



AODE MACHINERY

AWM 模温机操作手册

Operation Original Instruction Manual of
AWM Mold Temperature Controller



AODE MACHINERY

24 Hours Hotline

+86-13923892924 / +86-13823573023 (SHEN ZHEN PLANT)

+86-13914978909 / +86-15850359345 (SU ZHOU PLANT)

+86-13512948118 / +86-13516101512 (TIANJIN PLANT)

前言

PREFACE

AWM 模具温度控制机操作说明书;

AWM Instruction Manual of Mold Temperature Controller;

1、提供温度控制方面的领先技术，以优良的品质，适中的价位，完善的服务为客户创造价值

We provide advanced technology in temperature controlling and create values for customers with top quality, reasonable price and perfect service.

2、本手册说明如何操作使用此模温机，它同时提供一些平常保养事项及可预见问题的故障处理。

This manual illustrates how to operate the mold temperature controller and provides ordinary maintenance items and solutions to predictable faults.

3、为了操作人员对本设备能最有效安全的使用，请详阅本手册。

In order to make the most effective and safe use of the equipment, please read this manual carefully.

4、如有不明之处，请致电

深圳工厂 0755-33232001/2/3/4 转 812，

苏州工厂 0512-57115761/2/3 转 812，

天津工厂 022-26899171/3/9 转 818，有专员为您解答。

维修 24 小时热线：深圳 +86-13923892924/ +86-13823573023

苏州 +86-13914978909 / +86-15850359345

天津 +86-13512948118/ +86-13516101512

If any question, please contact with our technical supporter as below:

Shenzhen plant: 0755-33232001-4 Ext: 812

Suzhou plant: 0512-57115761-3 Ext: 812

Tianjin plant: 022-26899171/3/9 Ext: 818

24 Hours hotline: Shenzhen Plant: +86-13923892924/ +86-13823573023

Suzhou Plant: +86-13914978909 / +86-15850359345

Tianjin Plant: +86-13512948118/ +86-13516101512

目 录

Contents

第一章	安全守则	-----	3
Chapter One Safety Regulations			
第二章	产品特点	-----	6
Chapter Two Product Features			
第三章	机器各部分名称	-----	7
Chapter Three Name of Parts			
第四章	机型规格	-----	8
Chapter Four Specifications			
第五章	主要功能	-----	11
Chapter Five Main Functions			
第六章	安装及注意事项	-----	12
Chapter Six Installation and Precautions			
第七章	运转操作说明	-----	16
Chapter Seven Operating Instructions			
第八章	异常情况及处理表	-----	21
Chapter Eighth Abnormal Phenomena and Solutions			
第九章	保养与维护	-----	22
Chapter Nine Maintenance and Repair			
第十章	管路系统图	-----	23
Chapter Ten Pipeline SystemFlow Chart			
第十一章	电路图及电子零件清单	-----	24
Chapter Eleven Circuit Diagram and List of Electronic Parts			

第一章 安全守则

Chapter One Safety Regulations



危险！ Danger!

此机组内有高温高压，为安全起见，请勿移动机盖或开关。

The unit is designed to endure high temp and high pressure. For safe operation, do not remove the covers or switches.



注意！ Attention!

此机组仅供合格人员操作。

The unit should be operated by qualified personnel only.

切断电源后请关闭总开关。

Turn off main switch when power supply is off.

安装或移位时请穿戴安全手套和鞋子。

Put on safety gloves and shoes during installation or relocation.



警告！ Warning!

勿用潮湿物体或湿手接触开关。

Do not touch the switch with wet object or hands.

完全了解机器性能之后方可使用。

Do not use the machine before fully aware of its performance.

注意勿接触或撞击开关或感应器。

Be careful not to touch or hit the switch or sensor.

请保留足够的操作空间，清理障碍物。

Please keep enough space for operation, and clean out obstacles.

保护机器勿受强烈震动或撞击。

Protect the machine against severe vibration or collision.

勿移除或弄污安全提示。

Do not remove safety signs or make it dirty.

酒后或药后以及判断失准者请勿操作机器。

Drunken, medicine-taking, or men without proper judgment should not operate the machine.


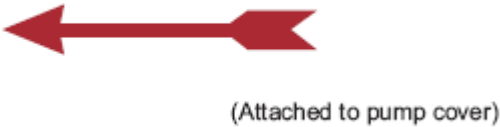


操作说明书必须时刻保持在操作者触手可及的地方。如果你遇到任何的疑问或者有出现问题的时候，请联系我们的客服部门。

The manual must be kept in the place that operator can reach to easily. If there's any questions or other issues occurring, pls contact our service department in time.

因客户操作人员不遵守操作说明书而造成操作故障或者因客户现场的自身原因或人为因素造成的严重事故，责任将由客户来承担，我公司不负任何法律责任。

For the operator not observe the manual to cause operating incident or for the self-reason of customer scence or the other human factors causing the bad accident, the duty will be undertaken by our customer with no legal liability of our company.

1.1 安全提示标志 Safety Signs and Labels

	<p>为确保加热温度的稳定性，冷却水压力不得低于 1.5kg/cm²，但最高亦不得超过3kg/cm²。出口背压在0.5 kg/cm²以下；</p> <p>In order to keep a stable temperature, cooling water pressure between 1.5 kg/cm and 3kg/cm.and outlet of pressure should less than 0.5 kg/cm</p> <p>为确保本机的冷却能力，请定期清理“Y”型冷却水过滤器。</p> <p>Clean the Y type strainer to ensure cooling capacity of the machine.</p>
	<p>此标志用以指示马达旋转方向。</p> <p>This sing indicates motor rotating direction.</p> <p>出现相反转时，警报器鸣响，控制面板的指示灯将给予指示。请调转两条电源线位置以解决这一问题。</p> <p>When phase reversal happens, the alarm sounds and indicator on control panel will indicate. Please exchange the place of two of the electrical wires to solve this problem.</p>
	<p>高压危险！可能会被电击，操作人员应小心。</p> <p>High voltage! Electrical shock may happen. Carefulness is required from the operator.</p> <p>机器上接地点请务必做好接地工作，否则可能会用触电危险；</p>
	<p>注意！操作人员应对此警告引起注意。</p> <p>Attentions! This is general warnings which operators should pay attention to.</p>

1.2操作守则 Operation Regulations

- 1) 在操作之前，确信软质冷却水干净无污染物质

Before operation, make sure that soft cooling water is clean without Pollutants.

低质水会导致加热器烧坏，泵叶轮磨损，流量降低，泵浦漏水。

Using low quality water may cause the damage of heater and impeller of pump, to decrease the flow rate and leakage of the pump.

- 2) 当机器运行时，不要轻易去移动。

Do not move the unit when it is in operation.

- 3) 如有需要机器修理，必须等水温降到30度以下之后。

When there's need of repairing, we must wait for water temperature falling below 30 degree.

- 4) 在关闭泵浦之前，必须等水温降到60℃以下，否则会影响它的使用寿命。

Before shut off the pump, must wait until water temperature falls below 60℃. Otherwise The service life of the unit would be affected.

- 5) 为保证控制温度稳定，冷却水压力应该在1-3kg/cm²。

In order to keep stable water temperature, cooling water pressure should be at 1~3kg/cm².

- 6) 在开机前，请确认电源已经接好且电源规格与机器名牌相符合。

Before starting the machine, pls check the connection of power wires and confirm the power spec be corresponding with the unit nameplate.

- 7) 在开机前，请确认机器进出口等阀门已经开启。

Before starting the machine, pls check the in/outlet valves of unit be open.

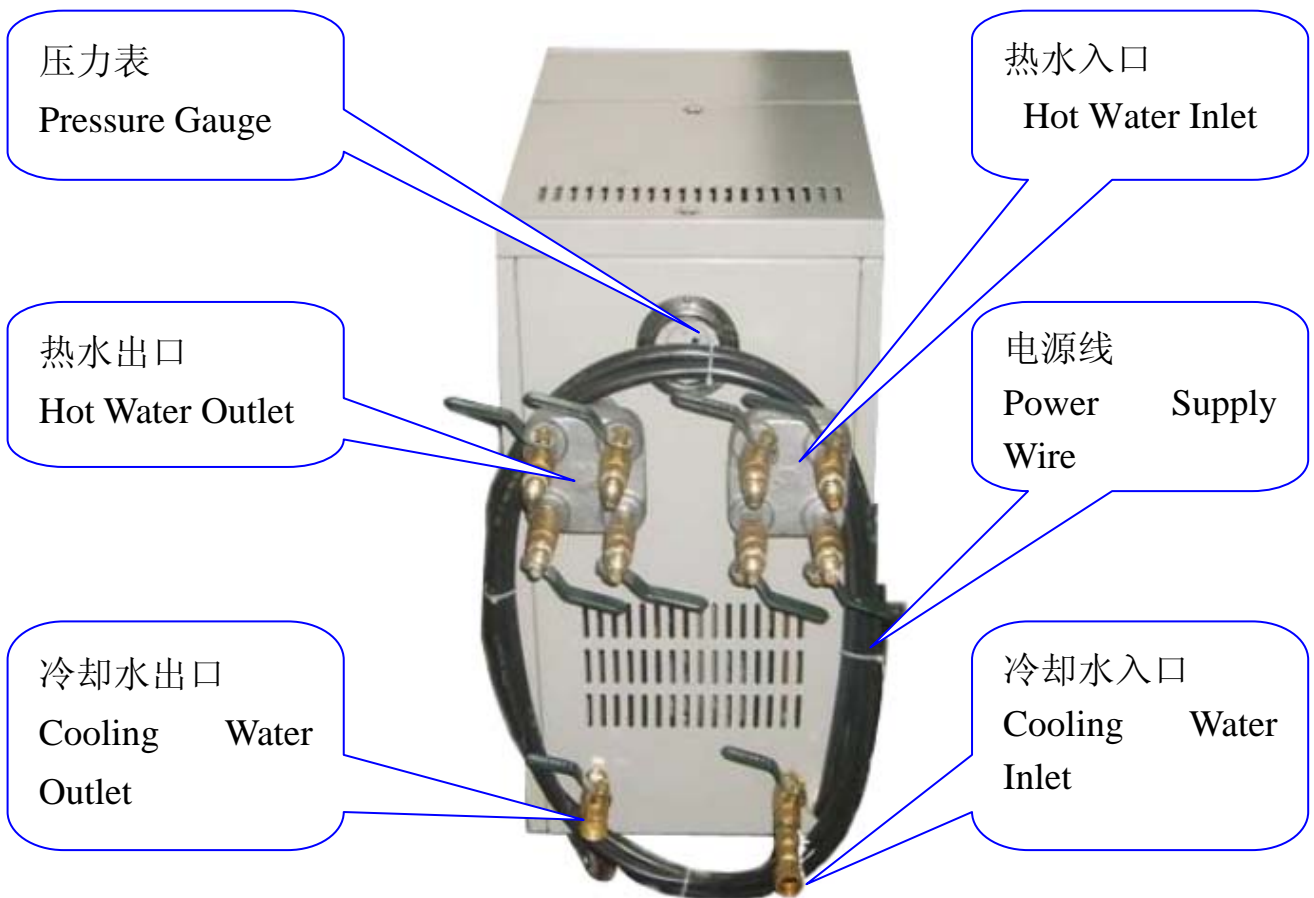
第二章 产品特点

Chapter Two Product Features

1. 最高使用温度 120℃
The highest temperature can reach 120℃
2. 采用微电脑控制面板，便于操作
Microcomputer control panel, easy to operate
3. 开机自动排气
Power on with automatic air exhaust
4. 出水、回水温度显示
Temperature display of outlet and returned water
5. 管路防爆装置
Pipeline with explosion-proof apparatus
6. 模具回水功能（选购）
Mold water return function (option)
7. 采用 WEST、ABB、MOELLER、WEIDMULLER 等控制零件。
Controlling accessories of WEST、ABB、MOELLER、WEIDMULLER
8. 不锈钢管路，减少管阻及锈垢
Stainless pipeline for reducing resistance and rust
9. 故障显示，维修不用专业人员
Error indication for easy maintenance
10. 故障自动警报提醒功能
Automatic alarms function for failure.

第三章 机器各部分名称

Chapter Three Names of parts



第四章 机器规格

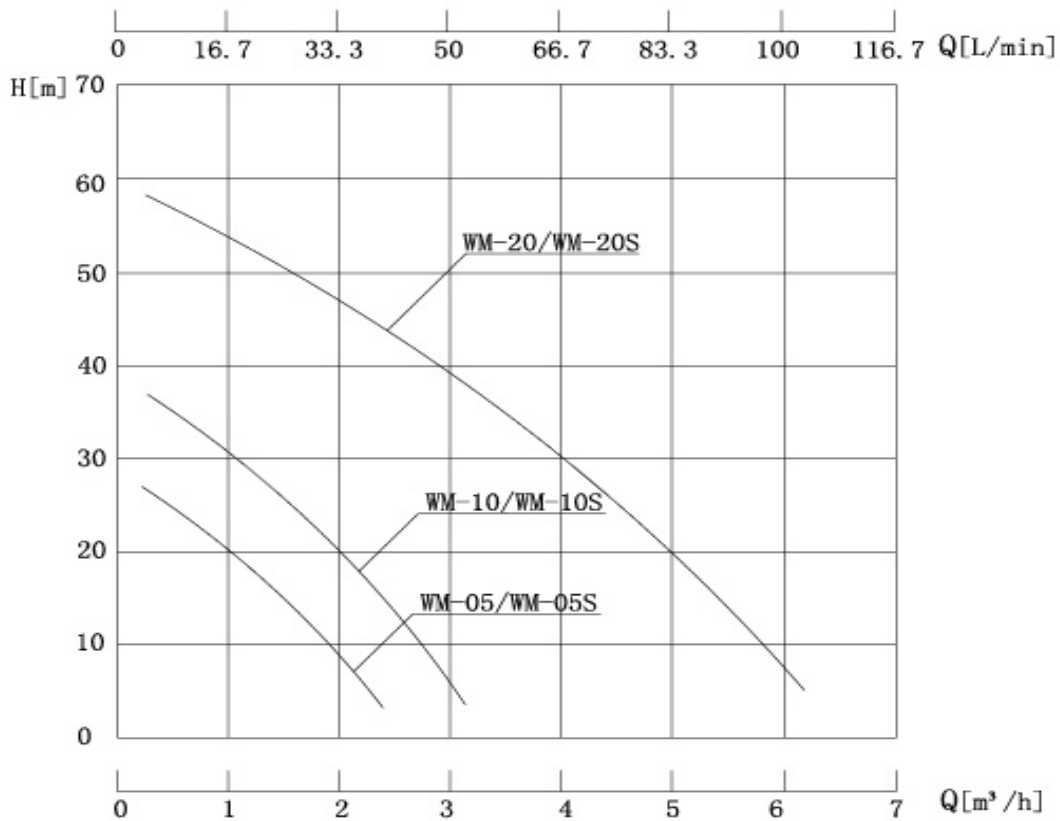
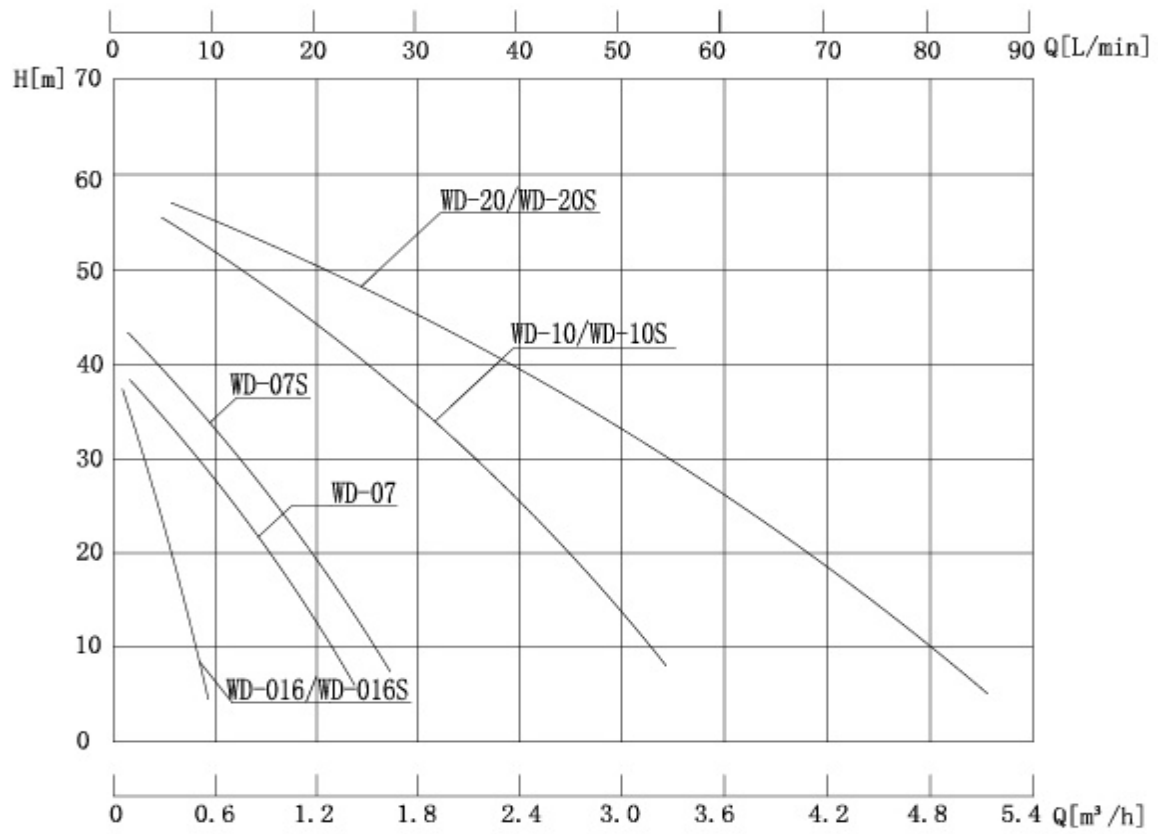
Chapter Four Specifications

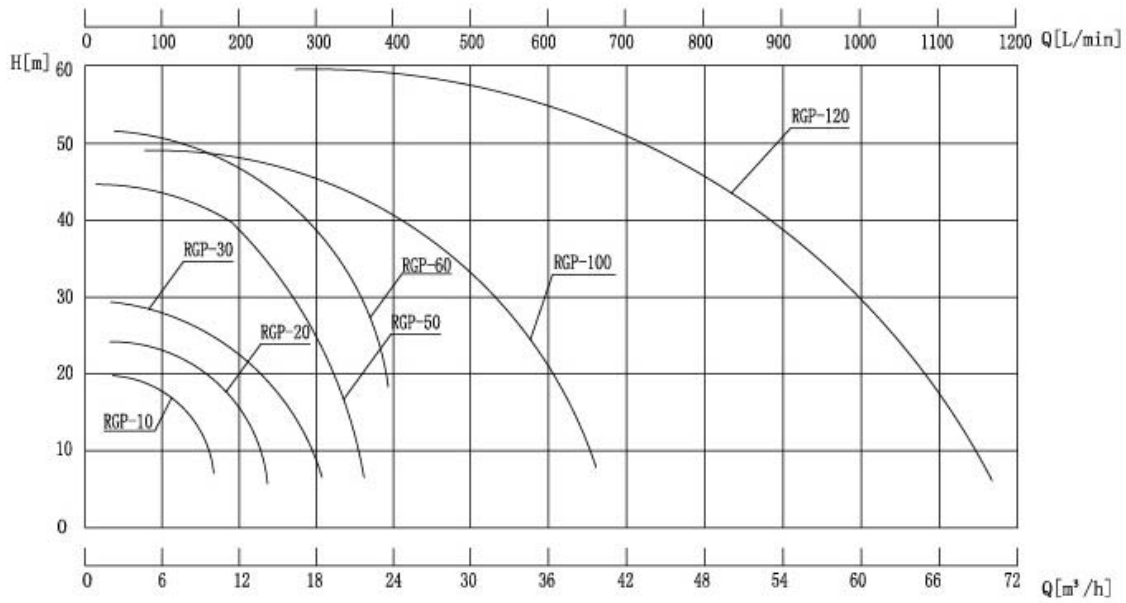
4.1 机器规格 Specifications

机型	单位	AWM-05A	AWM-05	AWM-10A	AWM-10	AWM-20	AWM-20-24	AWMD-10
Model								
温控范围	°C	常温-120°C						
Control range								
温控精度	°C	PID±1°C						
Temp.control accuracy								
电源		AC3 φ 380V50HZ (3P+E)						
Power								
传热媒体		水 WATER						
Heat transfer medium								
冷却方式		直接冷却DIRECT COOLING						
Cooling method								
加热能量	KW	6	6	9	9	12	24	9+9
Heating capacity								
泵浦马力	HP	0.5	0.5	1	1	2	2	1+1
Pump power								
泵浦工作流量	L/min	16	25	25	100	150	150	100+100
Pump folw								
系统工作压力	kg/cm ²	2.0	2.5	2.5	1.5	2.0	2.0	1.5+1.5
System pressure								
最大电力消耗	KW	7	7	11	11	14	26	11+11
Maxpower supply								
警报功能		泵反转/缺水/过载/						
Alert function								
冷却水配管	INCH	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Cooling water pipe								
循环水配管	INCH	3/8*2	3/8*2	3/8*4	3/8*4	3/8*4	1"	3/8*4
Circulation water pipe								
外型尺寸	MM	620*325*580	620*325*580	620*325*580	620*325*580	620*325*580	900*420*900	750*420*750
L+W+H								
重量	KG	50	50	65	65	75	95	130
Weight								

4.2 泵浦性能曲线

Pump performance curve





■ 测试基础

上述性能曲线对应于水在 20°C 时以正常速度运输。扬程和流量的误差是 $\pm 10\%$ ，性能误差 $+10\%$ 。泵的性能随输送流体介质的比重及密度的不同而产生变化。

第五章 主要功能

Chapter Five Main Functions

5.1 功能描述

Function Description

本产品使用水作为传热媒体，通过电热加温以及热水泵强制循环的供热设备。用途比较广，如对射出成型，导光板，连接器，光学镜片等模具控温。

The heating equipment which uses water as the heat transfer medium and through the electrically heats up and hot water pump forces circulation. It is widely applied in injection molding, light panel, connector, optic lens and etc.

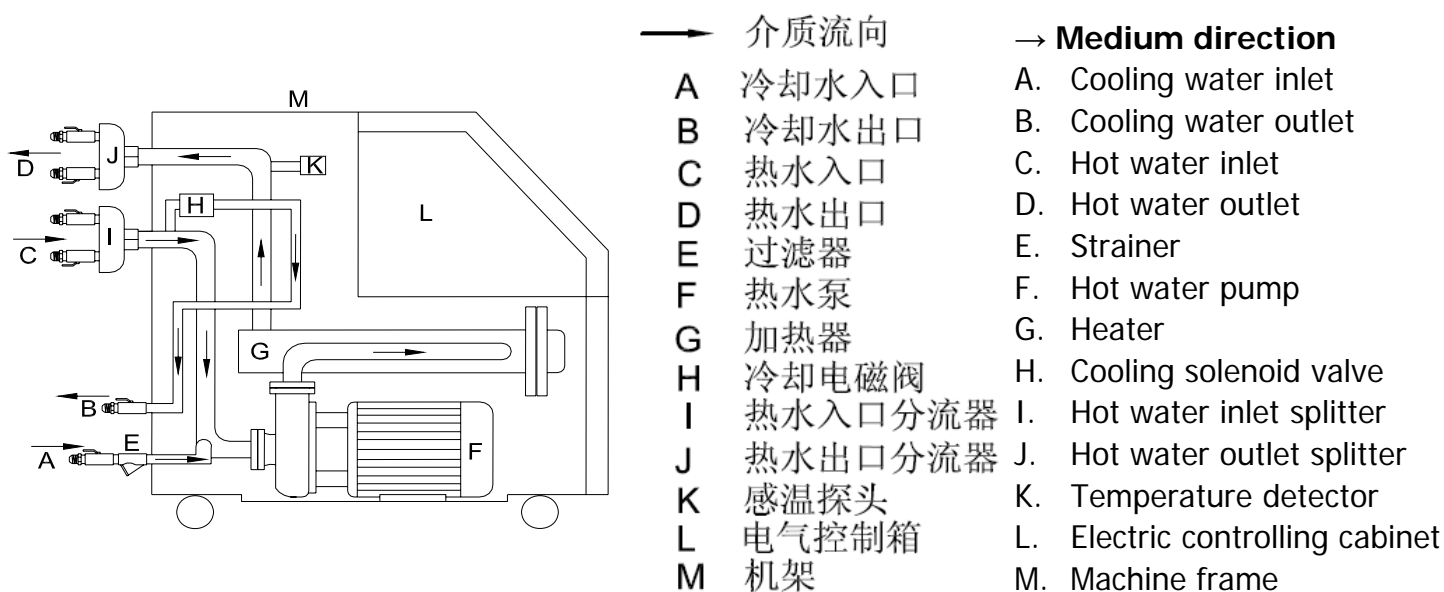
5.2 工作原理 Working Principle

工作原理：

传热媒体（水）通过冷却入水口 A 进入系统，由循环水泵 F 打到模具后再回到系统，周而复始。媒体（水）在经过加热器 G 升温，由感温探头 K 探测媒体（水）温度，当温度达到要求时，加热器 G 停止工作。当温度需要下降时，电磁阀 H 打开，使部分热水由冷却出水口 B 排出，系统内由冷却入水口 A 补进冷却水，从而使系统内温度下降。

Working Principle:

The heat transfer medium (water) enters into the system by cooling water inlet A, pumped to the mold by circulation water pump F, and then back to the system. This process repeats again and again. The medium (water) is heated up by the heater G, and its temperature is detected by temperature detector K. When the temperature reaches the required point, heater G will stop working. When the temperature needs to fall down, Solenoid valve H will be opened and hot water will be drained out from cooling water outlet B, and cooling water are supplemented by inlet A, thus descending the temperature inside the system.



第六章 安装及注意事项

Chapter Six Installation and Precaution

6.1 注意事项 Precautions

6.1.1) 本机仅可使用机箱铭牌的标示之三相电压及频率，地线（黄绿色）务必接地。
This machine can only use three-phase voltage and frequency indicated on the nameplate and the earth wire (yellow and green) must be GND.

6.1.2) 机器运转时请务必将冷却水出入口及有铁氟龙管连接的热水出入口阀门开启。
Please do open the outlet/inlet of cooling water and hot water outlet/inlet valves connected with Teflon pipe when running the machine.

6.1.3) 外部配管请参考以下使用之温度，选择外部配管：
Please refer to the following temperature for external pipe and make your choice:

A) 棉纱管	60°C	约半年
Cotton yarn pipe	60°C	about half a year
B) 中压皮管	120°C	约一年
Intermediate pressure leather hose	120°C	about one year
C) 铁氟龙管	200°C	约一年
Teflon pipe	200°C	about one year

注：管路接头于 120°C 以下可使用快速接头，高于此温度一定要使用油压接头，因管路压力大，请勿使用插芯及管束。

Notes: Quick coupler is suitable when temperature is below 120°C, but oil-pressure coupler must be used when it is above 120°C. DO NOT use plug and tube bundle since the pressure of pipeline is high.

6.1.4) 介质（水）Medium (water)

A)、不含沙及泥土或其他杂质的干净水源，如使用地下水需经软化处理。
Clean water source without sand and clay or other impurities, and ground water should be softening process first.

B)、每月定时更换循环水。
Change circulating water every month.

C)、定期添加防锈剂及除藻剂。
Add antirust agent and algaecide regularly.

注：杂质易堵塞管路造成机台损坏，未经软化的地下水会造成水垢，严重影响加热及传热效率，缩短发热管寿命。

Notes: Impurities block pipelines may cause machine damage easily, unsoftened ground water may cause furr, thus affect heating and heat transfer efficiency and shorten the service life of heating pipe.

6.2 安装 Installation

6.2.1) 安装空间 Installation Space

- A) 安装时，机器周围至少应留有500mm的安装空间，如右图所示。

During installation of the machine, keep at least 500mm installation space around the machine as shown by the right side picture.

该设备四周空出 0.5 米以便维修



- B) 确保安装空间不受阻塞。因为四周拥挤容易造成操作、保养和维修的不便。

Making sure the install space is clean. For the crowded circumstance is easy to cause inconvenience to operation, maintenance and repair.

- C) 安装时勿坐在机器上面。

Do not sit on the machine while installing.

- D) 远离易燃易爆物。

Keep away from flammable and explosive objects.

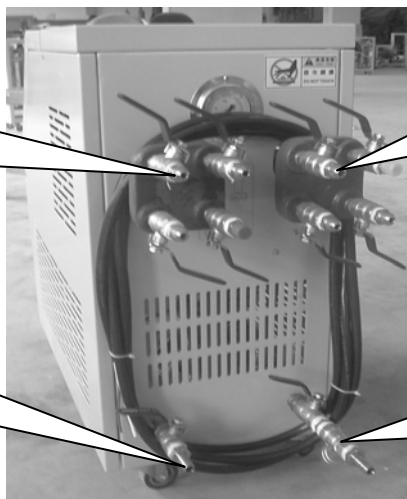
6.2.2 模具和水管的连接方法 Pipeline connect method with Mold

接热水出水管

Connected to hot water outlet pipe

接冷却出水管

Connected to cooling water outlet pipe



接热水入水管

Connected to hot water inlet pipe

接冷却入水管

Connected to cooling water inlet pipe

- 1) 冷却水循环系统 (Cooling water circulating system) :

- a. 将冷却水用耐热水管依照本机的冷却水入口大小接妥。

Connect heat-resistant water pipes according to the size of cooling water inlet.

- b. 将本机冷却水回水口接回水源或水塔循环利用避免浪费。

Connect the returning water pipe of cooling water with water source or tower for recycling.

- 2) 热水循环系统 (Hot water circulating system) :

- a. 本机热水出口以铁氟龙管接至模具入口。

Connect hot water outlet with mold inlet using PTFE pipe.

- b. 将模具出口接回本机热水入口。

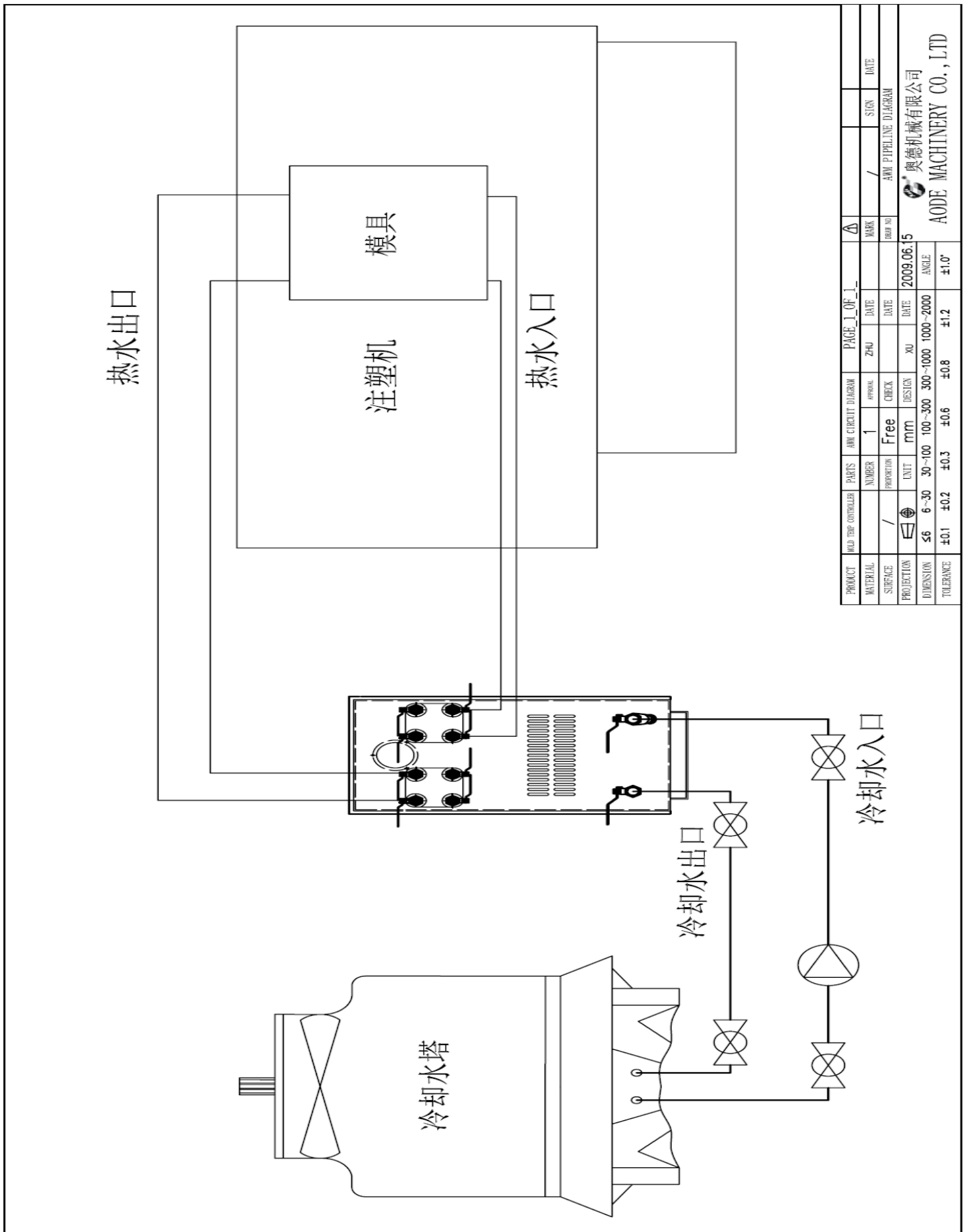
Connect mold outlet with hot water inlet.


- 3) 补水系统 (Water Refilling System) :

从水源或冷却水塔依照本机的冷却水进出口大小接妥。

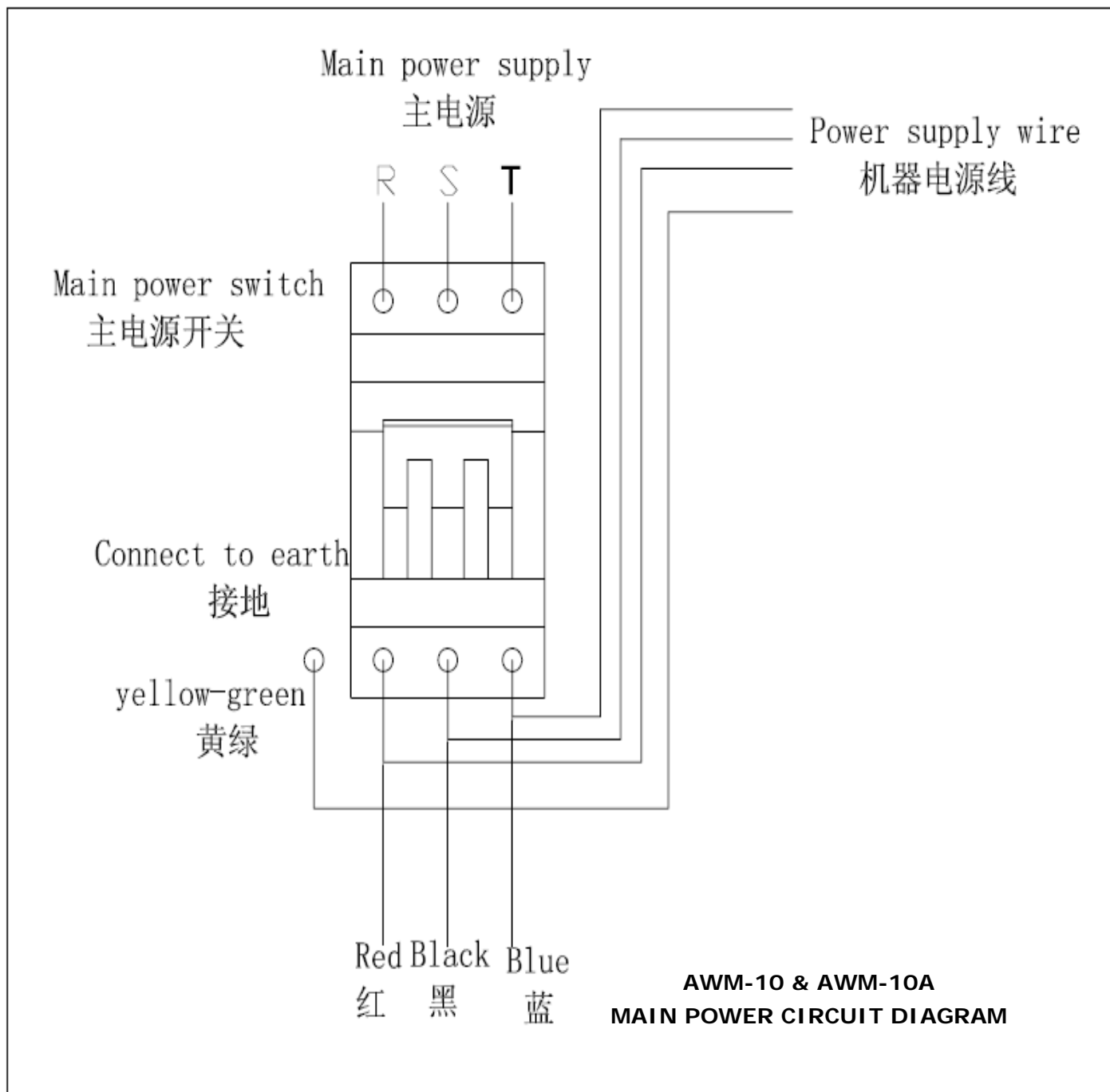
Connect from the water source or cooling water tower according to the size of refilling water inlet.

5)实际连接图



PRODUCT	MATERIAL	SURFACE	PROJECTION	DIMENSION	TOLERANCE	W/D TEMP CONTROLLER	PARTS NUMBER	AWM CIRCUT DIAGRAM	PAGE 1 OF 1	MARK	SIGN	DATE
							1	Free	ZHU		/	
							UNIT	mm	XU			
							30-100	100-300	300-1000	1000-2000		2009.06.15
							±0.1	±0.2	±0.3	±0.6	±0.8	±1.2
												±1.0°
AWM PIPELINE DIAGRAM												
 奥德机械有限公司 AO DE MACHINERY CO., LTD												

3) 电源接线图 Wire Connection of Power Supply

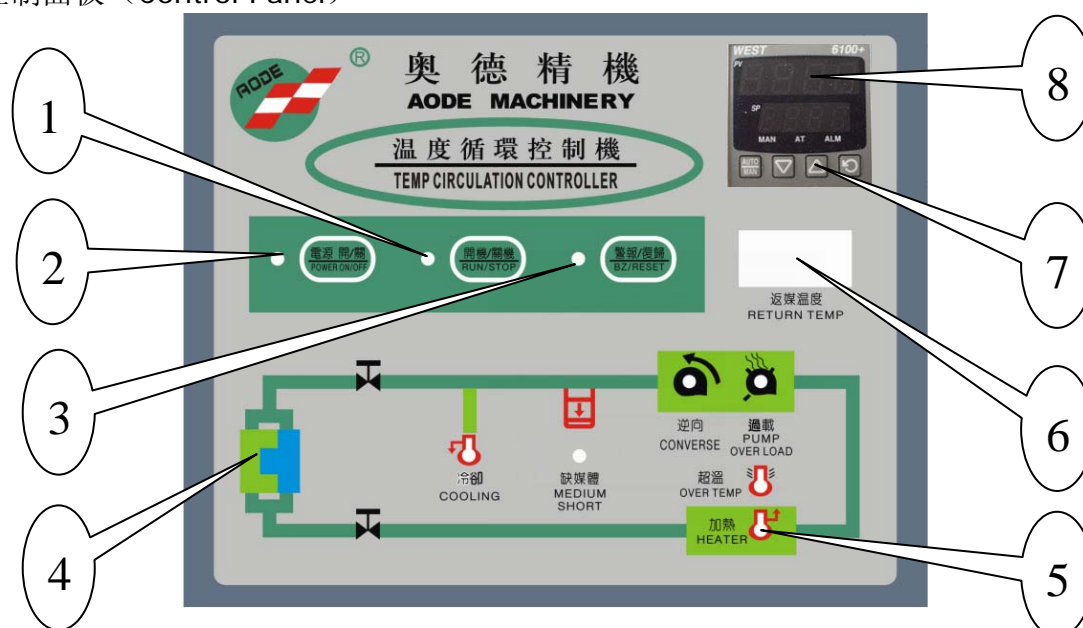


PRODUCT	MOLD TEMP CONTROLLER	PARTS	AOS CIRCUIT DIAGRAM				PAGE 1 OF 1		△						
MATERIAL		NUMBER	1	APPROVAL		DATE		MARK	/	SIGN	DATE				
SURFACE	/	PROPORTION	Free	CHECK		DATE		DRAW NO	AOS POWER CIRCUIT DIAGRAM						
PROJECTION	☞ ⊕	UNIT	mm	DESIGN	xu	DATE	2008.07.29	AODE MACHINERY CO., LTD							
DIMENSION	≤6 6~30 30~100 100~300 300~1000 1000~2000	ANGLE													
TOLERANCE	±0.1 ±0.2 ±0.3 ±0.6 ±0.8 ±1.2	±1.0'													

第七章 运转操作说明

Chapter Seven Operating Instruction

7.1 控制面板 (Control Panel)



序号 (NO.)	名称 (Name)	功能 (Functions)	备注 (Remarks)
1	泵浦开关 Run/stop	打开或关闭泵浦 Turn on/off the pump.	注意：马达旋转方向应正确。 Note: motor rotating direction should be correct.
2	电源开关 Power on/off	打开或关闭电源 Turn on/off power	注意：停机时请关闭电源开关 Note: turn off power switch when machine stop
3	警报复位 Buzzer reset	报警后复位使用 Press reset clear jam	注：消除警报时使用 Use for jam clearing
4	简易流程图 Simple flow chart	机器工作的简易流程 M/C operation flow	注：机器工作时的流程参考 Note: M/C operating reference flow
5	指示灯 Indicating lamp	机器工作时的状态信息指示 M/C running status	注：使我们能更好的了解机器当前的工作状态 Note: Let us know machine performance
6	回模温度 Medium return temp.	显示从模具回来的媒介温度 Show mold return medium temperature	注：作为机器使用过程中的参考温度 Note: as machine reference temperature 注：AWM-10A 型机无此功能 Note: No have above function on AWM-10A model;
7	温度设定按钮 Temp. setting button	设定机器所需控制的温度 Set machine request temperature.	注：当需要调整温度时使用 Note: use for temp adjusting.
8	温度显示 Temp. display	机器控制的温度显示 Show m/c temperature	注：PV 区显示当前温度 To show current temperature SV 区显示设定温度 To show setting temperature

7.1.2 电路板内部参数设定: (Internal circuit boards to set parameters)

①. 回油温度误差设定:

Return oil temperature setting error

按住**电源开/关**键 5 秒, 进入回水温度误差间设定界面。在“回水温度”显示处出现的数字就是回水温度误差。

Hold down the power **on/off** switch 5 seconds. Enter the setting interface of return water temperature error. The displaying figure on the return water is the returning water temp. error.

按**开机/关机**按钮会使回水温度（回油温度上数字）减少;

Press the **start/off** button, the figure of the return water temp. will decrease.

按**警报/复位**按钮会使回水温度（回油温度上数字）增加。

Press the **alarm/reset** button, the figure of the return water temp. will increase.

②. 开机冷却工作时间设定:

Cooling time to start working to set

按住**电源开/关**键 5 秒, 进入回油温度误差间设定界面,按一下**电源开/关**后进入开机冷却时间设定界面, 在“回油温度”显示处出现的数字就是开机冷却工作时间, 单位为秒。

Hold down the power **on/off** switch 5 seconds, enter the return water temp. error setting interface, Click the power **on/off** after boot time to set the cooling interface, Return water temperature in the show appeared that the number of working hours start to cool, for the second unit.

按**开机/关机**按钮会使开机冷却时间（回水温度上数字）减少;

Press the **start/off** button, the starting up cooling time (the figure of the return water temperature) will be reduced.

按**警报/复位**按钮会使开机冷却时间（回水温度上数字）增加。

Press the **alarm/reset** button, the starting up cooling time (the figure of the return water temperature) will be increased.

③. 报警延时输出时间设定:

Time setting of alarm delay output

按住**电源开/关**键 5 秒, 进入回水温度误差间设定界面,按一下**电源开/关**后进入开机冷却时间设定界面, 再按三下**电源开/关**后进入报警延时时间设定界面。在“回水温度”显示处出现的数字就是报警延时时间, 单位为秒。

Press the power **on/off** switch key for 5secs, enter the return water temp. error setting interface, press the power **on/off** switch key, enter the starting cooling time setting interface, press the power **on/off** switch key for three times, enter the alarm delay time setting interface which is the figures displayed on the return water temp. screen, and its unit is sec.

④. 在按**电源开/关**就退出内部参数设定进入正常工作状态。

Press the power on/off again and enter into the normal working

注: AWM-05A/10A 型机无此功能

Note: AWM-05A/10A model is without this function;

7.1 开机 (Startup)

7.1.1 打开冷却水及循环水的阀门。

Turn on the valves of cooling water and circulating water.

7.1.2 将温度设定在 0℃, 打开电源。

Set the temperature at 0℃, and turn the power on.

打开电源后, 可能产生以下情况:

The following situations may occur when power is on:

A) : 泵浦是否反转。

Whether the pump reversal.

处理: 关闭电源, 将外部三相电源线中任意两相对换位置, 接回即可。

Solution: Turn the power off and change the locations of any two of the three-phase power wires, connect again.

B) : 有无缺水警报。

Whether there is water shortage alarm.

处理: 检查冷却水阀门是否开启, 或是供水压力不足。

Solution: Check if the cooling water valve is on or if the pressure of water supply is enough.

7.1.3 机器开机后, 可能产生以下情况:

When the machine is on, the following situations may occur:

A) : 泵浦是否过载 (有警报)。

Whether the pump is overloaded (alarm)

处理: 请压下马达热继电器之复归按钮, 并检查三相电源是否欠相。

Solution: Please press the reset button of the motor thermal relay and check if the three-phase power supply is default phase.

※ 更换新模具时, 请先排气, 以增加加热器寿命。

When replace new molds, please cooling first to increase the service life of heater.

本机热水出入口各有 2 个球阀, 开机后请将冷却水入口球阀打开, 可将其中一个管路松 2-3 牙上的油压接头让气体排出, 待有水出来再关球阀, 再开机。

There are two ball valves in the hot water outlet/inlet, respectively. Please open the cooling water inlet ball valve after starting up. And oil-pressure coupler of one pipeline can be loosened to eliminate air. Turn off the ball valve when water flows out, and then turn the machine on.

7.2 关机 (Turnoff) :

1、先将温度降到 80℃ 以下, 再关电源。

Descend the temperature below 80℃ first, then turn off the power.

2、若长时间不使用, 请将所有球阀打开泄放系统内之循环水。

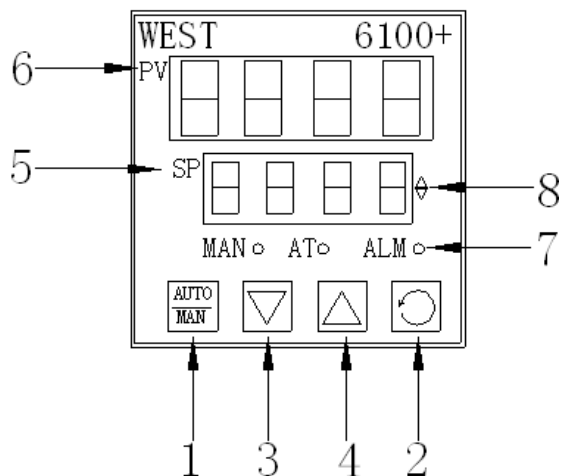
If the machine is not in use for a long time, please open all ball valves to discharge circulating water.

3、北方地区视实际天气情况, 需及时泄放机器的循环水和冷却水, 否则会因水严重冰冻, 损坏机器设备, 请密切注意。

Base on local weather in the north of China, we need to open all of the valves to discharge circulating water and cooling water, otherwise it will damage machine in reason of serious frost, please take noted!

7.3 温控器的使用与设定 Using & Setting of Temperature Controller

一、WEST P6100 型 (Model WEST P6100):



阶层键：设定内部参数。

Level Key: Set interior parameter.

2. 模能键：设定内部参数转换。

Condition Key: Set transformation of interior parameter.

3. 减少键：用于减少值。如欲降低温度，控此键设定值会下降；如连续按住不放，下降速度会加快。

Down Key: Decrease values. Press it to decrease temperature; press and hold to speed up the decrease.

4. 增加键：用于增加值。如欲提高温度，控此键设定值会上升；如连续按住不放，上升速度会加快。

Up Key: Increase values. Press it to increase temperature; press and hold to speed up the increase.

5. SP: 设定温度显示。Display the setting temperature value.

6. PV: 实际温度显示。Display the practical temperature value.

7. 状况讯号指示灯。Indicator light of condition and signal.

8. 加热冷却讯号指示灯。Indicator light of heating and cooling signal.

注：客户设定温度只需按 增加 和 减少 键，其他按键请勿动。

Note: Just press  and  to set the temperature. Do not press other keys.

附加：当采用双仪表来进行远程设置时，需对现场仪表进行如下操作

Addition: When using double instruments for remote setting, the following operation is needed for local instrument.

1. 按 2 号模能键，进入设置画面 Press condition key NO.2, then enter setting screen.

2. 按 2 号模能键翻滚 Rolling when press condition key NO.2.

3. 当选择 PV 区显示显示-LSP 时，仪表设定值由本仪表控制

When choose PV to display LSP, setting value is controlled by instrument.

4. 当选择 PV 区显示显示-RSP 时，仪表设定值由远程仪表控制

When choose PV to display RSP, setting value is controlled by remote instrument.

5. 选择好后按 1 键确认

After choosing, press 1 key to confirm.

温控器设置：Setting up of temperature controller

AWM/ARD系列温控器控制操作说明书

步骤一：刚上电5S就

- | | | | | | | | |
|-------------|---|-------|-------|--|-------|------|-----|
| 按 + 键直到出现 | <table border="1"><tr><td>OPEr</td></tr><tr><td>SLCt</td></tr></table> | OPEr | SLCt | | | | |
| OPEr | | | | | | | |
| SLCt | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>SEtP</td></tr><tr><td>SLCt</td></tr></table> | SEtP | SLCt | ←不调 | | | |
| SEtP | | | | | | | |
| SLCt | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>CO nF</td></tr><tr><td>SLCt</td></tr></table> | CO nF | SLCt | | | | |
| CO nF | | | | | | | |
| SLCt | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>0</td></tr><tr><td>ULoc</td></tr></table> | 0 | ULoc | ←调为 <table border="1"><tr><td>20</td></tr></table> | 20 | | |
| 0 | | | | | | | |
| ULoc | | | | | | | |
| 20 | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>JC</td></tr><tr><td>InPt</td></tr></table> | JC | InPt | ←调为 <table border="1"><tr><td>PC</td></tr></table> 按 <table border="1"><tr><td>AUTO</td></tr><tr><td>MAN</td></tr></table> 确定 | PC | AUTO | MAN |
| JC | | | | | | | |
| InPt | | | | | | | |
| PC | | | | | | | |
| AUTO | | | | | | | |
| MAN | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>123</td></tr><tr><td>rUL</td></tr></table> | 123 | rUL | ←调为 <table border="1"><tr><td>120°C</td></tr></table> 按 <table border="1"><tr><td>AUTO</td></tr><tr><td>MAN</td></tr></table> 确定 | 120°C | AUTO | MAN |
| 123 | | | | | | | |
| rUL | | | | | | | |
| 120°C | | | | | | | |
| AUTO | | | | | | | |
| MAN | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>-240</td></tr><tr><td>rLL</td></tr></table> | -240 | rLL | ←调为 <table border="1"><tr><td>0</td></tr></table> 按 <table border="1"><tr><td>AUTO</td></tr><tr><td>MAN</td></tr></table> 确定 | 0 | AUTO | MAN |
| -240 | | | | | | | |
| rLL | | | | | | | |
| 0 | | | | | | | |
| AUTO | | | | | | | |
| MAN | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>SnL</td></tr><tr><td>CEyP</td></tr></table> | SnL | CEyP | ←调为 <table border="1"><tr><td>dAL</td></tr></table> 按 <table border="1"><tr><td>AUTO</td></tr><tr><td>MAN</td></tr></table> 确定 | dAL | AUTO | MAN |
| SnL | | | | | | | |
| CEyP | | | | | | | |
| dAL | | | | | | | |
| AUTO | | | | | | | |
| MAN | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>rEu</td></tr><tr><td>Ctrl</td></tr></table> | rEu | Ctrl | ←不调 | | | |
| rEu | | | | | | | |
| Ctrl | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>nonE</td></tr><tr><td>ALAI</td></tr></table> | nonE | ALAI | ←不调 | | | |
| nonE | | | | | | | |
| ALAI | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>nonE</td></tr><tr><td>Inhi</td></tr></table> | nonE | Inhi | ←不调 | | | |
| nonE | | | | | | | |
| Inhi | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>Pri</td></tr><tr><td>USE1</td></tr></table> | Pri | USE1 | ←不调 | | | |
| Pri | | | | | | | |
| USE1 | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>Fri</td></tr><tr><td>USE2</td></tr></table> | Fri | USE2 | ←调为 <table border="1"><tr><td>SEC</td></tr></table> 按 <table border="1"><tr><td>AUTO</td></tr><tr><td>MAN</td></tr></table> 确定 | SEC | AUTO | MAN |
| Fri | | | | | | | |
| USE2 | | | | | | | |
| SEC | | | | | | | |
| AUTO | | | | | | | |
| MAN | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>31</td></tr><tr><td>di SP</td></tr></table> | 31 | di SP | ←调为 <table border="1"><tr><td>2</td></tr></table> 按 <table border="1"><tr><td>AUTO</td></tr><tr><td>MAN</td></tr></table> 确定 | 2 | AUTO | MAN |
| 31 | | | | | | | |
| di SP | | | | | | | |
| 2 | | | | | | | |
| AUTO | | | | | | | |
| MAN | | | | | | | |
| 按 键1S进入下一步 | <table border="1"><tr><td>20</td></tr><tr><td>CLoc</td></tr></table> | 20 | CLoc | | | | |
| 20 | | | | | | | |
| CLoc | | | | | | | |

注：AWM 机型最高温度调 120°C

Note : the highest temp. of AWM type unit is 120°C

步骤二: 按 Δ + \square 转到

CONF
SLCt

按 \square 键1S进入下一步

SEEP
SLCt

按 \square 键1S进入下一步

0
ULoc

 ← 调为

10

按 \square 键1S进入下一步

2.0
FILt

 ← 不调

按 \square 键1S进入下一步

0
OFF5

 ← 不调

按 \square 键1S进入下一步

0
PPWJ

 ← 不调

按 \square 键1S进入下一步

100
SPWJ

 ← 不调

按 \square 键1S进入下一步

10.0
Pb.P

 ← 调为

5.00

按 \square 键1S进入下一步

10.0
Pb.S

 ← 调为

5.00

按 \square 键1S进入下一步

5.00
ArSt

 ← 调为

--

按 \square 键1S进入下一步

1.15
rALt

 ← 调为

0.1

按 \square 键1S进入下一步

0
DL

 ← 不调

按 \square 键1S进入下一步

25
b.A5

 ← 调为

0

按 \square 键1S进入下一步

537.7
SPuL

 ← 调为

120

按 \square 键1S进入下一步

-240
SPLL

 ← 调为

0

按 \square 键1S进入下一步

100
OPuL

 ← 不调

按 \square 键1S进入下一步

32
Cl

 ← 调为

16

按 \square 键1S进入下一步

32
Cl2

 ← 调为

8

按 \square 键1S进入下一步

1
AHt

 ← 不调

按 \square 键1S进入下一步

1
AH2E

 ← 不调

按 \square 键1S进入下一步

EnAb
APt

 ← 调为

d5A

按 \square 键1S进入下一步

EnAb
PdEn

 ← 调为

d5A

按 \square 键1S进入下一步

EnAb
SPr

 ← 调为

d5A

按 \square 键1S进入下一步

rP

 ← 不调

按 \square 键1S进入下一步

-240
SP

 ← 不调

按 \square 键1S进入下一步

10
SLoc

 ← 不调

按 Δ + \square 转到

SEEP
SLCt

按 Δ 键1S进入下一步

OPtEr
SLCt

按 \square 键1S进入正常温控界面

第八章 异常情况处理表

Chapter Eight Abnormal Situation and Solution

故障现象 Phenomena	原因 Causes	处理方法 Solutions
1、无法开机 Fail to start up.	1、控制电路开关未打开 Fail to open the controlling circuit switch	1、将微型断路器开关打开 Open the micro breaker switch
	2、欠相。 Default phase.	2、检查电源线。 Check the power wire.
	3、高压断电保护 High voltage power off protection	3、打开机器侧封板，按下压力开关红色复位键即可 Open the machine side boards, press the red reset button of pressure switch
2、缺水警报 Water shortage alarm.	1、未开冷却水或压力不够 The cooling water is not opened or the pressure is not enough.	1、打开冷却水阀门并检查压力情况。 Open the cooling water valve and check the pressure.
	2、冷却水进出口接反 The position of the cooling water inlet and outlet is not right	2、调换冷却水进出口 Exchange the position of the cooling water inlet and outlet
	3、冷却水或补水口过滤器堵塞 Cooling water or filling water port blocked	3、清洗过滤器 Clean up the filter
3、泵过载警报 Pump overload alarming.	1、系统负载过重 System overload.	1、05A,10A 检查热水出入口阀门是否开启，并按复归键。 Check if the hot water inlet/outlet valve is open and press the reset key.
		2、检查泵的电机是否卡死 Check if the motor of pump is stuck
	2、电源电压不正常或欠相 Abnormal power supply or voltage, or phase deficiency.	1、使用三相电表测三相电压和电流。 Use three-phase electric meter to measure three phase voltage and electricity.
		2、检查电源端子是否松脱并拧紧，并按复归键。 Check if the power supply terminal is loosened, if yes, please screw it and press the reset key.
3、电机轴承卡死 Motor bearing stuck	3、更换轴承 Replace the bearing	
4、温度偏高、无法降温 Temperature is too high to fall down	1、电磁阀堵塞。 Solenoid valve blocked.	1、清除电磁阀内水孔杂物并清洗。 Clear up the sundries of water hole in solenoid valve.
	2、电磁阀线圈老化损坏。 Loop of solenoid valve aging and damaged.	2、请来电我司。 Please call us.
	3、冷却水出水被压太大 The pressure of cooling water is too big	3、冷却水出口直接排空或检查冷却水进出口是否接反 Cooling water emptying directly or check the position of the cooling water inlet and outlet

	4、PC 板输出异常 Abnormal output of PC board	4、更换 PC 板 Replace the PC board
5、无法加温 Fail to heating	1、电磁阀堵塞或损坏。 Solenoid valve blocked or damaged.	1、清除电磁阀内水孔杂物并清洗，或来电我司。 Clear up the sundries of water hole in solenoid valve or call us.
	2、发热管烧坏 Heater burnt out.	2、更换发热管，请来电我司。 Replace the heater or call us.
	4、PC 板输出异常 Abnormal output of PC board	4、更换 PC 板 Replace the PC board

第九章 保养与维护

Chapter Nine Maintenance and Repair

9.1 保养周期 Maintenance period

项目 Item	周期 Period
清洗过滤器 Strainer Cleaning	1 个月 One month
清洗电磁阀 Solenoid Valve Cleaning	1 个月 One month
铁氟龙管、接头 (PTFE) pipe, joint	1 年换新 Renew in one year
加热器清洗 Heater Cleaning	3 个月 Three month
电磁接触器 Solenoid valve Contactor	1 年换新 Renew in one year
接线端子螺丝 Terminal Block Screw	3 个月紧固一次 Fasten once every three months

9.2 维修事项 Service and Maintenance

维修时请注意下列事项:

Pay attention to the following rules during maintenance:

机器运行时水温很高,维修前先停运机器使其冷却,须待温度降至30度以下时方可进行维修;维修前戴上防护手套。(请注意,运转过程中切勿检查或拆开机器,否则会引发危险。)
During operation, the water is heated up to a high temperature, Stop the machine before service and wait it to fall below 30 to perform repairing or maintenance. (Please note that do not check or disassembly machine during operation; otherwise it will cause danger)

检查机器时至少应有两人在场。冷却机器,关闭电源,排干水。检查维修前确保周围留有足够空间。

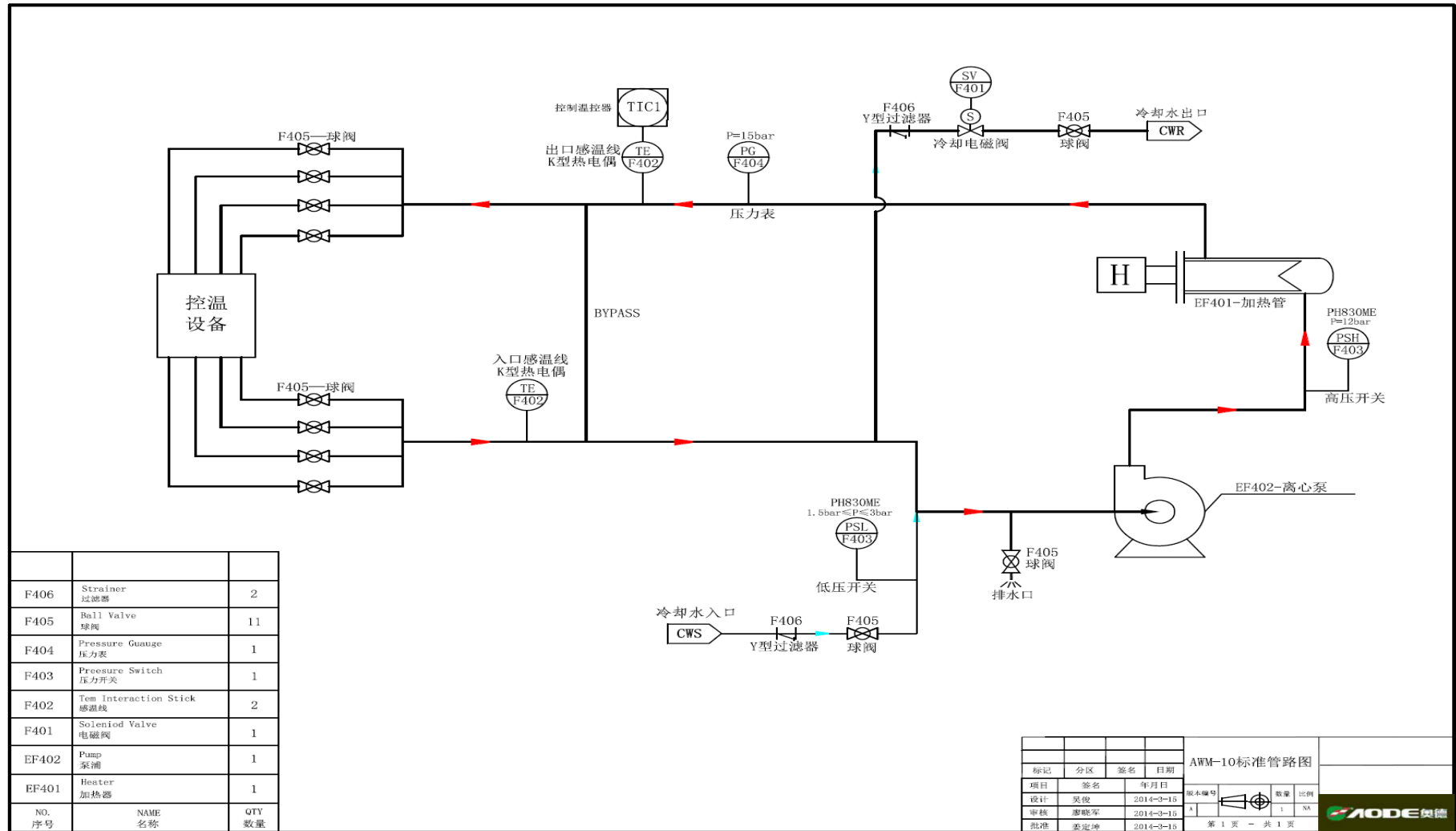
You'd better to have two or more persons on hand when checking the machine. Cool down the machine, turn off power supply, and drain out the water. Make sure there is enough space before checking and maintenance.

为延长机器使用寿命,防止事故发生,请定期检查机器状况。

In order to prolong the service life of the machine and prevent accidents, check the machine regular.

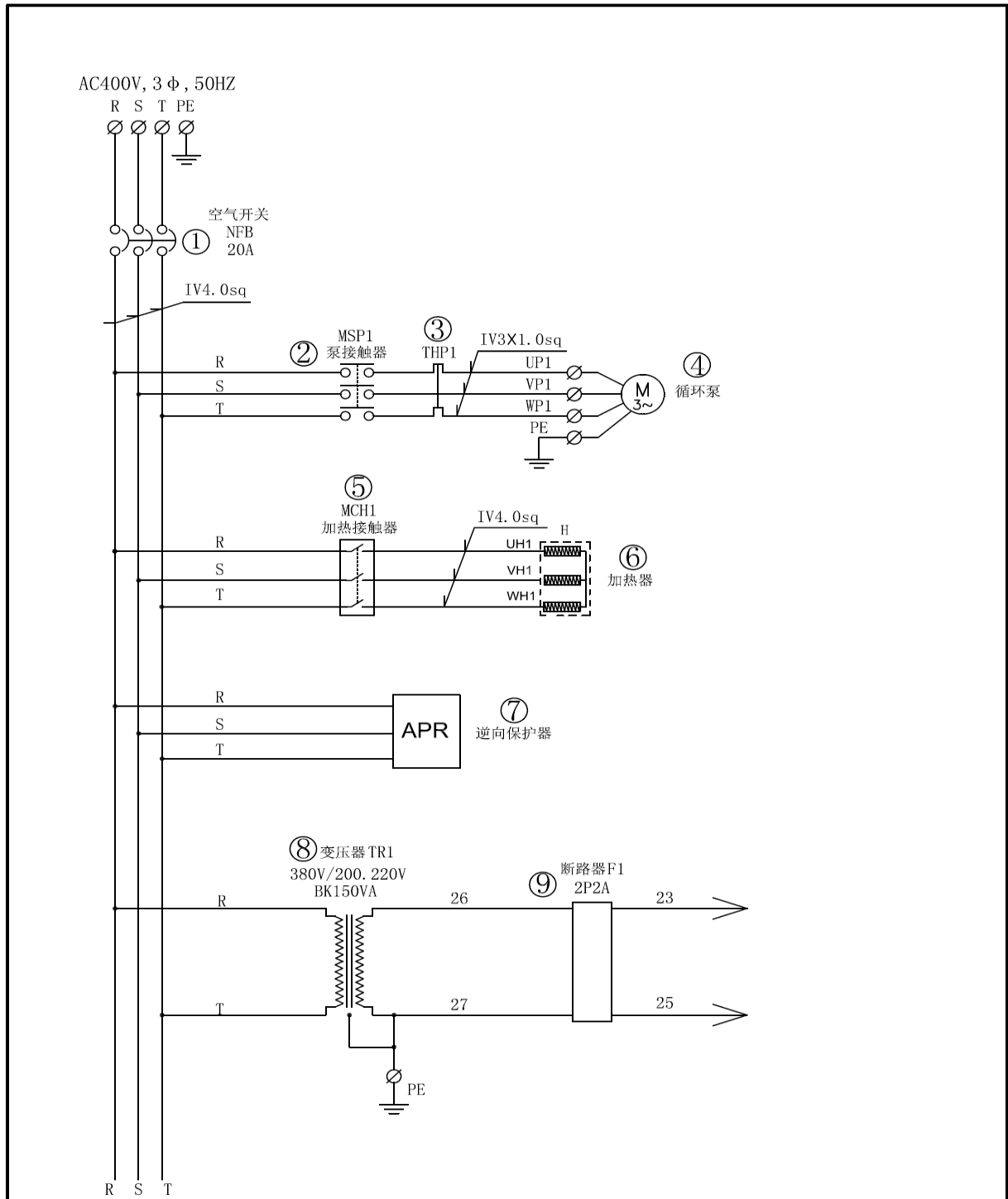
第十章 管路系统图

Chapter Ten Pipeline System Chart



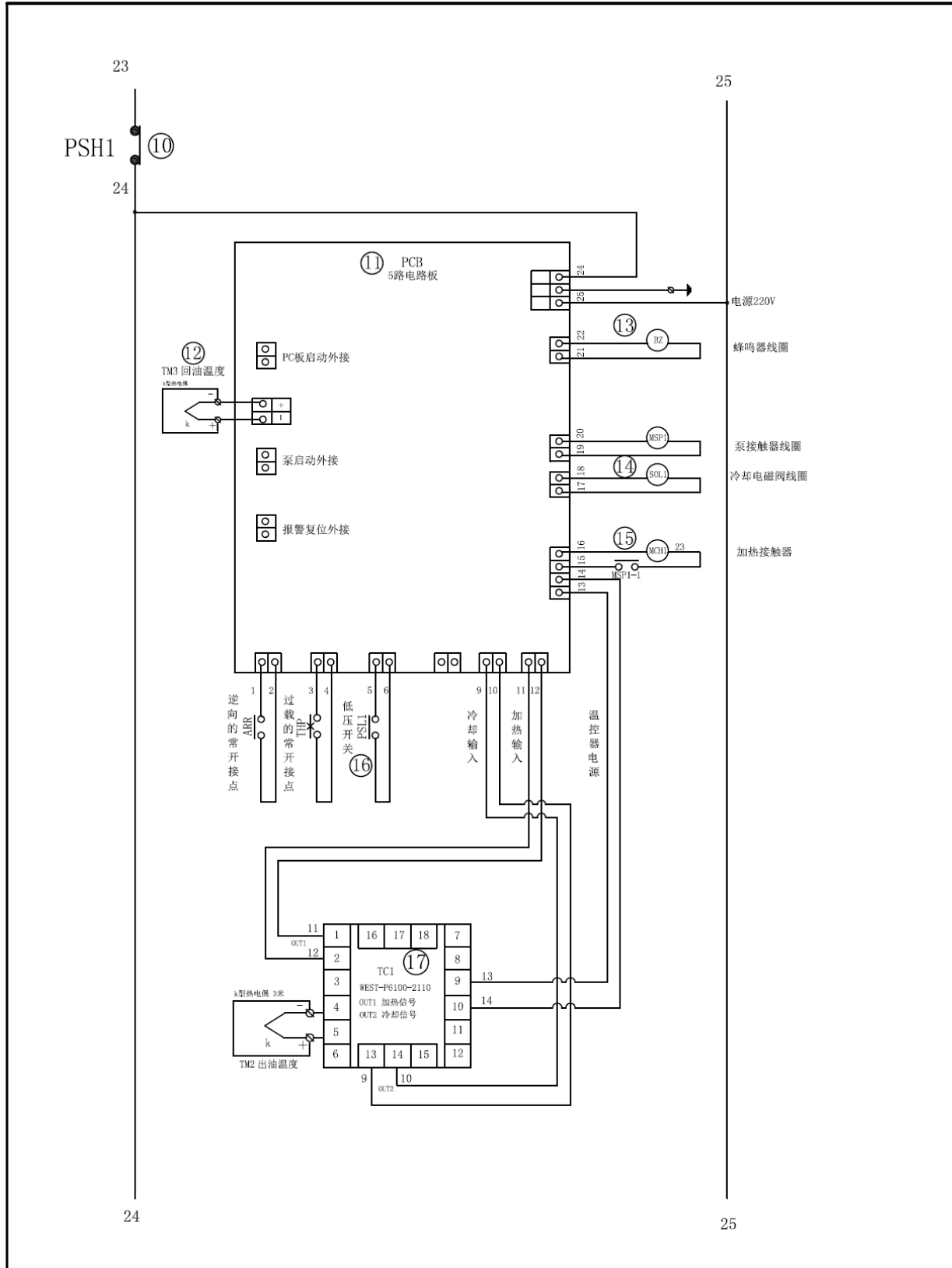
第十一章 电路图及电子零件清单

Chapter Eleven Circuit Diagram and List of Electronic Parts



				AWM电路生产图			标准机型生产图		
				动力线接线图					
标记	分区	签名	日期	版本编号		数量	比例		
项目	签名		年月日	A		1	NA		
设计	周献文		2013. 8. 15						
审核									
批准									
				第 2 页 - 共 4 页					

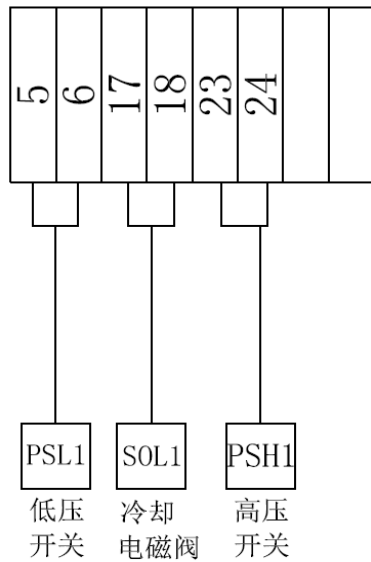




AWM电路生产图				标准机型生产图		
控制线接线图				AWM机型		
标记	分区	签名	日期	版本编号	数量	比例
项目	签名	年月日		A	1	NA
设计	周献文	2013. 8. 15		第 3 页 - 共 4 页		
审核						
批准						



⑱ TB 电箱接线端子排

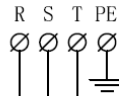


电气配件文字符号

序号	符号	名称	参数	数量	品牌
1	NFB	空气开关	20A	1个	西门子
2	MSP	泵接触器	A9D-30-10	1个	ABB
3	THP	热过载	TA25DU	1个	ABB
4	M	循环水泵	RGP-10-120	1台	奥德
5	MCH	加热接触器	A26D-30-10	1个	ABB
6	H	加热管	9KW	1个	奥德
7	APR	逆向保护器	DPA51CM44B014	1个	佳乐
8	TR	变压器	BK150VA	1个	九川
9	F	断路器	2P/2A	1个	LS
10	PSH	高压开关	P830HME	1个	奥德
11	PCB	集成电路板	5bit	1个	奥德
12	TM	感温棒	K型热电偶	1个	敏杨
13	BZ	蜂鸣器	XD37SLC-M	1个	三利
14	SOL	电磁阀	UD-10	1个	ODE
15	MCH	加热接触器	A26D-30-10	1个	ABB
16	PSL	低压开关	P830HME	1个	奥德
17	TC	温控器	P6100-2710	1个	WEST
18	TB	端子排	8P	1个	奥德

				AWM电路生产图			标准机型生产图		
				接线端子图			AWM机型		
标记	分区	签名	日期	版本编号		数量	比例		
项目	周献文		2013.8.15	A		1	NA		
设计									
审核									
批准									

AC380V, 3 ϕ , 50HZ



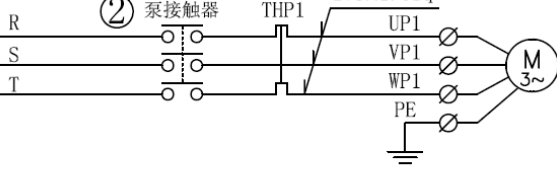
空气开关
NFB
20A

IV4.0sq

② MSP1
泵接触器

③ THP1
IV3X1.0sq

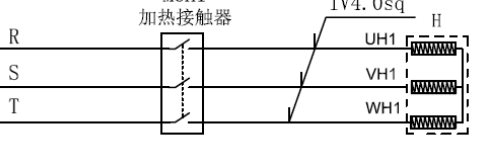
④ M
3~
循环泵



⑤ MCH1
加热接触器

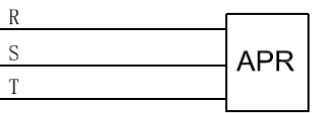
IV4.0sq

⑥ H
UH1
VH1
WH1
加热器



APR

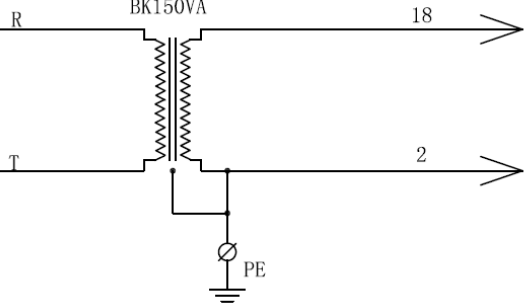
⑦ 逆向保护器



⑧ 变压器 TR1
380V/200, 220V
BK150VA

18

2

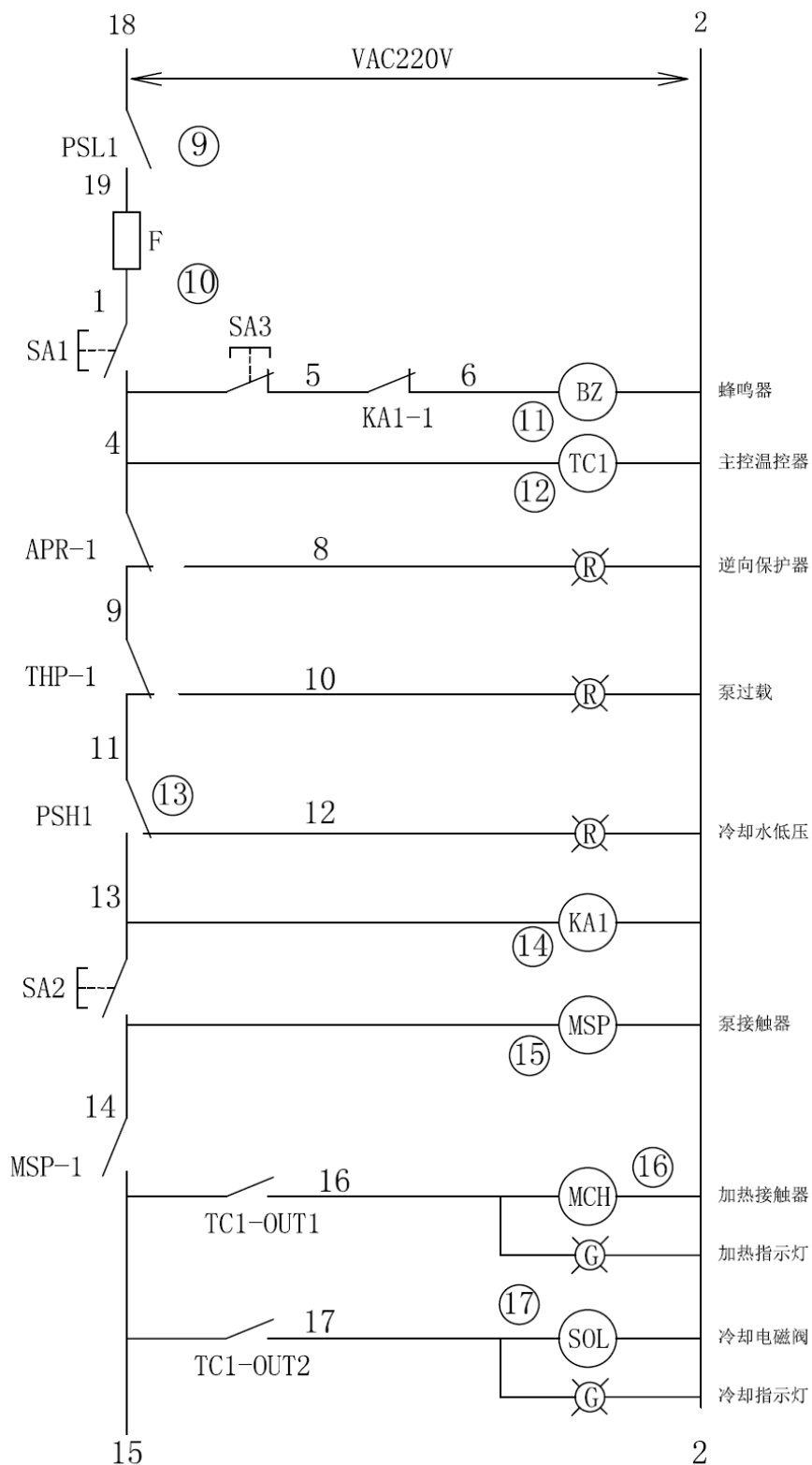


R S T

				AWM电路生产图			标准机型生产图	
				动力线接线图			AWM按键式-A型	
标记	分区	签名	日期	版本编号		数量	比例	
项目	签名		年月日	A		1	NA	
设计	周献文		2013.8.15					
审核								
批准								

第 2 页 - 共 4 页

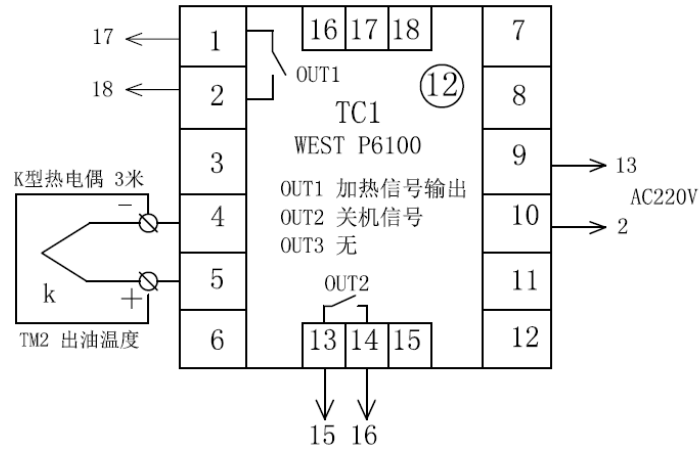




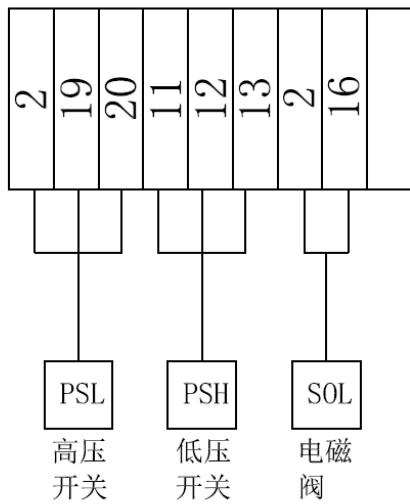
				AWM电路生产图			标准机型生产图	
				动力线接线图			AWM按键式-A型	
标记	分区	签名	日期	版本编号		数量	比例	
项目	签名		年月日	A		1	NA	
设计	周献文		2013.8.15					
审核								
批准								
				第 3 页 - 共 4 页				



温度控制仪表接线图



⑱ TB 电箱接线端子排



电气配件文字符号

序号	符号	名称	参数	数量	品牌
1	NFB	空气开关	20A	1个	LS
2	MSP	泵接触器	A9D-30-10	1个	ABB
3	THP	热过载	TA25DU	1个	ABB
4	M	循环水泵	RGP-10-120	1台	奥德
5	MCH	加热接触器	A26D-30-10	1个	ABB
6	H	加热管	9KW	1个	奥德
7	APR	逆向保护器	DPA51CM44B014	1个	佳乐
8	TR	变压器	BK150VA	1个	九川
9	PSL	高压开关	常闭	1个	奥德
10	F	微型断路器	1P1A	1个	九川
11	BZ	蜂鸣器	220V	1个	佳乐
12	TC	温控器	P6100-2110	1个	WEST
13	PSH	低压开关	常闭	1个	奥德
14	KA	中间继电器	DRM270730L	1个	魏德米勒
15	MSP	泵接触器	A9D-30-10	1个	ABB
16	MSH	加热接触器	A26D-30-10	1个	ABB
17	SOL	电磁阀	UW-10	1个	ODE
18	TB	端子排	8P	1个	奥德

				AWM电路生产图			标准机型生产图		
				动力线接线图			AWM按键式-A型		
标记	分区	签名	日期	版本编号		数量	比例		
项目	签名		年月日	A		1	NA		
设计	周献文		2013.8.15						
审核									
批准									
				第 4 页 - 共 4 页					

奥德机械有限公司

AODE MACHINERY CO., Ltd

香港總部 Hong Kong Headquarter

地址：香港中环德辅道中 131 号有余商业中心 1606 室
ADD Room1606, Unicorn Trade Centre, No.131 Des Voens Road, Central, Hong Kong;
电话 (TEL) : 00852-35766658
传真 (FAX) : 00852-35766688
E-mail: gdaode@163.com
网址 (website) : <http://www.gdaode.com>

深圳公司 Shenzhen Company

地址：深圳市寶安區公明鎮塘尾南明路奥德科技园
ADD: Aode Science Park, Tangwei Nan Ming Road, Gongming Town, Baoan District,
Shenzhen City,China
电话 (TEL) : 0755-33232001、33232002、33232003
传真 (FAX) : 0755-29623772
E-mail: aode@gdaode.com
网址 (website) : <http://www.gdaode.com>

苏州公司 Suzhou Company

地址：昆山市玉山镇民营经济开发区五联村强安路
ADD: Qiang'an Road, Wulian Village, Private-operated Economic Development Zone, Yushan Town,
Kunshan City, Jiangsu, China
电话 (TEL) : 0512-57115761、57115762、57115763
传真 (FAX) : 0512-57115791
E-mail: sales@aodejx.com
网址 (website) : <http://www.zgaode.com>

天津公司 TianJin Company

地址：天津市北辰科技园区华盛道 69 号
ADD: Hua Sheng Road, Beichen science park TianJin City,China
电话 (TEL) : 022-26899171 022-26899173 022-26899179
传真 (FAX) : 022-26899117
E-mail: tjaode@aodejx.com
网址 (website) : www.tj-aode.com