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# FOCUS ON SOPHISTICATED INDUSTRIAL TEMPERATURE CONTROL

VERSION 202410



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TEMPERATURE CONTROL



# 20 YEARS

**20 YEARS+**  
ACCUMULATION

**50000m<sup>2</sup>+**  
PRODUCTION AREA

**11000+**  
CUSTOMER CASES

**10000+**  
PRODUCTION CAPACITY

**306+**  
PATENTS

**AODE 奥德**



## ABOUT AODE

Founded in Shenzhen in 2004 and established its headquarters in Suzhou in 2007, AODE has been focusing on the industrial temperature control field and is a temperature control equipment manufacturer integrating R&D, production and sales. After 20 years of innovative development and precipitation, AODE products from a single heating series development to heating, cooling, cooling and heating in one and centralised cooling, centralised heating of a full range of product matrix, with different industries to provide diversified, customised temperature control product solutions. At present, there are 5 production bases in East China and South China, and sales and service centres in Tianjin, Chongqing and Qingdao. So far, AODE has successfully provided more than 11,000 enterprises with efficient and stable temperature control product services, and set up a benchmark in the industry.



-120°C  
+400°C

## FULL RANGE OF PRODUCTS TO MEET THE NEEDS OF DIFFERENT APPLICATION SCENARIOS

### MOULD TEMPERATURE MACHINE SERIES

Main products: oil temperature machine, water temperature machine, 320 °C die-casting mould temperature machine, 200 °C high-temperature water temperature machine, 400 °C ultra-high-temperature oil temperature machine, rapid cooling and rapid heating of high-gloss mould temperature machine, electrically heated organic heat carrier furnace.



### CHILLER SERIES

Main products: air-cooled/water-cooled chiller, air-cooled chiller/oil chiller, air-cooled/water-cooled screw chiller, water-cooled screw low-temperature chiller, evaporative cooled screw chiller, -120°C compound stacked ultra-low-temperature machine and so on.



### HIGH AND LOW TEMPERATURE SERIES

Main products: High and low temperature integrated intelligent control machine, applications: semiconductor, automotive parts testing, chemical and pharmaceutical.



### POINT COLD SERIES

Main products: high-pressure point cooler, multi-channel high-temperature water heater, mould cooling station, mould cooler, mould temperature control monitoring system, die-casting workshop whole plant water supply temperature control system, integrated control system, etc.



### BOILER SERIES

Main products: fuel oil (gas) organic heat carrier boiler, fuel oil (gas) steam boiler, fuel oil (gas) hot water boiler, electrically heated organic heat carrier boiler and so on.



### PUMP SERIES

Main products: high and low temperature magnetic drive centrifugal pumps, high and low temperature magnetic drive vortex pumps, high-pressure vane pumps, precision vortex pumps, non-leakage vertical pumps, high-flow centrifugal pumps, stainless steel centrifugal pumps, chemical pumps and so on.



### HIGH PRECISION OF TEMPERATURE CONTROL

The temperature control precision of the product can reach  $\pm 0.1^\circ\text{C}$ , which is at the leading level of the same industry in China, breaking the temperature control technology blockade of Europe and the United States in the field of optical lens.

### WIDE RANGE OF TEMPERATURE CONTROL

The temperature control range of industrial temperature control equipment is between  $-120^\circ\text{C}$  and  $+400^\circ\text{C}$ , and the temperature resistance range of high and low temperature pump is between  $-196^\circ\text{C}$  and  $+400^\circ\text{C}$ .

### FAST RATE OF TEMPERATURE CONTROL

AODE's self-developed "water/oil hot and cold rapid switching technology" can achieve rapid cooling and heating automatic switching temperature control, providing efficient and accurate temperature control for various industrial applications.

### SAFE AND STABLE

AODE products are designed to take multiple protection measures (power supply phase sequence detection, motor overload protection, flow detection, pressure detection, temperature detection, etc.) to ensure the safe and stable operation of the equipment.

### ENERGY EFFICIENT AND ENVIRONMENTALLY FRIENDLY

Through multiple innovations such as "High-efficiency Low-NOx Gas Condensing Boiler Technology" and "VOCs Condensing Recovery Refrigeration Technology", AODE is able to effectively improve the heating/cooling efficiency and reduce NOx and carbon emissions.

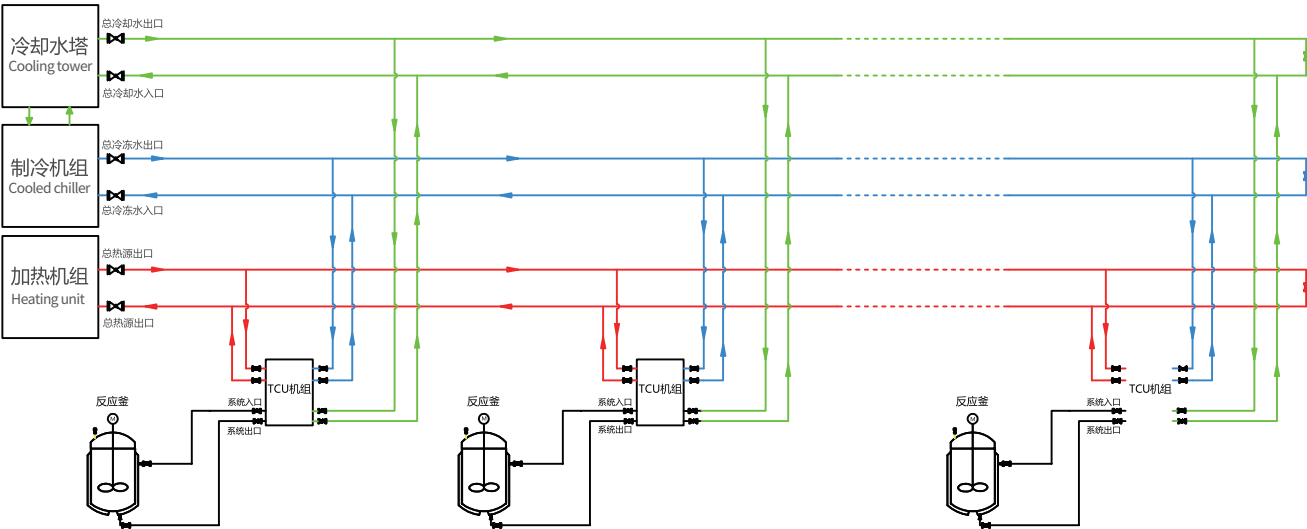
### INTELLIGENT CONTROL

The products produced by AODE can achieve energy consumption detection, online monitoring, data analysis, remote control, alarm linkage and so on.



# INDUSTRIAL TEMPERATURE CONTROL SYSTEM INTEGRATION

## 工业温控装备系统集成



# INDUSTRIAL BOILER SERIES

## 锅炉系列

Boiler series products include: oil (gas) organic heat carrier boiler, oil (gas) steam boiler, oil (gas) hot water boiler, electrically heated organic heat carrier boiler and so on.

### THE MAIN PURPOSE OF THE PRODUCT

- Chemical industry--Heating and cooling of reaction, distillation, melting, concentration, drying and other processes.
- Plastic industry - heating of extruder, bi-directional stretch film production line, heating moulding machine.
- Rubber industry - heating of sulphurisation machine.
- Corrugated industry - heating of corrugator, melting of wax.
- Food industry - heating between cooking, drying and frying.
- Asphalt industry - heating of melting equipment.
- Electronic industry - lamination of copper foil substrate, glass fibre cloth impregnation machine, etc.
- Paint and automotive industry - reaction of resin paint, drying of coating surface, lithium battery diaphragm.
- Synthetic fibre industry - heating of melt spinning machine.

# GAS/FUEL FIRED ORGANIC HEAT TRANSFER MATERIAL HEATERS

燃气有机热载体锅炉 +25℃☀️ +300℃



- No oil collection plate, no dead angle of the flow of heat medium oil, but also to prevent the oil collection plate high pressure to produce the risk of oil leakage breakage.
- Front and rear doors can be opened quickly to provide quick inspection and maintenance.
- With a fire view window, you can clearly monitor the combustion condition. With explosion-proof ports, to prevent the furnace ignition and deflagration in time to relieve the pressure, other boilers generally do not have this device.
- Three-layer boiler shell insulation, the inner ceramic fibre, the middle rock wool boards, the outer lightweight cement, in order to reduce the loss of accumulation and improve the strength of the outer shell
- Three-circuit tube coil design, heat transfer area than the general thermal media boiler on the market of about 30%, in order to reduce the exhaust gas temperature and greatly improve the efficiency of the boiler.
- Large combustion chamber, to avoid flame contact with the tube wall and damage, and reduce NOx emissions.

| ITEM                        | UNIT   | YY(Q)W-1800Y、Q      | YY(Q)W-2400Y、Q      | YY(Q)W-3000Y、Q      | YY(Q)W-3500Y、Q      | YY(Q)W-4000Y、Q      | YY(Q)W-4600Y、Q      | YY(Q)W-6000Y、Q      | YY(Q)W-7000Y、Q      | YY(Q)W-8200Y、Q      | YY(Q)W-9300Y、Q      | YY(Q)W-12000Y、Q      | YY(Q)W-14000Y、Q      |
|-----------------------------|--------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
| Rated Thermal Power         | kcal/h | 150*10 <sup>4</sup> | 200*10 <sup>4</sup> | 250*10 <sup>4</sup> | 300*10 <sup>4</sup> | 350*10 <sup>4</sup> | 400*10 <sup>4</sup> | 500*10 <sup>4</sup> | 600*10 <sup>4</sup> | 700*10 <sup>4</sup> | 800*10 <sup>4</sup> | 1000*10 <sup>4</sup> | 1200*10 <sup>4</sup> |
|                             | KW     | 1800                | 2400                | 3000                | 3500                | 4000                | 4600                | 6000                | 7000                | 8200                | 9300                | 12000                | 14000                |
| Thermal Efficiency          | %      | 92                  |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| Design Pressure             | MPa    | 0.8                 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| Design Temperature          | ℃      | 300/350/380         |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |
| Oil Capacity Inside Furnace | m³     | 1.7                 | 2.0                 | 2.54                | 2.9                 | 3.6                 | 4.1                 | 4.9                 | 5.6                 | 8                   | 9                   | 11.2                 | 12.3                 |
| Pump Power                  | KW     | 30                  | 37                  | 45                  | 55                  | 55                  | 75                  | 90                  | 130                 | 75*2                | 75*2                | 90*2                 | 90*2                 |
| Pump flow                   | m³/h   | 132                 | 176                 | 220                 | 256                 | 293                 | 337                 | 418                 | 406                 | 250*2               | 300*2               | 400*2                | 450*2                |
| Pump head                   | m      | 56                  | 55                  | 55                  | 55                  | 52                  | 60                  | 56                  | 56                  | 56                  | 56                  | 53                   | 53                   |
| Connecting Pipe Size        | mm     | 125                 | 150                 | 150                 | 200                 | 200                 | 200                 | 250                 | 250                 | 300                 | 300                 | 300                  | 350                  |
| Max. power consumption      | KW     | 40                  | 50                  | 62                  | 72                  | 72                  | 95                  | 115                 | 170                 | 195                 | 200                 | 235                  | 250                  |
| Gas Consumption             | m³/h   | 190                 | 253                 | 316                 | 379                 | 442                 | 506                 | 632                 | 758                 | 885                 | 1011                | 1264                 | 1517                 |
| Oil Consumption             | kg/h   | 160                 | 213                 | 266                 | 320                 | 373                 | 426                 | 533                 | 639                 | 746                 | 853                 | 1066                 | 1279                 |

# STEAM BOILER OF NWNS TYPE

NWNS型蒸汽锅炉 +25℃☀️ +300℃



- High boiler efficiency: flue tube type large diameter furnace chamber design, equipped with high efficiency energy saver and condenser, the efficiency can reach more than 100%.
- Low heat dissipation loss: three-layer boiler shell insulation, inner layer of ceramic fibre, intermediate rock wool boards, outer lightweight cement, to reduce heat dissipation loss and improve the strength of the outer shell.
- Superior Durability: Wetback back wall WET-BACK construction with ample heat transfer area for rugged durability.
- Short start-up time: from automatic ignition to the generation of steam at a pressure of 8 kg/cm² in about 10 minutes.
- Complete safety control: the use of highly reliable triple water level and triple pressure safety controls ensures the safe operation of the system.

| ITEM                       | UNIT               | NWNS1                                         | NWNS2 | NWNS3 | NWNS4 | NWNS5 | NWNS6 | NWNS8 | NWNS10 | NWNS12 | NWNS15 | NWNS20 |
|----------------------------|--------------------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Rated evaporation capacity | kg/hr              | 1000                                          | 2000  | 3000  | 4000  | 5000  | 6000  | 8000  | 10000  | 12000  | 15000  | 20000  |
| Rated vapour pressure      | MPa                | 1.0、1.25、1.6、2.0、2.5                          |       |       |       |       |       |       |        |        |        |        |
| Combustion method          |                    | Electronic proportional control ELECTRONICCAM |       |       |       |       |       |       |        |        |        |        |
| Full capacity              | kg                 | 4600                                          | 7100  | 8600  | 12000 | 12900 | 15400 | 17000 | 19600  | 23400  | 32500  | 39300  |
| Water retention            | kg                 | 3600                                          | 5700  | 9300  | 9700  | 10300 | 11400 | 14200 | 16300  | 19700  | 27900  | 34200  |
| Approximate boiler weight  | kg                 | 5900                                          | 8300  | 10500 | 13400 | 15600 | 18000 | 20300 | 23500  | 28500  | 37800  | 43300  |
| Thermal efficiency         | %                  | 98%                                           |       |       |       |       |       |       |        |        |        |        |
| Fuel Consumption           |                    |                                               |       |       |       |       |       |       |        |        |        |        |
| Diesel oil                 | kg/h               | 65                                            | 128   | 190   | 252   | 315   | 375   | 499   | 627    | 749    | 932    | 1243   |
| Petroleum                  | Nm <sup>3</sup> /h | 77                                            | 154   | 227   | 301   | 375   | 448   | 597   | 747    | 895    | 1112   | 1473   |
| Connection port diameter   |                    |                                               |       |       |       |       |       |       |        |        |        |        |
| Diesel fuel port           | mm                 | 20                                            | 20    | 20    | 20    | 20    | 20    | 20    | 25     | 25     | 25     | 25     |
| Natural gas port           | mm                 | 40                                            | 50    | 50    | 50    | 50    | 65    | 65    | 80     | 80     | 100    | 100    |
| Main Steam Port            | mm                 | 50                                            | 80    | 80    | 100   | 125   | 125   | 150   | 150    | 200    | 200    | 200    |
| Water outlet               | mm                 | 25                                            | 32    | 32    | 40    | 40    | 40    | 40    | 50     | 50     | 65     | 65     |
| Sewer outfall              | mm                 | 40                                            | 50    | 50    | 50    | 50    | 50*2  | 50*2  | 50*2   | 50*2   | 50*2   | 50*2   |
| Safety valve port          | mm                 | 40                                            | 50    | 65    | 50*2  | 50+65 | 65*2  | 65+80 | 80*2   | 80*2   | 100+80 | 100*2  |
| Chimney diameter           | mm                 | 300                                           | 400   | 450   | 500   | 550   | 600   | 700   | 800    | 850    | 900    | 950    |



APPLICATIONS  
应用领域

TO ACHIEVE INDUSTRY-WIDE COVERAGE IN THE INDUSTRIAL SECTOR  
AND IMPORT SUBSTITUTION OF HIGH-END PRODUCTS.

5G materials, 3C communications, energy storage, integrated die-casting, circuit boards, semiconductors, military, new energy, aerospace, scientific research, rail transportation, automotive parts, chemicals, pharmaceuticals, precision injection moulding, rubber, sheet/sheet/film, food, printing and dyeing, packaging, drying, composite materials, carbon fibre products and so on.



COMPONENT  
选用配件

Germany BITZER, Germany BOCK, Taiwan HANZHONG, the United States of America Copeland, Denmark Danfoss, Japan Panasonic compressor; Denmark Grundfos pump, Germany speck pump; Alfa Laval heat exchanger



High-efficiency condenser, evaporator; Danish Danfoss, Italy Carle throttle device; Danish Danfoss pressure transmitter; Japan ARK air filter; Italy OR solenoid valve; Germany RTK proportional valve and so on.



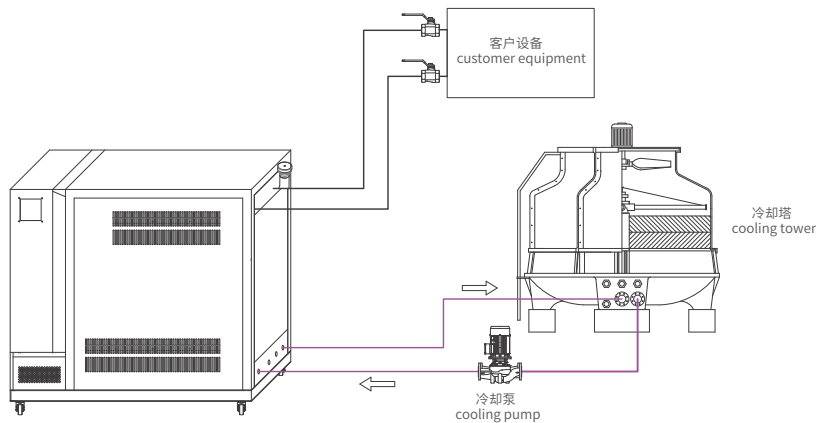
Germany Siemens controller, human-machine interface, contactor, thermal relay, Japan Omron phase sequence protection and other well-known brands of electronic components



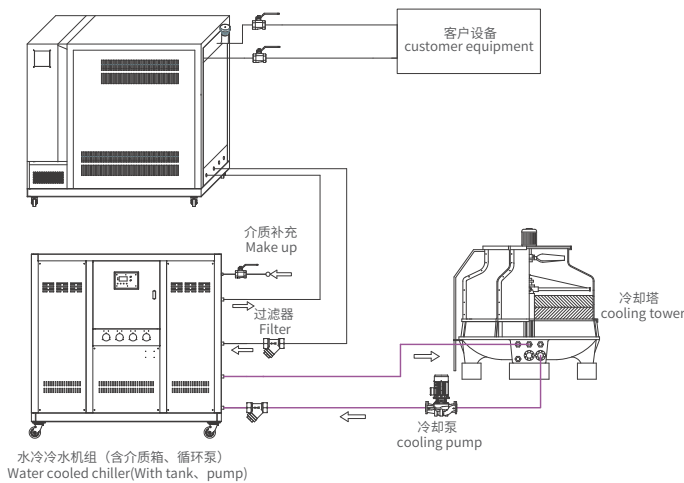
COOPERATION BRANDS  
合作品牌



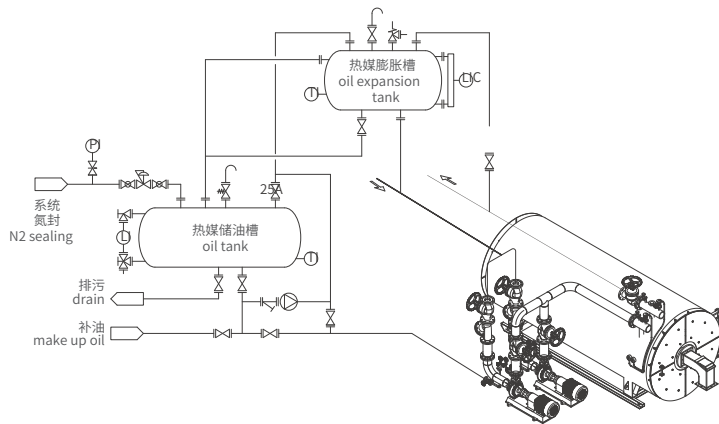
模温机安装管路流程图  
MOLD TEMPERATURE CONTROL UNIT PIPELINE INSTALLATION DRAWING



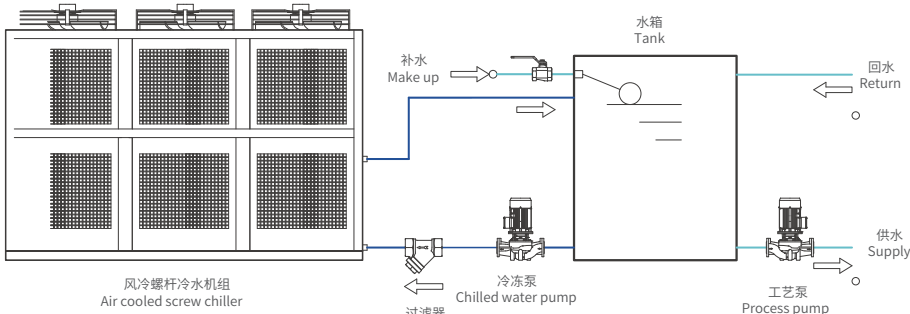
模温机、冷水机组外部管路连接图  
MOLD TEMPERATURE CONTROL UNIT AND CHILLER'S PIPELINE CONNECTION DIAGRAM



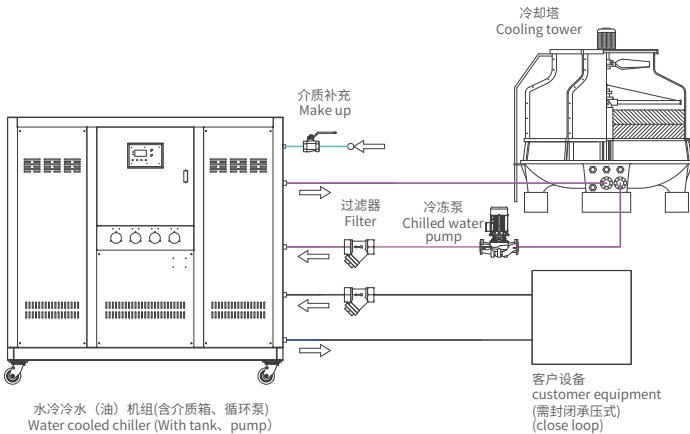
燃气(油)有机热载体炉外部连接管路  
GAS /FUEL FIRED ORGANIC HEAT TRANSFER MATERIAL HEATER PIPELINE DRAWING



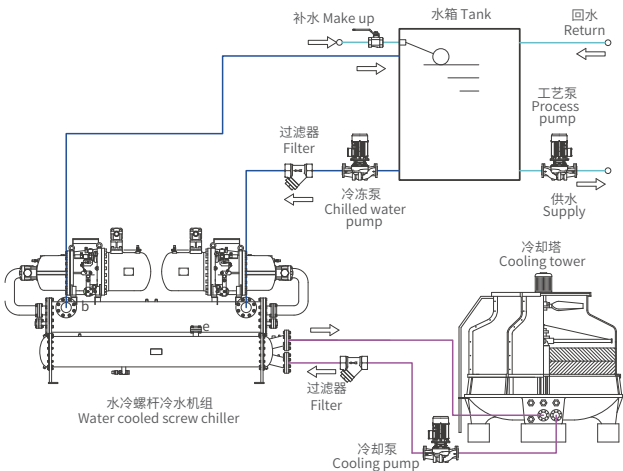
风冷螺杆冷水机组外部管路连接参考图  
AIR COOLED SCREW CHILLER PIPE CONNECTION DIAGRAM



水冷冷水(油)机组外部管路连接参考图  
WATER COOLED CHILLER PIPE CONNECTION DIAGRAM



水冷螺杆冷水机组外部管路连接参考图  
WATER COOLED SCREW CHILLER PIPE CONNECTION DIAGRAM





# SUCCESSFUL CASES

## 成功案例

### CHOOSE AODE

In China, Aode's professionalism makes the national brand replace the imported brand.  
Overseas, Aode's quality makes us the pride of Made in China. Temperature control we guarantee for you.  
For more cases, please visit the website : [www.aodetcu.com](http://www.aodetcu.com)

- |                                     |                                                 |                                              |                                |
|-------------------------------------|-------------------------------------------------|----------------------------------------------|--------------------------------|
| 1 Automotive integrated die-casting | 2 Die-casting industry                          | 3 Wind power industry                        | 4 chemical medicine            |
| 5 Testing Industry                  | 6 Organic heat carrier furnace (chemical fibre) | 7 petrochemicals                             | 8 5G circuit boards            |
| 9 Rubber industry                   | 10 Moulding temperature control                 | 11 Temperature control for calendering lines | 12 Injection moulding industry |





**11000+成功案例**  
11,000 + Success Stories

已有超过80000台/套奥德设备在全球范围内连续稳定运转

There are more than 80,000 units of AODE equipment in continuous and stable operation around the world.



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