Algeria
Angola
Egypt
Kenya
Libya
Nigeria
Reunion Island
South Africa
Tanzania
Tunis
Zambia

CIS

Kazakhstan
Russia
Turkmenistan
Ukraine

The Republic of Azerbaijan
The Republic of Belarus
The Republic of Kyrgyz
The Republic of Tajikistan
The Republic of Uzbekistan

Global Cooperation

International distributors play a particularly important role in the process of SUNWARD internationalization. Products with SUNWARD brand cannot quickly enter the market of developed country without support from international dealers, besides distinct characteristics in the performance, internal structure, color, appearance etc. Through the joint efforts of the agents and the clients, Sunward products has been continuously improving and upgrading to meet the market demand and take up a large slice of the international market share.

SUNWARD has established a marketing & service network worldwide working with more than 60 excellent foreign agents jointly. SUNWARD provides his full support to the agents by investing a lot of manpower and material resources . At the same time, SUNWARD devotes himself to establishing the new network actively and deeply. In Europe, Sunward has established the warehouse of complete machine, which can meet the European high-end market for the speed of delivery requirements.



Sunward Global Dealer Annual Conference & International Cooperation Conference



Sunward Global Tour Show 2013 - Indonesia

International Customers & Dealers



Sunward Rotary Drilling Rig
European Launching Ceremony



BAUMA in Munich, Germany in 2013



SUNWARD warehouse for complete machine in Europe
The European customer service parts center (Sweden)



Sunward Europ (in Italy)



Sunward Brazil 4S Store



Sunward Rotary Drilling Rig India Show



In Russia



In U.S



In Iran



In Italy

INTERNATIONAL AFTER-SALE SERVICE

Excellent after-sale service is a powerful guarantee for international market, therefore, service ability and specialization are the key indicators for Sunward to make distributor selection. Sunward has built a rather perfect service system, including established service station and parts center in Europe, Asia and other regions, especially in Europe, parts delivery time could be within 48 hours.



Service engineers of Sunward dealer maintain the machines



Sunward Chinese service engineers
do regular maintenance for customers



After-sale Service Training



Working at U.S



Working at Finland



Working at Italy



Working at Denmark

SWE SERIES COMPACT EXCAVATOR

Sunward SWE series multifunctional hydraulic excavator is the successful model of integrated innovation and sustainable innovation. From SWE08 to SWE 15, over 20 machine models, it has realized serialization. Having adopted world class engine and hydraulic parts, it can ensure high configuration and working stability. It is distinctively designed, staying close to international trend. The compact structure guarantees small swing radius, easy to operate and maintain. Advanced painting techniques, makes sure it has great performance in anti-corrosion. It is equipped self-developed extendable chassis, which gives it capacity to pass through narrow path. It has been widely applied in earthwork, road maintenance, cable and water pipe paving, garden cultivation and river clearance. It is sold throughout China, exported in bathes to developed countries.



SWE Series Medium and Large-Sized Excavator

Sunward SWE series multi-functional hydraulic excavator is the successful model of integrated innovation and sustainable innovation. From SWE210 to SWE470, various machine models, it has realized serialization. Having adopted world class engine and hydraulic parts, it can ensure high configuration and working stability. It is distinctively designed, staying close to international trend, fashionable, easy to operate and maintain. Advanced painting techniques, makes sure it has great performance in anti-corrosion. It has been widely applied in earthwork and milling work, like house building, road maintenance, irrigation works, harbor and airport construction, national defense project. It is sold throughout China, exported in bathes to developed countries.



SWF SERIES COUNTERBALANCE FORKLIFT

SWFD/G series counterbalance forklift has powerful motor system and Electro hydraulic shift control, which makes the driving more comfortable. The special 2 stage suspension system design of SWFD(S) series improve the absorb shock. Depend on the potential energy recycling technology, SWFE electric counterbalance forklift can increase 30% usage time of battery per charge. SWFR Reach Forklift is easy operation, high load, high lift, small turning radius, which reduces the operation space. SWES electric pallet truck is small, light and high performance, which is suitable for operation in narrow space.



SWL/SWTL SERIES SKID STEER LOADER

Sunward SWL\SWTL SSL is developed autonomously, according to the demand of international market. It's a new generation machine with compact structure, integrated with mechanical, electrical and hydraulic technology. All indicators have reached international advanced level. Its main features include flexible operation, high efficiency, easy to maintain and multifunction. It is particularly suitable for urban infrastructure, road maintenance, construction site, dock, deck, narrow space like vessel cabin, job content frequently changed area, forage deployment, silage compaction and meadow with tough jobs. It has been exported in batches to EU, Middle-East, etc.





SWDM ROTARY DRILLING RIG

Sunward Rotary Drilling Rig is a new kind of bored pile foundation equipment including models of SWDM04~SWDM42. Compared with other competitors which installed with general excavator chassis, Sunward independently developed retractable undercarriage ensures competitive stability; Drill Mast has the capacity of self loading and unloading; Luffing mechanism is novel in structure with larger driving force; Sunward independently developed electronic control system owns high degree of integration, powerful functions, quick reflexes, and high precision. It has been widely used in foundation construction of railway, road, port and city construction, such as the Olympic Bird's Nest, the Passenger Rail Line and the Capital Airport, which shows its great advantage and comprehensive performance. Sunward products achieved great sales in America, Russia, Nigeria, Italy, Australia, South Asian countries and so on.





SWSD SERIES MULTI-PURPOSE DUAL ROTARY DRILLING RIG

SWSD Series Double Rotary Head Strength Multifunction Drilling Rig is one kind of new product with independent intellectual property rights. It is a new update of international advanced technology whose core technology has been granted the national invention patent license.

SWSD Series DRHSM drilling rig is composed by double rotary heads, pile driver with high-stability, advanced hydraulic electrical control system and tools set including casing tube, drilling auger and DTH hammer. SUNWARD rig is designed for multi-functional construction, especially for high efficient drilling in complex stratum condition with gravel and hard rock. The DRHSM drilling rig provides high pile quality, high vertical precision and less mud contamination. SUNWARD rig solved the technical problems in large diameter pile foundation drilling in rock, overcome the environmental pollution. It is one kind of environment-friendly piling machinery with broad market prospect and good economic social benefits.

For the pile: bored pile, secant pile, steel-pipe composite pile, grouting pile, CFG&CFA pile, press-in precast pile by middle-digging method, removal & treatment of waste pile, and etc.;

For the stratum: soil, sand, pebble, gravel and all kinds of rock;

For the pile diameter: $\phi 500\text{ mm} \sim \phi 1500\text{ mm}$;

It shall be matched with step-by-step pile frame, electric double speed rotary head, electric frequency control rotary head in accordance with customers' requirement.



PILE DRIVER

Sunward ZYJ series static pile driver is a large-size green pile foundation construction equipment which was an innovation of Sunward founder with Chinese characteristics and great original, it includes 1 innovation patent and 7 practical new type patents and that constitutes the core technology. The product features in no vibration, no noise, but high pilling rate, it uses several national patent and technology such as creatively multipoint and pressing equalization pile clamping mechanism, side piling and corner piling device, it has international leading performance, in the year of 2003, it honored second-class National Science & Technology Progress which was the highest award of construction machinery area of that year. It has achieved mass production, around 30 models ranging from 80 to 1200 ton, the domestic market share is more then 60%, the product exported in batches to Russian, Kazakhstan, Ukraine, Singapore, Indonesia, Malaysia, Vietnam, Myanmar and other countries and regions.

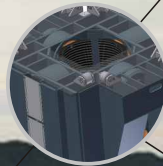


Pile clamping mechanism offers a variety of structure for the customs

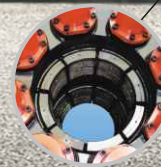
Suitable for all kinds of special pile models, including: H steel pile, Bamboo style pile, Trapezoidal pile, Triangle pile, Steel pipe pile.



8-cylinder pile clamping box, simple structure and convenient maintenance



Multipoint and isopressing pile clamping box used the wedge energizing principle, provides the uniform stress distribution on pile, especially suitable for large-tonnage and thin-wall pipe pile.



Hydraulic footstep travel mechanism

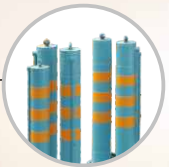
New pattern of hydraulic footstep travel mechanism is composed of three latest technical innovations, that is swing compensation, auto-reposition and constant load linkage.



Six pile clamping cylinders

There are six pile clamping cylinders, high construction speed and high efficiency.

SUNWARD large-tonnage pile driver is the first to adopt six pile-pressing cylinders.



Cab reserves room

The cab reserves room for air-condition installation. Handle layout is reasonable, easy to operate.



Counterweight on both sides

Lowered the center of gravity to ensure more secure construction.



Pile pressing cylinder quick and synchromesh return patented technology

Patent NO. ZL 201220144242.4

Using this technology, cylinder return speed increased one times. With the same configuration, it can achieve high construction efficiency.



SWDE SERIES BOOM-TYPE DTH DRILLING RIG

SWDE series boom-type DTH drilling rig is equipped with high free degree hydraulic drilling boom, which could multi-directional drill holes, method of multiplexing, wide working range ,high efficiency, flexible operation, low usage cost, it has floating travel chassis, suited for operation in rough and rugged terrains, multi-function, suited drilling with following pipes ,the pilot presplitting ,anchor rod reinforcement and other construction method. The angle-adjustable drilling frame makes it possible to meet the requirement of multiposition drilling; wide reach range of drilling boom can provide wide drilling radius, greatly improve working efficiency, the extension drilling arm extremely reduces the negative effect to the machine stability and working environment arising from vibration of the hammer and dust generated during drilling operation in comparison to those conventional drilling rigs, prolong service life and enhance drilling precision as well.





MINI BLASTING DRILLING RIG

To meet the demand of civil explosives, SWDR80 Mini Blasting Drilling Rig is specially designed by Sunward Intelligent Equipment Co. Ltd. Based on the successful experience of mass production for SWD series of Integrated Hydraulic DTH Drilling Rigs, it is featured by compact structure, multiple drilling capacities, wide scope of application, high efficiency, comfortable operation, flexible moving ability, cost saving, etc.

SWDR80 Mini Blasting Drilling Rig, based on SUNWARD excellent excavator system, installs drill system on the front of boom, adopts Cylinder-Steel rope feeding & hoisting system and air compressor for dust removal. The advanced rock drilling method with high cutting speed, can wholly replace the traditional manual pneumatic pick.



CRAWLER CRANE

Crawler crane is a kind of hydraulic full slewing two-section telescopic crane, which is designed according to the market demands. With advanced performance, high reliability and precision design, it has reached the top level of domestic technology.

Adopting Cummins 6BT5.9-C engine and extra-long undercarriage with X structure, it could be used in uneven surface working site, short distance moving crane, installation, cargo transportation. Moreover, the optional triangle track shoes for wetland decrease the ground pressure; SUNWARD crawler crane can especially work in desert and marsh where tyre crane could not be used.



CRAWLER CARRIER

SUNWARD SWCC75 crawler carrier is composed of high strength frame which includes the main frame, the flat base frame, cab assembly, covered structure assembly, dump bed, operating mechanism, power system, hydraulic system and electrical system.



SWTH SERIES TELESCOPIC HANDLER

SWTH Series Telescopic Handler is a multifunctional material handling equipment with mechanic-electric-hydraulic integration technology developed by Sunward independently. It adopts hydrostatic transmission, powerful motor system with superior off-road performance, three steering modes meeting different kinds of working conditions. Intelligent electrical throttle and electro-hydraulic proportional control system make the control more accurate and convenient



GENERAL AVIATION EQUIPMENT/YACHT



AURORA Light Sport Plane



Air-mapping Unmanned Plane



SVU200 Unmanned Rotorcraft



STB series Amphibious Delta Wing



Luxury Yacht made by Sunward