

SOLAR SCREW PUMP

2INCH/3INCH/4INCH

MAIN FEATURES

- Low power and high lift, the maximum lift can reach 180m, the maximum flow rate can reach 3.7m³/h
- Screw (material: SS304+rubber) corrosion resistant
- Small irrigation system, super cost-effective

APPLICATION SCENARIO

- Farm livestock
- Off-grid household water supply
- Small irrigation systems (Low flow demand)

HOT SELLING COUNTRIES

- South America, Africa, Australia and most island countries



SOLAR PUMP WITH PLASTIC IMPELLER

MAIN FEATURES

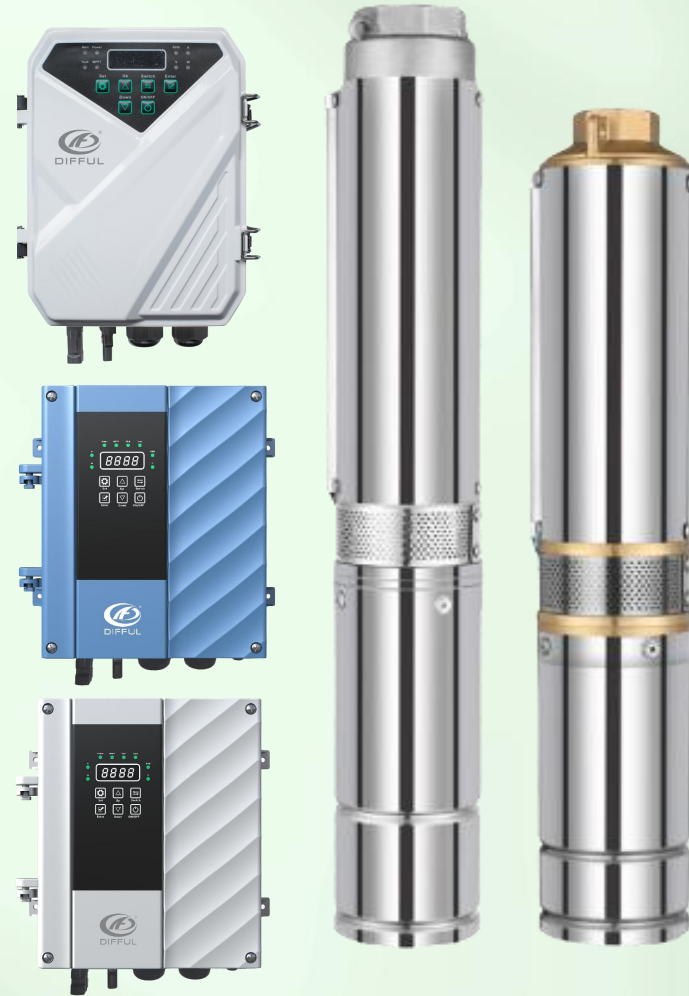
- Large flow range, suitable for most customers' needs
- Plastic impeller, corrosion resistance, easy to repair and replace later
- Small irrigation system, super cost-effective

APPLICATION SCENARIO

- Farm livestock
- Off-grid household water supply
- Small irrigation systems (low water requirements)

HOT SELLING COUNTRIES

- Southeast Asia, Middle East, South America, Africa



SOLAR PUMP WITH S/S IMPELLER

MAIN FEATURES

- The whole pump is made of stainless steel, high quality
- The flow range is large, suitable for most customers' needs, the power can reach up to 22000W
- The stainless steel impeller is of good quality and not easy to break

APPLICATION SCENARIO

- Farm livestock
- Off-grid household water supply
- Small or medium-sized irrigation systems

HOT SELLING COUNTRIES

- Africa (coastal countries), America, Australia, island countries, Saudi Arabia, etc



SOLAR SURFACE PUMP

DCPM SURFACE PUMP

- Centrifugal pump, large flow, suitable for pumping river water for irrigation



DCPM SURFACE PUMP



DQB BOOSTER PUMP

DQB BOOSTER PUMP

- Small flow, relatively high head, mainly used for boosting, domestic water



DLP SWIMMING POOL PUMP



DJET SURFACE PUMP

DLP SWIMMING POOL PUMP

- Centrifugal pump with large flow rate for swimming pool water circulation

DJET SURFACE PUMP

- Jet pump, small flow rate, relatively high head



SMALL SOLAR SUBMERSIBLE PUMP

DQD CLEAN WATER PUMP

- Aluminum, closed impeller, suitable for clean water



DWQD SEWAGE WATER PUMP

- Cast iron, semi-open impeller, suitable for sewage



WATER FILLED MOTOR SOLAR WATER PUMP

MAIN FEATURES

- Shielded motor water-cooled structure, no mechanical seal, avoids water leakage and mechanical seal friction problems
- Double internal and external shielded deep well pump, with magnetic field directional control function
- Graphite bearing, self-lubricating, strong corrosion resistance, thrust bearing, provides strong and stable thrust, diving depth can reach 150 meters

APPLICATION SCENARIO

- Farm livestock
- Off-grid household water supply
- Small or medium-sized irrigation systems

HOT SELLING COUNTRIES

- Africa (coastal countries), suitable for countries with high environmental protection requirements



HIGH SPEED DEEP WELL PUMP 6000RMP

MAIN FEATURES

- Maximum speed 6000 RPM
- Small size, strong power
- High solar energy utilization
- Energy saving

APPLICATION SCENARIO

- Farm livestock
- Off-grid household water supply
- Medium and large irrigation systems

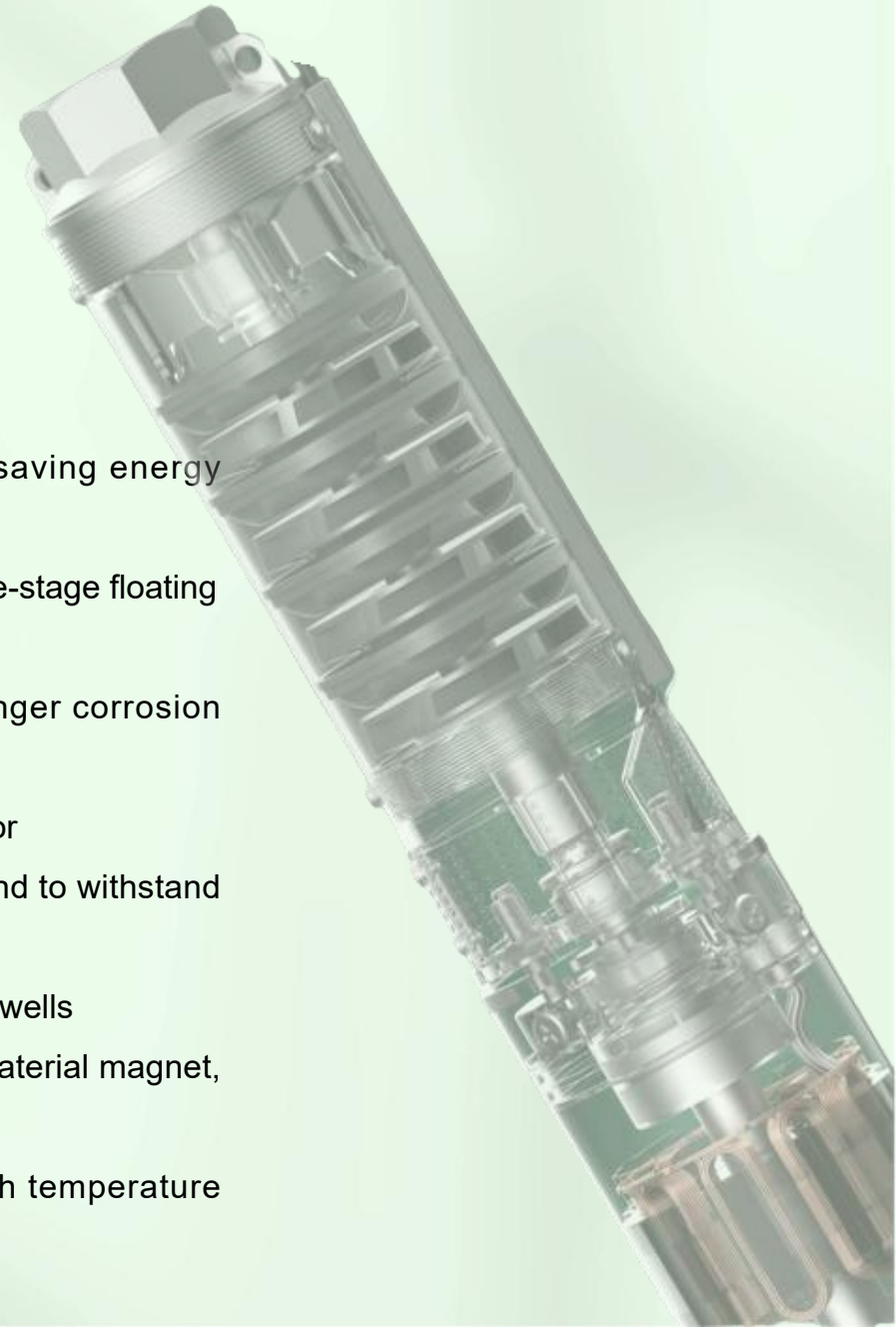
HOT SELLING COUNTRIES

- Southeast Asia, the Middle East, countries with high mountains or high head requirements



HIGH SPEED DEEP WELL PUMP CONFIGURATION ADVANTAGES

1. DC permanent magnet brushless synchronous motor: efficiency increased by 15%-20%, saving energy consumption
2. The whole 304 stainless steel rotor shaft avoids broken shaft, 304 stainless steel pump shaft, whole-stage floating wear-resistant and sand-resistant structure
3. 304 stainless steel water outlet, stainless steel connection, stainless steel oil cylinder, stronger corrosion resistance
4. Japanese brand NSK bearings, longer service life, cold-rolled 600 silicon steel sheet stator and rotor
5. Two deep groove ball bearings at the upper end and two angular contact bearings at the lower end to withstand greater radial and axial forces
6. Use two silicon carbide pairs of impregnated graphite mechanical seals, longer service life, deeper wells
7. 180 °C high temperature resistant copper wire enameled wire, insulation grade F, 42SH NdFeB material magnet, temperature resistance up to 150 °C
8. Soft start, overvoltage/undervoltage/overcurrent/phase loss/short circuit/water shortage/high temperature protection, etc



PERMANENT MAGNET OIL-IMMERSED SUBMERSIBLE PUMP

MAIN FEATURES

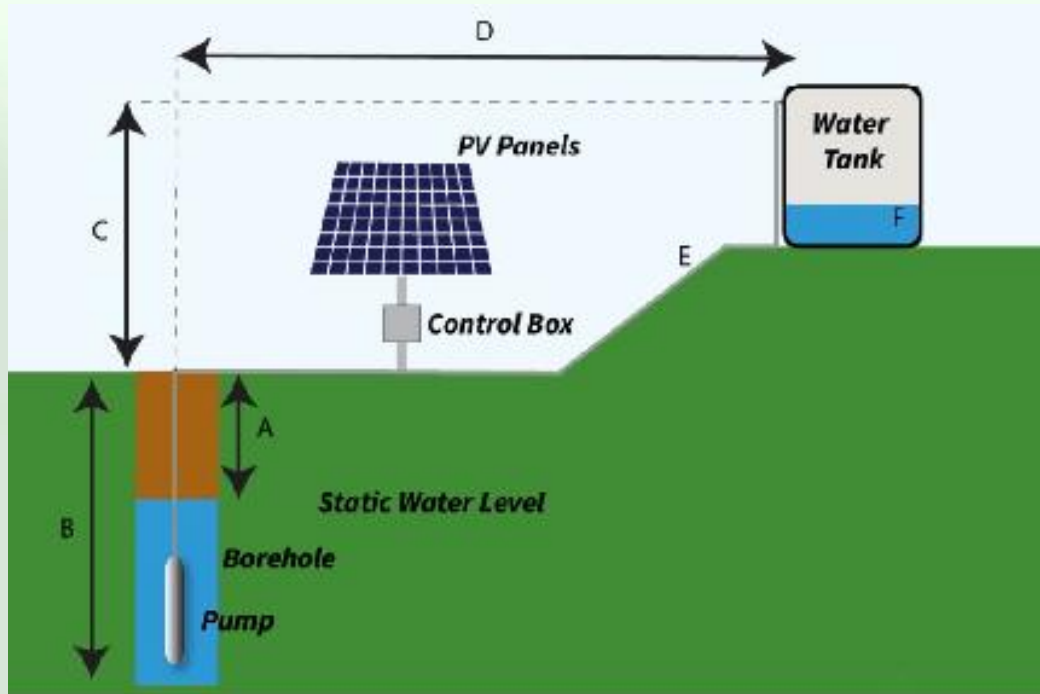
- Large flow rate (up to 250+m³/h), low head, small size, light weight
- The motor of the oil-immersed pump adopts a permanent magnet brushless motor. The permanent magnet brushless motor is more efficient than our traditional AC asynchronous motor, and can play a good role in saving electricity and energy.
- The oil-immersed pump is specially equipped with an external controller, with a simple and intuitive design and easy operation. Even first-time users can quickly get started, significantly improve work efficiency, and meet the needs of modern industry for intelligence and convenience.

APPLICATION SCENARIO

- Garden sprinkler irrigation
- Agricultural irrigation
- Aquaculture
- Flood control and drought relief



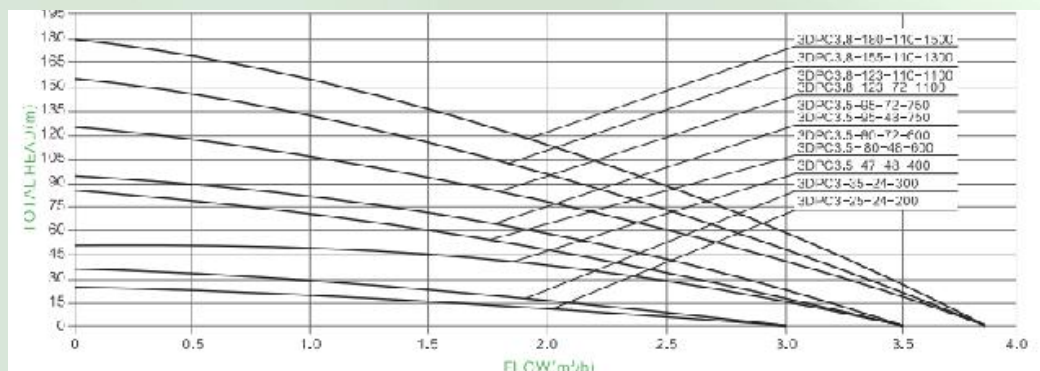
PRODUCT INTRODUCTION



How to choose solar water pump model?

As shown in the left figure

- Estimated head: $B+C+D/10$
- Estimated required flow rate: cubic meters per hour or liters per minute
- Check the approximate rated head and rated flow rate according to the curve chart and choose the most suitable solar water pump model



PARTS PROCESSING WORKSHOP

PUMP PARTS PRODUCTION MACHINE: CNC

The outlet/cylinder/connection is precisely produced and formed in one step to avoid multiple processing errors, ensure high precision and consistency of the product, and independently produce the main components of the permanent magnetic water pump, with better cost control.
Strictly implement the product zero defect plan to have better control over product quality.



Outlet

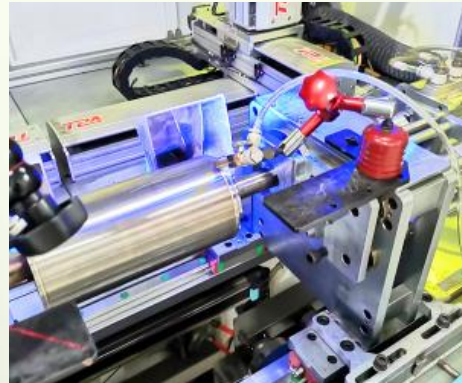
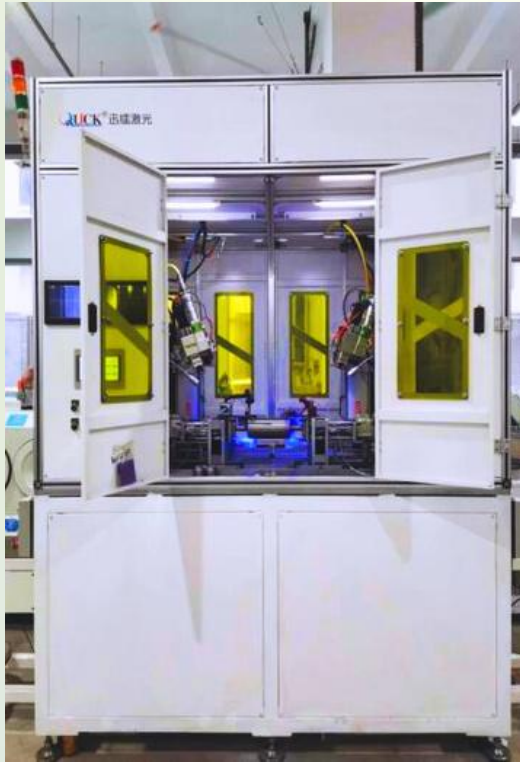


Connectors



Oil Cylinder

MOTOR PROCESSING LATHE



We use fully automatic laser welding equipment for motor processing. Fully automated production reduces human factors and improves product consistency.

This enhances the long-term stability of the motor. High-precision CNC lathes increase the size of pump body processing, enhance pump durability and consistency, thereby ensuring product quality and product life.

ROTOR SHAFT MACHINING



The rotor shafts are all finely machined to ensure the concentricity, circular runout and product consistency of the rotor.

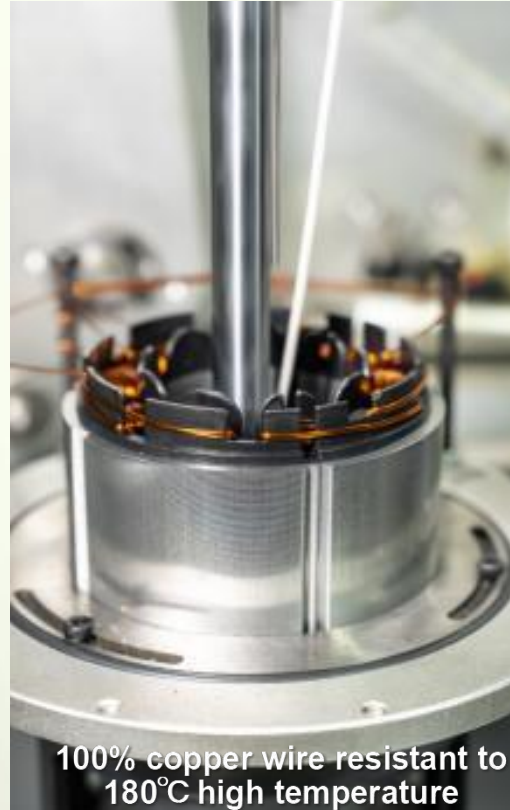
The rotor shaft of the water filling motor is treated with ceramic coating to increase the wear resistance between the graphite bearing and the rotor shaft, thereby extending the service life of the pump.

PUMP BARREL PROCESSING

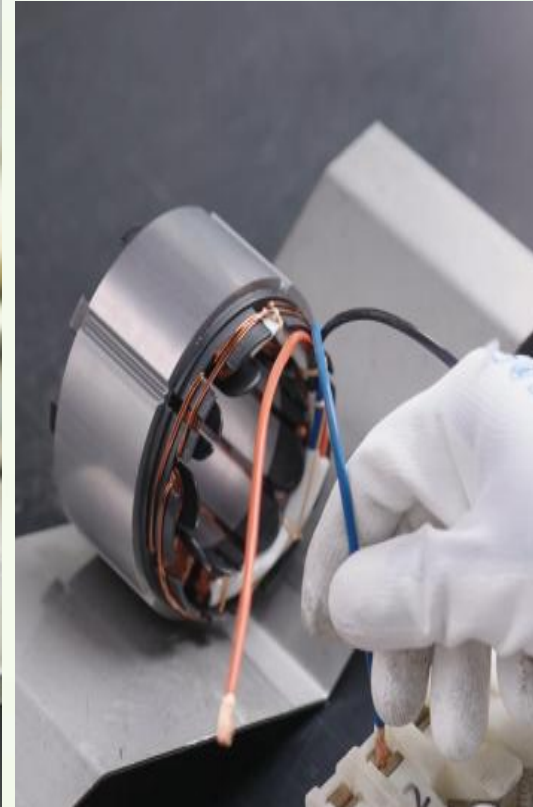


Ensure the cutting accuracy and surface quality of the pump barrel, make the size of the pump barrel meet the design requirements, provide qualified parts for subsequent assembly and use, and ensure the structural integrity and working performance of the pump barrel. The CNC system controls the tool to cut the pump barrel, accurately controls the parameters, ensures the cutting accuracy and surface quality, and meets the requirements of pump assembly and use.

COIL PROCESSING/TESTING



100% copper wire resistant to 180°C high temperature



The stator is made of cold-rolled silicon steel sheets stamped at high speed.

The automatic winding machine greatly improves the production efficiency of the factory, increases production capacity, and ensures product consistency.

The coil embedded in the automatic winding machine has a low failure rate, the wire is neat and beautiful, the heat dissipation effect is good, and the heat generation is very slow.

Each coil winding must be tested at 1800 volts for 3 seconds.

Any open or shorted windings can be found here.

Completely avoid the effects of coil failure on the pump.

IQC



We will conduct strict sampling inspections on the incoming materials from suppliers to ensure stable quality and improve product quality.

We regularly audit suppliers to improve the quality of their entire parts.

We use equipment such as coordinate measuring machines/projectors to inspect the incoming materials and determine their dimensional accuracy, positioning accuracy, geometric accuracy, and contour accuracy.

PARTS INSPECTION



WIDTH INSPECTION



LENGTH INSPECTION



IN-DEPTH INSPECTION



INNER DIAMETER INSPECTION



OUTSIDE DIAMETER INSPECTION

Dimension measurement/surface smoothness inspection, inspect parts according to inspection requirements to ensure that parts meet the requirements of the drawings and ensure product quality

The background image shows a large industrial facility, likely a pump assembly workshop. It features a high ceiling with multiple rows of industrial lights and large ceiling fans. In the foreground, there is a complex assembly line with various mechanical components, including what appear to be pump housings and shafts, mounted on a conveyor system. A worker in a dark shirt is visible in the middle ground, standing near the assembly line. The entire image is overlaid with a semi-transparent green filter.

CHAPTER THREE

PUMP ASSEMBLY WORKSHOP

STATOR PRESSING EQUIPMENT



The automatic press is equipped with a high-precision distance sensor. According to the specific height requirements, the coil pressing distance parameters can be accurately set in the equipment operation interface. During the entire pressing process, the system will monitor and dynamically adjust key parameters such as pressure and displacement in real time to ensure that the pressing size of each coil can strictly meet the standards, effectively improving the consistency of product quality and improving the overall production efficiency of the product.

MAGNETIC STEEL SURFACE MOUNTING MACHINE



The parameters are set in the magnet surface mounting machine operation interface. The system will ensure that each magnet can be pressed into the rotor in strict accordance with the preset standards, effectively improving the consistency of product quality. At the same time, the automated operation process greatly reduces the manual intervention process and improves the overall production efficiency of the product.

BEARING PRESS MACHINE



The bearing press machine is equipped with a distance sensing system. According to the specific installation height requirements, the bearing installation distance parameters can be accurately set on the equipment operation interface.

During the entire press process, the system will monitor and dynamically adjust key parameters such as pressure and distance in real time to ensure that the pressing dimensions of each bearing can strictly meet the preset standards, effectively improving the consistency of product quality.

WATER PUMP LINE TEST



Motor speed detection



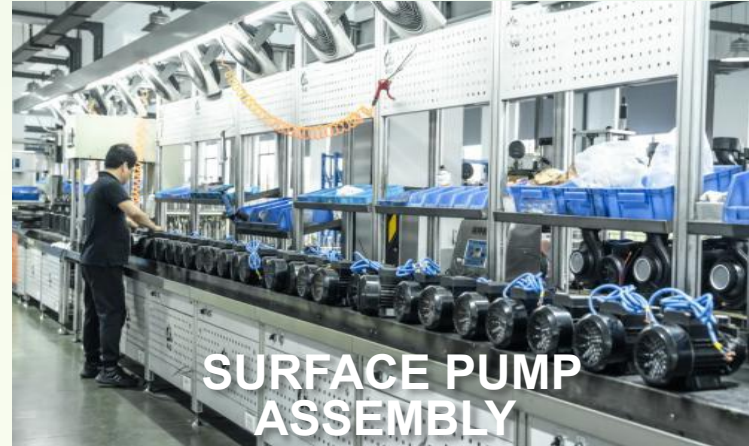
Motor sealing test



Water pump detection

Each pump is tested to prevent defects and ensure that the client's products are qualified, so as to maximize customer satisfaction.

WATER PUMP ASSEMBLY LINE



The automated assembly line greatly improves the work efficiency of workers, reduces the error rate, and increases production, with annual production increasing by about 30%.

Seven production lines work simultaneously. The daily output of solar water pumps can reach 1,200 units.

PUMP ORDER VERIFICATION AND INSPECTION BEFORE PACKAGING



Packaging inspection, order verification, taking photos for customers and other backup, assisting customers in factory inspection and product inspection

IN AND OUT WAREHOUSE MANAGEMENT



The warehouse area is 8,000 square meters, with sufficient material reserves. After the customer places an order, we will arrange production immediately and respond in time.

The warehouse has sufficient finished product inventory all year round and replenishes it regularly. Small batch sample orders can be shipped immediately.

The company uses ERP software to monitor inventory in real time, accurately control inventory, and standardize the in and out of storage process.

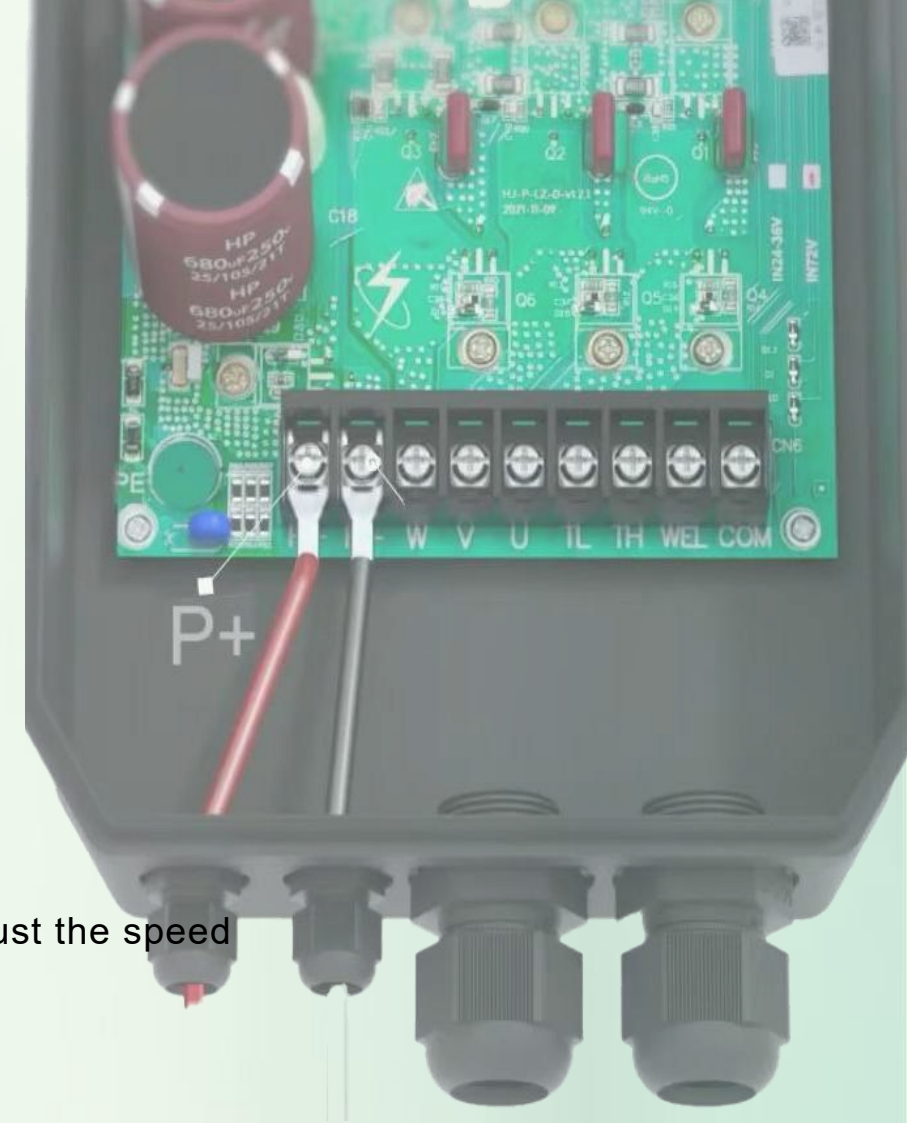


CHAPTER FOUR

CONTROLLER WORKSHOP

CONTROLLER FUNCTION INTRODUCTION

- (1) Waterproof grade: IP65
- (2) Wide open circuit voltage range
- (3) Working environment temperature: $-15^{\circ}\text{C}\sim 60^{\circ}\text{C}$
- (4) MPPT function, high solar energy utilization rate
- (5) Digital display of power, voltage, current, speed and other working conditions
- (6) Automatically adjust the speed according to the sunlight power, and manually adjust the speed according to actual needs
- (7) Automatic start and stop, no need for personnel on duty
- (8) Soft start: no impact current, protect the water pump motor
- (9) Overvoltage/undervoltage/overcurrent/phase loss/short circuit/water shortage protection/high temperature protection and other protection functions



WATER PUMP COMPREHENSIVE TEST SYSTEM



The main functions include the following aspects:

1. Performance test.
2. Reliability test.
3. Factory test, type test and cavitation test.
4. Real-time monitoring and display of data.
5. Automatic identification and alarm function.
6. Data storage and playback.

(Measurement of technical parameters such as flow, head, power, torque, speed, current, resistance, temperature, etc. of water pump products, as well as product performance test, type test and factory test) It plays an important role in the performance evaluation, reliability verification and daily maintenance of water pumps, ensuring the stable operation and efficient work of water pumps under different working conditions.

MOTOR COMPREHENSIVE TEST SYSTEM



The main function is to evaluate the performance and reliability of the controller in a low temperature environment and ensure its normal operation under extreme low temperature conditions.

The role of the electric thermostat in the test is mainly reflected in temperature control, safety control, energy saving and operation status display, ensuring the stability and safety of the test environment, while realizing energy saving and remote control functions.

SMT CIRCUIT BOARD PRODUCTION LINE



Imported brand fully automatic production line ensures the quality of circuit boards. Through highly automated equipment and precise control systems, fast and efficient patch operations are achieved. Compared with traditional manual soldering or insertion processes, SMT technology can greatly reduce manual intervention and increase production speed, thereby shortening the production cycle of products, reducing labor costs, and enabling companies to respond to market demand more flexibly and improve market competitiveness. The delivery period is stable and the delivery period is short. The controller quality control is strict, and the damage rate is less than 3‰.

PCBA COATING LINE



The main functions include protecting circuit boards, enhancing mechanical strength, improving impedance stability, and preventing electrical short circuits.

1. Protect circuit boards (from moisture, dust, and corrosion). 2. Enhance mechanical strength. 3. Improve impedance stability. 4. Prevent electrical short circuits.

SPI AOI INSPECTION EQUIPMENT



- SPI machines check the solder paste volume and uniformity of solder paste coating on PCB boards.
- AOI machines scan and inspect PCBs to ensure the correct placement of all components.
- Fully automatic inspection to avoid manual errors.

FCT&ICT INSPECTION EQUIPMENT



- Each circuit board must undergo ICT testing to detect the defective rate and failure rate of components.
- Each circuit board must be connected to a water pump for FCT testing to ensure the stability of product quality.
- Each circuit board must undergo long-term high temperature aging testing to ensure the quality of the controller.

CONTROLLER ASSEMBLY WORKSHOP



CONTROLLER HOUSING



WORKBENCH FOR IC PROGRAMMING

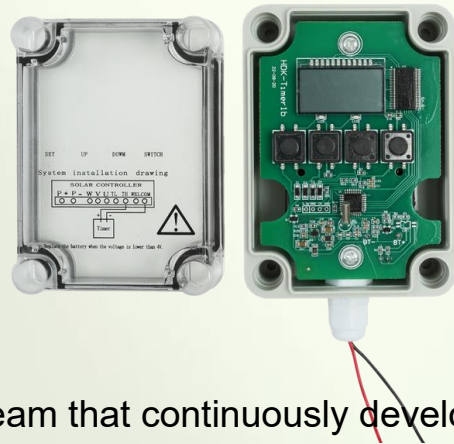
In the PCBA (Printed Circuit Board Assembly) manufacturing process, programming IC chips is crucial for integrating software functionality into hardware. This process involves embedding customized programs into the IC, a step that's fundamental to enabling the full range of an electronic device's capabilities.

Programming serves three key purposes:

- Firmware Installation: Loading essential software that controls the chip's basic operations.
- Hardware Enablement: Activating and initializing hardware components for seamless functionality.
- Function Tailoring: Customizing the chip's capabilities to meet specific product requirements.

DIFFUL's in-house developed controller, protected by exclusive software patents, represents a technological edge. When integrated into production lines, it significantly boosts assembly efficiency while minimizing errors, optimizing the overall manufacturing workflow.

NEW PRODUCT DEVELOPMENT



- According to the customer's demand for timing to open/close the water pump, the timer was developed and produced.
- It has now been put on the market and has been well received by many customers.

DIFFUL has a professional product R&D team that continuously develops new products, adds new product functions, and can quickly respond to R&D to meet the customized needs of different customers.

CHAPTER FIVE

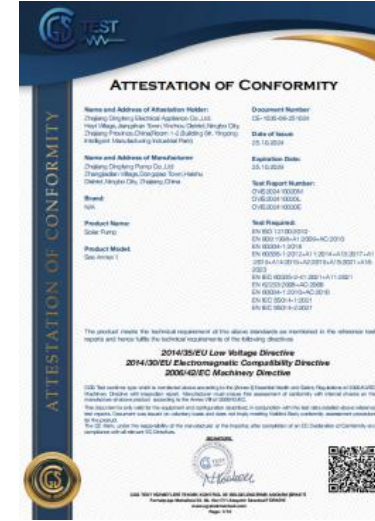
SERVICE AND CERTIFICATE



SERVICE AND CERTIFICATE

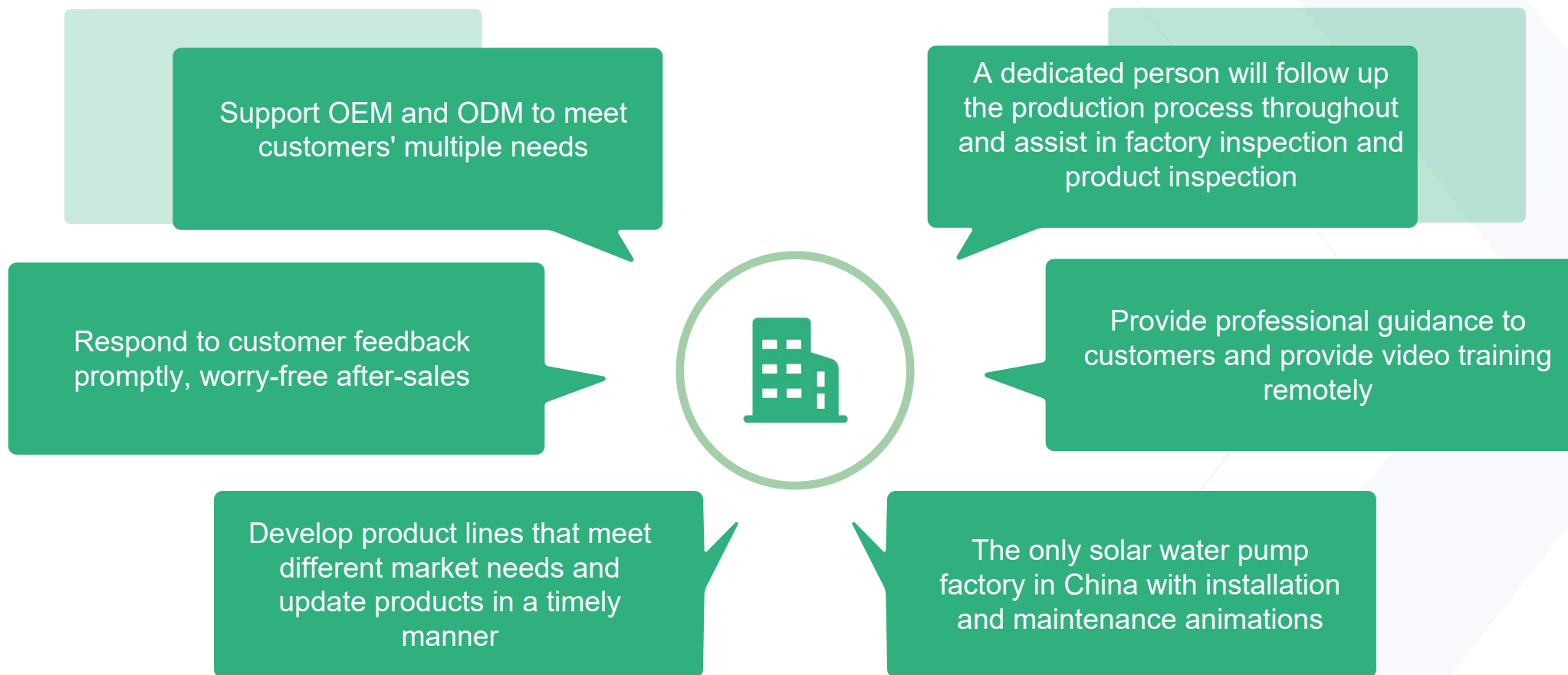
ISO9001/CE

If you have other certification needs, DIFFUL can assist you



Zhejiang Dingfeng Electric Co., Ltd. | www.difful.com | 24-hour service hotline: 4008080002

WHY CHOOSE US?



CHAPTER SIX

PARTICIPATION STATUS



SHANGHAI SOLAR
PHOTOVOLTAIC EXHIBITION



CANTON FAIR



BIG5 DUBAI EXHIBITION



GUANGZHOU SOLAR
PHOTOVOLTAIC EXHIBITION

CHAPTER SEVEN

CUSTOMER FEEDBACK



CUSTOMER FEEDBACK (I)



DIFFUL exports 300,000+ solar pumps every year, with 500+ dealers around the world!

CUSTOMER FEEDBACK (II)



DIFFUL exports 300,000+ solar pumps every year, with 500+ dealers around the world!

CUSTOMER FEEDBACK (HIGH SPEED PUMP)



High-speed pumps are suitable for areas with high mountains. The maximum head can reach 650 m. Compared with traditional AC pumps, the cost of going down the well is lower.

WATER FOR LIFE WITH SOLAR POWER

S O L A R W A T E R P U M P