PITCO FRIALATOR

MODEL 24R-UFM
DOUGHNUT FRYER

OPERATING AND SERVICE INSTRUCTIONS

FOR YOUR SAFETY –
Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

TO THE PURCHASER –
In a prominent location, post instructions to be followed in the event a fryer operator smells gas. Obtain this information by consulting your local gas supplier.

Please save this manual for future reference.

PITCO FRIALATOR CO., INC.
P.O. Box 501, Concord, N.H., U.S.A.
Tel. (603)225-6684
Telex 943466
A Blodgett Company

The fryer installed at this location has –

- ❑ Standing pilot ignition
- ❑ Electronic ignition

CONTENTS

ILLUSTRATIONS

INTRODUCTION

This manual explains how to set up and operate the Model 24R-UFM Doughnut Fryer. When compared with earlier doughnut fryers, this unit uses less oil and 40% less heat energy. The unit has a special shallow frying tank, designed to process floating bakery products. The 24R-UFM includes a built-in filter system, so it is not necessary to store a separate filter.

Important! Model 24R fryers may be equipped with two different ignition systems. (The ignition system is used to light the main gas flame under the fryer.) It is important that you know which kind of ignition system is installed on your fryer. This is because the operating instructions are different for the two different kinds of ignition systems.

Standing pilot ignition	One version of this fryer has a "standing pilot" ignition. The "pilot" is a small burner which is normally left burning while the fryer is waiting to be used. When you want to use the fryer, the control uses the flame from the pilot to light the main burners.
Electronic ignition	On the other version, the pilot light is not left burning when the fryer is waiting. When you turn on the fryer, the electronic ignition makes a series of sparks to light the pilot. The controller checks to be sure the pilot is burning correctly. Next, the controller turns on the gas to the main burners. On this type of fryer, the pilot flame is created only when you want to use the fryer.

It is easy to tell which kind of system is installed on your fryer. Open the door to the cabinet. You will see the line of burners in the center of the cabinet. Behind the burners, look for a small silver box with a light-brown knob marked Off, Pilot, and On. See Fig. 1. If you see this knob, you know the fryer has pilot ignition. A unit with pilot ignition also has a "pilot burner." This is a small burner, and is located between the two main burners in the center of the unit. If you do not see the light brown knob or the pilot burner, you can assume the fryer has electronic ignition.

Once you know which kind of ignition is used on your fryer, write this information in the space provided inside the front cover. This will help anyone else who reads this manual.

Often, the instructions will be the same, regardless of the type of ignition used. Sometimes the difference will be important. When the instructions are different for the two types of ignition, we will point this out.

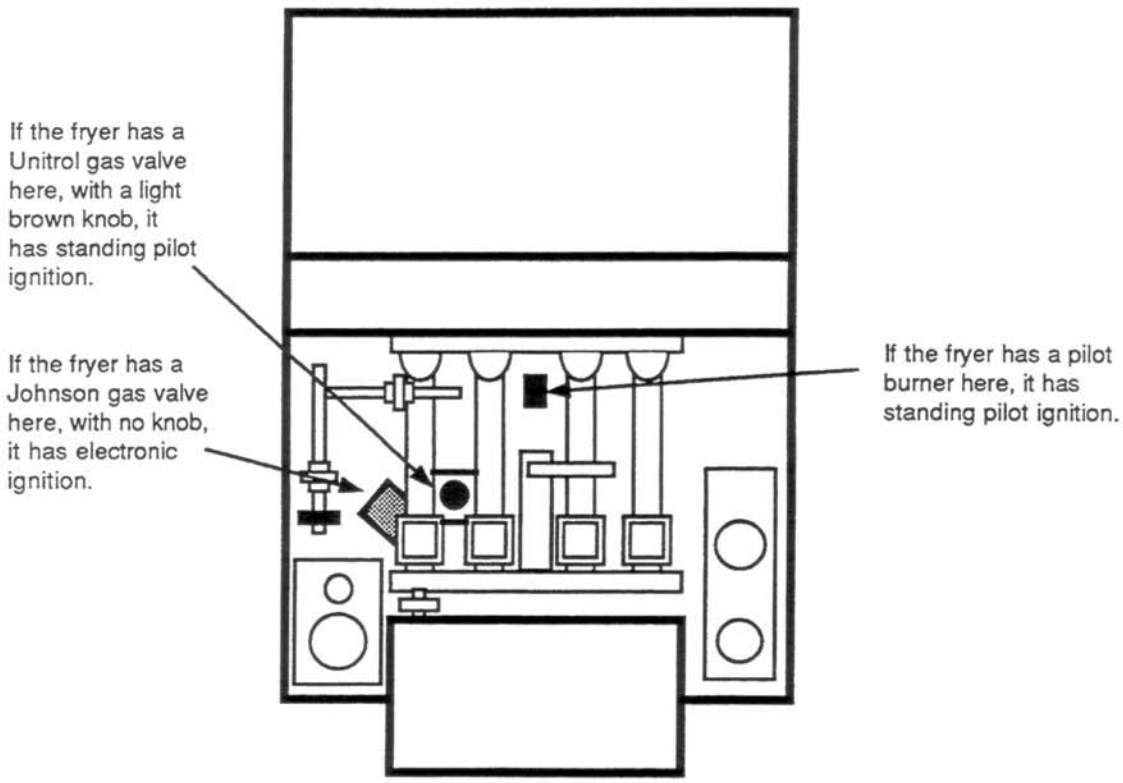


Fig. 1
Identifying standing pilot or electronic ignition

SPECIFICATIONS

	U.S.A. Units	Metric Units
Shipping Weight	625 lbs	284 kgs
Height Overall	57"	144.8 cm
Height to Top of Fry Tank	34"	86.4 cm
Width of Fryer	29-1/2"	75.0 cm
Width with Drainboard	57-1/2"	146.1 cm
Hourly Gas Input	72,000 Btu	18150 kcal
Gas Connection	1/2" NPT female	1.27 cm female
Frying Area	24" x 24"	61 cm x 61 cm
Frying Depth	3"	10.2 cm
Minimum Fat Capacity	120 lbs	81.6 kgs
Doughnut Screen Size	23" x 23"	58.4 cm x 58.4 cm
Electrical Requirements	1Ø,120V AC, 60 Hz, 15 Amps	
	1Ø, 220-240V AC, 50 Hz, 10 Amps	

SAFETY NOTES

Warning! The Model 24R fryer is safe and reliable when it has been installed correctly, and is operated safely. Pitco Frialator wants to be sure you get the best possible service from your fryer. It is very important that you read the instructions in this manual before you install or operate the fryer. If you follow the rules listed below, you should have years of trouble-free service from your Pitco fryer.

Warning! There is an open gas flame inside this fryer. The fryer can get hot enough to set nearby materials on fire. When installing the fryer, allow at least 6 inches (15 cm) of air space to any material that can burn. Do not stack paper, cardboard, or other burnable material near the fryer. If you allow burnable material to touch the fryer, or stack it near the fryer, the material may catch fire. Do not use gasoline near the fryer. Do not store gasoline or other flammable vapors and liquids near the fryer.

Warning! When the fryer is operating normally, you should never smell gas. If you do smell gas, something is wrong. If there is a gas leak, the gas may collect in the building. The gas may then be ignited by a spark or open flame, causing a dangerous explosion. LP gas (propane) is heavier than air, and tends to collect at floor level. The gas smell may be stronger near the floor. Here are some general safety rules:

If you smell gas, turn off the fryer right away, but do not use the Melt Cycle-Off-Cook switch to do this. Instead, turn off the gas valve in the fryer. Then turn off the gas at the main gas valve, on the gas tank outside the building, or at the main gas pipe. Everyone should leave the building right away. Call the gas company and the fire department, and wait outside the building until they arrive. On the telephone, be sure to give your name, address and phone number. Do not go back into the building.

Do not light any matches or lighters. Do not turn any electrical switches on or off – this can create a spark which can ignite the gas. Do not use an electric fan to clear the gas.

For more detailed instructions, ask your local gas supplier. Write down the instructions and post them in a visible place. Be sure everyone understands what to do if they smell gas.

Warning! **If you have a unit with electronic ignition**, do not light the pilot burner by hand. See the Introduction to tell whether you have this kind of fryer. If your fryer has electronic ignition, the pilot will be lit by the control circuits. If you light the pilot by hand, the main burner may come on a moment later. This can create a flame which may burn you.

Warning! Be sure the fryer can get enough air to keep the flame burning correctly. When the flame is "starved" for air, it can give off a dangerous gas called "carbon monoxide." Even though you can't see or smell this gas, it can still hurt you.

Warning! The fryer can also give off carbon monoxide gas if the flue vent is blocked. See Fig. 2. Blocking the flue vent can also cause the fryer to overheat and cause a fire hazard. Do not set anything on top of the flue vent, or block it in any way.

Warning! Each fryer is equipped to work with one type of fuel gas (either natural gas or LP/propane). The type of fuel gas which the fryer is designed to use is stamped on the data plate that is attached to the inside of the door. Do not operate the fryer with any other kind of fuel gas.

Warning! Before operating the fryer, test all fuel gas connections for leaks. Use a solution of soap and water, or a similar solution. Ask the gas supplier for an approved substance. Do not use an open flame to test for gas leaks!

Warning! The fryer may be equipped with a three-prong electrical plug. This three-prong plug is part of a "grounding" system that will protect you if something goes wrong with the electrical wiring in the fryer. Be sure the three-prong plug is plugged into a matching three-prong socket. Do not cut or break off the large third prong on this plug, or the protective system won't work.

If the fryer does not have a three-prong electrical plug, a qualified electrician should make all of the main electrical connections. The 120V AC or 220/240V AC current can cause severe burns, and can even kill you!

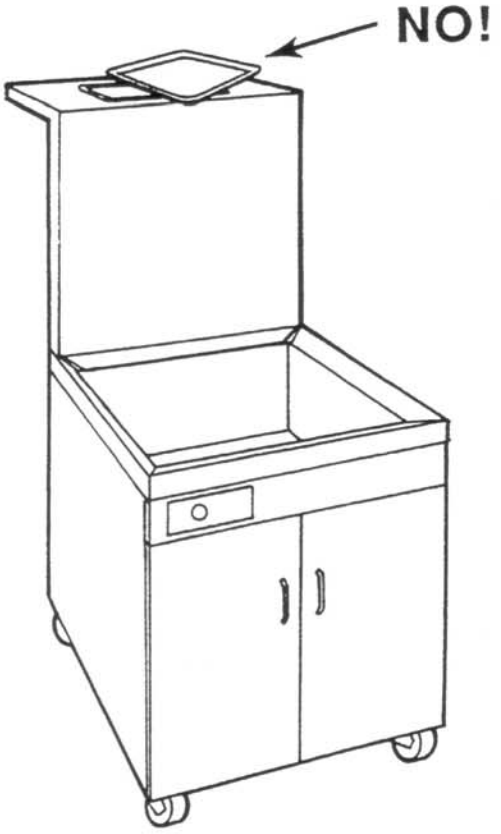


Fig. 2
Don't block the flue vent

Warning! Only a qualified electrician should work with the electrical parts inside the fryer. Be very careful to avoid energized electrical parts. Depending on the type of fryer, some of the internal parts carry 120V AC or 220/240V AC. This voltage can be dangerous. Always unplug the power cord, or turn off the power before working on the fryer. Plug the fryer in only when this is necessary to make test measurements on the electrical system.

Warning! Do not use the fryer until the fryer itself and the installation have been checked and approved. The fryer and installation should conform with all local building, gas, and electrical codes.

Warning! Do not use the fryer until it has been cleaned. Before shipment, the fryer kettle is given a thin protective coating. Before you use the fryer, clean the kettle to remove this coating.

Warning! Clean out the exhaust stack regularly. Over time, greasy material can collect in the hood. If this greasy material becomes too hot, it can

catch fire. Install an automatic fire extinguishing system if possible.

Warning! The switch marked Melt Cycle-Off-Cook turns on the main burners. Always turn this switch off before draining or filling the fryer.

Warning! The shortening or cooking oil in the fryer may be as hot as 375°F (190°C). If you touch this oil, it can cause very bad burns! Always wear oil-proof insulated gloves when you are pouring or filtering hot shortening or cooking oil.

Do not work on the fryer until the shortening in the kettle has cooled to 135°F (57°C) or less. Do not move the fryer when it contains hot shortening. Wait until the shortening has cooled to 135°F (57°C) or less.

Warning! If the fryer has been turned on, some of the parts may be very hot! Do not fill the kettle with oil or shortening or touch these parts unless they have cooled to room temperature. Do not touch the flue outlet, or go near the area over the flue outlet while the burners are operating.

Warning! Before turning on the fryer, be sure the burner tubes are covered by at least 1 inch (2.5 cm) of cooking oil or melted shortening. See Fig. 3. Never allow the burner tubes to become hot while they are surrounded with air. The heating tubes will quickly overheat and scorch the shortening.

For testing purposes, you may cover the burner tubes with water. Before you use the fryer, be sure to remove the water, and fill the kettle with shortening.

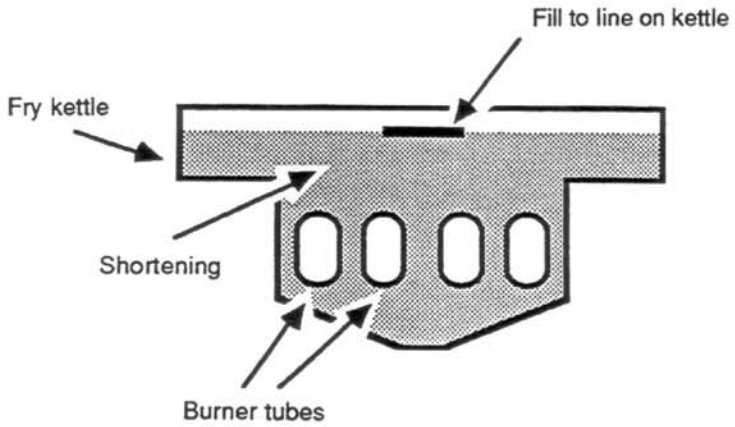


Fig. 3
Always cover the burner tubes

Warning! Do not try to melt a block of solid shortening by placing it on top of the burner tubes, as shown in Fig. 4. If you are using solid shortening, cut the shortening into blocks and pack it around the burner tubes, leaving no air spaces. See Fig. 5. If you leave any air spaces, the burner tubes may burn the shortening as they heat up. This could create a fire hazard. This will also void the warranty on the frying kettle.

When melting solid shortening in the kettle, use the "melt" cycle, not the normal heating cycle. During the "melt" cycle, the controller will turn the gas flame on and off

automatically, and heat the shortening slowly. This will help prevent the shortening from burning.

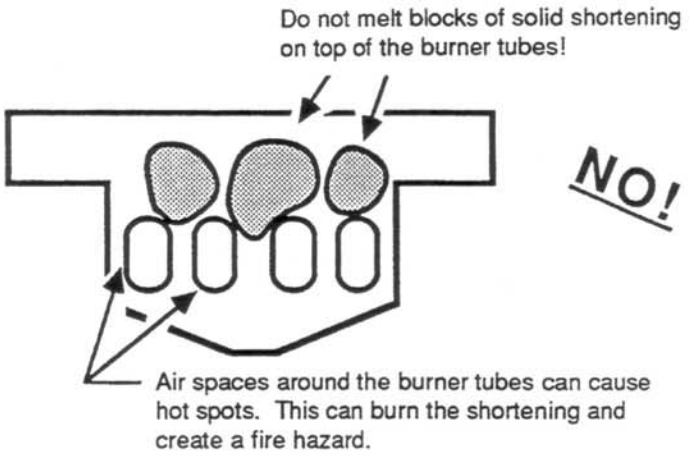


Fig. 4
Wrong way to melt solid shortening

Warning! Be careful not to aim the filtering hose at anyone. When the filtering pump is turned on, it can shoot hot oil through the filtering hose. Never turn on the pump switch unless the end of the filtering hose is aimed into the kettle or the filter pan.

Warning! If you allow some shortening to spill on the floor, it may be slippery. Clean up any spilled shortening quickly.

Warning! If the electrical power is cut off, the fryer will stop working. If you leave the fryer, set the Melt Cycle-Off-Cook switch to the Off position so the fryer does not re-start when the power is turned on again. Do not turn on the fryer again for at least 5 minutes. This allows time for extra gas to clear from the area around the fryer.

Warning! Do not drop any water into the hot oil. The water can create steam, causing the oil to spatter. The hot oil can cause burns.

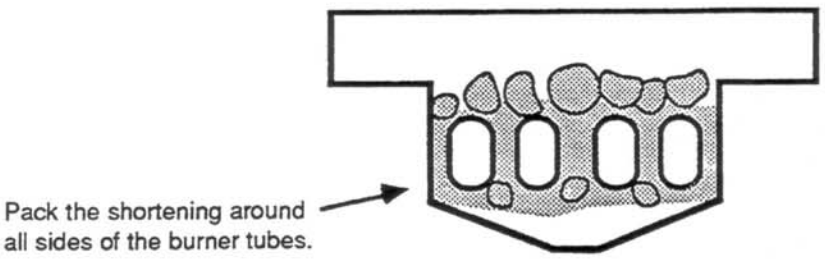


Fig. 5
Pack solid shortening around the burner tubes

INSTALLATION INSTRUCTIONS

Receiving and Assembly Instructions

1. Before you begin to install the fryer, read all of the safety notices in the previous section. This is very important.
2. Unpack the fryer from its packing container. Check the fryer and any accessories to be sure they weren't damaged during shipment. If you do notice damage, report it to the trucking company that brought the fryer. You should report any damage within 15 days of the time you receive the fryer.
3. The legs may be installed at the factory. If they are not, be sure to install the legs before you connect the gas supply line. There must be an air space under the fryer. This allows for easy cleaning under the fryer. The burners must be able to get enough air. If the burners are "starved" for air, they can give off a dangerous gas called "carbon monoxide." See the warnings in the section on "Safety Notes."

   Attach each leg using four 1/4-20 x 5/8 hex-head cap screws, with hex nuts and lock-washers. These parts are supplied with the fryer. Be sure the screws are tight. Mount the screws so the heads are inside the fryer, and the points face outward. It may be easier to attach the legs if you set the fryer on its side or back. If you do this, be sure to protect the outside of the fryer with cardboard when you lay it down. When you stand the fryer up again, be careful not to put too much weight on any one leg or pair of legs.
4. Install the splash guard and flue pipe. See Fig. 6. Remove the two flat head machine screws (10-24 x 1/2) which are located on each cabinet side just to the rear of the kettle. Remove the three #10 x 5/8 self-tapping screws located at the top corners and top center of the cabinet back.

   Place the splash guard over the top edge of the rear of the kettle, and over the top rear corners of the fryer cabinet. Align the five holes in the splash guard with the matching holes in the fryer, and replace the screws you just removed. Tighten the screws.

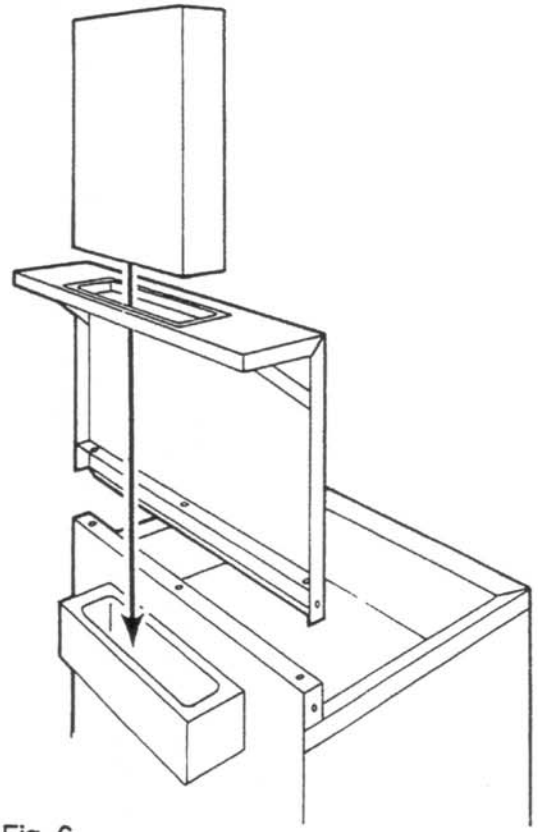


Fig. 6
Assembling the splashback and flue pipe

5. Fit the flue pipe down inside the opening in the top of the splash guard. The bottom end of the flue pipe fits over the collar at the top of the flue box, behind the kettle. The top of the flue pipe should sit about 1/2 inch below the top edge of the splash guard.
6. Assemble the drainboard. See Fig. 7. The drainboard can be installed so that it extends to the right or the left of the fryer.

   If you're going to attach the drainboard to the right side of the fryer, set the drainboard so the 3/8 inch clearance holes (1 cm) are at the left end of the board. To attach the drainboard to the left side of the fryer, set the drainboard so these holes are on the right end of the board.

   Slide the hinge rod through the clearance holes in the drainboard, sliding from front to back. The spacer is a hollow tube that is 1/2 inch (1.2 cm) in diameter and 2-5/8 inches (6.6 cm) long. Slide this spacer over the part of the hinge rod which protrudes from the rear hole on the drainboard. Insert the rear end of the hinge rod through the matching hole in the splash guard.

   A 3/8-16 x 2-1/2 hex-head cap screw (6.3 cm long) may be attached to the front top corner of the kettle. If your fryer includes this screw, remove it. If the screw is not in place on the fryer, you will find the screw packed with the other parts of the fryer. Fit the washer under the head of this screw, then slide the screw through the hole in the hinge rod post. Thread the end of the screw into the matching hole in the top of the fryer. Tighten the screw securely.

   Pivot the drainboard to the right (or left, depending on the direction you want the drainboard to extend from the fryer). Both support legs should drop into position

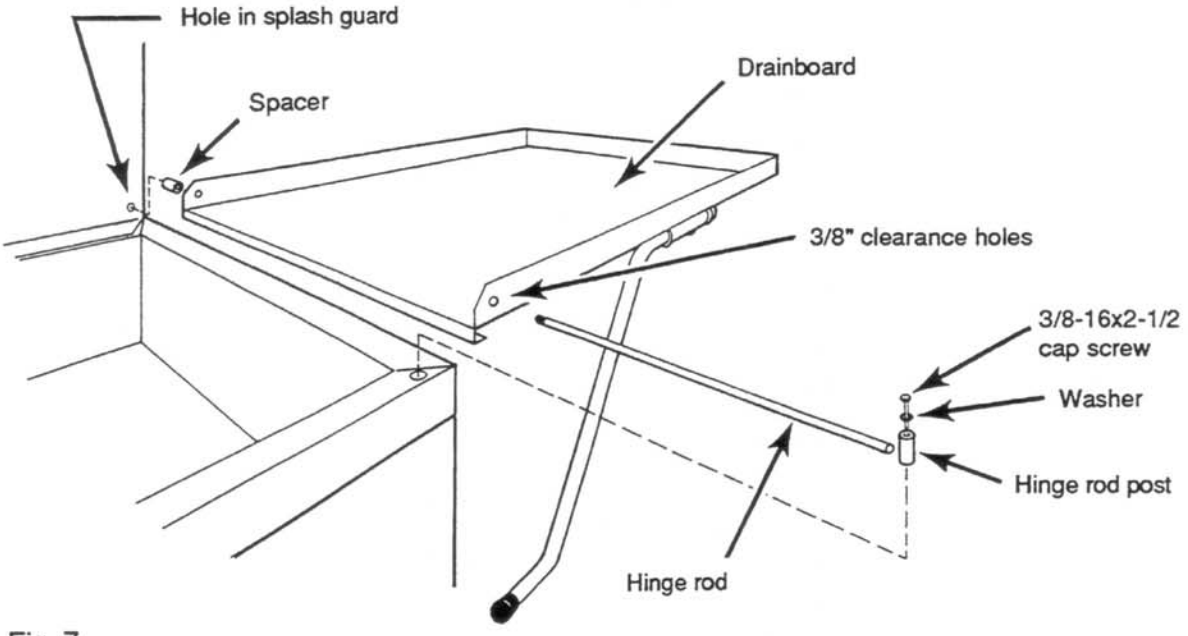


Fig. 7
Assembling the drainboard

against the cabinet side. The pitch of the drainboard can be adjusted by moving the support legs. When you're not using the fryer, swing the board back over the kettle as a protective cover.

7. A fryer can be converted to burn a different type of gas (LP to natural gas or natural gas to LP). Several parts must be changed including the main burner orifice, the pilot burner orifice, and the main gas valve. The user cannot make this conversion. This work must be done by a Pitco service representative.

Electrical Connections

1. If local electrical codes do not apply, follow the National Electrical Code as you install the electrical service. In Canada, follow C.S.A. Standard C22.1 and/or local codes. You should find a copy of the wiring diagram on the inside of the door.
2. The fryer, when installed, must be electrically grounded. Follow the local electrical codes. If local codes do not apply, follow the National Electric Code, ANSI/NFPA number 70-Current. If the fryer is equipped with a three-prong (grounding) plug, this plug should be plugged directly into a properly grounded three-prong socket. Do not cut or remove the grounding prong from this plug. Fryers shipped to Canada are not equipped with power supply cords. On fryers of this type, be sure the fryer is correctly grounded.

Gas Connections

1. Install the fuel gas service, following local gas codes, if they apply. Otherwise, follow the National Fuel Gas Code, ANSI/Z223.1-1980. In Canada, follow C.G.A. Standard B149.1, B149.2 and/or local codes. Contact the local gas supply company to find out the right size for the gas supply line. The fryer won't work properly if the gas line is too small. When making the gas supply connections, use a pipe joint compound that resists the action of liquified petroleum gasses.
2. Each fryer is designed to use one type of fuel gas (either natural gas or LP/ propane). The type of fuel gas which the fryer is designed to use is stamped on the data plate that is attached to the inside of the door.

WARNING! Do not operate the fryer with any other kind of fuel gas.

3. Before operating the fryer, test all fuel gas connections for leaks. Use a solution of soap and water, or a similar solution. Ask the gas supplier for an approved substance.

WARNING! Do not use an open flame to test for gas leaks!

4. If you are pressure-testing the gas supply piping, disconnect the fryer from the gas supply. If the test pressures will be greater than 1/2 psig (3.45 kPA), turn off the main shutoff valve "upstream" of the fryer. This will disconnect the fryer, and its manual shutoff valve. If the test pressures will be equal to or less than 1/2 psig., turn off the fryer's individual manual shutoff valve.

5. The burner manifold operating pressure should be as specified for the fuel gas for which the fryer is equipped. Proper manifold operating pressures are indicated on the data plate attached to the inside of the door of the unit.
6. The main burner flame should be adjusted using the air collars located on the lower part of each burner. The air collar should be raised or lowered to provide a soft blue flame with well-defined inner cones. The flames should enter the heat tube without touching the outside rim of the tube. A properly adjusted flame should not exhibit "lifting off" from the burner face. This indicates excessive flow. You should not see yellow tips on the flames. This indicates insufficient combustion air. Once the flames are properly adjusted, the air collar should be locked in place using the locknut or set screw provided.

Ventilation, Flue Exhaust, and Fire Extinguishers

1. Refer to local codes if you install a grease extractor, ventilating hood, filter unit, or fire extinguishing system. If local codes do not apply, refer to the following standards:

Grease Extractor	ANSI/UL 710-Current	ANSI/NFPA 96-Current
Ventilating Hood	ANSI/UL 507-Current	ANSI/NFPA 96-Current
Filter Unit	ANSI/UL 900-Current and ANSI/UL 586-Current	ANSI/NFPA 96-Current
Fire Extinguishing		
(CO_2)	UL154-Current	ANSI/NFPA 12-Current
(Dry Chemical)	UL299-Current	ANSI/NFPA 17-Current
(Water)	UL626-Current	ANSI/NFPA 13-Current
(Foam)		ANSI/NFPA 11-Current
(Sprinklers)	UL199-Current	ANSI/NFPA 13-Current
Smoke Detectors	ULI68-Current	ANSI/NFPA 72B-Current
Fire Detection Thermostats	ANSI/UL 521-Current	ANSI/NFPA 72B-Current

This listing of installation standards is not necessarily complete. Other nationally recognized standards may be equally appropriate. For additional information, contact the American Gas Association, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131.

2. The fryer must have adequate ventilation to prevent the formation of carbon monoxide gas. We explained this problem in the section on "Safety Notes." Excessive ventilation can cause drafts, which may interfere with the proper operation of the burner. On units with pilot ignition, drafts can also interfere with the pilot.
3. Leave at least 18 inches of open space between the fryer's flue opening and the intake of the exhaust blower. Do not connect the blower directly to the flue opening. This will cause poor temperature recovery, and poor ignition. On units

with pilot ignition, too much draft may also cause the pilot to go out. Too much draft will generally make the fryer work inefficiently.

4. The vent system should be designed so that it can be cleaned easily. Clean out grease and dirt on a regular schedule. This will reduce any possible fire hazard.
5. Install an approved fire fighting system. Exhaust gas temperatures in the fryer may be as high as 1200°F (650°C). The sensing device that activates a fire fighting system should be chosen and located properly to reduce "false alarms."

Installing The Fryer

1. Set the fryer in position. Allow at least 6 inches of clearance from any combustible walls or materials. In front of the fryer, allow at least 30 inches (76 cm) of space for the operator.

WARNING! To avoid a possible fire hazard, keep all combustible materials at least 6 inches (15.5 cm) away from the fryer.

2. Be sure the fryer is level. Use the adjustments located in the base of each leg.
3. When the fryer is shipped from the factory, many of the metal parts are covered with a thin layer of protective oil. Before you use the new fryer, be sure to clean it carefully to remove this coating. This will also remove any dirt, dust, or foreign matter that may have accumulated during storage and shipment.
4. If your fryer is equipped with a plain steel kettle (not stainless), the surfaces of the kettle should be coated with shortening after it is washed. This will prevent rust from forming. After the kettle is "seasoned," this is not necessary.

OPERATING INSTRUCTIONS

Follow these instructions if your fryer has Standing Pilot Ignition

Use these instructions only if your fryer has the standing pilot ignition system. If your fryer has an electronic ignition system, see the instructions in the next section. If you want to find out which kind of ignition system your fryer has, see the Introduction.

Filling the Fry Kettle –

(Fryers with Standing Pilot Ignition)

Warning! Be sure the burner tubes are completely covered with fluid before you try to light either the pilot or main burners.

1. Do not light the burners unless the burner tubes are covered with shortening. The fryer may overheat and cause a fire hazard. See Figure 3. The pilot burner should be lighted whenever the fryer is waiting to be used. When you turn the fryer on, the flame from the pilot will light the main burners.
2. Figure 8 shows how to set the valves when you are filling the fry kettle. Close the drain valve (green handle). Swing the handle clockwise so it points to the left. Fill the kettle with liquid shortening up to the fill line.
3. If you are using solid shortening, cut the shortening into chunks, and pack it around the burner tubes, as shown in Fig. 5.

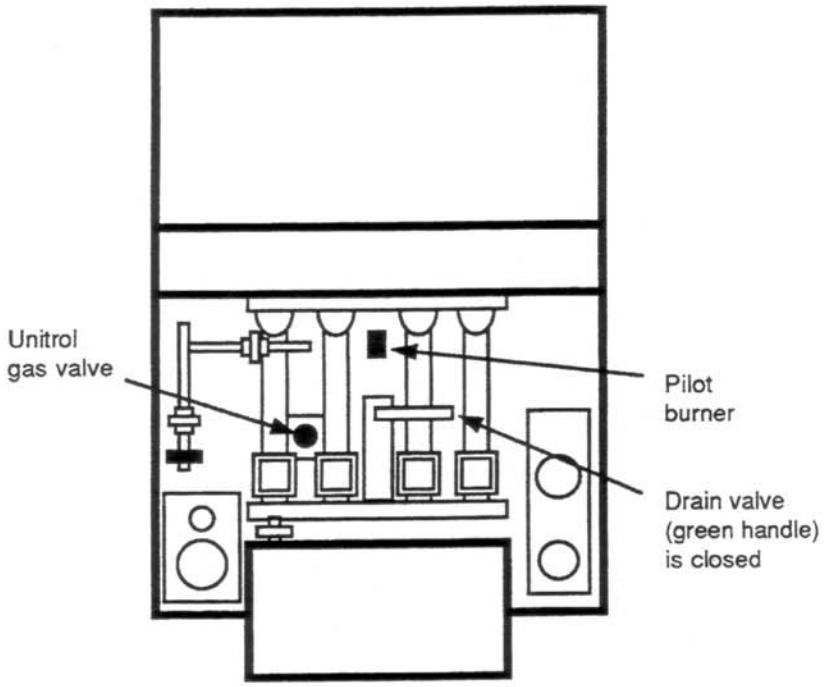


Fig. 8
Controls in fryer with standing pilot ignition

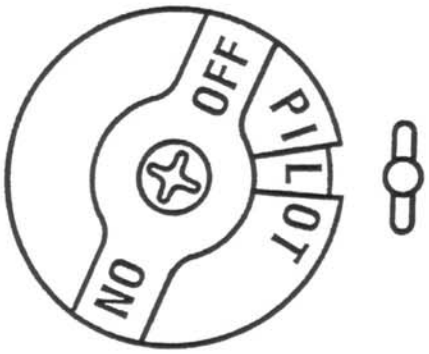


Fig. 9
"Pilot" position on Unitrol
(Fryers with standing pilot ignition)

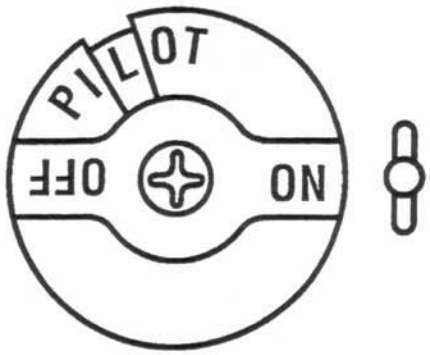


Fig. 10
"On" position on Unitrol
(Fryers with standing pilot ignition)

Warning! Do not leave any air spaces around the burner tubes. This can create "hot spots," which can burn the shortening and create a fire hazard.

4. Close the flush valve (yellow handle). Close the return valve (red handle).

Lighting the Pilot –
(Fryers with Standing Pilot Ignition)

1. Open the gas valve. Turn the handle counterclockwise, so it points downward. You are now ready to turn on the burners.
2. Turn the thermostat control knob counter-clockwise to the lowest setting.
3. The fryer should be plugged in. Turn on the circuit breaker. This switch is located behind the door, on the right side of the fryer. The Power light should be on.
4. To light the pilot, find the Unitrol knob inside the cabinet. See Fig. 8. The Unitrol knob is light brown, and is marked with three positions: Off-Pilot-On. Turn the Unitrol knob to the Pilot position and push it inward. See Fig. 9.
5. While you're holding the knob in, light the pilot burner. This burner is located between the two center burners. See Fig. 8.
6. Hold the knob in, and let the pilot burn for 30 to 60 seconds.
7. Release the knob. The pilot should keep burning. If the pilot goes out when you release the knob, repeat steps 5, 6, and 7.

Turning on the Main Burners
(Fryers with Standing Pilot Ignition)

1. If necessary, fill the fry kettle as described at the beginning of this set of instructions. Light the pilot by hand, as described in the previous section.

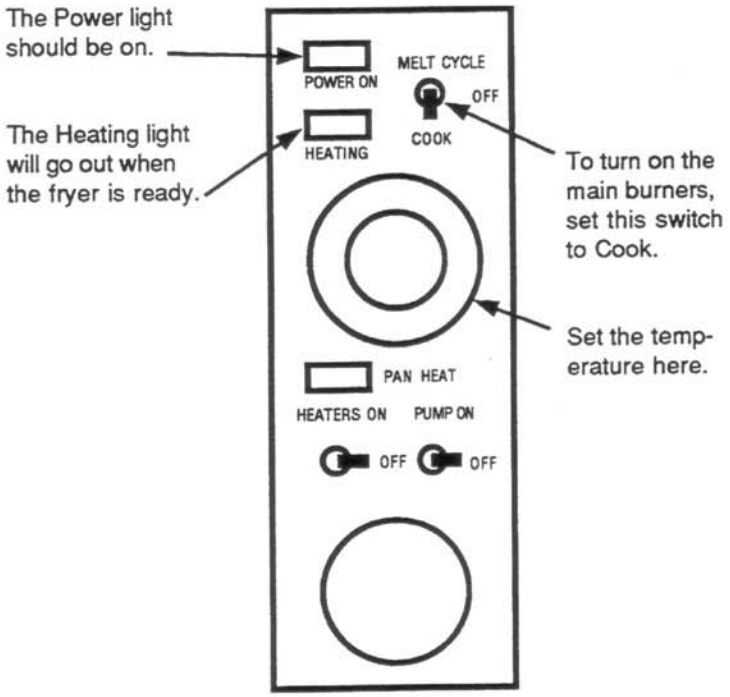


Figure 11
Turning on the fryer

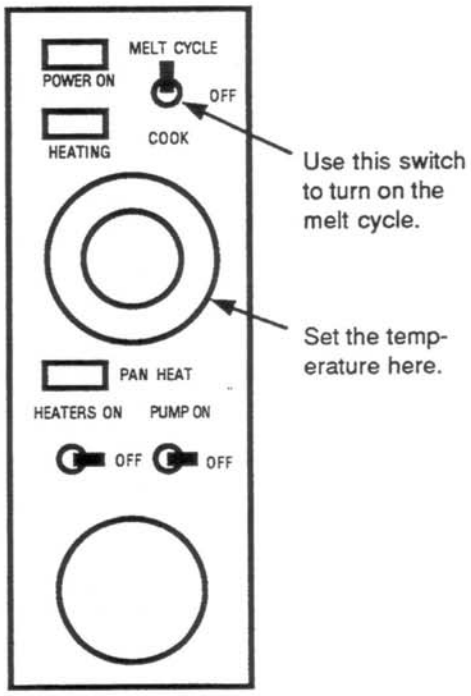


Fig. 12
Using the melt cycle

2. Turn the knob to the On position. See Fig. 10. The main burners will light.
3. If you are using liquid shortening, set the Melt Cycle-Off-Cook switch to the Cook position. See Fig. 11. The main burners will light, and the Heating lamp will glow. The burners and the Heating lamp will stay on until the shortening reaches the desired temperature.
4. Set the thermostat control knob to the desired temperature. When frying doughnuts, set the temperature switch for about 375°F (190°C).

   When the shortening in the fry kettle reaches 375°F, the Heating indicator on the panel will go out. This indicates that the operator may add product to the fryer.

Using the Melt Cycle

(Fryers with Standing Pilot Ignition)

1. If you are using solid shortening, carefully pack the shortening into the kettle. See the instructions given earlier in this section. Light the pilot by hand as you would normally. Turn the control knob to the On position to light the main burners.
2. Set the Melt Cycle-Off-Cook switch to the Melt Cycle position. See Fig. 12. The main burners in the fryer will light for 4 seconds, then turn off for 30 seconds. The Heating lamp will glow whenever the main burners are turned on.

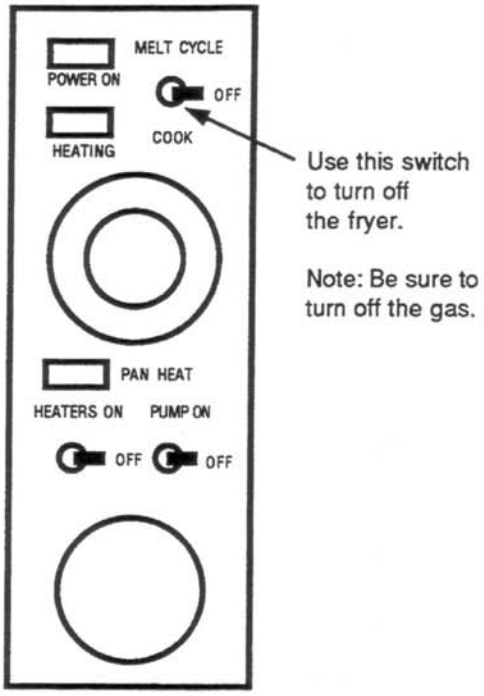


Fig. 13
Turning off the fryer

The melt cycle allows the fryer to heat the solid shortening slowly. This will continue until the shortening reaches 150°F (65°C). At this temperature, the main burners will stay on until the temperature setting is reached.

Warning! If you try to melt solid shortening without using the melt cycle, you may create a fire hazard. If there are any air spaces in the shortening, this can create "hot spots" and cause the shortening to overheat. This may create a fire hazard, and can also damage the kettle in the fryer.

3. You can leave the Melt Cycle-Off-Cook switch in the Melt Cycle position. After the warm-up period, the fryer will operate normally.

Turning off the Fryer

(Fryers with Standing Pilot Ignition)

1. Turn the Melt Cycle-Off-Cook switch Off. See Fig. 13. The main burners will go out. The Heating lamp will also go out.
2. Turn the Unitrol knob counterclockwise, past the Pilot position, to the Off position. See Fig. 14. The pilot flame will go out.

3. If desired, you can turn off the circuit breaker This switch is located behind the door, on the right side of the fryer. The Power light will go out. It is not necessary to turn off the circuit breaker every time you turn off the fryer. However, always be sure to turn off the Unitrol gas valve
4. Do not turn the fryer on again for at least 5 minutes. This allows time for extra gas to clear from the fryer.

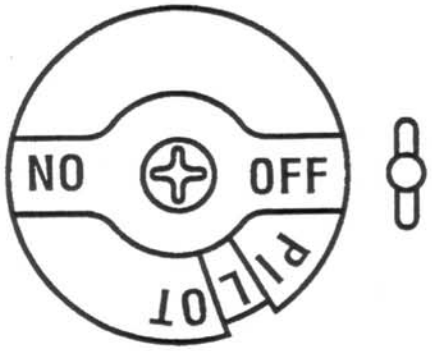


Fig. 14
"Off" position on Unitirol
(Fryers with standing pilot ignition only)

OPERATING INSTRUCTIONS

Follow these instructions if your fryer has Electronic Ignition

Use these instructions only if your fryer has the electronic ignition system. If your fryer has a pilot which must be lit by hand, see the instructions in the previous section. If you want to find out which kind of ignition system your fryer has, see the Introduction.

Filling the Fry Kettle –
(Fryers with Electronic Ignition)

1. Do not light the burners unless the burner tubes are covered with shortening. The fryer may overheat and cause a fire hazard. See Figure 3.

Warning! Be sure the burner tubes are completely covered with fluid before you try to light either the pilot or main burners.

2. The controller on this fryer will light the pilot automatically.

Warning! Do not light the pilot burner by hand. The main burner may come on a moment later, and you may be burned.

3. Figure 15 shows how to set the valves when you are filling the fry kettle. Close the drain valve (green handle). Swing the handle clockwise so it points to the left.

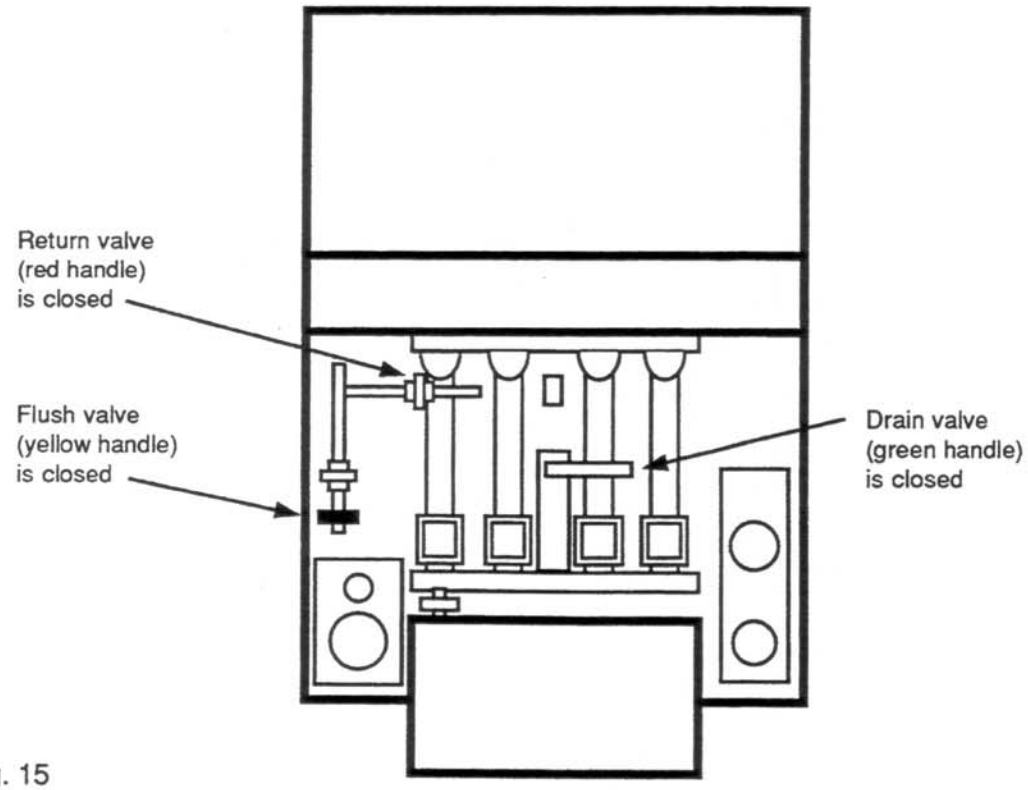


Fig. 15
Controls in fryer with electronic ignition

Fill the kettle with liquid shortening up to the fill line.

4. If you are using solid shortening, cut the shortening into chunks, and pack it around the burner tubes, as shown in Fig. 5.

Warning! Do not leave any air spaces around the burner tubes. This can create "hot spots," which can burn the shortening and create a fire hazard.

5. Close the flush valve (yellow handle). Close the return valve (red handle). Turn on the circuit breaker. This switch is located behind the door, on the right side of the fryer.

Turning on the Fryer

(Fryers with Electronic Ignition)

1. If necessary, fill the fry kettle as described in the last section.
2. The fryer should be plugged in. Turn on the circuit breaker. This switch is located behind the door, on the right side of the fryer. The Power light should be on.
3. Open the gas valve. Turn the handle counterclockwise, so it points downward. You are now ready to turn on the burners.
4. If you are using liquid shortening, set the Melt Cycle-Off-Cook switch to the Cook position. See Fig. 11. The main burners will light and stay on until the shortening reaches the desired temperature.
5. Set the temperature control for about 375°F (190°C). When the shortening in the fry kettle reaches 375°F, the Heating indicator on the panel will go out. This indicates that the operator may add product to the fryer.

Using the Melt Cycle

(Fryers with Electronic Ignition)

1. If you are using solid shortening, set the Melt Cycle-Off-Cook switch to the Melt Cycle position. See Fig. 12. The burners in the fryer will now come on for 4 seconds, then turn off for 30 seconds. This allows the fryer to heat the solid shortening slowly.

   This will continue until the shortening reaches 150°F (65°C). At this temperature, the main burners will stay on until the temperature setting is reached.

Warning! If you try to melt solid shortening without using the melt cycle, you may create a fire hazard.

2. You can leave the Melt Cycle-Off-Cook switch in the Melt Cycle position. After the warm-up period, the fryer will operate normally.

Turning Off the Fryer

(Fryers with Electronic Ignition)

1. Turn the Melt Cycle-Off-Cook switch off. See Fig. 13. The main burners and the pilot will go out. The Power On and Heating lamps should go out.
2. Do not turn the fryer on again for at least 5 minutes. This allows time for extra gas to clear from the fryer.

ADDITIONAL OPERATING INSTRUCTIONS –

Follow these instructions for fryers with either type of ignition

FILTERING THE OIL OR SHORTENING

Do this once a day

Assemble the Filter

1. Remove the cover of the filter pan. Take out the filter assembly, shown in Fig. 16 and Fig. 17. If the filter envelope is discolored or dirty, install a new filter envelope. Remove the round filter screw from the bottom of the filter housing. See Fig. 16. Pull the filter screen and envelope away from the suction tube. Remove the old filter envelope from the filter screen and throw it away.

   Slide the new filter envelope onto the filter screen. The holes in the envelope should line up with the holes in the filter screen. Line up the opening on the suction tube with the holes in the filter envelope and the filter screen. Install the filter screw through the hole in the filter screen, as shown in Fig. 16. Thread the filter screw into the opening of the suction tube.

   Fold the flap of the filter envelope over the edge of the filter screen. Place the filter assembly in the filter pan. The filter screw should fit into the hole provided in the bottom of the pan. Slide the edge of the filter assembly into the clamp on the bottom of the filter pan. This clamp is designed to hold the folded edge of the filter envelope in place.

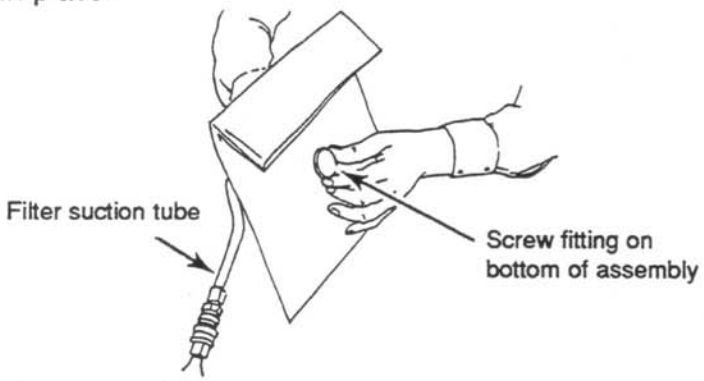


Fig. 16
Assembling the filter – part 1

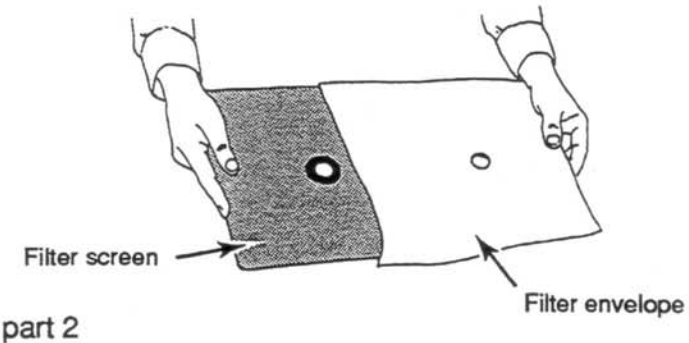


Fig. 17
Assembling the filter – part 2

Drain the Fryer

2. Figure 18 shows how to set up the fryer. Set the Melt Cycle-Off-Cook switch to the Off position. Set the Pump On-Off switch to the Off position. Set the Heaters On-Off switch to the Off position.
3. Turn off the gas valve. Turn the handle clockwise, so it points to the left.
4. Slowly push the filter pan back into the fryer until it stops.
5. Twist the drain nipple into the bottom of the drain valve. The drain hole in the cover of the filter pan should be just below the opening of the nipple.

Warning! Wear insulated oil-proof gloves when you do this!

6. Lift the filter pan cover, and connect the filter assembly to the white quick-disconnect fitting. Figure 19 shows how to use the quick-disconnect. Sprinkle 12 oz. of precoat powder onto the filter paper.
7. Connect the flush hose to the black quick disconnect.
8. Open the drain valve (green handle) by turning the handle counterclockwise, so that it points downward. The oil will drain into the filter tank.

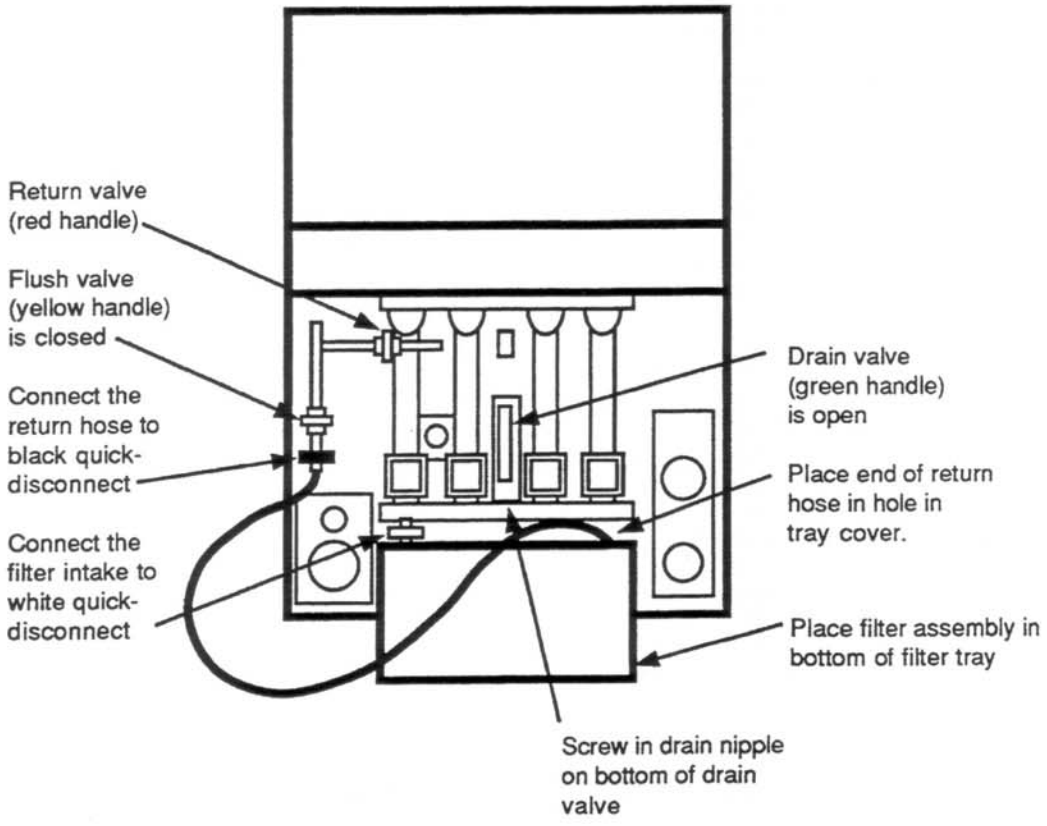


Fig. 18
Drain the oil

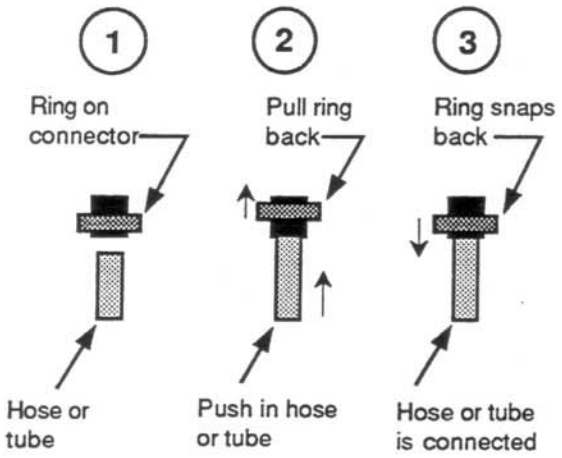


Fig. 19
Using a quick-disconnect

Flushing the Fryer

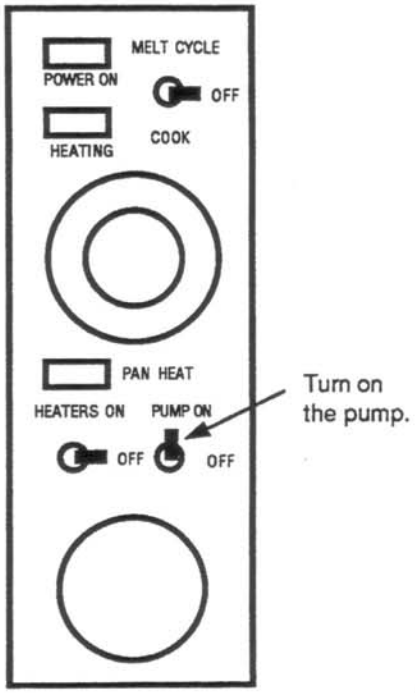
9. Lift the submerger screen out of the tank, and lock it in position.
10. Open the flush valve (yellow handle) as shown in Fig. 20.
11. Close the return valve (red handle).
12. Remove the tube screen. Carefully place the end of the flush hose inside the tank.

Warning! Do not aim the end of the flush hose at anyone. Hot oil might come out of the hose, and burn someone.

13. Hold the end of the flush hose. Set the Pump On-Off switch in the Pump On position. Rinse out the bottom of the tank with the shortening.
14. When you are finished, turn the Pump On-Off switch Off.

Circulate the Oil

15. Close the flush valve (yellow handle), as shown in Fig. 21.
16. Disconnect the flush hose from the black quick-disconnect. Drain the hose into the filter tank.
17. Open the return valve (red handle).
18. Set the Pump On-Off switch to the On position. The shortening will be pumped from the filter tank, into the fry kettle, and return to the filter tank. The filter paper and the precoat will remove debris from the shortening. Keep doing this for about two minutes.



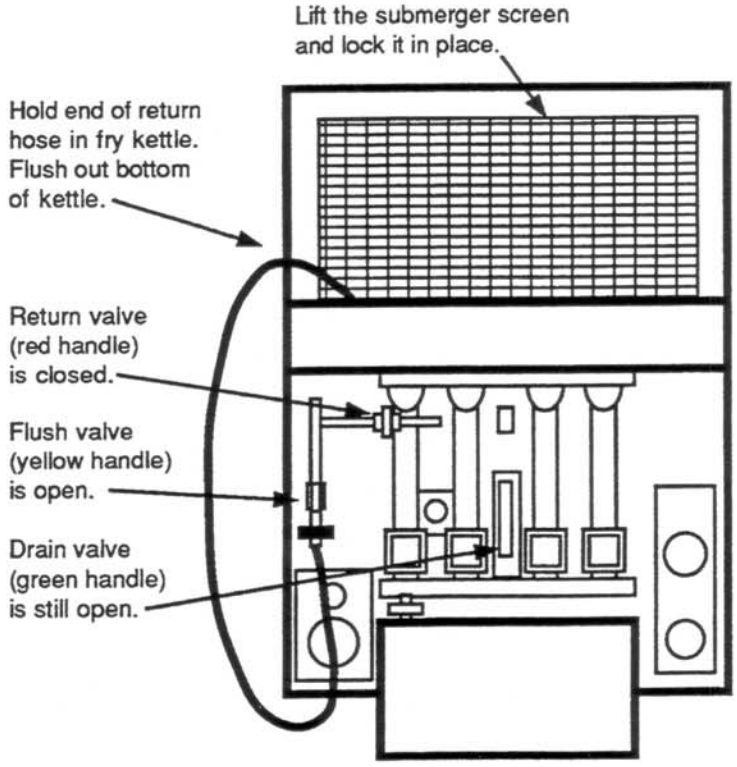


Fig. 20
Flush the fry kettle

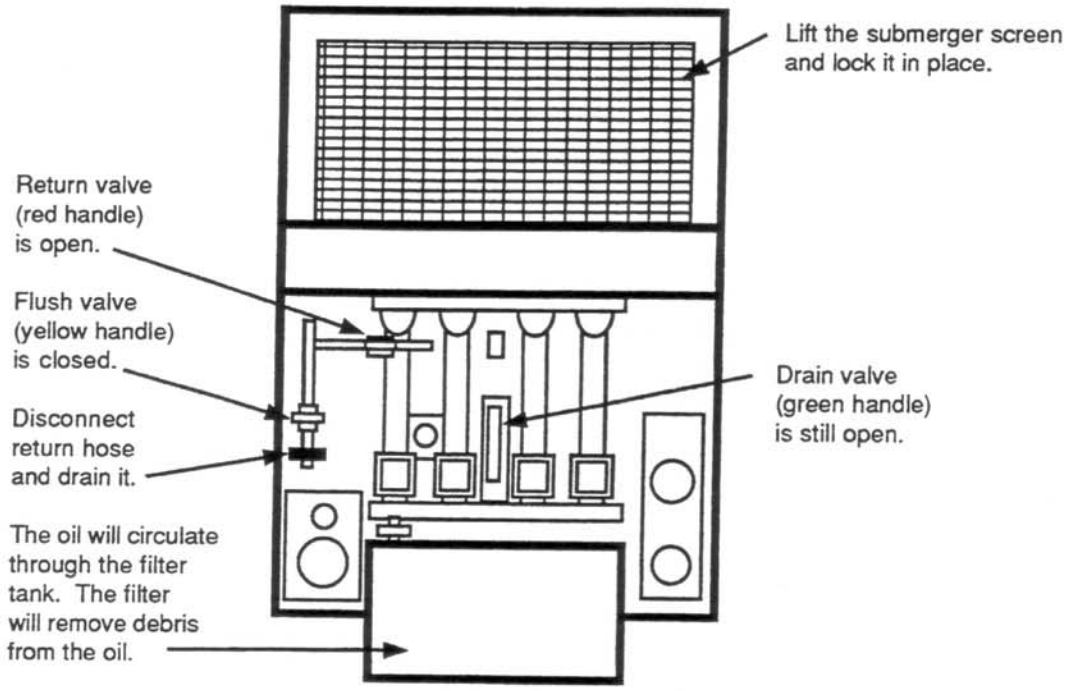


Fig. 21
Circulate the oil

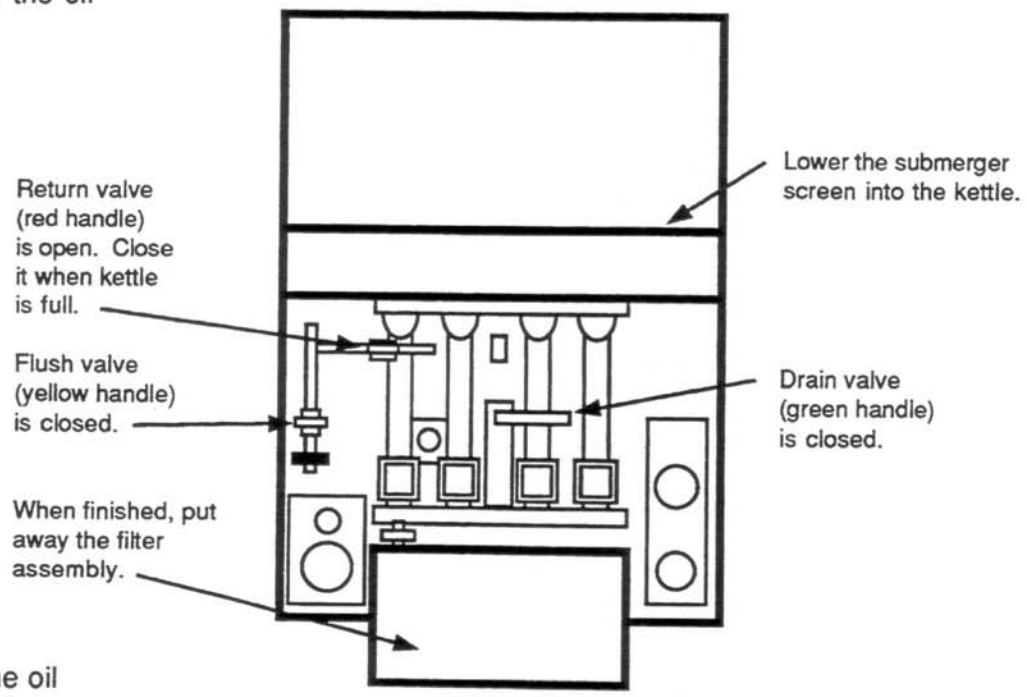


Fig. 22
Return the oil

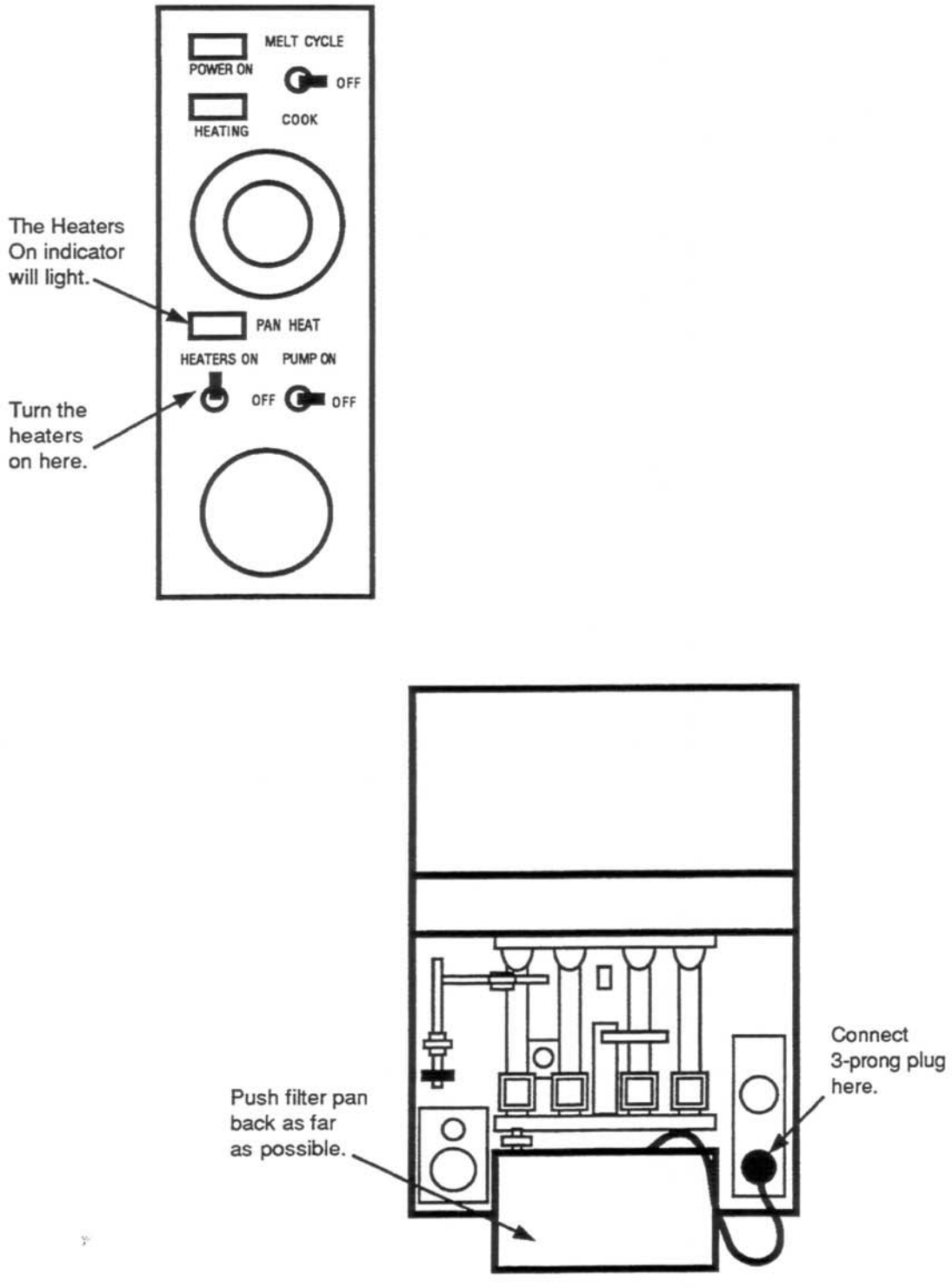


Fig. 23
Using the filter pan heaters

19. When you are through circulating the shortening, set the Pump On-Off switch to the Off position. Allow the shortening to drain from the tank.
20. While the parts of the fryer are still warm (135°F, 57°C), wipe off the submerger screen and the inside of the tank. Replace the tube screen.

Refill the Fry Tank

21. Place the submerger screen back in the fry tank.
22. Close the drain valve (green handle) as shown in Fig. 22. Move the handle counterclockwise so that it points to the left.
23. Set the Pump On-Off switch to the On position. Wait until the shortening reaches the level mark, or all of the oil has been pumped out of the filter pan, then set the switch to the Off position.
24. Close the return valve (red handle).
25. Disconnect the filter assembly from the white quick-disconnect and drain the flexible hose into the filter pan. Put the filter assembly in the filter pan. Close the doors. The fryer is ready to operate.

Using the Filter Pan Heater

1. If you put shortening in the filter pan, the shortening may become solid when it cools. The filter pan has electrical heaters which can be used to warm the shortening in the filter pan. The pump will not be able to move the shortening while it is solid.
2. To use the filter pan heaters, find the electrical cable at the rear end of the filter pan. See Fig. 23. Push the filter back into the fryer as far as it will go.
3. Connect the electrical power for the heaters. Plug the electrical cord into the socket on the right side of the fryer.
4. Set the Heaters On-Off switch to the On position. The Pan Heat indicator will light.
5. Leave the heaters on until the solid shortening has melted. Turn the Heaters On-Off switch to the Off position.

Weekly Cleaning

1. Turn off the gas valve.
2. Screw the drain nipple into the drain valve. Find a clean container that is big enough to hold all of the shortening in the kettle, and won't be melted by the hot fluid. Put this container under the drain outlet. Open the drain valve (turn handle down) and drain the shortening into the container.

Warning! Wear oil-proof insulated gloves as you do this.

3. Remove the tube screen. Use hot oil to flush out any remaining sediment in the bottom of the kettle.
4. While the fryer parts are still warm (135°F. or less), wipe off the tube screen and the inside of the kettle.
5. Close the drain valve (handle points to the left) and fill the kettle with a mixture of warm water and non-caustic detergent.
6. Turn on the gas. Light the pilot and the main burner. Set the Melt Cycle-Off-Cook switch to Cook. Set the thermostat control to 200°F (93°C) and simmer the water/ detergent mixture.
7. Let the kettle soak until the shortening deposits are softened.
8. Place a container under the drain valve. Open the drain valve, and drain off the hot water. Scrub the fry kettle and burner tubes to remove any residue.
9. Turn off the main burners. To do this, set the Melt Cycle-Off-Cook switch to the Off position. Fill the kettle with clean warm water, and mix in a "neutralizer" (like vinegar). See the packaging for your cleaner.
10. Turn on the main burners. Wait until the water reaches a slow boil.
11. Turn off the main burners. Drain the water and neutralizer, and rinse the kettle with clean water.
12. Wipe the kettle dry with a clean cloth.
13. Close the drain valve (green handle – points left). Pour the melted shortening back into the kettle. If necessary, filter the shortening as described in the last section.
14. Replace the tube screen and remove the drain nipple. The fryer is ready to operate.

Cleaning As Needed

1. If any shortening spills or splashes onto the outside of the fryer, wipe it up while it is still warm with a clean soft cloth.
2. If you have to clean any painted surfaces, use warm water and a mild detergent.
3. If you have to scrub to remove tough spots or stains, use a non-abrasive scouring powder and/or pads.

Recommended Frying Practices

1. Use only the best quality shortening – it will last longer than the cheaper grades. Good shortening will also produce foods that taste and look better.
2. The shortening will break down if it gets too hot, or if it is exposed to air or light, or if it is mixed with water or salt. Fry the doughnuts at the proper temperature setting. Keep the kettle covered with the drainboard when you're not using the fryer.
3. Filter the shortening at least once a day.

4. Keep the kettle clean. Follow the instructions in the section on "Weekly Cleaning."
5. Try to keep water out of the shortening.
6. Do not try to fry too much product at one time. You can fry different amounts of food in each processing batch.

Using the Back-up Thermostat

1. This fryer has a back-up thermostat which you can use if the main temperature control system ever fails. The thermostat control knob is located behind the front door, in the lower left corner of the cabinet.
2. There is a switch on the box which contains the back-up thermostat. To use the back-up thermostat, set this switch to the Back-up position.
3. Set the desired temperature on the back-up thermostat using the thermostat knob.

If the Power Fails

If the main power (120V or 220/240V AC) fails, the fryer will stop operating and turn off the gas automatically. Do not leave the fryer turned on, or it will begin operating again when the power returns. Set the Melt Cycle-Off-Cook switch to the Off position.

If You Smell Gas

When the fryer is operating normally, you should never smell gas. If you do smell gas, something is wrong. If there is a gas leak, the gas may collect in the building. The gas may then be ignited by a spark or open flame, causing a dangerous explosion. LP gas (propane) is heavier than air, and tends to collect at floor level. The gas smell may be stronger near the floor. Here are some general safety rules:

If you smell gas, turn off the fryer right away. Do not use the Melt Cycle-Off-Cook switch to do this. This switch could create a spark, and light the gas by accident. Instead, turn off the gas valve in the fryer. Also turn off the gas at the main gas valve, on the gas tank outside the building, or at the main gas pipe.

Everyone should leave the building right away. Call the gas company and the fire department, and wait outside the building until they arrive. On the telephone, be sure to give your name, address and phone number. Do not go back into the building.

Do not light any matches or lighters. Do not turn any electrical switches on or off – this can create a spark which can ignite the gas. Do not use an electric fan to clear the gas.

For more detailed instructions, ask your local gas supplier. Write down the instructions and post them in a visible place. Be sure everyone understands what to do if they smell gas.

TROUBLESHOOTING

About Standing Pilot Ignition

As we said, there are two versions of the Model 24R-UFM fryer. One version uses a "standing pilot" ignition system. To determine whether your fryer has this system, see the Introduction.

Figure 24 shows a block diagram for a unit with standing pilot ignition. Figures 26 and 27 are schematics for this type of fryer. On a fryer with standing pilot ignition, the pilot is lit by hand. The flow of gas is controlled by a valve called a "Unitrol" (V1). The Unitrol actually includes two separate valves – one for the pilot flame, and another valve for the main burners. When you turn the Unitrol handle to the Pilot position and push it in, the valve for the pilot burner opens. This allows you to light the pilot flame.

A device called a "thermopile" extends into the pilot flame. The thermopile generates a small electric current when it is heated. The Unitrol uses the current from the thermopile to keep the gas valve open. If the pilot goes out, the gas valve will close. This prevents the unit from leaking gas if the pilot goes out.

Once the pilot is burning, the main burners are controlled by a signal from the temperature control (A1). When the temperature control calls for heat, it signals to the Unitrol, and the Unitrol turns on the gas supply for the main burners. A temperature control pot (R1) determines the set-point or "target" temperature for the controller. A device called a "thermistor" (RT1) is used to sense the actual temperature in the kettle.

About Electronic Ignition

Another version of the fryer uses a proven-pilot electronic ignition system. Figure 25 shows a block diagram. The temperature control module (A1) decides when the main burners should be turned on. This happens when the temperature of the shortening is below the temperature set on the temperature control pot. The thermistor probe (RT1) senses the actual temperature of the shortening, and reports back to the temperature control module.

When the temperature controller calls for heat, it signals the ignition controller (A2). This controller produces a 24V AC output which turns on the gas valve for the pilot burner. The ignition controller then produces a series of high-voltage sparks at the tip of the ignitor (E2). The sparks light the pilot burner. The flame probe (E1) produces a small current when it is heated. If the ignition controller does not receive the signal from the flame probe within a few seconds, it will shut off gas to the pilot burner.

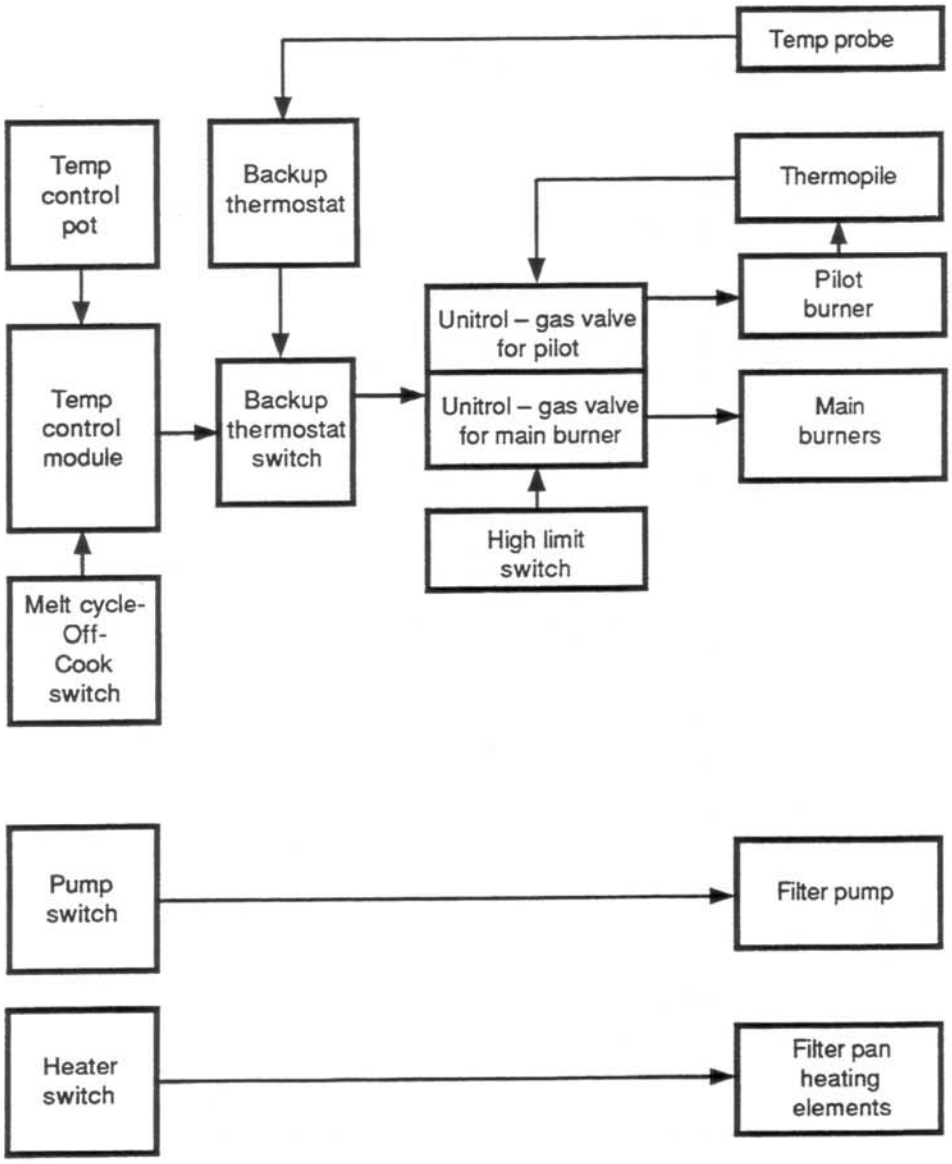


Fig. 24
Block diagram – standing pilot ignition control circuits

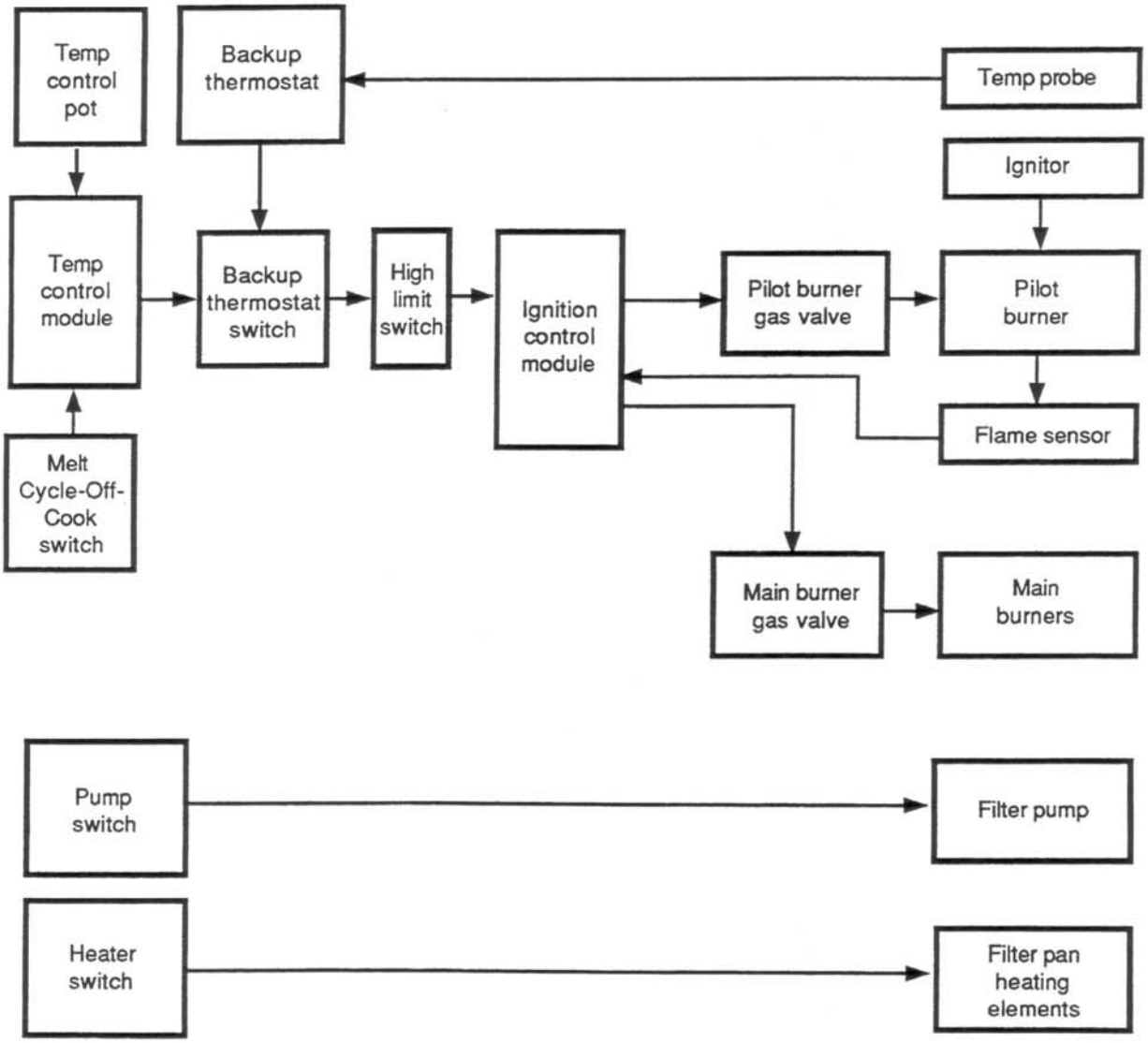


Fig. 25
Block diagram – electronic ignition control circuits

The current from the flame probe tells the ignition controller that the pilot is burning. On receiving this signal, the ignition controller produces another 24V AC output, which turns on the gas valve for the main burners.

Other Circuits

This fryer has a built-in filtering system. The filter pump operates on 120V AC, and is controlled by a switch mounted on the control box panel (S2).

The unit includes a high temperature limit switch (S4). This switch uses a sensor bulb which is mounted inside the fry kettle. When the temperature of the shortening rises above 450°F (232°C), this switch opens. On the version with standing pilot ignition, when S4 opens it causes the Unitrol to close, cutting off the gas supply to the fryer. On the version with electronic ignition, when S4 opens it interrupts the 24V signal to the ignition module A2, cutting off the flame.

The pump will not be able to move the shortening if it has cooled and become solid. The filter pan has two 120V resistive heating elements (HR1 and HR2) which can be turned on by a switch on the main panel.

The version which has a standard pilot and is wired for 120V AC does not have a transformer. All of the circuits in this unit operate on 120V AC. A circuit breaker (CB1) and a 7 Amp slow-blow fuse protect the 120V AC input.

The version which includes a standard pilot and is wired for 220V AC has one transformer (T2). This transformer produces 120V AC for the circuits inside the fryer. A circuit breaker (CB1) and a 3.2 Amp slow-blow fuse protect the 220V AC input. A .25 Amp slow-blow fuse protects the 120V AC output to the control circuits.

The version which uses electronic ignition, and is wired for 120V AC has one transformer (T1) which produces 24V AC. The 120V AC is used by the temperature control module, the pump motor, and the pan heating elements. Most of the other control circuits and the panel indicators operate on 24V AC. A circuit breaker (CB1) and a 7 Amp slow-blow fuse protect the 120V AC input. A 2 Amp slow-blow fuse protects the 24V AC output.

A fourth version uses electronic ignition, and is wired for 220V AC. This type of fryer has two transformers. One unit (T1) which produces 24V AC. The 24V AC is switched by the temperature control, routed through the high limit switch, and sent to the ignition module. The 120V AC is used by the temperature control module, the pump motor, and the pan heating elements. A circuit breaker (CB1) and a 3.2 Amp slow-blow fuse protect the 120V AC input. A 1 Amp slow-blow fuse protects the 24V AC output, and a .25 Amp slow-blow fuse protects the 120V AC output.

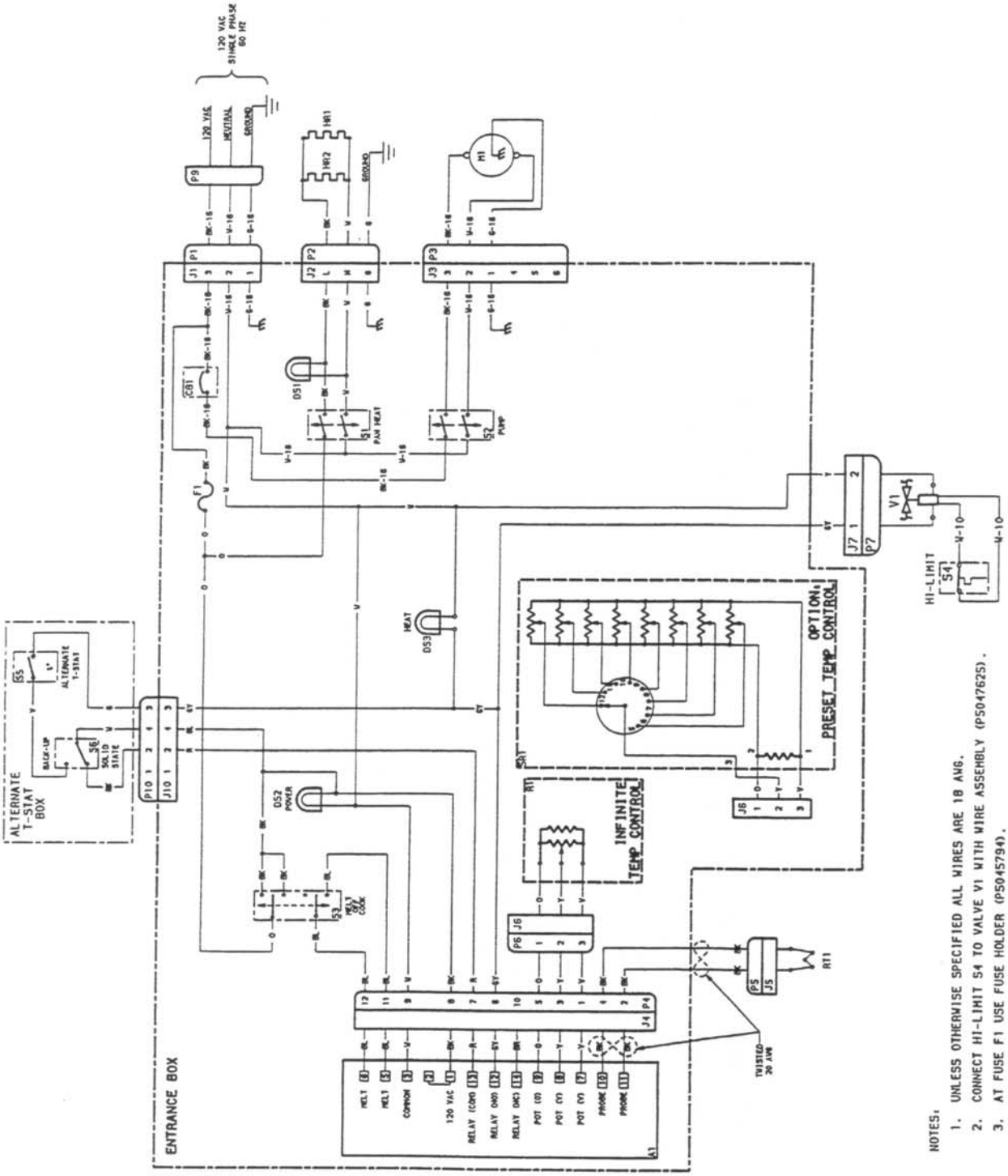


Fig. 26
Electrical schematic – fryer with standing pilot ignition
120V AC, 60Hz
(Print no. 700050)

Electrical Parts Listing for Fig. 26 – Fryer with Standing Pilot Ignition, 120V AC, 60 Hz

(Print Number 700050)

Code	Part No.	Description	Qty.
A1	P5046356	Temperature control, GO module	1
CB1	PP10104	Circuit breaker, toggle, SPST, 10A, 250V	1
DS1, DS3	PP10082	Lamp, 125V AC, amber, rectangular	2
DS2	PP10083	Lamp, 125V AC, white, rectangular	1
F1	P5045721	Fuse, glass, 7 Amp slow-blow	1
HR1, HR2	P5044785	Pan heater cartridge, 120V AC, 200W	2
J1, J6	PP10089	Connector, jack, 3 skt Molex	2
J2	P5046542	Receptacle, twist lock, 125V, L5-15R	1
J3	PP10205	Connector, jack, 6 skt Molex	1
J4	PP10209	Connector, jack, 12 skt Molex	1
J5, J7	P5045839	Connector, jack, 2 skt Molex	2
J10	PP10203	Connector, jack, 4 skt Molex	1
M1	P5046381	Pump motor, 115V AC, 60 Hz, 1725 RPM	1
P1, P6	PP10090	Connector, plug, 3 pin Molex	2
P2	P5046545	Plug, twist lock, 125V, L5-15P	1
P3	PP10204	Connector, plug, 6 pin Molex	1
P4	PP10208	Connector, plug, 12 pin Molex	1
P5, P7	P5045829	Connector, plug, 2 pin Molex	2
P9	P5046159	Cord, plug-mold, 16-3, SJO	1
P10	PP10202	Connector, plug, 4 pin Molex	1
R1	P5046582	Potentiometer, 900Ω	1
RT1	P5044876	Thermistor probe, 100KΩ	1
S1, S2	P5047166	Switch, toggle, SPDT, On-Off	2
S3	P5047165	Switch, toggle, SPDT, On-Off-On	1
S4	PP10084	Switch, high temperature limit	1
S5	P5047587	Electric thermostat switch, alternate	1
S6	P5047155	Switch, toggle, SPDT, On-On	1
SR1	P5047176	Switch, temp select, 8 position (option)	1
V1	P5045657	Gas valve, Unitrol, 120V, Nat	1
	P5045656	Gas valve, Unitrol, 120V, LP	1

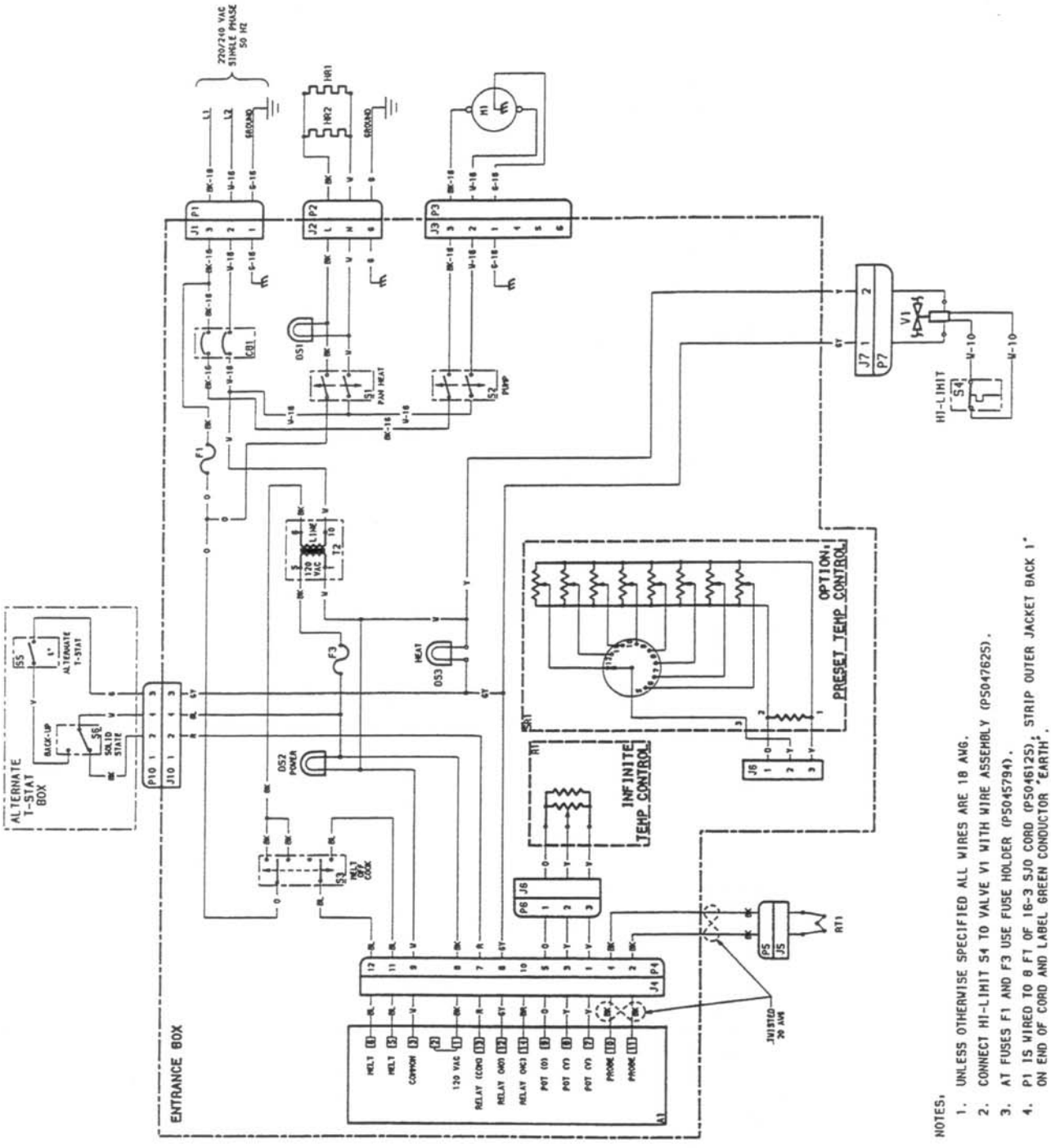


Fig. 27
Electrical schematic – fryer with standing pilot ignition
220/240V AC, 50Hz
(Print no. 700049)

Electrical Parts Listing for Fig. 27 – Fryer with Standing Pilot Ignition, 220/240V AC, 50 Hz

(Print Number 700049)

Code	Part No.	Description	Qty.
A1	P5046356	Temperature control, GO module	1
CB1	P5045215	Circuit breaker, toggle, DPST, 7A, 250V	1
DS1	PP10100	Lamp, 250V AC, amber, rectangular	1
DS2	PP10083	Lamp, 125V AC, white, rectangular	1
DS3	PP10082	Lamp, 125V AC, amber, rectangular	1
F1	P5045723	Fuse, glass, 3.2 Amp slow-blow	1
F3	P5045707	Fuse, glass, .25 Amp slow-blow	1
HR1, HR2	P5044785	Pan heater cartridge, 120V AC, 200W	2
J1, J6	PP10089	Connector, jack, 3 skt Molex	2
J2	PP10431	Receptacle, twist lock, 250V, L6-15R	1
J3	PP10205	Connector, jack, 6 skt Molex	1
J4	PP10209	Connector, jack, 12 skt Molex	1
J5, J7	P5045839	Connector, jack, 2 skt Molex	2
J10	PP10203	Connector, jack, 4 skt Molex	1
M1	P5046382	Pump motor, 220V AC, 50 Hz, 1725 RPM	1
	P5046383	Pump motor, 240V AC, 50 Hz, 1425 RPM	1
P1, P6	PP10090	Connector, plug, 3 pin Molex	2
P2	PP10430	Plug, twist lock, 125V, L6-15P	1
P3	PP10204	Connector, plug, 6 pin Molex	1
P4	PP10208	Connector, plug, 12 pin Molex	1
P5, P7	P5045829	Connector, plug, 2 pin Molex	2
P10	PP10202	Connector, plug, 4 pin Molex	1
R1	P5046582	Potentiometer, 900Ω	1
RT1	P5044876	Thermistor probe, 100KΩ	1
S1, S2	P5047166	Switch, toggle, SPDT, On-Off	2
S3	P5047165	Switch, toggle, SPDT, On-Off-On	1
S4	PP10084	Switch, high temperature limit	1
S5	P5047587	Electric thermostat switch, alternate	1
S6	P5047155	Switch, toggle, SPDT, On-On	1
SR1	P5047176	Switch, temp select, 8 position (option)	1
T2	PP10211	Transformer, 56VA, 208/240V to 120V	1
V1	P5045657	Gas valve, Unitrol, 120V, Nat	1
	P5045656	Gas valve, Unitrol, 120V, LP	1

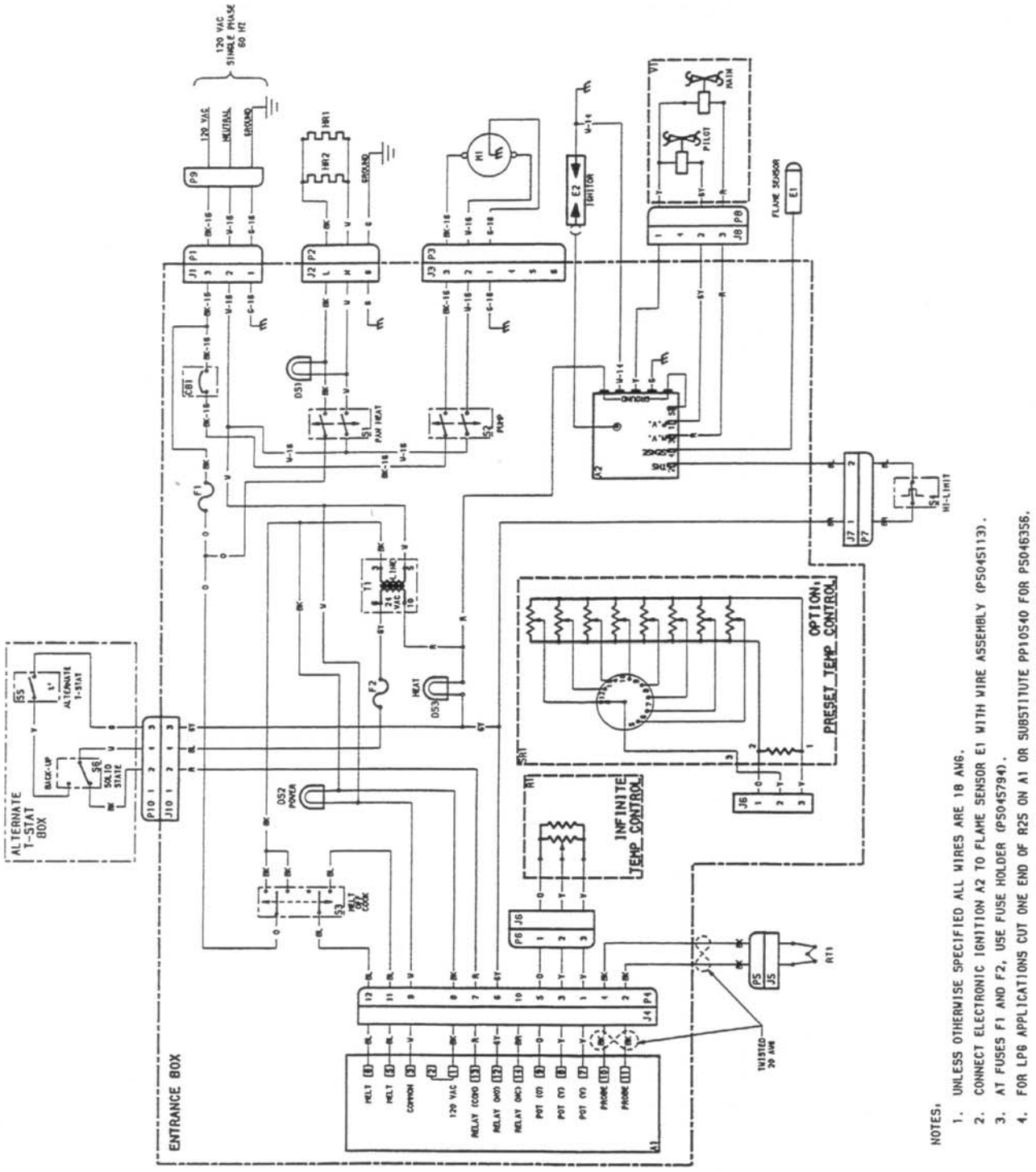


Fig. 28
Electrical schematic – fryer with electronic ignition
120V AC, 60Hz
(Print no. 700045)

Electrical Parts Listing for Fig. 28 – Fryer with Electronic Ignition, 120V AC, 60 Hz

Print Number 700045

Code	Part No.	Description	Qty.
A1	P5046356	Temperature control, GO module	1
A2	PP10070	Electronic ignition, 24V AC, G77, LPG	1
	PP10071	Electronic ignition, 24V AC, G77, Nat	1
CB1	PP10104	Circuit breaker, toggle, SPST, 10A, 250V	1
DS1	PP10082	Lamp, 125V AC, amber, rectangular	1
DS2	PP10083	Lamp, 125V AC, white, rectangular	1
DS3	P5045044	Lamp, 28V, amber, rectangular	1
E1	P5046626	Flame probe sensor	1
E2	PP10280	Pilot sensor, electronic ignition	1
F1	P5045721	Fuse, glass, 7 Amp slow-blow	1
F2	PP10122	Fuse, glass, 1 Amp slow-blow	1
HR1, HR2	P5044785	Pan heater cartridge, 120V AC, 200W	2
J1, J6	PP10089	Connector, jack, 3 skt Molex	2
J2	P5046542	Receptacle, twist lock, 125V, L5-15R	1
J3	PP10205	Connector, jack, 6 skt Molex	1
J4	PP10209	Connector, jack, 12 skt Molex	1
J5, J7	P5045839	Connector, jack, 2 skt Molex	2
J8, J10	PP10203	Connector, jack, 4 skt Molex	2
M1	P5046381	Pump motor, 115V AC, 60 Hz, 1725 RPM	1
P1, P6	PP10090	Connector, plug, 3 pin Molex	2
P2	P5046545	Plug, twist lock, 125V, L5-15P	1
P3	PP10204	Connector, plug, 6 pin Molex	1
P4	PP10208	Connector, plug, 12 pin Molex	1
P5, P7	P5045829	Connector, plug, 2 pin Molex	2
P8, P10	PP10202	Connector, plug, 4 pin Molex	2
P9	P5046159	Cord, plug-mold, 16-3, SJO	1
R1	P5046582	Potentiometer, 900Ω	1
RT1	P5044876	Thermistor probe, 100KΩ	1
S1, S2	P5047166	Switch, toggle, SPDT, On-Off	2
S3	P5047165	Switch, toggle, SPDT, On-Off-On	1
S4	P5047210	Switch, high temperature limit	1
S5	P5047587	Electric thermostat switch, alternate	1
S6	P5047155	Switch, toggle, SPDT, On-On	1
SR1	P5047176	Switch, temp select, 8 position (option)	1
T1	PP10210	Transformer, 40VA, 120/208/240V to 24V	1
V1	P5046661	Gas valve, 24V AC, LPG	1
	P5046660	Gas valve, 24V AC, Nat	1

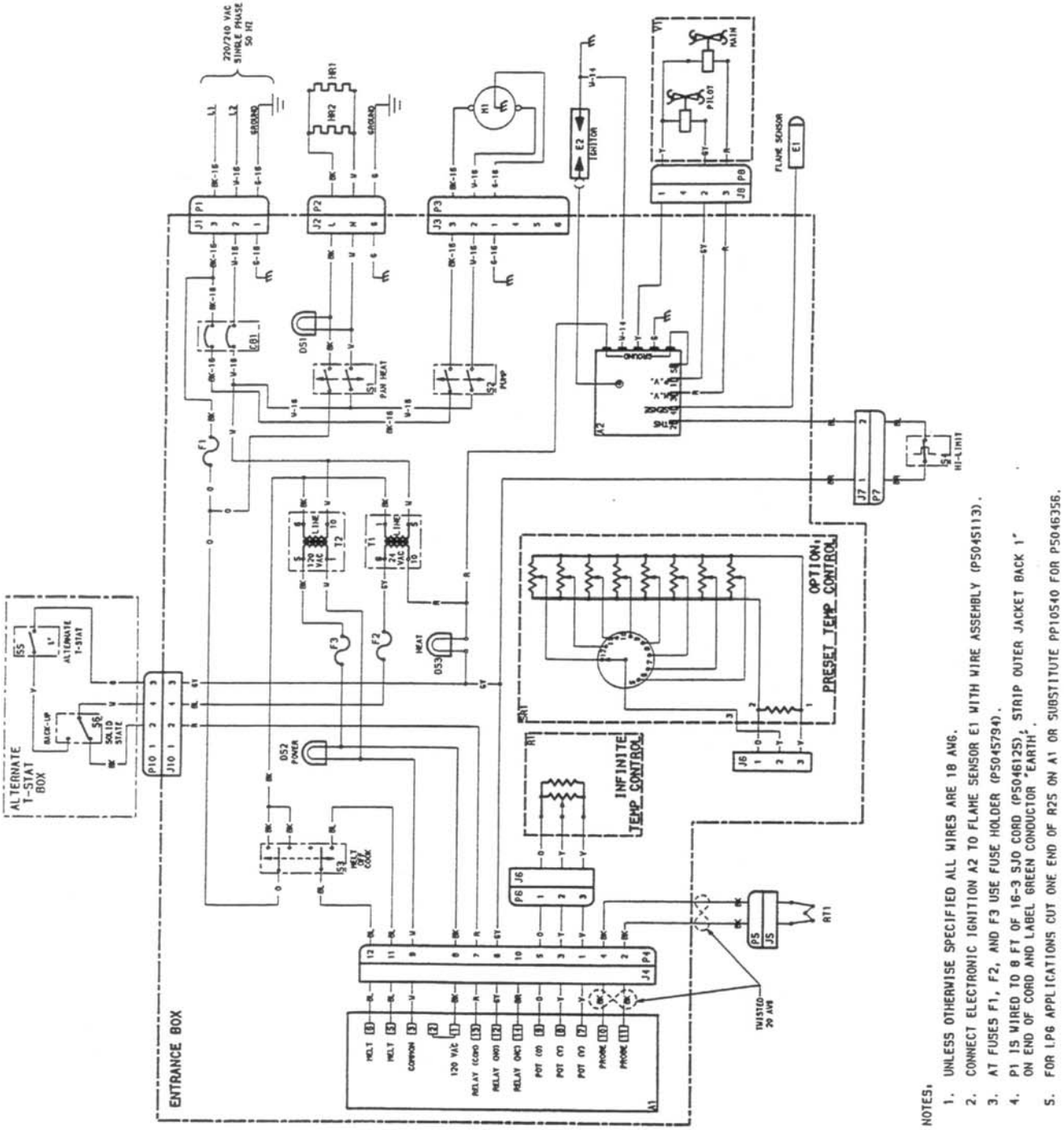


Fig. 29
Electrical schematic – fryer with electronic ignition
220/240 AC, 50Hz
(Print no. 700044)

Electrical Parts Listing for Fig. 29 – Fryer with Electronic Ignition, 220/240V AC, 50 Hz (Print Number 700044)

Code	Part No.	Description	Qty.
A1	P5046356	Temperature control, GO module	1
A2	PP10070	Electronic ignition, 24V AC, G77, LPG	1
	PP10071	Electronic ignition, 24V AC, G77, Nat	1
CB1	P5045215	Circuit breaker, toggle, DPST, 7A, 250V	1
DS1	PP10100	Lamp, 250V AC, amber, rectangular	1
DS2	PP10083	Lamp, 125V AC, white, rectangular	1
DS3	P5045044	Lamp, 28V, amber, rectangular	1
E1	P5046626	Flame probe sensor	1
E2	PP10280	Pilot sensor, electronic ignition	1
F1	P5045723	Fuse, glass, 3.2 Amp slow-blow	1
F2	PP10122	Fuse, glass, 1 Amp slow-blow	1
F3	P5045707	Fuse, glass, .25 Amp, slow blow	1
HR1, HR2	P5044786	Pan heater cartridge, 240V AC, 200W	2
J1, J6	PP10089	Connector, jack, 3 skt Molex	2
J2	PP10431	Receptacle, twist lock, 250V, L6-15R	1
J3	PP10205	Connector, jack, 6 skt Molex	1
J4	PP10209	Connector, jack, 12 skt Molex	1
J5, J7	P5045839	Connector, jack, 2 skt Molex	2
J8, J10	PP10203	Connector, jack, 4 skt Molex	2
M1	P5046382	Pump motor, 220V AC, 50 Hz, 1425 RPM	1
	P5046383	Pump motor, 240V AC, 50 Hz, 1425 RPM	1
P1, P6	PP10090	Connector, plug, 3 pin Molex	2
P2	PP10430	Plug, twist lock, 50V, L6-15P	1
P3	PP10204	Connector, plug, 6 pin Molex	1
P4	PP10208	Connector, plug, 12 pin Molex	1
P5, P7	P5045829	Connector, plug, 2 pin Molex	2
P8, P10	PP10202	Connector, plug, 4 pin Molex	2
R1	P5046582	Potentiometer, 900Ω	1
RT1	P5044876	Thermistor probe, 100KΩ	1
S1, S2	P5047166	Switch, toggle, SPDT, On-Off	2
S3	P5047165	Switch, toggle, SPDT, On-Off-On	1
S4	P5047210	Switch, high temperature limit	1
S5	P5047587	Electric thermostat switch, alternate	1
S6	P5047155	Switch, toggle, SPDT, On-On	1
SR1	P5047176	Switch, temp select, 8 position (option)	1
T1	PP10210	Transformer, 40VA, 120/208/240V to 24V	1
T2	PP10211	Transformer, 56VA, 208/240V to 120V	1
V1	P5046661	Gas valve, 24V AC, LPG	1
	P5046660	Gas valve, 24V AC, Nat	1

Troubleshooting Chart – Unit with Pilot Ignition, 120V AC, 1Ø, 60 Hz

(Print No. 700050)

Condition	Possible Cause	Remedy
Panel will not light when Melt Cycle-Off-Cook switch is set to Melt Cycle or Cook.	a. No 120V AC power to fryer.	a. Is main power cord plugged in?
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it trip?
	c. Fuse (F1) is open.	c. Replace fuse. Why did it open?
	d. Defective bulb.	d. Test and replace if necessary.
	e. Defective Melt Cycle-Off-Cook switch (S3).	e. Test and replace if necessary.
No heat from main burners, Power On light is on. Pilot is burning and Heating light is on.	a. Pilot thermopile not hot enough to generate required millivoltage.	a. Hold Unitrol knob (in "PILOT" position) depressed for one minute or longer. Make sure all air has been purged from gas line.
	b. Loose wire connection in millivoltage circuit.	b. Check all wire connections.
	c. Thermopile producing insufficient millivoltage.	c. Check voltage with millivoltmeter, holding pilot flame on manually as in Step 1 above. The reading should be 400mV ±50mV.
	d. Pilot flame too small.	d. Check millivoltage as above. Increase size of flame with Unitrol pilot adjusting screw.
	e. Pilot flame burning yellow.	e. Remove and clean pilot and thermopile. Decrease size of flame with Unitrol pilot adjusting screw.
	f. Draft may be pulling flame off thermopile.	f. Eliminate the draft.

Troubleshooting Chart –
Unit with Pilot Ignition, 120V AC, 1Ø, 60 Hz
Continued

Condition	Possible Cause	Remedy
	g. Unitrol is faulty.	g. When temperature control is calling for heat, check for 120V AC across gray wire and yellow wire at J7. If Unitrol does not react, replace it.
Filter pump not running with pump switch on.	a. No 120V AC power supply.	a. Connect plug (P6) or turn on 120V AC.
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it open?
	c. Defective pump switch (S2).	c. Check switch, and replace if necessary.
	d. Defective pump motor (M1).	d. If motor is getting 120V AC and does not run, replace it.
Filter pump runs, but pumps very slowly. Four to five minutes to fill tank.	a. Intake hose leaking.	a. If a lot of air bubbles are showing in returning oil, change hose.
	b. Bad pump.	b. If no air bubbles are showing and pumping action is very slow, replace the pump.
Heaters in filter pan will not heat. Pan Heat light is <u>not</u> on when Heaters On-Off switch (S1) is on.	a. No 120V AC power to fryer.	a. Connect plug (P9) or turn on 120V AC.
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it trip?
	c. Defective pan heat switch (S1).	c. Replace if defective.
Heaters in filter pan will not heat. Pan Heat light <u>is</u> on when Heaters On-Off switch (S1) is on.	a. Defective pan heater heating element cartridge.	a. Test as described in text.

Troubleshooting Chart – Unit with Pilot Ignition, 220/240V AC, 1Ø, 50 Hz

(Print No. 700049)

Condition	Possible Cause	Remedy
Panel will not light when Melt Cycle-Off-Cook switch is set to Melt Cycle or Cook.	a. No 220/240V AC power to fryer.	a. Is main power cord plugged in?
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it trip?
	c. Fuse (F1) is open.	c. Replace fuse. Why did it open?
	d. Defective bulb.	d. Test and replace if necessary.
	e. Defective Melt Cycle-Off-Cook switch (S3).	e. Test and replace if necessary.
	f. Defective transformer (T2).	f. Test transformer. See text.
No heat from main burners. Power On light is on. Pilot is burning and Heating light is <u>on</u>	a. Pilot thermopile not hot enough to generate required millivoltage.	a. Hold Unitrol knob (in "PILOT" position) depressed for one minute or longer. Make sure all air has been purged from gas line.
	b. Loose wire connection in millivoltage circuit.	b. Check all wire connections.
	c. Thermopile producing insufficient millivoltage.	c. Check voltage with millivoltmeter, holding pilot flame on manually as in Step 1 above. The reading should be 400mV ±50mV.
	d. Pilot flame too small.	d. Check millivoltage as above. Increase size of flame with Unitrol pilot adjusting screw.
	e. Pilot flame burning yellow.	e. Remove and clean pilot and thermopile. Decrease size of flame with Unitrol pilot adjusting screw.
	f. Draft may be pulling flame off thermopile.	f. Eliminate the draft.

Troubleshooting Chart –
Unit with Pilot Ignition, 220/240V AC, 1Ø, 50 Hz
Continued

Condition	Possible Cause	Remedy
	g. Unitrol is faulty.	g. When temperature control is calling for heat, check for 120V AC across gray wire and yellow wire at J7. If Unitrol does not react, replace it.
Filter pump not running with pump switch on.	a. No 220/240V AC power supply.	a. Connect plug or turn on 220/240V AC.
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it open?
	c. Defective pump switch (S2).	c. Check switch, and replace if necessary.
	d. Defective pump motor (M1).	d. If motor is getting 220/240V AC and does not run, replace it.
Filter pump runs, but pumps very slowly. Four to five minutes to fill tank.	a. Intake hose leaking.	a. If a lot of air bubbles are showing in returning oil, change hose.
	b. Bad pump.	b. If no air bubbles are showing and pumping action is very slow, replace the pump.
Heaters in filter pan will not heat. Pan Heat light is <u>not</u> on when Heaters On-Off switch (S1) is on.	a. No 220/240V AC power to fryer.	a. Connect plug or turn on 220/240V AC.
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it trip?
	c. Defective pan heat switch (S2).	c. Replace if defective.
Heaters in filter pan will not heat. Pan Heat light <u>is</u> on when Heaters On-Off switch (S1) is on.	a. Defective pan heater heating element cartridge.	a. Test as described in text.

Troubleshooting Chart –
Unit with Electronic Ignition, 120V AC, 1Ø, 60 Hz
(Print No. 700045)

Condition	Possible Cause	Remedy
Panel will not light when Melt Cycle-Off-Cook switch is set to Melt Cycle or Cook.	a. No 120V AC power to fryer.	a. Is 120V AC power cord plugged in?
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it trip?
	c. Fuse (F1) is open.	c. Replace fuse. Why did it open?
	d. Defective bulb.	d. Test and replace if necessary.
	e. Transformer (T1) is defective.	e. Check transformer for open-circuit or short. See text. Replace if defective.
	f. Defective Melt Cycle-Off-Cook switch (S3).	f. Test and replace if necessary.
No pilot and no heat from main burners. Power On light is on, but Heating light is off.	a. High limit switch (S4) is open or faulty.	a. Check switch, replace if necessary.
	b. Faulty transformer (T1).	b. Test as described in text.
	c. Faulty temp control module (A1).	c. Should be producing 24V AC across terminals 12 and 13.
No pilot and no heat from main burners. Power On light is on and Heating light is on.	a. High temp limit switch (S4) is open.	a. Press red button to reset. If it won't reset, replace it.
	b. Spark igniter cable (orange) not connected to ignition module (A2).	b. Turn off the fryer and securely reconnect the cable to A2.
	c. Spark igniter cable is defective.	c. Replace if igniter cable is cracked, burned, or has damaged insulation.
	d. Cracked ceramic on igniter.	d. Change pilot burner.
	e. Incorrect spark gap.	e. Gap should be .01 inch (25 mm). Igniter should be positioned in gas stream. If not possible, replace pilot burner.

Troubleshooting Chart –
Unit with Electronic Ignition, 120V AC, 1Ø, 60 Hz
Continued

Condition	Possible Cause	Remedy
	f. Faulty pilot valve (V1).	f. If 24V AC is reaching pilot valve (grey wire), but pilot does not light, replace valve assembly.
	g. Faulty ignition module (A2).	g. When A2 should be lighting the pilot, check for 24V AC across terminals 2 and 5. If A2 has this input, but does not produce an output across 1 and 5, replace A2.
Power On light is on and Heating light is on. Pilot is present but main burners do not come on.	a. Flame probe sensor (E1) is not connected.	a. Re-attach wire and check.
	b. Ceramic on flame probe sensor (E1) is cracked.	b. Replace probe.
	c. Flame probe sensor (E1) is grounded.	c. Un-ground flame probe sensor.
	d. Incorrect output from flame probe sensor.	d. Check flame probe sensor output. See text.
	e. Gas pressure too low.	e. Check and correct.
	f. Incorrect size orifice in pilot.	f. Check and correct.
Filter pump not running with pump switch on	a. No 120V AC power supply.	a. Connect plug (P9) or turn on 120V AC.
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it open?
	c. Defective pump switch (S2).	c. Check switch, and replace if necessary.
	d. Defective pump motor (M1).	d. If motor is getting 120V AC and does not run, replace it.

Troubleshooting Chart –
Unit with Electronic Ignition, 120V AC, 1Ø, 60 Hz
Continued

Condition	Possible Cause	Remedy
Filter pump runs, but pumps very slowly. Four to five minutes to fill tank.	a. Intake hose leaking.	a. If a lot of air bubbles are showing in returning oil, change hose.
	b. Bad pump.	b. If no air bubbles are showing and pumping action is very slow, replace the pump.
Heaters in filter pan will not heat. Pan Heat light is on when Heaters On-Off switch (S1) is on.	a. Defective pan heater heating element cartridge.	a. Test as described in text.

Troubleshooting Chart –
Unit with Electronic Ignition, 220/240V AC, 1Ø, 50 Hz
(Print No. 700044)

Condition	Possible Cause	Remedy
Panel will not light when Melt Cycle-Off-Cook switch is set to Melt Cycle or Cook.	a. No 220/240V AC power to fryer.	a. Is 220/240V AC power cord connected?
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Whey did it trip?
	c. Fuse (F1) is open.	c. Replace fuse. Why did it open?
	d. Defective bulb.	d. Check and replace if necessary.
	e. 120V AC transformer (T2) is defective.	e. Check transformer for open-circuit or short. See text. Replace if defective.
	f. Defective Melt Cycle-Off-Cook switch (S3).	f. Test and replace if necessary.
No pilot and no heat from main burners. Power On light is on, but Heating light is off.	a. High limit switch (S4) is open or faulty.	a. Check switch, replace if necessary.
	b. Faulty transformer (T1).	b. Test as described in text.

Troubleshooting Chart –
Unit with Electronic Ignition, 220/240V AC, 1Ø, 50 Hz
Continued

Condition	Possible Cause	Remedy
	b. Faulty temp control module (A1).	b. Should be producing 24V AC across terminals 12 and 13.
No pilot and no heat from main burners. Power On light is on and Heating light is on.	a. High temp limit switch (S4) is open.	a. Press red button to reset. If it won't reset, replace it.
	b. Spark igniter cable (orange) not connected to ignition module (A2).	b. Turn off the fryer and securely reconnect the cable to A2.
	c. Spark igniter cable is defective.	c. Replace if igniter cable is cracked, burned, or has damaged insulation.
	d. Cracked ceramic on igniter.	d. Change pilot burner.
	e. Incorrect spark gap.	e. Gap should be .01 inch (25 mm). Igniter should be positioned in gas stream. If not possible, replace pilot burner.
	f. Faulty pilot valve (V1).	f. If 24V AC is reaching pilot valve (grey wire), but pilot does not light, replace valve assembly.
	g. Faulty ignition module (A2).	g. When A2 should be lighting the pilot, check for 24V AC across terminals 2 and 5. If A2 has this input, but does not produce an output across 1 and 5, replace A2.
Power On light is on and Heating light is on. Pilot is present but main burners do not come on.	a. Flame probe sensor (E1) is not connected.	a. Re-attach wire and check.
	b. Ceramic on flame probe sensor (E1) is cracked.	b. Replace probe.

Troubleshooting Chart –
Unit with Electronic Ignition, 220/240V AC, 1Ø, 50 Hz
Continued

Condition	Possible Cause	Remedy
	c. Flame probe sensor (E1) is grounded.	c. Un-ground flame probe sensor.
	d. Incorrect output from flame probe sensor.	d. Check flame probe sensor output. See text.
	e. Gas pressure too low.	e. Check and correct.
	f. Incorrect size orifice in pilot.	f. Check and correct.
No heating by main burners when thermostat is set above oil temp (calling for heat). Power On light is on, Heating light is off.	a. Defective thermistor probe (RT1).	a. Check as described in text. Replace if necessary.
	b. Defective temp set control pot (R1) or preset temp control (SR1).	b. Check as described in text. Replace if necessary.
	c. Defective temp control (A1).	c. Check as described in text. Replace if necessary.
	d. Open fuse (F2).	d. Replace fuse. Why did it open?
Filter pump not running with pump switch on.	a. No 220/240V AC power supply.	a. Connect 220/240V AC.
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it open?
	c. Defective pump switch (S2).	c. Check switch, and replace if necessary.
	d. Defective pump motor (M1).	d. If motor is getting 220/240V AC and does not run, replace it.
Filter pump runs, but pumps very slowly. Four to five minutes to fill tank.	a. Intake hose leaking.	a. If a lot of air bubbles are showing in returning oil, change hose.
	b. Bad pump.	b. If no air bubbles are showing and pumping action is very slow, replace the pump.

Troubleshooting Chart –
Unit with Electronic Ignition, 220/240V AC, 1Ø, 50 Hz
Continued

Condition	Possible Cause	Remedy
Heaters in filter pan will not heat. Pan Heat light is not on when Heaters On-Off switch (S1) is on.	a. No 220/240V AC power to fryer.	a. Connect 220/240V AC.
	b. Circuit breaker (CB1) is open.	b. Reset breaker. Why did it trip?
	c. Defective pan heat switch (S2).	c. Replace if defective.
Heaters in filter pan will not heat. Pan Heat light is on when Heaters On-Off switch (S1) is on.	a. Defective pan heater heating element cartridge.	a. Test as described in text.

Checking the Solid State Thermostat Calibration

1. To check the calibration, start by filling the fry kettle. See the instructions in the section on "Filling the Fry Kettle."
2. Use a thermometer which is designed to measure the temperature of hot (500°F) shortening. Lower the tip of the thermometer into the shortening.
3. Light the pilot and main burners. See the "Operating Instructions."
4. Set the temperature control for 325°F (163°C). Wait until the burners shut off.

Warning! Watch the thermometer closely. If the shortening reaches 350°F, and the main burners do not go out, turn the thermostat control knob to a lower setting. Keep turning the control knob down until the burners go out.

5. Let the shortening cool. Allow the fryer to cycle four to six times, and check the thermometer. The temperature shown on the thermometer when the burners come on should match the setting on the thermostat control knob. If the two temperatures do match, the thermostat is calibrated correctly. If the temperatures are more than five degrees different, you should recalibrate the thermostat.
6. To recalibrate, loosen the set screw which holds the thermostat knob in position on the shaft. Turn the knob until the setting on the knob matches the actual reading from the thermometer. Be careful not to turn the shaft as you do this. When the setting is correct, re-tighten the set screw.
7. Allow the fryer to cycle two or three more times, and re-check the calibration.

Checking the Auxiliary Thermostat Calibration

1. The auxiliary thermostat offers a continuous range of settings. You can change the calibration.

   To check the calibration, start by filling the fry kettle. See the instructions in the section on "Filling the Fry Kettle." Do not replace the tube screen.
2. Use a thermometer which is designed to measure the temperature of hot (500°F) shortening. Lower the tip of the thermometer into the shortening.
3. Light the pilot and the main burners. See the "Operating Instructions."
4. Set the thermostat control knob to 325°F (162°C). Wait until the burners shut off.

Warning! Watch the thermometer closely. If the shortening reaches 350 degrees F. (177°C) and the main burners do not go out, turn the thermostat control knob to a lower setting. Keep turning the control knob down until the burners go out.

5. Let the shortening cool. Allow the fryer to cycle 4 to 6 times, and check the thermometer. The temperature shown on the thermometer when the burners come on should match the setting on the thermostat control knob. If the two temperatures do match, the thermostat is calibrated correctly. If the temperatures are more than five degrees different, you should re-calibrate the thermostat.
6. Using a thin screwdriver with a 1/8-inch-wide blade, loosen the two set screws in the thermostat knob and without turning the thermostat shaft, turn the knob until

the knob pointer points to the temperature indicated by the thermometer when the burners first come on.

7. Firmly retighten the set screws in the knob.
8. Recheck the calibration as instructed earlier in this section. The thermostat setting and the actual thermometer reading should be the same.

Testing a Transformer (T1 or T2)

Check the voltage input and output on the transformer when the fryer is turned on. If your unit has transformer T1, when there is 120V AC at the input, you should see 24V AC at the output. If the unit has transformer T2, when there is 220/240V AC at the input, you should see 120V AC at the output. If do not see the correct output, replace the transformer. You can also use an Ohmmeter to check for continuity through the transformer coils. Be sure neither of the coils is shorted to the frame of the transformer.

Testing the Temperature Control Module (A1)

The output from the temperature control module is found on terminal 12. The following table shows the output you should see here when the module is calling for heat. To be sure the module is calling for heat, turn up the temperature control pot. Be sure the Melt Cycle-Off-Cook switch is set to Cook, the temperature control (R1 or SR1) is OK, and thermistor (RT1) is connected. If the module does not produce an output on terminal 12, replace the module.

Type of Fryer	Output from Terminal 12
Pilot ignition, 120V AC	120V AC
Pilot ignition, 220/240V AC	120V AC
Electronic ignition, 120V AC	24V AC
Electronic ignition, 220/240V AC	24V AC

Testing the Spark Igniter

The igniter uses high voltage sparks to ignite the gas at the pilot burner. The igniter is a bit like the spark plug in a car. The high voltage must be able to reach the igniter. This means the insulation on the high voltage cable (orange) must be in good condition. The ceramic area around the igniter tip must be undamaged. The tip of the igniter must reach into the gas stream.

The spark gap at the igniter tip should be 0.1 inches (2.5 mm). If you cannot correct the spark gap, or if the igniter tip is damaged, replace the part.

Testing the Ignition Control Module (A2)

The ignition control module is active when it receives 24V AC from terminal 12 (gray wire) on the temperature controller (A1). When the temperature control is turned up, the temperature controller calls for heat, and turns on the ignition controller. The ignition controller first produces a 24V AC output on terminal 1 (gray wire). This opens the pilot valve. At the same time, the ignition controller produces a high-voltage spark for the igniter (E2). The spark ignites the pilot flame. The flame probe (E1) extends into this flame, and is used to sense whether the pilot is burning. When the pilot is burning, the heat from the pilot flame produces a current from the flame probe. When the ignition controller senses this current, it produces a 24V AC output on terminal 3 (red wire). This opens the valve for the main burners.

Testing the Gas Valves (V1) – Fryers with Electronic Ignition Only

The system includes two valves – one for the pilot burner, and a second for the main burners. These valves operate on 24V AC. If a valve is receiving 24V AC and is not operating, replace the valve. To check for 24V AC to the valve for the pilot burner, test across terminal 1 of the ignition controller (P.V.) and ground. To check for 24V AC to the valve for the main burners, test across terminal 3 of the ignition controller (M.V.) and ground. You can also use an ohmmeter to check for continuity through the coil on each valve. Be sure the coil is not shorted to ground.

Testing the Flame Probe (E1) – Fryers with Electronic Ignition Only

The flame probe produces a small current when it is heated. The ignition controller (A2) uses this current to tell when the pilot flame is burning. To test the flame probe, disconnect it from terminal 4 on the ignition controller. Connect a DC microammeter between the flame probe and terminal 4 on the ignition controller. Be sure the test leads are connected with the correct polarity.

When only the pilot is burning, the flame probe should produce a current of 0.2 micro-amps or more. If the output is less than this, check the gas pressure. If gas pressure is OK, replace the flame probe. If the output is more than this, but the main burners do not light, the ignition controller (A2) may be bad.

Testing the Thermistor (RT1)

A "thermistor" is a special kind of resistor. The resistance of this part goes down as it is heated. The table below shows the correct resistances at different temperatures. If the thermistor shows an open circuit, or if it shows the wrong resistances at these temperatures, replace it.

°F Temp	°C Temp	Resistance
72°F	22°C	100KΩ
350°F	176°C	923.8Ω
375°F	190°C	696.3Ω

Testing the Temperature Control Pot (R1)

The type of temperature control pot used on this fryer has a continuously-variable ("infinite") control (R1).

To check the pot, take resistance readings on plug P6. Check the resistance from terminal 3 (violet wire) to terminal 2 (yellow wire), and from terminal 1 (orange wire) to terminal 2 (yellow wire). As you turn the control back and forth, the resistance on each side of the pot should range between 0Ω and 900Ω.

Testing the High Limit Switch (S4)

The switch should open when the oil in the fry kettle reaches 450°F (±15°F).

Testing the Filter Pan Heaters (HR1, HR2)

Check the resistance through these heating elements. You should see a resistance of 72Ω in each element.

Service Help

For service, assistance or explanation of any procedure described in this manual, contact your dealer, your local service company, the factory representative in your area, or the factory.

Parts Listing

Figure 30 – Parts Listing for Fryers with Standing Pilot Ignition

Key No.	Part Description	Part No.
1	Cruller submerger handle	B4507001
2	Cruller submerger screen	B4506824
3	Flue pipe	B3500801
4	Pilot orifice – LP gas	P6071665
	Pilot orifice – natural gas	P6071666
5	Pilot burner – LP gas	P6071449
	Pilot burner – natural gas	P6071450
6	Ferrule pilot tube	PP10591
7	Fat container - cold-rolled steel	B3300501
	Fat container – stainless steel	B3300502
8	Back splash – cold-rolled steel	B4100203
	Back splash – stainless steel	B4100204
9	Submerger catch – cold-rolled steel	A4510901
	Submerger catch – stainless steel	A4510902
10	Catch, secondary	A4103202
11	Drainboard – cold-rolled steel	B2400303
	Drainboard – stainless steel	B2400304
12/13	Hinge rod and bracket – cold-rolled steel	B2400203
	Hinge rod and bracket – plated	B2400203-1
14	Thermostat box bracket	A4305901
15	High limit switch	PP10084
16	High limit switch bracket	A1815501
17	Drain valve	P6071785
18	Back-up thermostat	P5047587

Figure 30 – Parts Listing for Fryers with Standing Pilot Ignition (continued)

Key No.	Part Description	Part No.
19	Clevis pin	P0190145
20	Drain valve adapter	A4012101
21	Cabinet standoff bracket	A1815601
22	Cabinet back	A1612501
23	Legs, set 6"	B3900701
	Leg, per 6"	B3900101
	Casters, set 6"	B390081
	Caster, per 6"	PP10010
24	Burner fitting	P6071997
25	Pilot tube	A7506101
26	Main burners	P6071050
27	Handle support bracket	A4011101
28	Drain valve handle	B4000801
29	Left door	B7220107
30	Right door	B7220125
31	Main burner manifold	B7555001
32	Control box – 120V, LP gas	B2901601
	Control box – 120V, natural gas	B2901601
	Control box – 240V, LP gas	B2901602
	Control box – 240V, natural gas	B2901602
33	Name plate	P6074991
34	Gas valve – LP gas	P5045652
	Gas valve – natural gas	P5045650

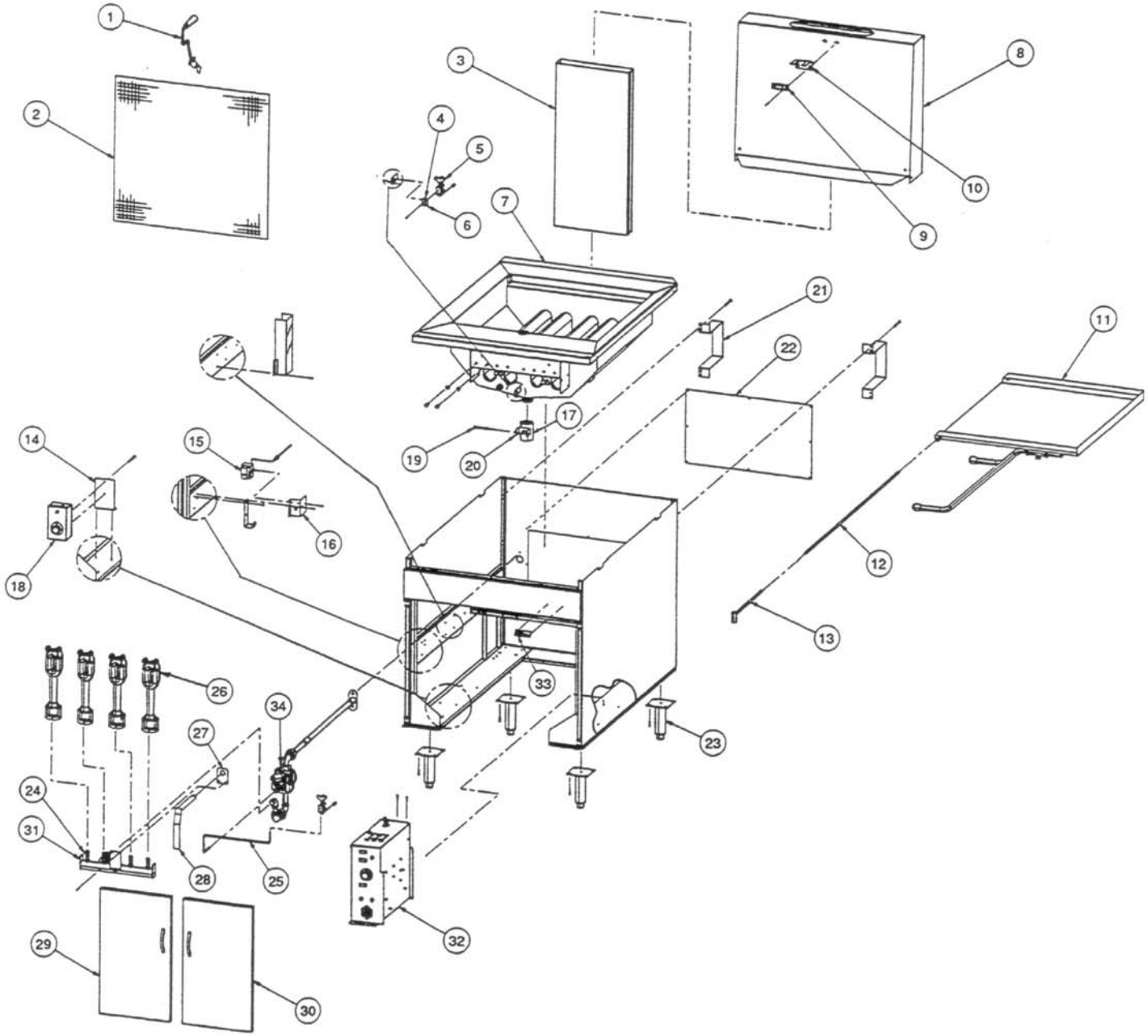


Fig. 30
Parts Illustration – Fryer with standing pilot ignition

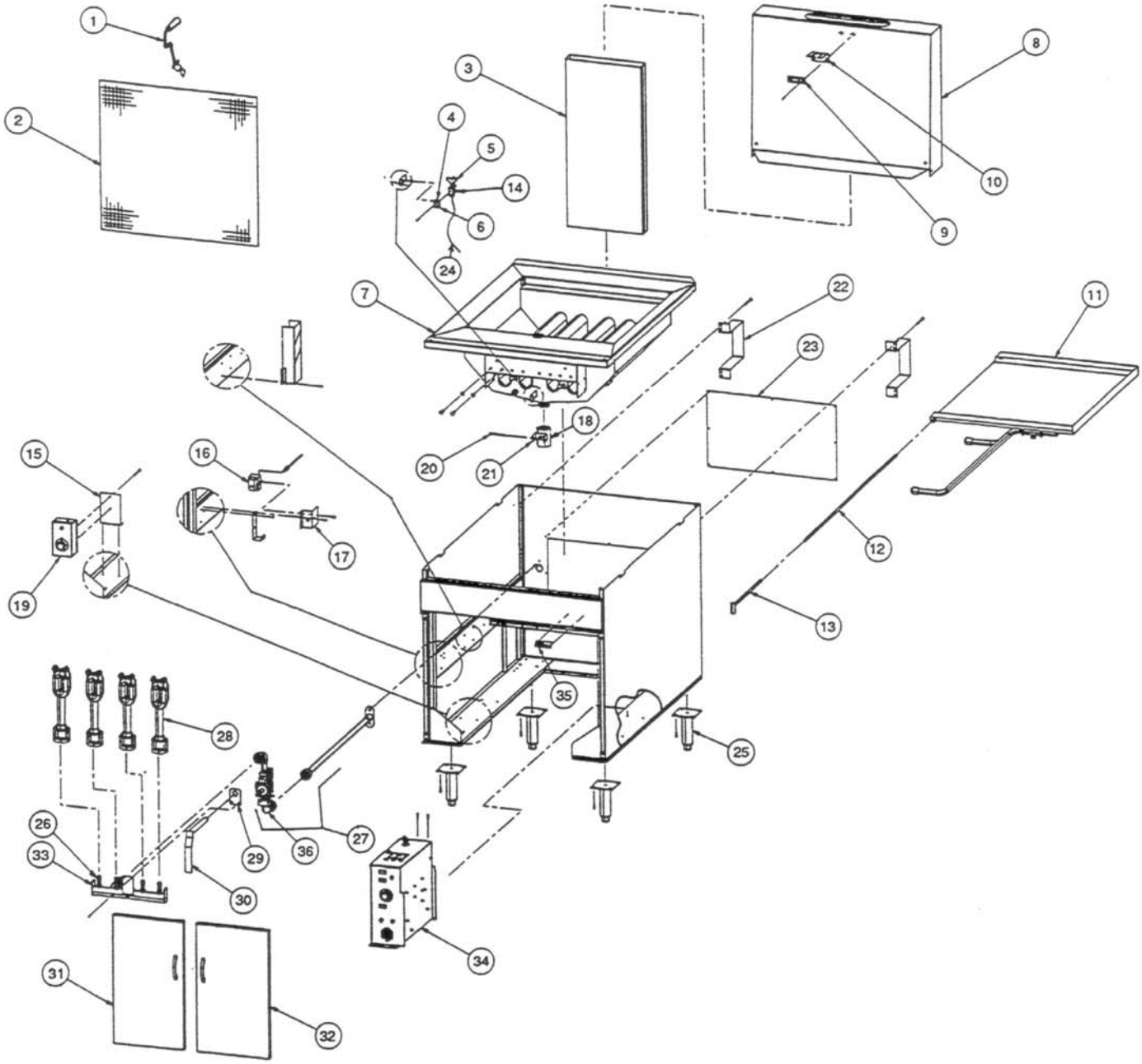


Fig. 31
Parts Illustration – Fryer with electronic ignition

Figure 31 – Parts Listing for Fryers with Electronic Ignition

Key No.	Part Description	Part No.
1	Cruller submerger handle	B4507001
2	Cruller submerger screen	B4506824
3	Flue pipe	B3500801
4	Pilot orifice – LP gas	P6071332
	Pilot orifice – natural gas	P6071331
5	Pilot burner – less orifice	PP10280
6	Ferrule pilot tube	PP10591
7	Fat container – cold-rolled steel	B3300501
	Fat container – stainless steel	B3300502
8	Back splash – cold-rolled steel	B4100203
	Back splash – stainless steel	B4100204
9	Submerger catch – cold-rolled steel	A4510901
	Submerger catch – stainless steel	A4510902
10	Catch, secondary	A4103202
11	Drainboard – cold-rolled steel	B2400303
	Drainboard – stainless steel	B2400304
12/13	Hinge rod and bracket – cold-rolled steel	B2400203
	Hinge rod and bracket – plated	B2400203-1
14	Flame sensor	P5046626
15	Thermostat box bracket	A4305901
16	High limit switch	PP10084
17	High limit switch bracket	A1815501
18	Drain valve	P6071785
19	Back-up thermostat	P5047587
20	Clevis pin	P0190145
21	Drain valve adapter	A4012101

Figure 31 – Parts Listing for Fryers with Electronic Ignition (continued)

Key No.	Part Description	Part No.
22	Cabinet standoff bracket	A1815601
23	Cabinet back	A1612501
24	Flame sensor wire	P5045113
25	Legs, set 6"	B3900701
	Leg, per 6"	B3900101
	Casters, set 6"	B3900801
	Caster, per 6"	PP10010
26	Burner fitting	P6071997
27	Pilot tube	A7578301
28	Main burners	P6071050
29	Handle support bracket	A4011101
30	Drain valve handle	B4000801
31	Left door	B7220107
32	Right door	B7220125
33	Main burner manifold	B7555001
34	Control box – 120V, LP gas	B2901703
	Control box – 120V, natural gas	B2901701
	Control box – 240V, LP gas	B2901704
	Control box – 240V, natural gas	B2901702
35	Name plate	P6074991
36	Gas valve – LP gas	P5046661
	Gas valve – natural gas	P5046660

In the event of problems with or questions about your order, please contact the Pitco Frialator factory, from 8:00 a.m. - 5:00 p.m., Eastern Standard Time, Monday through Friday, toll-free at:

1/800/258-3708.

In the event of problems with or questions about the equipment, please contact your local ASAP (Authorized Service and Parts) representative through the ASAP network number: 1/800/298-1862.