Vac-U-Temp

VT-1800, VT-2600, VT-3000, VT-26-100

~ *Includes* VT-4000 ~

OPERATOR'S MANUAL

www.LogicSeal.com

(800) 325-6442

FAILURE TO FOLLOW CORRECT OPERATING PROCEDURES MAY DAMAGE UNIT

PLEASE READ THIS MANUAL THOROUGHLY

LogicSeal
Negative pressure, positive results.

VAC-U-TEMP OPERATOR'S MANUAL*

Table of Contents

***Pages 21-25 for *"VT-4000-specific"* information**

Note on VT-4000: **Not Stock item – this is a special *Made-to-Order* Unit**

LEAK STOPPING WITH A NEGATIVE PRESSURE SYSTEM

The reason fluid leaks out from inside of a mold is because the pressure of the fluid inside is greater than the pressure of the air outside. If you had a small hole on a hose, for example, and the pressure of the air pushing in on it was strong enough, it would keep the fluid inside the hose. Since it is impractical to increase the pressure of the atmosphere, a Logic Seal Unit provides a way to decrease the pressure of the fluid to the point where the air holds it in. When using a “Leak Stopper”, the fluid is pulled through a mold to lower pressure. In all other circulating systems the fluid is pushed through, which increases pressure. Regulating the fluid pressure to a mold does not necessarily reduce the fluid flow.

Because the Logic Seal Unit draws a vacuum on the “FROM MOLD” line, the over-all pressure drop remains the same or even increases. This means that there is no loss of cooling flow and in some cases it may even be improved. Briefly, here is what is happening: the Regulator controls the pressure going from the Pump to the mold, increasing it as you turn the screw clockwise and decreasing it as you turn it counter-clockwise. These changes may be monitored by the “TO MOLD” Gauge. Fluid returning to the Vac-U-Temp enters the reservoir above the Pump, which is held under high vacuum.

The total pressure drop between the “TO MOLD” port and the “FROM MOLD” port is therefore a function of the difference in pressure between the Regulator and the Reservoir.

When the Regulator is turned all the way out, pressure from the Pump is cut off and flow in the circuit is only possible if the vacuum force from the Reservoir is sufficiently high to draw the Regulator's internal valve open. In this case, the entire circuit is under negative pressure and no leakage is possible. As the Regulator Screw is turned clockwise, more and more positive pressure is allowed into the circuit, which serves to push the zone of negative pressure back toward the Reservoir. As a test, you may observe this process by placing a jumper hose between the “TO MOLD” and “FROM MOLD” ports. Cut the hose halfway through and follow the leak stopping procedures.

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Logic Seal Operations

It is an Open Loop Unit. (Process Water is not held in Unit)

Logic Seal uses a Progressive Cavity Pump

To generate Vacuum in a Logic Seal you must restrict flow to Pump. If we use a LS-400 as an example, Pump has a 24 GPM capacity. To create a vacuum we must lower the GPM going to the Pump. If we have too little flow through the Pump, we are causing the Pump to “Run Dry” and will cause premature wearing of Pump parts. 50% minimum flow, give or take a few, is a general GPM # to shoot for. So with the LS-400, a minimum of 12 GPM is the lowest number to look for.

Logic Seals may be hooked in-line with any competitors’ Temperature Controller or Chiller. This will work but has its drawbacks because of the way most Temperature Controllers and Chillers work.

In 90% of these types of Controllers, they take a certain PSI of incoming water and boost. This causes the internal pressures of the Controller to be above the capacity of most Logic Seals, causing them to shut down. So a somewhat complicated hookup is required between the Units to lower pressures enough for the Logic Seal to run properly. The Logic Seal also has a maximum temperature of approximately 180º, depending on vacuum; this may be slightly higher or lower.

Vac –U–Temp Operations

It is a Closed Loop Unit. (Process Water Remains in the Unit)

Vac-U-Temp uses a Centrifugal Pump

To generate vacuum, the VT uses a separate Vacuum Venturi, with the customers’ compressed air. Through this method, we do not rob Pump Pressure or Max GPM of unit to create a vacuum.

Because the VT is also a Temperature Controller, the need to hook up an additional Unit in-line is not necessary. There is no need to size a VT for minimum flow as with the Logic Seal Units. Centrifugal Pumps cannot be harmed by too little or too much GPM. We use a 6kW Heater and 3.2 sq ft Heat Exchanger to keep process fluid at the set temperature for job.

Vac-U-Temps can be run up to their Maximum Temperature, (200º for the VT-1800 and 260º for the VT-2600), using the proper fluid, regardless of vacuum.

Both the VT and Logic Seal are designed to stop leaks. And both do so better than anything our competition has to offer. But it is very important that we “size” the Unit correctly and confirm how our Customer will be using the Unit before the purchase is made. This will insure that the Unit will work right for each application and last for many years to come.

Unpacking and Inspecting

Vac-U-Temps are shipped on supports that allow the use of a fork lift to remove the Unit from the pallet.

Remove plastic plugs from all plumbing ports. These plugs are only used as thread protection during shipping; they will not withstand the pressures or temperatures of an operating Unit.

Although the Unit may be intact externally, it is always wise to check for internal damage caused by excessive vibration or impacts during shipping.

Open the electrical box and make sure there are no loose wires or components.

Open the door and check that all tube fittings have a tube connected to them securely.

If you have any questions or concerns contact Logic Seal, Inc.
Sales and Service (800) 325-6442 / (800) 32-LOGIC

Connecting a Power Cord

CAUTION: *ELECTRICAL CONNECTIONS OR CHANGES SHOULD ONLY BE DONE BY QUALIFIED PERSONS WHO ARE FAMILIAR WITH PROPER ELECTRICAL SAFETY PROCEDURES*

Check machine serial plate for the power requirements of this Unit and be certain that the correct voltage and amperage is available in the area where the Unit is to be used.

~ ALWAYS USE A PROPERLY GROUNDED CORD ~

Mount a UL approved cord with the appropriate “Strain Relief” through the hole provided at the back of the Unit.

Be sure that the Unit has the proper ground connections for safe operation.

Making direct connections to a circuit breaker or fuse box is not recommended.

***Important:* UNPLUG UNIT WHEN NOT IN USE!**

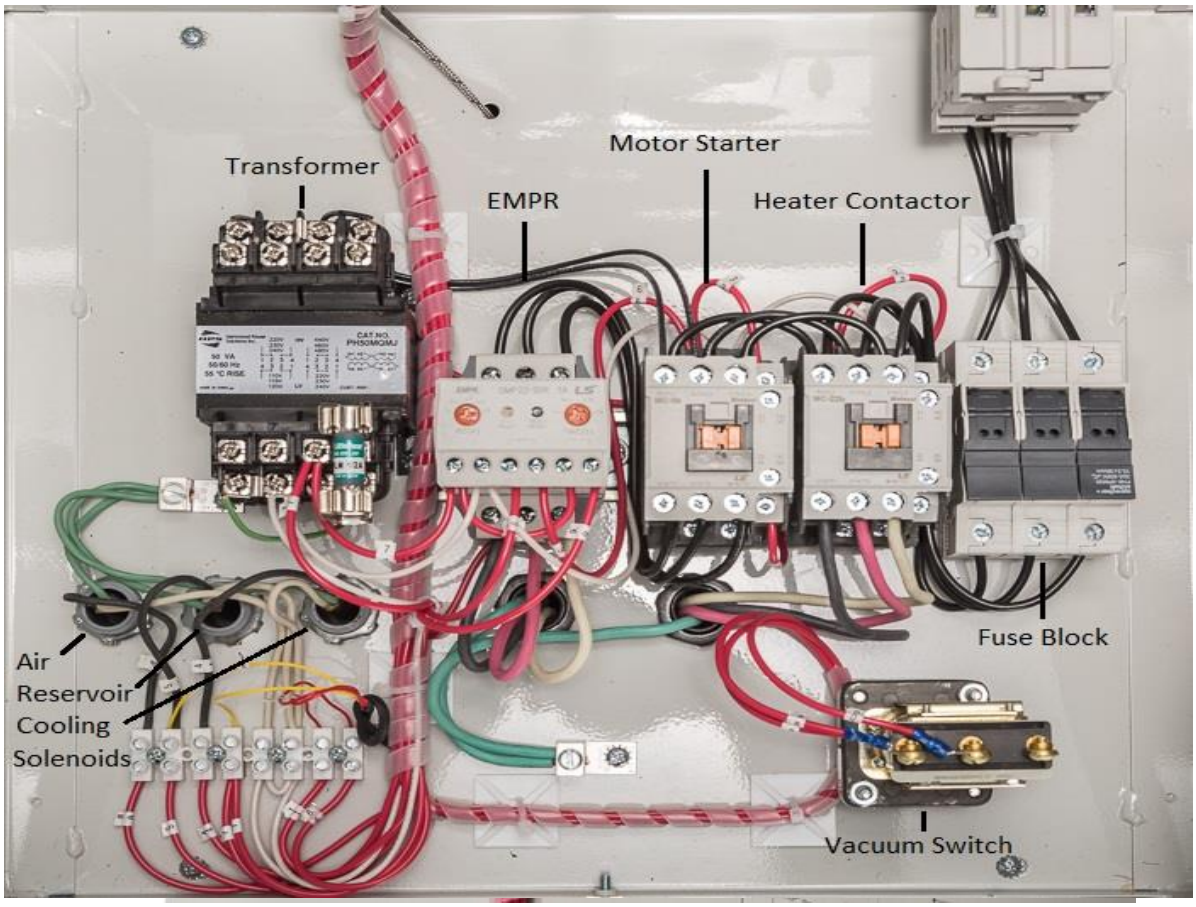

Illustration 2: VT Electrical Lid

Illustration 3: VT Base Electrical

Hose Connections

For maximum efficiency, use hoses that are the same diameter as the Ports to which they are connected. “Quick Release” fittings that are not vacuum-rated are not recommended on the “TO” and “FROM” Mold hoses as they may impair the use of the Unit as a Leak Stopper because under vacuum they themselves will leak.

NOTE: ALL HOSES USED IN THE “TO MOLD” AND “FROM MOLD” CIRCUIT MUST BE VACUUM-RATED OR THEY MAY COLLAPSE DURING USE.

1) Manual valves should be mounted externally to all ports on the Unit. This will aid setup and test procedures
2) When using the Vac-U-Temp as a leak stopper you will have maximum coolant flow when the “TO MOLD” line is connected to the mold at the point farthest from the leak. (For details, see section “Pressure Drop across a Mold”)
3) Connect COOLANT SUPPLY, COOLANT RETURN and RESERVOIR SUPPLY to the appropriate ports
4) To the AIR INLET, connect a source of compressed air capable of delivering a minimum of 7.8 SCFM at 80 PSI
5) Connect TO MOLD and FROM MOLD lines to the mold. Have both these valves off (You may loop them together if not ready to hook up to a mold)

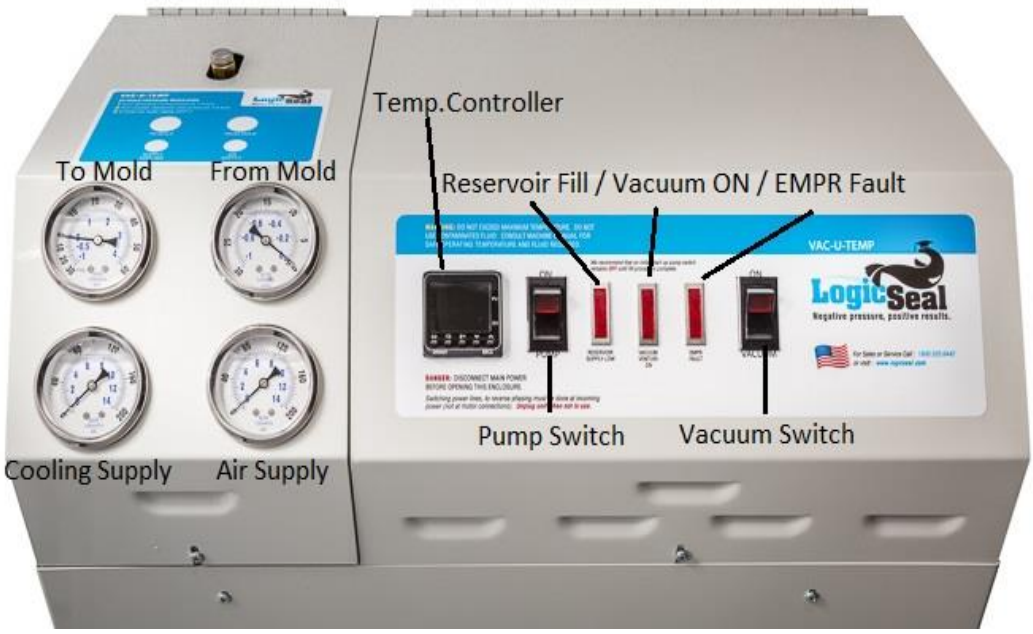

Illustration 4: VT Front Controls

Vacuum On-Switch (Pre-Vac

Vacuum Switch On, Pump Switch Off is used to avoid fluid loss and for safety reasons by placing the system under vacuum before Pumping begins. It is also used for filling the Reservoir Tank when a pressurized line is not available.

Reservoir Filling

The VT-1800, 2600 and 3000 are designed to be run on Water, Water Glycol or approved Thermal Transfer Fluid. Because the VT is a Negative Pressure machine, and water will boil at temperatures lower than 212°F under a Vacuum, it is important to choose the proper Process Fluid for your needs.

1) Click Safety Disconnect to the ON position.
2) Turn Vacuum Switch ON. (Once ON, the AUTO FILL sequence will be activated)(Vacuum is preset at the Factory at 15 hgs)
3) Open Cooling Supply, Cooling Return and Reservoir Supply Valves
4) Reservoir will be completely filled when the Reservoir Supply Light on the front of the Electric Enclosure goes out. (This light will activate on and off when the MOLD Circuit is opened to allow the circuit to become completely filled

Illustration 5: Regulator

Initial Start-Up Adjustments with Mold

We recommend that on initial start-up, the Pump switch remains OFF until fill process is completed.

Back the regulator screw all the way out (counter clockwise). Then turn the screw in (clockwise) until you just feel it hit the internal spring button. In this position, the regulator is off and ready for adjustments to a new molding setup. The adjusting screw should be returned to this position for each new molding setup.

Negative Pressure Operation

With “TO” and “FROM” mold valves closed, and the vacuum switch on, observe the frequency of Venturi going ON. (Vacuum should hold for more then 1 Minute without cycling on again).

Open up “FROM MOLD” valve and observe frequency of Venturi going ON. (This tells you size of leak in mold and connections.

Turn Pump ON and very slowly open “TO MOLD” valve until fully open.

Now that the Vac-U-Temp has been properly connected to the mold, the Unit may be "tuned" to your requirements using the following method:

1) With the Unit running, turn the Regulator Screw clockwise until the Mold begins to leak

2) Back the screw out until the leak stops. Do not turn the screw any further than is required to just stop the flow of water from the leak. This will reduce the pressure differential across the mold, and in turn, reduce the flow rate within the system

3) If you require a greater flow rate through the mold, increase the vacuum in the reservoir by small increments (not more than ten "clicks of the Vacuum Control Knob, i.e., not more than 1" or 25mm Hg. at a time) repeating steps 1 and 2 above between adjustments. Allow a few seconds for the system to reach a point of equilibrium following each adjustment before deciding to make further changes

IMPORTANT: It should be noted that there is a physical limit to the degree of vacuum that can be used at certain temperatures due to the effect of Pump Cavitation. As the temperature rises be alert for signs of Cavitation. Cavitation is evidenced by a Pinging or Popping at the front of the Pump. If this occurs, lower the Vacuum Control setting.

WARNING: PROLONGED OPERATION OF THE UNIT WITH THE PUMP CAVITATING WILL RESULT IN DAMAGE TO THE PUMP.

Applying Glycol to Vac-U-Temp Units:

When water is put under a vacuum it lowers the point at which the water will boil.

In a normal Temperature Controller, the water is under pressure so boiling is not an issue until the temperature goes way up.

Our machines keep most of the fluid under a vacuum so the temperature and amount of vacuum are important.

Adding Ethylene Glycol raises the Boiling Point of the water so it can be used at higher temps under higher vacuum.

The Vac-U-Temp is a closed loop system, so none of the process fluid leaves the Unit.

Vac-U-Temps are equipped with a separate Reservoir Supply port, so adding Glycol to the Vac-U-Temp is easy.

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SPECIAL NOTE: In those instances where the leak is actually inside the mold cavity, the high vacuum that occurs briefly when the mold opens may cause some of the coolant to be drawn into the cavity despite the leak stopping capabilities of the Vac-U-Temp. In these cases, the tool must be in production before the correct adjustment of the Regulator and Vacuum Control settings can be made. Occasionally this effect cannot be overcome by means of adjustment, and some means of shutting off the flow of coolant just prior to mold opening must be provided in order to eliminate leakage. Logic Seal can provide information and accessory Units to accomplish this.

Temperature Control System Check

Before running the Unit with a mold for the first time, the control and its related system should be tested for proper operation.

With the Unit connected to a mold, adjust the Temperature Control to desired setting and allow the water to circulate until the reading on the Temperature Controller matches the setting of the control. The Temperature Controller needs no TUNING. It is a simple ON / OFF controller that will hold temperature within 1 degree of set point.

Note: Because of the size of the heat exchanger and placement of the thermocouple it may be necessary to restrict outgoing cooling water to alleviate the appearance of dramatic temperature drop.

Under no circumstances should the water be turned completely off, as this may damage the Unit.

Fixing Problem Leaks

Multiple Leaks on a Single-Mold Circuit

If there are two or more leaks on one mold circuit and they are grouped toward one end, they should be treated as a single large leak. However, if they are distributed almost evenly throughout the circuit, then the flow cannot be maximized for flow in one direction or another. (See section “Pressure-Drop across a Manifold”)

Leaks into Mold Cavity

In a few cases, if the leak is directly into the cavity or core, the draw of the part when the mold opens or upon ejection will cause a temporary high suction that may draw out coolant if the Logic Seal is not adjusted for a high enough vacuum. In these cases, of course, the tool must be in production before a final adjustment can be made. In extreme cases, it may be necessary to shut the flow off just prior to the mold opening to eliminate any leakage.

This can be done by installing a Solenoid on the “TO MOLD” line that is closed by one of several methods: the clamp open signal from the molding press, a cycle timer, or a parting switch between mold halves. The most effective signaling method will depend upon the type of cavity leak. **For free consultation call Logic Seal at (800) 325-6442 (800-32-LOGIC).**

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Vac-U-Temp Maintenance Steps

1) Clean Unit in preparation of inspection. Check and clean, or replace all filter screens. DO NOT operate without screens. **Note:** Screens are located in the Reservoir and Cooling Supply Ports

2) Isolate Unit by running a hose from TO MOLD to FROM MOLD only

3) Check current and voltage on and across each phase of Motor and Heaters

4) Check condition of heater relay and motor starter relay, if pitted or defective in any way – replace

5) Check for wire connection throughout the Unit – tighten firmly, check grounding connection

6) Check Upper Float Switch to be sure that fill Solenoid turns OFF when up, ON when down. And check that when Lower Float Switch is down – Pump is OFF; up – Pump is ON

7) Check flow of water through heat exchanger to an open drain or bucket – should be very free-flowing

8) Check heat transfer fluid condition – refer to heat transfer fluid info

9) Run Unit under vacuum. Once setting has been achieved and temperature is not changing, vacuum should hold for at least 1 minute without Venturi going back on – if it falls, look for a leak

10) Check auto-fill Solenoid. When off, check that it is fully closed. When under vacuum, hold finger over supply port, no vacuum should be there when Off

11) Check power cord – make sure it is being used on a properly fused and grounded outlet

Problem Solving

When performing tests that involve the use of the front panel gauges, be aware that a faulty gauge can give misleading results. With Unit off, release “FROM MOLD” line so vacuum goes to “O.” TO and FROM Mold Gauges should read “O” at this point. If you question the accuracy of the Unit's gauges, perform tests with an external gauge.)

Vacuum will not reach set level:

Inadequate air pressure or volume: The Unit should have a minimum air supply pressure of 80 psi at a volume of 0.76 SCFM (5.4 bars at 21.5 1/min.) for proper operation.

Venturi plugged: The Venturi Unit, is susceptible to plugging if used with an unfiltered air source. If it plugs, remove, disassemble, and clean it. Place a filter on the airline to reduce the need for such maintenance in the future.

Float Lid & O-ring: Make sure Float Lid O-ring Groove and O-ring are clean and free of any debris. A light wire brush may be used on the brass Float Lid.

Internal vacuum leak: Apply the same test as outlined previously for this problem.

Faulty vacuum control or air Solenoid valve: If there is an interruption of the air flow which opens the vacuum in Venturi's inlet to the air supply line, it will prevent the build-up of vacuum force in the reservoir. This can be caused by:

Plugging of the Vacuum Control Line:

Defective Vacuum Control:

1) Open (shorted) circuit between Vacuum Control and Air Solenoid Valve
2) **Defective Air Solenoid Valve:** In order to determine whether or not this system is working, listen for the rush of air through the Solenoid Valve, Venturi, and Muffler. For the purpose of this test, you may need to create an artificial leak to cause the Solenoid Valve to open

Vacuum will not build up to level set on Vacuum Control:

1) Too much air entering from the system
2) Check to see that the problem is not caused by leaking hoses or fittings. Refer to section above entitled “Problem: use of improper disconnects fittings”
3) Re-adjust the Regulator in accordance with the directions given in section 5.4 “Negative Pressure Operation” (Leak-Stopping). Take extra care to see that the leak just stops. Do not turn the Regulator Screw any further out than is absolutely necessary to accomplish this.

Very large leak
If the leak in the mold is quite large, it will tax the ability of the Vac-U-Temp to stop it. This will be evidenced by a low reading on the Vacuum Gauge and by the continuous flow of air through the Venturi System. The User can turn up the volume on the vacuum which is at a set point done here at our Factory.

Water emerges from Venturi

High-Level Float sticking: The reservoir of the Vac-U-Temp contains a Float Switch, which is designed to prevent overfilling. Occasionally, however, a build-up of debris on the shaft of the float mechanism will cause the float to stick. To correct the situation, remove and clean the Float Switch.

Supply Solenoid: Remove and clean the Solenoid valve and screen

Temperature too high: Temperature is set too high for the vacuum running on the Unit and causing the Process Water to Boil. Lower Temperature or Vacuum.

Water emerges from Venturi, *(Float Switch or Supply Solenoid are not at fault)*

Water can be found entering from the airline. This problem is usually caused by an improperly adjusted Regulator, causing excessive turbulence in the Reservoir. Under ideal circumstances, the pressure in the mold's water passage at the site of the leak should be only slightly below atmospheric pressure--just enough to prevent water from leaking out but not enough to cause a large amount of air to be drawn into the system. The Reservoir of the Vac-U-Temp features an internal baffle, which is designed to separate the air from water returning. It does this with great efficiency unless the quantity of air in the water becomes excessive. To correct this situation go back to the adjustment instructions in the section, “Negative- Pressure Operation (Leak-Stopping)”

Rapid temperature drop during cooling cycle
If rapid temperature drop occurs, restrict outgoing cooling water.

EMPR (Electric Motor Protection Relay) Overload / Phase Monitor

EMPR LED will flash **RED** on and off, this indicates a Motor Overload. Check Motor Amperage. It may be necessary to adjust the EMPR RC (A) Dial slightly to alleviate nuisance tripping.

EMPR LED will alternate **RED / GREEN** to indicate a PHASE Fault. Switch 2 of the incoming lines.
Never switch the Overload or Motor Wires.
(Pump And EMPR Overload Wires should always be **Black 1 / Red 2 / White 3**)

Vac-U-Temp Motor Phasing and Proper Pump Rotation

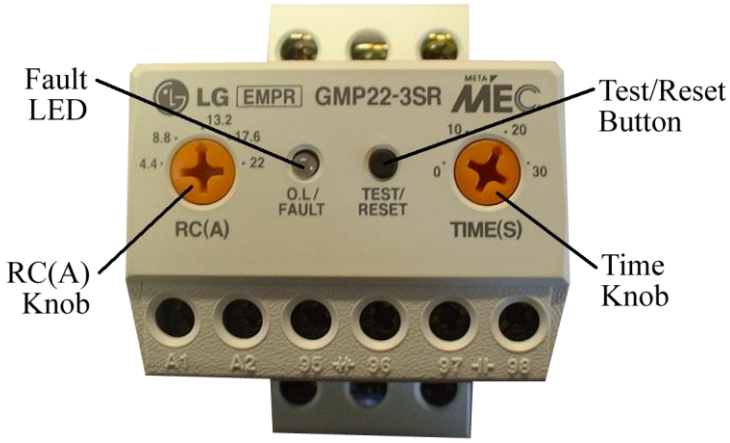
Motor Phasing: If the EMPR LED is flashing Red / Green this is an indication that the Unit is out of Phase.

Change any 2 of the 3 incoming power lines:
Generally just switch **RED** and **BLACK** incoming lines. This should correct the Phase Fault.

Proper Pump Rotation:
Now with the TO Mold Ball Valve closed Turn the Pump switch ON.
The To Mold Gauge should be reading close to 40 psi.

If To Mold Gauge is only reading 5 to 15 psi the Pump maybe running backwards: Shut Pump Switch OFF and UNPLUG the Unit to change 2 of the Motor Power leads at the EMPR and switch back your incoming power line. Plug VT back in and turn Pump Switch ON with the TO Mold Ball Valve still in the closed position, the TO Mold gauge should be reading close to 40 psi.

The motor is now in phase and Pumping with the correct rotation.



Draining the Unit for Storage or Shipment

Should it be necessary to ship the Vac-U-Temp to another location or to return it to Logic Seal for repair, the Unit must be properly prepared so as to avoid the possibility of severe damage or environmental contamination. Water left in the Unit's plumbing will freeze during air shipment (or surface shipment during cold months) and crack or distort the pipes and castings. Oil left in the Unit will spill during shipping. In addition to environmental concerns, oil clean-up can be very costly.

With Unit in cooling mode, disconnect Cooling Supply and Cooling Return. Introduce air into the Cooling Supply line at no more than 10 psi. This will remove all water from the Heat Exchanger. Water left in will freeze during the cold months. Disconnect the TO Mold and FROM Mold hoses from your Manifolds. Connect a hose between TO and FROM Mold on Unit.

For Oil Units proceed to step 6

On a Water Unit:

1. Open drain-port at front of Pump and drain approximately 1 gallon of water
2. Use a funnel to pour approximately 1 U.S. gallon (6 liters) of ethylene glycol into the Unit by way of the “FROM MOLD” port
3. Turn the Power Switch ON and allow the Unit to run for a few minutes
4. Drain the Unit
5. Turn the Regulator Screw fully clockwise before crating the Unit

Check Oil Condition

6. It is recommended that the condition of the any Thermal Transfer Fluid be checked every One Thousand Hours (1,000) if it ever becomes necessary to remove all oil, disconnect hoses before draining.

Other Products & Services from Logic Seal:

WATER TRANSFER TIMER & PACKAGE *(see Options grid-box on Quote)*
Includes all necessary plumbing and electronics for the Water Transfer Process

LOGIC SEAL
The original Leak Stopper was invented using negative pressure to solve molding problems. Multiple capacities to assure maximum performance for your application

Any concerns or technical questions, please call to speak to our Production Manager, Gary Rogers at (800) 325-6442 xt 402 or email him at: Gary@LogicSeal.com.

Thank you for supporting Made in America!

PATENT INFORMATION:
LOGIC SEAL, U.S. # 4,278,230
VAC-U-TEMP, U.S. # 4,287,941
CLUSTER VALVES, U.S. # 4,257,775
WATER TRANSFER, U.S. # 4,151,243
CONTACT COOLING, U.S. # 4,177,238
WATERLINE VENTING, U.S. # 4,091,069

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Vac-U-Temp Replacement Parts

Description	Part #
Motor Starter	E CNTR-3-110
Heater Contactor	E HTRCNTR-SP23
EMPR E	EMPR 1-5
EMPR (VT-26-100 240 Volts)	E EMPR 4.4-22
3 Pole Fuse Block	E FUSBLCK 3POLE
1 Pole Fuse Block (VT-1800-1 Only)	E FUSBLCK 1 POLE
6 kW Heater	E HTR6KW
3 kW Heater (VT-26-100 Only)	E HTR3K 277V
Red Rectangle Light	E P-LGTRECT RED
Rocker Switch	E SW-ROCKER
Safety Disconnect Switch	E SW DCON-32
Safety Disconnect Switch Handle	E SW DCON-H
Vacuum Switch	E SWVAC
Dual Float Brass	E SW2FLT
Thermal Coupler	E THRMO-VT
1/4” Solenoid (Reservoir and Air Supply)	E SLND1/4 NC110
1/2” Solenoid (Cooling Supply)	E SLND1/2 110NC
Control Transformer	E TRNS-V050
2” Swivel Caster	H CSTR2
2” Rigid Caster	H CSTR2NS
3” Swivel Caster (VT-26-100)	H CSTR3
3” Rigid Caster (VT-26-100)	H CSTR3NS
Check Valve Assembly	K CKV3/8FXF
Vacuum Venturi (Needs Short Muffler)	P VEN-32W/1/4VP
Short Muffler	P VEN-MUFFLER
3.2 sq ft Heat Exchanger	P HEAT-EX-3.2
5.6 sq ft Heat Exchanger	P HEAT-EX-5.6
3/4” Watts Regulator (VT-1800-3, VT-1800-1)	P REG-3/4-WR
1” Watts Regulator (VT-1800 C/ VT-2600)	P REG-1-WR
11/2” Watt Regulator (VT-26-100)	P REG-1-1/2-WR
30-0-60 2 1/2” Gauge (To Mold)	P GA30-60
30-0 2 1/2” Gauge (From Mold)	P GAVAC
0-200 2 1/2” Gauge (Cooling and Air Supply)	P GA0-200-DF
3” Float Lid O-ring	R ORING#327
High Temp 3” Float Lid O-ring (VT-3000 only)	R ORING#327-V
Burke Pump O-ring	R ORNG-BPMP
Burke Pump Seal	R SEALMV
Sta-Rite Pump Seal	R SEAL1826
2” High Temp Hose (Tank to Pump Connection)	P L-2 OD HOSE

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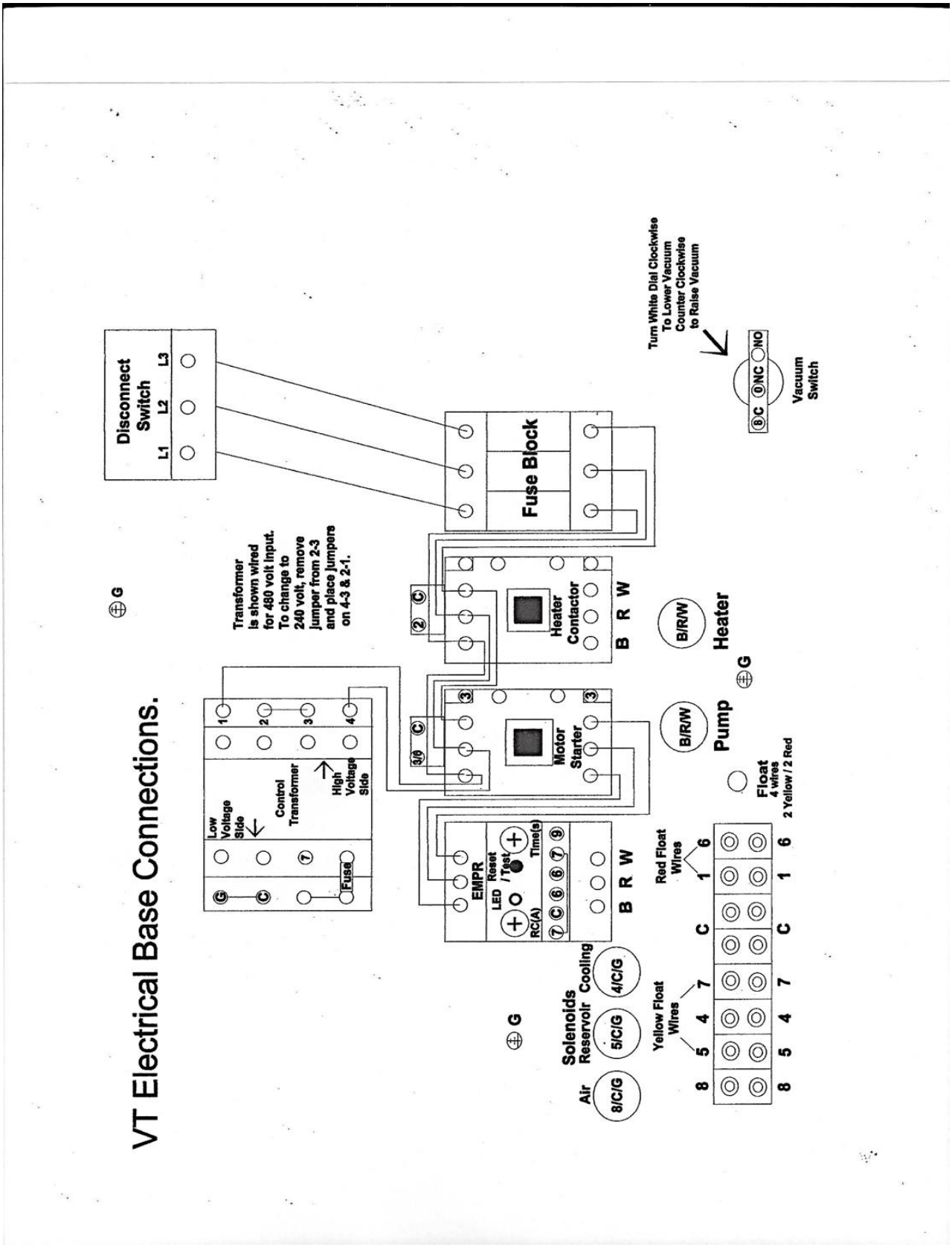
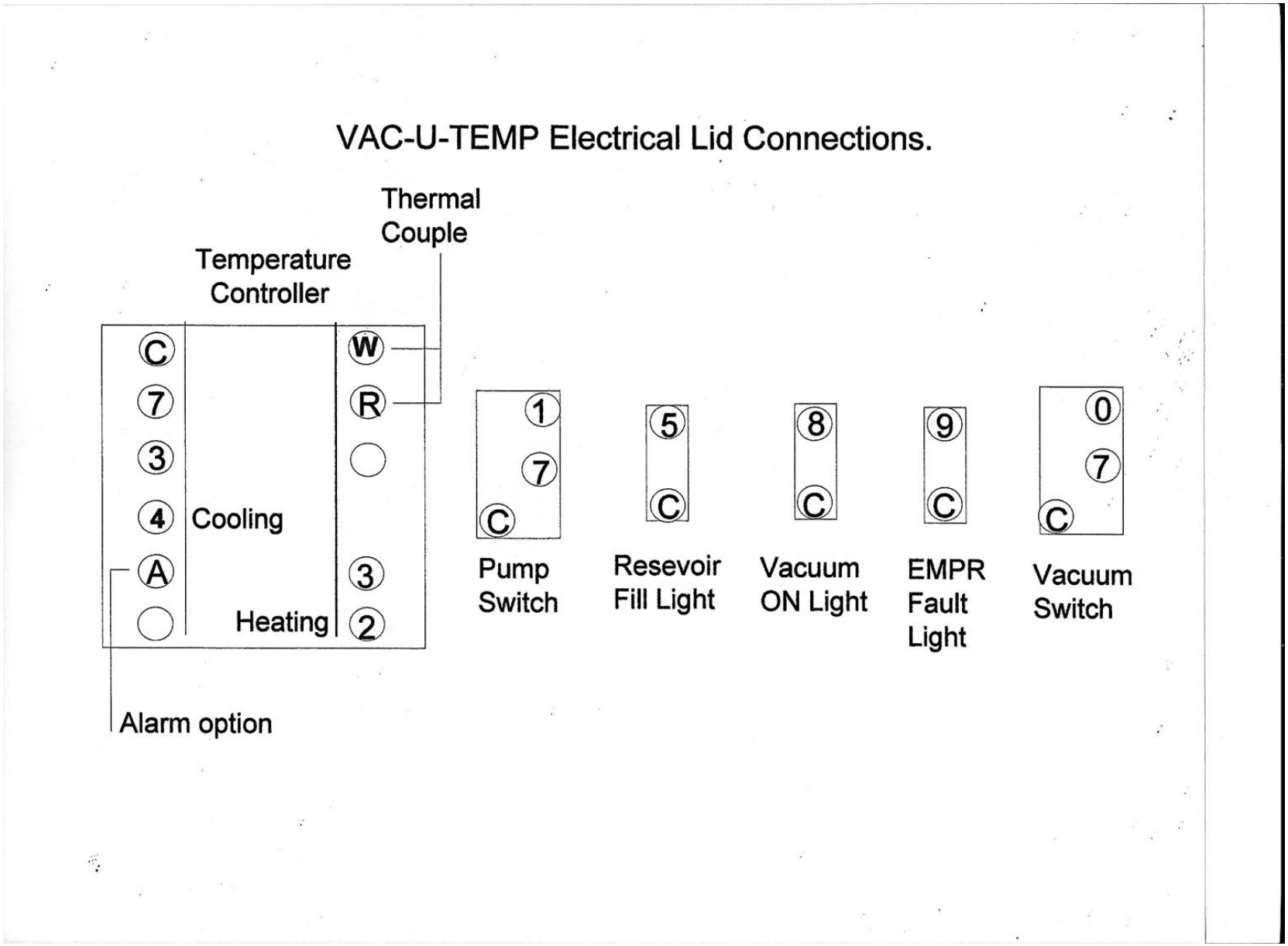

VT Electrical Base Connections.
Disconnect Switch
L1 L2 L3
Fuse Block
Transformer is shown wired for 480 volt input. To change to 240 volt, remove jumper from 2-3 and place jumpers on 4-3 & 2-1.
Turn White Dial Clockwise To Lower Vacuum Counter Clockwise to Raise Vacuum
Vacuum Switch
Heater Contactor
B R W
B/R/W
Heater
Pump
Motor Starter
Low Voltage Side
Control Transformer
High Voltage Side
Fuse
EMPR
LED Reset /Test Time(s)
RC(A)
Solenoids
Air Reservoir Cooling
8/C/G
5/C/G
4/C/G
Yellow Float Wires
Red Float Wires
Float
4 wires
2 Yellow / 2 Red


VAC-U-TEMP Electrical Lid Connections.
Thermal Couple
Temperature Controller
C
7
3
4
Cooling
A
Heating
W
R
3
2
Alarm option
1
7
C
Pump Switch
5
C
Resevoir Fill Light
8
C
Vacuum ON Light
9
C
EMPR Fault Light
0
7
C
Vacuum Switch

Warranty and Return Policy

Logic Seal, Inc. has a Mission Statement, Code of Honor and Policy in place such that our Customers' satisfaction is of primary importance.

Logic Seal / Vac-U-Temp / Trooper Units, manufactured by ***Logic Seal, Inc.*** are guaranteed to be free from defects in materials and workmanship for a period of one year from the date of shipment. This Warranty is limited to the repair and/or replacement of Parts, *including* Labor. Any Unit or Part proven defective upon inspection by ***Logic Seal, Inc.***, will be replaced or repaired without charge under this Warranty agreement in a prompt and timely manner.

Regarding Returns for repair, exchange or replacement:
All Returns require a Return Goods Authorization (RGA). Please call ***Logic Seal, Inc.*** at: **(800) 325-6442** *before* sending any Items back so that they may be assigned a RGA. There will be a 35% Restock Fee when applicable. This Fee also applies to Spare Parts, unless said Spare Parts are defective and returned against an authorized RGA.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Operations Manuals are provided with each Unit upon day of purchase and can be obtained by our Customers through email or snail mail by calling our Headquarters at **(800) 325-6442** or email us at: **Logic@LogicSeal.com**. If it is deemed not a manufacturing defect, then it is the Customer's responsibility to pay transportation fees to and from ***Logic Seal, Inc.***

No allowances, credits or reimbursements will be made for any replacement or repair unless authorized by Senior Management of ***Logic Seal, Inc.***

Note: If the equipment is returned outside the warranty period, the customer is responsible for freight and repair costs. Costs will be invoiced to the customer after completion of repair. ***Logic Seal, Inc.*** will do its best to keep the repair costs to a minimum.

Please keep this page as your Record of Purchase:

Model# _____ Serial# _____

Date Shipped: _____ Warranty Expiration_____

VT-4000-specific Information:

Draining the Unit for Storage or Shipment

1) Manual valves should be mounted externally to all Ports on the Unit. This will aid setup and test procedures

2) When using the Vac-U-Temp as a Leak Stopper, you will have a maximum coolant flow when the “To Mold” line is connected to the Mold at the point farthest from the leak. (For details see section on “Pressure Drop Across a Mold

3) Connect Coolant Supply, Coolant Return and Reservoir Supply to the appropriate Ports
   a) If using Water, you may install a Tee between Reservoir and Cooling Supply Ports
   b) If using Thermal Transfer Fluid, connect Reservoir Supply line hose going into a vented container of fluid. **(Never allow water to mix with Transfer Fluid)**

4) To the Air Inlet, connect a source of compressed air capable of delivering a minimum of 7.8 SCFM at 80 psi

5) Connect To Mold and From Mold lines to the Mold. Have both of these valves OFF. (You may loop them together if not ready to hook up to a Mold)

Purging Mold with VT Purge Option

Close Regulator by unscrewing adjustment Bolt. Slowly open Purge Valve to introducing air. Once Mold and connecting lines are purged, close Valve.

The Vac-U-Temp Tank has the capacity to hold approximately three-quarters of a Gallon of extra fluid. If your Mold and Circuit contain more than this, it will be necessary to add a Tee, with Ball Valve, before the From Mold Ball Valve.

Finally, before purging: close From Mold Valve and open Tee to allow purged fluids to drain into an open bucket.

Check Oil Condition *(from Page 15)*

With the Unit in Cooling Mode, disconnect Cooling Supply and Cooling Return. Introduce air into the Cooling Supply line at **NO MORE THAN** 10psi. This will remove all water from the Heat Exchanger. Water left in will freeze during cold months. Disconnect the To Mold and From Mold hoses from your Manifolds. Drain Pump and Tank using Ball Valve located at the front of the Pump.

Water Emerges from Venturi *(Float Switch or Supply Solenoid are not at fault)* *(from Page 14)*

Water can be found entering the airline. This problem is usually caused by an improperly adjusted Regulator, causing excessive turbulence in the Reservoir. Under ideal circumstances, the pressure in the mold's water passage at the site of the leak should be only slightly below atmospheric pressure – just enough to prevent water from leaking out but not enough to cause a large amount of air to be drawn into the System. The Reservoir of the Vac-U-Temp features an internal Baffle, which is designed to separate the air from water returning. It does this with great efficiency unless the quantity of air in the water becomes excessive. To correct this situation, go back to the adjustment instructions in the section "Negative Pressure Operation (Leak-Stopping)" on Page 9.

Foam Emerging from Venturi and Tank Lid

Water has become mixed with Thermal Fluid and is boiling, causing Foaming. Take the following steps:

1) Turn off Vacuum and Cooling Unit. Once Unit is cooled, move Tank slightly aside to expose fluid

2) Turn Pump on and set temperature to 205°F

3) While watching the fluid in the Tank, slowly raise Temperature one degree at a time, pausing a few minutes in between for the Cooling Circuit to cycle, all the while observing if fluid is beginning to foam

4) Once you have reached 212°F and no foaming has occurred, cool Unit, replace Lid and continue your normal process

Rapid Temperature Drop During Cooling Cycle

If rapid temperature drop occurs, simply restrict outgoing cooling water.

Yes, it is as easy as that!

Omron E5CC Programming with Alarm Option

To make this a little easier in the explanation of the programming, I will be referring to the input buttons on the controller from left to right as 1, 2, 3, 4, 5.

There are FOUR STEPS to this process. Read thoroughly to the end.

Changing the parameters beyond the Unit's design can cause injury to the Operator and damage to the Unit. Before making any changes please contact Logic Seal, Inc. at (800) 325-6442 xt 2 for Technical Support.

After initial installation of the Controller, with the Pump and Vacuum Switches in the OFF position, turn on Unit's Main Power Switch. Controller should light up and display its' Set Value (Green) and Process Value (White).

Note: Display characters may appear slightly different

STEP 1

- Hold down button 1 for a few seconds until it goes into its basic set up.
- CN-t should be displayed.
- To advance further push button 2
- Basic set up should be as listed

CN-t = 8
d-U = F
SL-H = 200.0 (VT-1800) / 260.00 (VT-2600)
SL-L = 40.0
CNtL = oNoF
S-HC = H-C
PtRN = oFF
oREV = oR-R
Alt 1 = 2
ALH1 = 0.2

- Then back to first one
- Hold button 1 and you will be returned to the PV/SV screen

(continue to Step 2 on next page)

STEP 2 *This level is only used for password access*

- Hold down both 1 and 2 button at once for a few seconds
- oAPt should be displayed
- To advance use button 2

oAPt = 0
CCPt = 1 (Change this to 0 to access PW protected parameters)
WtPt = oFF
PFPt = oFF
CHGP = oFF
PRLP = 0

- Then Back to the first one
- Hold down both 1 and 2 to return to the PV/SV Screen

STEP 3

- For PW protected programming
- Repeat STEP 1 procedures
- Cycle through the settings, (be careful not to change any)
- After ALH1 a new option will be available, AMoV
- This is the password input screen
- Hold down button 4 until the display reads -169
- Once # stops blinking it will automatically enter the switch output parameters
- LNLt should be displayed
- To advance use button 2

CNCt = oFF
MSPU = oFF
SPRU = M
SbIN = N-o
Sb2N = N-o
Sb3N = N-o
CNF = 0.0
MAV = oFF
o-dP = oFF
Ret = oFF
bRGt = 3
A1Lt = oFF
PRLt = 3
CJC = oN
A1oN = 0
A1oF = 0
oUt1 = o
SUb1 = C-o
SUb2 = ALM1
SUB3 = NoNE
PF = SHFt

(continue this step on next page)

(Step 3 continues here)

SPd1 = 4
SPd2 = 0
PVdP = oN
PVSt = oFF
SVSt = oFF
d.REF = 0.25
CMoV = 0

- Hold button once and Basic programming screen will be displayed
- Hold button 1 ***again*** and PV/SV screen will be displayed
- Repeat STEP 2 and change CCPt back to 1 to remove PW access
- Return to SP / PV display

STEP 4

- Setting Alarm Deviation.
- While in the SP / PV mode.
- Press button 2.

R-5 should be displayed.
R-5 = RUN

- Press button 2 again
- AL-1 should be displayed
- This is your Alarm Deviation Value
- This is Factory Set at 15.0
- This can be changed up or down using buttons 4 and 5
- Pushing button 2 one more time will return you to PV/SV display