



INSTALLATION, OPERATIONS & MAINTENANCE INSTRUCTIONS



ULTRAFRYER GAS FRYER MODEL PAR-2/3

INSTRUCTIONS TO BE FOLLOWED IN CASE THE USER SMELLS GAS ARE TO BE POSTED IN A PROMINENT LOCATION. THIS INFORMATION SHALL BE OBTAINED BY CONTACTING THE LOCAL GAS COMPANY OR GAS SUPPLIER.

FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

WARNING:

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment.

RETAIN THIS MANUAL FOR FUTURE REFERENCE

Manufactured By:



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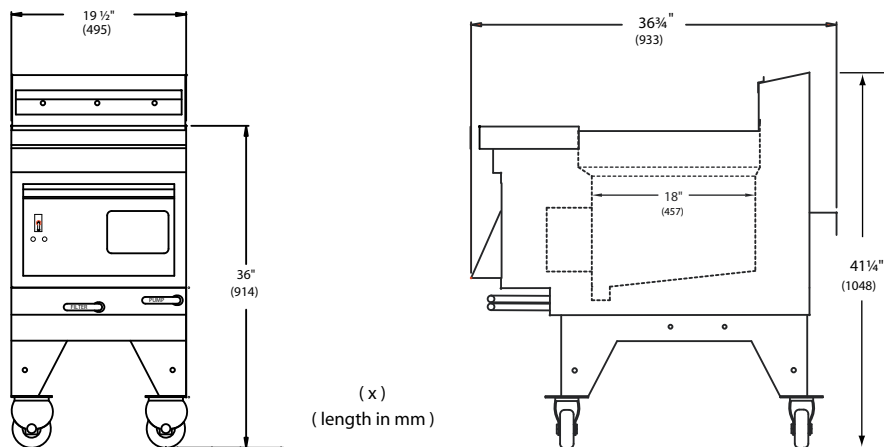
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SPECIFICATIONS

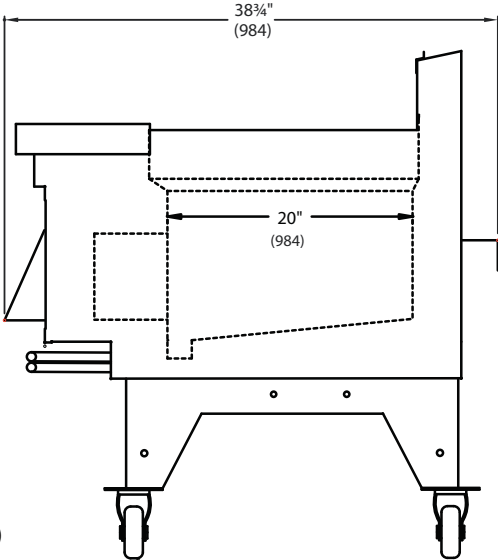
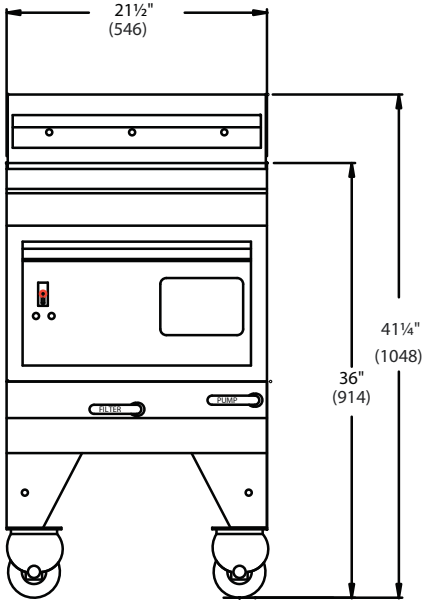
OVERALL WIDTH	19 1/2" (495 mm)
OVERALL DEPTH	36 3/4" (933 mm)
WORK HEIGHT	36" (914 mm)
SIZE FAT CONTAINER	18" X 18" (457 x 457 mm)
OIL CAPACITY	
HIGH LEVEL MARK	110 Lbs. (55 litres)
LOW LEVEL MARK	70 Lbs. (35 litres)
GAS RATING	
BUTANE GAS	65,000 BTU/HR (71.5 megajoules)
NATURAL GAS	65,000 BTU/HR (71.5 megajoules)
PROPANE GAS	65,000 BTU/HR (71.5 megajoules)
ELECTRICAL	120 VOLT 6 AMPERE 60 HZ 1 PHASE
SHIPPING CUBE	17.15 ft ³ (.48 M ³)
SHIPPING WEIGHT	315 Lbs. (142 kgs)



MODEL PAR-2-18

SPECIFICATIONS

OVERALL WIDTH	21½" (546 mm)
OVERALL DEPTH	38¾" (984 mm)
WORK HEIGHT	36" (914 mm)
SIZE FAT CONTAINER	20" X 20" (508 x 508 mm)
OIL CAPACITY	138 Lbs. (69 litres)
GAS RATING	
BUTANE GAS	75,000 BTU/HR (82.5 megajoules)
NATURAL GAS	75,000 BTU/HR (82.5 megajoules)
PROPANE GAS	75,000 BTU/HR (82.5 megajoules)
ELECTRICAL	120 VOLT 6 AMPERE 60 HZ 1 PHASE
SHIPPING CUBE	19.89 ft³ (.56 M³)
SHIPPING WEIGHT	325 Lbs. (146 kgs)

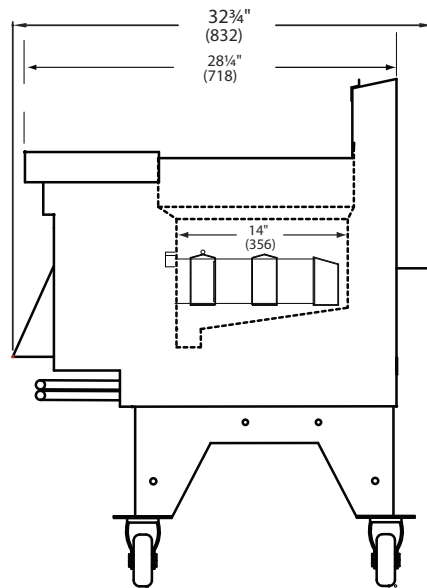
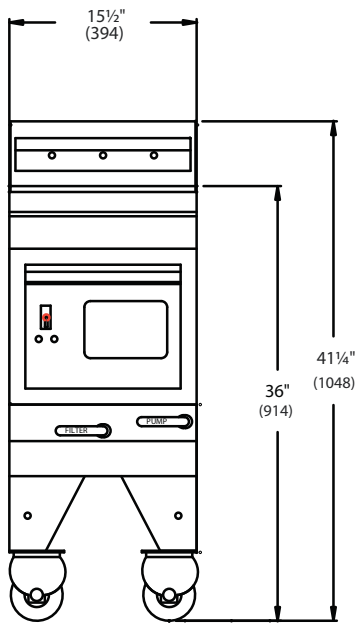


(x)
(length in mm)

MODEL PAR-2-20

SPECIFICATIONS

OVERALL WIDTH	15½" (394 mm)
OVERALL DEPTH	32 ¾" (832 mm)
WORK HEIGHT	36" (914 mm)
SIZE VAT CONTAINER	14" X 14" (357 x 357 mm)
OIL CAPACITY	
LOW LEVEL	35 Lbs (17.5 litres)
HIGH LEVEL	45 Lbs (22.5 litres)
GAS RATING	
BUTANE GAS	90,000 BTU/HR (99 megajoules)
NATURAL GAS	90,000 BTU/HR (99 megajoules)
PROPANE GAS	90,000 BTU/HR (99 megajoules)
ELECTRICAL	120 VOLT 6 AMPERE 60 HZ 1PHASE
SHIPPING CUBE	12.11 ft ³ (.34 M ³)
SHIPPING WEIGHT	275 Lbs (124 kgs)

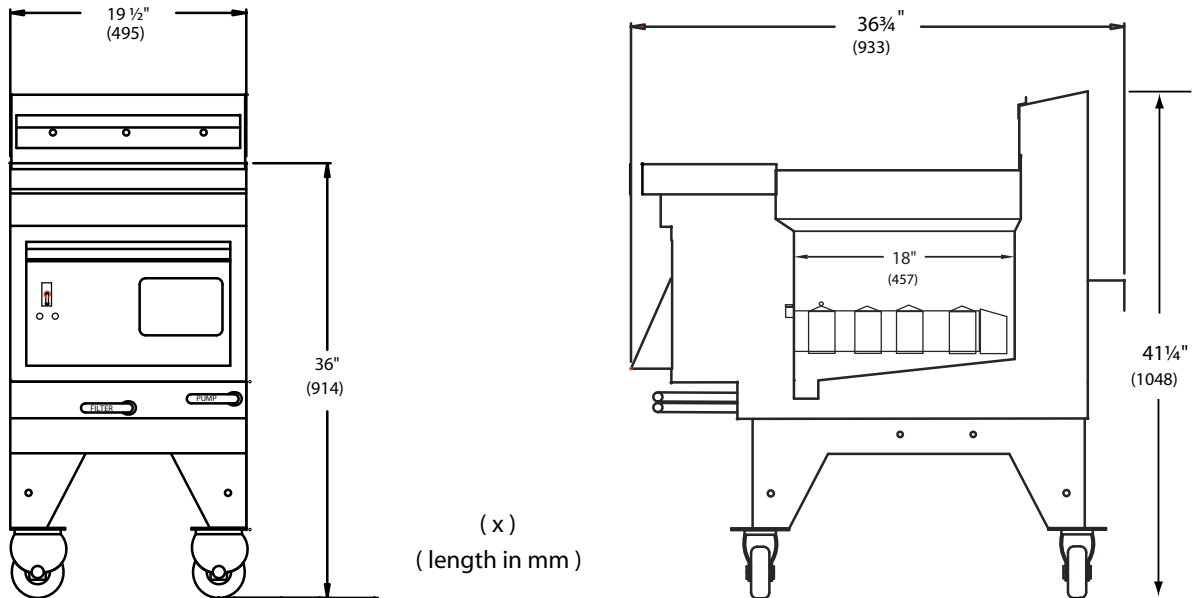


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(length in mm)

MODEL PAR-3-14

SPECIFICATIONS

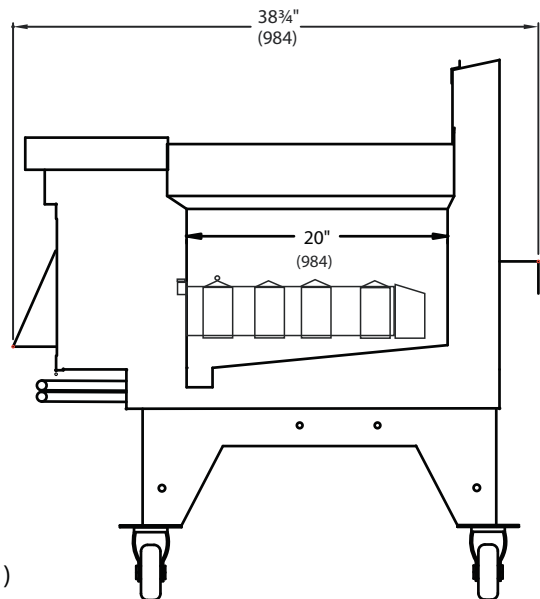
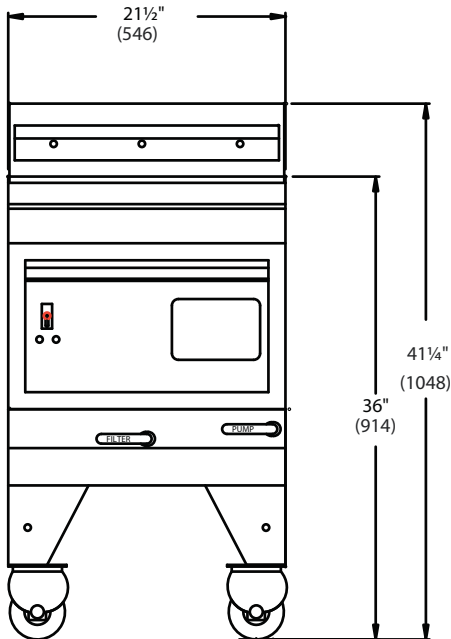
OVERALL WIDTH	19½" (495 mm)
OVERALL DEPTH	36¾" (933 mm)
WORK HEIGHT	36" (914 mm)
SIZE VAT CONTAINER	18" x 18" (457 x 457 mm)
OIL CAPACITY	
HIGH LEVEL MARK	110 LBS (55 litres)
LOW LEVEL MARK	70 LBS (35 litres)
GAS RATING	
BUTANE GAS	110,000 BTU/HR (121 megajoules)
NATURAL GAS	110,000 BTU/HR (121 megajoules)
PROPANE GAS	110,000 BTU/HR (121 megajoules)
ELELCTRICAL	120 VOLT 6 AMPERE 60 HZ 1 PHASE
SHIPPING CUBE	17.15 ft ³ (.48 M ³)
SHIPPING WEIGHT	315 LBS (142 kgs)



MODEL PAR-3-18

SPECIFICATIONS

OVERALL WIDTH	21½" (543 mm)
OVERALL DEPTH	38 ¾" (984 mm)
WORK HEIGHT	36" (914 mm)
SIZE VAT CONTAINER	20" x 20" (508 x 508 mm)
OIL CAPACITY	138 LBS (69 litres)
GAS RATING	
BUTANE GAS	120,000 BTU/HR (132 megajoules)
NATURAL GAS	120,000 BTU/HR (132 megajoules)
PROPANE GAS	120,000 BTU/HR (132 megajoules)
ELELCTRICAL	120 VOLT 6 AMPERE 60 HZ 1 PHASE
SHIPPING CUBE	19.89 ft³ (.56 M³)
SHIPPING WEIGHT	325 LBS (145 kgs)



(x)
(length in mm)

MODEL PAR-3-20

**PAR-2 AND PAR-3
GAS FRYER MANUAL**

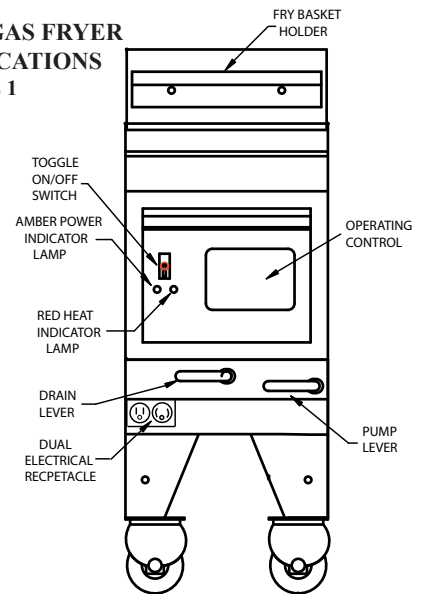
- 1. DESCRIPTION AND SPECIFICATIONS:** The PAR gas fryer is designed to operate as an energy-efficient gas fired unit, is design-certified by CSA International and the National Sanitation Foundation (NSF), and is manufactured to operate on either NATURAL, BUTANE or PROPANE gas according to the following performance specification. Each unit is shipped completely assembled with accessories packed inside the fryer tank and each unit is adjusted, tested and inspected prior to shipment. The Model PAR gas fryer is designed to be used in a commercial food preparation environment after it is installed as outlined in these instructions.

MODEL PAR-2 OPERATIONAL REQUIREMENTS		
ITEM DESCRIPTION	PAR-2-18	PAR-2-20
Oil Capacity		
High Level	110 lbs (55 liters)	138 lbs (69 liters)
Low Level	70 lbs (35 liters)	--
Gas Valve Setting		
Butane Gas	10.0"(254mm) W.C.	10.0"(254mm) W.C.
Natural Gas	4.0"(102mm) W.C.	4.0"(102mm) W.C.
Propane Gas	10.0"(254mm) W.C.	10.0"(254mm) W.C.
Orifice Drill Size		
Butane Gas	# 43	# 40
Natural Gas	# 25	# 22
Propane Gas	# 42	# 39
Inlet Gas Required		
Butane Gas	20.31 ft ³ /hr (.57 M ³)	23.44 ft ³ /hr (.66 M ³)
Natural Gas	61.90 ft ³ /hr (1.75 M ³)	71.43 ft ³ /hr (2.02 M ³)
Propane Gas	26.00 ft ³ /hr (.74 M ³)	30.00 ft ³ /hr (.85 M ³)
Energy Input	120 V 6 Amps 60 Hz 1 Phase	120 V 6 Amps 60 Hz 1 Phase
NOTES: 1) ft ³ /HR (M ³ /HR) Values may vary due to the heating value and specific gravity of local supplied Gas. 2) Model Par-2 Gas Fryers will be assembled according to the Gas Requirements specified on each Purchase Order.		

MODEL PAR-3 OPERATIONAL REQUIREMENTS			
ITEM DESCRIPTION	PAR-3-14	PAR-3-18	PAR-3-20
Oil Capacity			
High Level	45 lbs (22.5 liters)	110 lbs (55 liters)	138 lbs (69 liters)
Low Level	35 lbs (17.5 liters)	70 lbs (35 liters)	--
Gas Valve Setting			
Butane Gas	10.0"(254mm) W.C.	10.0"(254mm) W.C.	10.0"(254mm) W.C.
Natural Gas	4.0"(102mm) W.C.	4.0"(102mm) W.C.	4.0"(102mm) W.C.
Propane Gas	10.0"(254mm) W.C.	10.0"(254mm) W.C.	10.0"(254mm) W.C.
Orifice Drill Size			
Butane Gas	# 36	# 36	# 30
Natural Gas	# 16	# 10	# 7
Propane Gas	# 32	# 32	# 28
Inlet Gas Required			
Butane Gas	28.13 ft ³ /hr (.80 M ³)	34.38 ft ³ /hr (.97 M ³)	37.50 ft ³ /hr (1.06 M ³)
Natural Gas	85.71 ft ³ /hr (2.43 M ³)	104.76 ft ³ /hr (2.96 M ³)	114.29 ft ³ /hr (3.23 M ³)
Propane Gas	36.00 ft ³ /hr (1.02 M ³)	44.00 ft ³ /hr (1.25 M ³)	48.00 ft ³ /hr (1.36 M ³)
Energy Input	120 V 6 Amps 60 Hz 1 Phase	120 V 6 Amps 60 Hz 1 Phase	120 V 6 Amps 60 Hz 1 Phase
NOTES: 1) ft ³ /HR (M ³ /HR) Values may vary due to the heating value and specific gravity of local supplied Gas. 2) Model Par-3 Gas Fryers will be assembled according to the Gas Requirements specified on each Purchase Order.			

- 1.1 OPERATING CONTROLS:** The "basic" PAR gas fryer is equipped with a Fenwal Temperature Control or Electronic Thermostat and Default-to-Manual-Restart (DTMR) control; however customers may request the fryer be equipped with an "optional" Ultrastat Cooking Computer. When applicable, operating instructions for the Ultrastat Cooking Computer will be provided with the fryer. Operating controls on the Model PAR-2 and PAR-3 gas fryer include the Toggle ON/OFF Switch, **AMBER** Power Indicator Lamp, **RED** Burner Indicator Lamp, and Default-to-Manual-Restart (DTMR) control. These controls are mounted on the Temperature Control Access Panel; and the Fenwal Temperature Control or Electronic Thermostat and other fryer controls are located behind the access panel. The main drain lever and filter lever are located immediately below the Temperature Control Access Panel, as well as, a 120 volt dual electrical receptacle. These controls are identified on the illustration shown on the next page:

**PAR-2 & PAR-3 GAS FRYER
CONTROL LOCATIONS
FIGURE 1**



1.2 AUTOMATIC SAFETY FEATURES:

- A. PAR-2 and PAR-3 fryers
 - 1) High limit thermostat to shut off gas to the main burners by opening a solenoid-actuated safety valve in the combination gas control valve.
 - 2) Combination gas control valve which includes a built-in pressure regulator and manual valve.
 - 3) Sensing circuit within the spark ignitor module to turn gas to the fryer **OFF** if a burner **FLAME OUT** occurs.
 - 4) A Drain Valve Safety Switch and a Default-to-Off circuit in the Default-to-Manual-Restart (DTMR) Control that will **DISABLE** the fryer each time the drain valve is **OPENED**.
- B. PAR-2 Fryer - **CENTRIFUGAL** switch within the blower motor to open the electrical circuit and turn gas to the fryer **OFF** in the event the blower motor fails.
- C. PAR-3 Fryer - **AIR PRESSURE** switch to open the electrical circuit and turn gas to the fryer **OFF** in the event the blower motor fails.

1.3 RATING PLATE: Information on this plate includes the model and serial number; BTU/HR input rating of the burners; gas manifold pressure in inches W.C. ; minimum inlet gas pressure, orifice size; and type of gas. This data is essential for proper identification when communicating with ULTRAFRYER SYSTEMS or requesting special parts or information.

THE FRYER MUST BE CONNECTED ONLY TO THE TYPE OF GAS IDENTIFIED ON THIS RATING PLATE!

2. PRE-INSTALLATION: Safe and satisfactory operation of a PAR gas fryer depends on its proper installation. Installation must conform to local codes or, in the absence of local codes, with the current National Fuel Gas Code ANSI Z223.1 (latest edition). In Canada, gas installation shall be in accordance with the current CAN/CGA B 149.1 and .2 installation codes and/or local codes.

2.1 GENERAL: Each Model PAR fryer should be installed as follows:

- A. Placed beneath a properly designed exhaust hood
- B. Installed by a licensed plumber.
- C. Connected to the type gas for which the unit was fabricated as shown on the rating plate.
- D. Connected to the proper size pressure regulator installed in the gas supply line and adjusted to the proper manifold pressure.
- E. Connected to the main gas supply line with the proper size supply line.
- F. Restrained by use of a restraining device to avoid splashing of hot liquid and to assure tension cannot be placed on the flexible gas line or fittings.

2.2 CLEARANCES: The appliance must be kept free and clear of all combustibles. The minimum clearance from combustible and non-combustible construction is 6" (152 mm) from the sides, and 6" (152 mm) from rear. The fryer may be installed on combustible floors.

NOTE: Adequate clearances must be provided for servicing and proper operation.

2.3 STANDARDS: Installation must be planned in accordance with all applicable state and local codes, taking into account the following standards:

- A. The fryer and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at pressures in excess of ½ psig (3.45kPa). In Canada, gas installation shall be in accordance with the current CAN/CGA B 149.1 and .2 installation codes and/or local codes.
- B. The fryer must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at pressures equal to or less than ½ psig (3.45kPa).
- C. When installed the fryer must be electrically grounded in accordance with local codes, or in the absence of local codes, in accordance with the current National Electrical code ANSI/NFPA 70 (latest edition). In Canada electrical installation must be in accordance with the current CSA C22.1 Canadian Electrical Code Part 1 and/or local codes.
- D. Other applicable nationally recognized installation standards such as:
 - 1) National Fuel Gas Code ANSI Z223.1 (latest edition)
American Gas Association
1515 Wilson Blvd.
Arlington, VA22209
 - 2) NFPA Standards #54, #94 and #221 (latest edition)
National Fire Protection Association
470 Atlantic Avenue
Boston, MA 02110
 - 3) ANSI Z21.69/CAN/CGA-6.16 AND Z21.41/CAN1 6.9
- E. Exhaust hood, when installed must conform to the current NFPA 54-1 and Canadian CAN/CGA-1.11 (latest edition)

NOTE: Local building codes will usually not permit a fryer with its open tank of hot oil to be installed immediately next to an open flame of any type, whether a broiler or an open burner or range. Check local codes before beginning installation.

2.4 AIR SUPPLY AND VENTILATION: The area around the appliance must be kept clear of any combustible or flammable products and avoid any obstruction to the flow of ventilation air as well as for ease of maintenance and service. **NOTHING** is to be stored in the interior of the fryer's cabinet except the filter tub assembly.

- A. A means must be provided for any commercial, heavy duty-cooking appliance to exhaust combustion wastes outside of the building. It is essential that a fryer be set under a powered exhaust hood or that an exhaust fan be provided in the wall above the unit, as exhaust temperatures are in the vicinity of 400°F (204°C).

NOTE: Strong exhaust fans in a hood or in the overall air conditioning system can produce slight air drafts in the room, which can interfere with burner performance and be hard to diagnose. Air movement should be checked during installation and if burner problems persist, make-up air openings or baffles may have to be provided in the room.

- B. Exhaust temperature, in addition to the open tank of hot oil, make the storage of anything on shelving over or behind the fryer unsafe.
- C. Filters and drip troughs should be part of any industrial hood, but consult local codes before constructing and installing any hood.
- D. Provisions must be made for an adequate supply of fresh air and adequate clearance must be maintained for air openings into the combustion chamber.

3. RECEIVING & INSTALLING THE FRYER

3.1 UNPACKING: Check that the container is upright. Use an outward prying motion – **DO NOT USE A HAMMER** - to remove the carton. Check the fryer(s) for visible damage; if such damage has occurred do not refuse shipment, but contact the carrier and file the appropriate freight claims. Remove the two shipping bolts in the front and rear legs and remove the two (2) 2" x 6" (51 x 152mm) wood supports.

3.2 INSTALLING:

WARNING: IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

- A. If sufficient clearance is available to roll the assembled fryer bank into the building, proceed to paragraph 3.3 below.
- B. In the event entrance doors are too narrow for the assembled fryer bank, disassemble and reassemble the fryer as follows:

1) DISASSEMBLY

a. Perform these steps facing the **FRONT** of the fryer:

- 1) Number each vat cabinet from **LEFT to RIGHT** and place these numbers on the front and rear panel of each cabinet.
- 2) Lower the Temperature Control access panel from each vat cabinet.
- 3) **CAREFULLY** remove the **APRON** from the fryer bank as follows: **TAKE CARE TO NOT DAMAGE THE GASKETS BENEATH THE APRON.**
 - a) **CAREFULLY** remove the ¼ - 20 wing nut, ¼" (6mm) split lock washer and 1¼" (17mm) flat washer from each ¼ - 20 weld stud beneath each vat hat sections.

NOTE: There are two (2) weld studs located in the rear hat section and two (2) studs in the front hat section.

After all wing nuts and washers have been removed, begin **LIFTING** the apron **FRONT** flange **EVENLY** along the length of the apron.

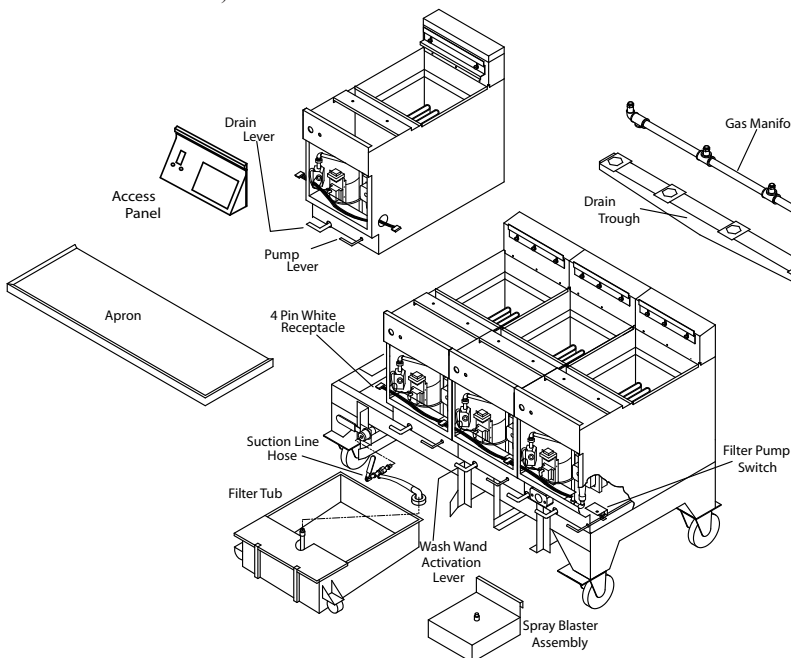
- b) When the **FRONT** flange of the apron has been separated equal distance from each vat, continue to raise the apron while keeping it level until the **REAR** flange can be separated from the front lip of the fryer vats.
- 4) Remove the **JOINER STRIP** located between each set of Vats; then cut the **SILICONE SEAL** between the vats.

- 5) **CAREFULLY** separate the **SHORTENING DRAIN TROUGH** from each ball valve plate by removing the four (4) ¼ -20 hex head bolts and nuts; then remove the drain trough from the fryer.

NOTE: A neoprene gasket was placed between the ball valve and drain opening of each vat and sealed with silicone. Therefore it may be necessary to use a sharp instrument to separate the trough from the valve.

TAKE CARE NOT TO DAMAGE THE GASKET.

- 6) **CAREFULLY** disconnect the **4 PIN WHITE** connector from its mating receptacle located on the **LOWER** right hand end of each vat; then remove the **BLACK** wiring harness protector from the 2" (51mm) opening in each vat.
- 7) **CAREFULLY** disconnect the **ELECTRICAL OUTLET BOX BLACK** and **WHITE** electrical wires connected to wires by **WIRE NUTS** located on the **LEFT HAND** side of the "extreme" **RIGHT HAND** vat.
- 8) Remove the 10-24 truss head screw and nut on the right hand side of each vat used to secure adjoining vats and remove the 10-24 truss head screw and nut that secures the "extreme" left hand vat cabinet of the base frame .



- b. Perform these steps facing the **REAR** of the fryer:
 - 1) Remove the **REAR** panel from each vat by removing the eight (8) pan head self-tapping screws from the panel and fan cover.
 - 2) Remove the two (2) 10-24 truss head screws and nuts on the right hand side of each vat used to secure adjoining vats.
 - 3) **CAREFULLY** remove the two (2) self-tapping philips head screws along the **BOTTOM** flange of each cabinet.
 - 4) **CAREFULLY** loosen and separate the flexible gas line from the gas manifold flare fitting on each vat, remove the ¼ -20 hexhead bolts and nuts from each manifold “**L**” **BRACKET**; then set the **GAS MANIFOLD** aside.
 - 5) **CAREFULLY** disconnect the **SHORTENING LINE RED** and **WHITE** heater wires terminated in a **2 PIN WHITE** connector from its mating receptacle located on the left hand side of the “extreme” **LEFT HAND** vat.

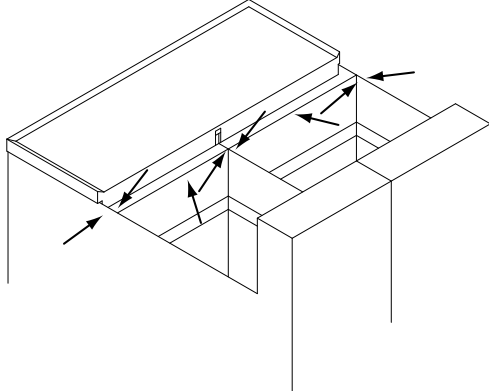
NOTE: **BLACK** and **WHITE CABLETYES** may have to be removed to separate connections.

- 6) **CAREFULLY** disconnect the **FILTER PUMP MOTOR RED, GREEN** and **WHITE** electrical wires terminated in a **4 PIN WHITE** connector from its mating receptacle located on the left hand side of the “extreme” **LEFT HAND** vat.
- 7) **CAREFULLY** disconnect the **POWER LINE BLACK** and **WHITE** electrical wires terminated in a **4 PIN WHITE** connector from its mating receptacle located on the left hand side of the “extreme” **LEFT HAND** vat.
- 8) **SECURE** the **SHORTENING LINE** to the base frame on the **LEFT HAND** end of the fryer bank; then **CAREFULLY** loosen and separate the shortening line union attached to each ½” (13mm) ball valve.
- 9) **CAREFULLY** remove each cabinet from the base frame, carry each cabinet into the building; then place the base frame into position in the kitchen.
- 10) **PRIOR** to re-assembling the fryer bank:
 - a) Remove **DRIED** silicone used to seal the apron to vats, opening between each set of vats, front and rear of each cabinet, lower edge of the two (2) end vats and perimeter of the base frame.
 - b) **THOROUGHLY** clean the **TEFLON TAPE** from all **GAS** and **SHORTENING** fittings and pipes, then wrap all male pipes and fittings with teflon tape.

2. RE-ASSEMBLY

- a. Place each vat cabinet in numerical order in **FRONT** of the base frame from **LEFT** to **RIGHT**
- b. Install each vat cabinet on the base frame as follows:
 - 1) Place a bead of silicone around the perimeter of the base frame for the **FIRST** vat cabinet.
 - 2) **CAREFULLY** place **VAT CABINET #1** in position on the base frame; then secure the cabinet to the base frame by installing a 10-24 truss head screw and nut on the left hand flange to the base frame then install two (2) self-tapping philips head screws in the two holes on the bottom flange of the cabinet.
 - 3) Repeat the above procedures to install remaining vat cabinets on the base frame.
- c. When all vat cabinets are installed on the base frame, secure the cabinets as follows:
 - 1) Place a bead of silicone along the **FRONT, TOP** and **REAR** space between vat cabinets #1 and #2.
 - 2) Install a 10-24 truss head screw and nut in the ¼” (6mm) holes on the **FRONT** right hand side of vat cabinet #1 and left hand side of vat cabinet #2.
 - 3) Install two (2) 10-24 truss head screws and nuts in the two (2) ⅜” (5mm) slotted holes on the **REAR** left hand side of vat cabinet #1 used to secure it to cabinet #2.
 - 4) Repeat the above procedures to secure remaining vat cabinets to adjoining vat cabinets.
- d. Perform these steps facing the **REAR** of the fryer:
 - 1) **CAREFULLY** connect each shortening line union **HAND TIGHT**, remove the device used to secure the **SHORTENING LINE** to the **LEFT** end of the base frame; then **SECURELY** tighten each shortening line union.
 - 2) Place the **GAS MANIFOLD** in position, secure each manifold “**L**” **BRACKET** to the frame using the ¼-20 hex head bolts and nuts removed earlier; then **SECURELY** connect each manual gas valve flexible gas line to the male flare fitting on the manifold.
 - 3) **SECURELY** connect the **SHORTENING LINE RED** and **WHITE** heater tape electrical wires terminated in a **2 PIN WHITE** connector to its mating receptacle on the left hand side of the “extreme” **LEFT HAND** vat. Install a small cable-tye on the connection to assure these connectors cannot be separated.
 - 4) **SECURELY** connect the **FILTER PUMP MOTOR RED, GREEN** and **WHITE** electrical wires terminated in a **4 PIN WHITE** connector to its mating receptacle located on the left hand side of the “extreme” **LEFT HAND** vat.
 - 5) **SECURELY** connect the **POWER LINE BLACK** and **WHITE** electrical wires terminated in a **4 PIN WHITE** connector to its mating receptacle located on the left hand side of the “extreme” **LEFT HAND** vat.
 - 6) Install a large cabletye on the cable harness on the “extreme” **LEFT** and **RIGHT** vats; then replace the **REAR PANEL** on each vat cabinet using eight (8) pan head self-tapping screws in the cabinet panel and fan cover.
- e. Perform these steps facing the **FRONT** of the fryer:
 - 1) Install the **BLACK** wiring harness protector in the 2” (51mm) opening of each vat; then **SECURELY** connect the **4 PIN WHITE** wiring harness connector to its mating receptacle on each vat.
 - 2) **CAREFULLY** connect the **ELECTRICAL OUTLET** box **BLACK** and **WHITE** wires on the “extreme” right hand vat to the **POWER** line **BLACK** and **WHITE** wires using the wire nuts previously removed.
 - 3) Remove any dried silicone from the **SHORTENING DRAIN TROUGH**, place a bead of silicone to the same location on the drain trough, position the drain trough beneath the fryer; then **SECURE** the drain trough to each ball valve plate using four (4) ¼ -20 hex head bolts and nuts previously removed.
 - 4) Remove any dried silicone from each **JOINER STRIP**, place a bead of silicone in each strip; then place the joiner strip over the edge of all adjoining fryer vats.

- 5) **CAREFULLY** replace the **APRON** as follows:
 - a) Remove any dried silicone from the upper front corner area of each vat divider, upper inside edge of each vat and the **TOP** surface of the rear hat section of each vat using alcohol.
 - b) Place the apron in position along the **REAR** of the fryer with the front of the apron elevated about 45°, seat the rear flange of the apron over the front inside edge of each vat; then **CAREFULLY** lower the front of the apron until each ¼ - 20 weld stud is seated in the notches of the front and rear hat section of each vat. Slip the apron slightly to the left and right to center it on the fryer.
 - c) When the apron is properly positioned, secure it to the hat sections of each vat using the wing nut, split washer and flat washers removed earlier.
 - d) After the apron has been secured to each fryer vat, place a bead of silicone sealant along the seam of the apron rear flange, front panel of each vat and each vat corner and apron seam as shown below.



CAUTION: FAILURE TO SEAL THESE AREAS WILL PERMIT HOT SHORTENING TO BOIL UP INTO THE SPACE ALLOWING OIL TO SEEP INTO THE FIREBOX AREA.

- 6) Raise the Temperature Control Access Panel.

3.3 LEVELING:

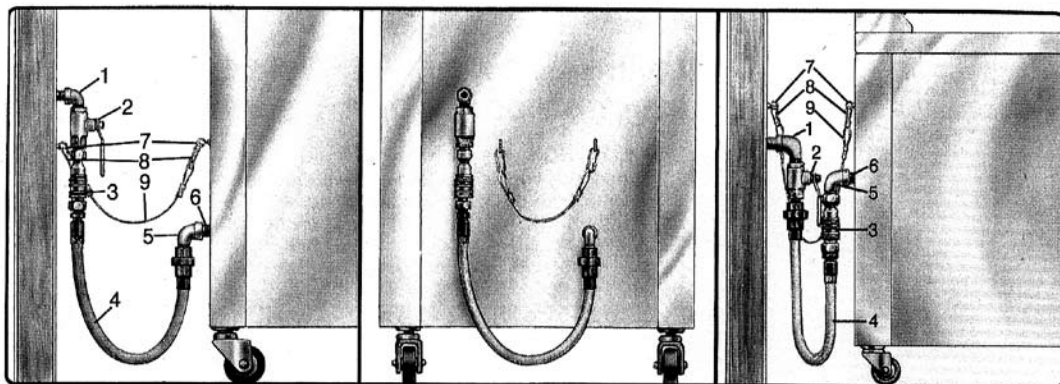
- A. Roll the fryer to its operating location and check to be sure it is level at this location. If not, loosen the casters and insert the appropriate number of shim plates between leg and caster plates then retighten the caster bolts.
- B. If the floor is smooth and level, adjust to the high corner and measure with a spirit level. If the floor is uneven or has a decided slope, level the unit with metal shims.

NOTE: A caster may not return exactly to the same position after being moved, which may require re-leveling after each move.

- C. Connect the gas manifold to the building gas supply line by means of a CSA International APPROVED flexible gas line as shown in the figure below.

NOTE: CONNECT-IT inc. ¾" (19mm), 1" (25mm) and 1 ¼" (32mm) flexible gas hose 4 feet long (1219mm) with a quick disconnect coupling on one end is available from Ultrafryer Systems under part number 24-322 (¾" (19mm) hose), 24-323 (1" (25mm) hose) and 24-456 (1 ¼" (32mm) hose). These hoses are equipped with a fusible link, which melts at 361°F (183°C) that will **SHUT OFF** the gas supply when it melts. A restraining device 44" (1119mm) long is also available under part number 24-324.

CAUTION: THE BUILDING GAS SUPPLY LINE MUST BE SIZED TO PROVIDE THE VOLUME OF GAS REQUIRED FOR PROPER OPERATION AS EXPLAINED IN PARAGRAPH 9.2, (page 29).



WARNING: THE RESTRAINT DEVICE (ITEM 9) MUST BE INSTALLED TO ASSURE TENSION CANNOT BE PLACED ON THE FLEXIBLE GAS LINE OR FITTING.

- | | |
|--------------------------------|------------------------------|
| 1. BUILDING GAS SERVICE LINE | 6. APPLIANCE MANIFOLD/NIPPLE |
| 2. MAIN GAS CUT-OFF VALVE | 7. EYELET FASTENERS |
| 3. CONNECT-IT QUICK-DISCONNECT | 8. SPRING HOOK |
| 4. FLEX-CON CONNECTOR | 9. RESTRAINING CHAIN |
| 5. ELBOW | |

**TYPICAL GAS CONNECTION
FIGURE 2**

3.4 INLET GAS REQUIREMENTS:

PERTINENT GAS DATA

<u>FRYER & GAS</u> <u>TYPE</u>	<u>GAS VALUE WATER</u> <u>COLUMN SETTING</u>	<u>ORFICE HOLE</u> <u>SIZE</u>	<u>RATING</u>		<u>INLET GAS REQ'D</u>	
			<u>BTU/HR</u>	<u>MJ/HR</u>	<u>FT³ / HR</u>	<u>M³ / HR</u>
PAR-2-18						
Butane Gas	10.0" (254mm) W.C.	# 43	65,000	71.5	20.31	.57
Natural Gas	4.0" (102 mm) W.C.	# 25	65,000	71.5	61.90	1.75
Propane Gas	10.0" (254mm) W.C.	#42	65,000	71.5	26.00	.74
PAR-2-20						
Butane Gas	10.0" (254mm) W.C.	#40	75,000	82.5	23.44	.66
Natural Gas	4.0" (102 mm) W.C.	#22	75,000	82.5	71.43	2.02
Propane Gas	10.0" (254mm) W.C.	#39	75,000	82.5	30.00	.85
PAR-3-14						
Butane Gas	10.0" (254mm) W.C.	#36	90,000	99.0	28.13	.80
Natural Gas	4.0" (102 mm) W.C.	#16	90,000	99.0	85.71	2.43
Propane Gas	10.0" (254mm) W.C.	#32	90,000	99.0	36.00	1.02
PAR-3-18						
Butane Gas	10.0" (254mm) W.C.	#36	110,000	121.0	34.38	.97
Natural Gas	4.0" (102 mm) W.C.	#10	110,000	121.0	104.76	2.96
Propane Gas	10.0" (254mm) W.C.	#32	110,000	121.0	44.00	1.25
PAR-3-20						
Butane Gas	10.0" (254mm) W.C.	#30	120,000	132.0	37.50	1.06
Natural Gas	4.0" (102 mm) W.C.	#07	120,000	132.0	114.29	3.23
Propane Gas	10.0" (254mm) W.C.	#28	120,000	132.0	48.00	1.36

FT³ / HR (M³ / HR) Values may vary due to heating value and specific gravity of gas supplied by local companies.

3.5 GAS CONNECTION: The gas supply (service) line must be the same size or greater than the inlet line of the appliance. **THE GAS SUPPLY LINES MUST BE SIZED TO ACCOMMODATE ALL THE GAS FIRED EQUIPMENT THAT MAY BE CONNECTED TO THAT SUPPLY.** Refer to the Inlet Gas Line Sizing Table on page 29.

NOTE: Sealant used on all pipe joints must be resistive to butane and propane gas.

- A. Manual shut off valve: This supplier-installed valve must be installed in the gas service line ahead of the appliance and in a position where it can be reached quickly in the event of an emergency.
- B. Pressure regulator: All commercial cooking equipment must have a pressure regulator on the incoming service line for safe and efficient operation, because service pressure may fluctuate with local demand. External regulators are not required on this fryer, as that function is performed by a combination gas control valve, however if the incoming pressure is in excess of ½ psig, a step-down regulator will be required.
- C. Natural gas: Natural gas fryers require 7" (178mm) water column (W.C.) "inlet" pressure to the fryer's combination gas control valve for proper operation, when all gas units are operating simultaneously. Butane and Propane gas fryers require 14" (356mm) water column (W.C.) "inlet" pressure to the fryer's combination gas control valve for proper operation, when all gas units are operating simultaneously. This "inlet" pressure **MUST** be checked with a manometer **PROIR** to placing the fryer in operation.

WARNING: IF THE "INLET" GAS PRESSURE AT THE FRYER'S COMBINATION GAS CONTROL VALVE "EXCEEDS" ½ lb/in² (.035 kg/cm²) OR APPROXIMATELY 14" (356 mm) W.C., AN EXTERNAL REGULATOR MAY BE NEEDED TO PREVENT DAMAGE TO THE COMBINATION GAS VALVE, AND VOIDING OF WARRANTY. FAILURE TO ADDRESS THIS COULD RESULT IN EXPLOSION OR FIRE.

- D. Combination gas control valve: The correct combination gas control valve and orifice is installed at the factory for **BUTANE, NATURAL** and **PROPANE** units based on each Purchase Order. This valve should be **CHECKED/ADJUSTED** by qualified service personnel using proper test equipment for the following "**OUTLET**" gas pressure **PRIOR** to start-up of a fryer. **NATURAL GAS FRYERS 4" (102mm) W.C. BUTANE/PROPANE FRYERS 10" (254mm) W.C.**
- E. Rigid connections: Check any installer-supplied intake pipe(s) visually and/or blow them out with compressed air to clear dirt particles, threading chips or any other foreign matter before connecting to the service line as these particles may clog the orifice when gas pressure is applied. All connections must be tested with a soapy solution before lighting the fryer. **DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS!** Putting an open flame beside a new connection is not only dangerous, but will often miss small leaks that a soapy solution would find.
- F. Flexible Couplings, Connectors: The installation is to be made with a connector that (1) complies with the **Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 (CAN/CGA-6.16)**, and a quick-disconnect device that complies with the **Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 (CAN1-6.9)** (2) adequate means must be provided to limit the movement of the appliance without depending on the connector and the quick dis-connect device or its associated piping to limit the appliance movement and (3) the location(s) where the restraining means may be attached to the appliance shall be specified. **DOMESTIC CONNECTORS ARE NOT SUITABLE!!!**
- G. Fryer Service: The fryer is equipped with swivel casters. To service the fryer:
 - 1) Turn "OFF" gas supply at the supply source.
 - 2) Disconnect the flexible gas line quick-disconnect
 - 3) Disconnect restraint means and roll fryer out for rear service access.
 - 4) When the fryer is re-positioned, be sure to reconnect the restraint and level the fryer.

- 3.6 ELECTRICAL CONNECTION:** The **MAXIMUM** current draw per vat at Initial Start-up or during a Warm-up Cycle will be 3 Amperes at 120 Volts. When running the Filter System simultaneously allow for an additional 3 Amperes. Refer to the wiring diagram attached to the front door of the fryer for internal electrical connections.
- 3.7 DEFAULT-TO-MANUAL-RESTART (DTMR) CONTROL:** The “basic” Model PAR-2 and PAR-3 gas fryer is equipped with a Default-to-Manual-Restart (DTMR) Control. This control contains a Default-to-Off electrical circuit that **DISABLES** a fryer any time the drain valve is **OPENED**, and a Default-to-Melt electrical circuit which automatically places a fryer in a shortening **MELT MODE** to gradually and **SAFELY** melt shortening each time a fryer is turned **ON** and the **START BUTTON** is depressed on the **DTMR** control. The Default-to-Manual-Restart Control is intended to avoid “operator errors” that can result is **DRY FIRING** a fryer causing shortening to be scorched, heat exchanger damage and/or a vat fire. Layout of the DTMR Control Panel.

DTMR CONTROL PANEL

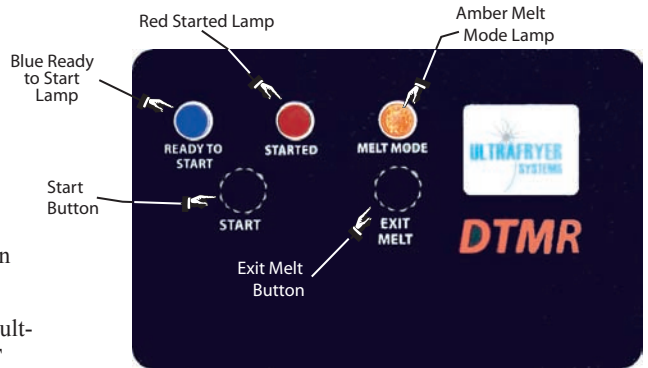
BLUE READY TO START LAMP - When lit indicates the power on/off switch is in the ON position, the drain valve is **CLOSED**, and the fryer is ready to operate.

START BUTTON - When this button is momentarily depressed, it places the fryer in operation.

RED STARTED LAMP - When lit indicated the **START BUTTON** has been momentarily depressed and the fryer is operating.

AMBER MELT MODE LAMP - When lit indicated the **TIMER** in the Default-To-Melt circuit is cycling the fryer burner **ON** for seven (7) seconds and **OFF** for 28 seconds to safely heat shortening.

EXIT MELT BUTTON - When this button is momentarily depressed the **TIMER** in the Default-To Melt circuit will switch to the **FULL ON** position allowing the Fenwal thermostat to heat shortening to its pre-set temperature.

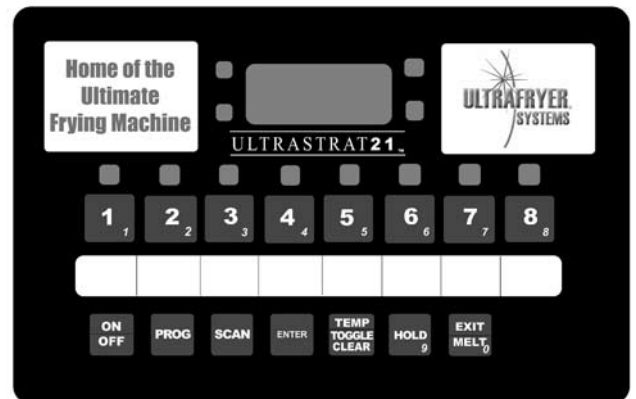


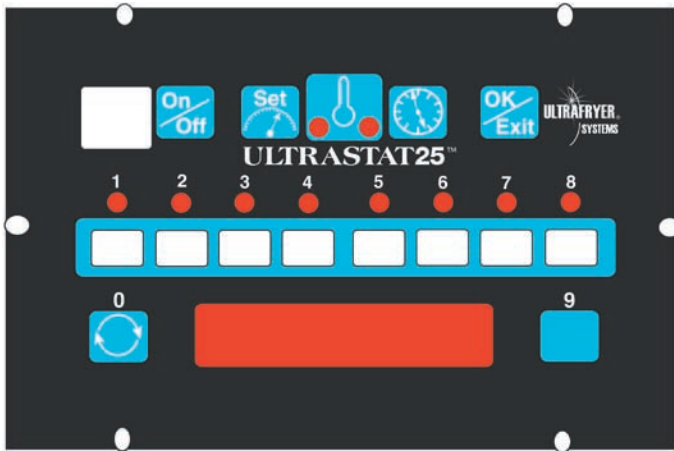
- 3.8 OPTIONAL CONTROLS :** The Model PAR-2 and PAR-3 gas fryers may be equipped with an Ultrastat Model 11, 21, or 25 Cooking Computer as described below:

- A. ULTRASTAT 11 COOKING COMPUTER:** Some Model PAR-3 gas fryers are equipped with an Ultrastat 11 Cooking Computer which is connected to the fryer’s electrical system to serve as its thermostat as well as providing heat control, status information and product cook timer. When the computer is in operation it will **DISABLE** the fryer if the drain valve is **OPENED**. Operation of the Ultrastat 11 Cooking Computer is covered in the Ultrastat 11 Ultrafryer Computer Operation Instruction PN 30A053 provided with Fryeres equipped with an Ultrastat 11 Cooking Computer.



- B. ULTRASTAT 21 COOKING COMPUTER:** The Ultrastat21 Cooking computer 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 is cap-able of cooking up to eight (8) different products; each of which can be programmed to be cooked from one (1) to ten (10) different temperature at different times in a cook cycle. In addition, the operator can program the ULTRASTAT21 computer to cook products under “**FLEX**” or “**STRAIGHT**” timing modes. When programmed for “**FLEX**” time mode the computer will adjust the actual cook time taking into con-sideration the temperature variation due to load size, initial product temperature, product moisture content, and other factors that affect the cook cycle. Under “**STRAIGHT**” time mode, the product is cooked at a specified temperature for the length of time programmed without adjusting for these variations. Operation of the ULTRASTAT21 cooking computer is covered in the ULTRASTA21 Gas Fryer Computer Operation Instructions PN 30A009 provided with fryers equipped with this computer.





C. **ULTRASTAT 25** : The Ultrastat 25 Cooking Computer is a high performance, micro-processor based electronic controller designed for use in commercial appliance temperature and timing control applications. Utilizing a microcontroller board, membrane switch front panel with a digital LED readout, and display board, the Ultrastat 25 Cooking Computer has been customized for Ultrafryer Systems applications by the addition of up to (10) stage cooking profiles for each of the (8) product keys, exit melt feature, optional temperature setback and filtering prompts, and can be programmed to cook products under “Flex” or “Straight” timing modes. Operation of the Ultrastat 25 Cooking Computer is covered in its Instruction Manual PN 30A051 provided with the Fryers Equipped with this computer.

4. INITIAL START-UP

- 4.1 **CLEANING:** New units are wiped clean with solvents at the factory to remove any visible signs of dirt, oil, grease, etcetera, remaining from the manufacturing process, then given a light coat of oil. Each fryer vessel should be thoroughly washed with hot soapy water to remove film residues, installation dust or debris; and then wiped dry before being used for food preparation.
- 4.2 **START-UP:** The fryers are tested, adjusted and calibrated prior to being shipped; however adjustments may be necessary on installation to meet local conditions, high or low gas pressure, differences in altitudes, variations in gas characteristics and to correct possible problems caused by rough handling or vibration during shipment. Initial calibration or adjustment is the responsibility of the customer and will not be covered by the Ultrafryer Systems warranty.

NOTE: Calibration and adjustments must be performed by qualified personnel.

- 4.3 **LIGHTING INSTRUCTIONS:** Each fryer is equipped with a spark ignition system and to test this system, perform the following steps, in sequence:

- A. Turn the Toggle **ON/OFF SWITCH** to the **OFF** position.
- B. Fill the fryer vessel with hot or cold water to the **SHORTENING LEVEL** mark.

CAUTION : IF THE MAIN BURNERS ARE OPERATED WITH THE VESSEL EMPTY, THE HEAT WILL CAUSE THE JOINTS OF THE FRYER VESSEL TO BE PLACED UNDER UNDO STRESS AND MAY CAUSE THE HEAT EXCHANGER VESSEL TO WARP OR BUCKLE, VOIDING WARRANTY.

- C. Turn the manual gas valve behind the fryer control access door of the fryer to the **OFF** position and wait **FIVE (5)** minutes for any accumulated gas to disperse.
- D. **ENSURE** the **MAIN** gas shut-off is in the **ON** position, **MANUAL VALVE** on the combination **GAS CONTROL VALVE** (located behind the fryer control access door) is in the **ON** position and the **EXHAUST FAN** in **ON**.
- E. Turn the manual gas valve to the **ON** position.
- F. Turn the **ON/OFF** switch **ON**; then place the **DTMR** or **ULTRASTAT** Cooking Computer into the **MELT MODE**.

WARNING!!! DO NOT USE A MATCH OR CANDLE TO LIGHT A FRYER.....EVER!

- 4.4 **SEQUENCE OF INGITION:** When the lighting instruction steps are performed in the sequence listed above, the following will occur:

- A. Blower motor will come **ON** activating the air pressure/centrifugal switch.
- B. The air pressure/centrifugal switch will **CLOSE** completing the electrical circuit to the transformer.
- C. The transformer will supply 24 volts to the **IGNITOR MODULE** and **GAS CONTROL VALVE**, and the ignitor will **SPARK** lighting the gas in the burner.

WARNING!!! WHEN CHECKING FOR BURNER PERFORMANCE, DO NOT STAND WITH YOUR FACE CLOSE TO THE BURNER.... IT MAY LIGHT WITH A “POP” AND COULD FLASH BACK AND CAUSE FACIAL BURNS.

NOTES: 1) If the burner flame fails, it will be sensed by the SPARK IGNITOR, the Spark Ignitor Module will open the electrical circuit to the **GAS CONTROL VALVE** shutting off gas to the burner. 2) If the blower motor fails, the air pressure/centrifugal switch will open the electrical circuit to the **TRANSFORMER** removing electrical power from the SPARK IGNITOR MODULE and GAS CONTROL VALVE shutting off gas to the burner.

- 4.5 **BURNER OPERATION TEST:** Perform step 4.3 A) through 4.3 F) above and observe operation of the burners. When satisfied that the burner is operating properly, drain the fryer vessel of water and dry the vessel thoroughly; then fill the fryer vessel with shortening according to instruction in paragraph 4.6 below.

4.6 SHORTENING INSTALLATION:

- A. **LIQUID SHORTENING:** When using a liquid shortening (cooking oil) fill the fryer with shortening even with the middle line of the “E <” in the word **LEVEL** of the applicable shortening level mark on the rear wall of the fryer.

B. SOLID SHORTENING:

- 1) Cut a block of solid shortening into small pieces.
- 2) Place small pieces of solid shortening **EVENLY** on top of the **HEAT EXCHANGER TUBES** or **THOROUGHLY PACK** these pieces of solid shortening between, below and above the **HEAT EXCHANGER TUBES**. While packing solid shortening is messy and time consuming, it is the fastest way to melt solid shortening.
- 3) Turn the fryer ON/OFF switch to the **ON** position; then place the **DTMR** r other fryer control in the **MELT MODE**.
- 4) When the **BURNER TUBES** are completely covered with **LIQUID** shortening and the shortening temperature has reached the applicable **MELT LIMIT TEMPERATURE**, replace the grill in the fryer vat; then place the fryer in the **FULL ON** mode.
- 5) Continue adding solid shortening as follows:
 - a) Place small pieces of solid shortening into a fry basket.
 - b) **CAREFULLY** lower the basket into the fryer vat.
 - c) **GENTLY** turn the basket to allow these pieces of solid shortening to float away.
 - d) Repeat the above steps until liquid shortening is even with the middle line of the “E< ” in the word **LEVEL** of the applicable shortening level mark on the rear wall of the fryer vat.

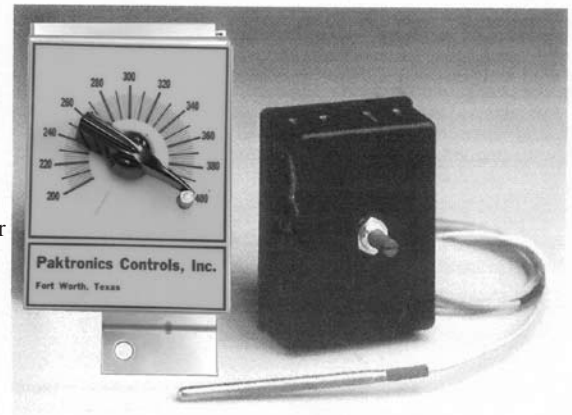
WARNING!!! TO AVOID INJURY

- I DO NOT MOVE A FRYER FILLED WITH HOT LIQUID.**
- II THE FRYER MUST BE RESTRAINED BY USE OF A RETAINING DEVICE TO PREVENT TIPPING TO AVOID THE SPLASHING OF HOT LIQUID.**
- III THE AREA SURROUNDING THE FRYER MUST BE KEPT FREE AND CLEAR OF ALL COMBUSTIBLES.**
- IV DO NOT GO NEAR THE AREA DIRECTLY OVER THE FLUE OUTLET WHEN THE FRYER’S MAIN BURNERS ARE OPERATING.**
- V ALWAYS WEAR OIL-PROOF, INSULATED GLOVES WHEN WORKING WITH A FRYER FILLED WITH HOT OIL.**
- VI ALWAYS DRAIN HOT OIL INTO A METAL TUB, POT OR CAN ... HOT OIL CAN MELT PLASTIC BUCKETS OR SHATTER GLASS.**

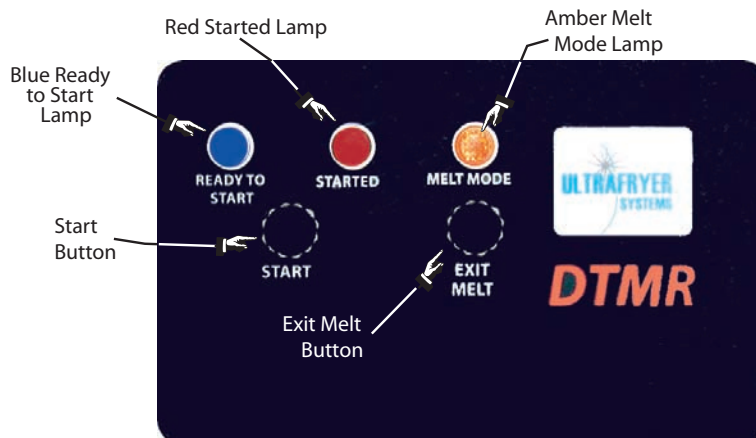
4.7 START-UP AND COOKING

A. GENERAL :

- 1) The Default-to-Manual-Restart (DTMR) Control along with a Fenwal Temperature Controller or Electronic Thermostat is connected to a fryer’s electrical system to control operation of the fryer. The DTMR contains a Default-to-Off circuit that will **DISABLE** the fryer anytime the Drain Valve is **OPEN**, and a Default-to-Melt circuit that will automatically place the fryer in a **SHORTENING MELT MODE** to gradually and safely heat shortening each time the fryer’s Toggle ON/OFF Switch is turned **ON**.
2. **Electronic Thermostat:** The Electronic Thermostat has a temperature range from 200°F (93°C) to 400°F (204°C) and will accurately maintain a pre-set shortening cook temperature within ± 2° of the pre-set temperature.



- B. START-UP :** Safely start-up a gas fryer equipped with a Default-to-Manual-Restart (DTMR) control as follows:



<u>ITEM</u>	<u>ACTION</u>	<u>DTMR CONDITION</u>
1	ENSURE the drain valve lever is in the CLOSED UP position and that water is at the proper level; then turn the Toggle ON/OFF switch to the ON position.	A. The AMBER power indicator will LIGHT. B. BLUE READY TO START lamp will LIGHT.
CAUTION: PRIOR TO PROCEEDING TO STEP 2 VISUALLY CHECK THAT THE HEAT MECHANISM IS COVERED WITH AT LEAST 2" (51 mm) OF WATER.		
2	Depress, then release the momentary START button	A. RED STARTED lamp and AMBER MELT MODE lamp will light. B. BLUE READY TO START lamp will turn OFF. C. A TIMER in the Default-To-Melt electrical circuit will begin cycling the fryer heat mechanism ON for seven (7) seconds and OFF for 28 seconds to safely heat the water.
CAUTION: PRIOR TO PROCEEDING TO STEP 3, VISUALLY CHECK THAT THE WATER COMPLETELY COVERS THE HEAT MECHANISM.		
3	When the shortening temperature is above 100°F (38°C) depress, then release the momentary EXIT MELT button.	A. AMBER MELT MODE lamp will turn OFF and the RED STARTED lamp will remain lit. B. The TIMER in the Default-To-Melt circuit will switch to the FULL ON position, allowing the Fenwall thermostat or Electronic Thermostat to heat water to its pre-set temperature.
4	When the fryer's RED heat indicator lamp turns OFF, indicating the pre-set temperature has been reached, initiate a cook cycle.	
Steps 1, 2 and 3 will have to be repeated each time any of the following occurs: DRAIN VALVE IS OPENED. TOGGLE ON/OFF SWITCH IS TURNED OFF TO FILTER SHORTENING. TOGGLE ON/OFF SWITCH IS TURNED OFF AT CLOSING.		

C. **COOKING** : Most products should be cooked with a shortening temperature about 360°F (182°C); however, each product should be cooked at the **LOWEST** temperature that produces a high quality product while obtaining maximum usage of the shortening.

I - DO USE A HIGH QUALITY SHORTENING TO ACHIEVE A CONSISTENT QUALITY PRODUCT AND LONG TERM SAVINGS.

II - DO NOT SALT PRODUCTS OVER THE FRYER AS SALT QUICKLY DETERIORATES THE SHORTENING AND FLAVORS OTHER PRODUCTS COOKED IN THE SAME SHORTENING.

III - DO FILTER SHORTENING AFTER THE LUNCH AND DINNER RUSH AND MORE OFTEN IN A HIGH SALE VOLUME STORE; AND BOIL-OUT THE FRYER EVERY 7 DAYS.

5. **OPERATING INSTRUCTIONS:** The Model PAR gas fryer is equipped with a recirculating shortening filter system which is to be operated, cleaned and repaired according to the following procedures.

5.1 GENERAL:

- A. **SHORTENING:** Use a high quality shortening to achieve a consistent quality product as well as a long term savings.
- B. **SHORTENING TEMPERATURE:** Most products should be cooked with a shortening temperature about 350°F (177°C); however, each product should be cooked at the **LOWEST** temperature that produces a high quality product while obtaining maximum usage of the shortening.
- C. **SALTING:** Products should not be salted over the fryer vessel as salt quickly deteriorates the shortening and flavors other products cooked in the same shortening.
- D. **POWER FAILURES:** The Model PAR fryer cannot be operated during power failures. **DO NOT** attempt to by pass safety controls and manually operate the fryer.
- E. **PUMP MOTOR:** The filter pump motor installed on the base frame is protected by a motor thermal overload switch.

CAUTION: ENSURE THE WASH DOWN HOSE IS NOT CONNECTED TO A FRYER PRIOR TO RESETTING A THERMAL OVERLOAD SWITCH.

5.2 **FILTERING SHORTENING:** The fryer must be filtered at least twice a day (once after the lunch rush and again after the dinner rush). Place the amount of filter agent in the shortening as prescribed by the chemical supplier and follow instructions for filtering shortening provided with the filter machine.

5.3 **LEVELING SHORTENING:** After filtering, the shortening level must be checked and fresh shortening added when necessary.

- A. The shortening in the vat should reach to the middle line of the "E" in the word LEVEL of the applicable shortening level mark on the rear wall of the fryer.
- B. If shortening is needed, use the filter scraper to cut off a small block of solid shortening.
- C. Place the small block of shortening into a fry basket, lower the basket into the shortening; then turn the basket to allow the block to float freely.
- D. Repeat the above steps until the shortening in each vat is at the proper level.

5.4 BOILING OUT FRYER: The fryer should be **BOILED OUT** every **7 DAYS** to remove carbon buildup and other encrusted materials. Add the amount of boil out compound to the fryer as prescribed in the cleaning manual provided by the chemical supplier and follow instructions for boiling out a fryer in the operating instructions provided with the fryer.

5.5 CLOSING/SHUTDOWN INSTRUCTIONS:

- A. CLOSING:** When closing at night; filter the shortening in the fryer, **THOROUGHLY** drain all filter lines and cover the fryer vessel. Turn the **ON/OFF** Switch on the fryer **OFF** and turn the Manual Gas Valve **OFF**.
- B. SHUTDOWN OR PROLONGED POWER FAILURE:**
 - 1. Shutdown: Perform the following whenever a fryer is being shutdown for an extended period of time:
 - a. Drain and discard the shortening.
 - b. **THOROUGHLY** clean the fryer vat.
 - c. Turn the ON/OFF Switch to the **OFF** position, disconnect the 120-volt power cord and turn applicable Circuit Breakers **OFF**.
 - d. Turn the Manual Gas Valve **OFF** and turn the Main Gas Shut-off Valve **OFF**.
 - 2. Prolonged power failure: The model PAR fryer cannot be operated during power failures. **DO NOT** attempt to bypass safety controls and manually start the fryer.

6. CLEANING AND MAINTENANCE

6.1 CLEANING: Any item of equipment operates better and lasts longer when it is kept clean and properly maintained, and this fryer is no exception. In order for the fryer to provide years of trouble-free service, it must be **CLEANED** and **MAINTIANED** according to instructions contained herein and at the intervals listed below:

A. DAILY

- 1. **FILTER** shortening in each fryer vat after the **LUNCH** and **DINNER** rush and more often in high volume sale stores.

CAUTION: PRIOR TO CLEANING THE FRYER VAT, REMOVE THE 120 VOLT ELECTRICAL PLUG FROM THE ELECTRICAL RECEPTACLE AND TURN THE MANUAL GAS VAVLE OFF.

- 2. **Clean** the fryer surface with a solution of hot water and detergent periodically during operating hours and with stainless steel cleaner at closing. If necessary, use a dampened 3M type **7447 RED** or 3M type **7440** heavy duty **BROWN** Scotchbrite pad to remove encrusted material. **DO NOT** use steel wool, abrasive cloths, cleaners, powders, metal knife, spatula or any other metal object to scrape stainless steel! Scratches on stainless steel are almost impossible to remove!

CAUTION: DO NOT ALLOW ANY CLEANING SOLUTION/WATER TO SPLASH INTO A VESSEL OF HOT COOKING OIL AS IT WILL CONTAMINATE THE OIL AND MAY CAUSE THE OIL TO SPALTTER CAUSING SEVERE BURNS.

- 3. **THOROUGHLY** clean the filter machine according to instructions provided with the machine.

B. WEEKLY

- 1) **BOIL OUT** the fryer vat using Boil Out Compound according to procedures in the cleaning manual provided by the chemical supplier
- 2) Perform steps 2) and 3) listed above under Daily Cleaning routines.

6.2 MAINTENANCE - The Fenwal Temperature Controller or Electronic Thermostat seldom need adjusted if properly set during the initial nstallation. If necessary, adjust the Fenwal Temperature Control or Electronic Thermostat according to the following procedures.

6.3 FENWAL TEMPERATURE CONTROLLER ADJUSTMENT - If the Fenwal Temperature Controller is found to be **MORE THAN ±7°F** (± 4°C) from the desired cook temperature, they should be adjusted by a **QUALIFIED REPAIRMAN** as follows:

A. EQUIPMENT REQUIRED:

- 1) Fluke Model 51 Digital Thermometer w/ Type K “Bead” Thermo-Couple Temperature probe or equivalent **ACCURATE** digital thermometer and probe.
- 2) Shortening Skimmer w/ long handle.
- 3) Two (2) screwdrivers, one with a 1/8” (3mm) blade and one with a ¼” (6mm) blade.

B. PRECAUTIONS:

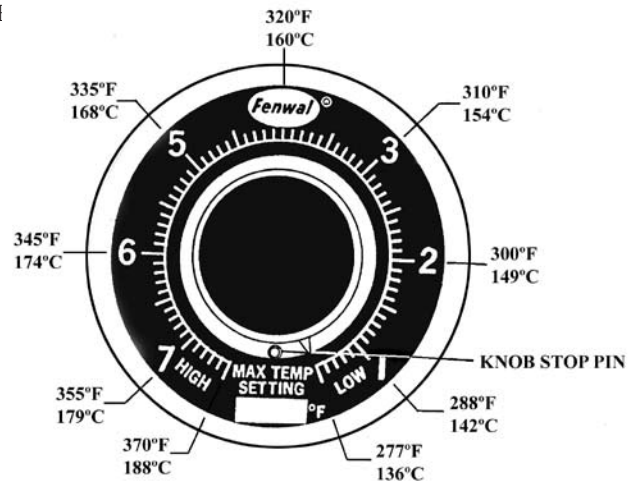
- 1) If the **AVERAGE** temperature computed in step C 10) falls within a range of ±7° F (± 4°C) of the cook temperature, the Fenwal Temperature Controller is operating properly and should not be adjusted.
- 2) **PRIOR** to checking/adjusting a Fenwal Temperature Controller, **ENSURE** the shortening **BENEATH** the heat tubes is in a liquid state, shortening has **STABILIZED** at the normal cook temperature and the shortening is **THOROUGHLY** stirred in a **COUNTER-CLOCKWISE (CCW)** direction.
- 3) The Fenwal Temperature Controller adjustment shaft is **EXTREMELY SENSITIVE**. One (1) **FULL** turn (360°) of the adjustment shaft will change shortening temperature 100° F (56°C). The approximate change of shortening temperature per movement of the adjustment shaft is as follows:

<u>MOVEMENT</u>	<u>TEMPERATURE CHANGE</u>
1/8 TURN	12.5° F (7°C)
1/4 TURN	25° F (14°C)
1/2 TURN	50° F (28°C)
3/4 TURN	75° F (42°C)
1 TURN	100° F (56°C)

NOTE: To **INCREASE** shortening temperature turn the adjustment shaft to the **LEFT** (counter clockwise).
To **DECREASE** shortening temperature, turn the adjustment shaft to the **RIGHT** (clockwise).

C. FENWAL TEMPERATURE CONTROLLER TEMPERATURE CHECK/ADJUSTMENT PROCEDURES: Fenwal Temperature Controllers in ALL fryer configurations are equipped with a DIAL and KNOB

- 1) **ENSURE** electrical power and gas to the vat has been turned **OFF**.
- 2) **CAREFULLY** drain sufficient shortening from the vat to **LOWER** the shortening about 4" (102 mm) beneath the Fenwal Temperature Controller sensing element.
- 3) After the sensing element has **COOLED**, loop the Bead Type K temperature probe around the sensing element, connect the temperature probe to the Fluke thermometer, set the **KNOB** pointer to the **LOW** setting (**MAXIMUM CLOCKWISE POSITION**), then **CAREFULLY** loosen the knob set screw and remove the knob from adjustment shaft. **TAKE CARE TO NOT TURN THE ADJUSTMENT SHAFT.**
- 4) Replace shortening drained in step 2). and **ENSURE** it is level with the shortening level mark.
- 5) Turn electrical power and gas to the vat **ON** and start the fryer to heat the shortening.
- 6) Periodically **STIR** shortening in a **COUNTER-CLOCKWISE (CCW)** direction with a **LONG** handle skimmer to pull congealed shortening **UPWARD** from the cold zone area beneath the heat tubes.

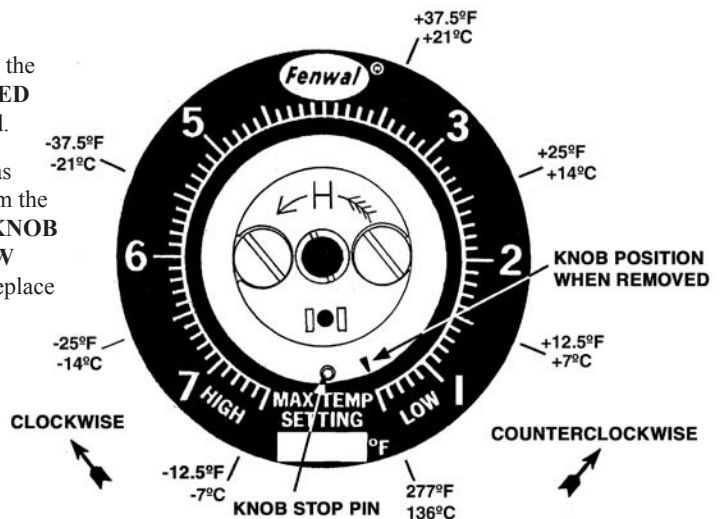


CAUTION: ALL SHORTENING MUST BE IN A LIQUID STATE AND EVENLY HEATED PRIOR TO ADJUSTING A FENWAL TEMPERATURE CONTROLLER!

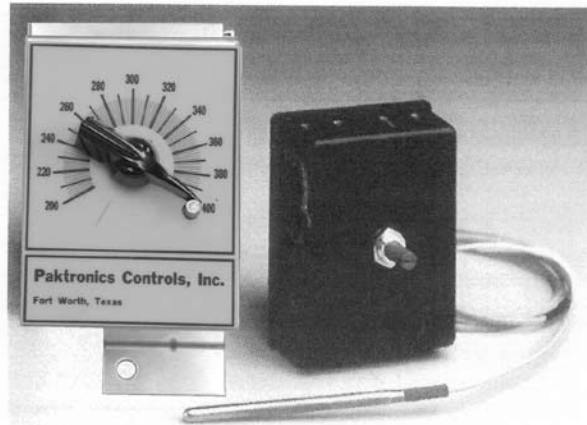
- 7) When the shortening has reached temperature and the burner has cut-off, allow the temperature controller to **CYCLE ON** and **OFF** about 3 times to **STABILIZE** shortening temperature.
- 8) After shortening temperature has become **STABLE**, continue to stir the shortening in a **CCW** direction. When the fryer **SHUTS OFF**, record the temperature displayed on the fluke digital thermometer and when the fryer **TURNS ON** record the temperature displayed on the thermometer.
- 9) Compute the **AVERAGE** of the two (2) temperature readings recorded in step 8). For example: **SHUT-OFF** temperature = 343° F (173°C), **TURN-ON** temperature = 339° F (171°C), then **AVERAGE** temperature = 341° F (172°C).
- 10) If the **AVERAGE** temperature computed in step 9). falls within a range of $\pm 7^\circ$ F ($\pm 4^\circ$ C) of the cook temperature, the Fenwal Temperature Controller is operating properly and should not be adjusted. If the **AVERAGE** temperature computed above is more than $\pm 7^\circ$ F ($\pm 4^\circ$ C) from the cook temperature, the Fenwal Temperature Controller should be adjusted as follows:
 - a) If the **AVERAGE** temperature computed above is **HIGHER** than the desired cook temperature, the adjusting screw should be turned to the **RIGHT (clockwise) CW** to **DECREASE** shortening temperature. For example: the **AVERAGE** temperature is 365° F (185°C) and the desired cook temperature is 340° F (171°C) — turn the adjusting screw $\frac{1}{4}$ **TURN** to the **RIGHT (CW)** to lower the cook temperature.
 - b) If the **AVERAGE** temperature computed above is **LOWER** than the desired cook temperature, the adjusting screw should be turned to the **LEFT (counter-clockwise) CCW** to **INCREASE** shortening temperature. For Example: the **AVERAGE** temperature is 347.5° F (175°C) and the desired cook temperature is 360° F (182°C) - turn the adjusting screw $\frac{1}{8}$ **TURN** to the **LEFT (CCW)** to raise the cook temperature.
- 11) Repeat **STEP 8)** and **9)** to re-compute the **AVERAGE** temperature and if it is within $\pm 7^\circ$ F ($\pm 4^\circ$ C) of the desired cook temperature, no further adjustment is necessary.

NOTE: To **ACCURATELY** set the Fenwal Temperature Controller to the desired cook temperature, shortening **MUST BE** periodically **STIRRED** in a **COUNTER-CLOCKWISE** direction to assure it is evenly heated.

- 12) Repeat **STEP 1)** and **STEP 2)** and after the sensing element has **COOLED**; 1) remove the Bead type K temperature probe from the sensing element, 2) **CAREFULLY** replace and secure the **KNOB** on the adjustment shaft with the **POINTER** against the **LOW** setting (**MAXIMUM CLOCKWISE POSITION**) and 3) replace shortening to the shortening level mark.



6.4 ELECTRONIC THERMOSTAT CALIBRATION - The Electronic Thermostat in all fryer configurations are equipped with a Dial and Knob and should be checked and calibrated when necessary as follows:



1. **ENSURE** electrical power and, if applicable, gas to the fryer has been turned **OFF**.
2. **CAREFULLY** drain sufficient shortening from the fryer to **LOWER** the shortening about 4" (102 mm) beneath the Electronic Thermostat sensing probe.
3. After the sensing probe has **COOLED**, loop the bead of an **ACCURATE** digital test thermometer temperature probe around the sensing element; then connect the probe to the thermometer.
4. Replace shortening drained in step B and **ENSURE** it is level with the shortening level mark on the rear of the vat; then turn the power and, if applicable, gas to the fryer **ON**.
5. Set the **KNOB** of the Electronic Thermostat to the **CENTER** (300) of the dial and periodically **STIR** the shortening in a **COUNTER-CLOCKWISE (CCW)** direction with a long handle skimmer to pull congealed shortening **UPWARD** from the Cold Zone area.
6. When shortening has reached the set temperature and the **RED** indicator lamp on the fryer has turned **OFF**, allow the Electronic Thermostat to cycle **ON** and **OFF** about five (5) times to stabilize the system.
7. After the shortening temperature has stabilized, record the temperature reading of the **TEST THERMOMETER** immediately after the **RED** indicator lamp and the fryer turns **OFF**.
8. **CAREFULLY** loosen the set screw on the Electronic Thermostat **KNOB** without turning the thermostat potentiometer, set the thermostat knob pointer to the temperature recorded by the test thermometer; then tighten the set screw on the thermostat knob taking care not to turn the thermostat's potentiometer.
9. Repeat steps 1 and 2 above, remove the test thermometer temperature probe from the Electronic Thermostat sensing element; then repeat step D to return the fryer to normal operation.

7. TROUBLESHOOTING

7.1 GENERAL: The problems and possible solutions listed in the troubleshooting chart below are typical problems that are frequently encountered. **ONLY** qualified repairmen are to use the troubleshooting chart to repair this fryer. In the event a main burner malfunction occurs, perform the following checks **PRIOR** to contacting a repairman:

- A. Ensure Gas Valves are in their proper position.
- B. Check that the fryer electrical plug is connected to an electrical receptacle.
- C. Ensure the applicable Circuit Breaker is in the **ON** position and that the fryer ON/OFF switch is in the **ON** position.
- D. Ensure the applicable fryer control has been placed in the **FULL ON** mode.
- E. Ensure the gas supply line quick-disconnect coupling is **SEATED** on the gas manifold fitting.
- F. Determine that the blower is operating.

7.2 TROUBLESHOOTING CHART: Should a problem occur that cannot be corrected after performing the above CHECKS, contact an authorized repairman and/or Ultrafryer Systems Customer Service 1-800-525-8130 and provide the information acquired while performing these checks.

CAUTION: ENSURE REPAIRMEN ARE ADVISED THAT FRYER RESTRAINTS MUST BE DISCONNECTED/CONNECTED. IF A FRYER IS TO BE MOVED DURING MAINTENANCE OR REPAIR, AND THAT ELECTRICAL POWER AND GAS MUST BE TURNED OFF PRIOR TO PERFORMING ANY MAINTENANCE OR REPAIR.

TROUBLESHOOTING CHART		
<u>ISSUE</u>	<u>PROBLEMS</u>	<u>POSSIBLE SOLUTIONS</u>
1	Main burner will not ignite. Blower is operating; but gas is not present at the burner.	<p>A. Check the Blower Motor air pressure Switch by temporarily disconnecting the two (2) ORANGE blower motor wires and connecting them together. If the IGNITOR sparks when these wires are connected, the air pressure switch is defective and it will have to be replaced.</p> <p>B. Check the following components and replace if found to be defective:</p> <ul style="list-style-type: none"> Gas Control Valve Hi-Limit Switch Transformer
2	Electrical power is present at the fryer, but the Blower is not operating.	A. Blower Motor may have over-heated and shut off on thermal overload. If this situation did occur, it will correct itself when the motor cools (10-20 minutes). If this overheating problem persists, replace the blower motor.
3	Excessive time is required to raise the shortening to cooking temperature. Temperature recovery is slow and main burner flames are small and appear to be lethargic.	<p>A. Ensure that the MANUAL GAS VALVE is completely open.</p> <p>B. Check for an obstruction in the gas line.</p> <p>C. Check for an obstruction in the flue pipe.</p> <p>D. Check that the ORFICE PLUG has the correct drill size opening as indicated on the operational requirements comparison chart shown on page 6.</p> <p>E. Check for damaged BLOWER MOTOR fins.</p> <p>F. Use a standard water-type U-gauge Manometer to check the pressure at the gas control valve pressure tap. Proper gas pressure is indicated on the operational requirements comparison chart shown on page 6.</p> <p>NOTE: If necessary remove the Pressure Regulator Adjustment Cover and adjust this control to the proper pressure. (Turn adjusting screw CLOCKWISE to increase gas pressure to the burner and COUNTER CLOCKWISE to decrease gas pressure. Replace adjustment cover.)</p>
4	Shortening temperature is too high and breaks down quickly.	<p>A. Check the gas pressure as described above.</p> <p>B. Check calibration of the Fenwal Temperature or Electronic Thermostat with an ACCURATE digital thermometer.</p>
5	The filter pump motor fails to operate when the Filter Pump Lever Handle is placed in the OPEN position.	<p>A. Insure the filter pump micro-switch is good, then check the manual reset button on the filter pump motor.</p> <p>B. If the filter pump motor fails to operate after the reset button has been depressed, repair or replace the motor.</p>
6	Decreased shortening flow rate while filtering.	A. Check for excessive sediment on the filter screen, standpipe suction fitting or in filter tub.
7	Pump/Motor operates but does not pump shortening.	<p>A. Check for congealed shortening in the shortening system.</p> <p>B. Check that the Standpipe is seated in the Knurl Knob.</p> <p>C. Check for loose Standpipe / Suction Line Coupler connection.</p>
8	Pump / Motor hums but will not pump shortening	A. Check for congealed shortening in the pump or in shortening plumbing.

8. **RECOMMENDED SPARE PARTS:** To minimize downtime on the Model PAR fryer upon failure of a component part, at least one (1) of the following items should be kept as a spare part in the local area:

MODEL PAR-2 AND PAR-3 FRYER RECOMMENDED SPARE PARTS LISTING		
<u>Part Description</u>	<u>Manufacturer's Part Number</u>	<u>Ultrafryer System's Part Number</u>
24 Volt Stepdown Transformer	Honeywell AT40A1121	18-180
Hi-Limit Switch Model 103KM1	Stemco 103K	19A144
Filter Pump Micro-Switch	Cherry E13-50H	18-185
24 Volt Combination Gas Control Valve	Honeywell VR8203A-1005	18-227
SPDT Toggle ON / OFF Switch		18A287
1/2" (13mm) Manual Gas Valve	Glacomini R602	24-326

MODEL PAR-2 FRYER RECOMMENDED SPARE PARTS LISTING		
<u>Part Description</u>	<u>Manufacturer's Part Number</u>	<u>Ultrafryer System's Part Number</u>
2" (51mm) Ball Valve Assembly		12-775
Pre-wired Fasco Blower Motor		12A021
Ignitor Spark Module	Honeywell S87B1008	18-179
3/4" (19mm) Apollo Pump Control Valve		24-292
18" (457mm) Vat Viking Pump/Motor Assembly	Viking GPV - 0519-10	24A183
7/16" (11mm) Orifice Plug w/#25 drill hole for Natural Gas		24-458
7/16" (11mm) Orifice Plug w/#42 drill hole for Propane Gas		24-460
7/16" (11mm) Orifice Plug w/#43 drill hole for Butane Gas		24-342
20" (508mm) Vat Viking Pump/Motor Assembly	Viking GPV - 0519-10	24A183
7/16" (11mm) Orifice Plug w/#22 drill hole for Natural Gas		24-457
7/16" (11mm) Orifice Plug w/#39 drill hole for Propane Gas		24-459
7/16" (11mm) Orifice Plug w/#40 drill hole for Butane Gas		24-461

MODEL PAR-3 FRYER RECOMMENDED SPARE PARTS LISTING		
<u>Part Description</u>	<u>Manufacturer's Part Number</u>	<u>Ultrafryer System's Part Number</u>
1¼" (32mm) Ball Valve Assembly		12A483
PAR-3-14 Fasco Blower Motor Kit		19A547
PAR-3-18&20 Fasco Blower Motor Kit		19A548
Ignitor Spark Module	Honeywell S87B1008	18-179
Air Pressure Switch (Note)	Model SMD 1204	18A291
½" (13mm) Apollo Pump Control Valve		24-036
14" (356mm) Vat Viking Pump/Motor Assembly	Viking GPV - 0514-74	24-338
7/16" (11mm) Orifice Plug w/#16 drill hole for Natural Gas		24A065
7/16" (11mm) Orifice Plug w/#32 drill hole for Propane Gas		24A066
7/16" (11mm) Orifice Plug w/#36 drill hole for Butane Gas		24A067
18" (457mm) Vat Viking Pump/Motor Assembly	Viking GPV - 0519-10	24-239
7/16" (11mm) Orifice Plug w/#10 drill hole for Natural Gas		24A070
7/16" (11mm) Orifice Plug w/#32 drill hole for Propane Gas		24A066
7/16" (11mm) Orifice Plug w/#36 drill hole for Butane Gas		24A067
20" (508mm) Vat Viking Pump/Motor Assembly	Viking GPV - 0519-10	24-239
7/16" (11mm) Orifice Plug w/#7 drill hole for Natural Gas		24A194
7/16" (11mm) Orifice Plug w/#28 drill hole for Propane Gas		24-295
7/16" (11mm) Orifice Plug w/#30 drill hole for Butane Gas		24-336
* NOTE: Model Par-3 Fryers built prior to Jan. 2000 were equipped w/Model A1-4 Air Switch.		

9. TECHNICAL ASSISTANCE, PARTS LISTING, AND WIRING DIAGRAM

9.1 TECHNICAL ASSISTANCE – Contact the local repairman, service agent or Ultrafryer Systems Customer Service Department at 1- 800-525-8130 for technical assistance or to perform any maintenance or repair that may be necessary.

9.2 INLET GAS LINE SIZING - The Table below is to be utilized to calculate the size (diameter) of the inlet gas line from the building regulator to the fryer manifold.

INLET GAS LINE REQUIREMENTS									
PIPE LENGTH	PIPE DIAMETERS (inches & (mm equivalents)) Maximum Allowable Flow (Shown in ft ³ /hr (M ³ /hr))								
	Feet (Meters)	½" (13 mm)	¾" (19mm)	1" (25mm)	1¼" (32mm)	1½" (38mm)	2" (51mm)	2½" (64mm)	3" (76mm)
15 (4.6)	62 (1.7)	108 (4.7)	350 (9.8)	620 (17.4)	960 (26.9)	2,000 (56.0)	3,500 (98.0)	5,400 (151.2)	11,200 (313.6)
30 (9.1)	43 (1.2)	120 (3.4)	245 (6.9)	430 (12.0)	680 (19.0)	1,400 (39.2)	2,450 (68.6)	3,800 (106.4)	7,900 (221.2)
45 (13.7)	35 (1.0)	98 (2.7)	200 (5.6)	355 (9.9)	530 (14.8)	1,150 (32.2)	2,000 (56.0)	3,200 (89.6)	7,900 (182.0)
60 (18.3)	30 (0.8)	84 (2.4)	175 (4.9)	310 (8.7)	480 (13.4)	1,000 (28.0)	1,760 (49.3)	2,700 (75.6)	5,600 (156.8)
75 (22.9)	27 (0.8)	76 (2.1)	155 (4.3)	275 (7.7)	430 (12.0)	890 (24.9)	1,560 (43.7)	2,450 (68.6)	5,000 (140.0)
90 (27.4)	25 (0.7)	70 (2.0)	145 (4.1)	250 (7.0)	395 (11.1)	810 (22.7)	1,430 (40.0)	2,260 (63.3)	4,550 (127.4)
105 (32.0)	23 (0.6)	64 (1.8)	132 (3.7)	232 (6.5)	370 (10.4)	750 (21.0)	1,300 (36.4)	2,100 (58.8)	4,200 (117.6)
120 (36.6)	21 (0.6)	60 (1.7)	125 (3.5)	215 (6.0)	340 (9.5)	700 (19.6)	1,200 (33.6)	1,950 (54.6)	4,000 (112.0)
150 (45.7)	19 (0.5)	54 (1.5)	110 (3.1)	195 (5.5)	310 (8.7)	630 (17.6)	1,080 (30.2)	1,750 (49.0)	3,550 (99.4)
180 (54.9)	17 (0.5)	49 (1.4)	100 (2.8)	175 (4.9)	280 (7.8)	570 (16.0)	960 (26.9)	1,600 (44.8)	3,200 (89.6)
210 (64.0)	16 (0.4)	44 (1.2)	94 (2.6)	165 (4.6)	260 (7.3)	530 (14.8)	890 (24.9)	1,450 (40.6)	3,000 (84.0)
240 (73.2)	15 (0.4)	43 (1.2)	88 (2.5)	155 (4.3)	240 (6.7)	500 (14.0)	840 (23.5)	1,350 (37.8)	2,800 (78.4)
270 (82.3)	14 (0.4)	40 (1.1)	83 (2.3)	145 (4.1)	230 (6.4)	470 (13.2)	780 (21.8)	1,300 (36.4)	2,650 (74.2)
300 (91.4)	14 (0.4)	38 (1.1)	79 (2.2)	138 (3.9)	215 (6.0)	440 (12.3)	750 (21.0)	1,250 (35.0)	2,500 (70.0)
450 (137.2)	11 (0.3)	31 (0.9)	64 (1.8)	112 (3.1)	176 (4.9)	360 (10.1)	630 (17.6)	1,000 (28.0)	2,050 (57.4)
600 (182.9)	10 (0.3)	27 (0.8)	56 (1.6)	97 (2.7)	152 (4.3)	315 (8.8)	530 (14.8)	860 (24.1)	1,750 (49.0)

NOTE: 1) FT³/HR (M³/HR) values may vary due to heating value and specific gravity of gas supplied by local companies.
 2) To determine the inlet gas line diameter for the distance between the fryer and main gas regulator, locate the FT³/HR (M³/HR) of gas required for the fryer and pipe length and read the pipe diameter on the top row. For example: a bank of fryers containing three (3) Par-2-20 Fryers, one (1) Par-2-18 Fryer and one (1) Par-3-14 fryer operating on Natural gas requires 361.90 FT³/HR (10.24 M³/HR) ((3x71.43 (2.02))+61.90 (1.75))+85.71 (2.43)). If the fryer bank is located 60 feet from the building gas regulator, a 1½" (38mm) diameter gas line **MUST** be installed between the manifold and regulator.

INLET GAS REQUIREMENTS MODEL PAR-2/PAR-3 GAS FRYERS									
VAT SIZE PAR	IN MM	GAS TYPE	GAS VALVE SETTING (WC)		ORIFICE HOLE SIZE	RATING		INLET GAS REQ'D	
			IN	MM		BTU/HR	MJ/HR	FT ³ /HR	M ³ /HR
2	18" (457)	Butane	10.0	(254)	#43	65,000	(71.5)	20.31	(0.57)
		Natural	4.0	(102)	#25	65,000	(71.5)	61.90	(1.75)
		Propane	10.0	(254)	#42	65,000	(71.5)	26.00	(0.74)
2	20" (508)	Butane	10.0	(254)	#40	75,000	(82.5)	23.44	(0.66)
		Natural	4.0	(102)	#22	75,000	(82.5)	71.43	(2.02)
		Propane	10.0	(254)	#39	75,000	(82.5)	30.00	(0.85)
3	14" (356)	Butane	10.0	(254)	#36	90,000	(99.0)	28.13	(0.80)
		Natural	4.0	(102)	#16	90,000	(99.0)	85.71	(2.43)
		Propane	10.0	(254)	#32	90,000	(99.0)	36.00	(1.02)
3	18" (457)	Butane	10.0	(254)	#36	110,000	(121.0)	34.38	(0.97)
		Natural	4.0	(102)	#10	110,000	(121.0)	104.76	(2.96)
		Propane	10.0	(254)	#32	110,000	(121.0)	44.00	(1.25)
3	20" (508)	Butane	10.0	(254)	#30	120,000	(132.0)	37.50	(1.06)
		Natural	4.0	(102)	#7	120,000	(132.0)	114.29	(3.23)
		Propane	10.0	(254)	#28	120,000	(132.0)	48.00	(1.36)

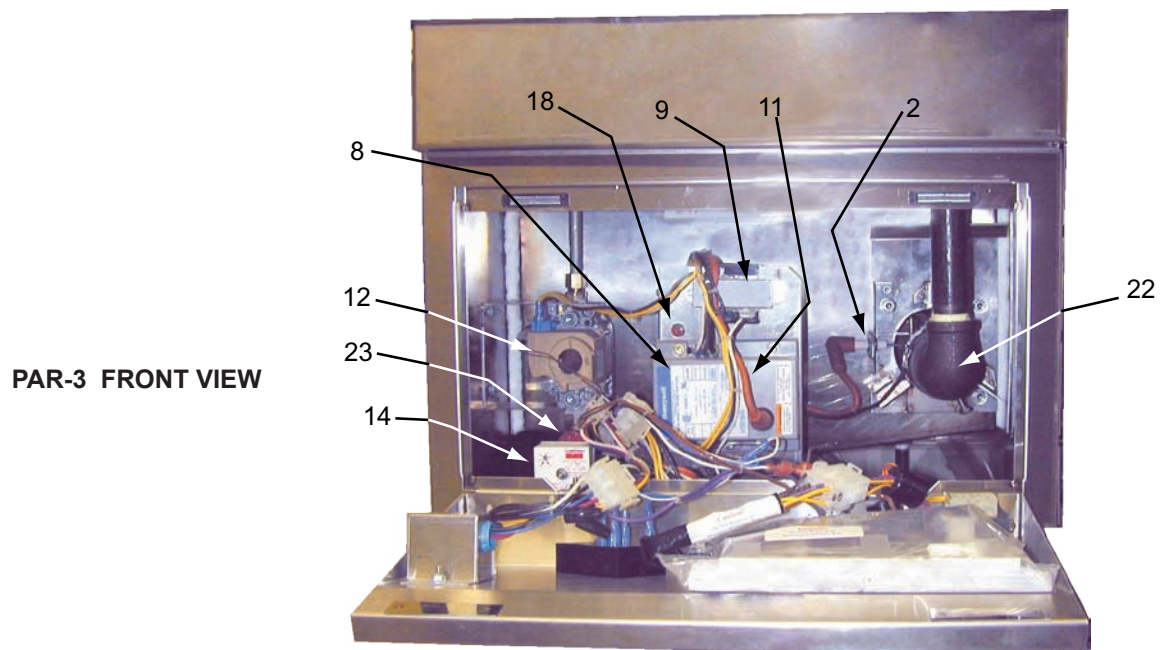
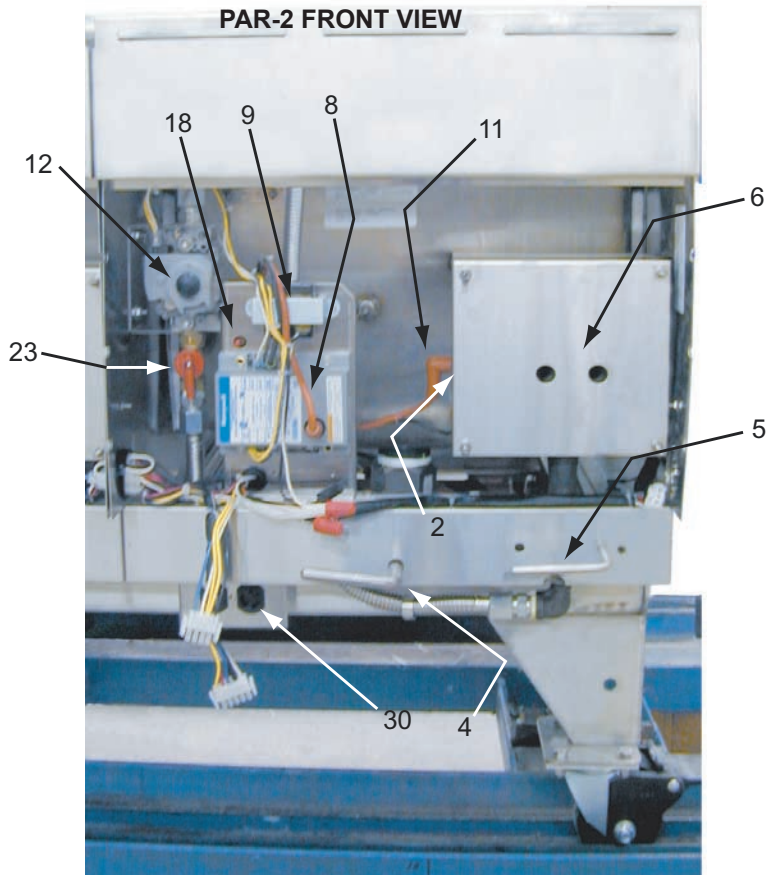
NOTE: The flexible gas line used to connect the gas manifold to the building gas supply line must rated for the BTU/Hr (MJ/Hr) for the Fryer.
 For example: the BTU/Hr (MJ/Hr) rating for a bank of fryers containing three (3) Par-2-20 fryers, one (1) Par-2-18 fryer and one (1) Par-3-14 fryer is rated at 380,000 BTU/Hr (418 MJ/Hr) ((3 x 75,000 (82.5))+65,000 (71.5))+90,000 (99)).

The Flexible Gas Line used to connect the gas manifold to the building gas supply line must be rated for the BTU/Hr (MJ/Hr) designated for the Fryer. Flexible gas lines and their ratings stocked by Ultrafryer Systems are listed below:

FLEXIBLE GAS LINES STOCKED BY ULTRAFRYER SYSTEMS			
PART NUMBER	DESCRIPTION	RATING	
		BTU/HR	(MJ/HR)
24-322	3/4" (19mm) Diameter Flexible Gas Line (w/quick connect couplings) 48" (1219mm) long. Connect-It SSGC75-48-UCQ	225,000	(281)
24-323	1" (25mm) Diameter Flexible Gas Line (w/quick connect couplings) 48" (1219mm) long. Connect-It SSGC100-48-UCQ	435,000	(479)
24-323	1 1/4" (32mm) Diameter Flexible Gas Line (w/quick connect couplings) 48" (1219mm) long. Connect-It SSGC125-48-UCQ	875,000	(479)

9.3 PARTS LISTING: Items listed above and on the following pages may be obtained by contacting Ultrafryer Systems at 1-800-545-9189.

PAR-2- / PAR-3 GAS FRYER COMPONENT LOCATIONS

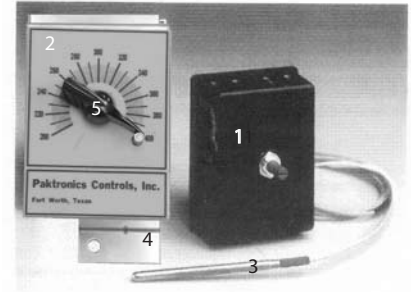


ITEM	DESCRIPTION	PN
* 1	Drain Clean-out Rod for all Par-2 & Par-3 Fryers.	12-569
2	Ignitor Spark Rod Assembly for all Par-2 Fryers. NOTE: Set Rod Gap to $\frac{5}{32}$ " (4mm) prior to installation. Ignitor Spark Rod Bracket with Ignitor Rod for all Par-3 Fryers. NOTE: Set Rod Gap to $\frac{5}{32}$ " (4mm) prior to installation.	12A043 19A738
* 3	14" (356mm) Vat Grill w/Deflector for Par-3-14-F Fryers. (See 22-703) 18" (457mm) Vat Grill w/Deflector for Par-2-18-F & Par-3-18-F Fryers. (See 22-704) 20" (508mm) Vat Grill w/Deflector for Par-2-20-F & Par-3-20-F Fryers. (See 22-671)	12A070 12A062 12A071
4	2" (51mm) Drain Valve Lever for all Par-2 Fryers. 1 $\frac{1}{4}$ " (32mm) Drain Valve Lever for all Par-3-14 Fryers. 2" (51mm) Drain Valve Lever for all Par-3-18&20 Fryers.	12A105 12A476 12A477
5	$\frac{3}{4}$ " (19mm) Filter Valve Lever for all Par-2 Fryers. $\frac{1}{2}$ " (13mm) Filter Valve Lever for all Par-3-14 Fryers. $\frac{1}{2}$ " (13mm) Filter Valve Lever for all Par-3-18&20 Fryers.	12A106 19A615 19A617
6	Par-2-18&20 Fire Box Assy w/linterior gaskets. For cover order PN 19-626, For weldment shields order PN 22A168 & for shield gaskets order PN 12A161.	19A074
* 7	RED Handle Spray Blaster/Wash Wand Activation Lever for Par-3-14 Fryers. SC MODELS ONLY RED Handle Spray Blaster/Wash Wand Activation Lever for Par-2-20 & Par-3-20 Fryers. SC MODELS ONLY RED Handle Spray Blaster/Wash Wand Activation Lever for Par-2-18 & Par-3-18 Fryers. SC MODELS ONLY	12A474 12A475 12A524
8	Model S 87B1008 Spark Ignitor Module for all Par-2 & Par-3 Fryers.	18-179
9	120 Volt to 24 Volt Step-Down Transformer for all Par-2 & Par-3 Fryers.	18-180
*10	Drain and Filter Valve Lever Microswitch for all Par-2 & Par-3 Fryers.	18-185
11	Model 39212S-1 Ignitor Rod Cable w/plugs for all Par-2 & Par-3 Fryers.	18-187
12	Electric Gas Combination Control Valve for all Par-2 & Par-3 Fryers. (Uses mounting bracket 19A113)	18-227
*13	Fenwal Temperature Controller (Used with Default-to-Manual-Restart (DTMR) Control PN 12A259 and 12A798 ONLY). (Order Dial & Knob 22-705 when ordering this Item.) (NOTE: 1) Electronic Thermostat (Used with Default-to-Manual-Restart (DTMR) Control PN 12B013 and 12B057 ONLY)	18-233 12B077
14	Delay on Make Relay for all Par-3 Fryers. (NOTE: Set Relay to "4" prior to installation.	18A045
*15	Vat Joiner Strip for all Par-3-14 Fryer Vats. Vat Joiner Strip for all Par-2-18 & Par-3-18 Fryer Vats. Vat Joiner Strip for all Par-2-20 & Par-3-20 Fryer Vats.	19-508 19-509 19-510
*16	Cast Iron Burner for all Par-2 Fryers.	19-559
18	Hi-Limit Switch Pre-Set to trip at 400° F (204°C) for all Par-2 & Par-3 Fryers. (Order a $\frac{1}{4}$ " (5mm) Compression Fitting PN 24-247 when ordering this item.)	19A144
*19	Basket Hanger Bracket for all Par-3-14 Fryers. (NOTE 2) Basket Hanger Bracket for all Par-2-18 & Par-3-18 Fryers. (NOTE 2) Basket Hanger Bracket for all Par-2-20 & Par-3-20 Fryers. (NOTE 2)	19A949 19A950 19A951
*20	14" (356mm) Vat Grill w/out Deflector for Par-3-14- SC Model Only Fryers. (See 12A070) 18" (457mm) Vat Grill w/out Deflector for Par-2-18- SC & Par-3-18- SC Model Only Fryers. (See 12A062) 20" (508mm) Vat Grill w/out Deflector for Par-2-20- SC & Par-3-20- SC Model Only Fryers. (See 12A071)	22-703 22-704 22-671
*21	Ferrofix Nozzle Eclipse #GF-1 Burner for all Par-3 Fryers.	22A112
22	Cast Iron Venturi for all Par-3 Fryers.	22A118
23	$\frac{1}{2}$ " (13mm) ID Manual Gas Valve w/Red Handle for all Par-2 & Par-3 Fryers.	24-326
*24	Par-2-20 "Natural Gas" Orifice Plug w/#22 Drill Hole (Note 3) Par-3-20 "Natural Gas" Orifice Plug w/#7 Drill Hole (Note 3) Par-2-18 "Natural Gas" Orifice Plug w/#25 Drill Hole (Note 3) Par-3-18 "Natural Gas" Orifice Plug w/#10 Drill Hole (Note 3) Par-3-14 "Natural Gas" Orifice Plug w/#16 Drill Hole (Note 3)	24-457 24A194 24-458 24A070 24A065
*25	$\frac{1}{2}$ " (13mm) MPT x $\frac{1}{2}$ " (13mm) MPT Flexible Gas Line 36" (914mm) Long for all Par-2 & Par-3-18&20 Fryers.	24A011
*26	$\frac{1}{2}$ " (13mm) MPT x $\frac{1}{2}$ " (13mm) MPT Flexible Gas Line 24" (610mm) Long for all Par-3-14 Fryers.	24A086
*28	Medium Duty 4" (102mm) Front Caster w/Brake for all Par-2 & Par-3 Fryers.	28-015
*29	"L" Shaped Tip cleaning Brush for all Par-2 & Par-3 Fryers.	29A044
30	Nema 5-15R/L5-15R Dual Electrical Receptacle for all Par-2 & Par-3 Fryers.	33A005

NOTES: 1) Par-2 fryers with a **FENWAL TEMPERATURE CONTROLLER** PN 18-233 are equipped with a Default-To-Manual -Restart (DTMR) Control PN 12A259 and Par-2 Fryers with an **ELECTRONIC THERMOSTAT** PN 12B077 are equipped with a **DTMR** PN 12B057. Par-3 Fryers with a **FENWAL TEMPERATURE CONTROLLER** PN 18-233 are equipped with a **DTMR** PN 12A798 and Par-3 Fryers with an **ELECTRONIC THERMOSTAT** PN 12B077 are equipped with a **DTMR** PN 12B013.

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PN</u>
1	Electronic Thermostat Control	18A058
2	Electronic Thermostat Face Plate	18A070
3	Temperature Probe	18A276
* 4	Electronic Thermostat Bracket	19B174
5	Electronic Thermostat Knob	22A169

* Not Shown

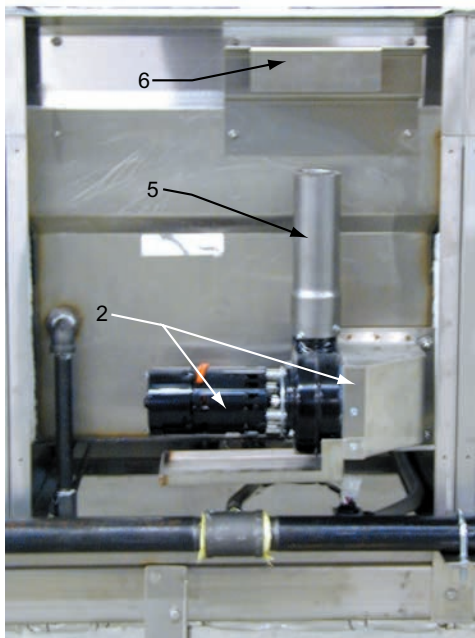


2) The **TOPCAPS** on SC Fryers adjacent to the **TOPSIDE** Wash Wand / Spray Blaster female bulkhead coupling are wider than other **TOPCAPS** and therefore require the **FOLLOWING** "Special" Basket Hanger Brackets:

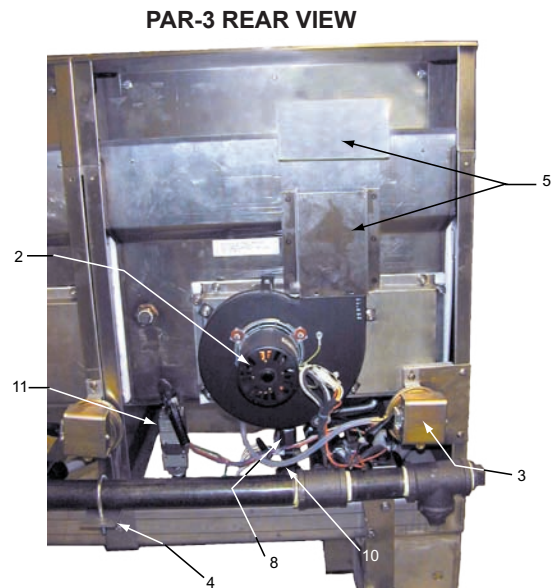
<u>SIZE VAT</u>	<u>BASKET HANGER BRACKET</u>
14	19B093
18	19B094
20	19B095

3) Par-2 and Par-3 Butane and Propane Orifice Plug Part Numbers (())'s are as follows:

<u>FRYER</u>	<u>BUTANE</u>	<u>PROPANE</u>
Par-2-14	#45 Drill Hole Special Order	#44 Drill Hole (24A016)
Par-2-18	#43 Drill Hole (24-342)	#42 Drill Hole (24-460)
Par-2-20	#40 Drill Hole (24-461)	#39 Drill Hole (24-459)
Par-3-14	#36 Drill Hole (24A067)	#32 Drill Hole (24A066)
Par-3-18	#36 Drill Hole (24A067)	#32 Drill Hole (24A066)
Par-3-20	#30 Drill Hole (24-336)	#28 Drill Hole (24-295)



PAR-2 REAR VIEW



NOTE: The Air Switch Tube and Fitting (Item #10) are located on "top" of the blower on some fryers.

ITEM	DESCRIPTION	PN
* 1	2" (51mm) Drain Ball Valve Assembly for all Par-2 & Par-3-18&20 Fryers. (Order Gasket 22A119 when ordering this item.) 1 1/4" (32mm) Drain Ball Valve Assembly for Par-3-14 Fryer (order Gasket 22A119 when ordering this item.)	12-775 12A483
2	115 Volt 60 HZ Pre-wired Exhaust Blower Motor for all Par-2 Fryers 115 Volt 60 HZ Exhaust Blower Motor Kit w/Mounting Bracket for Par-3-14 Fryers. 115 Volt 60 HZ Exhaust Blower Motor Kit w/Mounting Bracket for Par-3-18&20 Fryers.	12A021 19A547 19A548
3	Model SMD 1204 Air Pressure Switch for all Par-3 Fryers.	18A291
4	Gas Manifold Mounting Bracket for all Par-2 & Par-3 Fryers.	19A214
5	2 1/8" Dia x 7 7/8" High (54 x 200mm) Flue Tube for Par-2 Fryers. 5 3/4" x 11" High (146 x 279mm) rectangular Flue Tube with deflector for Par-3-18&20 Fryers. 5 3/4" x 8" High (146 x 208mm) rectangular Flue Tube with deflector for Par-3-14 Fryers.	19A459 19A473 19A910
6	Flue Tube Deflector for Par-2-18&20 Fryers	19A917
* 7	125 Volt 75 Watt Silicon Heater 5' (1524mm) Long for all Par-2 & Par-3 Fryers.	23-341
8	Gemini 1/2" (13mm) Pump Ball Valve for all Front Drain Par-2 and Par-3 Fryers. Appollo 3/4" (19mm) Pump Ball Valve for all Center Drain Par-2 Fryers.	24-036 24-292
* 9	Model GPV-0519 7.7 GPM (29.26 LPM) Viking Pump/Motor Kit for all Par-2 and Par-3-18&20 Fryers. NOTE: For replacement Motor Kit, order PN 12B129 and for Pump Only order 24-329. Model GPV-0514 5.5 GPM (19.25 LPM) Viking Pump/Motor Kit for all Par-3-14 Fryers. NOTE: For replacement Motor Kit, order PN 12B129 and for Pump Only order 24-339.	24A183 24A184
*10	3/16" (5mm) ID, 5/16" (8mm) OD Air Pressure Switch Plastic Tube rated for 500° F (260°C) for all Par-3 Fryers ONLY.	24A068
11	1/2" (13mm) S/S Pressure Port Switch for all Par-3 Fryers. ONLY	24A081
12	Medium Duty 4" (102mm) Rear Caster w/out Brake for all Par-2 & Par-3 Fryers.	28-016
*13	Type SJO 16/3 Electrical Cord with 90° Molded Plug	33-048

Model Par-2 Center Drain Replacement Vats:

VAT SIZE	VAT DEPTH	PN
18" (457 mm)	Shallow 8" (203 mm)	12A286
18" (457 mm)	Standard 10 7/8" (276 mm)	12A320
20" (508 mm)	Standard 10 7/8" (276 mm)	12-885

Model Par-2 Front Drain Replacement Vats:

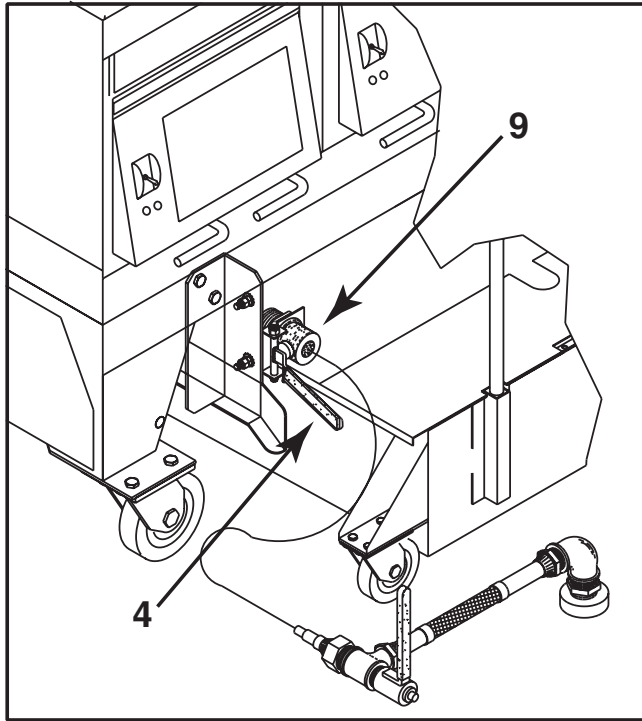
VAT SIZE	VAT DEPTH	PN
18" (457 mm)	Shallow 8" (203 mm)	12A319
18" (457 mm)	Standard 10 7/8" (276 mm)	12A656
20" (508 mm)	Standard 10 7/8" (276 mm)	12A658

NOTE: For Par-2-18&20 Weldment Gasket Kit (7 items) Order 12A161.

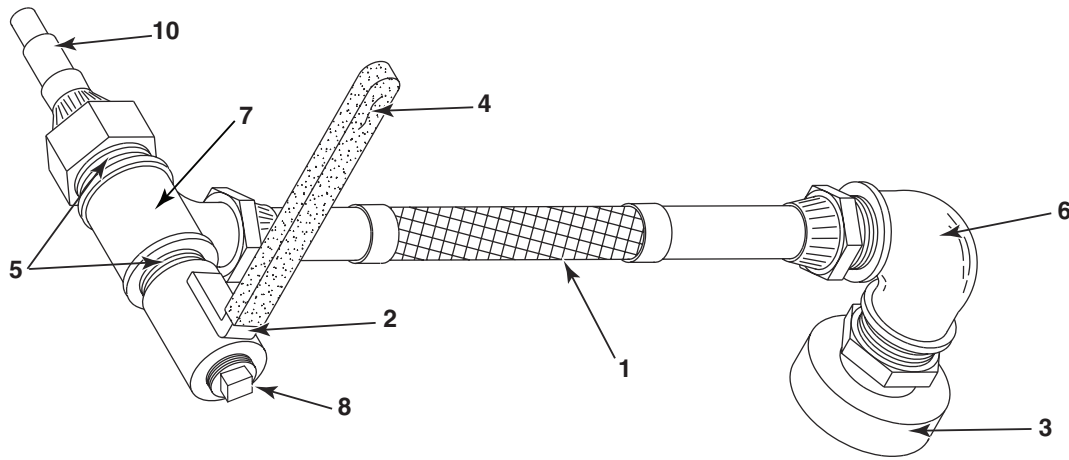
Model Par-3 Front Drain Replacement Vats:

VAT SIZE	VAT DEPTH	PN
14" (356 mm)	Standard 8 7/8" (225 mm)	12A655
18" (457 mm)	Shallow 8" (203 mm)	(Note)
18" (457 mm)	Standard 10 15/16" (278 mm)	12A657
20" (508 mm)	Standard 10 15/16" (278 mm)	(Note)

NOTE: Special Order from Customer Service; call 1-800-525-8130 for information.



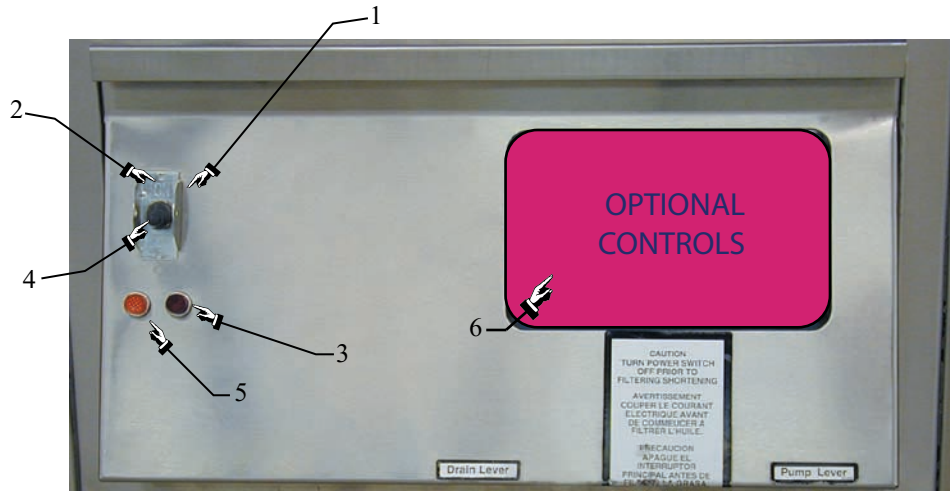
BULKHEAD SUCTION COUPLING



**SUCTION HOSE ASSEMBLY
PN 12A912**

ITEM	DESCRIPTION	PN
1	NSF APPROVED ½" (13 mm) x 10½" (267 mm) Long, Food Grade wire reinforced Hose w/Fittings for all Par-2 & Par-3 Fryers	12A276
2	Suction Line Hose Handle Assembly	19A932
3	Female Quick-Connect Fitting	22-677
4	Cool Handle II Grip	22-734
5	½" (13 mm) Closed Black Iron Nipple	24-003
6	⅜" (10 mm) x 90° w/½" (13 mm) NPT Internal Threads Black Iron Street Elbow	24-376
7	½" x ½" x ½" (13 x 13 x 13 mm) Black Iron Tee	24A083
8	½" (13 mm) Black Iron Square Head Plug	24A084
9	½" (13 mm) FPT S/S Female Bulkhead Coupling w/raised Push Button Release	24A157
10	½" (13 mm) FPT x 2⅞" (73 mm) Long S/S In-Line Male Plug	24A160

**MODEL PAR-2-F / PAR-3-F
TEMPERATURE CONTROL ACCESS PANELS**

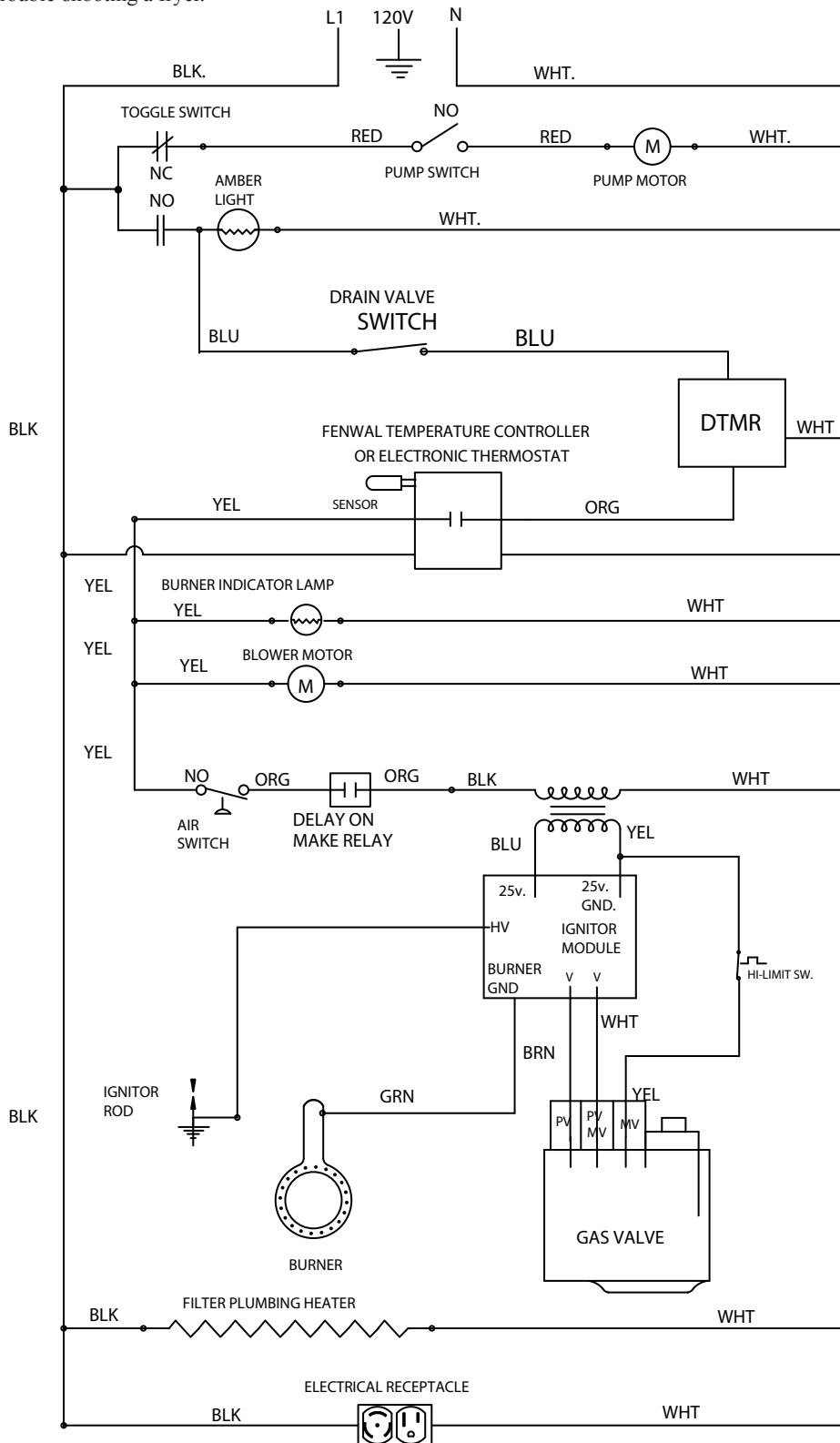


ITEM	DESCRIPTION	PN
1	On/Off Toggle Switch Guard.	18-129
2	120 Volt 6 Amp SPDT Toggle ON/OFF Switch.	18A287
3	125 Volt 1/3 Watt Snaplight w/ RED Lens.	23-362
4	Toggle ON/OFF Switch Protective Boot.	23-402
5	125 Volt 1/3 Watt Snaplight w/ AMBER Lens.	23A056
6	COOKING CONTROLS Default-To-Manual-Restart (DTMR) Control f/Par-2-F Fryer. Uses Fenwal Controller PN18-233 OR Default-To-Manual-Restart (DTMR) Control f/Par-2-F Fryer. Uses Electronic Thermostat PN12B077. Default-To-Manual-Restart (DTMR) Control f/Par-3-F Fryer. Uses Fenwal Controller PN18-233 OR Default-To-Manual-Restart (DTMR) Control f/Par-3-F Fryer. Uses Electronic Thermostat PN12B077. Ultrastat 11 Cooking Computer (Uses Temperature Probe 18A006) Ultrastat 21 Cooking Computer (Uses Temperature Probe 18A006) Ultrastat 25 Cooking Computer (Uses Temperature Probe 18A006)	12A259 12B057 12A798 12B013 22A120 Note Note

NOTE: To obtain a replacement “**PROGRAMMED**” Ultrastat Cooking Computer contact the Customer Service Department at **1-800-525-8130** and provide the following information:

TYPE STORE: CHURCHS, POPEYES COMPANY, POPEYES FRANCHISE, ETC.
TYPE FRYER: ELECTRIC OR GAS
PRODUCT: CHICKEN, FRENCH FRIES, ETC.

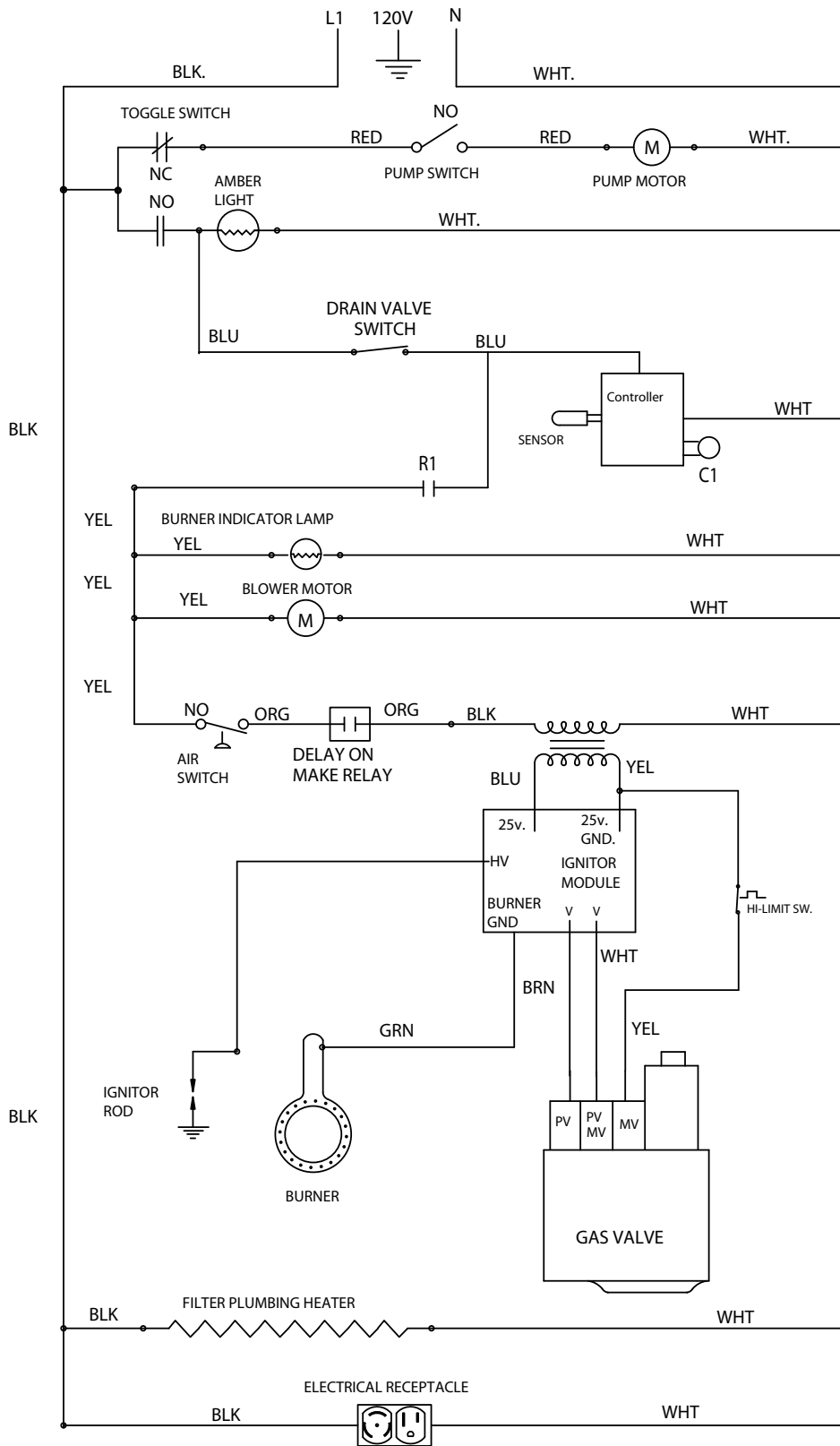
9.4 WIRING DIAGRAM - Since minor wiring changes may occur in the future, USE the diagram pasted to the Fryer for circuit tracing and / or trouble-shooting a fryer.



NOTE: This diagram is identical for a Par-2 except a Par-2 **DOES NOT** have a Delay-On-Make Relay and is equipped with a **CENTRIFICAL** switch not an Air Switch.

23A099b

MODEL PAR-2 / PAR-3 GAS FRYER WITH DTMR



NOTE: This diagram is identical for a Par-2 except a Par-2 **DOES NOT** have a Delay-On-Make Relay and is equipped with a **CENTRIFICAL** switch not an Air switch.

MODEL PAR-2 / PAR-3 GAS FRYER WITH COMPUTER