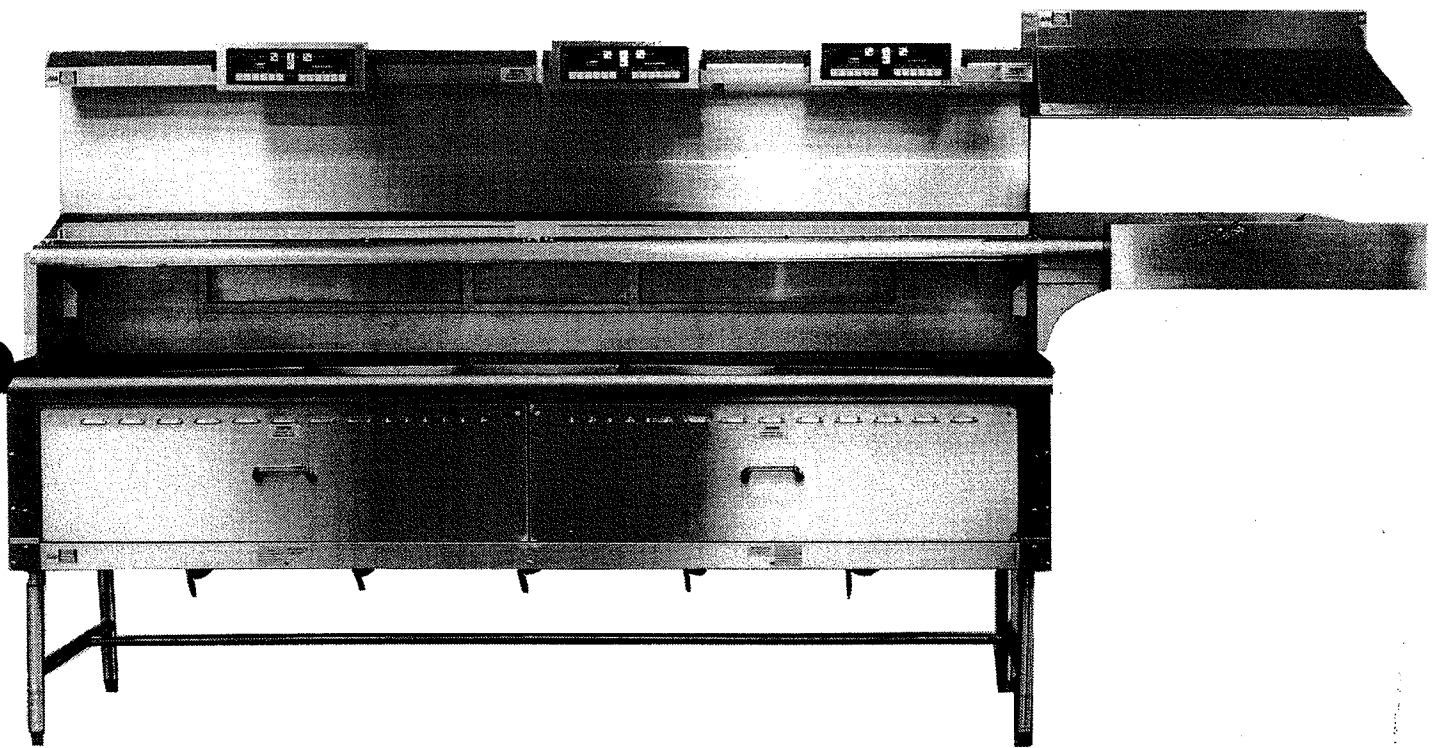


MAINTENANCE & REPAIR INSTRUCTION MANUAL



FAR WEST
PRODUCTS INC.



**Uni-Top II Fryer,
Venthood and Computer Magic Cooking Computer**

PREFACE

This manual is written for the use of store team members and maintenance personnel. Proper use of the manual will provide personnel a better understanding of the equipment and will allow team members to make minor repairs which will prevent major service repair expenses. To keep repairs at a minimum, preventive maintenance should be accomplished as scheduled in the preventive maintenance section.

This manual was written and published by Harvey Warner of Far West Products, Inc. for exclusive use by Church's Fried Chicken, Inc. Franchisee and Company personnel. This manual will be provided automatically with the store package for new stores equipped with a Uni-Top II Fryer and replacement copies may be obtained through normal supply channels under CPN 30-463.

FAR WEST PRODUCTS, INC.

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INDEX

UNI-TOP II FRYER, VENT HOOD & COOKING COMPUTER

PART ONE GENERAL INFORMATION

	<u>PAGE</u>
I. Definition of Terms	9
II. Introduction	10-14
A. 5 Vat Uni-Top II Fryer	10
B. Computer Magic Cooking Computer	11
C. 5 Vat Vent Hood	12
D. Make-Up Air/Exhaust System	13
E. Fire Suppression System	14
III. Safety and Warranty	15-17
A. Safety	15
B. Warranty	16, 17
IV. Installation Information	18

PART TWO PREVENTIVE MAINTENANCE, TROUBLE-SHOOTING, CLEANING

	<u>PAGE</u>
I. Preventive Maintenance and Inspection Requirements	21
II. Trouble-Shooting Chart	21-23
III. Cleaning Instructions	24, 25

PART THREE PRINCIPLES OF OPERATION

	<u>PAGE</u>
I. 5 Vat Uni-Top II Fryer	27-33
A. Electrical System	30-33
208 Volt Circuit	30, 31
24 Volt Circuit	32
120 Volt Circuit	33
B. Computer Magic Cooking Computer	34-41
Computer Control Panel	34
Computer Display Codes	35
Computer Programing Instructions	36-38
Computer Operating Instructions	39-41
II. 5 Vat Vent Hood	<u>PAGE</u> 42-44
A. Electrical System	43
B. Warmer Lamp Sub-Assembly	44

III.	Make-Up Air/Exhaust System	45-47
	A. Exhaust System	45, 46
	B. Make-Up Air System	46, 47
	C. Air Movement Summary	47
IV.	Fire Suppression System	48, 49

**PART FOUR
MAINTENANCE AND REPAIR**

		<u>PAGE</u>
I.	5 Vat Uni-Top II Fryer	56-75
	A. 208 Volt Electrical Components	56-64
	Step-Down Transformer	56, 57
	Primary Contactor	57, 58
	Secondary Contactor	58, 59
	Heat Elements	59-64
	B. 24 Volt Electrical Components	65-73
	Temperature Probe	65, 66
	Hi-Limit Thermostat	66, 67
	Computer Interface Board	67-69
	Secondary Contactor Control Relay	69, 70
	Computer Interface Cable	70, 71
	Computer Cable	71-73
	Computer Magic Cooking Computer	73
	C. Electrical Receptacle	74, 75
II.	5 Vat Vent Hood	76-80
	A. Chicken Warmer Lamps	76-78
	B. Potato Warmer Lamps	78, 79
	C. Warmer Lamp Switches	79, 80
III.	Make-Up Air/Exhaust System	81-88
	A. Jenn Air Exhaust Fan	82-86
	B. Dayton Blower	86-88
IV.	"UNIVERSAL" Cold Zone Wiring Diagram	88, 89

**PART FIVE
PARTS LIST AND SUPPLY**

		<u>PAGE</u>
I.	5 Vat Uni-Top II Fryer	93-95
II.	Computer Magic Cooking Computer	96, 97
III.	5 Vat Vent Hood	98, 99
IV.	Make-Up Air/Exhaust System	100, 101

LIST OF FIGURES

		<u>PAGE</u>
Figure 1	Vat 1 208 Volt Circuit	30
Figure 2	Vat 1 Primary Contactor Coil Circuit	31
Figure 3	Vat 1 Secondary Contactor Coil Circuit	33
Figure 4	Vent Hood Warmer Lamp Wiring Diagram	42
Figure 5	Make-Up Air/Exhaust System	45
Figure 6	Vat 1 and Vat 2 High Voltage Circuit	54
Figure 7	Front View Vat 1 and Vat 2	55
Figure 8	Computer Interface Board Circuitry	71
Figure 9	Venthood Warmer Lamp Wiring Diagram	76
Figure 10	Make-Up Air/Exhaust System (Exploded View)	87

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**PART ONE
GENERAL INFORMATION**

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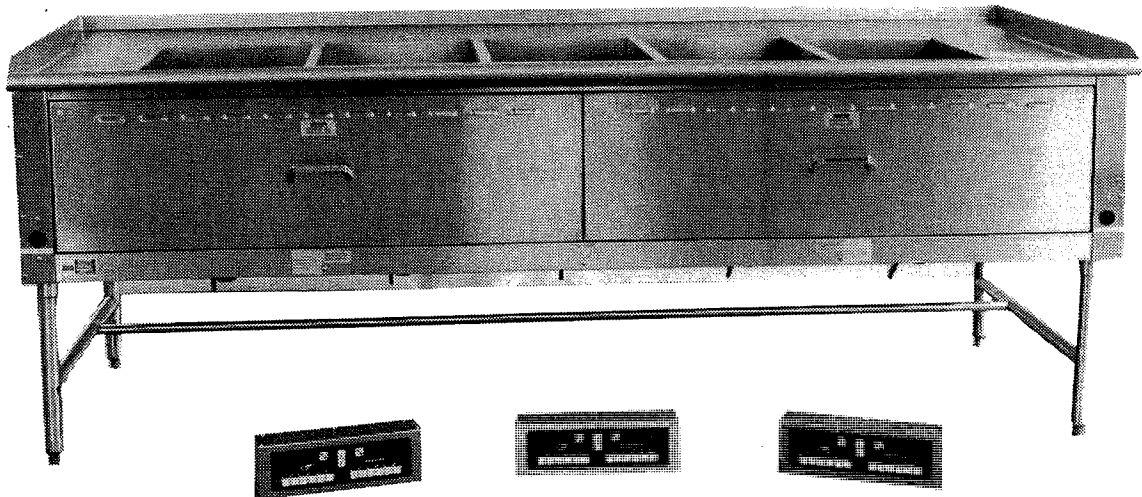
I.

DEFINITION OF TERMS

- COIL -** Wire wrapped around a metal bar that acts as a magnet when electricity flows through the wire
- COLD ZONE -** The concave area in the bottom of a fryer in which the lower shortening temperature tends to attract, crumbs, etc. and other debris.
- CONTACTOR -** An electromagnetic (coil) actuated relay
- DEENERGIZE -** Opening of electrical contacts
- DEPRESSED -** Pressing downward or held inward
- ENERGIZE -** Closing of electrical contacts
- LED -** Light-emitting diode
- SET BACK TEMPERATURE -** Lower temperature setting used between rush periods to conserve energy
- SET POINT TEMPERATURE -** Product cooking temperature
- SHUNT TRIP CIRCUIT BREAKER -** A switch that automatically opens an electric circuit breaker when the shunt trip mechanism is activated

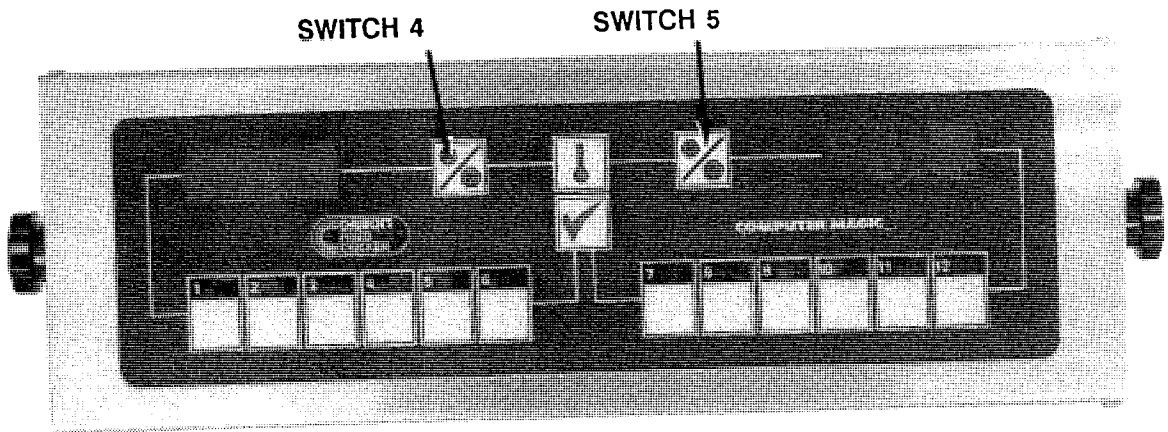
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INTRODUCTION



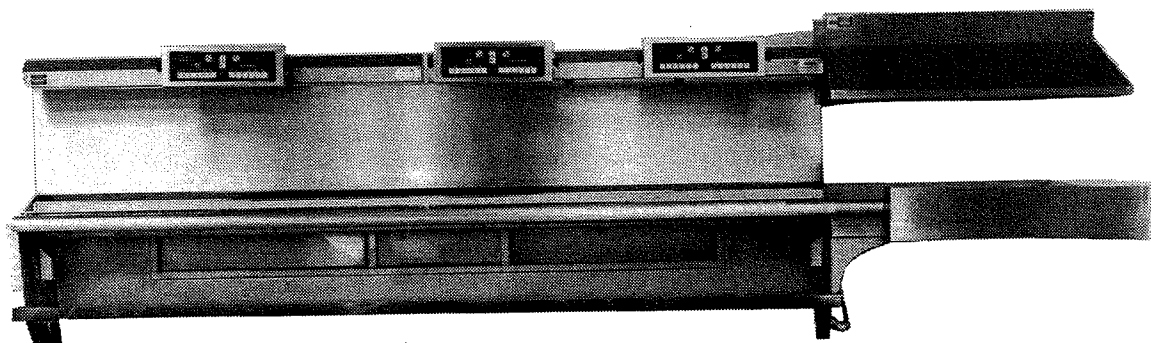
5 VAT Uni-Top II Fryer

The Uni-Top II Fryer is a Far West Products Incorporated designed deep fat fryer listed with Underwriters Laboratories and approved by the National Sanitation Foundation. The fryer is constructed from 16 to 18 gauge type 304 polished satin finish stainless steel and is equipped with adjustable stainless steel legs for leveling during initial installation. Five (5) models of the Uni-Top II Fryer is available containing two (2) to six (6) cooking vats and each model is wired for either 208 or 240 volt three phase electrical power as well as 120 volt single phase electrical power for adjacent appliances. Each cooking vat has a 75 pound shortening capacity which is heated with flat blade heating elements. Each vat is individually insulated to prevent heat loss and reduce energy consumption, and the top of the fryer is constructed from a solid piece of stainless steel for ease of cleaning while eliminating shortening leaks between vats. The Uni-Top II Fryer is operated by remote solid state cooking computers that can be programmed for cooking six (6) different products in each vat. These computers are mounted on warmer lamps attached to the vent hood, shown below.



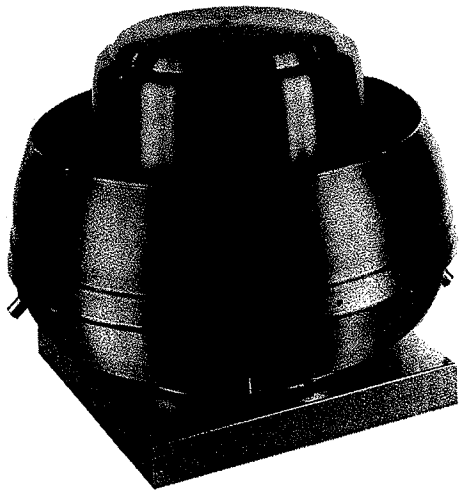
COMPUTER MAGIC COOKING COMPUTER

The Computer Magic Cooking Computer is manufactured by The Frymaster Corporation and is in compliance with the limits for a class B computing device pursuant to Sub-part J of Part 15 of the FCC Rules. This cooking computer can be programmed to cook up to 12 different products utilizing a Celsius or Fahrenheit Temperature Display with two (2) pre-set **SHAKE** alarms, as well as a pre-set **HOLD TIME** alarm. Each Computer Magic II can control two (2) cooking vats with **SWITCH 4** controlling the **LEFT** vat and **SWITCH 5** controlling the **RIGHT** vat.

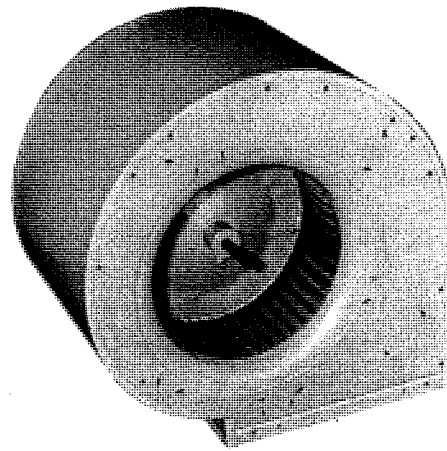


RIGHT HAND 5 VAT VENT HOOD

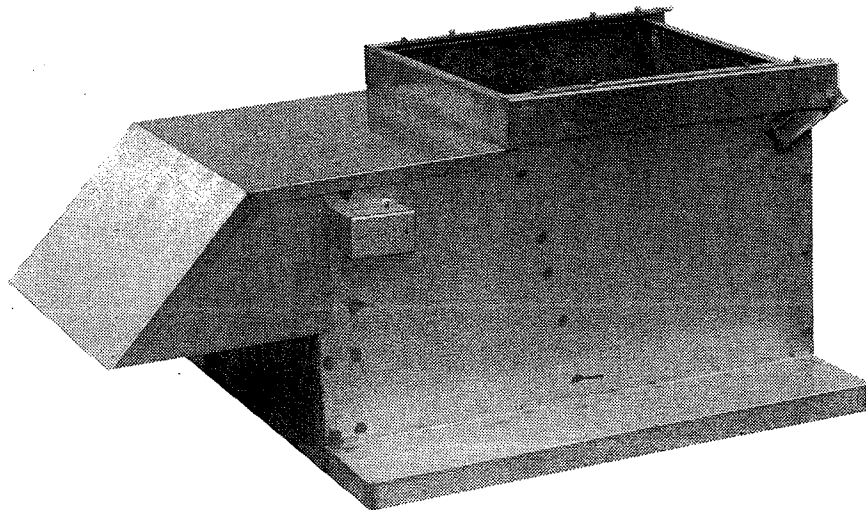
The Vent Hood is a Far West Product Incorporated designed and manufactured item of equipment listed with Underwriters Laboratories and approved by the National Sanitation Foundation. The vent hood is manufactured in a left or right hand configuration and can be mounted on a **5 VAT** or **6 VAT** Uni-Top II Fryer. Other Vent Hoods are also manufactured for use with 2, 3 and 4 Vat Uni-Top II Fryers.



JENN AIR EXHAUST FAN

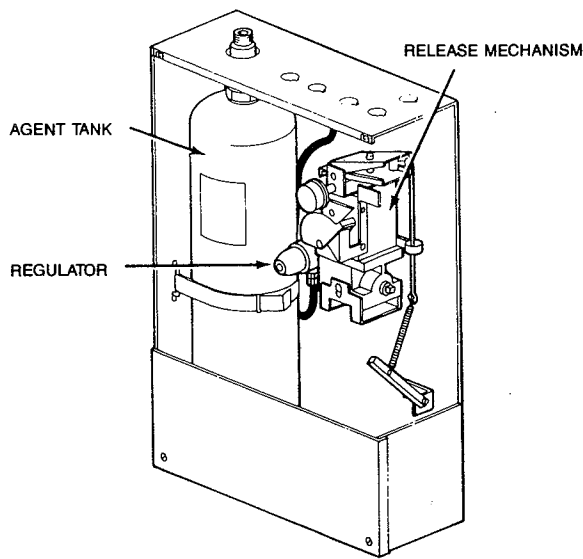


DAYTON SQUIRREL CAGE BLOWER

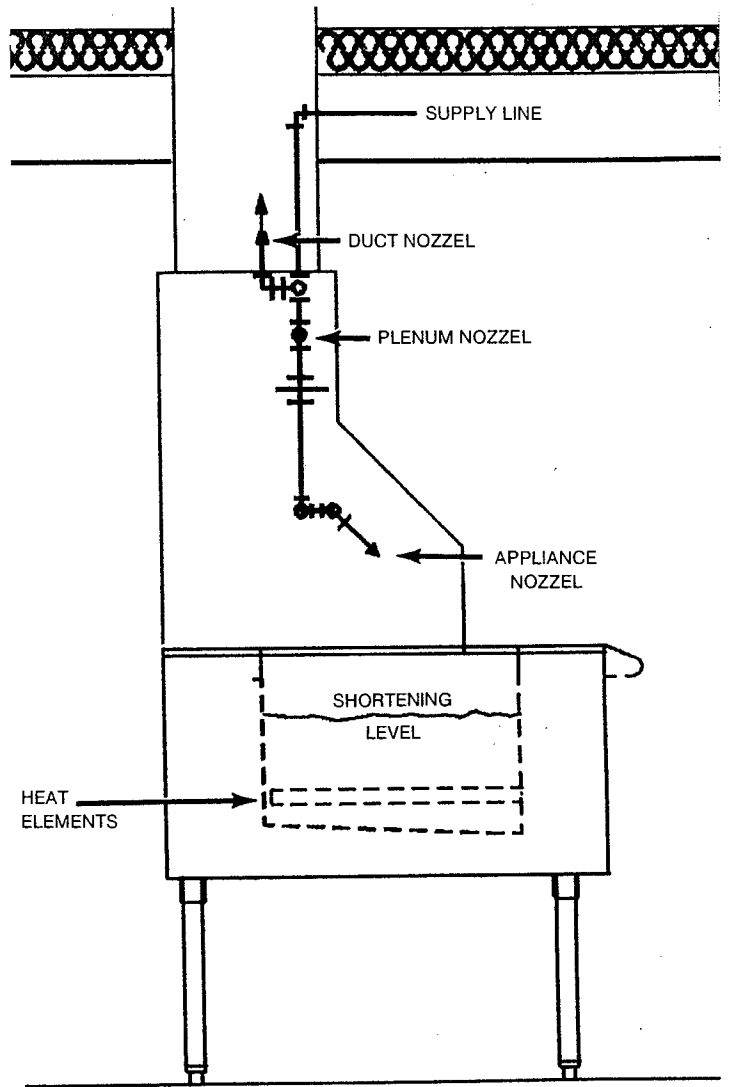


MAKE/UP AIR/EXHAUST SYSTEM

The exhaust and make-up air system is used in conjunction with the exhaust duct and vent hood of the Uni-Top II Fryer to replace that air which is exhausted from over the Uni-Top II Fryer. The system consists of a weather proof housing, installed on the roof of the store over the exhaust duct, with a squirrel cage type blower and Jenn-Air exhaust fan. The blower pulls air from outside the building and discharges it into a manifold duct and then to a plenum box located between the roof and suspended ceiling to the rear of the Uni-Top II Fryer. A portion of the air forced through this system is conditioned air from inside the store and it is mixed with fresh outside air to prevent uncomfortable temperatures in the Uni-Top II Fryer area.



**ANSUL AUTOMAN
MODEL R-102
FIRE SUPPRESSION SYSTEM**



**PIPING DIAGRAM AND LOCATION
OF FIRE EXTINGUISHER
DISCHARGE NOZZLES**

FIRE SUPPRESSION SYSTEM

The Model R-102 Ansul Fire Suppression System is designed to provide fire protection for the Uni-Top II Fryer, Vent Hood and exhaust duct. The basic system consist of an Ansul Automan Regulated Release Assembly which includes a regulated release mechanism and a liquid agent storage tank housed within a single enclosure. Necessary plumbing, detectors, nozzles, etc. are installed in manufactured vent hoods during assembly and are connected to the Model R-102 Ansul Fire Suppression System during equipment installation in a store. Should a fire occur in the fryer, one (1) of three (3) fusible links will melt causing the potassium-based liquid fire suppressant to be automatically discharged through the system extinguishing the fire.

NOTES

III.

SAFETY AND WARRANTY

A. SAFETY:

Uni-Top II Fryer SAFETY - The major safety factor associated with the Uni-Top II Fryer is burns from the hot shortening. In order to prevent serious burns, good housekeeping habits are required. The floor in front of and the area around the fryer should be kept clean and dry. Whenever anything is placed into a cooking vat, care should be used not to splash the hot shortening. Chicken should always be "placed" into the shortening, not thrown. Caution should be used in that the heating elements become extremely hot during operation and retain this heat for a considerable period of time after electrical power is removed. The precautionary measures that must be observed with the electrical system are as important as the safety measures described above. The Uni-Top II Fryer utilizes 120 volts and 208 or 240 volts, single and three phase electrical power and no adjustments or replacements of electrical units should ever be attempted without first disconnecting all electrical power. Failure to do so could result in serious electrical shock or death. Electrical power to the Uni-Top II Fryer is supplied from more than one circuit breaker within the store and it should be determined that all electrical power is disconnected before any repairs or adjustments are attempted. The fryer and its controls should not be operated with wet hands or while standing in water. To do so can result in serious electrical shock or death.

Fire in the liquid shortening should always be a constant concern of personnel operating, maintaining or working near the Uni-Top II Fryer. The Uni-Top II Fryer is equipped with an Ansul Fire Suppression System. This system is automatic; however, it does require an inspection each six (6) months by a licensed distributor. In ALL installations, 3 phase electrical power is to be supplied through shunt trip circuit breakers which are automatically OPENED when a fire occurs and the Ansul Fire System is activated.

VENT HOOD SAFETY - The major safety factor associated with the Vent Hood is burns which will occur should contact be made with any part of the warmer lamp assemblies. Both infrared and quartz heat lamps radiate heat that causes the bulbs and adjacent metal to become extremely hot. When changing or cleaning grease filters, caution should be exercised to insure they are not inadvertently dropped into the hot shortening causing splash burns to other personnel. The Vent Hood utilizes 120 volt single phase electrical power and no repair to lamps, lamp holders or switches should be attempted without first disconnecting all electrical power. Failure to do so, could result in serious electrical shock or death.

MAKE-UP AIR SYSTEMS SAFETY - The blower and exhaust fan in the Make-up air system operate on 120 volt single phase electrical power and no cleaning, repair or adjustment to these items should be attempted without first disconnecting all electrical power. Failure to do so could result in serious electrical shock or death. The exhaust fan should never be turned ON or OFF if hands or feet are wet. Water will sometimes stand on the roof of buildings and electrical shock or death could occur if contact is made with electrical equipment while standing in water.

B. WARRANTY OF EQUIPMENT:

Far West Products (FWP) warrants all equipment it manufactures or provides to be free of defects in material and workmanship for a period of 90 days. In addition, FWP provides 90 day labor and one year parts warranty on the Uni-Top II Fryer. If the conditions and procedures contained in applicable policies are satisfied, FWP will repair, including the cost of parts, or replace, at its sole option, any item in which it has been determined by qualified technical personnel that the failure was caused by a defect in material or workmanship during the warranty period. The warranty does not include coverage for any other consequential costs or damages including, but not limited to, any loss in store sales, spoiled food products, transportation, duty or customs costs. There are no warranties other than as expressly stated in applicable policies and **ANY IMPLIED WARRANTIES OR MERCHANTABILITY, FITNESS OF TRADE USAGE ARE EXPRESSLY EXCLUDED.** Most components of the Uni-Top II Fryer, Vent Hood and Make-up air system are warranted by the manufacturer of these items for one year and the Computer Magic Computer is warranted for 18 months by the Frymaster Corporation against defects in material or workmanship. After the FWP warranty period, the applicable manufacturer listed below should be contacted for warranty adjustment as listed in the above Policy and Procedures.

<u>Component</u>	<u>Manufacturer</u>	<u>Telephone</u>
*208/240 Volt 6 KW 3 Phase Heat Element	Chromalox 600 Kenrick-B-12 Houston, Texas 77060	713/847-1868
	or	
	Watlow Electric Manufacturing Co. 12001 Lackland Rd., RR#5 St. Louis, MO 03141	314/221-2816
Cooking Computer P/N 806-3533 or Components	Frymaster Corp. 8700 Line Ave. P. O. Box 5100 Shreveport, LA 71135-100	1-800-551-8633
35 Ampere 480 Volt Resistive Coil Contactor P/N 3035A24AC	Durakool, Inc. 1080 N. Main St. Elkhart, IN 46514	219/264-1116
208/240 Volt-24 Volt Step-Down Transformer P/N BE322775-GEK	Basler Electric P. O. Drawer 269 Highland, IL 62249	618/654-2341
450 Deg F High Limit Thermostat P/N LCH- 06030-00-00	Robertshaw Controls P. O. Box 26544 Richmond, VA 23261	804/281-0700

*Manufacturer, Voltage & Wattage is stamped on the heat element.

IV. INSTALLATION INFORMATION

Each model of the Uni-Top II Fryer is wired internally to operate on either 208 volt or 240 volt 3 phase electrical power as indicated on a **METAL** tag located adjacent to the high voltage terminal blocks in the **REAR** electrical raceway. A "Universal" wiring diagram is posted on the inside of each front panel and in the rear electrical raceway. After the Uni-Top II Fryer has been properly positioned in the store, it should be **LEVELED** using the adjustable bullet feet. Leveling will assure that each vat contains the same amount of shortening when checked at the engraved shortening level marker. Electrical connections to the Uni-Top II Fryer should be made by a licensed electrician and they must conform to the **NATIONAL ELECTRICAL CODE** as well as local electrical codes and/or ordinances. To avoid electrical hazards and assure efficient operation of this fryer, the following precautions should be observed during installation:

- A. **MATCH VOLTAGE:** Before connecting electrical power, insure the line voltage matches the voltage rating on the fryer's data plate.
- B. **FUSING:** This fryer is not fused and must be connected to a circuit having the shunt-trip circuit breakers sized in accordance with requirements of the National Electrical Code as well as local codes and ordinances.
- C. **GROUNDING:** The Uni-Top II Fryer must be grounded according to the National Electric Code and local codes/ ordinances. A ground lug is located adjacent to the electrical stub-up access holes in the rear raceway.
- D. **FIRE PROTECTION:** The Uni-Top II Fryer should be installed beneath a ventilating hood which complies with NFPA 96 Standards and is equipped with an automatic fire extinguishing system that will shut-off all sources of electrical power to the fryer in case of fire.

When electrical wires from circuit breakers in the main electrical panel have been properly connected to the Uni-Top II Fryer terminal blocks and tested for circuit integrity, install and connect each **COOKING COMPUTER** as follows:

- A. Securely mount the cooking computers onto the venthood warmer bars.
- B. Route the end of one (1) computer cable through the **RIGHT HAND** wire chase in the **REAR** electrical raceway to the Computer Interface Board (**CIB**) for Vats 1 and 2, and connect the 15 pin plug to socket J2. Route the other end of this computer cable to the cooking computer mounted on the **LEFT HAND** warmer bar, and connect the 15 pin plug to the socket on the rear of the computer.
- C. Route the end of one (1) computer cable through the **LEFT HAND** wire chase in the **REAR** electrical raceway to the **CIB** for Vats 3 and 4, and connect the 15 pin plug to socket J2. Route the other end of this computer cable to the **MIDDLE** cooking computer, and connect the 15 pin plug to the socket on the rear of the computer.
- D. Route and connect the remaining computer cable to socket J2 of the **CIB** for Vat 5 and the remaining cooking computer following procedures in paragraph C above.

CAUTION: DO NOT TURN COMPUTERS ON UNTIL WATER OR SHORTENING IS IN EACH VAT AT THE PROPER LEVEL.

- E. Secure excess computer cable using plastic cable ties.

PART TWO
PREVENTIVE MAINTENANCE, TROUBLE-SHOOTING AND CLEANING

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I. PREVENTIVE MAINTENANCE AND TROUBLE SHOOTING

- A. **Preventive Maintenance** - Since the Uni-Top II Fryer is the heart of the food preparation area, special care and preventive maintenance must be accomplished to prevent break-downs which could curtail food sales. Minimum maintenance and cleaning is required because of the design and materials used in the manufacture of the fryer. Any preventive maintenance or cleaning should be accomplished with **CAUTION** whenever the fryer is in operation since the liquid shortening is extremely hot and will cause severe burns. The fryer is supplied with 120V, single phase and 208V or 240V, three phase electrical power. If servicing is required, **ALL power MUST BE TURNED OFF** at the main electrical panel.

INSPECTION SCHEDULE

<u>Item</u>	<u>Inspection Interval</u>		<u>Inspect For</u>
	<u>Daily</u>	<u>Weekly</u>	
Drain Valves	*		Inspect all drain valves. Determine that valves have no external leaks, handles are securely mounted and that they may be opened and closed without undue force.
Temperature		*	Check for visual damage to temperature sensing probes at the time of boil out.
Shortening		*	Inspect for shortening leaks around each heat element. If a leak is found, inspect the heat element nut and washer according to procedures listed in paragraph IA3 Part Four of this manual.
Grease Filters	*		Clean grease filters in the ventilating hood each evening and allow them to air dry overnight.
Ventilating Hood & Exhaust System		*	Clean the interior of the ventilating hood, exhaust duct, and exhaust fan to remove any accumulation of grease. INSURE EXHAUST FAN CIRCUIT BREAKER IS TURNED OFF.

- II. **TROUBLE SHOOTING** - The trouble shooting problems, probable causes and corrective actions listed below are the most common failures that may be experienced. If this chart and a common sense approach to problems are used, it will eliminate unnecessary replacement of serviceable parts as well as expensive repair bills.

<u>Problem</u>	<u>Probable Cause</u>	<u>Corrective Action</u>
Excess smoke from shortening.	A. Temperature too high.	A. Check SET POINT temperature programmed in Cooking Computer. SEE NOTE 1.
	B. Shortening breakdown.	B. Replace shortening.
ON/OFF switch on, display shows "CYCL" momentarily, then display shows "PROB".	A. Open or shorted probe.	A. Replace temperature sensing probe. SEE NOTE 2.

<u>Problem</u>	<u>Probable Cause</u>	<u>Corrective Action</u>
ON/OFF switch on, display shows "HOT", alarm sounding, heat elements off.	<p>B. Loose wire or pin connection in temperature sensing probe circuit.</p> <p>A. Shortening temperature above 375°F due to:</p> <ol style="list-style-type: none"> 1. Defective temperature sensing probe. 2. Defective computer. 	<p>B. Repair loose wire or pin connection in temperature sensing circuit.</p> <p>A. Allow fryer to cool below 375°F.</p> <ol style="list-style-type: none"> 1. Replace temperature sensing probe. SEE NOTE 2. 2. Replace computer.
Primary Contactor Chattering	<p>A. Intermittent open contactor coil.</p> <p>B. Loose wire connections on contactor coil.</p> <p>C. Defective hi-limit thermostat.</p>	<p>A. Replace contactor.</p> <p>B. Tighten connections on contactor coil.</p> <p>C. Replace hi-limit thermostat.</p>
ON/OFF switch on, display shows "PROB", heat element(s) off, alarm sounding.	<p>A. Defective hi-limit thermostat.</p> <p>B. Defective interface board.</p> <p>C. Defective relay on interface board.</p>	<p>A. Replace hi-limit thermostat.</p> <p>B. Replace interface board.</p> <p>C. Replace relay.</p>
ON/OFF switch on, no display shown, heat element(s) off.	<p>A. No power to fryer.</p> <p>B. No 24 volt power to computer.</p> <p>C. Defective computer.</p> <p>D. Fryer circuit breaker tripped.</p>	<p>A. <ol style="list-style-type: none"> 1. Check computer cable connections. 2. Check fryer(s) circuit breakers in main electrical panel. </p> <p>B. Check LEFT HAND 24 volt transformer.</p> <p>C. Replace computer.</p> <p>D. Check for cause and close circuit breaker.</p>
Fryer does not go into Melt function, display shows "PROB", heat element(s) off.	<p>A. Defective temperature sensing probe.</p> <p>B. Loose plug J1 or J3 connection on interface board.</p> <p>C. Loose computer cable connection.</p>	<p>A. Replace temperature probe. SEE NOTE 2.</p> <p>B. Insert plugs firmly into interface board.</p> <p>C. Insert 15 pin plugs firmly into computer and interface board. SEE NOTE 1.</p>
Fryer does not come out of Melt function, display shows "CYCL", shortening temperature below 135°F.	<p>A. Defective computer.</p> <p>B. Defective relay on interface board.</p> <p>C. Defective secondary contactor.</p> <p>D. Loose high voltage wire connections on terminal block.</p>	<p>A. Replace computer. SEE NOTE 1.</p> <p>B. Replace heat relay on interface board.</p> <p>C. Replace contactor.</p> <p>D. Tighten loose connections on terminal blocks.</p>

<u>Problem</u>	<u>Probable Cause</u>	<u>Corrective Action</u>
Slow recovery.	A. Defective heating element. B. Low voltage to fryer.	A. Replace heating element. SEE NOTE 3. B. Check high voltage supplied to fryer.
Excessive time required to melt shortening (more than 45 min.).	A. Low voltage to fryer. B. Defective heating element.	A. Check high voltage supplied to fryer. B. Replace heating element. SEE NOTE 3.

NOTES: 1 - THE DELICATE CIRCUITRY OF THE COOKING COMPUTER CAN BE ADVERSELY AFFECTED BY CURRENT FLUCTUATIONS AND ELECTRICAL STORMS. SHOULD THE COMPUTER NOT FUNCTION OR PROGRAM PROPERLY FOR NO APPARENT REASON, RESET THE COMPUTER BY UNPLUGGING IT FROM THE FRYER AND PLUGGING IT BACK IN.

2 - THE INTERNAL RESISTANCE OF THE TEMPERATURE SENSING PROBE INCREASES AS SHORTENING TEMPERATURE INCREASES. TO DETERMINE IF A PROBE IS DEFECTIVE:

DISCONNECT THE 2 PIN PROBE PLUG FROM THE 2 PIN SOCKET.

MEASURE THE SHORTENING TEMPERATURE WITH ANOTHER THERMOMETER POSITIONED CLOSE TO THE SENSING BULB OF THE PROBE WITHIN THE VAT.

INSERT THE LEADS OF AN OHM METER INTO THE 2 PIN PROBE SOCKET.

REPLACE THE TEMPERATURE PROBE IF MEASURED RESISTANCE OF THE PROBE IS MORE THE +/-40 OHMS FROM THE READINGS SHOWN BELOW:

<u>SHORTENING TEMPERATURE</u>	<u>TEMPERATURE PROBE RESISTANCE</u>
100°F	1141 OHMS
150°F	1245 OHMS
200°F	1348 OHMS
250°F	1451 OHMS
300°F	1552 OHMS
340°F	1632 OHMS

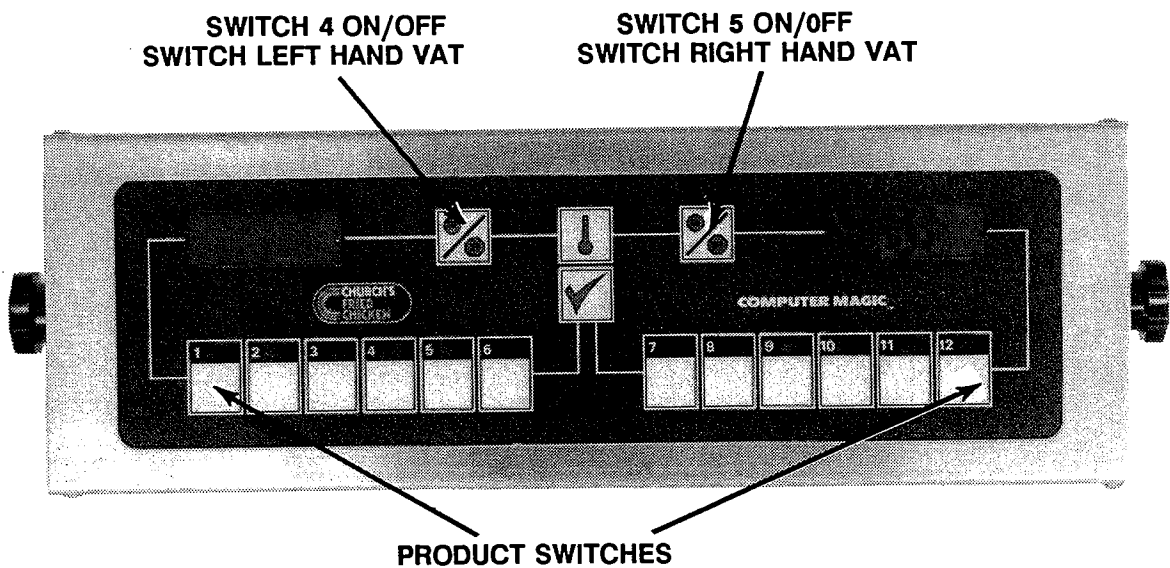
3 - THE MOST EFFECTIVE MEANS TO DETERMINE IF A HEAT ELEMENT IS OPERATIONAL IS TO MEASURE THE CURRENT DRAW OF AN ELEMENT WITH AN AMP-PROBE. THE CURRENT DRAWN BY A GOOD HEAT ELEMENT SHOULD BE CLOSE TO THE VALUES SHOWN BELOW:

<u>INPUT ELECTRICAL SERVICE</u>	<u>HEAT ELEMENT CURRENT</u>
208 VOLTS	33.2 AMPERE
240 VOLTS	28.5 AMPERE

III. CLEANING INSTRUCTIONS

Each vat of the Uni-Top II Fryer must be thoroughly cleaned and filled with the proper amount of shortening **PRIOR** to programming the Cooking Computer for products to be cooked. Clean each vat as follows:

1. With the exception of the **KETTLE GRILL**, remove all articles from the vat such as baskets, heat element wrench, etc.
2. **CLOSE** the drain valve located beneath the vat by pushing the handle completely towards the **REAR** of the fryer.
3. Fill the vat to a level 2" above the engraved **FILL LINE** with water; then add 1/2 packet of costic cleaner.



4. Turn the Cooking Computer **ON** by depressing the **ON/OFF** switch (4) or (5) and when "CYCL" appears in the display (1) or (2); depress product switches "1" "6" "5" "3" **IN THAT ORDER** to place the vat in the pre-programmed **BOIL** mode at a temperature of 195 degrees.

NOTE: A dummy temperature probe load, CPN 12-318, must be inserted in socket J1 of the **LAST** computer interface board in 3 and 5 vat Uni-Top II Fryers in order to place vat 3 and vat 5 in the **BOIL** mode.

5. Allow this heated solution to remain in the vat for the length of time recommended by the cleaner manufacturer; then turn the Cooking Computer **OFF** by again depressing the **ON/OFF** switch (4) or (5).
6. Place a metal container large enough to hold the vat contents beneath the drain valve. **CAREFULLY** open the drain valve by pulling the handle completely towards the front of the fryer, and completely drain the cleaning solution from the vat. **CAUTION: THIS SOLUTION WILL BE AT 195 DEGREES AND CAN CAUSE SEVERE BURNS.**

7. Thoroughly rinse the vat with cool clear water. Use a vinegar rinse to neutralize the fryer cleaner, then thoroughly rinse the vat with cool clear water again. Wipe the vat with a soft cloth and allow it to thoroughly dry.
8. **CLOSE** the drain valve by pushing the handle toward the **REAR** of the fryer and add shortening to 1" above the **HEAT ELEMENT**.

CAUTIONS:

NEVER OPERATE THE UNI-TOP II FRYER WITH AN EMPTY VAT OR WITH ANY THERMOSTAT SENSING BULB ABOVE THE SHORTENING LEVEL.

IF SOLID SHORTENING IS USED; REMOVE THE KETTLE GRILL AND PACK SHORTENING AROUND THE ELEMENT. DO NOT LEAVE FRYER UNATTENDED.

9. Turn the Cooking Computer **ON** by depressing the **ON/OFF** switch (4) or (5). **CYCL** will appear in the display (1) or (2) indicating the computer is in the **MELT** mode. Periodically depress the **TEMPERATURE CHECK SWITCH** (3) **ONCE** to determine the shortening temperature. When the temperature reaches 180 degrees, add sufficient shortening to raise it to the engraved **FILL LINE** mark.

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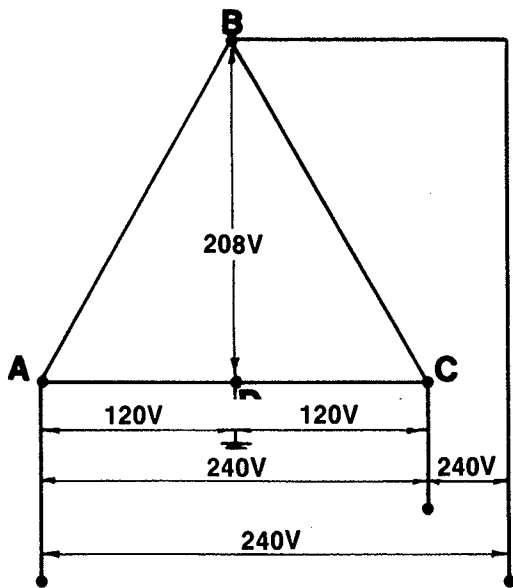
**PART THREE
PRINCIPLES OF OPERATION**

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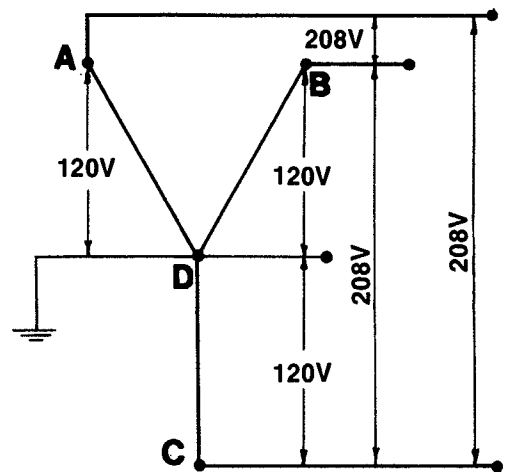
I.

5 VAT UNI-TOP II FRYER

Electrical service to the store is provided from power line transformers to electrical power panels installed in the rear of the store. The 120 volt single phase and 208/240 volt three phase power required for operation of the Uni-Top II Fryer is fed from shunt trip circuit breakers in these panels to the electrical terminal blocks mounted in the rear electrical raceway of the fryer. The 120 volt single phase electrical power is connected to one (1) terminal block and the 208/240 volt three phase electrical power is connected to another terminal block within this raceway. In order to understand the electrical system within the Uni-Top II Fryer, a brief description of electrical power is necessary. Electrical power is generated by large turbines run by water, gas, oil or coal-fired systems. These turbines produce three voltages, each of which periodically change in magnitude at different times and is referred to as three phase power. This three phase electrical power is distributed from the generating plant to homes, stores etc. by an electrical network such as a four (4) wire delta or wye network which consist of a common or neutral wire and a wire for each of the three voltages generated. At the home or store, this voltage is reduced by step-down transformers to provide the required voltages, such as those used in Church's Chicken stores as shown below. Although three different magnitude of voltages can be obtained from a four (4) wire network, only two are actually used to operate equipment, 120 volts and either 208/240 volts. The network wires are connected to the line side of the electrical panels at the rear of the store and electrical power is fed to each item of equipment, electrical outlets, signs, lights, etc. from circuit breakers within these panels.



3Ø 4 WIRE DELTA NETWORK



3Ø 4 WIRE WYE NETWORK

A. ELECTRICAL SYSTEM

With the exception of 208/240 volt three phase electrical power required by the heat elements to heat the shortening, **ALL** other components of a Uni-Top II Fryer operate on 24 volt alternating current (VAC). One (1) **STEP-DOWN TRANSFORMER** is used to reduce the 208/240 volt three phase electrical power to 24 VAC for operation of the **PRIMARY CONTACTOR** in each vat. The transformer for **ODD NUMBER** vats is also used to provide 24 VAC for operation of the Computer Magic Cooking Computer. Operation of every vat in a Uni-Top II Fryer is identical and for purpose of explanation, the following principles of operation refer to vat 1.

NOTE: THE ONLY DIFFERENCE BETWEEN A 208 VOLT AND 240 VOLT UNI-TOP II FRYER IS THE ELECTRICAL RATING OF THE HEAT ELEMENTS. TO SIMPLIFY EXPLANATIONS, THE REMAINDER OF THESE PRINCIPLES OF OPERATION ARE ORIENTED TOWARDS A 208 VOLT UNI-TOP II FRYER.

1. 208 VOLT CIRCUIT

The 208 volt circuit of Uni-Top II Fryer vat one consists of two (2) electrical contactors, **PRIMARY** and **SECONDARY**, and two (2) flat blade heating elements. These components are electrically wired to terminals 17, 18 and 19 of the high voltage terminal block as shown in figure 1.

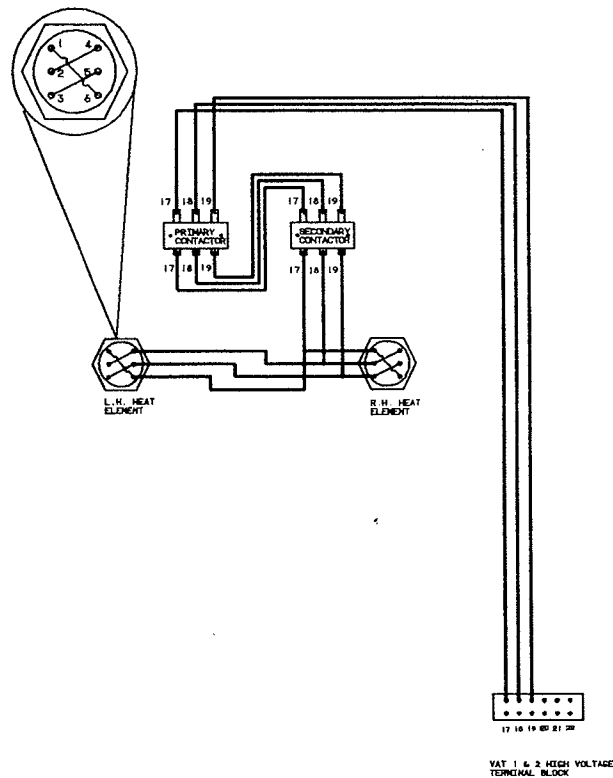


FIGURE 1. VAT 1 208 VOLT CIRCUIT

There must be 208 volt three phase electrical power across each segment of the **LEFT** and **RIGHT** hand heat elements to properly heat shortening. As described above, both the primary and secondary contactors must be energized to apply voltage across each element; and when energized voltage will be applied to the top, middle and bottom segments of each heat element as follows: top segment wires 17 and 18, middle segment - wires 18 and 19, and bottom segment - wires 17 and 19.

2. 24 VOLT CIRCUIT

Operation of the primary and secondary contactors is as follows:

- a. **PRIMARY CONTACTOR** - There must be 24 VAC across the **COIL** of the primary contactor for it to energize. As shown in figure 2, one side of the **PRIMARY CONTACTOR** coil is connected to the **LEFT HAND 24 VAC** step-down transformer with a **WHITE** wire and the opposite side of the coil is connected to the **HI-LIMIT THERMOSTAT** with a **BLUE** wire which is in turn wired to this 24 VAC step-down transformer with a **BROWN** wire. As soon as the high voltage circuit breakers in the main electrical panel are **TURNED ON**: (1) there will be 208 volts 3 phase electrical power present on the **UPPER** contacts of the primary contactor and **UPPER** terminals of the 24 VAC step-down transformer, (2) 24 VAC will be applied to the **COIL** of the primary contactor from the **LOWER** terminals of the 24 VAC transformer through the **HI-LIMIT THERMOSTAT**, (3) the primary contactor will energize, and (4) 208 volt 3 phase electrical power will be present on the **LOWER** contacts of the primary contactor and the **UPPER** contacts of the secondary contactor.

NOTE: THE HI-LIMIT THERMOSTAT IS DESIGNED TO OPEN THE 24 VOLT CIRCUIT TO THE PRIMARY CONTACTOR COIL WHENEVER SHORTENING TEMPERATURE EXCEEDS 450°F.

- b. **SECONDARY CONTACTOR** - 24 VAC must be across the **COIL** of the secondary contactor for it to energize. As shown in figure 2, one side of the coil is connected to **PIN 3 SOCKET J3** on the Computer Interface Board (**CIB**) with a **BROWN** wire and the opposite side is wired to **PIN 9 SOCKET J3** with a **BLUE** and **WHITE** striped wire. As shown in figure 3 below, Pin 3 is internally connected to the **RIGHT HAND 24 VAC** terminal on the **CIB** which is in turn connected to the **LEFT HAND 24 VAC** step-down transformer with an **ORANGE** wire, and Pin 9 is internally connected to **CONTACT 4** of Relay RL3. When the temperature probe of the Computer Magic Cooking Computer for Vat 1 senses a need for higher shortening temperature, 24 VAC will be applied to the **COIL** of Relay RL3 and it will energize. When Relay RL3 energizes its **NORMALLY OPEN** contacts 4 and 5 will **CLOSE** completing the 24 VAC circuit to the secondary contactor **COIL**, the secondary contactor will then energize applying 208 volts 3 phase electrical power to the **LEFT** and **RIGHT** hand heat elements.

NOTE: ONE (1) COMPUTER MAGIC COOKING COMPUTER AND COMPUTER INTERFACE BOARD ARE USED FOR EACH TWO (2) VATS; VATS 1 AND 2, VATS 3 AND 4, AND WHEN APPLICABLE, VATS 5 AND 6.

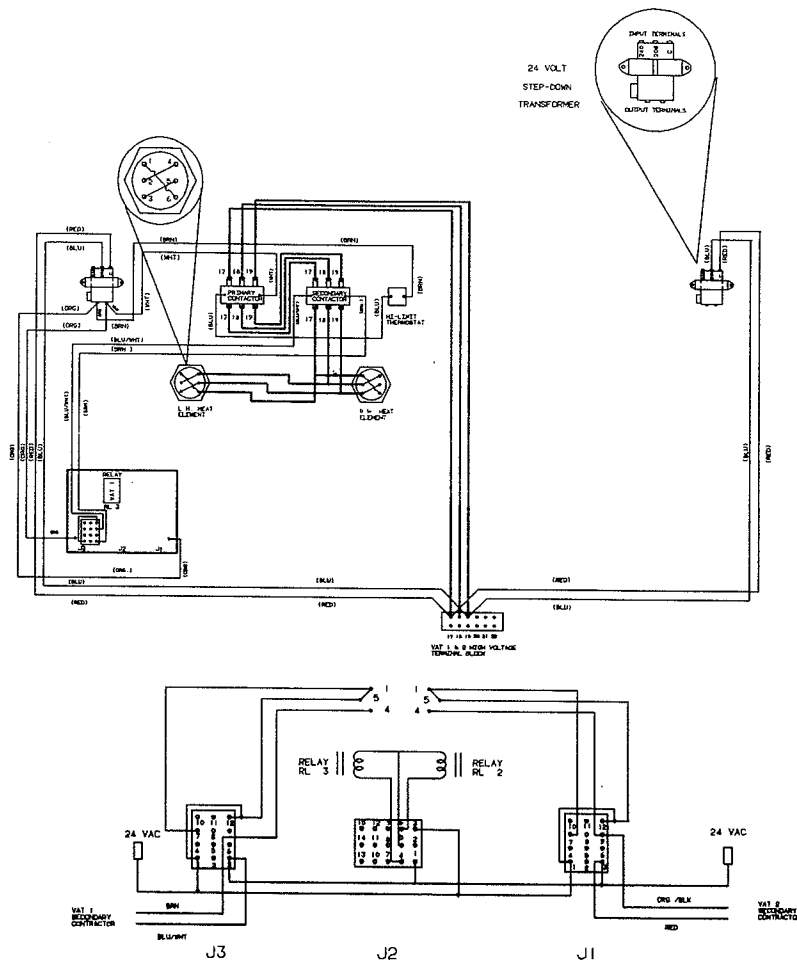


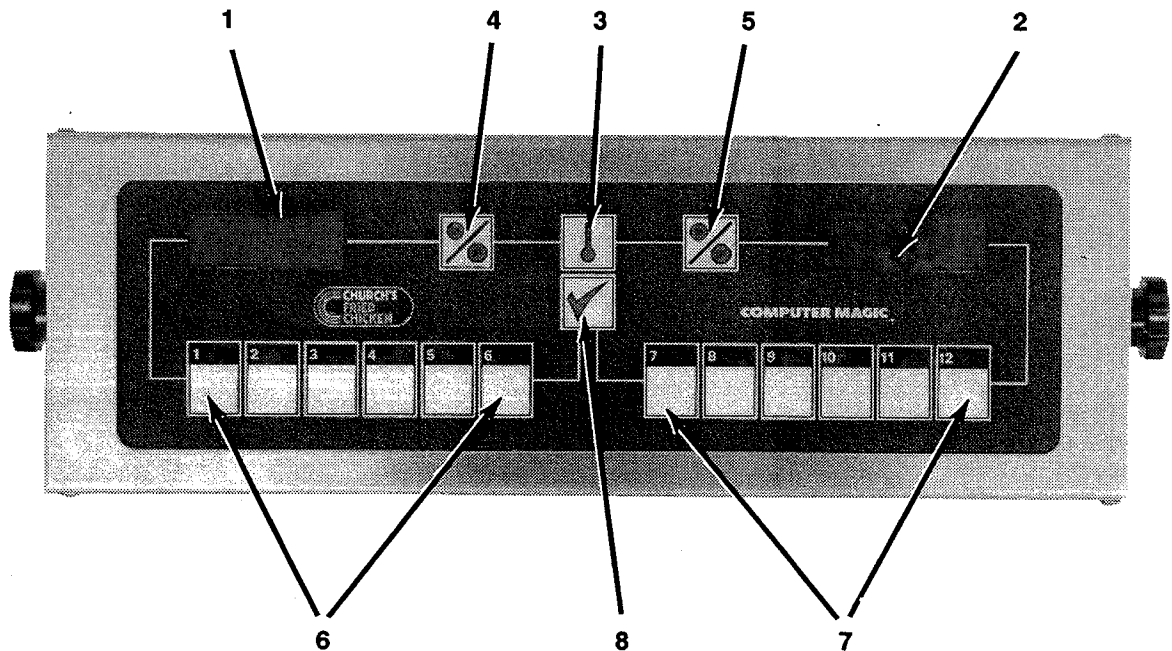
FIGURE 3. VAT 1 SECONDARY CONTACTOR COIL CIRCUIT

3. 120 VOLT CIRCUIT

The 120 volt single phase electrical circuit of the Uni-Top II Fryer consist of the Batter Table and Potato Freezer electrical receptacles, and the 120 volt single phase circuitry for the Vent Hood Warmer Lamps and Chicken Warmer Bars. These circuits will be described in Part FOUR of this manual.

B. COMPUTER MAGIC COOKING COMPUTER

1. COMPUTER CONTROL PANEL



- 1 Lighted Display - Left side display of various functions and operations.
- 2 Lighted Display - Right side display of various functions and operations.
- 3 Storage and Temperature Check Switch - Locks program in computer and/or displays setpoint temperature when depressed.
- 4 On/Off Switch - Controls power supply for left side of dual computer and secondary contactor for left hand vat.
- 5 On/Off Switch - Controls power supply for right side of dual computer and secondary contactor for right hand vat.
- 6 Programming and Product (Cook) Switches - Enter codes during computer programming. Becomes cook switches for products 1 thru 6 of left hand vat after computer is programmed.
- 7 Programming and Product (Cook) Switches - Enter codes during computer programming. Becomes cook switches for products 1 thru 6 of right hand vat after computer is programmed.
- 8 Check Switch - Used when reprogramming the computer memory.

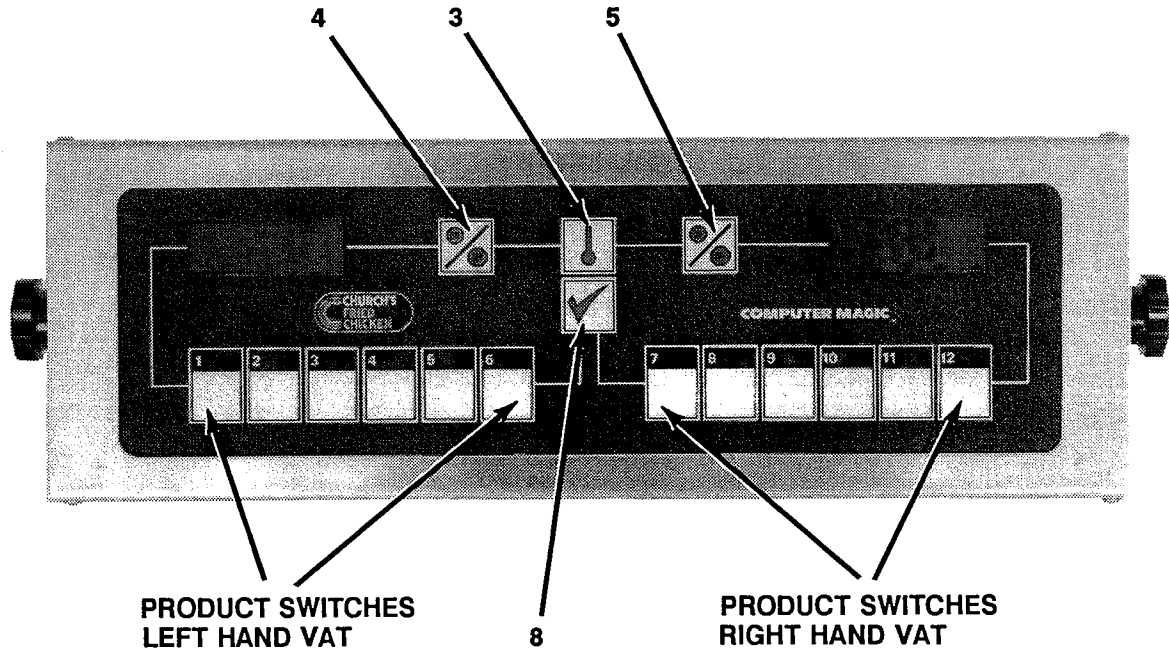
WARNING: Fryer must contain oil or water before turning computer **ON**, and the cooking computer must be programmed properly before attempting to cook any product.

2. COMPUTER DISPLAY CODES

The following codes will appear in the computer displays:

- boIL** - Computer is in Boil mode. The fryer vat will be raised to 195°F and remain there until the computer is turned off.
- bUSY** - Computer is busy. Computer cannot be programmed.
- CodE** - Computer is in program mode.
- COOC** - Cooking time. Displayed in minutes and seconds
- C.YCL** - Computer is in melt cycle. Will alternate heat between left and right vats until setpoint temperature is reached. Dot between "C" and "Y" indicates heat element for that vat is ON.
- ErOr** - Error. Incorrect code selected.
- Hd-x** - Hold time. The amount of time to hold a product after it has been cooked. The product switch number will appear in the "X" position.
- °-Hi** - High temperature. Temperature is 15°F or more above set point temperature.
- Hot °-Hi-** High temperature limit. Alarm will sound to indicate temperature is above 395°F. Display will alternate between °-Hi- and **HOT** indication. **IMMEDIATELY DEPRESS ON/OFF SWITCH.**
- °-LO** - Low temperature. Temperature is above 180°F, but below set point temperature.
- Prob** - Probe malfunction. Indicates a faulty temperature probe.
- Sb-L** - Setback mode for left vat. Fryer automatically switches to programmed lower temperature after vat is idle for 20 minutes.
- Sb-R** - Set back mode for right vat. Fryer automatically switches to programmed lower temperature after vat is idle for 20 minutes.
- SELP** - Select product. Select product to be cooked as programmed on switch 1 thru 12.
- SENS** - Sensitivity setting. Can be set from 1 through 9 with 5 being the average. Based on the density of the product to be cooked.
- SH-1** - First shake time. From 0 to 4 minutes after cook time is started.
- SH-2** - Second shake time. From 0 to 8 minutes, after cook time is started. **MUST BE MORE THAN SH-1.**
- SP-L** - Setpoint for left vat. Temperature at which product is to be cooked.
- SP-r** - Setpoint for right vat. Temperature at which product is to be cooked.
- - Four bars will appear in either right or left display window to indicate shortening is at cooking temperature.
- .** - Dot may be displayed in either right or left or both display windows indicating that the thermostat is calling for heat.

3. COMPUTER PROGRAMMING INSTRUCTIONS



The Computer Magic Cooking Computer is manufactured by The Frymaster Corporation and is in compliance with the limits for a class B computing device pursuant to FCC Rules. This cooking computer can be programmed to cook up to 6 different products utilizing a Celsius or Fahrenheit Temperature Display with two (2) pre-set **SHAKE** alarms, as well as a pre-set **HOLD TIME** alarm. Each Cooking Computer can control two (2) cooking vats with **SWITCH 4** controlling the **LEFT** vat and **SWITCH 5** controlling the **RIGHT** vat. However, when only one (1) cooking vat is used, either switch will control power to the vat.

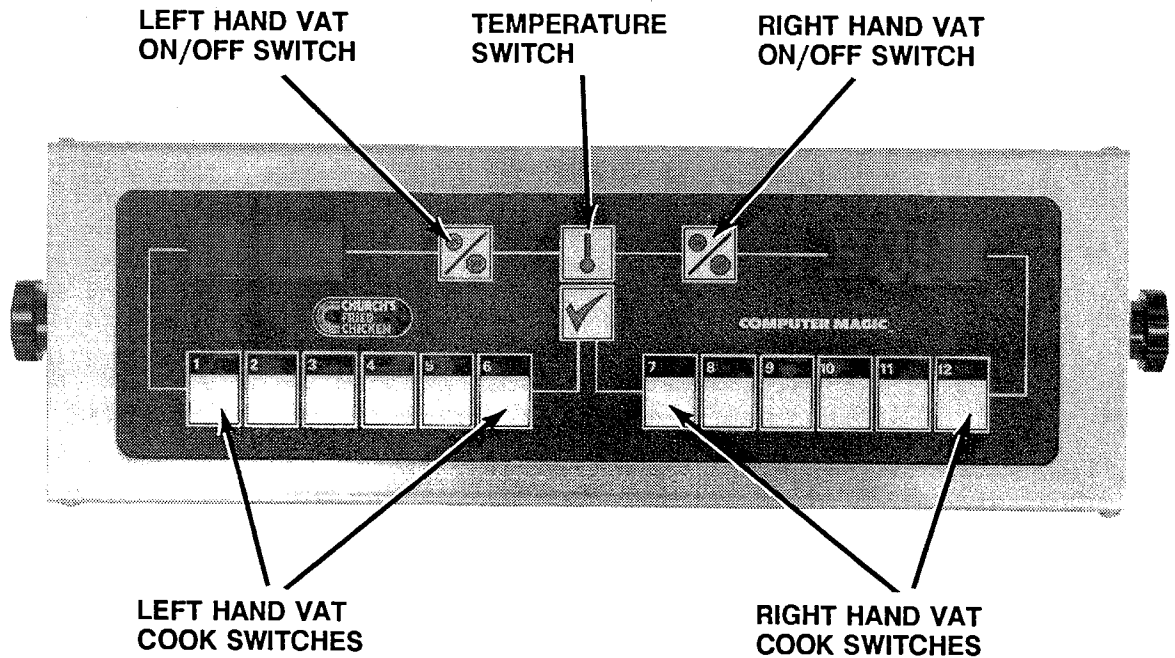
Step-by-step procedures for programming the Computer Magic Cooking Computer are as listed on the following pages:

CAUTION: UNI-TOP II FRYER VATS MUST CONTAIN THE PROPER AMOUNT OF OIL OR WATER BEFORE TURNING COMPUTER ON.

<u>Sequence</u>	<u>Procedure</u>	<u>LH Display</u>	<u>RH Display</u>
1	DEPRESS both ON/OFF switch (4) & (5) for Computer 1.	CYCL	CYCL
2	Place computer in program mode by depressing CHECK switch (8).	CodE	
3	When CodE appears in left display, depress switches "1", "6", "5" and "10" in that order for access to program mode.	SP-r	
4	Enter SET POINT temperature for RIGHT HAND vat by depressing appropriate switches, i.e., "3", "4", "10".	SP-r	340 (Example)
5	Depress CHECK switch; then enter SET BACK temperature for RIGHT HAND vat by depressing appropriate switches, i.e., "2", "8", "10".	Sb-r	280 (Example)
NOTE: IF THE SET-BACK FEATURE WHICH IS DESIGNED TO CONSERVE ENERGY DURING SLOW PERIODS IS NOT DESIRED, ENTER SET-POINT (340) TEMPERATURE.			
6	Depress CHECK switch; then enter SET POINT temperature for LEFT HAND vat by depressing appropriate switches, i.e., "3", "4", "10".	SP-L	340 (Example)
7	Depress CHECK switch; then enter SET BACK temperature for LEFT HAND vat by depressing the appropriate switches, i.e., "2", "8", "10".	Sb-L	280 (Example)
8	Depress CHECK switch. At this time, the LED over each of the product switches will flash indicating each product may be programmed by depressing the desired product switch.	SELP	
9	Depress product switch "1", for left hand vat, then enter desired sensitivity setting by depressing one switch (1 through 9).	SENS	
10	Depress CHECK switch, then enter appropriate cooking time in minutes and seconds, i.e., "1", "5", "10", "10".	COOC	15:00 (Example)

<u>Sequence</u>	<u>Procedure</u>	<u>LH Display</u>	<u>RH Display</u>
11	Depress CHECK switch; then enter appropriate FIRST SHAKE TIME from 0-4 minutes after start of cook time. If no "shake" is required, depress switch "10".	SH-1	2.00 (Example)
12	Depress CHECK switch; then enter appropriate SECOND SHAKE TIME 0-8 minutes. If no "shake" is required, depress switch "10". NOTE: SH-2 MUST BE EQUAL TO OR LONGER THAN SH-1 IF USED.	SH-2	
13	Depress CHECK switch; then enter appropriate HOLD TIME in minutes and seconds, i.e., "4", "5", "10", "10".	Hd	45:00 (Example)
14	Depress CHECK switch; then repeat sequence 9 through 13 to enter sensitivity, temperature, shake times, and hold time for product switches 2,3,4,5 and 6 of the left hand vats and the 6 product switches for the right hand vat.	SELP	
15	After the LAST product switch has been programmed and SELP appears in the LEFT HAND DISPLAY , depress the TEMPERATURE switch (3) to exit program mode.	CYCL	CYCL
NOTE:	FAILURE TO DEPRESS THE TEMPERATURE SWITCH BEFORE TURNING OFF POWER WILL CAUSE ALL DATA ENTERED TO BE ERASED.		
16	Follow sequences 1 through 15 to program other computers.		

4. COMPUTER OPERATING INSTRUCTIONS



Each Computer Magic Cooking Computer is capable of controlling two (2) Uni-Top II Fryer vats. The **ON/OFF** switch **LEFT** of the **TEMPERATURE** switch and cook switches 1-6 controls the **LEFT HAND** vat, while the **ON/OFF** switch **RIGHT** of the **TEMPERATURE** switch and cook switches 7-12 controls the **RIGHT HAND** vat. Each Computer Magic Cooking Computer **MUST** be programmed to cook products to be served after the Uni-Top II Fryer has been installed, cleaned and shortening has been placed in each vat level with the engraved **FILL LINE**.

- a. When the Computer Magic Cooking Computers have been properly programmed, each vat should be operated as follows:
 - (1) Turn the computer on by depressing the **ON/OFF** switch. If shortening temperature is **BELOW** 180°F, **CYCL** will appear in the display to indicate the computer is in the **MELT** cycle mode. If shortening temperature is **ABOVE** 180°F, but **BELOW** the set point temperature, **°-LO** will appear in the display and it will automatically turn the heat element **ON** until the **SET POINT** temperature is reached and a **FLOATING DOT** will appear in the display indicating the thermostat is seeking more heat. When the **SET POINT** temperature is reached **---** will appear in the display and the computer will automatically control the heat element to maintain the set point temperature.
 - (2) When **---** appears in the display, the applicable **PRODUCT** switch may be depressed to start a **COOK** cycle. When depressed, the **LED** for that switch will **LIGHT** and the **COOK TIME** for that product will start decreasing.

If this is the **ONLY** product being cooked, the **COOK TIME** will be displayed as it decreases.

- (3) When the **FIRST SHAKE TIME** is reached, an **ALARM** will sound for 5 seconds and **SH-1** will be displayed and when the **SECOND SHAKE TIME** is reached, the alarm will sound and **SH-2** will appear in the display for 5 seconds. If the computer has not been programmed for either **SHAKE TIME**, the remaining **COOK TIME** will continue to be displayed.
- (4) At the end of the cook cycle, the **LED** of the product switch will **FLASH**, **COOC** will appear in the display, and an **ALARM** will sound until the product switch is depressed.
- (5) As the product switch is depressed at the end of a cook cycle, **Hd-X** (product switch number) will appear in the display and the **HOLD TIME** will start decreasing. At the end of the hold time, an **ALARM** will sound and **Hd-X** will again appear in the display. The **CHECK** switch must be depressed to turn the alarm **OFF** and reset the computer for another cook cycle for that product.

- NOTES:**
1. To cancel the melt cycle and go as quickly as possible to setpoint temperature, depress switch **1** for the left vat and **12** for the right vat. **THIS PROCEDURE IS NOT TO BE USED WITH SOLID SHORTENING.** If melt cycle is cancelled in error, depress the On/Off switch to re-enter melt cycle.
 2. To view vat temperature, depress the **TEMPERATURE** switch and to view the **SET POINT** temperature, depress the **TEMPERATURE** switch **TWICE**.
 3. If a product is not cooked in the vat for **20 MINUTES**, the computer will automatically reduce the shortening temperature to the **SET BACK** temperature. **TO ABORT THIS FEATURE, SET SET BACK TEMPERATURE TO SET POINT TEMPERATURE.**
 4. If more than **ONE** product is being cooked, the **COOK TIME** of the product with the **LEAST** time remaining will be displayed and the **LED** for that product will flash.
 5. If another **COOK CYCLE** for that product switch is started or another product switch for that **VAT** is depressed, the **HOLD TIME** will be automatically cancelled.
 - b. The Computer Magic Cooking Computer has been pre-programmed by the Frymaster Corporation for the following four (4) "**SPECIAL FUNCTIONS**". Prior to using these functions, the computer must be turned **ON** and the **CHECK** switch must be depressed prior to entering the appropriate code.

<u>Code</u>	<u>Function</u>
1,6,5,1	Constant Temperature Display - In this mode, the vat temperature will be continually displayed at the expense of other displays. When the computer is in this mode, SET-POINT TEMPERATURE can be displayed by depressing the temperature switch once. To cancel Constant Temperature Display; depress CHECK switch, then depress switches 1,6,5,1.
1,6,5,3	Boil Mode - In this Mode, the vat temperature will increase to 195°F and remain at this temperature until that vat is turned OFF .

NOTE: A dummy temperature probe load, CPN 12-318, must be inserted in socket **J1** of the **LAST** computer interface board in 3 and 5 vat Uni-Top Fryers in order to place vat 3 and vat 5 in the **BOIL** mode.

Code

Function

1,6,5,8

Celsius/Fahrenheit Temperature Display Section - Allows the operator the option of having temperatures displayed in degrees centigrade or fahrenheit. When this code is entered, "C" will appear in the **LEFT** display and the **LED** over product switch 1 will light, and "F" will appear in the **RIGHT** display and the **LED** over product switch 12 will light. To select centigrade depress product switch "1" or to select fahrenheit depress product switch "12". When selection is completed, the computer will automatically return to the normal operating mode.

1,6,5,12

Program Review Mode - Permits the operator to automatically review the cooking instructions that have been programmed for each product. When this code is entered, the **SET POINT** and **SET BACK** temperatures of each vat will be displayed, then **SELP** will appear in the **LEFT** display and the **LED's** over each product switch will flash. To review the **SENSITIVITY SETTING**, **COOK TIME**, **SHAKE TIMES**, and **HOLD TIME** of a product, depress the appropriate product switch. To exit the Program Review Mode, depress the **TEMPERATURE** switch when **SELP** appears in the display.

II. 5 VAT VENT HOOD

Even though the 5 Vat Vent Hood is manufactured in a left and right hand version, construction and operation of each is identical. A 5 Vat Vent Hood consists of four (4) major assemblies; **CHICKEN WARMER, POTATO WARMER, PLENUM** and **TROUGH**. The base of the plenum is flanged for installation on top of a Uni-Top II Fryer and at the top is an opening for installation of the exhaust duct which is attached to the exhaust fan/make-up air system installed on the roof of the building. Within the plenum area are grease filters which trap shortening vapor and flour prior to entry into the exhaust duct. Two (2) hinged doors are provided on the rear of the plenum for access to these filters, which are easily removed for cleaning. For extensive repairs within the plenum area, these doors can be easily removed by opening the doors to a 90 degree angle and then raising the doors straight up until the hinges separate. Adjacent to the chicken and potato warmers and midway between the warmers are four (4) electrical switches which turn the quartz lamps in the chicken warmer and potato warmer panels on and off. The top two (2) switches (S1 and S2) control the chicken warmer lamps and the bottom two (2) switches (S3 and S4) control the potato warmer lamps.

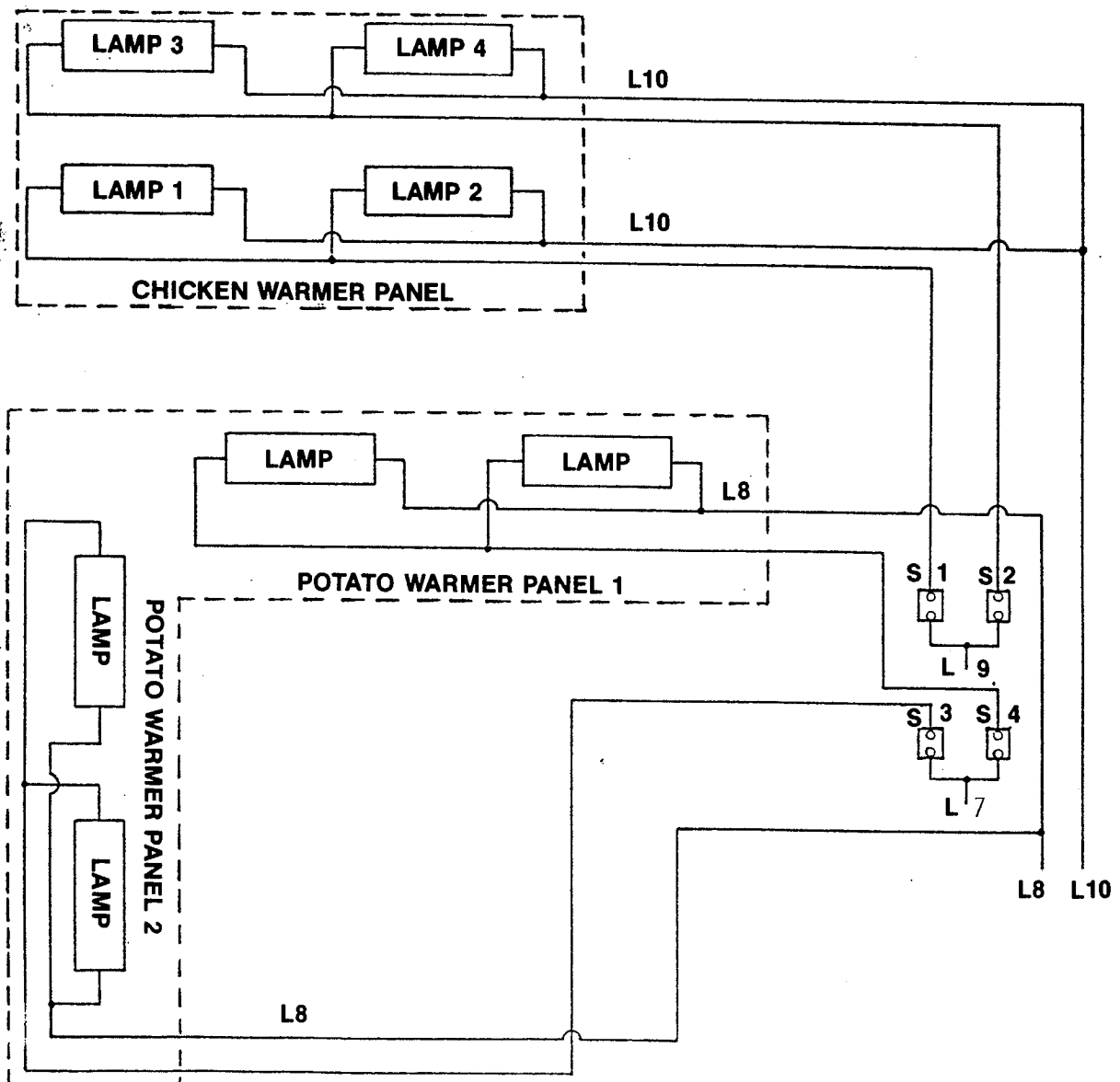
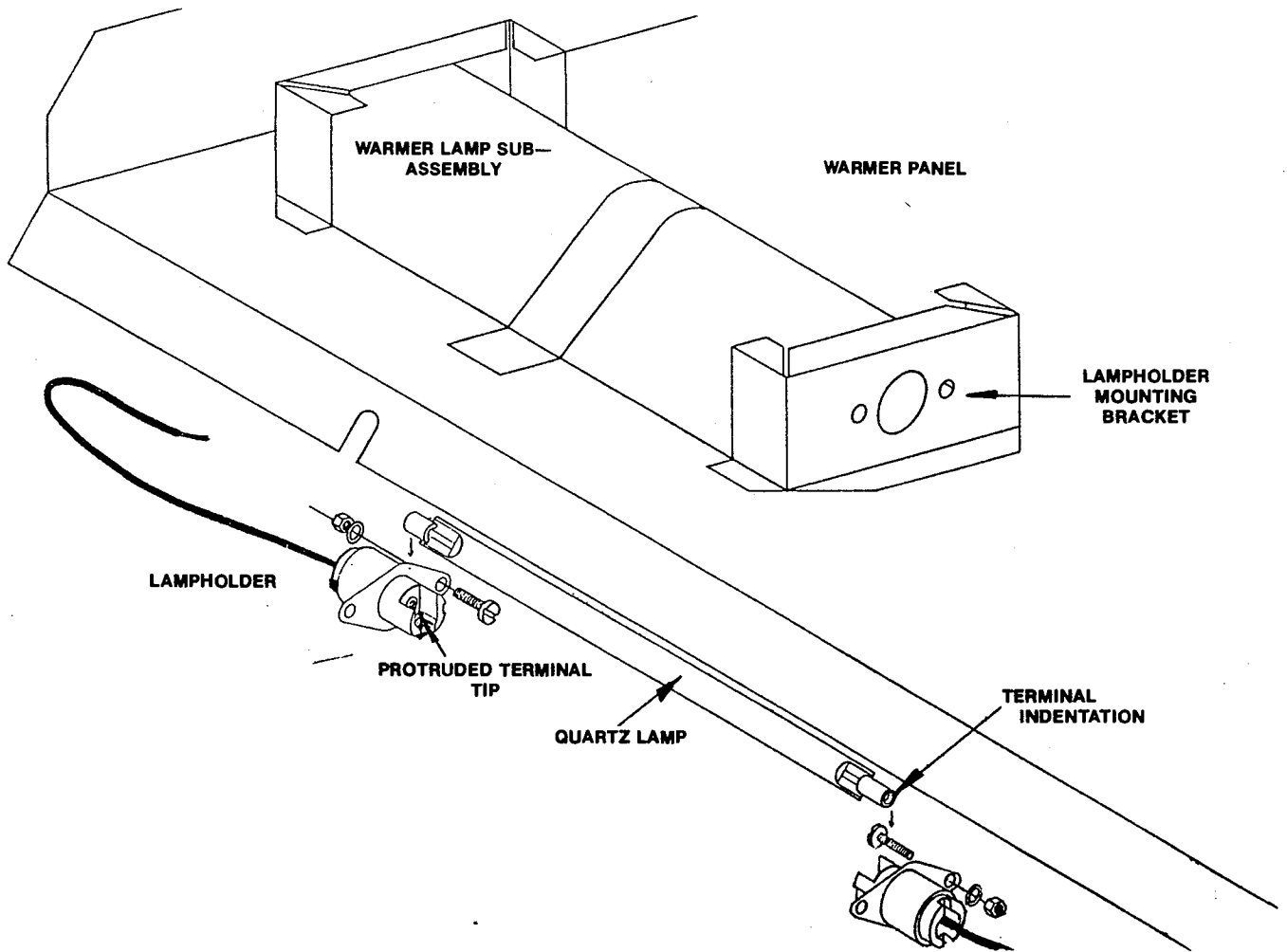


FIGURE 4. VENT HOOD WARMER LAMP WIRING DIAGRAM

A. ELECTRICAL SYSTEM

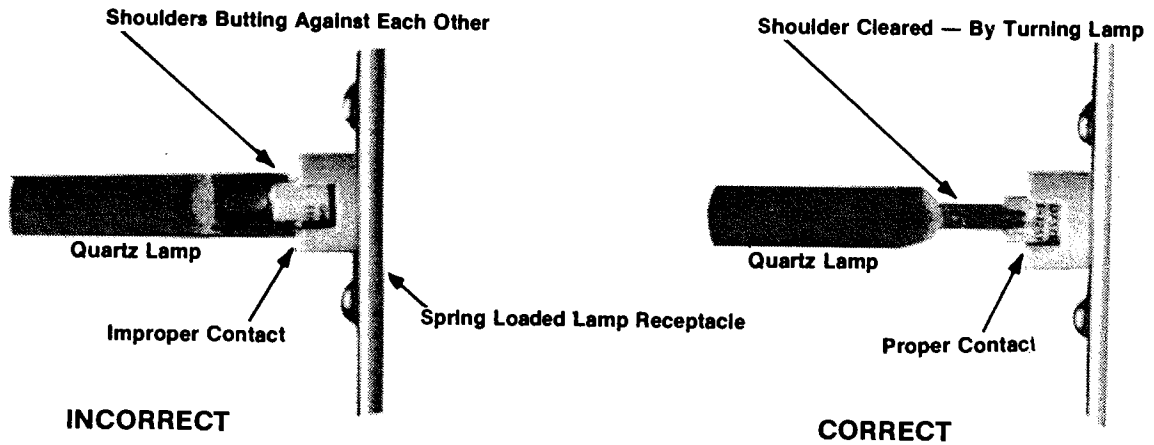
The quartz lamp warmer panel, mounted in the chicken warmer assembly, contains four (4) 120 volt, 375 watt quartz lamps. These lamps are electrically wired, through switch S1 and S2, to terminals 9 and 10 on the 120 volt single phase terminal board in the terminal panel of the Uni-Top II Fryer as shown in figure 4. The two (2) quartz lamp panels, mounted in the potato warmer assembly, contains two (2) 120 volt, 375 watt quartz lamps in each panel. These lamps are electrically wired, through switch S3 and S4 to terminals 7 and 8 on the 120 volt, single phase terminal board as shown in figure 4.

Whenever the applicable circuit breaker in the main electrical panel is closed, there will be 120 volts across terminals 7 and 8 as well as terminals 9 and 10 on the 120 volt, single phase terminal board. When switch S1 on the vent hood is in the **ON** position, **LAMP 1** and **LAMP 2** will light because there will be 120 volts across each lamp from terminal 10, through each lamp, and through switch S1 to terminal 9. When switch S3 on the vent hood is in the **ON** position, the two lamps in **POTATO WARMER PANEL 2** will light because there will be 120 volts across each lamp from terminal 8, through each lamp, and through switch S3 to terminal 7.



B. WARMER LAMP SUB-ASSEMBLY

Each quartz lamp is inserted in two spring loaded lamp holders mounted on brackets of the warmer lamp sub-assembly as shown in the sketch below. The lamp holders are wired to the electrical system as shown in figure 4. On each end of a quartz lamp, there is a brass color terminal with a small indentation and in the center of each lampholder, there is a silver color terminal with a tip that protrudes about 1/8". For a quartz lamp to operate properly, without arcing, it **MUST** be inserted in the lamp holders where the tip on each holder is **SEATED** in the terminal indentation on each end of the lamp as shown below.



III. MAKE-UP AIR/EXHAUST SYSTEM

The make-up air system works in conjunction with the exhaust system to maintain a positive, odor free, air pressure within the store. This positive air pressure enables a comfortable temperature to be maintained in the store by retarding outside air from entering the store as doors are opened.

- A. **Exhaust System** - The exhaust system consists of the: **VENT HOOD, EXHAUST DUCT, and EXHAUST FAN** which are mounted on top of a weatherproof housing located on the roof of the building as shown in figure 5.

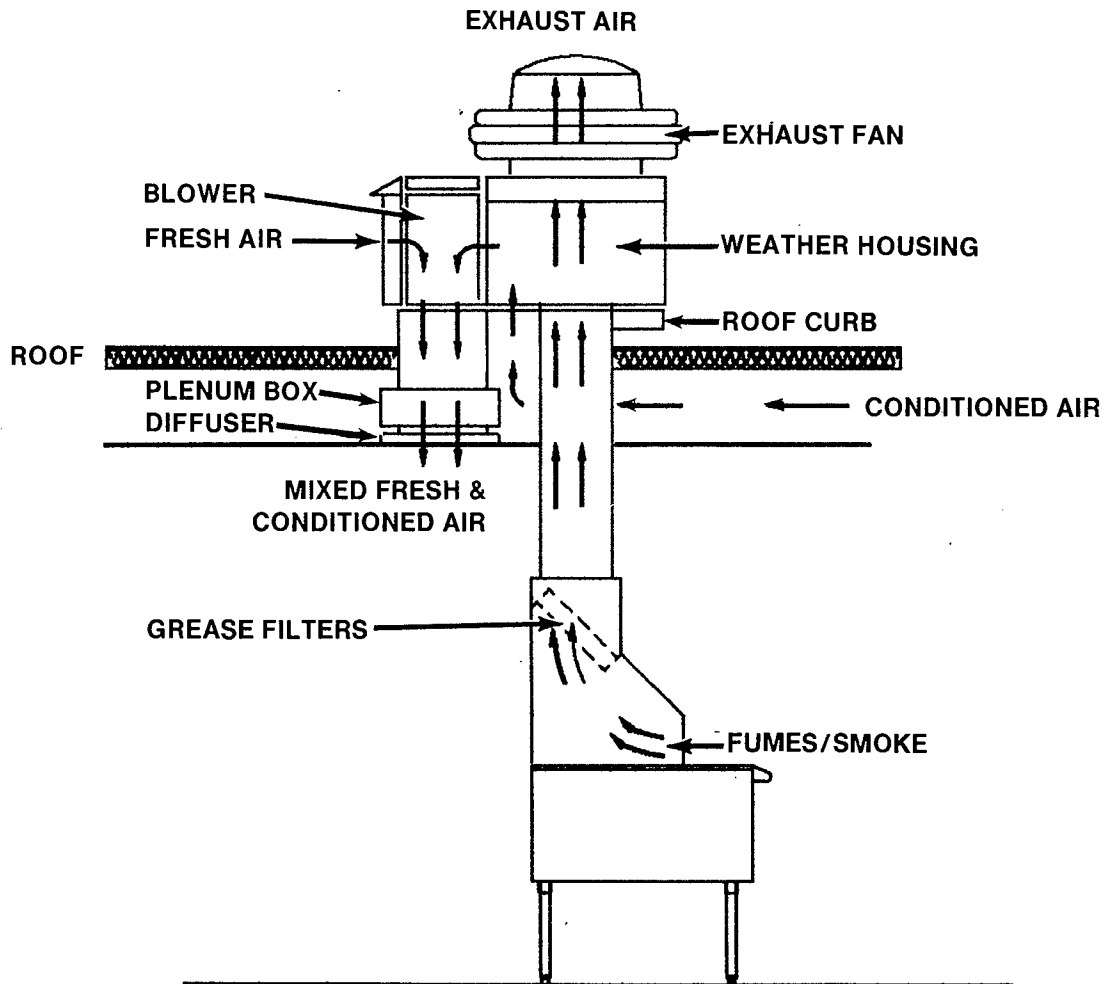


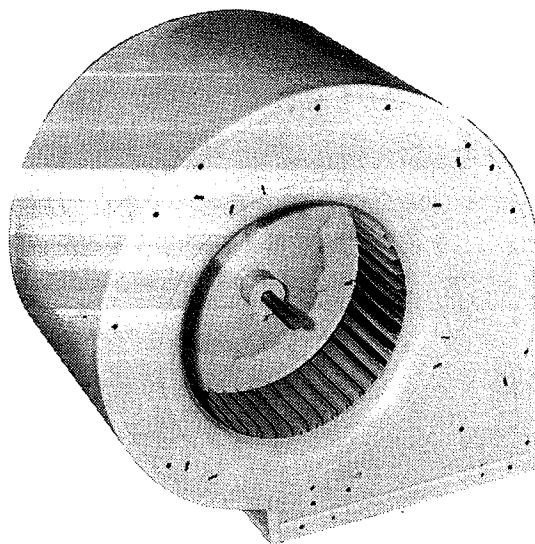
FIGURE 5. MAKE-UP AIR/EXHAUST SYSTEM



**JENN AIR EXHAUST FAN MODEL 183BTD
CPN 21-035**

The Jenn Air Model BTB 183 exhaust fan is electrically wired to a circuit breaker in one of the main electrical panels. Whenever the circuit breaker is closed, the exhaust fan will operate drawing obnoxious fumes and smoke collecting over the Uni-Top II Fryer through the exhaust system and discharging it outside the building as shown in this figure.

B. Make-Up Air System



**DAYTON BLOWER MODEL 4C686
CPN 22-057**

The make-up air system consists of the **BLOWER, DUCT, PLENUM BOX** and **DIFFUSERS** as shown in figure 5. The Dayton Model 4C688 is electrically wired to the same circuit breaker as the exhaust fan, consequently, it operates when the exhaust fan operates. Whenever the circuit breaker is closed, the blower draws in fresh outside air and conditioned air, from between the suspended ceiling and roof, as shown in figure 5, discharges this fresh and conditioned air through the duct to the plenum box, where it is mixed; and the mixed fresh/conditioned air is discharged out the diffusers located to the front and rear of the Uni-Top II Fryer.

C. Air Movement Summary

In addition to the air exhausted by the Uni-Top II Fryer, air is exhausted out of the store from exhaust fans in each rest room. In addition to the air pulled into the store from outside by the blower in the make-up air system, air is pulled into the store through the fresh air dampers of each Heating, Ventilation and Air Conditioning (HVAC) unit. The air movement summary from these sources is shown in the table below.

INTAKE AIR

Make-up Air System	+ 1300 CFM
Lobby HVAC	+ 500 CFM
Kitchen HVAC	+ <u>0</u> CFM
TOTAL	+ 1800 CFM

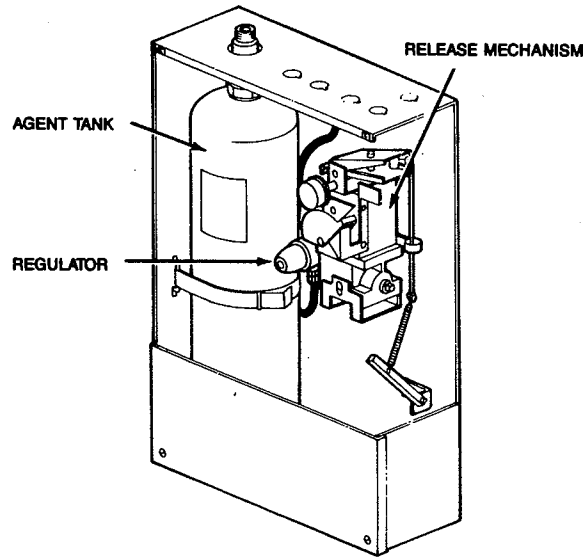
EXHAUST AIR

Exhaust System	-1540 CFM
Restroom Exhaust Fans	- <u>180</u> CFM
TOTAL	-1720 CFM

RESULTANT AIR PRESSURE

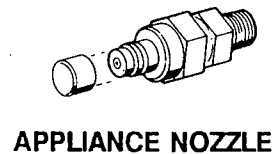
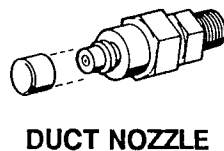
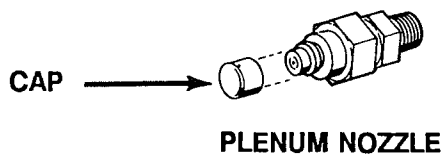
Intake Air	+ 1800 CFM
Exhaust Air	- <u>1720</u> CFM
BALANCE	+ 80 CFM (Positive Air Pressure)

IV. FIRE SUPPRESSION SYSTEM

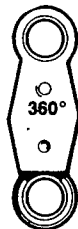


**ANSUL AUTOMAN MODEL R-102
CPN 22-450**

An Ansul Fire Suppression system, Model R-102-20, has been installed in all new stores constructed since 1983 for fire protection of the Uni-Top II Fryer, vent hood and exhaust duct. The basic system consists of a 20 pound wet chemical chamber and release mechanism housed in a metal enclosure which is normally installed on the walk-in cooler wall or Manager's office in the store. Necessary piping for the fire suppression system is installed in each vent hood, during assembly in the manufacturing plant and these pipes are attached to the Ansul Automan after the Uni-Top II Fryer vent hood and exhaust duct is installed in a store. Discharge nozzles are installed on the end of the 3/8 inch black iron pipes which terminate in the **EXHAUST DUCT, VENT HOOD PLENUM**, and beneath the **VENT HOOD TROUGH**. The three (3) types of nozzles used are plenum, duct and appliance (shown below) and each are designed to assure the area in which they are located will be flooded with sufficient wet chemical to extinguish a fire. The Uni-Top II Fryer nozzles are installed beneath the vent hood and are designed to discharge the wet chemical in a cone shape over the shortening in each stove to prevent any combustible vapors from escaping. Each type of nozzle is provided with a **CAP** which protects the nozzle from grease and dirt. When the fire suppression system is activated, these caps are blown off of the nozzle when the pressurized wet chemical charge is released.



Within the Ansul Automan is a spring loaded **RELEASE MECHANISM** that is held in a cocked position by a wire rope attached to it and the three (3) 360° fusible links located in the plenum area of the vent hood. A snap action type electrical switch is located near the release mechanism and it is electrically wired to each **SHUNT TRIP CIRCUIT BREAKER** through which electrical power is supplied to the Uni-Top II Fryer. As long as the release mechanism is in the **COCKED** position, the contacts of the snap action switch are **OPEN**.



360° FUSIBLE LINK

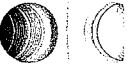
When a fire occurs, the three (3) fusible links of eutectic solder, located in the plenum area of the vent hood, will **MELT**. Whenever one of these links melt: (1) tension is removed from the wire rope permitting the spring loaded release mechanism to move to the **UNCOCKED** position; (2) wet chemical is expelled from the chamber, through the supply line, and discharged out of the nozzles into the duct, plenum and Uni-Top II Fryer and (3) the contacts of the snap action electrical switch **CLOSE**, applying voltage to the shunt trip mechanism of the circuit breakers and the circuit breakers open, removing high voltage electrical power from the Uni-Top II Fryer.

NOTE: ONCE THE FIRE SUPPRESSION SYSTEM IS ACTIVATED, IT RELEASES THE ENTIRE 20 POUNDS OF WET CHEMICAL TO SMOTHER THE FIRE. THE SYSTEM MUST BE RECHARGED WITH WET CHEMICAL AND RESET TO THE COCKED POSITION BY A LOCAL DISTRIBUTOR.

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**PART FOUR
MAINTENANCE AND REPAIR**

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MAINTENANCE AND REPAIR INSTRUCTIONS:

Maintenance and repair instructions contained herein are based on the 1989 models of equipment being manufactured. While the information may not completely apply to later models of equipment, these instructions should be used as a guide in performing similar repairs on newer equipment unless advised otherwise in a Technical Bulletin or Information Letter.

Maintenance and repair of the Ansul Fire Suppression System **WILL ONLY** be accomplished by a licensed Ansul Distributor. Maintenance and repair of the Uni-Top II Fryer, Vent Hood, and Make-Up Air/Exhaust System should be accomplished by a person thoroughly familiar with the overall operation of this equipment. Electrical power, 120 volts and 208/240 volts, to the Uni-Top II Fryer, Vent Hood and Make-Up Air/Exhaust System **WILL** be turned **OFF** in the main electrical panel **PRIOR** to performing any repairs to electrical components.

Maintenance or repair of the Uni-Top II Fryer, Vent Hood, and Make-Up Air/Exhaust System will be minimal, if preventive maintenance is accomplished at the intervals prescribed in Part Two.

NOTE: NO ATTEMPT WILL BE MADE TO REPAIR A COMPUTER MAGIC COOKING COMPUTER. IF IT IS DETERMINED THAT A COMPUTER IS DEFECTIVE, IT WILL BE RETURNED FOR REPAIR ACCORDING TO PROCEDURES CONTAINED IN PART FIVE OF THIS MANUAL.

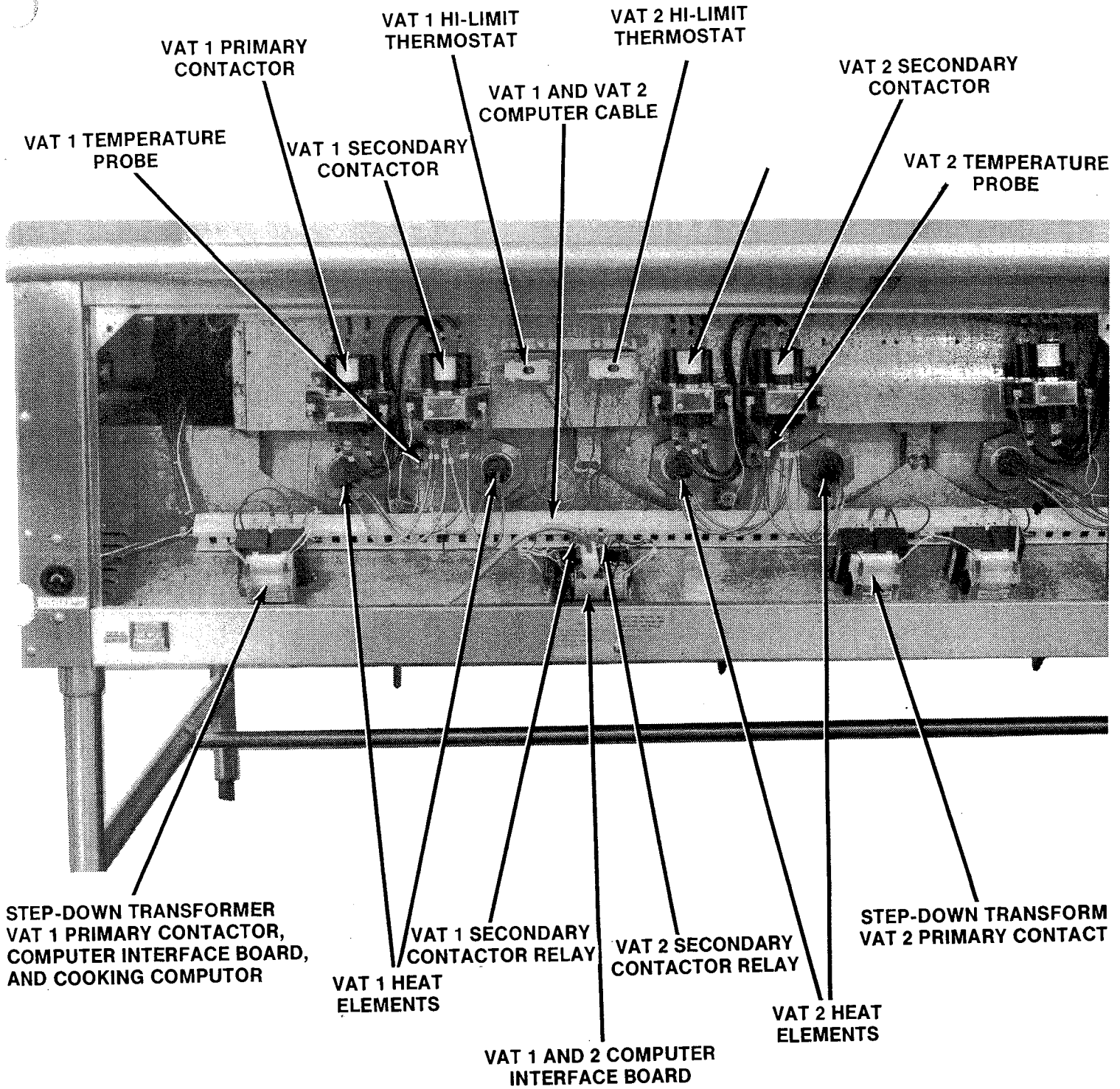


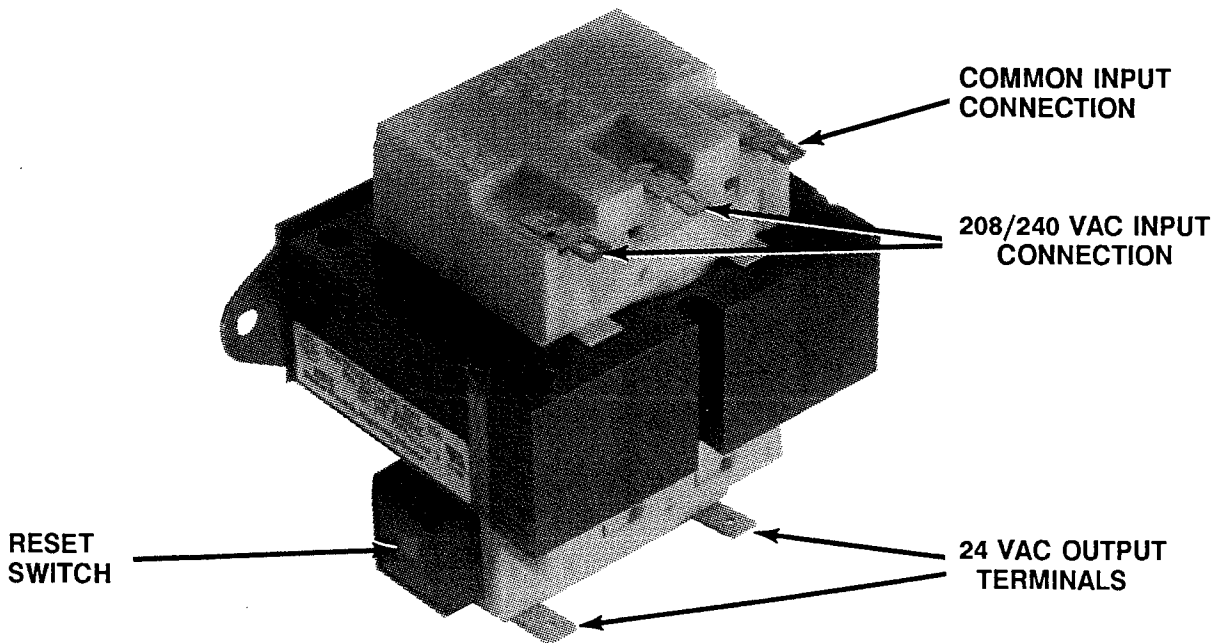
FIGURE 7. FRONT VIEW VATS 1 AND 2

I. **UNI-TOP II FRYER**

A. **208 VOLT ELECTRICAL COMPONENTS**

1. **STEP-DOWN TRANSFORMER:**

Two (2) Basler Electric step-down model BE322775-GEK transformers are mounted in the **FRONT** electrical raceway of the Uni-Top II Fryer as shown in Figure 7. The transformer on the **LEFT** reduces the incoming **HIGH VOLTAGE** on terminals 17 and 19 to 24 volts for operation of the **PRIMARY CONTACTOR COIL** for Vat 1, Computer Interface Board, and Computer Magic Cooking Computer. The transformer on the **RIGHT** reduces the incoming **HIGH VOLTAGE** on terminals 17 and 19 to 24 volts for operation of the **PRIMARY CONTACTOR COIL** for Vat 2.



**STEP-DOWN TRANSFORMER
CPN 22-619.**

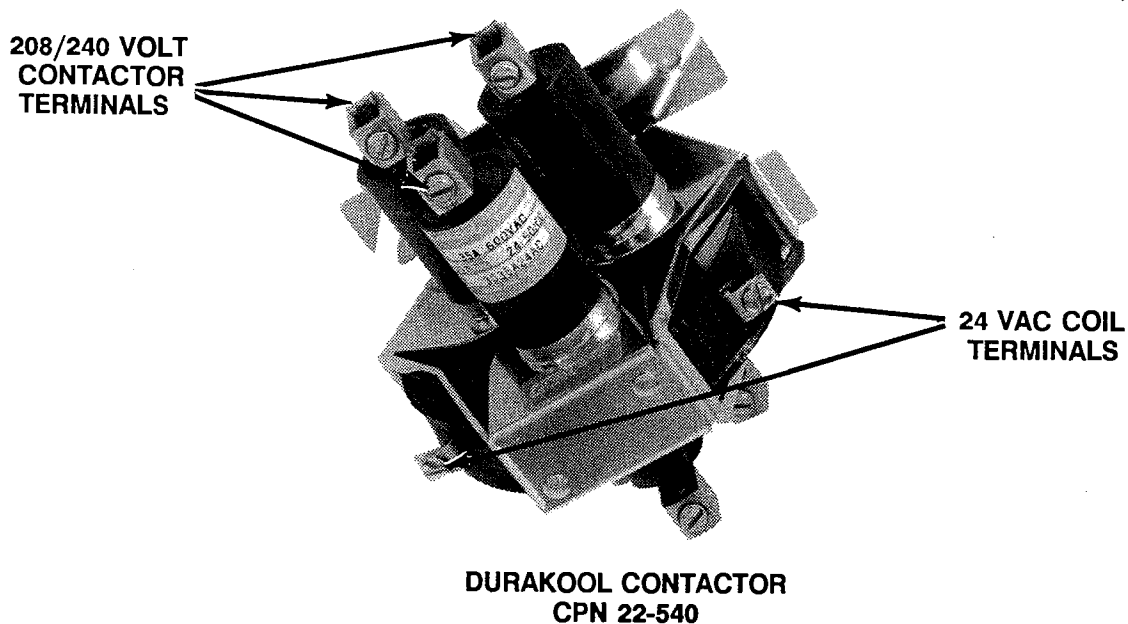
To replace a **STEP-DOWN TRANSFORMER:**

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the applicable front panel and remove the panel from the fryer.
- c. Position the **NEW** step-down transformer beside the defective transformer; then **REMOVE** the wires from the defective transformer **ONE-AT-A-TIME** and **INSTALL** them on the identical terminal of the new transformer.

- d. Remove the defective step-down transformer from the bulk head of the fryer by removing the two (2) #8 X 1/2" TEK screws; then securely mount the new step-down transformer to the bulk head using these screws.
- e. Replace the front panel on the fryer and secure it to the fryer by tightening the two (2) **DZUS** fasteners in the upper corners of the panel.
- f. Turn electrical power, 120 volts and 208/240 volts, to the fryer **ON** in the main electrical panels.

2. PRIMARY/SECONDARY CONTACTORS

Two (2) Durakool Model 3035A24AC 35 ampere 600 volt three pole contactors with 24 VAC resistive coils are mounted on the bulkhead immediately above the heat element nuts for each vat as shown in Figure 7. The contactor on the **LEFT** will always be the **PRIMARY** contactor and the contactor on the **RIGHT** will always be the **SECONDARY** contactor. These contactors are electrically wired in series with the two (2) heating elements as shown in figure 6.



To replace a **PRIMARY CONTACTOR**:

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the front panel and remove the panel from the fryer.
- c. Remove the **COLORED** wires from the **24 VAC COIL TERMINALS** of the defective primary contactor by loosening the terminal screws.

- d. Remove the three (3) **BLACK** wires from the **TOP** and **BOTTOM** contactor terminals by loosening the terminal screws.

NOTE: IF THE WIRES DO NOT CONTAIN LABELS WITH THE WIRE NUMBER, PLACE A TAG NUMBERED 1, 2, 3 ON THE THREE BLACK WIRES LEFT-TO-RIGHT.

- e. Remove the defective primary contactor from the bulkhead by removing the two (2) #8-1/2" TEK screws; then securely mount the new primary contactor to the bulkhead using these screws.
- f. Loosen the six (6) 208/240 volt contactor terminal screws and **SECURELY** reinstall the six (6) **BLACK** wires as follows:

- (1) Top Contactor Terminals
 - LEFT HAND TERMINAL - LOWEST** numbered wire
 - CENTER TERMINAL - MIDDLE** numbered wire
 - RIGHT HAND TERMINAL - HIGHEST** numbered wire

NOTE: These wires are routed through the **LEFT HAND** electrical raceway chase to the 208/240 volt terminal block mounted in the **REAR** electrical raceway.

- (2) Bottom Contactor Terminals
 - LEFT HAND TERMINAL - LOWEST** numbered wire
 - CENTER TERMINAL - MIDDLE** numbered wire
 - RIGHT HAND TERMINAL - HIGHEST** numbered wire

NOTE: These wires are **JUMPER** wires connected to the **TOP** contactor terminals of the adjacent **SECONDARY** contactor.

- g. **SECURELY** connect the **WHITE** wire to the **RIGHT HAND** 24 VAC coil terminal and **SECURELY** connect the **BLUE** wire to the **LEFT HAND** 24 VAC coil terminal.
- h. Replace the front panel on the fryer and secure it to the fryer by tightening the two (2) **DZUS** fasteners in the upper corners of the panel.
- i. Turn electrical power, 120 volts and 208/240 volts, to the fryer **ON** in the main electrical panel.

To replace a **SECONDARY CONTACTOR:**

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the applicable front panel and remove the panel from the fryer.
- c. Remove the **COLORED** wires from the **24 VAC COIL TERMINALS** of the defective secondary contactor by loosening the terminal screws.

- d. Remove the three (3) **BLACK** wires from the **TOP** contactor terminals by loosening the terminal screws.

NOTE: IF THE WIRES DO NOT CONTAIN LABELS WITH THE WIRE NUMBER, PLACE A TAG NUMBERED 1, 2, 3 ON THE THREE BLACK WIRES LEFT-TO-RIGHT.

- e. Place a tag numbered 1, 2, 3 on the three (3) **WHITE** wire bundles connected to the **BOTTOM** contactor terminals **LEFT-TO-RIGHT**; then remove these wire bundles by loosening the terminal screws.

NOTE: These wires are connected to the LEFT and RIGHT hand heating elements.

- f. Remove the defective secondary contactor from the bulkhead by removing the two (2) #8-1/2" TEK screws; then securely mount the new secondary contactor to the bulkhead using these screws.

- g. Loosen the six (6) 208/240 volt contactor terminal screws and **SECURELY** reinstall the three (3) **BLACK** wires to the **TOP** contactor terminals as follows:

LEFT HAND TERMINAL - LOWEST numbered wire

CENTER TERMINAL - MIDDLE numbered wire

RIGHT HAND TERMINAL - HIGHEST numbered wire

- h. **SECURELY** reinstall the three (3) bundles of **WHITE** wires to the **BOTTOM** contactor terminals as follows:

LEFT HAND TERMINAL - LOWEST numbered wire bundle

CENTER TERMINAL - MIDDLE numbered wire bundle

RIGHT HAND TERMINAL - HIGHEST numbered wire bundle

- i. **SECURELY** connect the **BROWN** or **ORANGE/BLACK** wire to the **RIGHT HAND** 24 VAC coil terminal and **SECURELY** connect the **BLUE/WHITE** or **RED** wire to the **LEFT HAND** 24 VAC coil terminal.

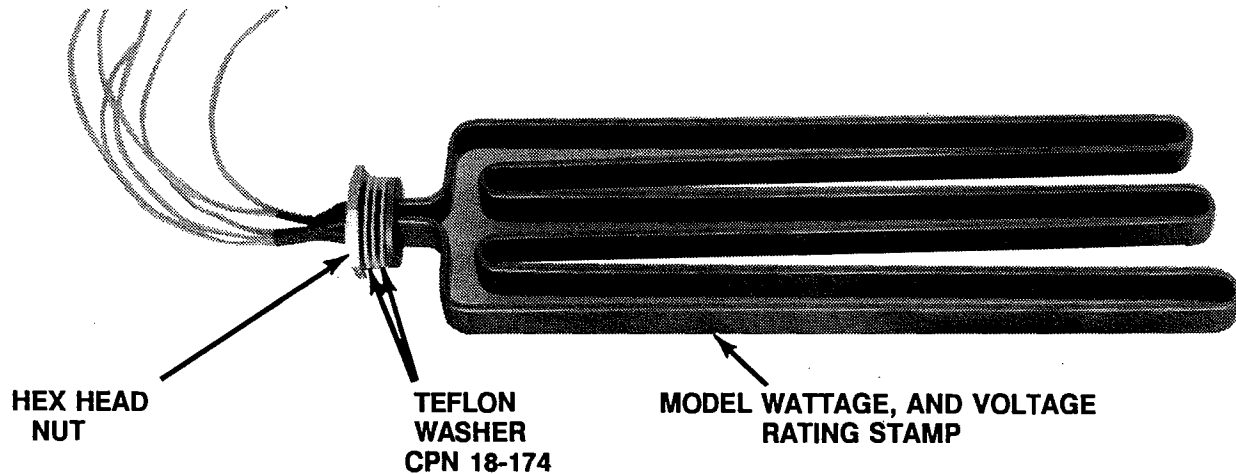
- j. Replace the front panel on the fryer and secure it to the fryer by tightening the two (2) **DZUS** fasteners in the upper corners of the panel.

- k. Turn electrical power, 120 volts and 208/240 volts, to the fryer **ON** in the main electrical panel.

3. HEAT ELEMENTS

Two (2) 208/240 volt 3 phase flat blade heating elements rated at 6000 watts (6KW) each are mounted on the bulkhead immediately below the primary and secondary contactor as shown in figure 7. These heating elements are electrically wired in series with the **PRIMARY** and **SECONDARY** contactors as shown in figure 6. A total of **12,000 WATTS (12 KW)** must be provided by the two (2) heating elements to properly cook the products within the prescribed time periods. Since the internal resistance of a 208 volt heat element is **LESS** than the internal resistance of a 240 volt heat element, it is **ESSENTIAL** that the voltage rating of the heat elements be the same as the three phase voltage connected to the Uni-Top II Fryer. If a 240 volt heat element is installed in a fryer operating on 208 volt electrical power, it will take shortening **LONGER** to rise to the proper temperature and the

time for temperature recovery will **INCREASE**. If a 208 volt heat element is installed in a fryer operating on 240 volt electrical power, the fryer will appear to operate properly, **BUT** the heat element will **FAIL PREMATURELY** due to the excessive current flowing through the element. The wattage and voltage rating of a heat element is stamped on each element as shown below; and the **METAL** tag located adjacent to the high voltage terminal block in the **REAR** electrical raceway indicates the voltage (208 or 240 volts) that should be applied to the fryer. Prior to replacing a heat element **INSURE** the new element has the proper voltage rating for that applied to the fryer.

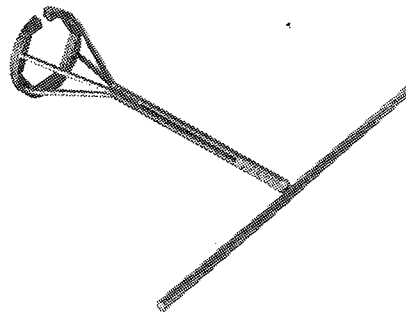


208 VOLT HEAT ELEMENT CPN 18-172
240 VOLT HEAT ELEMENT CPN 18-173

If shortening is found to be leaking around the heat elements, the nut securing the element to the vat may be loose or the teflon washer may need to be replaced.

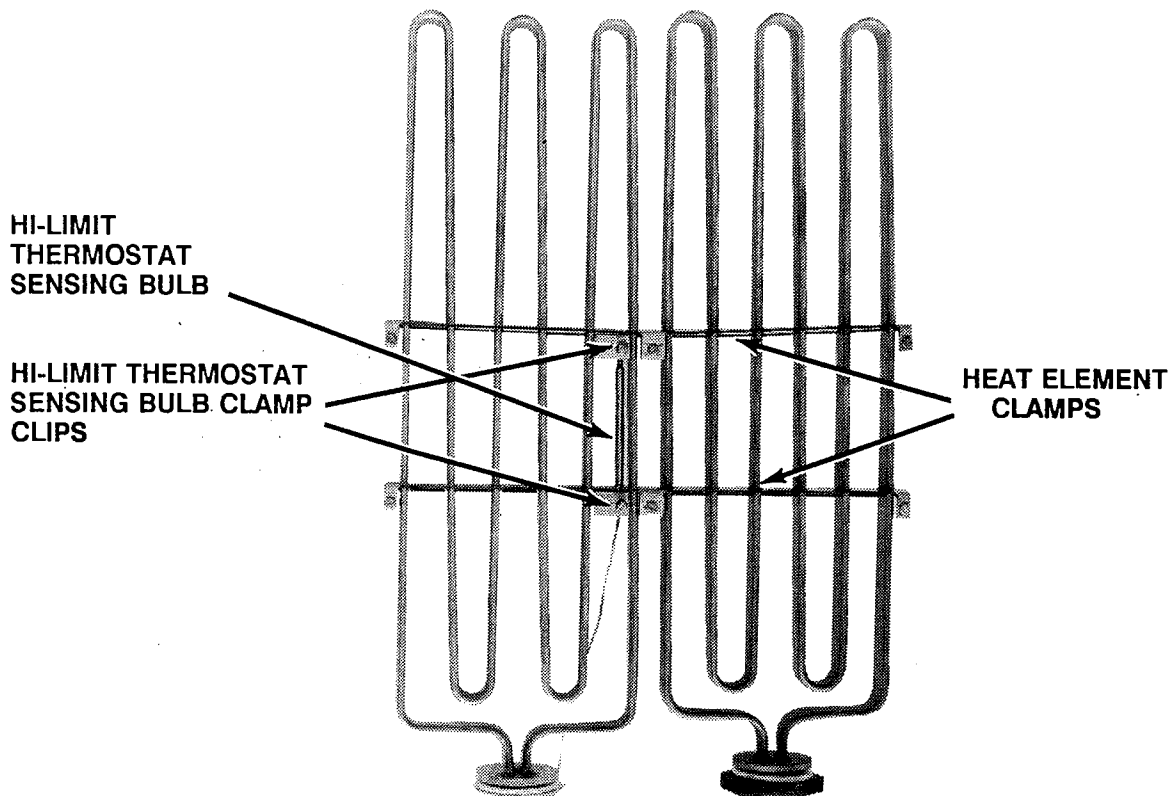
a. To **TIGHTEN** a heat element **NUT**:

- (1) Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- (2) Loosen the two (2) **DZUS** fasteners at the top of the front panel and remove the panel from the fryer.
- (3) **CAREFULLY** tighten the heat element nut on **BOTH** heat elements using the heat element wrench.



HEAT ELEMENT WRENCH

- (4) Clean the area around each heat element nut to insure the shortening leak has been corrected.
- (5) Replace and secure the front panel to the fryer and turn electrical power to the fryer **ON** in the main electrical panels.



b. To **REPLACE** heat element **WASHERS**:

- (1) Perform steps a (1) and a (2) above, and drain all shortening from the vat.
- (2) Remove the Hi-Limit Thermostat sensing bulb, shown above, from the heat element clamp clips by loosening the two (2) 8-32 X 3/4" screws and **CAREFULLY** place the capillary tube and sensing bulb in an out-of-the-way location.
- (3) Place a tag numbered 1, 2, 3 and the three (3) **WHITE** wire bundles connected to the **BOTTOM** terminal **LEFT** to **RIGHT** of the secondary contactor; then remove these wire bundles by loosening the terminal screws.
- (4) Loosen the large hex head nut on both heat elements using the heat element wrench.

- (5) **LABEL**, then separate the heat element wires from the **WIRE BUNDLES** previously connected to the secondary contactor.
- (6) **CAREFULLY** remove the large hex head nut from **BOTH** heat elements and the teflon washers on each side of the fryer bulkhead; and thoroughly clean the area around each heat element opening.
- (7) **CAREFULLY** place **NEW** teflon washers over **BOTH** heat element threads on each side of the fryer bulkhead; then **SECURELY** replace the large hex head nut on each heat element using the heat element wrench.

CAUTION: DO NOT USE SUBSTITUTE WASHERS. OBTAIN WASHERS THROUGH NORMAL SUPPLY CHANNELS UNDER CPN 18-174.

- (8) **CAREFULLY** attach the heat element wires to the **WIRE BUNDLES** insuring they are attached as **LABELED** in step 5 above; then **SECURELY** reinstall the three (3) wire bundles to the **BOTTOM** terminals of the secondary contactor from **LEFT** to **RIGHT**.

LEFT HAND TERMINAL - LOWEST numbered wire bundle

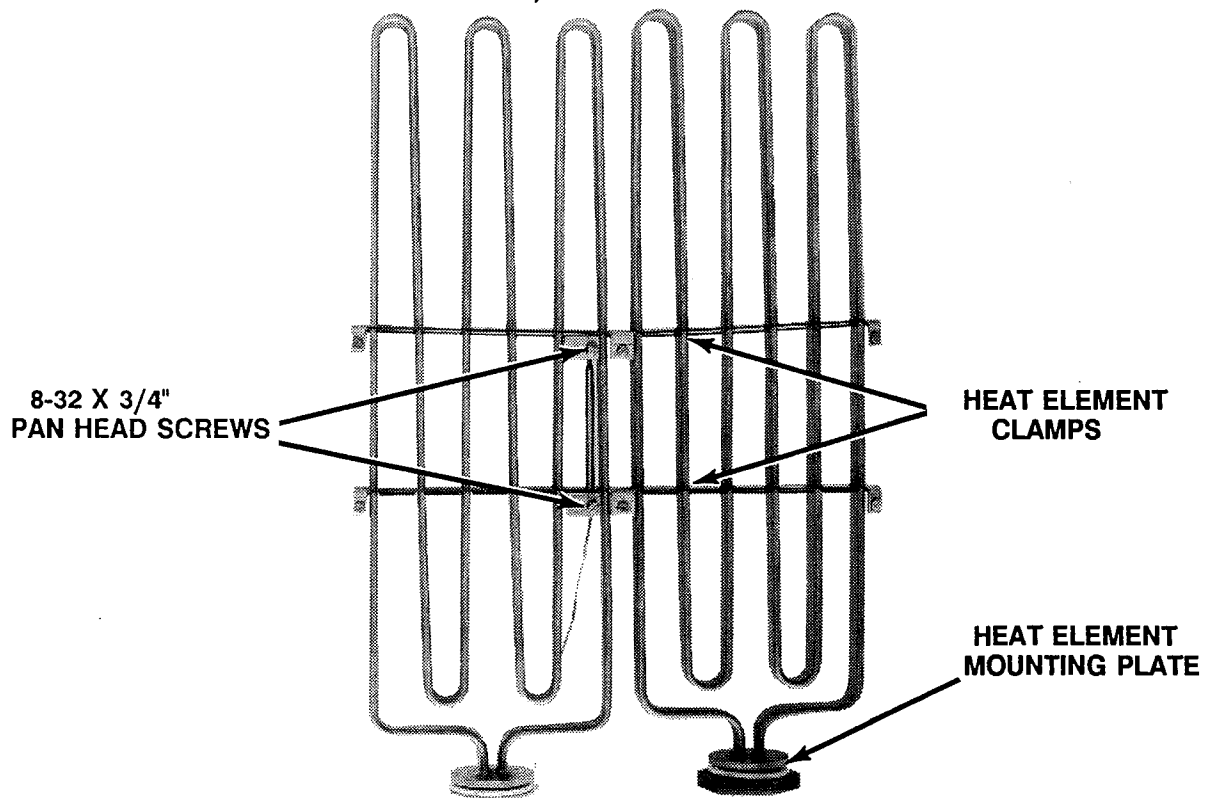
CENTER TERMINAL - MIDDLE numbered wire bundle

RIGHT HAND TERMINAL - HIGHEST number wire bundle

- (9) **CAREFULLY** insert the Hi-Limit Thermostat sensing bulb in the heat element clamp clip and secure it by tightening the two (2) 8-32 X 3/4" screws.
- (10) Replace shortening in the vat and check to assure the shortening leak has been corrected.
- (11) Perform step a (5) above.

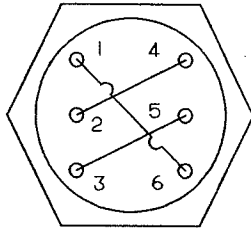
C. To REPLACE a HEAT ELEMENT:

- (1) Perform steps **a(1), a(2), b(2), b(3), B(4)** and **b(5)** above in that order.
- (2) **CAREFULLY** remove the large hex head nut and teflon washers from the defective heat element.
- (3) Remove the defective heat element from the heat element assembly by removing the **TOP HEAT ELEMENT CLAMPS** as follows:
 - (a) Remove the three (3) 8-32 X 1/2" pan head screws from each clamp.
 - (b) Separate and remove the **TOP** heat element clamp from each clamp assembly.
 - (c) **CAREFULLY** slide the defective heat element toward the **REAR** of the fryer; then remove it from the vat by raising the end of the element opposite the mounting plate **UP**.



- (4) Thoroughly clean both sides of the fryer bulk head near the heat element mounting hole, **CAREFULLY** place a new heating element in the vat, insert two (2) new teflon washers over the threads on the mounting plate; then **POSITION** the new element in the clamp assembly with the mounting plate butted against the bulkhead.
- (5) Place a teflon washer over the mounting plate threads on the **OPPOSITE** side of the bulkhead and secure the heat element to the bulkhead by tightening the large hex head nut **FINGER TIGHT**.

- (6) Replace and secure the **TOP HEAT ELEMENT CLAMPS** as follows:
- (a) Position the clamp **NEAREST** the heat element mounting plate **6"** from the plate, then securely tighten the 8-32 X 1/2" screws.
 - (b) Position the remaining clamp **3"** from the other clamp; then securely tighten the 8-32 X 1/2" screw.
- (7) **SECURELY** tighten the large hex head nut on the heat element using the heat element wrench.
- (8) Attach the wires on the **NEW** heat element to the **LABELED** wires of the other heat element as shown below.



**HEAT ELEMENT
TERMINAL NUMBERS**

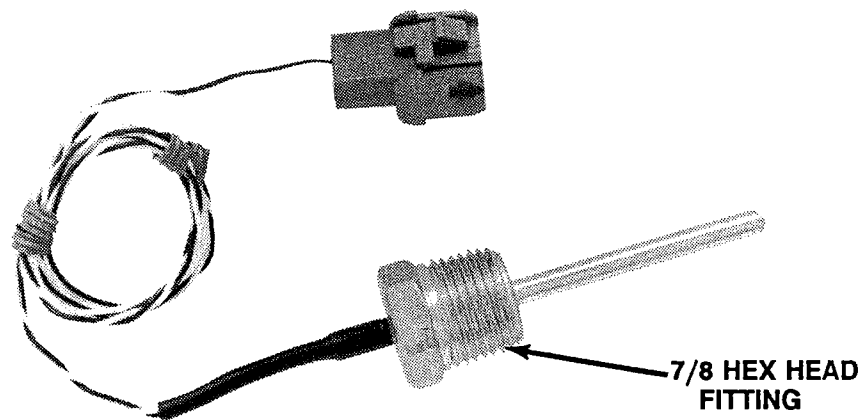
<u>HEAT ELEMENT TERMINAL NUMBER</u>	<u>WIRED LABELED</u>
1 & 6	1
2 & 4	2
3 & 5	3

- (9) **SECURELY** connect the three (3) wire bundles to the **BOTTOM** terminals of the secondary contactor as follows:
- LEFT HAND TERMINAL - LOWEST** numbered wire bundle
 - CENTER TERMINAL - MIDDLE** numbered wire bundle
 - RIGHT HAND TERMINAL - HIGHEST** numbered wire bundle
- (10) Perform steps **b(9)**, **b(10)** and **a(5)** above in that order.

B. 24 VOLT ELECTRICAL COMPONENTS

1. TEMPERATURE PROBE:

The temperature probe is a component of the Frymaster Computer Magic Cooking Computer and it is mounted on the fryer bulkhead between the heat elements as shown in Figure 7. The **BLACK/RED** and **WHITE** wires attached to the sensing bulb of the probe for Vat 1 are connected to a **BROWN** socket, as shown below. This socket mates with a **BROWN** plug which is electrically wired to plug **J3** of the Computer Interface Board (CIB) with **YELLOW** and **ORANGE** wires.



**TEMPERATURE PROBE
CPN 18-176**

To replace a TEMPERATURE PROBE:

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the front panel and remove the panel from the fryer.
- c. **CAREFULLY** drain all shortening from the Vat and while shortening is draining, **CAREFULLY** separate the **BROWN** socket and plug.
- d. After all shortening has drained, remove the defective probe from the fryer by turning the hex head fitting on the temperature probe to the **LEFT** (counter-clockwise) with a **7/8"** open-end wrench.

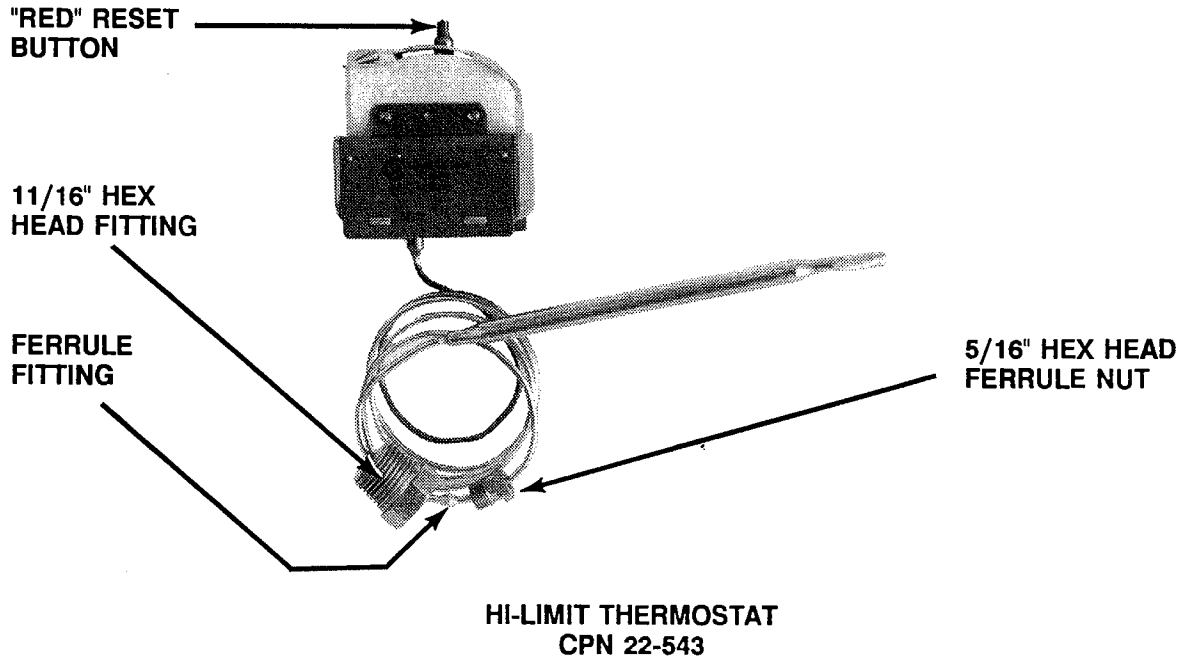
- e. Clean the threaded opening for the temperature probe on the bulkhead; place teflon tape on the threads of the hex head fitting; then insert and **SECURELY** tighten the fitting to the bulkhead by turning the hex head on the fitting to the **RIGHT** (clockwise) with a **7/8"** open-end wrench. **CAREFULLY** connect the **BROWN** socket, attached to the new temperature probe, to the **BROWN** plug, attached to plug **J3**.
- f. Replace shortening in the vat; replace and secure the front panel to the fryer; and turn electrical power to the fryer **ON** in the main electrical panels.

2. HI-LIMIT THERMOSTAT:

Two (2) Robertshaw Series 5225 450^oF Hi-Limit Thermostats are mounted on the fryer bulkhead between Vats 1 and 2 as shown in Figure 7. The Hi-Limit Thermostat for Vat 1 is located on the **LEFT**, and it is wired in series between the **STEP-DOWN TRANSFORMER** and **PRIMARY CONTACTOR COIL** for Vat 1 as shown in Figure 6. The **RIGHT HAND** terminal of the thermostat is connected to the **LEFT HAND STEP-DOWN TRANSFORMER** with a **BROWN** wire and the other terminal is connected to the primary contactor coil of Vat 1 with a **BLUE** wire.

To replace a HI-LIMIT THERMOSTAT:

- a. Perform steps **1a** and **1b** above and drain all shortening from the vat.



- b. Remove the **BROWN** and **BLUE** wires from the Hi-Limit Thermostat electrical terminals; then remove the thermostat from the fryer bulkhead by removing the two (2) #8 X 1/2" TEK screws.

- c. When all shortening has drained, loosen the **FERRULE NUT** on the hex head fitting of the thermostat capillary tube by turning the nut to the **LEFT** (counter-clockwise) using a **5/16"** open-end wrench while holding the hex head fitting with a **11/16"** open-end wrench.
- d. Remove the Hi-Limit Thermostat sensing bulb from the heat element clamp clips by loosening the two (2) 8-32 X 3/4" screws.
- e. Separate the ferrule nut from the hex head fitting; then remove the hex head fitting from the fryer bulkhead by turning it to the **LEFT** (counter-clockwise) with a **11/16"** open-end wrench.
- f. Mount the new Hi-Limit Thermostat to the fryer bulkhead using the two (2) #8 X 1/2" TEK screws removed in step 2b above; connect the **BLUE** wire to the **LEFT HAND** terminal; then connect the **BROWN** wire to the **RIGHT HAND** terminal.
- g. **CAREFULLY** feed the sensing bulb and capillary tube through the fryer bulkhead opening, and secure the sensing bulb to the heat element clamp clips by tightening the two (2) 8-32 X 3/4" screws.
- h. Pull any excess capillary tubing from the fryer; wrap teflon tape around the threads of the hex head fitting; **CAREFULLY** secure the hex head fitting to the fryer bulkhead by turning it to the **RIGHT** (clockwise) with a **11/16"** open-end wrench.
- i. **CAREFULLY** insert the **FERRULE FITTING** into the hex head fitting; then insert and **SECURELY** tighten the **FERRULE NUT** to this fitting by turning it to the **RIGHT** (clockwise) with a **5/16"** open-end wrench.
- j. Replace shortening in the vat; replace and secure the front panel to the fryer; and turn electrical power to the fryer **ON** in the main electrical panels.

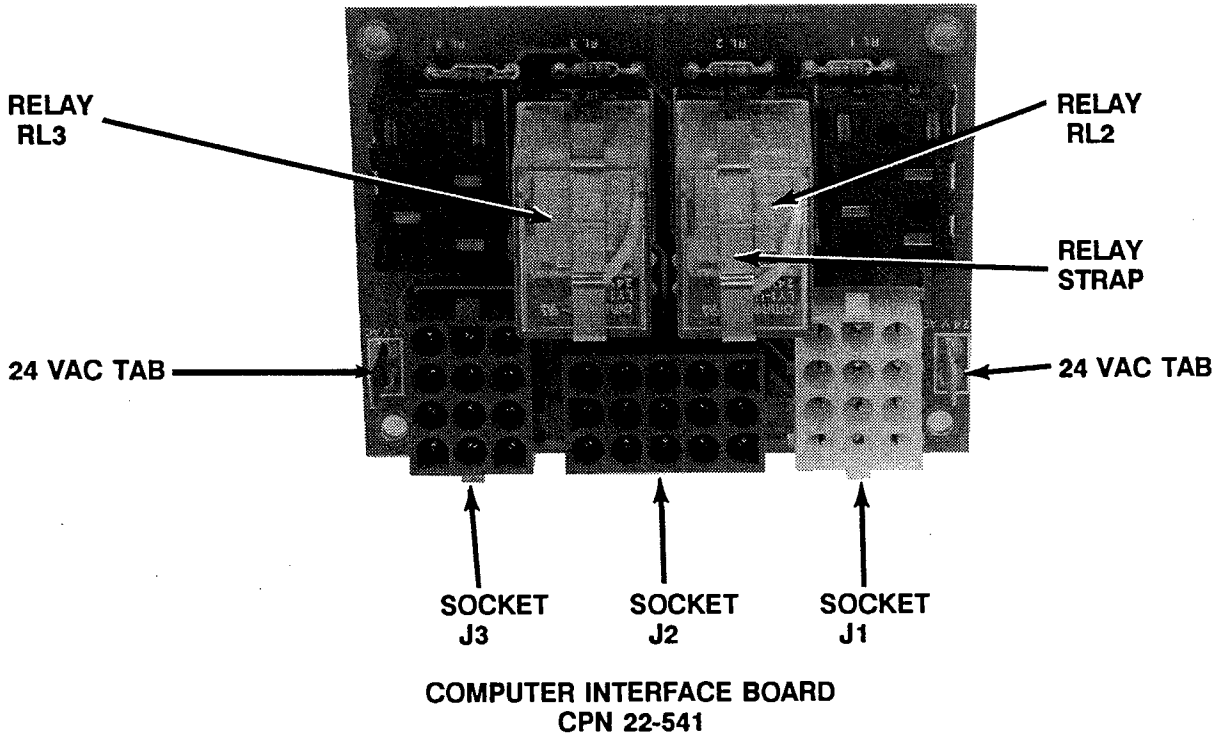
3. **COMPUTER INTERFACE BOARD:**

The Computer Interface Board (**CIB**) Model 806-3535 is a component of the Frymaster Computer Magic Cooking Computer and **ONE (1)** CIB is used to control operation of **TWO (2)** Vats (Vat 1 and Vat 2, Vat 3 and Vat 4, etc.). The CIB for Vat 1 and Vat 2 is mounted on the fryer bulkhead directly below the **LEFT HAND** heating element as shown in figure 7. This **PRINTED CIRCUIT BOARD** contains relays **RL2** and **RL3** which control the secondary contactors for **VAT 1** and **VAT 2**, as well as other circuitry which enables the Computer Magic Cooking Computer to properly cook products that have been programmed.

To replace a **COMPUTER INTERFACE BOARD:**

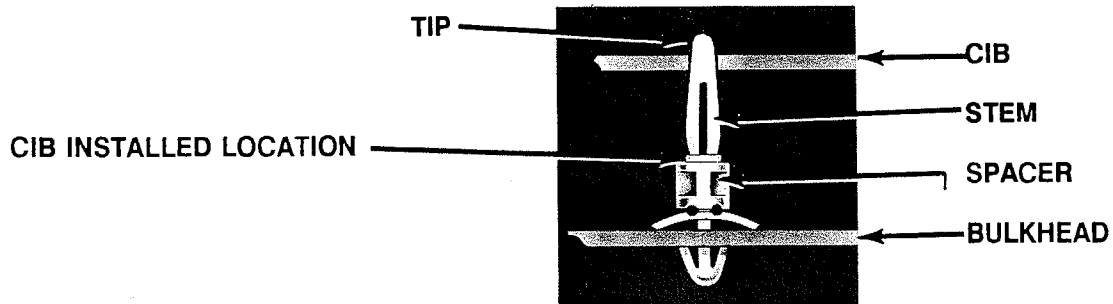
- a. Turn electrical power, 120 volts and 208/240 volts to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the front panels and remove the panel from the fryer.
- c. Remove the two (2) **ORANGE** wires from the **24 VAC TABS** on the CIB identified below.

- d. Carefully **DEPRESS** the **TABS** on the side of the **BROWN** plastic electrical plug connected to the **BROWN** plastic socket **J3**; then **GENTLY** remove this plug. Repeat this procedure to remove the plastic electrical plugs from sockets **J1** and **J2**.



- e. Carefully remove the **STRAP** on relay **RL3** by pulling it away from the relay socket, then **CAREFULLY** remove relay **RL3**. Repeat this procedure to remove relay **RL2** from the relay socket.

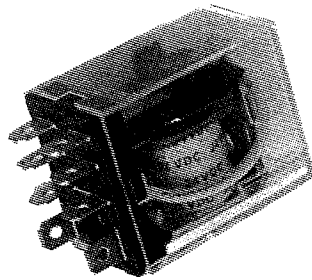
NOTE: The CIB is secured to the fryer bulkhead with four (4) **WHITE** nylon card spacers. To release the CIB from the **STEM** of each spacer, the **STEM** must be depressed with long nose pliers while lifting that corner of the CIB **UPWARD**.



- f. **CAREFULLY** remove the CIB from the fryer by **DEPRESSING** the **STEM** of each spacer with long nose pliers while lifting that corner of the CIB.
- g. Position the new CIB on the bulkhead with sockets **J1**, **J2** and **J3** toward the **BOTTOM** of the fryer; insert the **TIP** of the four (4) card spacers in the CIB mounting holes; then secure the CIB to each spacer by pressing **DOWNWARD** on the CIB until each corner is securely seated on the spacer.
- h. **CAREFULLY** insert one (1) of the relays removed in step e above in socket **RL2**; then secure the relay to the socket using the relay strap. Repeat this procedure to insert and secure the remaining relay in socket **RL3**.
- i. **CAREFULLY** depress the **TABS** on the side of the 12 pin **BROWN** plastic plug, **GENTLY** insert this plug in socket **J3**, and when the plug is firmly seated in the socket, release the **TABS** to secure this connection. Repeat this procedure to install the 15 pin **WHITE** plug in socket **J2** and the 12 pin **WHITE** plug in socket **J1**.
- j. Securely connect the two (2) **ORANGE** wires to the **24 VAC TABS** on the bottom of the CIB.
- k. Replace and secure the front panel on the fryer using the two (2) **DZUS** fasteners; then turn electrical power to the fryer **ON** in the main electrical panels.

4. **SECONDARY CONTACTOR CONTROL RELAY**

One (1) 24 volt Model LY1 relay manufactured by Omron is used in each Computer Interface Board (CIB) to control the secondary contactor of each vat. Relay **RL2** on each CIB controls the **EVEN** numbered vats (2, 4 and 6) and Relay **RL3** control **ODD** numbered vats (1, 3 and 5).



**24 VDC RELAY
CPN 22-616**

To replace a **OMRON 24 VDC RELAY**:

- a. Perform steps 3a and 3b above.
- b. Carefully **REMOVE** the **STRAP** on the defective relay; then **CAREFULLY** remove the relay from the CIB.

- c. **CAREFULLY** insert the new relay in the appropriate relay socket, then secure the relay using the **STRAP** removed in the above step.
- d. Replace and secure the front panel on the fryer using the two (2) **DZUS** fasteners; then turn electrical power to the fryer **ON** in the main electrical panels.

5. **COMPUTER INTERFACE CABLE**

One (1) Computer Interface Cable with two (2) 12 pin plastic electrical plugs and two (2) 2 pin plastic electrical plugs are used with each Computer Interface Board to enable the Computer Magic Cooking Computer to properly cook products that have been programmed. The 12 pin **BROWN** plastic electrical plug connects to socket **J3** and wires terminated in this plug connect to the **SECONDARY** contactor coil and the **BROWN TEMPERATURE PROBE** socket of **ODD** numbered vats (Vats 1, 3, 5). The **WHITE** 12 pin plastic electrical plug connects to socket **J1** and wires terminated in this plug connect to **SECONDARY** contactor coil and the **WHITE TEMPERATURE PROBE** socket of **EVEN** numbered vats (vats 2, 4, 6).



COMPUTER INTERFACE CABLE
CPN 22-545

To replace an **INTERFACE CABLE**:

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the front panel and remove the panel from the fryer.
- c. Carefully **DEPRESS** the **TABS** on the side of the **BROWN** and **WHITE** 12 pin plugs and **GENTLY** remove each plug from the applicable **SOCKETS** on the **CIB**.
- d. Remove the two (2) wires connected to the **COIL** terminals of each secondary contactor, **SEPARATE** the **BROWN** and **WHITE** 2 pin electrical plugs from the **TEMPERATURE PROBE** sockets by **DEPRESSING** the **TABS** on the side of the plug; then remove the defective Interface Cable from the fryer.
- e. **CAREFULLY** depress the **TABS** on the side of the **BROWN** and **WHITE** 12 pin electrical plugs attached to the new Interface Cable, **GENTLY** insert the **BROWN** plug in socket **J3** and insert the **WHITE** plug in socket **J1**, and when each plug is firmly seated in the sockets, release the **TABS** to secure the connections.

- f. Connect the **BROWN** and **BLUE/WHITE** wires with **SPADE** terminals to the **COIL** terminals of the **LEFT HAND** secondary contactor; connect the **RED** and **ORANGE/BLACK** wires to the coil terminals of the **RIGHT HAND** secondary contactor; then **SECURELY** connect the **BROWN** and **WHITE** 2 pin plugs to the **BROWN** and **WHITE** temperature probe sockets.
- g. Replace and secure the front panel on the fryer using the two (2) **DZUS** fasteners; then turn electrical power to the fryer **ON** in the main electrical panels.

6. COMPUTER CABLE

A 15 foot Computer Cable with a 15 pin **WHITE** plastic plug on each end is used to interconnect the circuitry within the Computer Magic Cooking Computer to the Computer Interface Board (CIB) circuitry and the **TEMPERATURE PROBE** for two (2) vats of the fryer. One 15 pin electrical plug connects to a 15 pin electrical socket on the **REAR** panel of the Computer and the other plug connects to socket **J2** on the CIB.

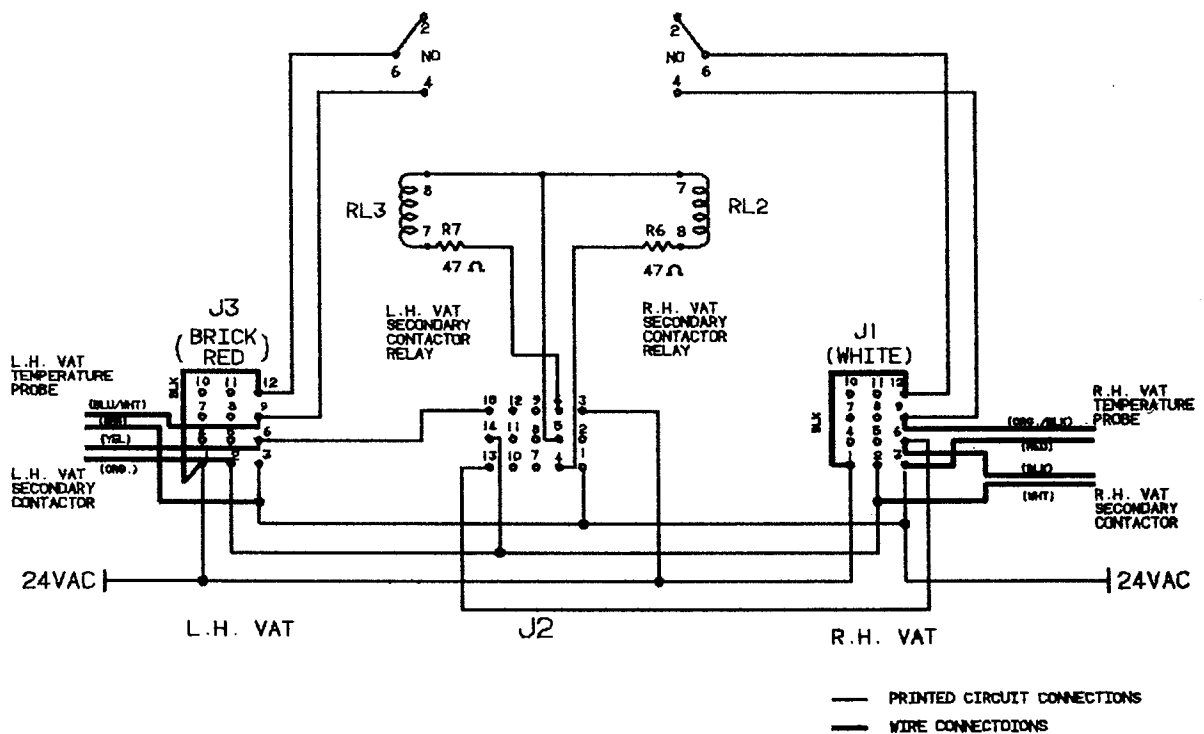


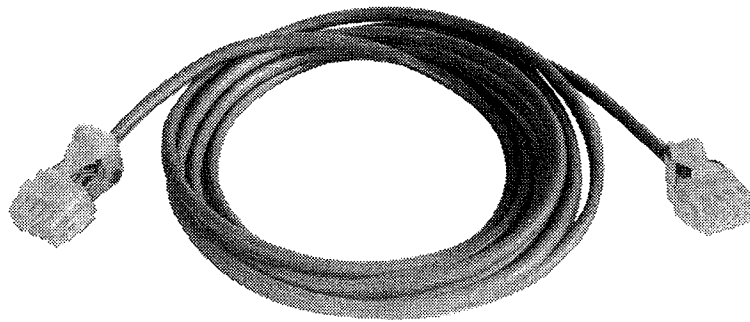
FIGURE 8. COMPUTER INTERFACE BOARD CIRCUITRY

As shown in figure 8 above, some pins in socket **J2** are connected to pins in sockets **J1** and **J3** by **PRINTED CIRCUITS** within the CIB to complete the following circuits to the Computer Magic Cooking Computer.

COMPUTER CIRCUIT

SOCKET J2 PINS

24 VAC Electrical Power	1 & 3
Left Hand Vat Secondary Contactor Control Relay RL3 Coil	5 & 6
Left Hand Vat Temperature Probe	14 & 15
Right Hand Vat Secondary Contactor Control Relay RL2 Coil	4 & 5
Right Hand Vat Temperature Probe	13 & 14



**COMPUTER CABLE
CPN 22-546**

To replace a **COMPUTER CABLE**:

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the front panel and remove the panel from the fryer. Then remove the cover from the **REAR** electrical raceway.
- c. Carefully **DEPRESS** the **TABS** on the side of the 15 pin electrical plug connected to the socket on the **REAR** panel of the computer; then **GENTLY** remove the plug from the socket. Repeat the procedure to remove the 15 pin electrical plug from socket **J2** on the **CIB**.
- d. Cut all plastic cable ties used to secure the Computer Cable to the fryer or vent hood; then **CAREFULLY** remove the defective Computer Cable from the electrical raceway and wire chase of the fryer.
- e. Route one end of the new computer cable through the appropriate wire chase in the **REAR** electrical raceway to the applicable Computer Interface Board (**CIB**) and connect the 15 pin plug to socket **J2**. Route the other end of this computer cable to the cooking computer and connect the 15 pin plug to the socket on the rear of the computer.

NOTE: Route the computer cable for Vats 1 and 2 through the **RIGHT HAND** wire chase and route the cables for Vats 3, 4, 5 and 6 through the **LEFT HAND** wire chase.

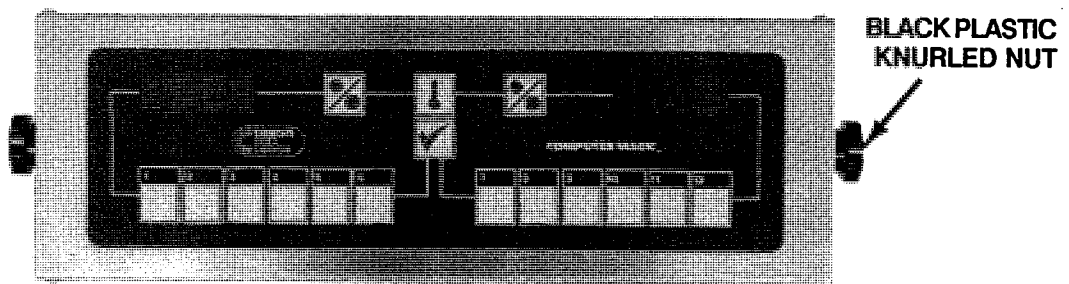
- f. **CAREFULLY** route the Computer Cable to the Computer Magic Cooking Computer using the same path as on adjacent computer cables and secure it to the fryer/vent hood with plastic cable ties; then coil and secure any excess cable to a location where it cannot be damaged.
- g. Replace and secure the front panel on the fryer using the two (2) **DZUS** fasteners; replace and secure the cover on the **REAR** electrical raceway; then turn electrical power to the fryer **ON** in the main electrical panels.

7. **COMPUTER MAGIC COOKING COMPUTER**

The Computer Magic Cooking Computer is mounted on a bracket attached to the Chicken Warmer Bar and it is electrically connected to the Uni-Top II Fryer by a 15 foot Computer Cable.

To replace a **COMPUTER MAGIC COOKING COMPUTER**:

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
- b. Carefully **DEPRESS** the **TABS** on the side of the 15 pin electrical plug connected to the socket on the **REAR** panel of the computer; then **GENTLY** remove the plug from the socket.
- c. Loosen the **BLACK PLASTIC** knurled nut on each side of the computer; then **CAREFULLY** remove the Computer from the mounting bracket.



COMPUTER MAGIC COOKING COMPUTER **CPN 22-539**

- d. Position the new Computer on the mounting bracket and **SECURE** it to the bracket with the two (2) **BLACK PLASTIC** knurled nuts.
- e. **CAREFULLY** insert the 15 pin electrical plug on the Computer Cable in the 15 pin socket on the **REAR** panel of the Computer by depressing the **TABS** on the side of the plug.
- f. Turn electrical power to the fryer **ON** in the main electrical panel; then **PROGRAM** the new Computer for products cooked according to procedures in paragraph IB Part Three of this manual.

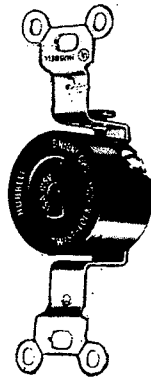
CAUTION:DO NOT ATTEMPT TO REPAIR A DEFECTIVE COMPUTER. PROCESS DEFECTIVE COMPUTERS ACCORDING TO PROCEDURES IN PART FIVE.

C. ELECTRICAL RECEPTACLES

The Uni-Top II Fryer has been designed to operate in a store configured with either **LEFT** or **RIGHT** hand equipment; therefore two (2) electrical receptacles are provided on both sides of the fryer for the Batter Table and Potato Freezer. Two (2) Hubbell type 4710 twist lock electrical receptacles are located on the two (2) **FRONT** panels of the fryer for the Batter Table, and two (2) Leviton type 5015 electrical receptacles are located on the **SIDE** panels toward the rear of the fryer for the Potato Freezer.

1. BATTER TABLE RECEPTACLE:

The two (2) Batter Table twist lock receptacle, Hubbell type 4710, are located on the **FRONT** panels of the fryer and are electrically wired to terminals **5** and **6** of the 120 volt single phase terminal block mounted in the **REAR** raceway of the fryer.



**BATTER TABLE ELECTRICAL RECEPTACLE
HUBBELL TYPE 4710
CPN 23-183**

To replace a BATTER TABLE RECEPTACLE:

- a. Turn electrical power, 120 volts and 208/240 volts to the fryer **OFF** in the main electrical panels.
- b. Loosen the two (2) **DZUS** fasteners at the top corners of the applicable front panel and remove the panel from the fryer.
- c. **CAREFULLY** remove the defective electrical receptacle from the front panel of the fryer by removing the two (2) 10-24 truss head screws and nylock nuts.
- d. Remove the **RED** and **WHITE** wire from the defective receptacle electrical terminals and **SECURELY** install them on the terminals of new receptacle as follows:

WIRE COLOR

TERMINAL COLOR

RED
WHITE

BRASS
SILVER

- e. Install the new electrical receptacle in the mounting hole and secure it to the fryer using the two (2) 10-24 truss head screws and nylock nuts removed in step c above.
- f. Replace and secure the front panel on the fryer using the two (2) **DZUS** fasteners; then turn electrical power to the fryer **ON** in the main electrical panels.

2. POTATO FREEZER RECEPTACLE

The two (2) Potato Freezer receptacle, Leviton type 5015, are located on the **SIDE** panels of the fryer and are electrically wired to terminals **11** and **12** of the 120 volt single phase terminal blocks mounted in the **REAR** raceway.



**POTATO FREEZER ELECTRICAL RECEPTACLE
LEVITON TYPE 5015
CPN 33-012**

To replace a **POTATO FREEZER RECEPTACLE**:

- a. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels, and remove the **COVER** from the rear raceway by removing the fourteen (14) #8 X 1/2" TEK screws.
- b. Remove the defective electrical receptacle from the **SIDE** panel of the fryer by removing the two (2) 10-24 truss head screws and nylock nuts; then remove the **BLACK** and **WHITE** wires connected to defective receptacle.
- c. **SECURELY** install the **BLACK** and **WHITE** wires on the terminals of the new receptacle as follows:

WIRE COLOR

TERMINAL COLOR

BLACK
WHITE

BRASS
SILVER

- d. Replace and secure the rear raceway cover using the fourteen (14) #8 X 1/2" TEK screws; then turn electrical power to the fryer **ON** in the main electrical panels.

II. 5 VAT VENTHOOD

The only difference in Venthoods manufactured by Far West Products Incorporated is physical location of the Chicken Warmer assembly **LEFT** or **RIGHT** and **LENGTH** of the plenum section in 3, 4, 5 and 6 vat venthoods. Maintenance and repair to the Venthood is minimal and most repairs will be to electrical components which are wired identically in **ALL** Venthoods.

A. CHICKEN WARMER LAMPS

Four (4) quartz lamps are installed in the Chicken Warmer Panel mounted beneath the Chicken Warmer Hood with four (4) 10-24 X 5/8" truss head stainless steel screws. These lamps are electrically wired to terminals 9 and 10 of the 120 volt single phase terminal block located in the **REAR** electrical raceway of the Uni-Top II Fryer as shown in Figure 9. While defective quartz lamps can be readily replaced, the Chicken Warmer Panel **MUST** be removed from the Venthood to replace a defective quartz lampholder.

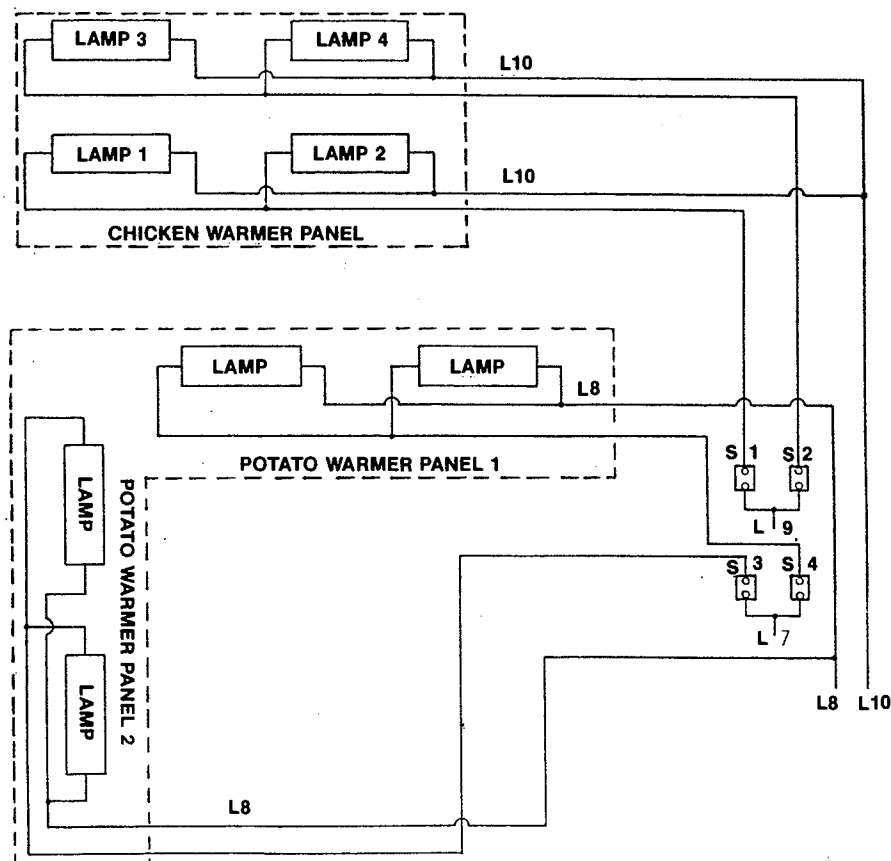
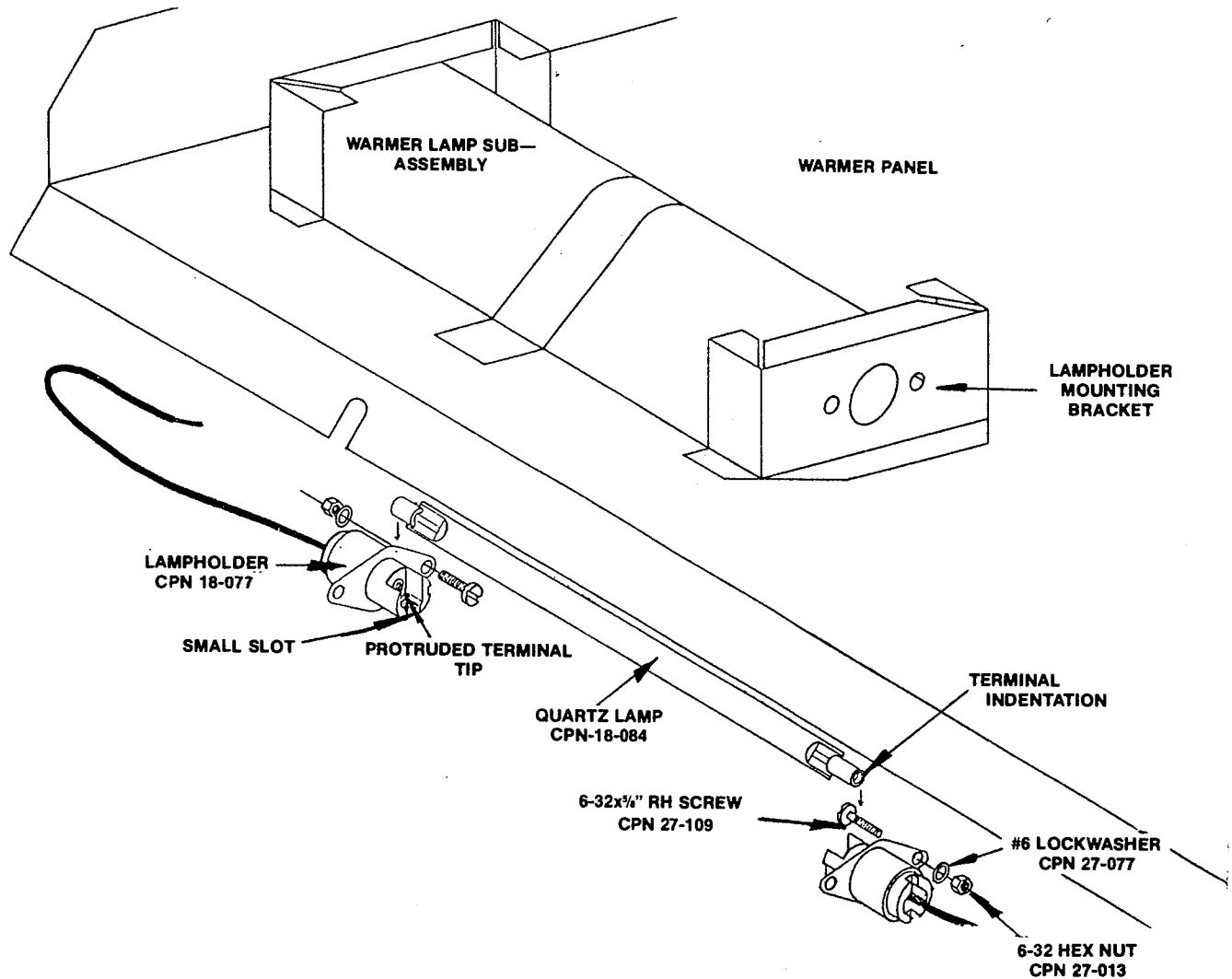


FIGURE 9. VENTHOOD WARMER LAMP WIRING DIAGRAM

To replace a **LAMPHOLDER**:

1. Turn electrical power to the fryer, 120 volts and 208/240 volts, **OFF** in the main electrical panels.
2. Remove the quartz lamp from the defective quartz warmer lamp lampholder identified in the sketch below.



3. Remove the four (4) 10-24 X 5/8" screws from the chicken warmer panel, separate the warmer panel from the Venthood, and **CAREFULLY** lower the chicken warmer panel.
4. Separate the **GRAY** electrical wire of the defective lampholder from the **TAN** electrical wire by removing the **ORANGE** or **YELLOW** wire nut.

NOTE: Some lampholders will be connected to **ONE TAN** wire, some to **TWO TAN** wires, and some to a **TAN** and **GRAY** wire.

5. Remove the defective lampholder from the warmer lamp sub-assembly by removing the two (2) 6-32 X 5/8" screws, 6-32 hex nuts, and lock washers.
6. Install the new lampholder in the warmer lamp sub-assembly, **INSURING** the **SMALLER** slot on the porcelain holder is pointed **DOWNWARD**, and secure the lampholder to the sub-assembly using the screws, nuts and washers removed in step 5 above.
7. Connect the **GRAY** wire of the new lampholder to the **TAN**, and if applicable, other **GRAY** and **TAN** wires, and secure the connection with the wire nut removed in step 4 above.
8. Remove the dried silicone, used to seal the chicken warmer panel to the warmer hood, from the edges of the chicken warmer panel and perimeter of the warmer hood.
9. **CAREFULLY** position the chicken warmer panel in the warmer hood and secure it to the hood using the four (4) 10-24 X 5/8" screws removed in step 3 above.
10. Completely seal the crevice between the chicken warmer panel and warmer hood with silicone.
11. Replace the quartz lamp in the lampholders **INSURING** the protruded terminal tip of each lampholder is seated in the terminal indentation on each end of the lamp.
12. Turn electrical power, 120 volts and 208/240 volts, to the fryer **ON** in the main electrical panels.

B. POTATO WARMER LAMPS

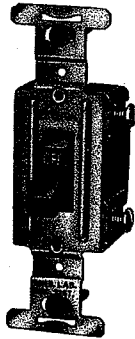
Two (2) potato warmer panels are installed beneath the chicken display area of the Venthood, and each potato warmer panel contains two (2) quartz lamps. Each panel is secured to the hood with three (3) 10-24 X 5/8" truss head stainless steel screws and the quartz lamps are electrically wired to terminals 7 and 8 of the 120 volt single phase terminal block, as shown in figure 9. Defective quartz lamps can be readily replaced in the potato warmer panels, however, a potato warmer **MUST** be removed from the venthood to replace a defective lampholder.

To replace a **LAMPHOLDER**:

1. Turn electrical power to the fryer, 120 volts and 208/240 volts, **OFF** in the main electrical panels.
2. Remove the quartz lamp from the defective quartz warmer lamp lampholder identified in the sketch above.
3. Remove the three (3) 10-24 X 5/8" screws from the potato warmer panel containing the defective lampholder and **CAREFULLY** lower the potato warmer panel.
4. Separate the **GRAY** electrical wire of the defective lampholder from the **TAN** electrical wire or wires by removing the **ORANGE** or **YELLOW** wire nut.
5. Remove the defective lampholder from the warmer lamp sub-assembly by removing the two (2) 6-32 X 5/8" screws, 6-32 hex nuts, and lock washers.
6. Install the new lampholder in the warmer lamp sub-assembly, **INSURING** the **SMALLER** slot on the porcelain holder is pointed **DOWNWARD**, and secure the lampholder to the sub-assembly using the screws, nuts, and washers removed in step 5 above.
7. Connect the **GRAY** wire of the new lampholder to the **TAN** electrical wire or wires and secure the connection with the wire nut removed in step 4 above.
8. **CAREFULLY** position the potato warmer panel beneath the chicken display area and secure it to the venthood using the three (3) 10-24 X 5/8" screws removed in step 3 above.
9. Replace the quartz lamp in the lampholders **INSURING** the protruded terminal tip of each holder is seated in the terminal indentation on each end of the lamp.
10. Turn electrical power, 120 volts and 208/240 volts, to the fryer **ON** in the main electrical panels.

C. **WARMER LAMP SWITCHES**

The chicken warmer lamps and potato warmer lamps are turned on and off by four (4) single pole single throw (SPST) electrical switches, Leviton Type 1530, which are mounted on the rear panel of the venthood. These switches are electrically wired in series with the quartz lamps and 120 volt single phase terminal block as shown in figure 9. The **TOP** two (2) switches control the chicken warmer lamps and the **BOTTOM** two (2) switches control the potato warmer lamps.



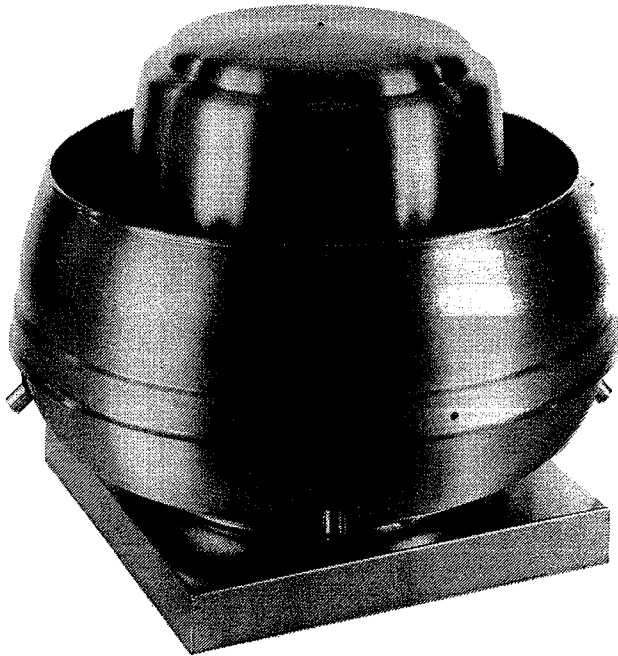
**WARMER LAMP SWITCH
LEVITON TYPE 1530
CPN 18-012**

To replace a **WARMER LAMP SWITCH**:

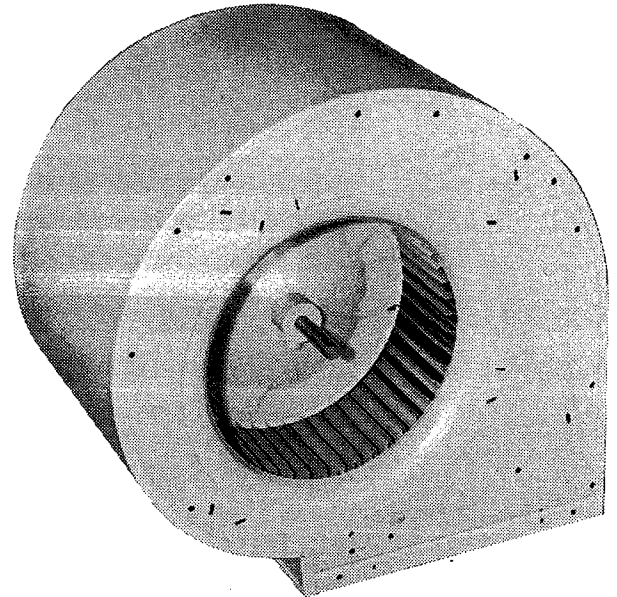
1. Turn electrical power, 120 volts and 208/240 volts, to the fryer **OFF** in the main electrical panels.
2. Remove the stainless steel switch cover from the rear panel of the venthood by removing the eight (8) 6-32 X 1/2" round head screws.
3. Remove the two (2) 6-32 mounting screws from the defective switch and **CAREFULLY** pull the switch (with electrical wires attached) away from the rear panel as far as possible.
4. Label the wires connected to the two (2) bottom electrical terminals on the switch **LEFT** and **RIGHT**.
5. With the wires labeled, remove the wires from the defective switch.
6. Position the new switch on the rear panel with the electrical terminal pointed **DOWNWARD** and connect the wires labeled **LEFT** to the left hand terminal and the wires labeled **RIGHT** to the right hand terminals.
7. **CAREFULLY** place the new switch into the rear panel and secure it to the panel using the two (2) 6-32 screws removed in step 3 above.
8. Remove the dried silicone from around the rear panel and stainless steel switch cover.
9. Install the stainless steel switch cover on the rear panel and secure it to the panel with the eight (8) 6-32 X 1/2" screws removed in step 2 above.
10. Thoroughly seal the crevice around the stainless steel switch cover with silicone.
11. Turn electrical power, 120 volts and 208/240 volts, to the fryer **ON** in the main electrical panels.

III. MAKE-UP AIR/EXHAUST SYSTEM

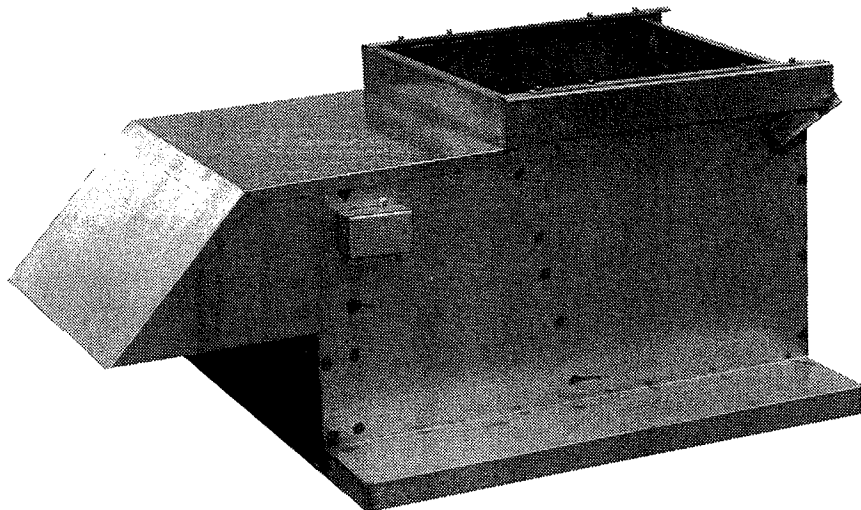
The major components of the Make-Up Air/Exhaust System are the Dayton Squirrel Cage Blower and Jenn Air Exhaust Fan which are attached to a weather proof housing located on the roof of the store. If preventive maintenance of the Make-Up Air/Exhaust System is performed according to Part Two of this manual, maintenance and repair of the Jenn Air Exhaust Fan and Dayton Blower will be minimal.



JENN AIR EXHAUST FAN
CPN 21-035



DAYTON BLOWER
CPN 22-057

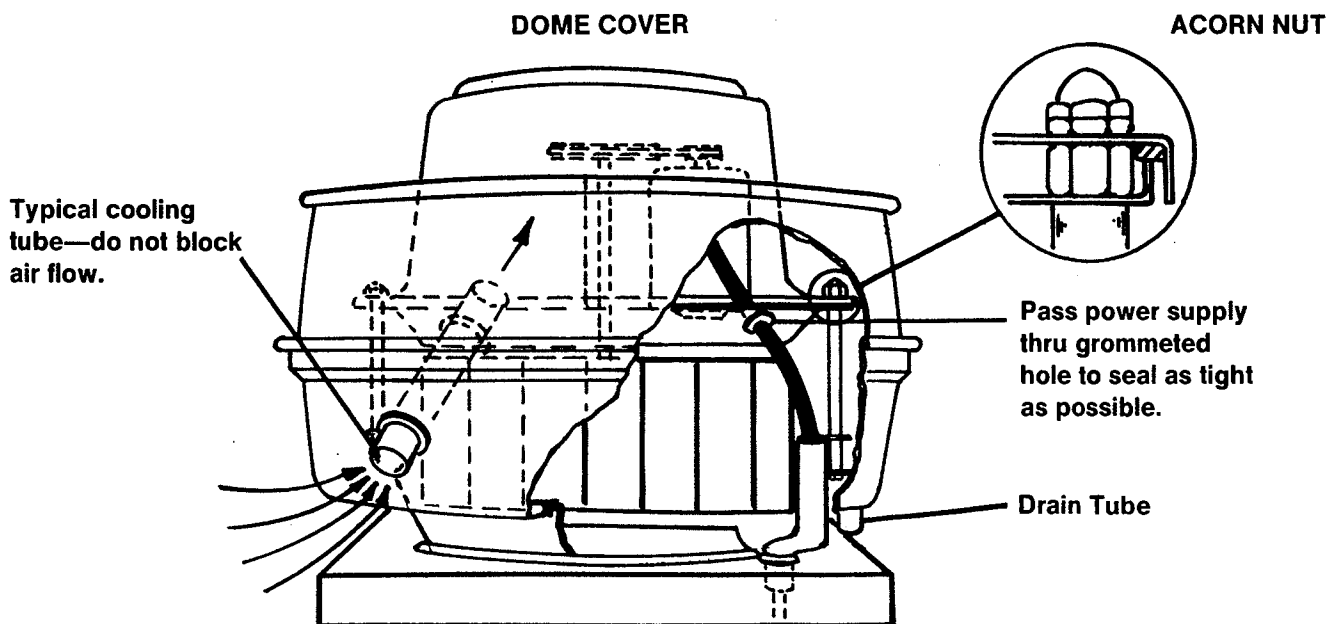


WEATHER PROOF HOUSING
CPN 11-155

A. JENN AIR EXHAUST FAN

The Model 183BTD Jenn Air Exhaust Fan is mounted to angle iron hinges attached to the exhaust fan weather housing. It is electrically wired to the same circuit breaker as the Dayton Blower, and these electrical connections are contained in the electrical junction box attached to the side of the weather housing. The exhaust fan is equipped with an automatic belt tensioner, and the fan motor contains pre-lubricated bearings which normally will not require lubrication. The fan shaft bearings are equipped with grease fittings, and they should be lubricated **ONCE EACH YEAR** with Shell Alvenia EP#2 or equivalent type grease.

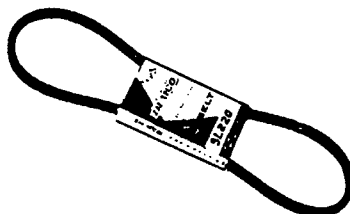
NOTE: Excessive grease pressure will blow out the bearing seals. **USE** a hand operated grease gun to grease these fittings.



1. To lubricate **FAN SHAFT BEARING:**
 - a. Turn the circuit breaker, in the main electrical panel, for the Jenn Air Exhaust Fan and Dayton Blower **OFF**.
 - b. Remove the **DOME COVER** from the motor compartment of the exhaust fan by removing the four (4) acorn nuts.
 - c. Move the fan motor toward the center of the motor compartment to relieve tension applied to the "V" belt.
 - d. With tension of the belt relieved, use thumb pressure to slip the belt off of the **FAN SHAFT PULLEY** and then off of the **MOTOR SHAFT PULLEY**, while holding the motor.

- e. When the belt is removed, **SLOWLY** let the motor and mounting bracket rotate to the **LEFT** (counter-clockwise) to gain access to the two (2) 45° angle grease fittings on the fan shaft.
- f. Using a **HAND OPERATED** grease gun, filled with Shell Avenia EP#2 or equivalent type grease, grease the two fittings until grease appears around the bearing seals.
- g. Move the fan motor and mounting bracket to the **RIGHT** (clockwise) and using a straight edge, **INSURE** the motor and fan shaft pulleys are aligned. If necessary, align the pulleys by loosening either the motor shaft or fan shaft pulley with a 5/32" Allen Wrench, aligning the pulleys and re-tightening the pulley with a 5/32" Allen wrench.
- h. Place the "V" belt over the fan motor pulley, push the fan motor toward the center of the motor compartment and slip the belt over the fan shaft pulley.
- i. Replace the **DOME COVER** on the motor compartment and secure it using the four (4) acorn nuts removed in step 1b above.
- j. Turn the circuit breaker for the Jenn Air Exhaust Fan and Dayton Blower **ON** in the main electrical panel.

2. To replace a **FAN MOTOR BELT**:

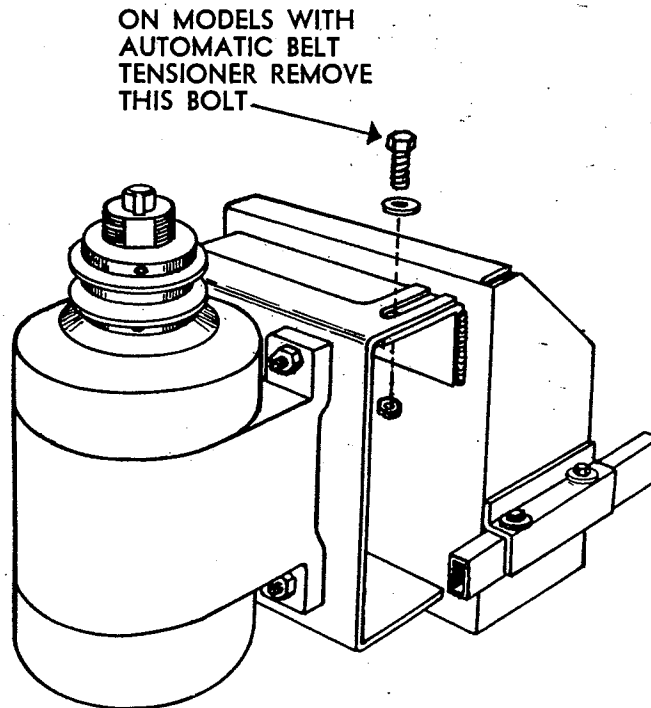


**FAN MOTOR "V" BELT
CPN 25-011**

- a. Perform steps **1a**, **1b**, **1c**, and **1d** above to remove a defective motor belt.
 - b. Check and align the **PULLEYS** on the fan motor and fan shaft according to step 1g above.
 - c. Install the new "V" belt as described in step 1h above; then perform steps **1i** and **1j**.
3. To replace a **FAN MOTOR**:
- a. Perform steps **1a**, **1b**, **1c**, **1d** and **1e** above.
 - b. Remove the cover from the safety disconnect switch box, label the fan motor wires connected to the switch, and remove the wires from the switch terminals.

- c. Loosen the electrical cord clamp on the side of the safety disconnect switch box and **CAREFULLY** remove the fan motor electrical wires from the box.
 - d. Remove the defective fan motor from the mounting bracket by removing the four (4) hex head bolts and nuts.
 - e. Remove the pulley from the fan motor shaft by loosening the **BOTTOM** set screw using a 5/32" Allen wrench.
 - f. To insure a suitable replacement fan motor is obtained for replacement, take the defective fan motor to a local electrical motor distributor, such as W. W. Grainger, to facilitate identification. **ADVISE** the distributor that the motor is operated in **SHAFT UP** position. **NOTE:** Installation of a motor designed for a different angle mount will result in premature failure of the motor.
 - g. Install the fan motor pulley, removed in step e above, on the new fan motor and tighten the set screw just enough to hold the pulley on the shaft.
 - h. Mount the new motor on the mounting bracket and secure it to the bracket using the four (4) hex head bolts and nuts removed in step d above.
 - i. Insert the fan motor electrical cord in the clamp on the side of the safety disconnect switch box and tighten the clamp.
 - j. Connect the fan motor wires to the safety disconnect switch as labeled in step b above or as instructed by the local electrical motor distributor.
 - k. Replace the cover on the safety disconnect switch box.
 - l. Perform steps 1f, 1g and 1h above.
 - m. Turn the circuit breaker, in the main electrical panel for the Jenn Air Exhaust Fan and Dayton Blower, **ON** and **INSURE** the fan motor and fan shaft are rotating **COUNTER-CLOCKWISE**.
 - n. Replace the **DOME COVER** on the motor compartment and secure it using the four (4) acorn nuts removed above.
4. To replace a **JENN AIR EXHAUST FAN**:
- a. Turn the circuit breaker for the Jenn Air Exhaust Fan and Dayton Blower **OFF** in the main electrical panel.
 - b. Remove the cover from the electrical junction box on the side of the weather housing.
 - c. Label the Jenn Air Exhaust Fan electrical wires connected inside the junction box and disconnect these wires.
 - d. Loosen the cable clamp on the side of the junction box and **CAREFULLY** remove the Jenn Air Exhaust Fan electrical cord from the junction box.

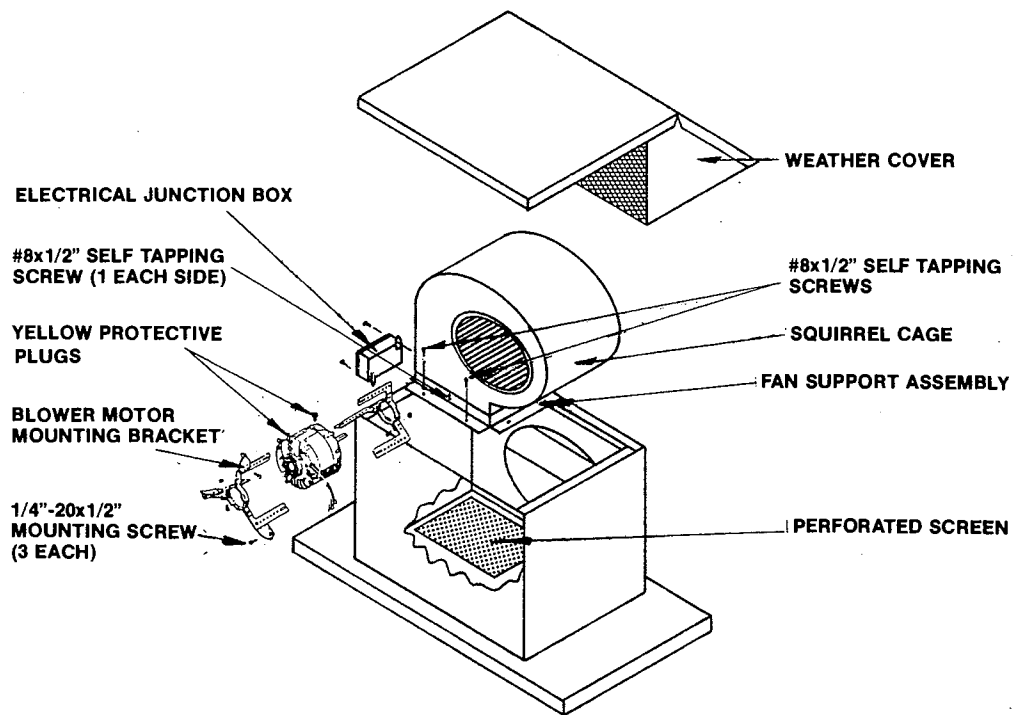
- e. Remove the Jenn Air Exhaust Fan, with the two (2) hinge angles attached, from the weather housing by removing the 3/8"-16 X 1" bolt and fiber lock nut from each hinge.
- f. Remove the two (2) hinge angles from the defective exhaust fan by removing the four (4) 1/4" - 10 X 5/8" bolts and hex nuts from each hinge angle.
- g. **CAREFULLY** place the new Jenn Air Exhaust Fan on its side, with the **DRAIN TUBE** side **UP**. Using a hinge angle as a template, mark location of the four (4) 1/4" mounting holes on this side of the fan using a felt tip pen. Repeat this procedure for the side of the fan **OPPOSITE** the **DRAIN TUBE**.
- h. Using an electric drill and 1/4" drill bit, drill four (4) 1/4" holes in each side of the fan at the locations marked above.
- i. Mount and secure the hinge angles to each side of the exhaust fan using the eight (8) 1/4" - 20 X 5/8" bolts and hex nuts removed in step 4f above.
- j. **CAREFULLY** position the new exhaust fan, with hinge angle attached, on the weather housing with the **DRAIN TUBE** on the same side as the electrical junction box and secure the hinge angles to the hinges with the two (2) 3/8" - 16 X 1" bolts and fiber lock nuts removed in step 4e above.
- k. Remove the **DOME COVER** from the Jenn Air Exhaust Fan by removing the four (4) acorn nuts.
- l. Remove the cover from the safety disconnect switch on the **DEFECTIVE** exhaust fan, make a note on connection of the electrical cord wires on the switch, and remove the wires from the switch terminals and the cord from the defective fan.
- m. Attach the new safety disconnect switch to the new switch cover, packaged in the new exhaust fan, and connect the wires of the electrical cord to the switch terminals as noted above.
- n. Insert the other end of the exhaust fan electrical cord through the **GROMMET** and **DRAIN TUBE** pipe shown above, and clamp it to the end of the electrical junction box on the side of the housing. Connect the wires on the electrical cord to the wires inside the junction box as labeled in step 4c above and then replace the junction box cover.
- o. Remove the bolt and two (2) washers from the fan motor mounting bracket identified in the sketch below and by the **LABEL** attached to one of the washers. **NOTE:** Failure to remove this bolt and washers will result in noisy operation of the fan and cause the fan to prematurely fail.



- p. Remove the belt from the fan motor and fan shaft pulleys, check, and (if necessary) align the pulleys according to step 1g above, ensuring both pulleys are securely attached to the motor and fan shafts, and replace the belt according to step 1h.
- q. Turn the circuit breaker, in the main electrical panel, to the Jenn Air Exhaust Fan and Dayton blower **ON**, and place the **SAFETY DISCONNECT SWITCH** in the **ON** position.
- r. Insure the fan motor and fan shaft pulleys are rotating **COUNTER-CLOCKWISE**, replace the **DOME COVER** on the motor compartment and secure the cover to the compartment using the four (4) acorn nuts removed in step 4k above.

B. DAYTON BLOWER

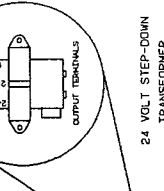
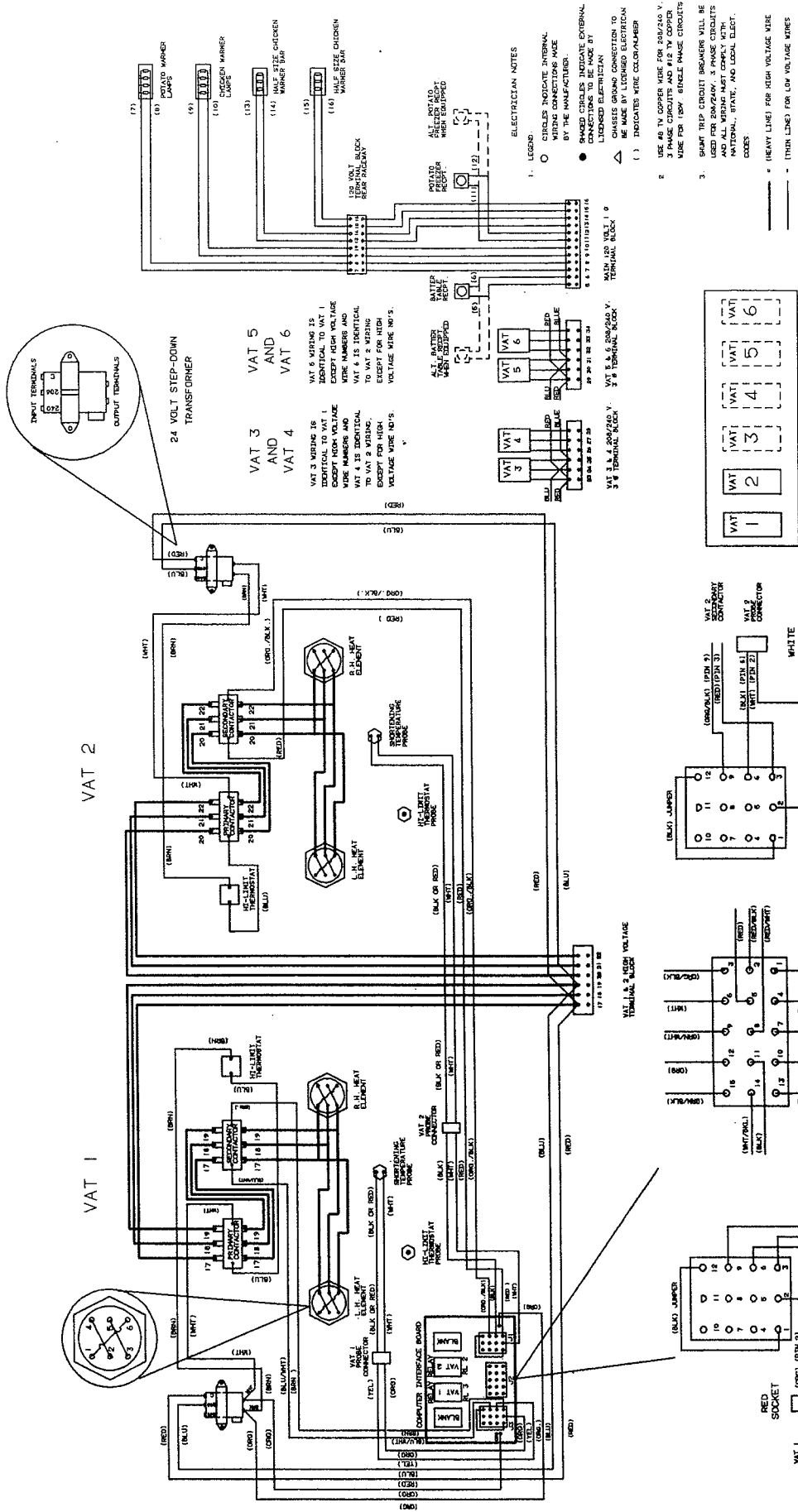
The Dayton Model 4C686 blower is mounted in a **DOWN BLAST** position inside the applicable weather proof housing. It is electrically wired to operate at **HIGH SPEED** and its electrical wires are connected to the same circuit breaker as the Jenn Air Exhaust Fan. The blower motor bearings should be lubricated **ONCE EACH YEAR** with 10 to 20 drops of SAE 10W or 20W **NON-DETERGENT** or electric motor oil.



**FIGURE 10. MAKE-UP AIR/EXHAUST SYSTEM
(EXPLODED VIEW)**

1. To lubricate **MOTOR BEARINGS**:
 - a. Turn the circuit breaker for the Jenn Air Exhaust Fan and Dayton Blower **OFF** in the main electrical panel.
 - b. Remove the weather cover from the make-up air housing.
 - c. Remove the cover from the electrical junction box located on the side of the make-up air housing; label the wires in the junction box to which the **BLACK** and **WHITE** blower motor wires are connected; and disconnect the blower motor electrical wires.
 - d. Remove the **COMPLETE** Dayton Blower from the make-up air housing by removing the #8 X 1/2" self-tapping screws identified in Figure 10.
 - e. Remove the two (2) **YELLOW** protective plugs from each end of the motor, as shown in Figure 10, lubricate each oil port with 10 to 20 drops of SAE 10W or 20W **NON DETERGENT** or electric motor oil, and securely replace the **YELLOW** protective plugs.
 - f. **THOROUGHLY** clean the perforated screen in the base of the make-up air housing **INSURING** all dirt and grease is removed from the holes in this screen.

UNIVERSAL UNI - TOP II FRYER WIRING DIAGRAM

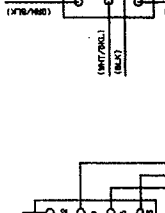
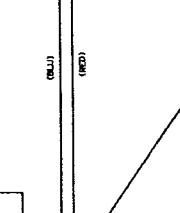
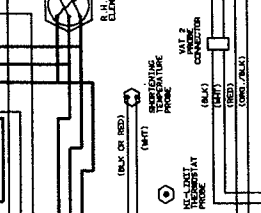
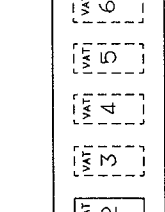
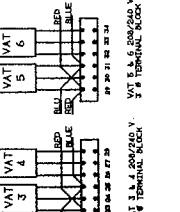
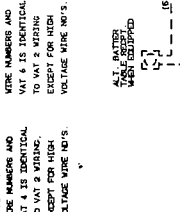


VAT 3 WIRING IS IDENTICAL TO VAT 1. WIRE NUMBERS AND WIRE COLORS ARE IDENTICAL TO VAT 2 WIRING. EXCEPT FOR HIGH VOLTAGE WIRE NOT'S.

VAT 5 AND VAT 6 WIRING IS IDENTICAL TO VAT 1. WIRE NUMBERS AND WIRE COLORS ARE IDENTICAL TO VAT 2 WIRING. EXCEPT FOR HIGH VOLTAGE WIRE NOT'S.

VAT 3 AND VAT 4

VAT 5 AND VAT 6



INTERFACED BOARD CONNECTIONS

NOTE: INTERFACED BOARD IN UNIT-TOP II MUST BE INSTALLED WITH CONNECTORS J1, J2, AND J3 TOWARD THE TOP OF THE FRYER.

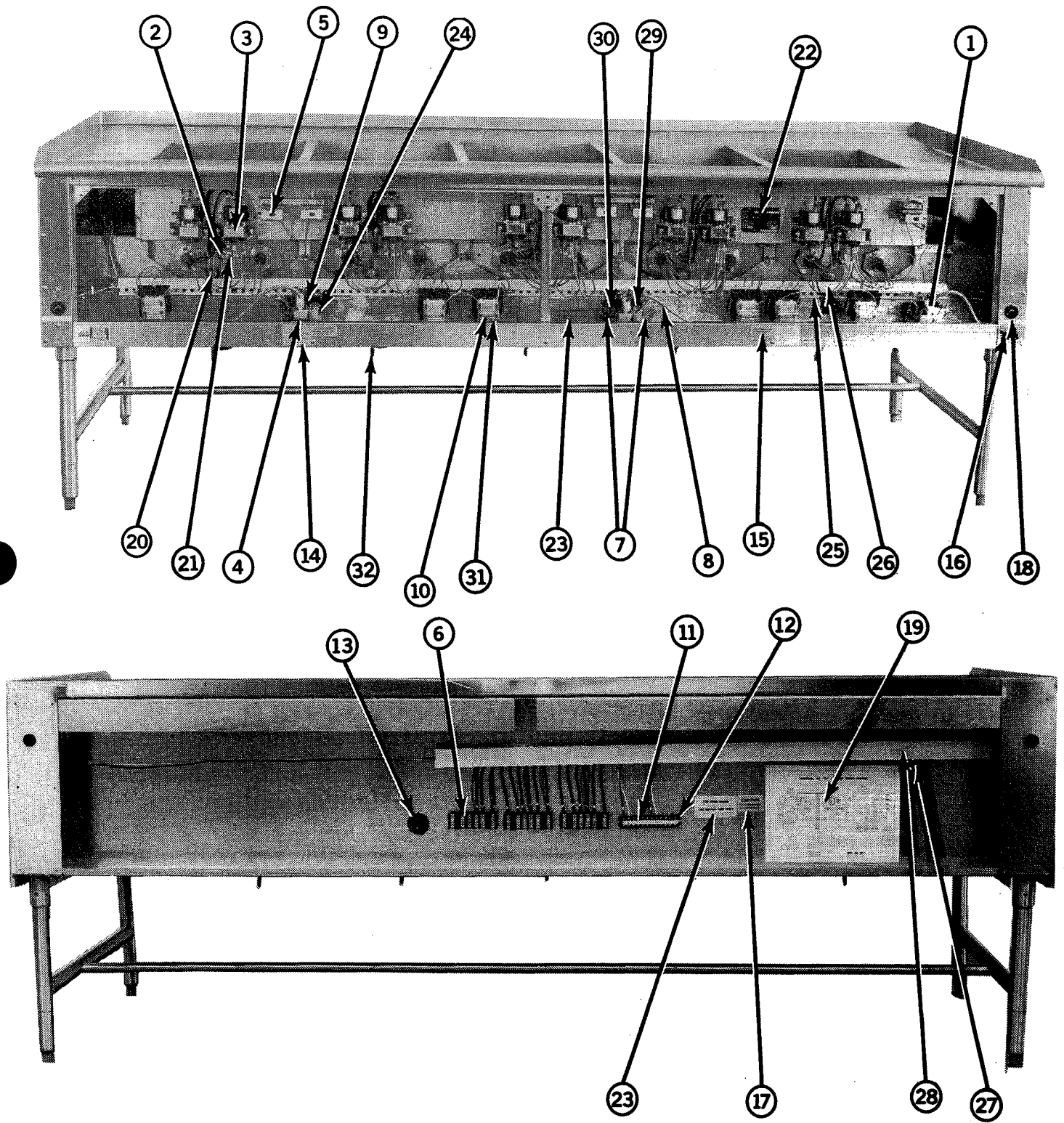
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**PART FIVE
PARTS LIST AND SUPPLY**

PARTS LIST AND SUPPLY

Items listed in Sections I, II, III, and IV identified with a Church's Part Number (CPN) may be obtained through normal supply channels. To identify parts **NOT** shown in illustrations contained in these sections; (1) refer to Part Four of this Manual, (2) refer to the Illustrated Inventory Listing, and (3) contact the Technical Service Department, Far West Products, Inc., 512/737-5734.

I. 5 VAT UNI-TOP II FRYER



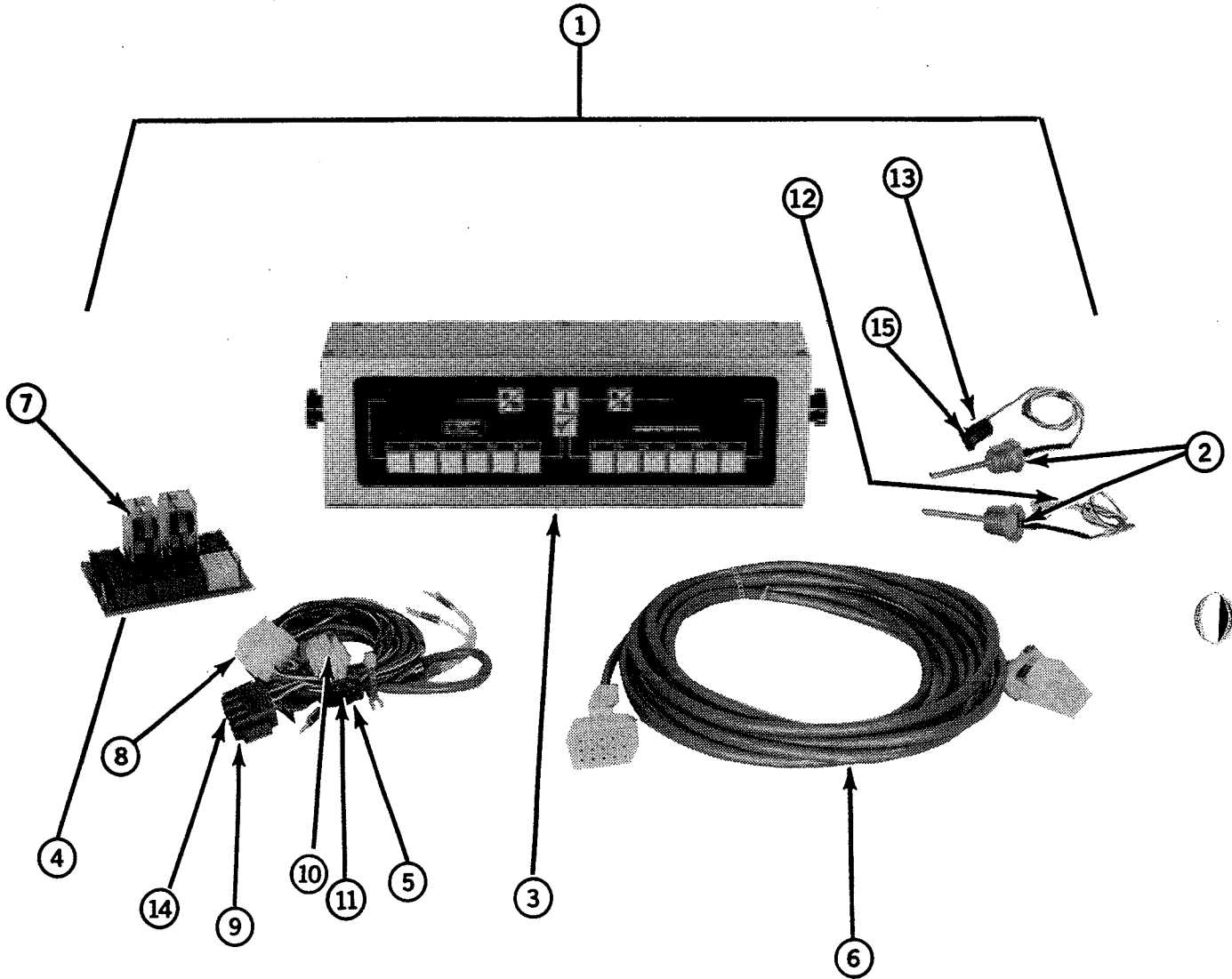
5 VAT UNI-TOP II FRYER

<u>INDEX NUMBER</u>	<u>PART</u>	<u>CPN</u>	<u>DESCRIPTION</u>
1	Load	12-318	Dummy Temperature Probe
2	Probe	18-176	Temperature
3	Contactora	22-540	Durakool Mercury 35A 600V
4	Board	22-541	Computer Interface W/O Relays
5	Thermostat	22-543	Hi-Limit 450° F
6	Block	22-544	Terminal (High Voltage)
7	Harness	22-545	Computer Interface Cable
8	Cable	22-546	Computer
9	Relay	22-616	Computer Interface Board
10	Transformer	22-619	Step-Down 208/240 VAC to 24 VAC
11	Block	23-017	Terminal (Low Voltage)
12	End	23-018	Terminal Block
13	Terminal	23-023	Ground Lug
14	Tag	23-060	CAUTION: This Machine...
15	Tag	23-066	Single Phase And...
16	Tag	23-081	120 Volt, 1.3 AMP
17	Tag	23-083	CAUTION: For Proper...See
		23-082	for 240 Volt Tag
18	Receptacle	23-183	Electrical Twist Lock
19	Diagram	23-257	Uni-Top II Fryer Wiring
20	Bushing	23-260	Temperature Probe
21	Bushing	23-261	Hi-Limit Thermostat
22	Tag	23-268	Uni-Top Fryer Data Plate
23	Tag	23-269	For Field Wiring...
24	Spacer	23-273	Computer Interface Board
25	Duct	23-277	Panduit 1" X 1-1/2"
26	Cover	23-278	Panduit Duct 1" Wide
27	Duct	23-279	Panduit 1-1/2" X 2"
28	Cover	23-280	Panduit Duct 1-1/2" Wide
29	Plug	23-284	Male 12 PIN (White)
30	Plug	23-285	Male 12 PIN (Red)
31	Tubing	23-292	Polyvinyle Flex Size "0"
32	Valve	24-233	Gate 1-1/2" Diameter

PARTS NOT SHOWN

<u>PART</u>	<u>CPN</u>	<u>DESCRIPTION</u>
Holder	11-364	French Fry Basket
Clamp	12-251	Heat Element
Wrench	12-252	Heat Element 2.53" Dia.
Wrench	12-312	Heat Element 2.29" Dia.
Cover	12-316	Vat
Divider	12-317	Vat
Element	18-172	Heat 208 V 6KW
Element	18-173	Heat 240 V 6KW
Washer	18-174	Heat Element Teflon
Basket	21-320	French Fry
Grill	22-538	Vat
Socket	23-286	Female 2 PIN (White)
Socket	23-287	Female 2 PIN (Red)
Plug	23-288	Male 2 PIN (White)
Plug	23-289	Male 2 PIN (Red)

II. COMPUTER MAGIC COOKING COMPUTER



CAUTION: DO NOT ATTEMPT TO REPAIR A COMPUTER. IF UNCERTAIN IF A COMPUTER IS DEFECTIVE, CONTACT FRYMASTER CORPORATION TECHNICAL SERVICE AT 1-800-551-8633. PROCESS DEFECTIVE COMPUTERS FOR REPAIR AS SHOWN ON OPPOSITE PAGE.

COMPUTER MAGIC COOKING COMPUTER

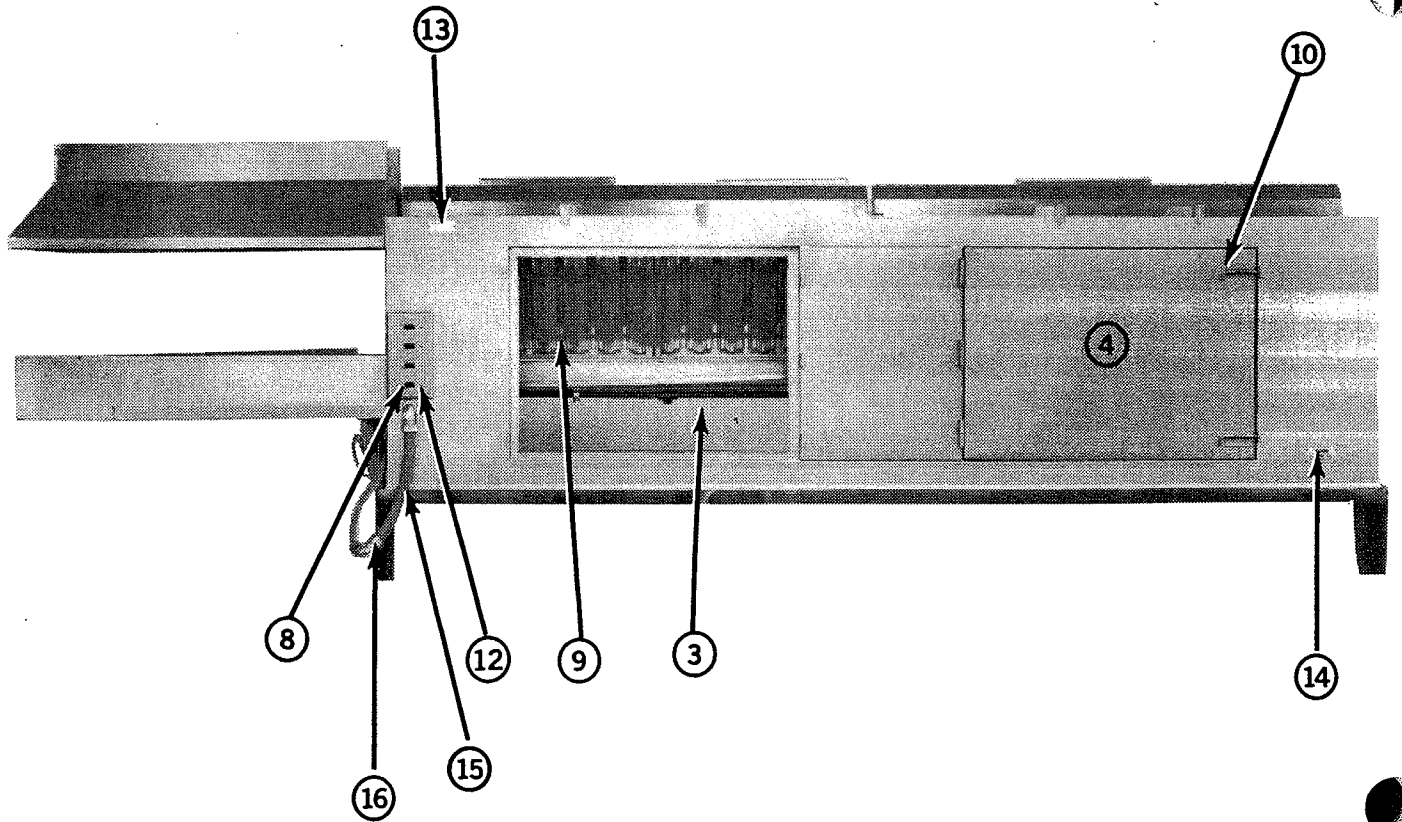
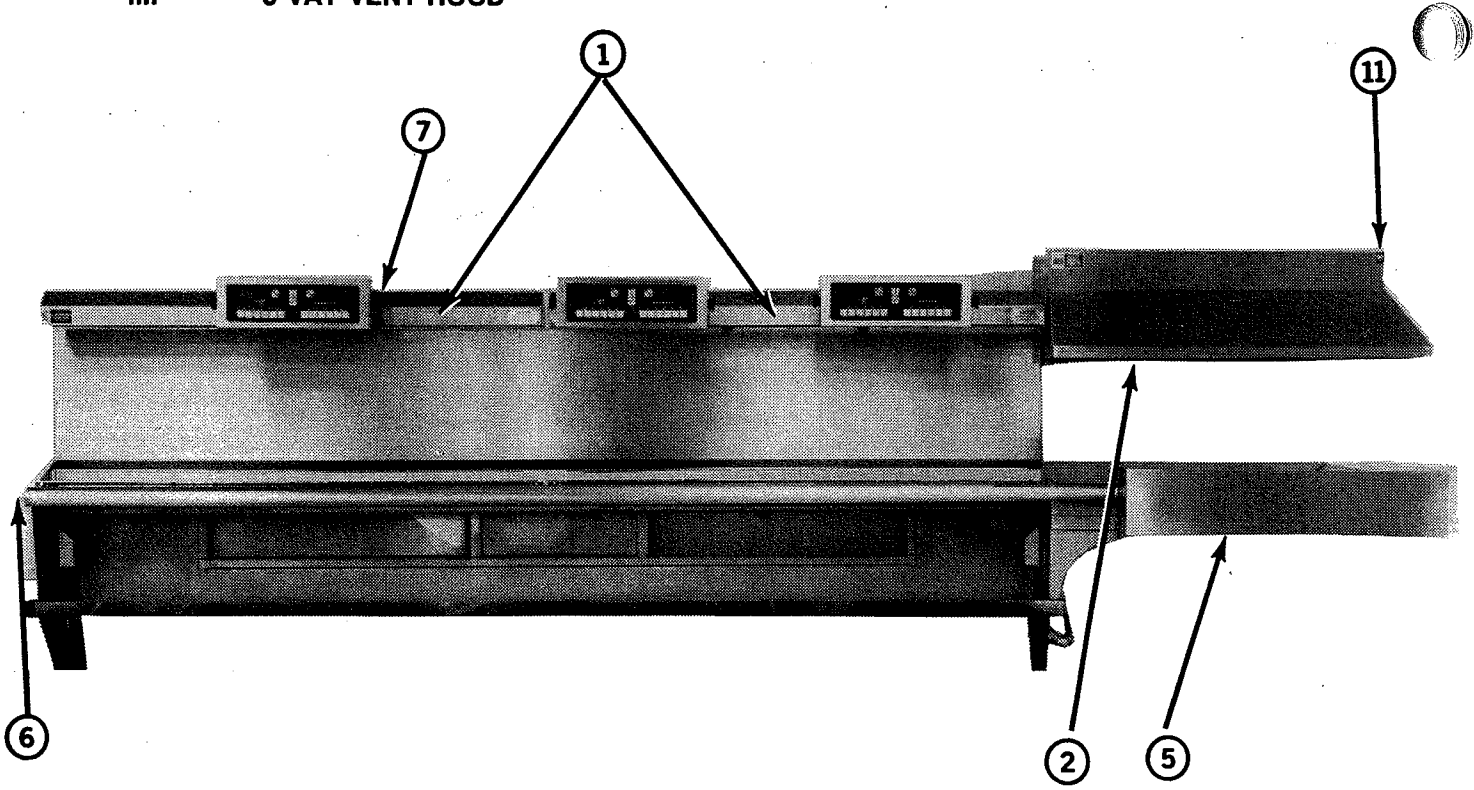
<u>INDEX NUMBER</u>	<u>PART</u>	<u>CPN</u>	<u>DESCRIPTION</u>
1	Assembly	21-321	Frymaster Computer Magic Cooking Computer (Consist of Index Number 2-7)
2	Probe	18-176	Temperature Sensing
3	Computer	22-539	Computer Magic Cooking
4	Board	22-541	Computer Interface W/O Relays
5	Harness	22-545	Interface Cable
6	Cable	22-546	Computer (15 Feet Long)
7	Relay	22-616	Computer Interface Board
8	Plug	23-284	Male 12 PIN (White)
9	Plug	23-285	Male 12 PIN (Red)
10	Socket	23-286	Female 2 PIN (White)
11	Socket	23-287	Female 2 PIN (Red)
12	Plug	23-288	Male 2 PIN (White)
13	Plug	23-289	Male 2 PIN (Red)
14	PIN	23-290	Female Terminal F/18-24 AWG Wire
15	PIN	23-291	Male Terminal F/18-24 AWG Wire

DEFECTIVE COMPUTER PROCESSING PROCEDURES

IN-WARRANTY - (In Use less than 18 months) Contact Technical Services, Far West Products Inc. at extension 734 and provide store number and serial number of defective computer. Replacement computer CPN 22-539 will be sent to the store. Upon receipt of defective computer by Technical Services, the store will be credited for the computer CPN 22-539 previously sent.

OUT-OF-WARRANTY (In Use Over 18 Months) Order **EXCHANGE** computer CPN 80-060. Upon receipt of defective computer and **COPY** of issue document for **EXCHANGE** computer by Technical Services, the store will be credited with \$50.00.

III. 5 VAT VENT HOOD



5 VAT VENT HOOD

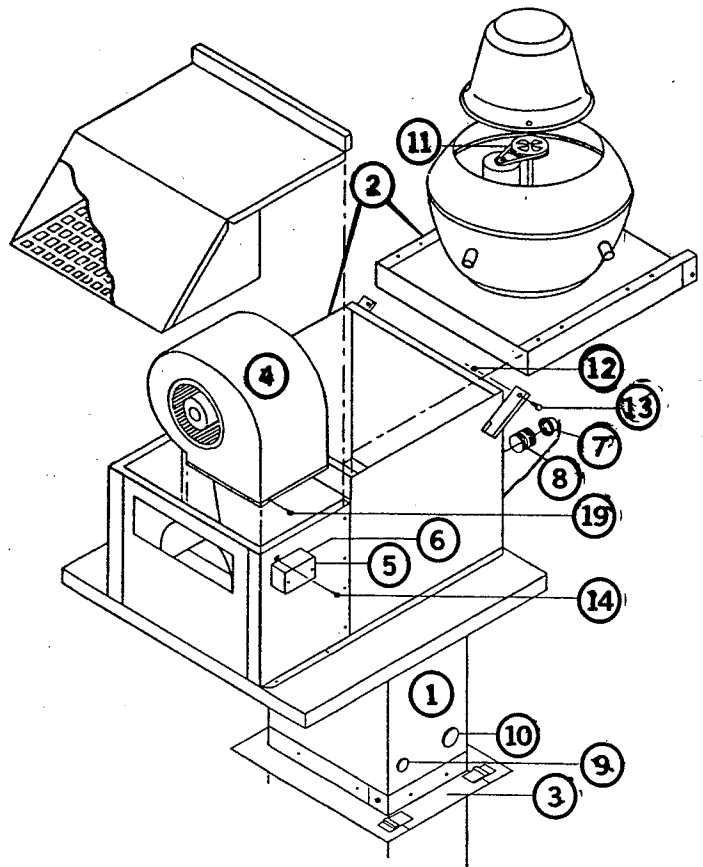
<u>INDEX NUMBER</u>	<u>PART</u>	<u>CPN</u>	<u>DESCRIPTION</u>
1	Bar	11-199	Chicken Warmer (See NOTE 1)
2	Assembly	12-140	Chicken Warmer Panel (See NOTE 2)
3	Door	12-147	Left Hand W/Hinge
4	Door	12-148	Right Hand W/Hinge
5	Assembly	12-160	Potato Warmer Panel (See NOTE 2)
6	Cup	12-287	Grease
7	Bracket	12-319	Computer Mounting
8	Switch	18-012	Toggle (Leviton 1530)
9	Filter	21-256	Grease FC1625 2" X 16" X 25"
10	Latch	22-479	Door (For Right Hand Door)
11	Seal	23-154	NSF Polyplate
12	Cover	23-185	Switch Plate
13	Tag	23-207	Serial Number
14	Tag	23-209	CAUTION Consider All...
15	Seal-Tite	33-005	3/4" Diameter
16	Connector	33-014	Elbow 3/4" X 90°

PARTS NOT SHOWN

<u>PART</u>	<u>CPN</u>	<u>DESCRIPTION</u>
Filter	21-260	Grease FC1620 2" X 16" X 20"
Latch	22-478	Door (For Left Hand Door)
Cover	23-140	Handy Box 2" X 4"
Box	23-200	Handy 2" X 4"

- NOTES: 1. Refer to the Chicken Warmer Bar and Pie Warmer Lamp Maintenance Manual, CPN 30-168, for identification of Warmer Bar components.
2. Refer to Part Four Section II for identification of Chicken Warmer and Potato Warmer lamp components.

IV. MAKE-UP AIR/EXHAUST SYSTEM



MAKE-UP AIR/EXHAUST

<u>INDEX NUMBER</u>	<u>PART</u>	<u>CPN</u>	<u>DESCRIPTION</u>
1	Duct	11-154	Exhaust 58-1/2" long f/modular building (see note)
2	Housing	11-155	Weather Proof
3	Collar	12-064	Exhaust Duct
4	Blower	22-057	Dayton Model 4C686
5	Cover	23-140	Handy Box 2" X 4"
6	Box	23-200	Weather Proof Handy 2" X 4"
7	Cap	24-144	Galvanize Pipe 1-1/4" diameter
8	Nipple	24-145	Galvanize 1-1/4" X 3"
9	Adapter	24-225	Quick Seal f/3/8" NPT pipe
10	Adapter	24-226	Quick Seal f/1/2" NPT pipe
11	Belt	25-011	"V" P/N 3L220
12	Nut	27-051	Nylon Lock 3/8-16
13	Bolt	27-034	Hex Head 3/8-16 X 1"
14	Screw	27-075	Pan Head #8 X 3/4" sheet metal

NOTE: Order CPN 11-153 for 81-1/4" long duct used in conventional store.