INSTRUCTIONS
FOR
MFT1230C & MFT1460C
MOLD FLUID CONTROL SYSTEMS

FEATURES:

- Temp. Range: 122°F to 248°F (50°C to 120°C)
- Self optimizing microprocessor control with digital display of both set and process temperatures.
- Process alarms, low fluid level, pump overload, over temperature, phase reverse and fluid diagnostics.
- RS485 Communication Interface.
- High quality German pump horizontal mount for dependable flow and temperature control.
- Stainless Steel flanged pump with silicon carbide seal.
- Heavy gauge all stainless steel internal piping to avoid corrosion.
- Media: Water only, open circuit direct cooling. Incoming water supply requires 25 to 70 P.S.I.
- Maintains temperature accuracy to ±1°F.
- Sealed electrical control box. Only opens with a key.
- Y-Strainer supplied on inlet water line.
- Heater box insulated.
- Heater housing oversized to prevent scale blockage.
- Circuit protected pump and heater.
- Durable powder coated cabinet.

Our PPE Mold Fluid Control Systems are a PPE exclusive only available from PPE. Do not confuse these with any other make, model or manufacturer.

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Revised 5-23-23

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MOLD FLUID CONTROL SPARE PARTS

FOR MFT1230C & MFT1460C

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1. INTRODUCTION

1.1 DESCRIBE

First of all, thank you for using PPE temperature controller.

This series of temperature controllers are our newest designed products. It is small, light, complete function, beautiful appearance, easy to operate, and quick to installation. You can set different temperature, flow rate, and medium used as water.

To ensure total utilization of this temperature, please study this guide thoroughly in order to familiarize its functions and methods of operation. This guide can be used as an on-hand or quick reference for any problems encountered.

If there are any doubts, please feel free to contact us.

1.2 SPECIFICATION

OPERATING TEMPERATURE RANGE 122℉ TO 248℉ (50℃-120℃)

PUMP	VOLTAGE	GPM@ 30 PSI	TEMP ℉	HTR KW	PIPE CONNECTIONS (NPT)				DIMENSIONS			UNIT WEIGHT	APPROX. SHIPPING WEIGHT	MODEL NUMBER
					TO PROCESS	FROM PROCESS	WATER SUPPLY	DRAIN	H	W	L			
1 HP	230/60/3	16	248	9	3/4"	3/4"	1/2"	1/2"	24"	2"	30"	129 lbs.	195 lbs.	MFT1230C
1 HP	460/60/3	16	248	9	3/4"	3/4"	1/2"	1/2"	24"	2"	30"	129 lbs.	195 lbs.	MFT1460C

1.2.1 WATER QUALITY STANDARD

Please note the water quality for supplying water to molding temperature controllers or other related machines. If the water quality is bad, the rust in pipes results in water flow decreased and pump, heater, and solenoid valve are damaged. In addition, the corrosion is resulted from exceeding the standard of PH value. In order to avoid of this kind of situation, please ensure the water quality according to the table (JRA-GL-02-1994) from Japan as below.

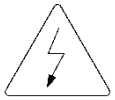
Also, please install the filter on the pipe for water supply to filter sand, clay, iron powder, and other particles and don't use pure water.

Specified by the Japan Refrigeration and Air Conditioning Industry Association

Item	Standard Value	Tendency	
		Corrosion	Scale
PH(25℃)	6.5~8.2	○	○
Conductivity (Ms/m) (25℃) {μs/cm} (25℃)	80 and below {800 and below}	○	○
Iron Chloride(mgCl¯/L)	200 and below	○	
Iron Sulfate(mgSO4²¯/L)	200 and below	○	
Acid Consumption (pH4.8)(mgcaco3/L)	100 and below		○
Hardness (mgCaCO3/L)	200 and below		○
Calcium Hardness(mgCaCO3/L)	150 and below		○
Ion Silica Dioxide(mgSiO2/L)	50 and below		○
Fe(mg Fe/L)	1.0 and below	○	○
Copper (mg Cu/L)	0.3 and below	○	
Iron Sulfide(mgS²¯/L)	Not detected	○	
Iron Ammonium NH+4 (mgNH4+/L)	1.0 and below	○	
Residual Chlorine (mg CI/L)	0.3 and below	○	
Free Carbon Dioxide (mgCO2/L)	4.0 and below	○	
Ryzner Stability Index	6.0~7.0	○	○

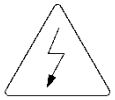
1.3 SECURITY INFORMATION

Honor Your Symbols



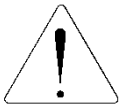
Danger:

The machine is with high temperature and high voltage electrical equipment, should be connected according to all national and local codes. All installation, maintenance, service, repair, adjustment, and operation should be done only by appropriately trained electrical personnel who have read and completely understood this instruction manual.



Warning:

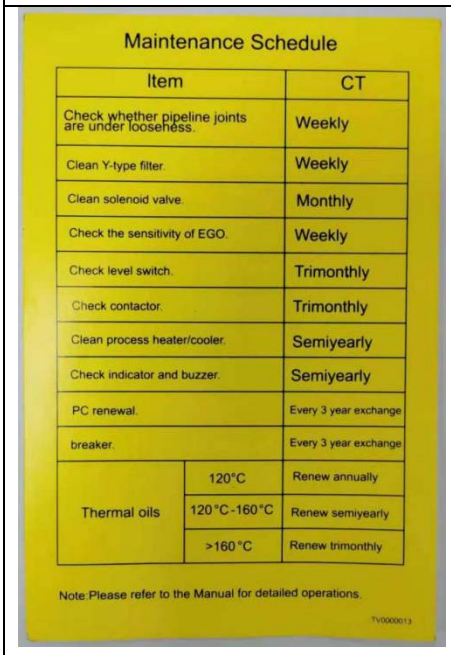
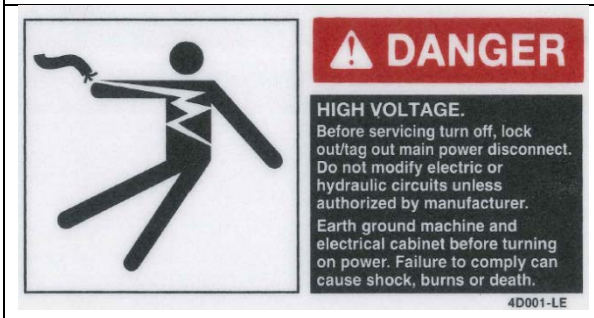
Should be operated by professionals. When equipment is turned on, please don't wear the glove or cloth which might result in dangerous situation. When power outage, please turn off power supply. In order to prevent accident from power problem when static electricity, please switch off MFT. Please wear hot gloves and safety shoes when installing and moving. Please don't use spare parts from other suppliers for maintenance and replacement.



Attention:

Should not be touched the machine control parts by hand or touched the machine with water subjects to avoid possible electric shock. The machine should be located in an area that provides adequate space for pedestrian and vehicle traffic. Owner should be ensured by adequate supervision that correct safety, installation, maintenance, and operating procedures described in this manual, as well as recognized industry practice, are followed by all personnel.

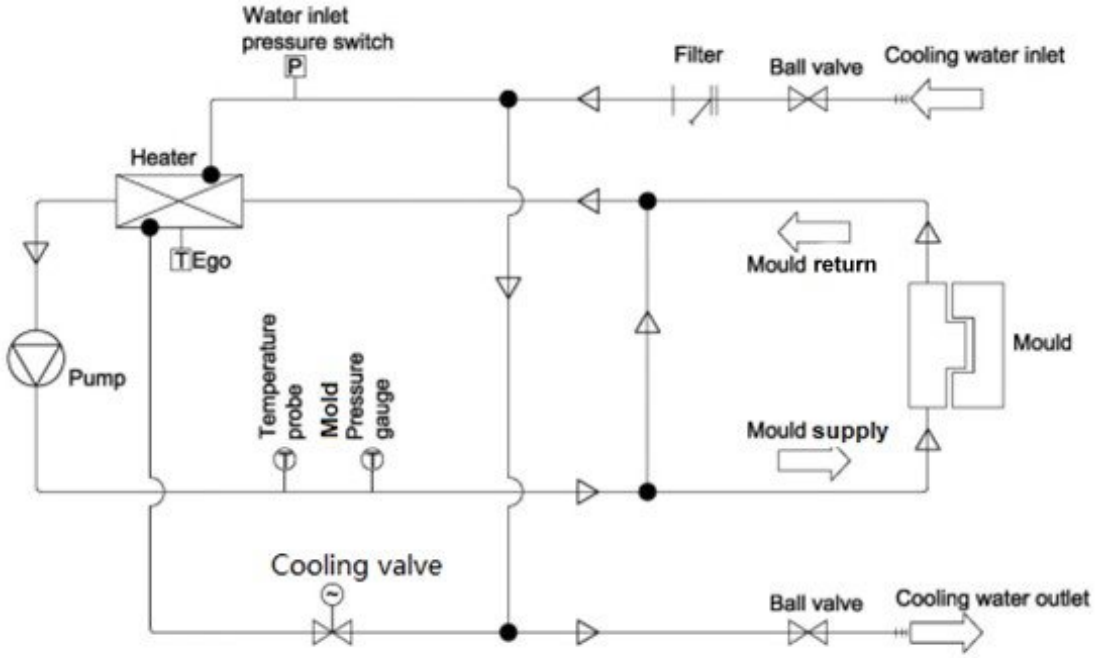
1.4 WARNINGS AND CAUTIONS

LABEL	INTRODUCTION
	**Attention:** Please maintain the machine as the maintenance schedule.
	**Attention:** Please read the manual before starting the machine. The maximum temperature setting value is 120℃/248˚F
	**Attention:** The unit voltage: 230V, 60 Cycle 3 Phase
	**Attention:** Caution risk of electric shock.

1.5 WORKING PRINCIPLE

The high temperature water from mold flows back into the mold temperature machine heater through the pipe. After being heated, water would be pumped to mold again, as so on. In this process, if the water temperature is too high, the system will release the cooling valve, and the cooling water will enter the system directly for cooling. If cooling water is shortage or the water pressure is too low to reach the set value (1.5KG). Water inlet pressure switch will activate alarm and shut down the system. If the water temperature keeps increasing and reaches to the set point of EGO (over-temperature protector), the trip will be activated and then shut down the main power. Do not expect mold temp unit to cool fluid (water) below the minimum use temperature of 50℃ /122 ℉. This is not a chiller.

Working principal diagram



2. INSTALLATION AND DEBUGGING

2.1 ENSURE INSTALLATION SPACE

When installing the machine, ensure adequate installation space (reserve at least 500mm around the machine), as shown in the figure below. Installation in a narrow space is not conducive to the operation of the machine and machine inspection and maintenance, do not sit on the machine or put things on the cabinet.

Do not locate flammable and explosive materials around the machine.

2.2 PIPING INSTATLLATIONS

1) Connect the machine to the mold with PTFE lined hose, and use wrench to tight the inlet/ outlet joints to avoid any possible leakage. (Reference drawing)

2) Connect the cooling water inlet to water supply, and connect the cooling water outlet to the water drain area. Incoming water supply requires 25-70 P.S.I.

Note! Pressure gauge on top of unit does not indicate inlet water pressure.

Note: the inlet and outlet of cooling water are shown in the figure below. Do not connect them in reverse! When the service temperature is above 100°C/212°F, the high temperature resistant pipe must be used for the cooling water pipe.

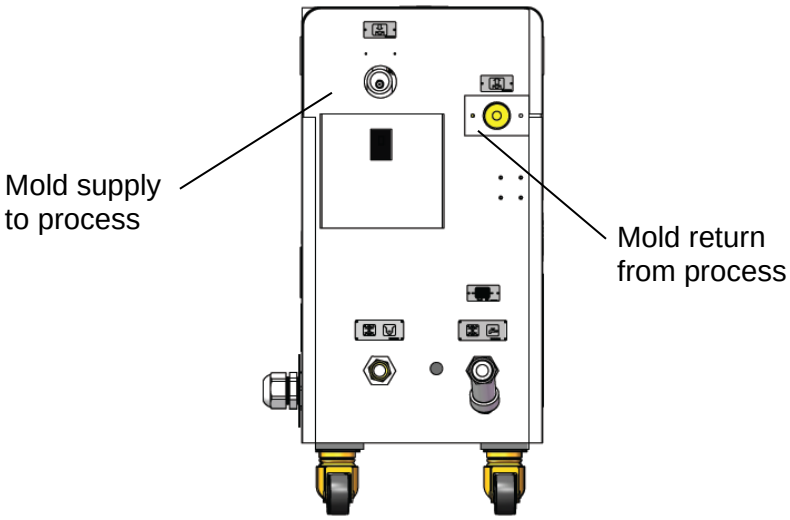
For hot oil units

Note: when the machine service temperature is less than or equal to 200°C/392°F, PTFE lined pipe with temperature resistance of 200°C/392°F can be used

When the operating temperature of the machine is 200°C/392°F ~ 300° C/572°F, the PTFE lined pipe with temperature resistance of 300°C/572°F must be used.

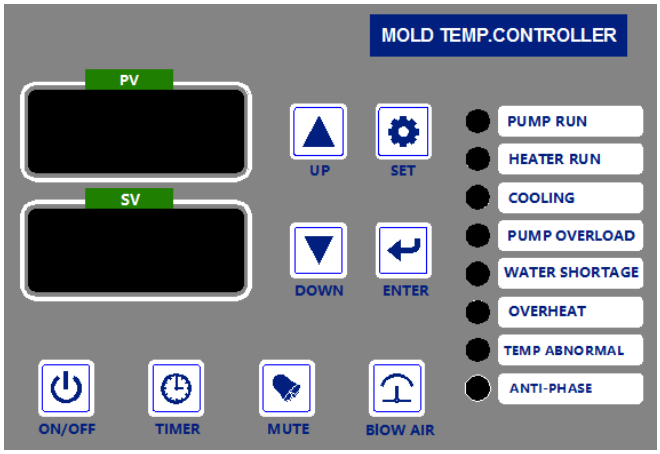
2.3 POWER CONNECTION

Verify that the connected power supply matches the required specification, and then connect the power supply.



3. OPERATING INSTRUCTIONS

3.1 FRONT PANEL LAYOUT



3.2 DESCRIPTION OF DISPLAY

ITEM		Name	Explanation	Remarks
1	PV	Temperature	Process Values Temp. And alarm code	Show [0100], means the actual value is 100 Show [100.0], means the actual value is 100.0
2	SV	Parameters	Temp. And parameters	Set Values

3.3 DESCRIPTION OF KEY PAD

ITEM	Name	Explanation	Remarks
3		Switch ON/OFF	Switch on, [TEMP.] shows [OFF]; After switch on, pump and heater delayed operation; Switch off, [TEMP.] shows [OFF]
5		Set the equipment start timely	According to [F-71], customer can set timer.
6		Blow ON/OFF	**Only using under stop condition.** After it's OFF, machine will stop working,(when customer doesn't operate after it's ON, it will be OFF automatically, customer can set time based on parameter 3-[F-16]).
7		Mute ON/OFF	Customer won't hear alarm as switch on.

3.4 DESCRIPTION OF LAMP

ITEM	Name	Explanation	Remarks
8	Pump Run	Lighten as running Flashed as delay or stand by	
9	Heater Run	Lighten as heating Flashed as delay	
10	Cooling	Lighten as cooling	

3.5 DESCRIPTION OF ALARM LAMP

ITEM	Name	Explanation	Remarks
11	Pump Overload	Lighten as pump overload	
12	Water Shortage	Lighten as water shortage	
13	Over Heat	Lighten as over heat	When temp. is too high, too low, or over limit.
14	Temp. Abnormal	Lighten as abnormal temp.	When thermocouple is damaged.
15	Anti-Phase	Lighten as pump reverse	When phase wire is damaged.

3.6 SETTING BUTTON

ITEM	Name	Explanation
19		Set parameters
20		Enter
21		Increase parameter value
22		Decrease parameter value
23		Rapid cooling

3.7 BASIC OPERATION

1. Turn on the main power switch

PV shows [OFF]; waiting operation;

2. Switch on

(1) Press , blower start to operate, heater delayed operation.

(2) PV show current temp.， SV show current parameters.

3. Pump on and off

(1) Pump on: after power supply, pump is operated delay. Pump starts operating after reaching time. Set by parameters 3: [F-03]

(2) Pump off: press when pump operation, pump is delay off and then pump is off after reaching time or temp. (Delay off - parameters 3: [F-06], Delay time or temp. - parameters 3:[F-05])

4. Heater on and off

(1) Heater on: after pump is operated, heater starts delay timer. It starts after reaching time. (Delay time - c 3:[F-04])

(2) Heater on: heater is delay on. (Delay time - parameters 3: [F-05])

(3) Heater off: press when heater on and then heater is closed forcedly. Meantime, cooling is on.

5. Switch off

Press when running, PV shows[OFF] and current temp. interactively and then heater is closed and pump is delay off. After pump stops working, machine will be turned off and shows [OFF].

6. Pre-start machine

(1) When switch off, press , PV shows [OFF] and SV shows (countdown time). Machine is switched on and run timely. Please see the function code [F-71].

(2) During the timing, press , the timer will be closed and then PV shows [OFF].

7. Blow ON/OFF

(1) Blow on: during stop working, press and then blow on.

(2) Blow off: when blow on, press and then blow off.

(3) Blow off: if customer doesn't press when blow on, blow situation will be closed automatically as reaching setting time. (Time setting - parameters3: [F-16]).

8. Mute ON/OFF

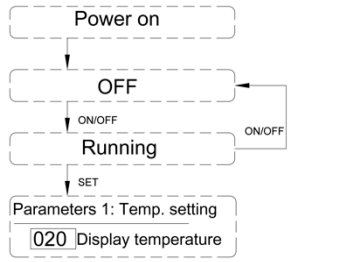
(1) During alarm, press and then mute on and alarm is mute.

(2) When mute on, press and then mute off and hearing alarm.

9. Temperature monitoring

PV defaults the temp. CH1. If customer would like to check CH2 and CH3, please press when customer doesn't operate any functions and then it will display temp. CH2. If customer presses , it will display temp. CH3. If customer would like to check the temp of control box, please press + , it will show the temp.

Molding Temperature Controller Complete Function



3.8 TEMPERATURE SETTING AND AUTO-TUNNING

1. During running, PV shows the current temp.
2. Press , SV shows 4 digits and right digit is flashing.
3. Press or to set the flashing value.
4. Press to choose the digit from left to right.
5. Press or to increase or decrease the value.
6. Press to save the setting and then 4 digits would stop flashing.
7. If customer doesn't press any button once entering the setting mode, the setting mode would be dropped out after 30 sec. and save the setting. (The revised value isn't kept when revising internal parameters.
8. Press and at the same time, PV shows [AT] for auto-turning. Then, machine will do PID calibration parameter. If the current temp.is flashing alternately, it means under PID calibration parameter. Please note:

<1>. During PID calibration parameter, please don't operate anything.

<2>. The temp of control has to over room temp about 2ºC for PID calibration parameter. If the temp of control is lower, please increase it first. Then, customer can decrease the temp of control after finishing PID calibration parameter.

<3>.After finishing PID calibration parameter, PV [AT] disappear and machine is normal running automatically. When the temp is not changed during PID calibration parameter, customer would see alarm [E-15] after3600 sec.

3.9 TEMPERATURE LIMIT AND TIMER

1. During running, PV shows CH1 temp.

2. Press ⚙ + ▲ 2 sec at the same time, enter parameters 2 PV shows[F01.1] which is upper limit alarm code of CH1 temp.

3. Press ▲ or ▼ to increase or decrease SV the value.

4. Press ↵ to save the current value and enter next item [F02.1] which is lowest limit alarm code of CH1 temp.

5. Press ↵ to save the current value and enter next item [F71] which sets the time of switch on timely. Customer can set by above operation and back to [F01.1].

6. After completing, press ↵ a while for exiting the setting mode.

7. Parameters2: [Temperature 1]

Code	Name	Explanation	Value		Unit
			Factory setting	Range	
F01.1	Upper limit of CH1 temp.(Outlet)	Actual temp. > Setting temp. + Temp. upper limit, PV>SV+[F01.1] alarm and shows [E-08]-[CH1]	15	0-250	℃/℉
F02.1	Lowest limit of CH1 temp. (Outlet)	Actual temp. > Setting temp. – Temp. lowest limit, PV<SV-[F02.1] alarm and shows [E-07]-[CH1]	15	0-250	℃/℉
F71	Time	Default switching on time.	0000	0~9999	min

3.10 BASIC FUNCTION

1. During running, PV show the current temp.
2. Press ⚙ + ▲ 2 sec at the same time, enter parameters 2 and show [F01.1].
3. Press ⚙ + ▲ 2 sec at the same time again, enter parameters 3 and PV shows [F01.2].
4. Press ▲ or ▼ to increase or decrease SV the value.
5. Then, press ⚙, PV shows [F01.3]…[F-26]…[F01.2]by cycle for setting.
6. After completing, press ⚙ a while for exiting the setting mode.
7. Parameters 3: [Basic Parameter]

Code	Name	Explanation	Value		Unit
			Factory setting	Range	
F01.2	Upper limit of CH2 temp.(Inlet)	Actual temp. > Setting temp. + Temp. upper limit, PV>SV+[F01.2]alarm and shows [E-08]-[CH2]	15	0-250	℃/℉
F01.3	Upper limit of CH3 temp. (Molding)	Actual temp. > Setting temp. + Temp. upper limit, PV>SV+[F01.3]alarm and shows [E-08]-[CH3]	15	0-250	℃/℉
F02.2	Lowest limit of CH2 temp. (Inlet)	Actual temp. > Setting temp. – Temp. lowest limit, PV<SV-[F02.2]alarm and shows [E-07]-[CH2]	15	0-250	℃/℉
F02.3	Lowest limit of CH3 temp. (Molding)	Actual temp. > Setting temp. – Temp. lowest limit, PV<SV-[F02.3]alarm and shows [E-07]-[CH3]	15	0-250	℃/℉
F03	Exhaust	After pump on, heater is delay on. Then, it exhausts.	40	0～999	sec
F04	Heater delay	After pump on, please let heart delay on for exhausting.	60	0-9999	sec
F05	Pump switch off delay	After pressing ”Power” or “Pump”, pump will stop working until reaching time or temp.	45	0-9999	℃/℉ / sec
F06	Pump switch off delay method	When pump switches off, customer can choose to reach time or reach temp. for pump delay switch off.	1	0: Stop as reaching time 1: Stop as reaching temp.	
F07	Upper limit of machine temp.	Upper limit of machine temp. (The parameter of FOH series is 310.)	150	0-350 32-662	℃/℉

F08	Upper limit of temp. setting	Upper limit of temp. setting (The parameter of FOH series is280.)	120	0-350 32-662	℃/℉
F09	Time of insufficient heating	After switch on, machine cannot reach the setting temp after heater runs a while and then alarm.	3600	0-9999	sec
F10	Interval time of Interval exhaust	Exhaust as every setting time.	0	0-9999	sec
F11	Running time of Interval exhaust	Running time of interval exhaust	0	0-9999	sec
F12	Unit of temp.	Celsius or Fahrenheit temp.	0	0：℃ 1：℉	
F13	Low water level checking time (It's useless for FOH series.)	If the signal of low water level is kept about the setting time, the signal is confirmed.	5	0~60	sec
F14	Time of pressure relief	When refilling water, pressure relief and exhaust are opened at the same time and kept based on the setting time.	0.0	0~9.9	sec
F15	Time of refilling water (It's useless for FOH series.)	After confirming the signal of low water level, machine will refill water. If the signal isn't disappeared after refilling water and then alarm [E-13]-[MLOW] (Refilling water is insufficient.)	120	0~300	sec
F16	Blowing time (It's pump reversal for FOH series.)	If customer doesn't close blow manually, the blow function will be closed automatically as reaching the setting time.	30	0-9999	sec
F17	3 phase checking	Whether customer checks 3 phase power or not?	OFF	OFF: close ON: open	
F18	PV value shows decimal point	Show decimal point or not.	OFF	ON:PV shows decimal point OFF:PV doesn't show decimal point	
F19	OFS1 CH1 Temp. Correction	Correct wire deviation V.S. deviation of actual temp signal.	0.0	-99.9~100.0	℃/℉
F20	GAI1 CH1 Magnification Correction	Adjust the error value of wire to correct magnification value.	1000	1~1500	
F21	OFS2 CH2 Temp. Correction	Correct wire deviation V.S. deviation of actual temp signal.	0.0	-99.9~100.0	℃/℉

F22	GAI2 CH2 Magnification Correction	Adjust the error value of wire to correct magnification value.	1000	1~1000	
F21.3	OFS3 CH3 Temp. Correction	Correct wire deviation V.S. deviation of actual temp signal.	0.0	-99.9~100.0	℃/℉
F22.3	GAI3 CH3 Magnification Correction	Adjust the error value of wire to correct magnification value.	1000	1~1000	
F23	Display filter	Inhibit to be affected by the noise input signal.	5	0-250	
F24	Remote control	Remote control for ON/OFF the controller	OFF	ON: open OFF: close	
F25	Current output Lowest limit adjustment	Output power supply is set 0% for checking Current output by 4mA, Current is too high: decrease the value Current is too low: increase the value	22	0-100	MA
F26	Current output Upper limit adjustment	Output power supply is set 100% for checking Current output by 20mA, Current is too high: increase the value Current is too low: decrease the value	27	0-100	MA

Note 1: this item needs to be changed with [I / O setting] item, and it can be used only after the setting is completed.

1. **In [temp. setting], press** ⚙ + ▲ + ▼ 2 sec at the same time, PV shows [F-81] and then entering password.

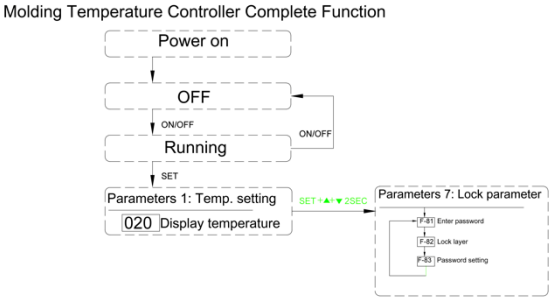
2. Press ⚙, PV **shows [F-82],** lock the setting on PV (Please see table 1 and 2.).

3. Press ⚙, PV **shows [F-83],** customer can set the password on SV to enter **[F-82].**

4. Press ⚙, back to **[F-81]** by cycle.

5. Press ⚙ 2 sec, back to **[Temp. setting].**

6. Parameters 7: [Lock Parameter]



Code	Name	Explanation	Value		Unit
			Factory setting	Range	
F81	Lock parameter Entering password	Enter the password for enter into the locked layer.	3	0~9999	Factory password:3
F82	Lock layer	Choose the parameter layer to lock.	0	0-2	Table 1 & 2
F83	Setting password	Set the password by entering [LK-1]	3	0~9999	Enter the password in[F-81]

3.11. ERROR CODE AND TROUBLESHOOTING

Controlled captive type: When alarm is released, it won't recover non-alarm state, please press  or restart for releasing alarm.

Non-Controlled captive type: When alarm is released, it will recover non-alarm state automatically. Customer can press  to release the alarm forcedly.

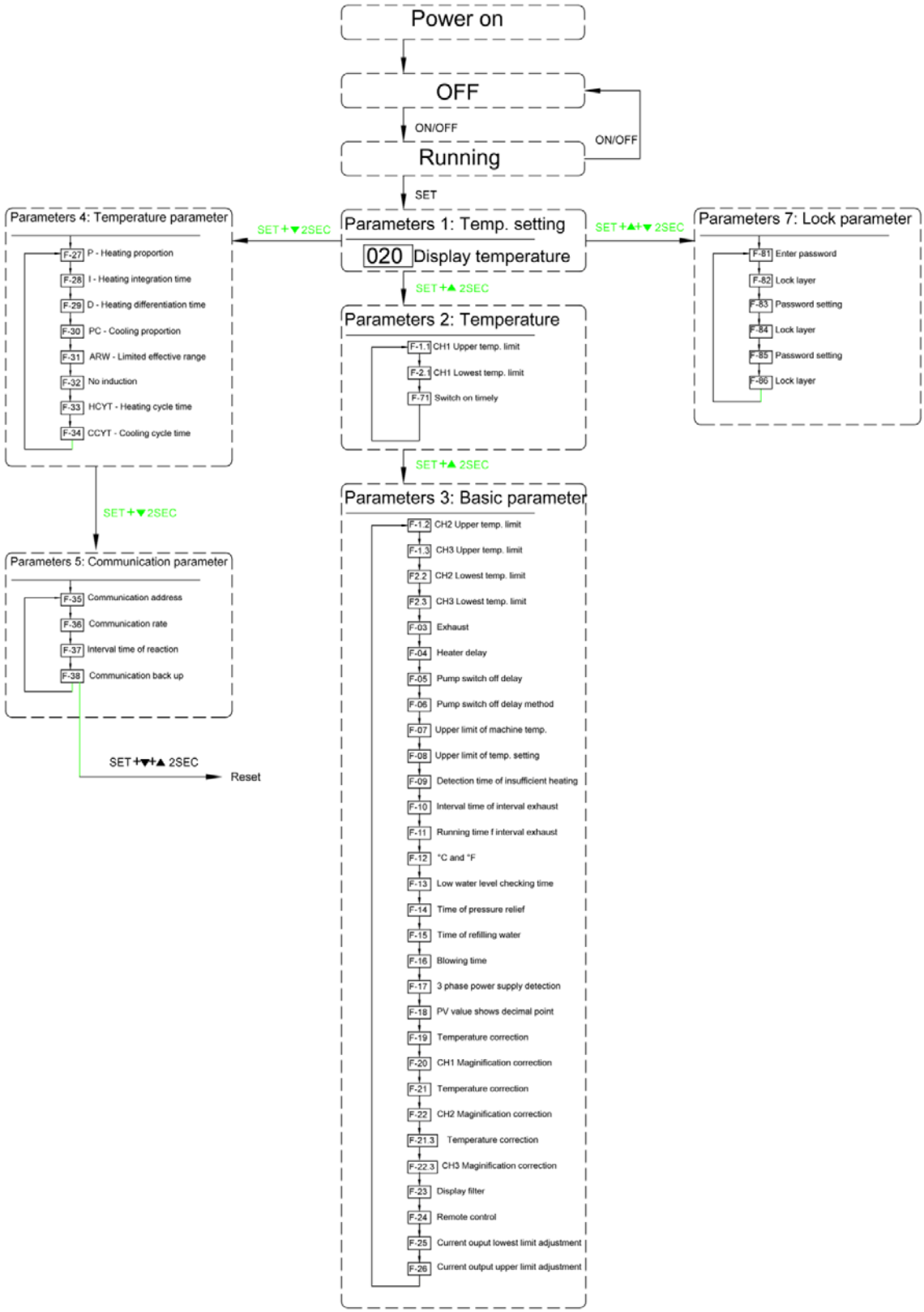
If thermocouple is abnormal and overheat alarm, the display would show actual temp. and alarm code alternatively, except power outage alarm.

Error code	Fault description	Possible causes	Processing method
[E-01]-[CH1]	Temperature probe 1 failure	Outlet temperature probe failure	Replace the temperature probe
[E-01]-[CH2]	Temperature probe 2 failure	Inlet temperature probe failure	Replace the temperature probe
[E-02-[PHRS]	Three-phase abnormality	Power connection error Abnormal power supply Circuit board fault	Arbitrarily exchange two phases in the incoming line of three-phase power supply. Check three-phase power supply Replace the circuit board
[E-03]-[OVL]	Pump overload	Pump failure Thermal relay (FR) current setting error	Replace the pump The correct setting of the thermal relay (FR) current is 1.1 times of the pump rated current.
[E-04]-[MESO]	Heating media shortage to mold But temp continues rising	Insufficient cooling water inlet pressure Detect pressure switch failure	Please provide sufficient water pressure 25-70 P.S.I. Replace the pressure switch
[E-05]-[CH1]	Temperature probe 1 input temperature is too high	Contactor fault	Replace contactor
[E-05]-[CH2]	Temperature probe 2 input temperature is too high	Contactor fault	Replace contactor
[E-06]-[SOVT]	Over temp. alarm	EGO fault	Replace EGO Factory setting 150℃/302℉
[E-07]-[CH1]	Temperature probe 1 below lower limit	Short running time controller parameter setting is not reasonable	Wait for a while Check the controller parameters and reset the unreasonable parameters. Please refer to the common parameter settings of the controller.
[E-07]-[CH2]	Temperature probe 2 below lower limit	Short running time controller parameter setting is not reasonable	Wait for a while Check the controller parameters and reset the unreasonable parameters. Please refer to the common parameter settings of the controller.

Error code	Fault description	Possible causes	Processing method
[E-08]-[CH1]	Temperature probe 1 is above the upper limit	Short running time controller parameter setting is not reasonable	Wait for a while Check the controller parameters and reset the unreasonable parameters. Please refer to the common parameter settings of the controller.
[E-08]-[CH2]	Temperature probe 2 is above the upper limit	Short running time controller parameter setting is not reasonable	Wait for a while Check the controller parameters and reset the unreasonable parameters. Please refer to the common parameter settings of the controller.
[E-10]-[CH1]	Temperature probe 1 is connected inversely	Outlet temperature probe is connected inversely	Interchanging temperature probe wire
[E-10]-[CH2]	Temperature probe 2 is connected inversely	Inlet temperature probe connected inversely	Interchanging temperature probe wire
[E-12]-[PWR]	Heating energy shortage	Heater failure Contactor fault	Replace heater Replace Contactor
[E-13]-[MLOW]	Water shortage	Booster pump failure Liquid level detection switch failure	Replace booster pump Replace the liquid level detection switch
[E-15]-[ATF]	PID calibration fault	Heater failure Contactor fault Temperature probe failure	Replace heater Replace Contactor Replace the temperature probe
N/A	Pump won't run	Low water pressure	Adjust incoming water pressure to 25 P.S.I. or greater

3.12 COMPLETE FUNCTION

Molding Temperature Controller Complete Function



Parameter group

1. Parameters 4: [Temp. Parameter]

Code	Name	Explanation	Value		Unit
			Factory setting	Range	
F-27	P - Heating proportion	Setting temperature control proportion 0: on/off action	20.0	0~+999.9	
F-28	I - Heating integration time	Eliminate the difference of proportion control Set 0:PD action	240	0~+9999	
F-29	D - Heating differentiation time	Prevent the stability increased from fluctuate temperature Set 0:PI action	60	0~+9999	
F-30	PC - Cooling proportion	According to heating, please set the cooling proportion from 0 to 1000%.	1000	0~+9999	
F-31	ARW - Limited effective range	Prevent over adjustment from integral action	100	0~+100	
F-32	No induction	Set no induction band of heating and cooling. If there is only heating function, it should be on induction band of ON/OFF	0.5	0~+20.0	℃/℉
F-33	HCYT - Heating cycle time	Output cycle time Relay: 20 sec Voltage pulse: 2 sec Current: 0 sec	20.0	0~+360.0	sec
F-34	CCYT - Cooling cycle time	Eliminate the difference of proportion control Set 0:PD action	20.0	0~+360.0	sec

2. Parameters 5:[Communication Parameter]

Code	Name	Explanation	Value		Unit
			Factory setting	Range	
F-35	Communication address	Setting communication address	1	0-250	
F-36	Communication rate	0: 9600 bps 1: 19200 bps 2: 38400 bps 3: 57600 bps	2	0-3	bps
F-37	Interval time of reaction	When does machine react after receiving correct command?	0	0-100	ms
F-38	Communication back up	Communication back up(to EEP rom)	OFF	ON: save OFF: not save	

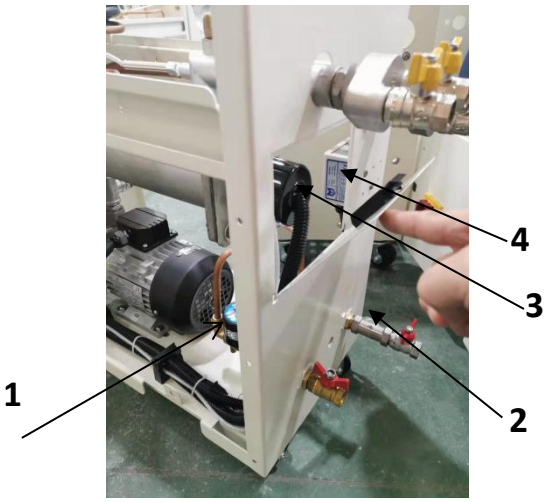
3. Parameters 7: [Lock Parameter]

Code	Name	Explanation	Value		Unit
			Factory setting	Range	
F-81	Lock parameter Entering password	Enter the password for enter into the locked layer.	3	0~9999	Factory password:3
F-82	Lock layer	Choose the parameter layer to lock.	0	0-2	Table 1 & 2
F-83	Setting password	Set the password by entering [LK-1]	3	0~9999	Enter the password in[F-81]
F-84	Lock layer	Choose the parameter layer to lock.	0	0-F	Table 1 & 2 Universal password:9898
F-85	Setting password	Set the password by entering[LK-2]	98	0~9999	Enter the password in[F-81]

3.13 PASSWORD AND LOCK

1. In [temp. setting], press + + 2 sec at the same time, PV shows [F-81] and then entering password.
2. Press , PV shows [F-82] and press , PV shows [F-83].
3. Press , PV shows [F-84] and customer can lock the setting on SV (Please see table 3 & 4).
4. Press , PV shows [F-85], customer can set the password on SV to enter [F-84].
5. Press , back to [F-81] by cycle.
6. Press 2 sec, back to [Temp. setting].

4. REPAIR AND MAINTENANCE



1. Cleaning solenoid valve, cycle: every 3 months.
2. Cleaning Y filter, cycle: every 1 month.
3. Cleaning heater / cooler every 6 months
4. Check the level switch, cycle: every 3 months

In order to use the machine safely, please pay attention to the following items during maintenance:

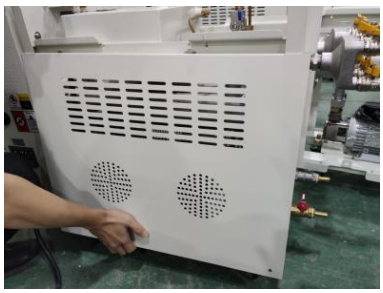
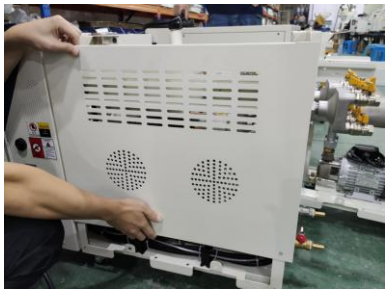
1) There should be at least 2 persons for checking machine. Please decrease the temp., cutting power supply, drainage oil and water first.
2) Please ensure the machine stops working before maintenance and check because high temp and then wearing the glove also.
3) In order to extend the system life and avoid of accident, please check and maintain regularly.
4) Please ensure the temp is decreased to lower than 50℃/122℉ before maintenance and check.

(Please note that open the machine is dangerous as machine is running!)

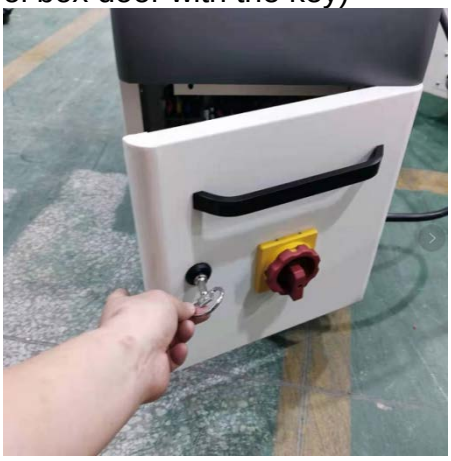
4.1 OPEN THE MACHINE

1) Open the top cover (as shown in the picture, lift the cover slightly first and then remove the top cover with force).

2) Open the side cover, screw out the two fixing screws at the lower part of the body side, and then lift up to open the side cover.

3) Open the electric control box (as shown in the picture below, open the electric control box door with the key)



Disconnect Power!

4.2 Y TYPE FILTER

1) Please use the good quality clean water. The unit is equipped the Y filter in the water inlet to avoid the impurities get into the pipes.

2) When the impurities flow into the machine, it may cause the malfunction of the machine or the decrease of the temperature control ability. Therefore, the Y-type filter must be cleaned regularly.

3) Clean procedure: Switch off the power and water supply valve, open the Y filter cover to clean.

4.3 SOLENOID VALVE

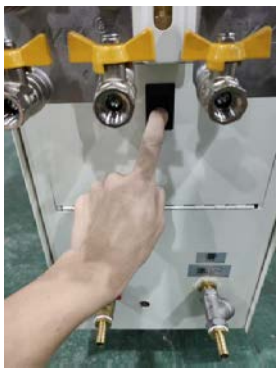
Replacement steps:

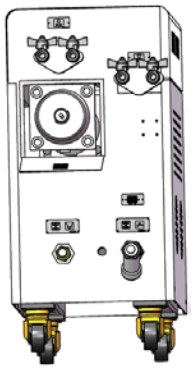
1) Open the top cover and the side cover. (Please see 4.1)
2) Remove the solenoid valve or replace it (as shown below).
3) Install in reverse order.

Solenoid valve

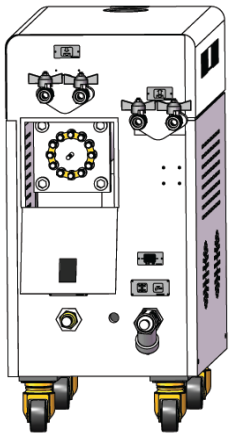
4.4 HEATER

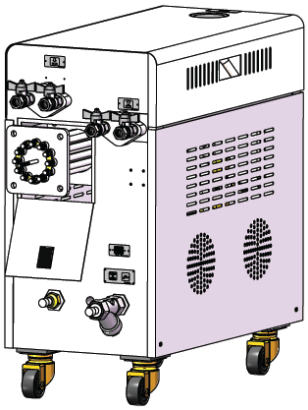
1) Open the heating cover (as shown in the picture, first press the black switch downward and then open the heating cover outwards)





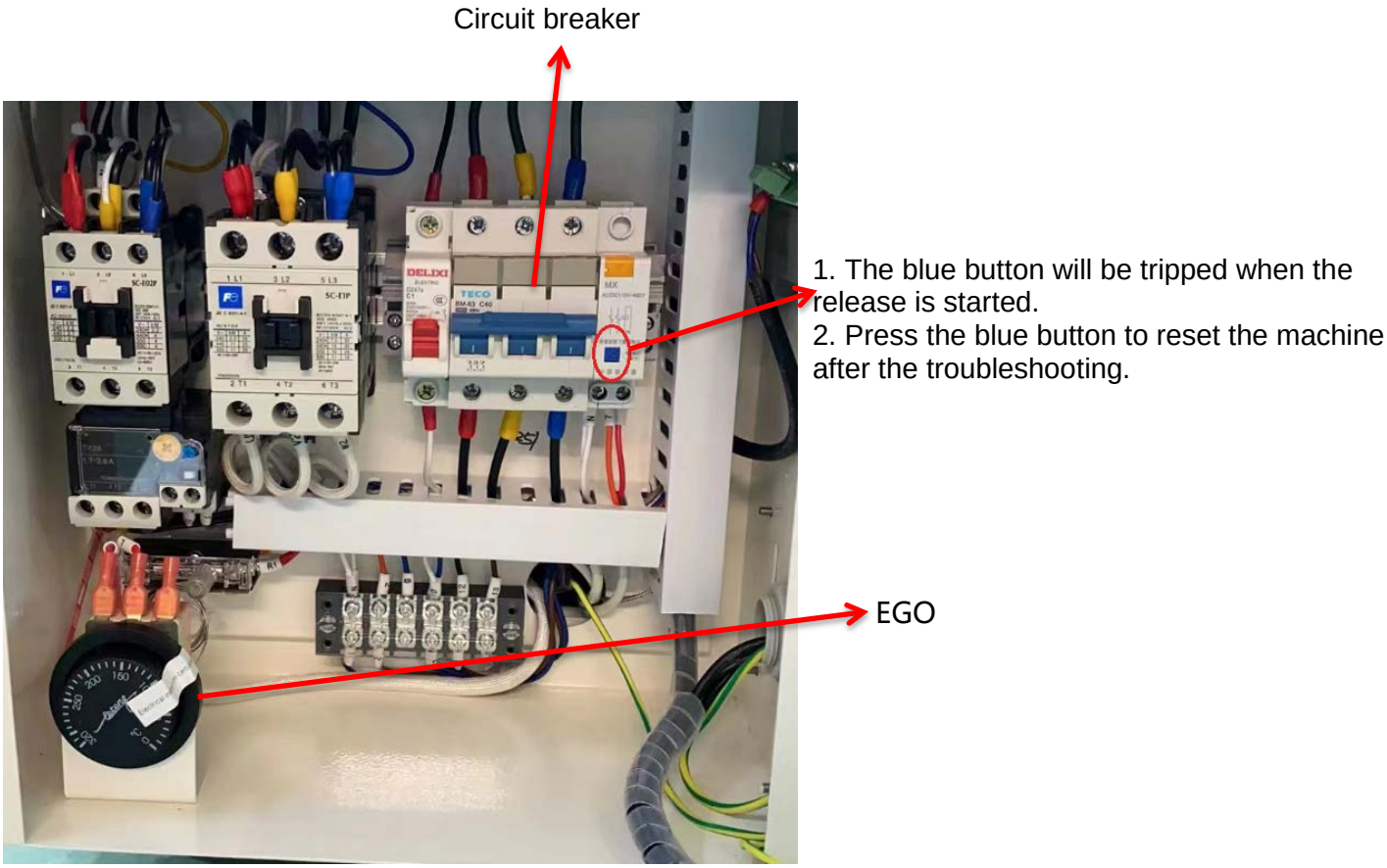
2) Remove the heating tube cover (as shown in the figure, unscrew the screws, loosen the wire clamp and remove the heating tube cover).





3) After cleaning the electric heat pipes, installs the electric heat pipes back into the machine in reverse order

4.5 EGO

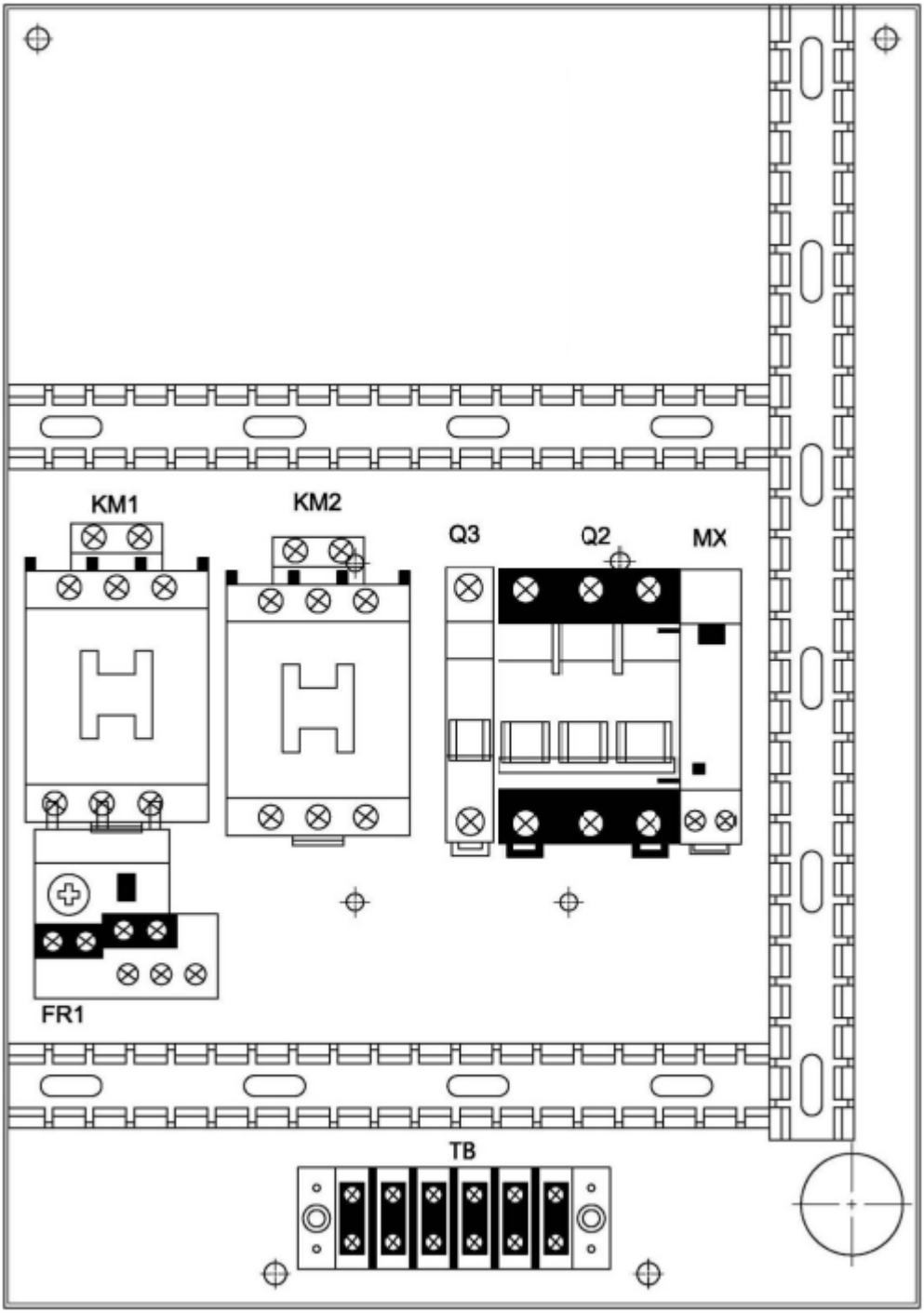


1) The factory preset of EGO is 150C°/302°F

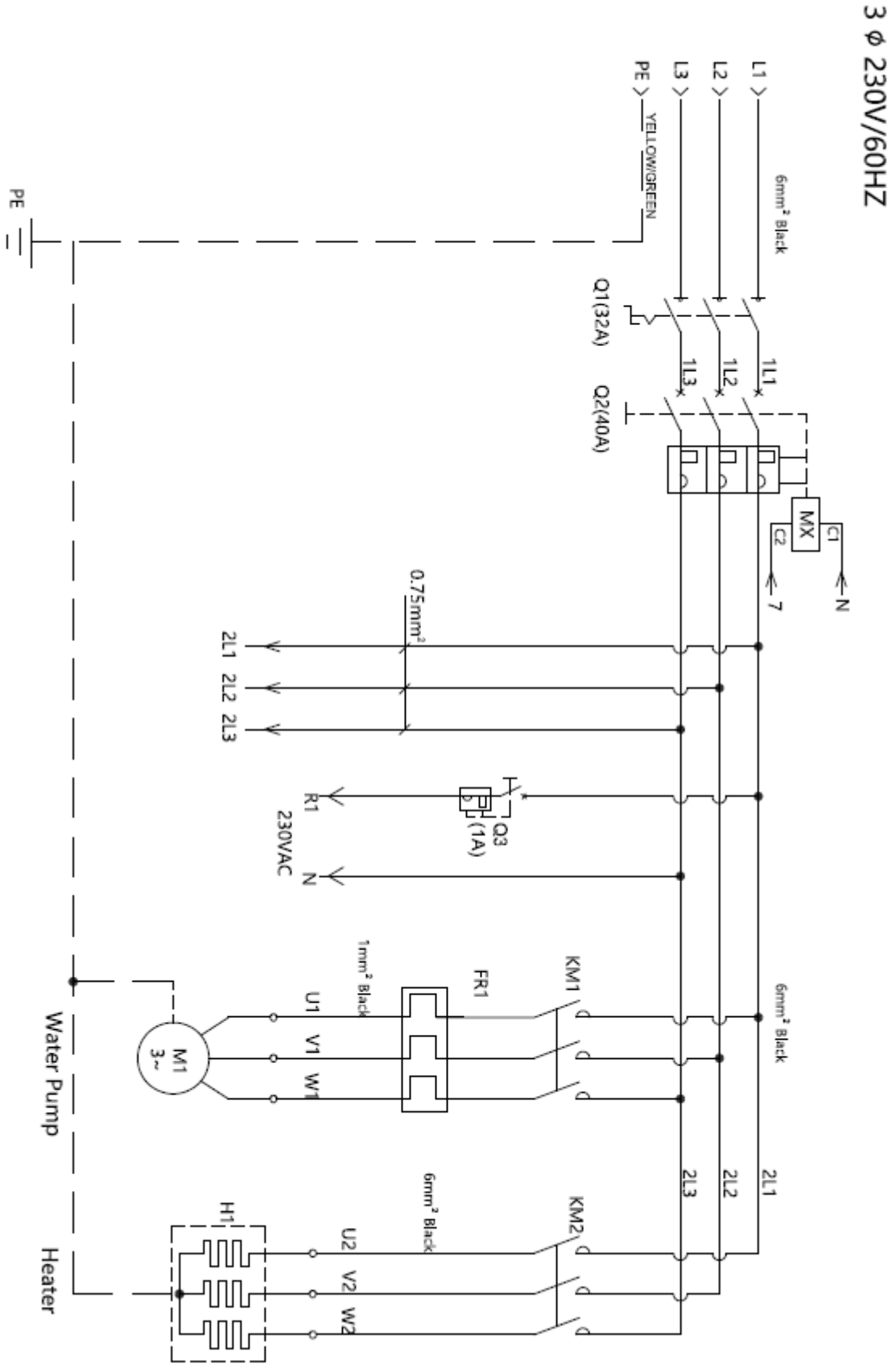
2) The release will be started and shut down the main power when the temperature of EGO probe is ≥ the EGO setting value. Press the blue button to reset after the troubleshooting, and then turn the breaker on.

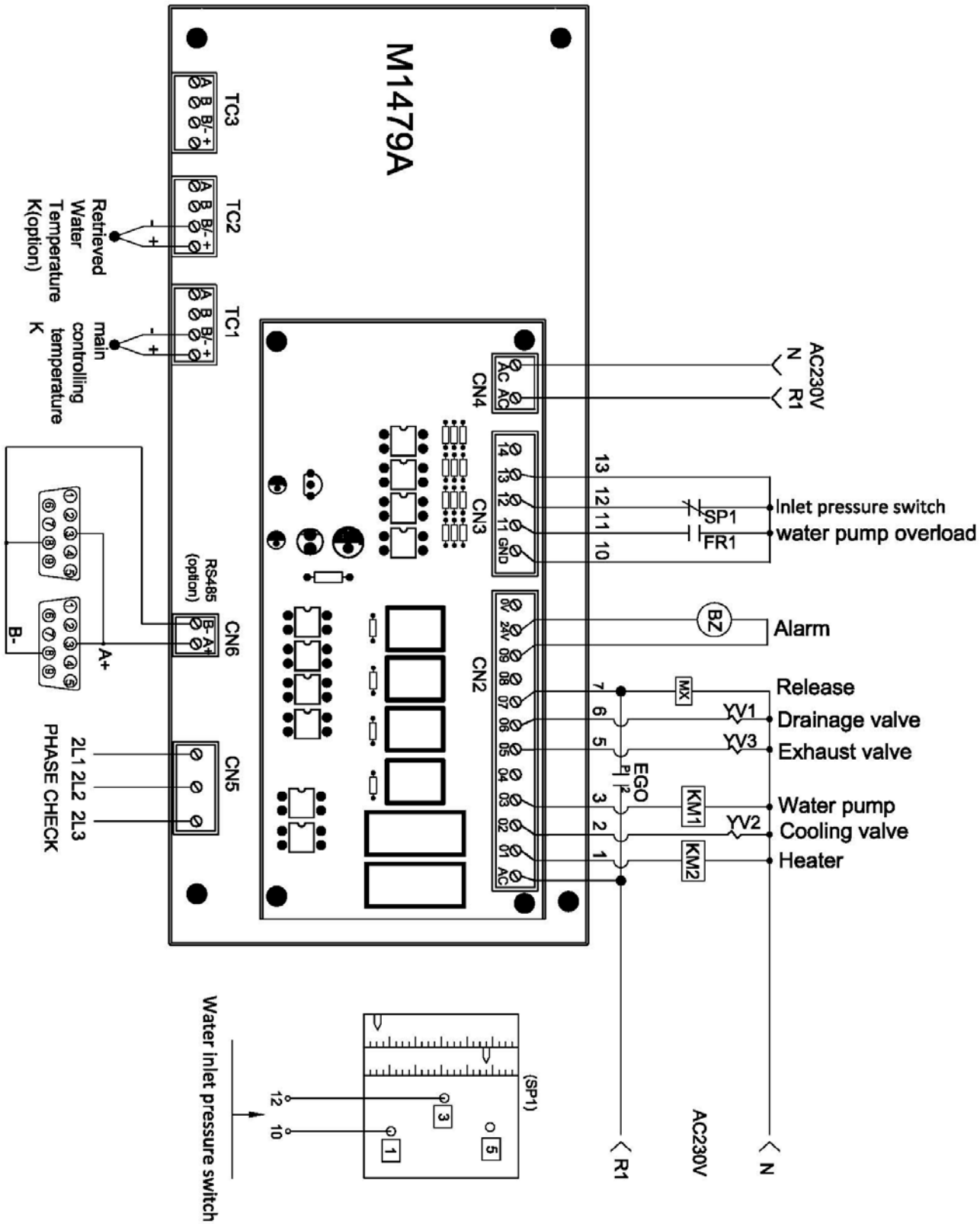
5. CIRCUIT DIAGRAM

1）Electrical layout（230V）



2）Circuit diagram（230V）





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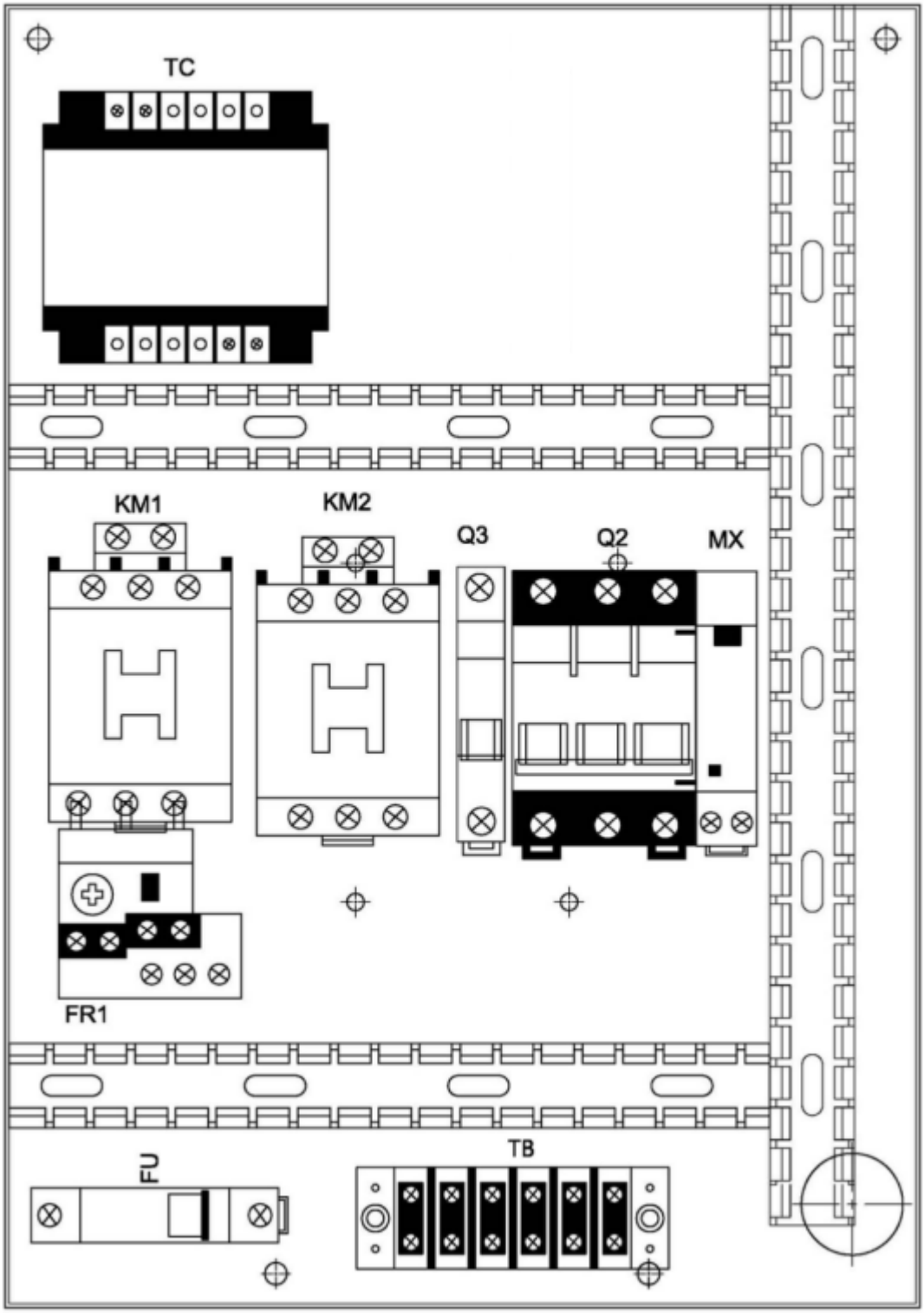
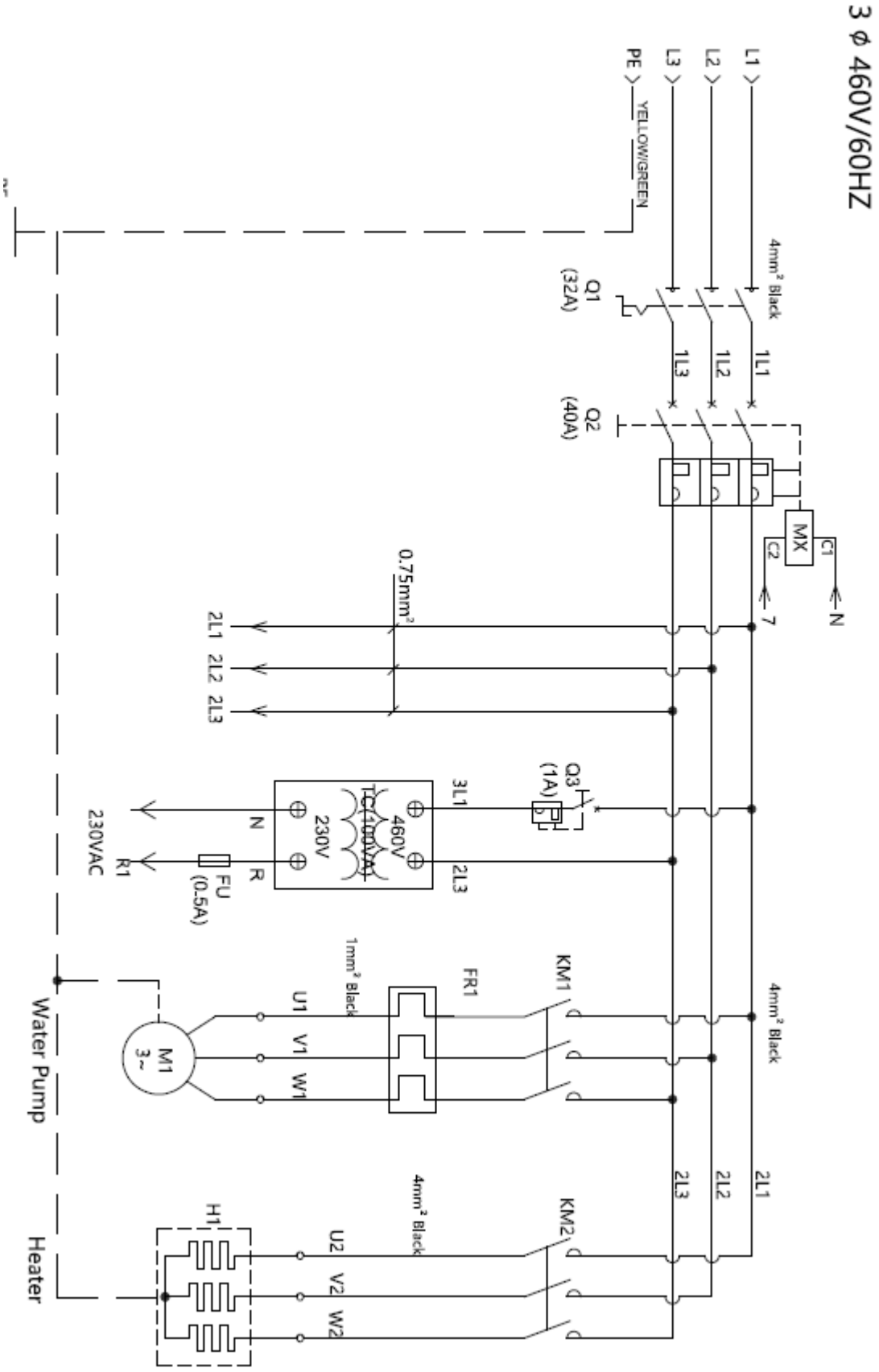
MFT1230C

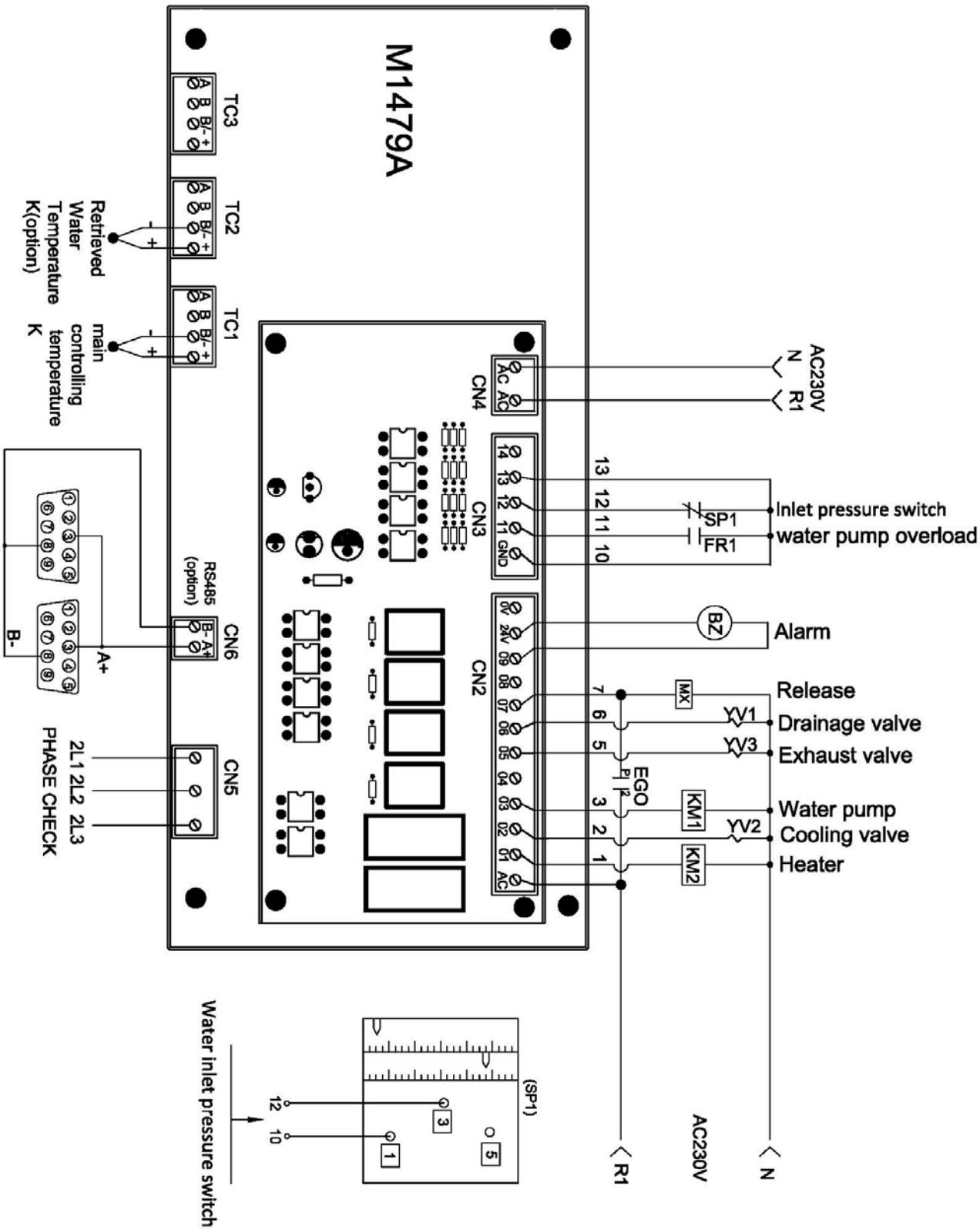
Electrical symbols	Electrical name	Model	Specifications	Qty	Remarks
1479A	Circuit board	1479A Version	----	1	
Q1	Main power switch	SLD2	32A	1	
Q2	Circuit breaker	BM63D-3040	40A/3P	1	
Q3	Circuit breaker	M-63	C1A/1P	1	
KM1	Contactor	SC-E02PM-C	AC 220V/50HZ	1	
KM2	Contactor	SC-E2SPM-C	AC 220V/50HZ/60HZ	1	
FR1	Thermal overload relay	TK-E02-C	(2.8-4.2)A	1	
MX	Release	----	AC/DC/110V-400V	1	
TB	Terminal	TB2506-600V	25A/6P	1	
BZ	Buzzer	PK-27A29EPQ	(3~24V /DC)	1	
EGO	Overtemperature protection	----	50-320℃(122°F to 608°F) Factory setting 150℃/302 °F	1	
H1	Heater	9KW /L:350	3φ230/50HZ/60HZ	1	
3~M	Water pump（120°）	YS-20A/1HP	3φ230V/60HZ	1	
YV1	Mold drain valve	2V025-06	AC 220V/50HZ/60HZ	1	optional
YV2	Cooling valve	UD-10	AC 220V/50HZ/60HZ	1	
SP1	Pressure switch	MGP506E	0~6KG	1	

3)Electrical layout（460V）



4)Circuit diagram（460V）





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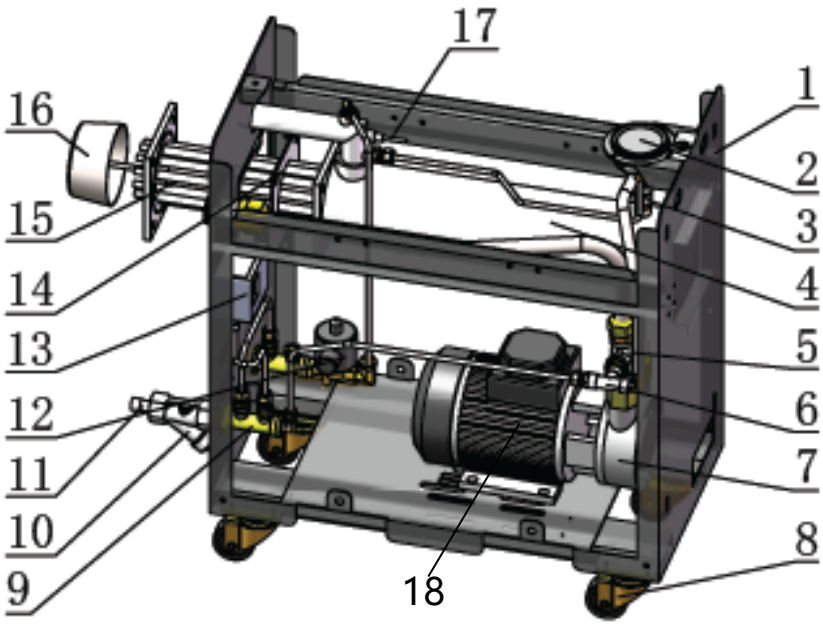
MFT1460C

Electrical symbols	Electrical name	Model	Specifications	Qty	Remarks
1479A	Circuit board	1479A Version	----	1	
Q1	Main power switch	SLD2	32A	1	
Q2	Circuit breaker	BM63D-3040	40A/3P	1	
Q3	Circuit breaker	M-63	C1A/1P	1	
FU	Fuse	----	0.5A	3	
KM1	Contactor	SC-E02PM-C	AC 220V/50HZ	1	
KM2	Contactor	SC-E1PM-C	AC 220V/50HZ/60HZ	1	
FR1	Thermal overload relay	TK-E02-C	(1.7-2.6)A	1	
MX	Release	----	AC/DC/110V-400V	1	
TB	Terminal	TB2506-600V	25A/6P	1	
TC	Transformer	460V/220V	TP-BK-100VA	1	
BZ	Buzzer	PK-27A29EPQ	(3~24V /DC)	1	
EGO	Overtemperature protection	----	50-320℃(122°F to 608°F) Factory setting 150℃ /302℉	1	
H1	Heater	9KW /L:50	3φ460/50HZ/60HZ	1	
3~M	Water pump（120°）	YS-20A/1HP	3φ460V/60HZ	1	
YV1	Mold drain valve	2V025-06	AC 220V/50HZ/60HZ	1	optional
YV2	Cooling valve	UD-10	AC 220V/50HZ/60HZ	1	
SP1	Pressure switch	MGP506E	0~6KG	1	

6. EXPLODED VIEW

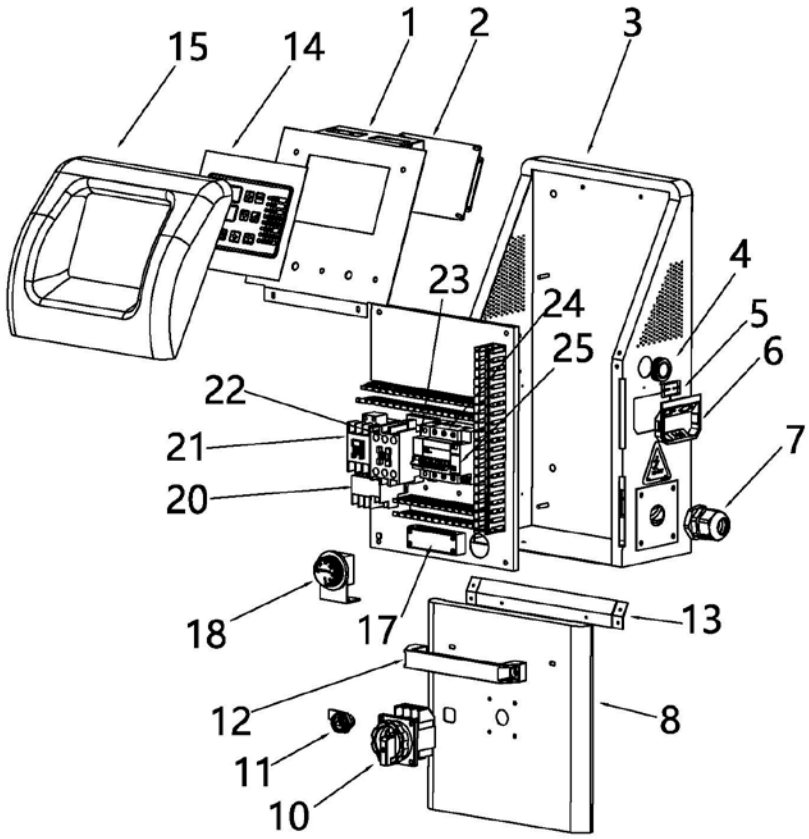


MODEL: MFT1230C & MFT1460C

(Item)	PPE Parts No.	Description	(Qty')
1	MFT0001	Case Body	1
2	MFT0002	0~16Kg/cm2&0~230Psi(Pressure Gauge)	1
3	MFT0003	3/8 (Ball Valve)	1
4	MFT0004	Heater Housing	1
5	MFT0005	SUS304 1/2"*1/2"*3/4"(T Tube)	1
6	MFT0006	SUS304 3/8"(T Tube/Inner Teeth)	1
7	MFT0007	YS-20A-120 (Pump)230V	1
7	MFT0008	YS-20A-120 (Pump)460V	1
8	MFT0009	Front Caster	2
8	MFT0010	Rear Caster(Brakes)	2
9	MFT0011	Four Way Connector)	1
10	MFT0012	SUS 1/2 (Y Filter)	1
11	MFT0013	1/2 (Cooper Water Tap)	1
12	MFT0014	UD-10 (Solenoid Valve)	1
13	MFT0015	MGP506E(Pressure Switch)	1
14	MFT0016	(Graphite Gasket)	1
15	MFT0017	9KW-L:345-230/400V(Heater)	1
15	MFT0018	9KW-L:345-265/460V(Heater)	1
16	MFT0019	(Heater Lid)	1
17	MFT0020	(1/8PT*30L*1.5M) (Temperature Probe)	1
18	MFT0036	Pump Shaft Seal Kit	1

MOLD FLUID CONTROL SPARE PARTS

FOR MFT1230C



Electrical and control box spare parts

(Item)	SYMBOLS	Parts No.	Description	(Qty')
1		MFT0021	Circuit Board Holder	1
2		MFT0022	Circuit Board	1
3		MFT0023	Control Box	1
4	BZ	MFT0024	Buzzer (3~24V /DC)	1
5		MFT0025	RS485 Interface PCB Board	1
6		MFT0026	RS485 Holder	1
7		MFT0027	Cable Fixing Head	1
8		MFT0028	Control Box Door Cover	1
9		MFT0029	Bottom Plate Of Control Box	1
10	Q1	MFT0030	32A Main Power Switch	1
11		MFT0031	Door Lock	1
12		MFT0032	Handle	1
13		MFT0033	Control Box Crossbar	1
14		MFT0034	Thin Film Panel	1
15		MFT0035	Plastic Frame	1
17	TB	MFT0036	Terminal Block 6P	1
18	EGO	MFT0038	Ego 50-320℃ Over Temp Limiter	1
20	FR1	MFT0039	Thermal Overload Relay 2.8~4.2a for 230v Motor (FX-RLY4)	1
21	KM1	FX-CONT1	Contactor SC-E02-C	1
22	KM2	FX-CONT7	Contactor SC-E2SPM-C	1
23	Q3	MFT0042	Circuit Breaker 1P/1A	1
24	Q2	MFT0043	Circuit Breaker 3P/40A	1
25	MX	MFT0044	Release Ground Fault Reset	1

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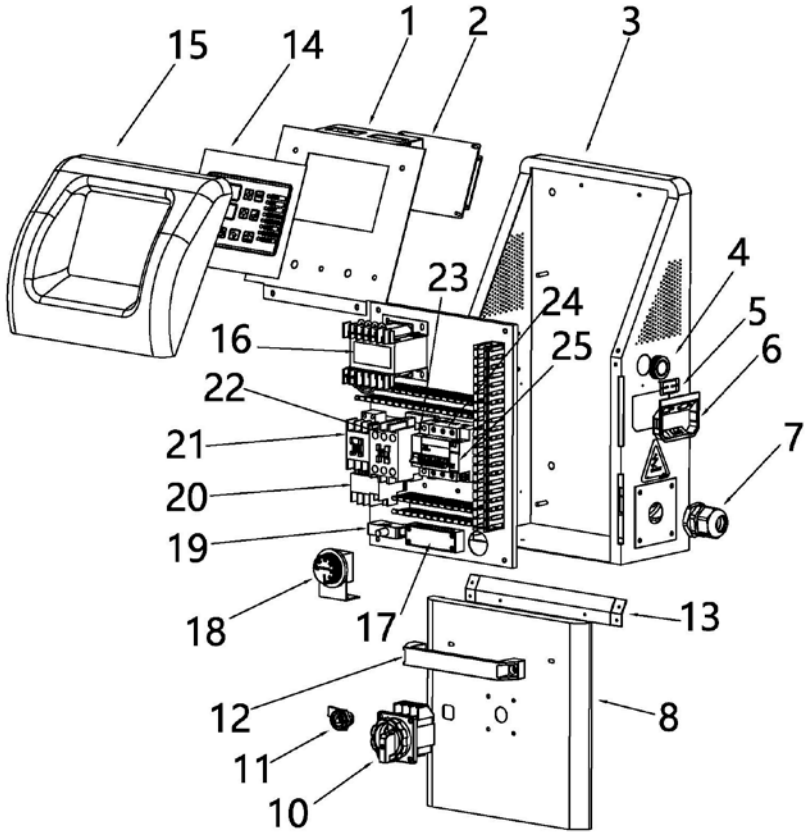
FOR MFT1460C



Electrical and control box spare parts

(Item)	SYMBOLS	Parts No.	Description	(Qty')
1		MFT0021	Circuit board holder	1
2		MFT0022	Circuit board	1
3		MFT0023	Control Box	1
4	BZ	MFT0024	Buzzer (3~24V /DC)	1
5		MFT0025	RS485 Interface PCB Board	1
6		MFT0026	RS485 Holder	1
7		MFT0027	Cable Fixing Head	1
8		MFT0028	Control Box Door Cover	1
9		MFT0029	Bottom Plate Of Control Box	1
10	Q1	MFT0030	32A Main Power Switch	1
11		MFT0031	Door Lock	1
12		MFT0032	Handle	1
13		MFT0033	Control Box Crossbar	1
14		MFT0034	Thin Film Panel	1
15		MFT0035	Plastic Frame	1
16	TC	MFT0037	Transformer 100VA 460V/220V	1
17	TB	MFT0036	Terminal Block 6P	1
18	EGO	MFT0038	Ego 50-320℃ Over Temp Limiter	1
19	FU	MFT0041	Fuse（0.5A）	1
20	FR1	MFT0040	Thermal Overload Relay 1.7~2.6A for 460v Motor (FX-RLY2)	1
21	KM1	FX-CONT1	Contactor SC-E02	1
22	KM2	FX-CONT3	Contactor SC-E1P	1
23	Q3	MFT0042	Circuit breaker 1P/1A	1
24	Q2	MFT0043	Circuit breaker 3P/40A	1
25	MX	MFT0044	Release Ground Fault Reset	1

7. MAINTENANCE RECORD SHEET

7.1 MACHINE INFORMATION

Machine type _____ serial number _____ date of manufacture _____

Voltage _____ ¢ _____ V Frequency _____HZ total power _____

7.2 INSTALLATION INSPECTION

( ) Check that there is enough space around the machine

( ) Check whether the connecting pipe is connected correctly

Electrical installation

( ) Voltage check_____ V_____HZ ( ) Check the phase sequence of power supply

( ) Circuit breaker specifications: φ1 _____ A φ3 _____ A

7.3 CHECK DAILY

( ) Check the machine switch function ( ) Check all the cables of the machine

7.4 CHECK WEEKLY

( ) Check electrical components for loose joints ( ) Check Y type water filter valve

( ) Check solenoid valve ( ) Check pump overload and phase

( ) Check whether the pipe connection is loose ( ) Check ego flexibility

Fixed at 150℃/302℉

7.5 QUARTERLY INSPECTION

( ) Check the level switch ( ) Check contact contactor flexibility

( ) Use temperature 160° above, replace heat medium oil

7.6 CHECK HALF A YEAR

( ) Check whether the damaged pipeline ( ) Clean electric heat pipe/cooler

( ) Check whether the indicator light and buzzer operate normally

7.7 ANNUAL INSPECTION

( ) Use temperature below 120° C, replace the heat medium oil

7.8 CHECK EVERY THREE YEARS

( ) Replace PC board ( ) Replace the circuit breaker

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