

PPE OPERATION AND INSTALLATION MANUAL FOR MOLD TEMPERATURE CONTROLLERS



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UNIT MODELS
MFT0752C, MFT0754C, MFT1002C, MFT1004C

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INSTALLATION OF THE PPE UNIT

- The 230-3-60 volt unit draws approximately 30 amps.
- The 460-3-60 volt unit draws approximately 15 amps.
- If trouble should occur contact the Service Manager at the address and telephone number shown on the O & I manual cover.
- DO NOT OPERATE THIS UNIT ABOVE 250 DEGREES FAHRENHEIT (121 °C).

INTRODUCTION

ALWAYS DISCONNECT POWER TO THE UNIT BEFORE OPENING THE CONTROL BOX

The **PPE** unit is designed specifically to control the temperature of the water supplied to a mold.

This unit is built with high quality components and assembled by skilled craftsmen and tested to insure that you receive a high quality durable piece of equipment.

Thus, it is important that the unit be installed correctly to be sure that you receive optimum performance from your **PPE** unit. Please read this manual carefully and be sure that your unit is installed correctly.

It is the owner's responsibility to assure proper operator training, installation, operation, and maintenance of the **PPE** unit. All local, State and Federal codes must be observed in the installation of this **PPE** unit.

ALWAYS DISCONNECT POWER TO THE UNIT BEFORE REMOVING THE COVER

UNPACKING THE UNIT

Before accepting the unit from the freight company, visually inspect the unit for any shipping damage. If there is any indication that the package was mishandled, further inspection should be done immediately in front of the delivery driver. Note all visual damage on the delivery receipt prior to acceptance.

Remove the unit from the package and again inspect for any damage that could have occurred during shipment. If damage is noted, be sure to file a claim IMMEDIATELY with the carrier. Remove any packing materials and support materials from the unit.

NOTICE

IN ORDER TO PROTECT THE UNIT FROM FREEZING WHEN SHIPPED DURING THE WINTER (**AFTER** OCTOBER 1st), THE UNIT HAS BEEN SHIPPED WITH ANTIFREEZE IN THE RESERVOIR AND PUMP. YOU MAY WANT TO FLUSH THIS ANTIFREEZE OUT OF THE SYSTEM BEFORE CONNECTING TO YOUR SYSTEM.

After removing the unit from the box, you will notice that there are rubber pads or “feet” in a plastic bag attached to the electrical cord.

You should install the “feet” that are included with the unit on the four corners of the unit, using the double sided tape that is included in the plastic bag for this purpose. If the unit is equipped with casters, this is not necessary.

ELECTRICAL

ALWAYS DISCONNECT POWER TO THE UNIT BEFORE REMOVING THE COVER.

Bring adequate 230/3/60 or 460/3/60 **FUSED** electrical power to the unit. The 230 volt unit draws approximately 30 amps when fully operating. The 460 volt unit draws approximately 15 amps when fully operating be sure that the unit is grounded and proper voltage within 10% of the nameplate voltage is applied to the unit.

CONNECTING TO THE MOLD

The “TO PROCESS” fitting on the PPE unit is a 1¼ inch FPT coupling. We suggest that a 1½-inch line be run from the “TO PROCESS” fitting on the PPE unit to the inlet connection of the mold, and the reduction in pipe size be made at the mold if the inlet connection on the mold is smaller than 1 ½ inch.

It is suggested that a valve be installed on the “TO PROCESS” line at the PPE unit, to be used as a balancing valve to balance the flow to the mold or as an isolation valve should maintenance be required on the unit.

CAUTION: THE FITTINGS ARE CONNECTED TO A MANIFOLD PLATE BOLTED TO THE UNIT. DO NOT OVERTIGHTEN FITTINGS SUCH THAT YOU BREAK THE FITTINGS FROM THE MANIFOLD PLATE.

The “FROM PROCESS” fitting on the PPE unit is a 1-¼ inch FPT Coupling. Run a 1½ inch line to the “FROM PROCESS” fitting on the PPE unit from the outlet connection of the mold. We suggest that a 1½ inch line be run to the PPE unit with the final reduction in line size (if any) taking place as close to the mold as possible.

We suggest a balancing valve be installed on the “FROM PROCESS” line at the PPE unit. The valve can be used to balance the flow provided by the PPE unit to the mold, or as an isolation valve if maintenance is required on the PPE unit.

CAUTION: THE FITTINGS ARE CONNECTED TO A MANIFOLD PLATE BOLTED TO THE UNIT. DO NOT OVERTIGHTEN FITTINGS SUCH THAT YOU BREAK THE FITTINGS FROM THE MANIFOLD PLATE.

CONNECTING THE COOLING WATER

Be sure that your plant cooling system can provide adequate chilled water flow, pressure, temperature and cooling capacity to handle the cooling requirements of the PPE unit.

The PPE unit requires at least 5 GPM of cooling water flow to the heat exchanger. It is necessary to insure that a minimum of 25 PSIG cooling water pressure is available at the cooling water INLET to the unit. This is necessary to keep the water from flashing to steam when the unit is running at temperatures above 212 °F. In order to provide for adequate cooling water flow through the unit it is also necessary to have at least a 15 PSIG differential between the entering cooling water and the leaving cooling water.

It is also necessary to insure that the INLET pressure does not exceed 75 PSIG. If the pressure exceeds this, when the inlet pressure is added to the pump pressure, the pressure relief valve can open prematurely because of cycling of the solenoid valve.

Your cooling system must also have adequate cooling capacity in WATTS or BTU/HR to handle the cooling requirements of the mold/PPE unit. You can contact the factory for clarification.

The “CHILLED WATER IN” fitting on the PPE unit is a 1¼ inch FPT Coupling. Run a ½ inch line from the “CHILLED WATER IN” connection on the PPE unit, to the supply line from the cooling water source. Use ½ inch lines with the final reduction in pipe size taking place at the unit.

CAUTION: THE FITTINGS ARE CONNECTED TO A MANIFOLD PLATE BOLTED TO THE UNIT. DO NOT OVERTIGHTEN FITTINGS SUCH THAT YOU BREAK THE FITTINGS FROM THE MANIFOLD PLATE.

The “CHILLED WATER OUT” fitting on the PPE unit is a steel ½ inch FPT Coupling. Run a ½ inch line to the “CHILLED WATER OUT” connection on the PPE unit from the RETURN line of the chilled water system, or to a drain (if the cooling water is tap water). Install ½ inch lines to the unit making the final reduction in pipe size at the unit.

CAUTION: THE FITTINGS ARE CONNECTED TO A MANIFOLD PLATE BOLTED TO THE UNIT. DO NOT OVERTIGHTEN FITTINGS SUCH THAT YOU BREAK THE FITTINGS FROM THE MANIFOLD PLATE.

UNIT OPERATION

STARTING THE UNIT

Turn on the water supply to the unit and pause till the water stops flowing into the system.

BEFORE RUNNING THE PUMP, CHECK THE PUMP FOR PROPER ROTATION. THE CORRECT PUMP ROTATION IS COUNTER CLOCKWISE WHEN LOOKING AT THE FRONT OF THE PUMP FROM THE SUCTION END; OR CLOCKWISE WHEN LOOKING AT THE BACK OF THE MOTOR.

IF THE ROTATION IS INCORRECT, THE PUMP ROTATION CAN BE REVERSED BY CHANGING 2 LEADS ON THE FUSED DISCONNECT THAT IS SUPPLYING POWER TO THE UNIT. DISCONNECT ELECTRICAL POWER TO THE UNIT BEFORE CHANGING THESE LEADS.

After checking for rotation, turn on the unit and press the start button. When the unit is started it will go through an 85 Second “PURGE CYCLE” to eliminate air in the system. The heaters will not operate during this “PURGE CYCLE”.

NOTE: DO NOT RUN THE MOLD UNTIL COOLING SYSTEM IS FILLED WITH WATER AND AIR IS PURGED FROM THE SYSTEM

DISCONNECT ELECTRICAL POWER BEFORE REMOVING THE COVER.

SETTING THE TEMPERATURE CONTROLLER ON THE UNIT

This section will discuss the basic control operation and the basic settings. For more complete instructions on the operation of the controller, please read the Instruction Manual for the controller included with this manual.

There are two digital display windows on the temperature controller. The upper window displays the actual temperature of the fluid going to the process or the “PROCESS VALUE”. The lower window displays the “SET VALUE” of the controller.

There is an indicator “SP2 or OUT2” that will light if the unit is in the heating mode (the heaters are energized).

The “AL or ALM” light stands for alarm and is an over/under alarm from set point. This has been set at the factory to light if the process temperature is 5 ° F above or below the set point. If you wish to change this “over/under” alarm temperature, you can change this setting.

To change the temperature set value, touch the “UP ARROW” to raise the set point, or the “DOWN ARROW” to lower the set point to the desired set point temperature. When the desired temperature appears in the upper window, press ENTER (the key pad to the far left) to store the new temperature. (NOTE: on “16A” controllers it is necessary to touch “INDEX” (the keypad on the far left) once. “SP1” will appear in the lower window and the current “set point” will appear in the upper window). Touch the “INDEX” keypad again to “SP2”, THIS SHOULD BE SET TO -4. Do not change this setting. Touch the “INDEX” keypad again to return to the operating mode with the “Set Point” in the lower window and the “Process Value” in the upper window. **IT IS NECESSARY TO TOUCH THE “ENTER” KEY PAD TO INPUT THE NEW TEMPERATURE.**

SETTING THE PID PARAMETERS (16A ONLY)

This temperature controller is arranged to provide “PID” temperature control. “PID” stands for “Proportional-Integral-Derivative” control, and for most load situations will give the process more stable temperature control than “On/Off” control. Under “PID” control, the temperature controller “anticipates” cooling and heating requirements and will institute these control activities in anticipation of the load requirements to give more stable temperature control to the process.

*This temperature controller’s “PID” constants are preset at the factory. This is described on page 22 of the manual. This temperature controller is equipped with “Fuzzy Logic”. “Fuzzy Logic” maintains better temperature stability under changing load conditions and allows the unit to come to temperature stability faster after temperature changes. It is important to note that **THE “FUZZY” LOGIC FEATURE OF THIS CONTROLLER IS ENGAGED, AND WE RECOMMEND THAT IT REMAIN ENGAGED.** With the “fuzzy” logic, the unit will provide better temperature stability than when it is not engaged.*

For more information on these features, please see the Temperature Controller manual in the back of this manual.

The unit will now run and cool and heat the mold.

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The unit will now run and cool and heat the mold.

TROUBLE SHOOTING GUIDE

ALWAYS DISCONNECT POWER TO THE UNIT BEFORE OPENING CONTROL BOX

UNIT SHUTS OFF-"PUMP STOP ALARM INDICATOR" LIGHT IS ON

The unit will go off on alarm and the red alarm light will come on if the pump stops. Check that the water pressure entering the unit is over 25 PSI. The unit will not run with out adequate water pressure. If proper water pressure is found, check the pump motor starter for over load trip.

If the unit still does not remain on after the "START" button has been released, and you have verified that the unit has adequate water pressure, contact PLASTIC PROCESS EQUIPMENT, INC. at 216-367-7000 or FAX 216-367-7022.

UNIT NOT HOLDING TEMPERATURE (TEMPERATURE GOES TOO HIGH)

Check the load on the unit compared to the cooling capacity of the unit. If the unit is over loaded it will not hold the temperature setting.

Check that there is an adequate supply of cooling water to the unit (flow and temperature). The unit requires a minimum of 15 PSIG pressure differential between the "CHILLED WATER IN" and the "CHILLED WATER OUT" connections on the unit.

Check to be sure the solenoid valve is functioning properly. When cooling is required, the "SP1" light will light on the temperature controller and the valve will open. If the valve is not

opening when the unit calls for cooling, the valve is either not getting power to open (an electrical fault) or the valve is faulty.

If the unit still does not function properly, contact PLASTIC PROCESS EQUIPMENT, INC. at 216-367-7000 or FAX # 216-367-7022.

UNIT NOT HOLDING TEMPERATURE (TEMPERATURE GOES TOO LOW)

Check to be sure the chilled water connections are not connected backwards. The chilled water in (or cooling water in) to the unit MUST enter the “Chilled Water In” port on the back of the unit.

If you need additional help, contact PLASTIC PROCESS EQUIPMENT, INC. at 216-367-7000 or FAX # 216-367-7022.

TEMPERATURE AT THE MOLD IS NOT THE SAME AS INDICATED ON THE CONTROLLER

There will always be a slight difference between the controller indicated temperature and the temperature measured at the mold. Also, one must be sure that the thermometer used to measure the mold temperature is accurate. One should use two thermometers that read the same to confirm the accuracy of the thermometers used. If the temperature difference seems too high, the controller is probably out of calibration or the unit has a faulty thermocouple.

The controller can be calibrated by adjusting the “input correct” or “InPC” function on the controller. See page 25 of the temperature controller manual or contact the factory for further details.

You can reach PLASTIC PROCESS EQUIPMENT, INC. at 216-367-7000 or FAX # 216-367-7022.

TEMPERATURE CONTROLLER IS READING “OPEN InP”

This generally indicates a sensor failure. Turn off the unit and unplug the unit. Open the control panel door and check to be sure that the red thermocouple lead is connected tightly to terminal 1 of the controller and the white (or yellow) thermocouple lead is connected tightly to terminal 3 of the controller (see the electrical schematic in this control manual).

Check the thermocouple connections on the terminal strip in the panel to be sure that they are connected tightly. The white thermocouple lead is connected to the “+” terminal; the red or yellow lead is connected to the “-” terminal.

Plug the unit back in and turn on the unit and press the “START” button. If this does not correct the problem contact PLASTIC PROCESS EQUIPMENT INC. at 216-367-7000 or FAX # 216-367-7022.

WHY A PPE TEMP UNIT?

THE PROCESS

The PPE mold temperature control unit is normally used on molds, which are used in the INJECTION MOLDING industry. However, the PPE unit can be used on any mold.

Frequently individual molds on injection molding machines in a plant need different temperatures than that provided by a central chilled water system or central cooling tower water system. Also, machines running “engineering” materials such as nylon, ABS or other engineering resins need water at temperatures in the 120 °F to 200 °F range to the mold, because of the higher curing temperatures of the resins. A PPE mold temperature control unit can be used to supply this higher temperature to the mold. The “direct injection” mold temperature control units will use the fluid from the central system and circulate it to the mold. When cooling is required, a small amount of colder fluid from the central system is “injected” into the system to provide the cooling. If heating is required, the electric heater in the unit will be activated to heat the fluid.

If the fluid in the central chilled water system or cooling tower system is of a poor quality, it may be desired to isolate this from the mold completely. If this is desired, a PPE heat exchange mold temperature control unit can be used. This is a completely closed circuit unit that has the mold cooling fluid isolated from the central system cooling fluid by a heat exchanger.

THE PPE MOLD TEMPERATURE CONTROL UNITS

The standard “**direct injection**” PPE mold temperature control unit has a heater, tank, pump and controls to circulate water at the proper temperature to the molds.

Once the unit is in operation the general mode of the unit is one of cooling. If the temperature of the mold circuit water rises above the set point, the valve leaving the tank opens and water from the colder chilled water (or tap water) flows through the tank and into the system, thereby cooling the mold circuit water to the correct temperature. If the temperature of the water circulating to the mold is too cold, the electric heater will activate, to bring the water up to temperature.

The PPE “**heat exchange**” mold temperature control unit has a heater, tank, pump, heat exchanger and controls to circulate water at the optimum temperature to the molds.

Once the unit is in operation, the general mode of the unit is one of cooling. If the temperature of the mold circuit water rises above the set point, a valve in the system opens and allows water from the colder chilled water (or cooling tower water) to flow through one side of the heat exchanger to cool the mold cooling circuit on the other side of the heat exchanger. The central cooling water does not come in contact with the mold cooling water in the heat exchange mold temperature control unit.

SYSTEM MAINTENANCE

WATER/CIRCULATING FLUID

It is necessary to have a good quality water supply to the PPE unit. If not, scale and mineral deposits can collect on the heaters, causing premature heater failure. To maintain heat transfer efficiency, it may be necessary to chemically clean the heaters if scale develops.

PUMP

The bearings are located in and are a part of the electric motor. They are permanently lubricated. No greasing is required.

The pump is equipped with a mechanical seal. This seal should last for many years. If a new seal is required, it is available from PPE. Please have the PPE unit model and serial number available and the pump model, HP and serial number available when calling to order the pump seal.

VALVE

No Lubrication is required.

PRESSURE SWITCH

No maintenance is required.

PRESSURE RELIEF VALVE

If the valve develops a leak, it can be cleared by opening the valve for about 5 seconds allowing water to flow and clearing any deposits that may have developed, causing the valve to leak.

WARRANTY

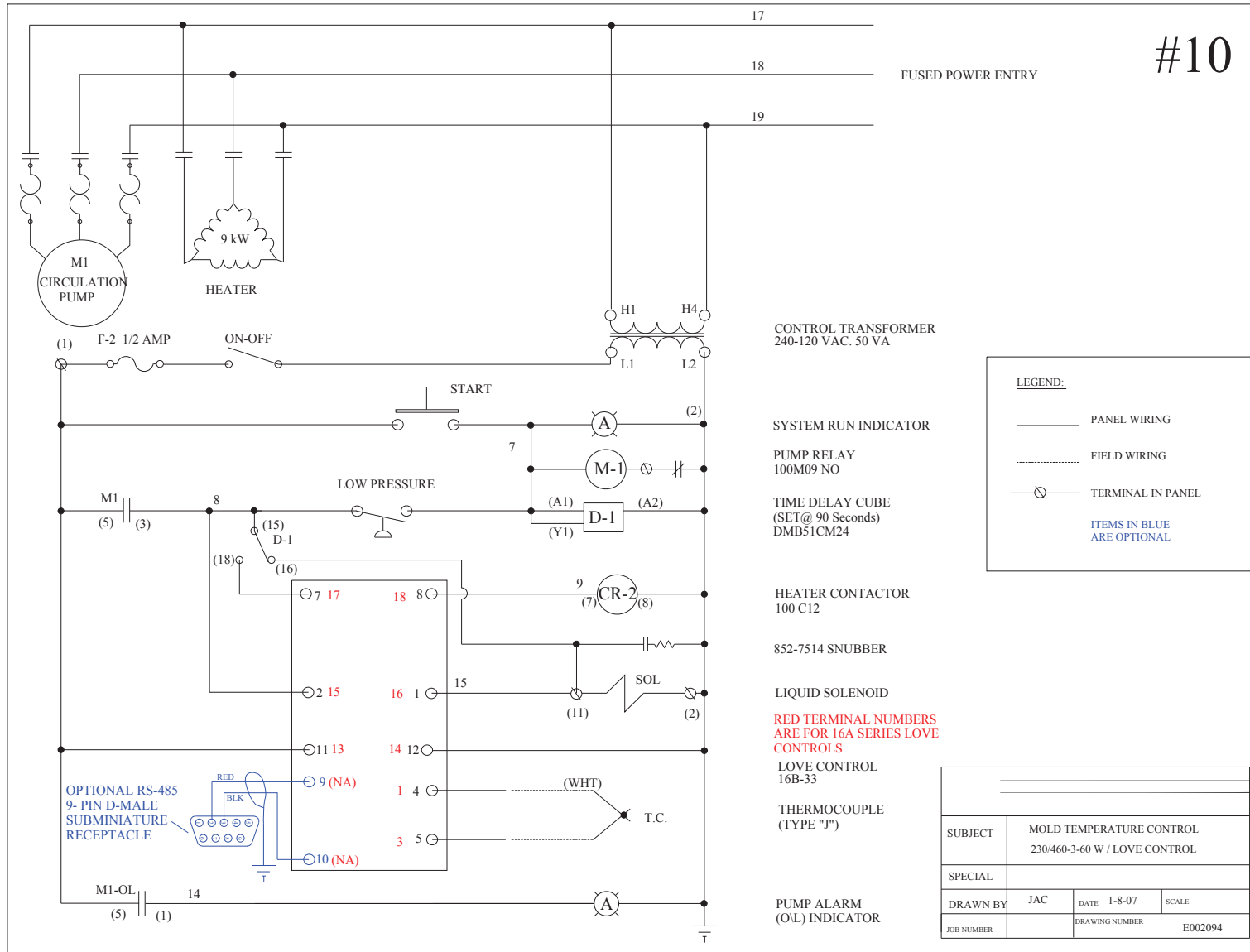
The manufacturer warrants all equipment manufactured by it to be free from defects in workmanship and material when used under recommended conditions. The manufacturer's obligation is limited to repair or replace, F.O.B. the factory, any parts which are returned freight prepaid within one year of equipment shipment to the original purchaser. Warranty is limited to the manufacturer's warranty on the components but in no case will it be less than one year. All components are subject to inspection at the manufacturer's factory. The warranty is limited only to those components which in the manufacturer's opinion are defective. Any replacement part assumes the used portion of this warranty.

This parts warranty does not cover any labor charges for replacement of parts, adjustment repairs or any other work. This warranty does not apply to any equipment which in the manufacturer's opinion has been subjected to misuse, negligence or operation in excess of the recommended limits including freezing. The warranty does not cover components which have been repaired or altered without the manufacturer's express, written authorization. Defective parts become the property of the warrantor and are to be returned. If there is an outstanding payment due on the unit, the warranty will not apply until payment in full has been received by the factory.

The manufacturer is not liable for any incidental, consequential or special damages or expenses. The manufacturer is not liable for parts not furnished as a part of its manufactured equipment.

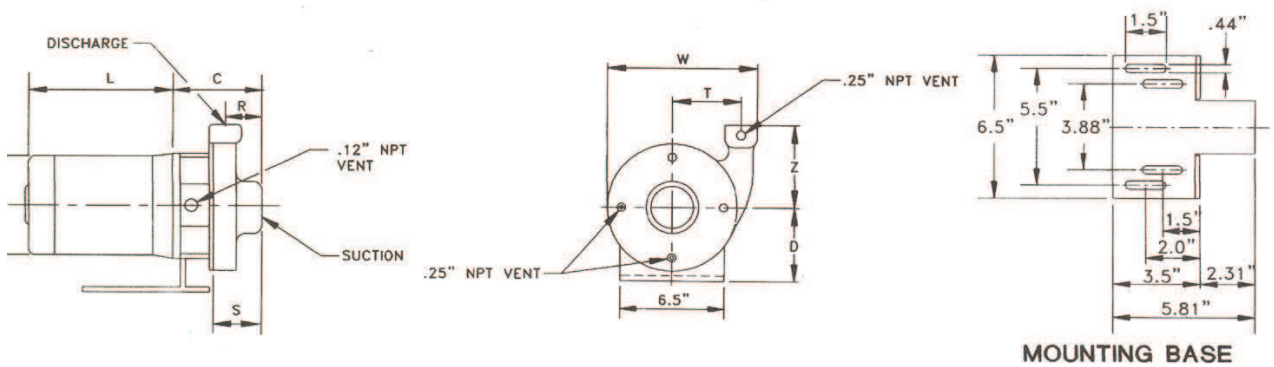
ELECTRICAL SCHEMATIC

#10



PUMP CURVE

MOTORPUMP™



PUMP DIMENSIONS - NPT

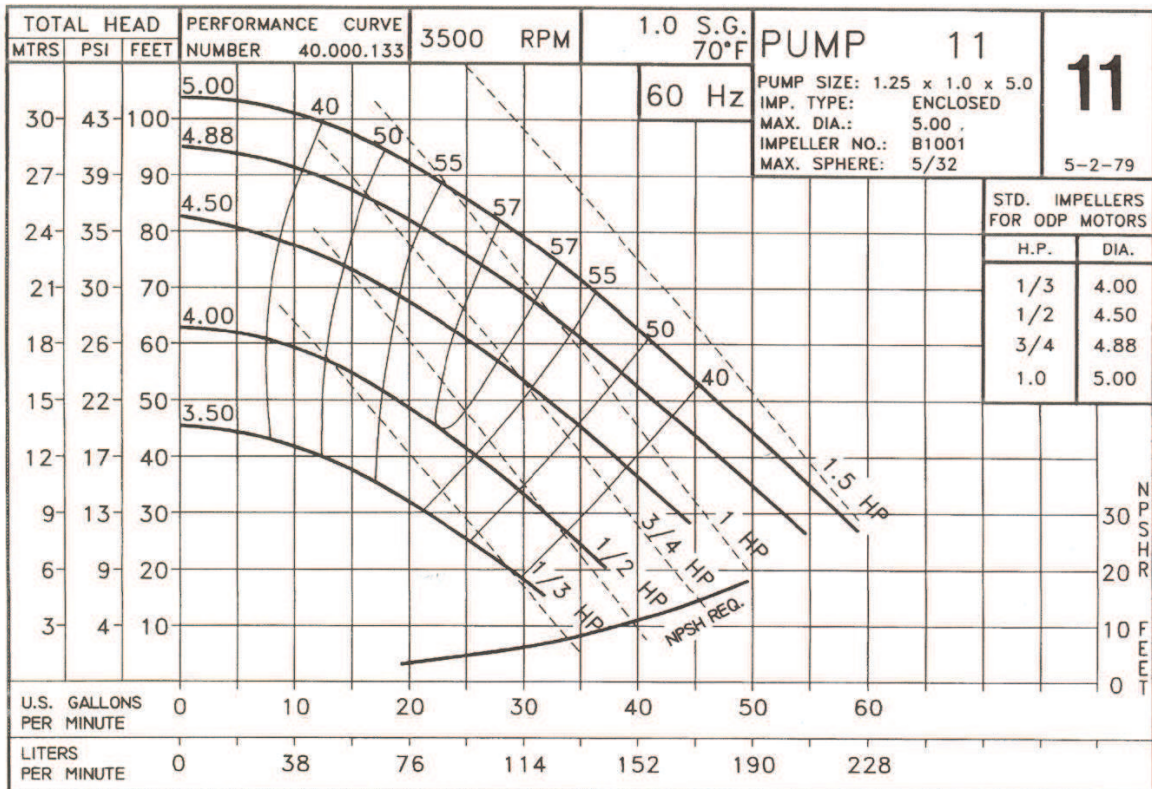
PUMP NO.	SIZE (NPT)		C	D	R	S	T	W	Z
	SUCT	DISCH							
11	1.25	1	4.87	4.19	2.13	2.88	3.13	7.88	4.88
12	1.25	1	4.43	4.19	1.81	2.50	3.13	7.13	3.75
60	1.5	1.25	5.25	4.19	2.62	3.25	3.13	8.25	4.88
16	2	1.5	5.88	4.19	2.50	3.88	3.13	8.25	4.75
27	3	2	6.94	4.19	3.25	4.94	N/A	8.00	7.00
69	1	.75	3.62	3.50	1.00	2.00	1.88	4.69	2.69
51	1.5	1.5	5.50	4.19	1.75	3.25	2.75	7.00	4.00
61	2	2	5.75	4.19	2.00	3.50	2.75	7.50	4.25

**MOTOR DIMENSIONS J56
3500 RPM OPEN MOTOR**

HP	L	O
.33, .5	8.63	6.50
.75, 1	9.25	6.50
1.5	9.88	6.50
2, 3	10.50	6.50

For TEFC Enclosure add 2" Max.

Pump No. 27 is center discharge. Therefore, the "T" dimension is not applicable.
For Pump No. 11 in bronze, refer to the Pump No. 12 dimensions.



CONTROLLER PARAMETER SETTINGS 16A

ITEM	Setting	Comments
SP1	75	Temperature set point
SP2	0	Deviation from SP1
Secondary Menu		
A1Lo	-5	Alarm Low
A1Hi	5	Alarm High
Out1	4tp	Output Selection: OnOf, 1tp, or 1PuL
Out2	onof	Output Selection: OnOf, 1tp, or 1PuL
SP2D	-4	Set Point 2 Deviation
TunE	Pid	Tuning Choice: Self, Pid, SLO, nor, FAST
Pb1	8	PID Parameters
Pb2	NA	PID Parameters
res	0.3	PID Parameters
rte	0.03	PID Parameters
Pid2	NA	
ArUP	OFF	Don't Change
ArtE	OFF	Approach Rate
Fint	50	Fuzzy intensity
Fbnd	8	Set same as Pb1.
FrTE	0.03	Set same as rte
PEA	NA	Highest peak since last on/off
UAL	NA	Lowest valley since last on/off
PctO	OFF	Don't Change
InPC	0	Input Correction
Filt	2	Use 2 for 0 and 4 for 0.0
Lpbr	OFF	Don't Change
Secure Menu		
SECr	4	Don't Change
InP	JIC	1P38 FOR RTD
Unit	F	F or C
dPt	0	Decimal Point Positioning 0 or 0.0
InPt	OFF	Don't Change
SEnC	OFF	Don't Change
SCAL	-100	-200 FOR RTD
SCAH	1600	875 FOR RTD
SPL	45	Set point Low
SPH	250	Set point High
Sp10	OutA	Don't Change
S1St	Dir	Output State; dir (cool) or rE(heat)
S1OL	0	Don't Change
S2OH	100	Don't Change
S1LP	Oon	Lamp
S2t	De	Type; AbSolute or DEviation from SP1
S2St	Re	Output State; dir (cool) or rE(heat)
S2OL	0	Don't Change
S2OH	100	Don't Change
S2rE	Onof	Reset , Automatic
S2Pi	OFF	Power Interrupt
S2iH	OFF	Inhibit till first cycle
S2LP	Oon	Lamp
AL1	HiLo	Function: OFF, LO, Hi, HiLo, Evnt
A1t	De	Type; AbSolute or DEviation from SP1
A1rE	Onof	Reset , Automatic
A1Pi	OFF	Power Interrupt
A1iH	OFF	Inhibit till first cycle
A1St	Clos	Output State
A1LP	Oon	Lamp
A1Lb	OFF	Loop Break

CONTROLLER PARAMETER SETTINGS 16B

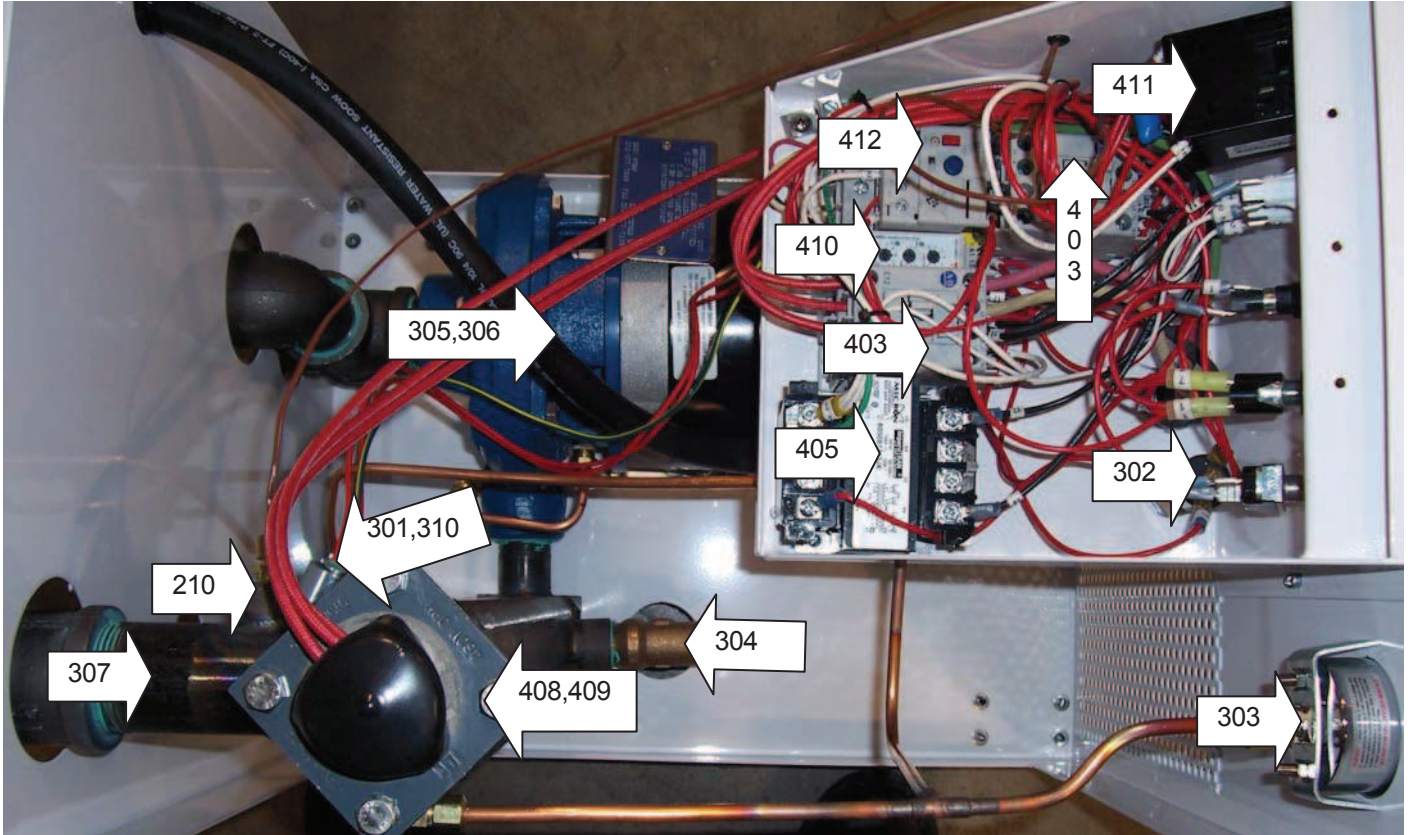
Love Controller Parameter Settings MOLD TEMP 16B

ITEM	Setting	Comments
Operation Mode		
SV	175	Temperature set point
r-S	rUn	Control setting RUN or STOP
SP	0	Decimal position
AL1H	5	Upper limit alarm 1
AL1L	5	Lower limit alarm 1
LoC	OFF	Setting lock mode
Regulation Mode		
At	OFF	Auto tuning
HtS	2	Heating hysteresis
CtS	1	Cooling hysteresis
CoEF	1	P value of 1st & 2nd output group during dual loop control
dEAd	0	Dead band
tPoF	0	Regulate temperature value
Initial Setting Mode		
InPt	J	Set input type
TPUn	F	Set temperature unit
tP-H	250	Upper limit of temperature range
tP-L	45.0	Lower limit of temperature range
Ctrl	OnOf	Sets control mode
S-HC	H2C1	Select heating/cooling control
ALA1	1	Alarm 1 mode setting
ALA2	0	Alarm 2 mode setting
SALA	OFF	Set system alarm
CoSH	OFF	Communication write function
C-SL	ASCII	ASCII, RTU format
C-no	1	Communication address
bPS	9600	Communication Baud rate setting
Len	7	Data length setting
PrtY	EVEN	Parity bit setting
StoP	1	Stop bit setting

UNIT MODELS

MFT0752C, MFTC0754C, MFTC1002C, MFTC1004C

SPARE PARTS LIST WITH PHOTO ID



PPE Mold Temperature Controllers

Item #	Item Name	Description
OT000301	SV8262G202	Solenoid Valve, 1/4"; 120/1/60
OT000310	SV8262G202Coil	Solenoid Valve, 1/4"; 120/1/60 COIL
OT000210	Tcouple,J	Thermocouple, J
OT000302	PresSwitchMTC	Pressure Switch for MTC, Nason
OT000303	Press.GageStl	Pressure Gage, Steel Case; 2" dial
OT000304	PresRelMTC	Pressure Relief Valve, 3/4"; 150 PSI
OT000305	ScotPump3/4HP	Pump, Centrifugal, 3/4 HP, 3/50/60/200-230/460
OT000306	ScotPump1HP	Pump, Centrifugal, 1 HP, 3/50/60/200-230/460
OT000307	TankMTC	MTC Heater Tank with Heater Flange and Fittings
OT000401	Timer,MTU **	Timer Delay Part# TGL1100A4 (Note: Units only prior to 11/2004)
OT000402	OMRLY2REL **	Control Relay (Note: Units only prior to 11/2004)
OT000403	ReMoCo C12NC	Heater Relay
OT000404	Love16A2133	Love Temperature Controller
OT000405	Trnsformer120	Transformer, Control
OT000406	ReMoCo M09NC **	3 Pole relay (Note: Units only prior to 11/2004)
OT000407	MotStrOL1.6-5 **	OV Bk for Mtr Str, 1.6-5 Amps (Note: Units only prior to 11/2004)
OT000408	H-9KWFLN2403	Heater, Flange, 9KW, 240/3/60
OT000409	H-9KWFLN4603	Heater, Flange, 9KW, 460/3/60
OT000410	Timer, Multit	Multifunction Timer PN DMB51CM24
OT000411	Love 16B/C	Love Temperature Controller 16B/C rev 1/8/07
OT000412	MotStrOL1.0-5 AutoReset	Overload Block for Motor Starter, 1.0 to 5 Amps
OTMFTSeal	Scot Seal Kit .75,1.5	Seal Kit for Scot Pump, .75 and 1 HP

** These Components Were Used Only In Units Manufactured Prior to 11/2004.

NOTES