Pitco Frialator®

There's Always Something Cooking!

Installation, Operation, and Maintenance Manual

For McDonald's Gas Fryer

Counter Top Models
12MCD

DESIGN CERTIFIED AMERICAN GAS ASSOCIATION

NSF

APPROVED

NOTICES

There are three different types of notices that you should be familiar with, a NOTICE, CAUTION, and WARNING. A NOTICE is a special note used to call attention to a particularly important point. CAUTION is used to point out a procedure or operation which may cause equipment damage. The WARNING notice is the most important of the three because it warns of an operation that may cause personal injury. Please familiarize yourself with your new cooker before operating it and heed the notices throughout this manual. The WARNINGS are listed below and on the following page for your review prior to operating the unit.

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, operating and maintenance thoroughly before installing or servicing this equipment

TO THE PURCHASER

POST IN A PROMINENT LOCATION INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THAT AN OPERATOR SMELLS GAS. OBTAIN THIS INFORMATION FROM YOUR LOCAL GAS SUPPLIER.

THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE

There is an open flame inside the fryer. The unit may get hot enough to set near by materials on fire. Keep the area around the fryer free from combustibles.

DO NOT supply the fryer with a gas that is not indicated on the data plate. If you need to convert the fryer to another type of fuel, contact your dealer.

DO NOT use an open flame to check for gas leaks!

Wait 5 minutes before attempting to relight the pilot to allow for any gas in the fryer to dissipate.

Never melt blocks of shortening on top of the burner tubes. This will cause a fire, and void your warranty.

Water and shortening DO NOT mix. Keep liquids away from hot shortening. Dropping liquid frozen food into the hot shortening will cause violent boiling.

At operating temperature the shortening temperature will be greater than 300°F. Extreme care should be exercise when working with hot shortening to avoid personnel injury.

Ensure that the fryer can get enough air to keep the flame burning correctly. If the flame is starved for air it can give off a dangerous carbon monoxide gas. Carbon Monoxide is a clear odorless gas that can cause suffocation.

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Chapter 1: General Information and Installation

The frying system you have selected for your establishment has been designed by Pitco Frialator to meet the requirements of the McDonald's organization. This unit will give you many years of reliable service if you follow the simple operation and maintenance procedures in this manual. This manual contains the general installation, operation, and maintenance procedures for the McDonald's counter top models.

1.1 INTRODUCTION

All models come standard with manual pilot light systems and built in safety devices. To find out which model you have. look at the identification plate inside the door. This plate has a lot of useful information, but to identify which fryer you have, look at the model number block. The model number identifies which fryer and what features you have.

Table 1-1 Fryer Specifications

Specification Description	Domestic Units (USA)	International Units (Metric)
Hourly Gas Input	65,000 BTUs	16,380 KCal
Number of Heat Tubes	3	3
Hourly French Fry Production	45 Lbs.	20.4 Kgs.
Minimum Fat Capacity	30 Lbs.	13.61 Kgs.
Frying Area	12" x 12"	30.5x30.5cm
Frying Depth	3-5/8"	9.2cm
Drain Valve Size	1" NPT	2.54 cm
Shipping Weight	114 Lbs.	52.7 Kgs.
Gas Connection Size	1/2"	1.27cm

1.2 CHECKING YOUR NEW FRYER

Your new fryer has been carefully packed. Every effort has been made to ensure that your fryer will be delivered to you in perfect condition. As you unpack your new fryer, inspect each of the pieces for damage. If something is damaged, DO NOT sign the bill of lading. Contact the shipper immediately, the shipper is only responsible for 15 days after delivery. Check the packing list enclosed with your fryer to ensure that you have received all of the parts to the fryer. If you are missing any parts, contact the dealer from whom the fryer was purchased.

1.2.1 Check Your Order

The crate containing the fryer unit will also contain the following:

(1) Flue Heat Deflector per fryer
(1) Fry Basket Hanger per fryer
(1) Drain Clean Out Rod
(1) Brush
(2) Pitco Cleaner Sample
(1) Drain Extension

1.2.2 Heat Deflector Installation

If the fryer requires a heat deflector, you will find a removable label at the rear top edge of the unit. This label has instructions for positioning and installation of the heat deflector. Refer to the label and the instructions below to install the deflector.

a. Remove the two self-drilling screws from the top, back area of the cooker.

b. Position the heat deflector so that the angled portion of the deflector is facing toward the front of the fryer. Secure the heat deflector to the back of the unit using the sheet metal screws previously removed.

WARNING

DO NOT obstruct the flow of combustion/ventilation or air openings around the fryer as this may cause the build up of dangerous gases. Adequate clearance around the fryer is necessary for servicing and proper burner operation. Ensure that you meet the minimum clearances specified in the installation instructions.

c. When properly installed the angled section of the heat deflector will extend over the flue opening to redirect the heat. It SHOULD NOT cover the flue opening. Nothing should block the flue opening as this will cause the fryer to overheat and produce dangerous gases.

1.3 INSTALLATION

WARNING

The fryer must be secured to the counter top to prevent movement. Accidental movement of the fryer during operation may cause oil to splash out of the fryer. Hot oil **WILL** cause severe bums.

Although it is possible for you to install and set up your new fryer, it is STRONGLY recommended that you have it done by qualified professionals. The professionals that install your new fryer will know the local building codes and ensure that your installation is safe.

1.3.1 Installation Clearances

The fryer needs clearance around it for proper operation. Adequate clearances allow for servicing and proper burner operation. The clearances shown below are for cooker installation in combustible and non-combustible construction.

	Combustible Construction	Non-Combustible Construction
Back	6"	0"
Sides	6"	0"

1.3.2 Gas Connection

Your fryer will give you peak performance when the gas supply line is of sufficient size to provide the correct gas flow. The gas line must be installed to meet the local building codes or National Fuel Gas Code (NFPA 54-1984) and ANSI Z223.1 -1988. In Canada, install the fryer in accordance with CAN-CGA 1-B 149.1, .2 and local codes. Gas line sizing requirements can be determined by your local gas company by referring to National Fuel Gas Code, Appendix C, Table C-4 (natural gas) and Table C-16 (propane). The gas line needs to be large enough to supply the necessary amount of fuel to all appliances without losing pressure to any appliance. Other factors that are used to determine the piping requirements are BTU requirements of the appliances being connected and the length of pipe between the meter and the appliances.

WARNING

NEVER supply the fryer with a gas that is not indicated on the data plate. Using the incorrect gas type will cause improper operation. If you need to convert the fryer to another type of fuel, contact your dealer.

1.3.2.1 Fuel Types - Each fryer is equipped to work with one type of fuel. The type of fuel with which the appliance is intended to operate is stamped on the data plate attached to the inside of the door.

WARNING

DO NOT use an open flame to check for gas leaks!

1.3.2.2 Fuel Supply Line Leak and Pressure Testing - The fuel supply system must be tested before the fryer is used. If the fuel line is going to be tested at a pressure greater than (>)1/2 PSIG (3.45 kPa), make sure that the fryer is disconnected from the fuel line. If the fuel line is to be tested at a pressure equal to or less than ([) 1/2 PSIG (3.45 kPa), the fryer can be connected but the unit's gas valve must be shut. Test all gas line connections for leaks with a solution of soap and water when pressure is applied.

1.3.2.3 Gas Line Connection - Connect the fryer to the gas supply line with a connector that complies with the Standard for Connectors for Movable Gas Appliances (ANSI Z21.69/ CAN-CGA-6.16).

NOTICE

NEVER use an adaptor to make a smaller gas supply line fit the cooker connection. This may not allow proper gas flow for optimum burner operation, resulting in poor cooker performance. NEVER supply the cooker with any fuel other than the type indicated on the data plate. Using the incorrect gas type will cause improper operation.

1.3.3 Ventilation and Fire Safety Systems

Your new fryer must have proper ventilation to function safely and properly. Exhaust gas temperatures can reach as high as 1200°F. Therefore, it is very important to install a fire safety system. Your ventilation system should be designed to allow for easy cleaning. Frequent cleaning of the ventilation system and the fryer will reduce the chances of fire. Table 1-2 provides a list of reference documents that provide guidance on ventilation and fire safety systems. This table is not necessarily complete. Additional information can be obtained from the American Gas Association, 8501 East Pleasant Valley Road, Cleveland, OH 44131.

Table 1 -2 Ventilation and Fire Safety References

Topic	Underwriters Laboratory Document	National Fuel Gas Code Document
Grease Extractor	ANSI/UL710-1981	ANSI/NFPA 96-1987
Ventilation Hood	ANSI/UL 705-1984	ANSI/NFPA96-1987
Filter Unit	ANSI/UL 586-1985	ANSI/NFPA 96-198 7
	ANSI/UL 900-1987	
Types of Fire Extingushers and Detection Equipment		
CO_2	ANSI/UL 154-1983	ANSI/NFPA 12-1989
Dry Chemical	ANSI/UL 299-1984	ANSI/NFPA 17-1985
Water	ANSI/UL 626-1984	ANSI/NFPA 13-1989
Foam		ANSI/NFPA 11-1988
Sprinklers	ANSI/UL 199-1982	ANSI/NFPA 13-1989 ANSI/NFPA 13-1989
Smoke Detectors	ANSI/UL 268-1981	ANSI/NFPA 72B-1986
Fire Detection Thermostats	ANSI/UL 521-1987	ANSI/NFPA 72B-1986

Excessive ventilation causes drafts, which will interfere with the proper operation of the pilot and the burner. Leave at least 18 inches of open space between the fryer's flue vent opening and the intake of the exhaust hood.

CAUTION

Ensure that your ventilation system does not cause a down draft at the fryer's flue opening. Down drafts will not allow the fryer to exhaust properly and will cause overheating which may cause permanent damage. **The Heat deflector DOES NOT stop down drafts.** Damage caused by down drafts will not be covered under equipment warranty. NEVER allow anything to obstruct the flow of combustibles or ventilation exiting from the fryer flue. DO NOT put anything on top of the flue area.

NOTICE

NEVER connect the blower directly to the flue openings. The direct flow of air will cause poor temperature recovery, poor ignition, inefficient operation of the fryer, and could extinguish the pilot.

1.4 INITIAL ADJUSTMENTS

After your fryer has been installed as described in section 1.3, it needs to be adjusted to ensure that it will perform as designed. These adjustments must be performed by a **qualified person.** To perform these adjustment the following tools will be needed:

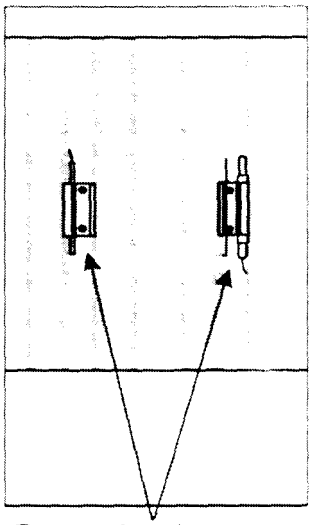
- Manometer (low pressure gage)
- Digital Thermometer (Temperature probe)
- DC Millivolt Meter

1.4.1 Visual Checks

Before you begin filling and adjusting the fryer, perform the following visual checks:

a. After the fryer is in its permanent location, check the levelness. Any additional leveling that is necessary must be performed before using the fryer

b. Check the temperature bulbs (thermostat/high-limit), located in the fryer tank to ensure that the mounting screws are tight. The figure shows the probe location. Look down inside the fryer tank to see the probes.



Ensure that these parts are not loose.

1.4.2 Burner Ignition Systems

The counter top fryer has a standing manual pilot system. Follow the procedures in this section to light and adjust the pilot system.

CAUTION

Before going any further, fill the fryer with WATER. Water is used for the installation adjustments because the temperature will never exceed 212°F (100°C) thereby allowing plenty of adjustment time. Never let the water level go below the MIN LEVEL mark on the rear of the tank.

WARNING

There is an open flame inside the fryer. The unit may get hot enough to set near by materials on fire. Keep the area around the fryer free from combustibles.

1.4.2.1 Lighting the Pilot Light

WARNING

Wait 5 minutes before attempting to relight the pilot to allow for any gas in the fryer to dissipate.

a. Open the gas supply valves to the fryer.

b. Open the fryer's door to gain access to the controls. Ensure that the thermostat control knob is in the OFF position.

c. Turn the Unitrol valve knob to the PILOT position and push in on the knob. Hold the knob in for approximately one minute to purge the air from the line. Hold a flame to the pilot burner until the pilot ignites. This may take a little while the first time you light the fryer because of air in the lines. Once lit, hold the knob in for approximately 60 seconds then release. The air only needs to be purged from the line the first time the pilot is lit or after the gas line has been disconnected.

d. If the pilot goes out wait 5 minutes and repeat step c. If after three tries the pilot will not remain lit, refer to the operator troubleshooting section of this manual.

e. Turn the Unitrol gas valve knob counterclockwise to the ON position.

f. Turn the fryer thermostat knob to the desired temperature.

g. The main burner will light and be controlled by the thermostat. The pilot burner will remain lit regardless of the thermostat setting.

1.4.2.2 Pilot Flame Adjustment - The pilot flame should be adjusted to produce the proper millivolt output from the pilot sensing device. There are two types of pilot sensing devices thermopile or thermocouple. Millivolt output for the thermopile should be between 300 and 500 millivolts. Figure 1-1 shows the pilot assembly with examples of the incorrect and correct pilot size. Example A illustrates a pilot flame size that is too small to produce sufficient millivolt output. Example B is the correct size for proper millivolt output.

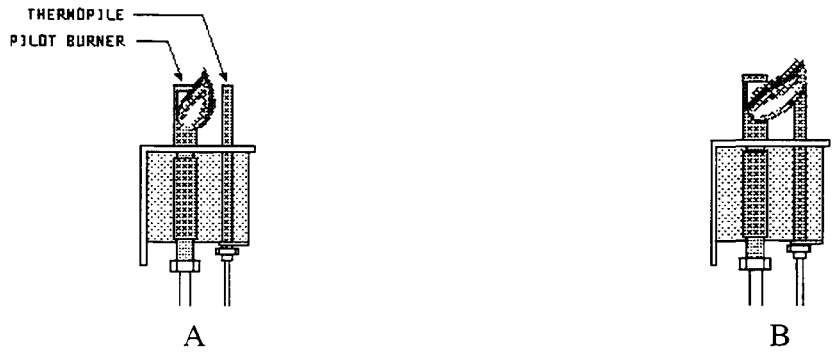


Figure 1-1 Pilot Assembly, Flame Adjustment

a. This test requires a DC millivolt meter set to a scale of 0-l000mv.

b. Locate the thermopile wires at the Hi-limit.

c. Using the positive (+) test probe, touch the probe to one of the High Limit wire terminals.

d. Connect the negative (-) test probe to pilot bracket. If the reading on the meter, when the pilot is lit, is 400 ± 50mv the pilot flame does not need adjustment. If the voltage is not correct proceed to step e.

e. Remove the pilot flame adjustment cover.

f. Turning the flame adjusting screw (figure 1-3) clockwise lowers the flame and the millivolt output. Turning the screw counterclockwise increases flame size and millivolt output.

g. Rotate the screw in the direction to achieve a reading of 400 ±50 mv for thermopiles.

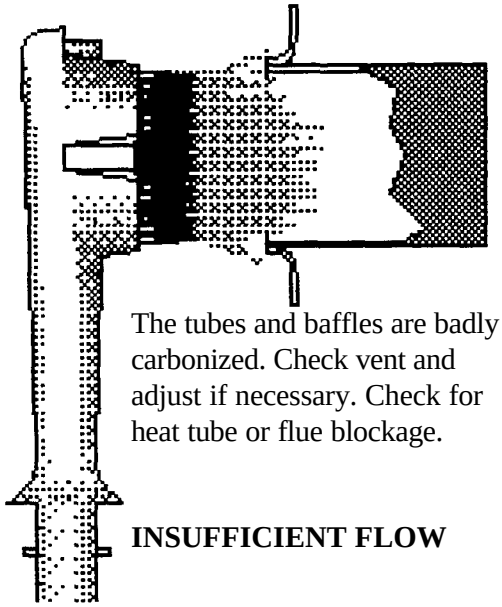
NOTICE

Allow 3 to 5 minutes between flame adjustments to allow the reading to settle.

h. Replace the pilot flame adjusting screw cover.

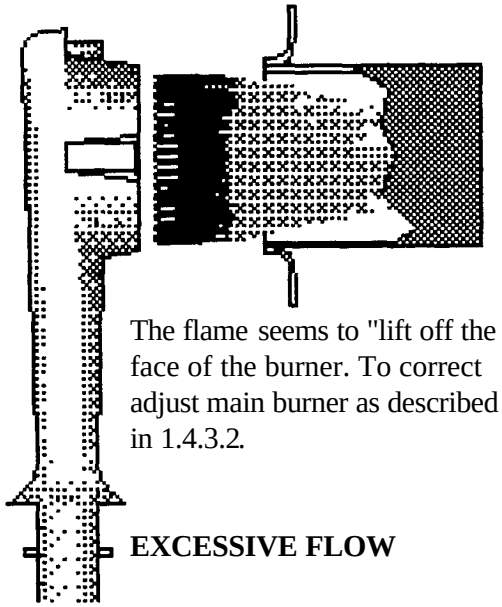
1.4.3 Main Burner System

The main burner receives gas from the main gas supply through the thermostatically controlled valve. When the thermostat is turned up the gas control valve opens. After the burner system is operating, perform the burner adjustments in the following procedure. Figure 1-2 illustrates the different conditions possible for the main burner.



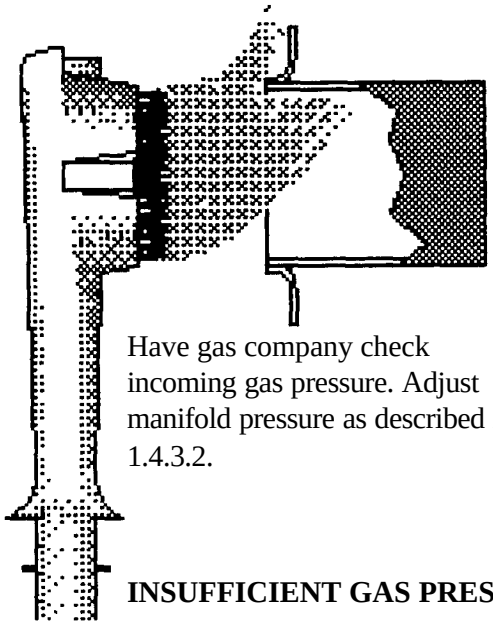
The tubes and baffles are badly carbonized. Check vent and adjust if necessary. Check for heat tube or flue blockage.

INSUFFICIENT FLOW



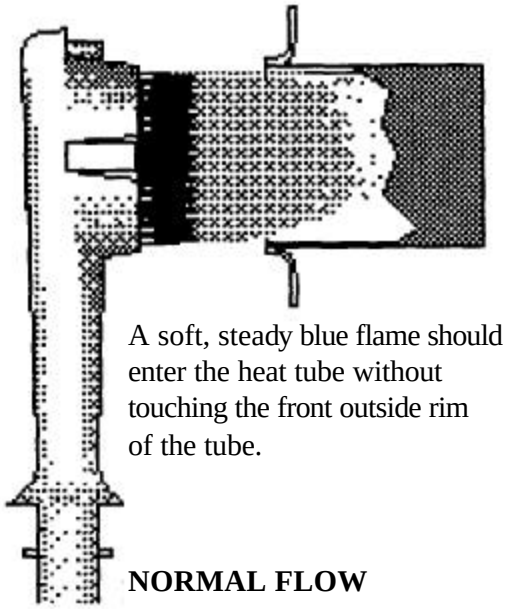
The flame seems to "lift off the face of the burner. To correct adjust main burner as described in 1.4.3.2.

EXCESSIVE FLOW



Have gas company check incoming gas pressure. Adjust manifold pressure as described in 1.4.3.2.

INSUFFICIENT GAS PRESSURE



A soft, steady blue flame should enter the heat tube without touching the front outside rim of the tube.

NORMAL FLOW

Figure 1-2 Main Burner Conditions

1.4.3.1 Gas Line Requirements - A properly installed gas supply system will deliver 5.0" - 6.0" w.c. natural gas (11.0" - 12.0" w.c. LP) to all appliances connected to the line, operating at full demand.

1.4.3.2 Burner Adjustment - The burners must be adjusted to deliver optimum flame. Adjust the burner flame using the following procedure.

a. Ensure that the main gas valve is shut off, remove the manifold pressure tap plug and connect an accurate pressure gage (range of 0-16" w.c. in 0.1" increments) or manometer.

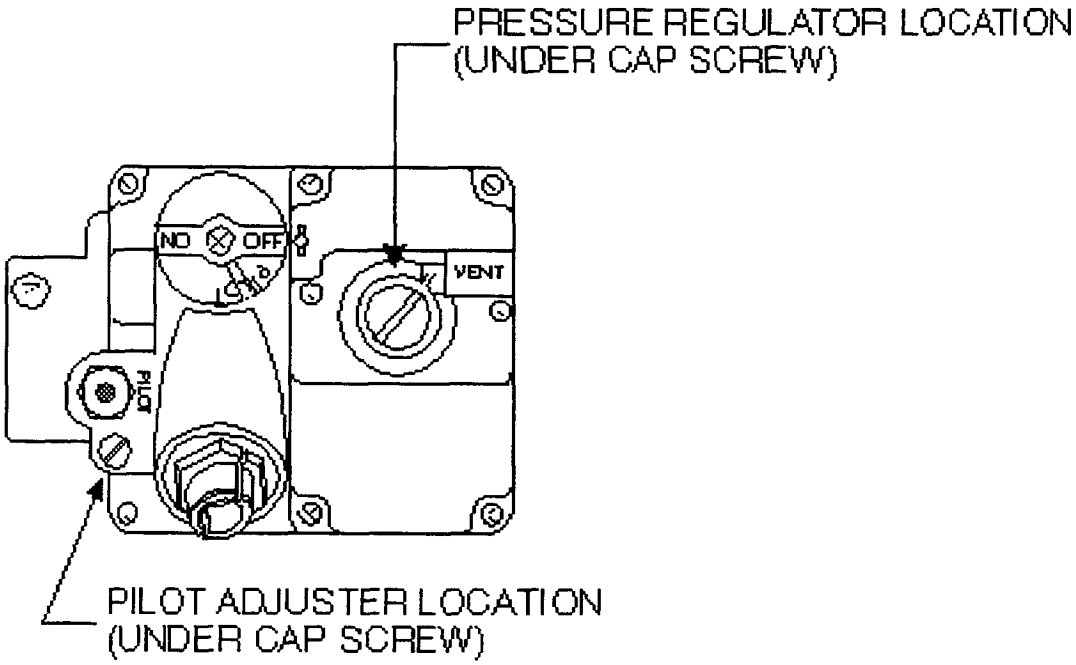


Figure 1-3 Gas Valve Showing Location of Pressure Regulator and Pilot Adjusters

b. Turn on all appliances connected to the gas supply line and light their main burners. The pressure reading of the installed pressure gage should not drop from the required installation pressure. Any loss of pressure indicates inadequate supply line installation which will cause poor performance of all appliances during peak usage.

c. The installed pressure gage reading should be the same, ±0.1", as that marked on the data plate inside the door. If the pressure is correct go to step f, if not, adjust the pressure.

d. To adjust the pressure, remove the regulator adjustment screw cover (see Figure 1-3). Use a flat tip screwdriver to adjust the screw until the proper pressure is reached. Turning the screw clockwise will increase the pressure, counterclockwise will decrease the pressure.

e. When the pressure is correct, install the regulator adjustment screw cover.

f. To remove the pressure gage, turn off fryer and shut the main gas valve. Remove the gage

and install the pressure tap plug using some pipe sealing compound.

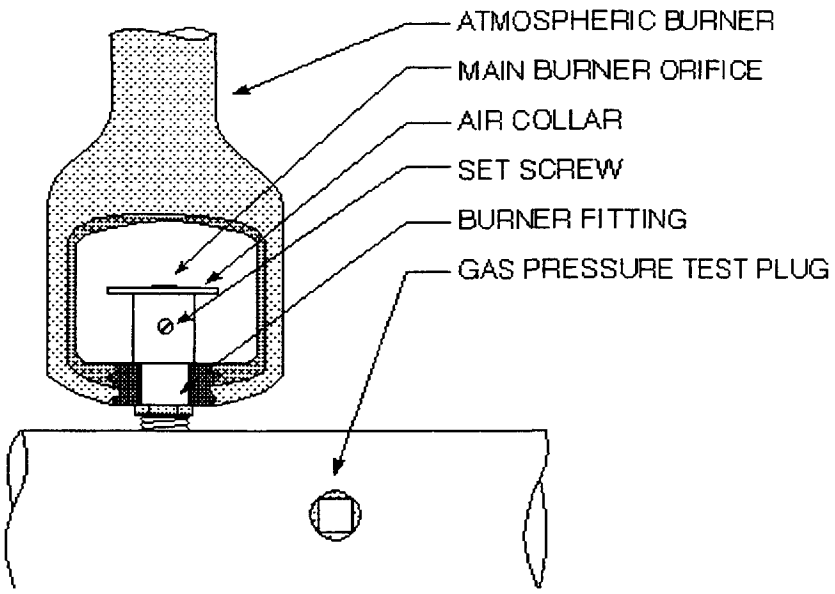


Figure 1-4 Air Collar

g. Now that the pressure is set for proper operation, set the main burner flame. Unlock the air collars by loosening the set screw for the collars. Open the main gas valve, light the pilot, and turn thermostat to light the main burners.

h. Adjust the shape and size by raising or lowering the air collars to achieve a soft blue flame with well defined inner cones as seen on figure 1-2.

i. When the flames have been properly adjusted, lock the collars in place with the set screw provided.

1.4.4 Initial Cleaning

When the fryer is shipped, many of its parts are covered with a thin coat of cooking oil for protection. Before the fryer is ready for cooking it must be cleaned. This will remove the oil coating and any foreign matter that may have accumulated during storage and shipment. Perform the cleaning as described below. During cleaning

a. Fill the fryer with water. Turn the fryer on and set the thermostat to 200°F.

b. Allow the fryer to heat for 15 minutes. Add Pitco fryer cleaner directly to the water, stirring with the fryer cleaning brush to ensure cleaner has dissolved thoroughly.

NOTICE

Do not leave the fryer unattended during cleaning. Never let the water level go below the "Min Level" mark on the back of the tank.

c. Using the fryer cleaning brush, scrub the inside of the fryer to remove protective coating.

d. When cleaning is complete, turn the thermostat to OFF and turn gas valve knob to the Pilot position. Drain the water into a container suitable for hot water and dispose of it.

e. When the tank has cooled, rinse it thoroughly with cool water. Continue to rinse the tank until the cleaner has been rinsed, thoroughly from the tank.

f. Using a clean dry cloth, wipe out all of the water. Be very thorough removing the water, because any residual water will cause hot oil to splatter out of the fryer.

CAUTION

Mild steel tanks must be wiped down/coated with oil to keep the tank from rusting.

g. Now that the tank is clean, you are ready to fill and operate the fryer. Refer to 2.1 for instructions on adding shortening to the fryer.

1.4.5 Thermostat Calibration

Filling the fryer with oil is described in 2.1. To perform the calibration check detailed below you will need a digital thermometer.

NOTE

The thermostat calibration should be checked only. If the setting is off a few degrees perform the steps that follow. If the dial setting is off a significant amount call a qualified technician for warranty service.

a. Place the tip of the thermometer in the shortening approximately 1" above the temperature sensors.

b. Set the thermostat at 325°F and wait for the temperature reading on the thermometer to rise. As the temperature rises toward 325°F watch the thermometer closely.

c. If the shortening temperature reaches 350°F and the burners DO NOT turn off, turn the thermostat down. Keep lowering the thermostat setting until the burners go out.

CAUTION

If the burners do not turn off at the lowest thermostat setting, the thermostat could be defective. Contact your ASAP representative.

d. Let the fryer cycle 4 to 6 times before checking the temperature. Compare the thermometer temperature against the thermostat setting. If the values are more than 5°F apart continue with calibration, if they are not go to i.

e. Loosen the set screw that holds the thermostat knob to its shaft.

f. Rotate the thermostat dial without moving the shaft to the temperature indicated on the thermometer. Tighten the set screw on the thermostat dial to lock the dial on place.

g. Adjust the thermostat to a new setting and allow the fryer to cycle 4 to 6 times at the new temperature. Check the thermometer temperature against the thermostat dial, if it greater than 5°F away from the dial setting, perform the above procedure again. If the temperature is ±5°F of the thermostat dial setting, the thermostat is set correctly.

h. When the calibration is correct, remove the thermometer and replace the tube screen.

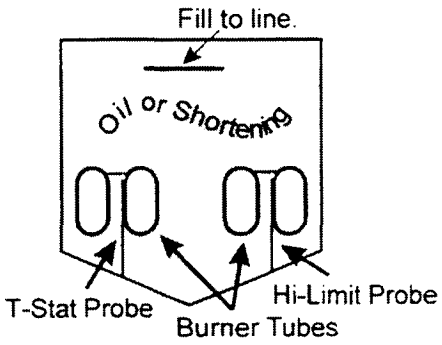
Chapter 2: Operating Instructions

This chapter describes how to operate your fryer to obtain the best performance. Included in this chapter are filling, operating, and cleaning instructions for gas fryers.

2.1 FILLING THE FRYER

Both liquid and solid shortening can be used in the fryer, but liquid is preferred. You can melt solid shortening but you must carefully follow the instruction in section 2.1.2.

2.1.1 Filling the Fryer With Liquid Shortening



a. Make sure the drain valve is completely closed.

b. Fill the fryer with oil to the "Oil Level" line marked on the back of the kettle.

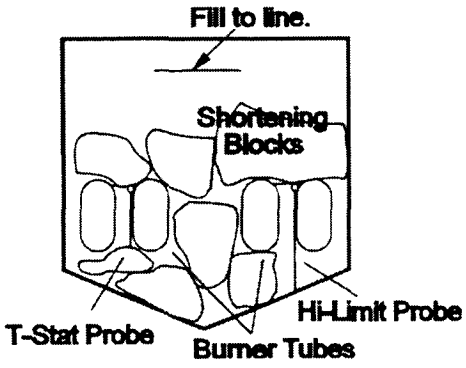
2.1.2 Filling the Fryer With Solid Shortening

WARNING

Never melt blocks of solid shortening on top of the burner tubes. This will cause a fire, and will void your warranty.

a. Make sure the drain valve is completely closed.

b. Remove the screen covering the tubes.



c. Cut the shortening into cubes no larger than 1". ALWAYS pack the shortening below, between, and on top of the burner tubes. DO NOT leave any large air gaps. Use care when packing the solid shortening in the kettle. DO NOT bend or break the temperature sensor probes. If these are damaged the fryer will not function properly.

c. Once the fryer is packed with shortening, the shortening must be melted. Place the switch, located above the thermostat knob, in the MELT ON position. The fryer will automatically melt the shortening using short, controlled, bursts of heat. The melt cycle will continue until cooking temperature has been reached.

2.2 OPERATING INSTRUCTIONS

To ensure the food always comes out the very best, follow the preparation instructions for the food you are cooking. Using the best shortening makes the best fried foods. The best shortening will last longer than lower grade shortening and save you money. When not in use the shortening should be cooled and covered to prevent contamination.

WARNING

Water and shortening DO NOT mix. Keep liquids away from hot shortening. Dropping liquid frozen food into the hot shortening will cause violent boiling.

2.2.1 Fryer Start-Up

DO NOT START FRYER WITHOUT FILLING WITH OIL!

a. Light the pilot light as described in section 1.4.2.

b. Turn the temperature control knob (thermostat) to the desired temperature setting. This knob is located behind the front doors or on the front control panel.

c. Turn the fryer ON by pressing the ON side of the ON/OFF/TEST switch. The POWER ON light and the HEATING light will come on. The HEATING light cycles with the main burners.

d. Place the melt option switch in the MELT ON position. If the oil temperature is less than 150°F, the burners will turn on for 4 seconds and remain off for 30 seconds. This will heat the shortening slowly to 150°F (65°C). At 150°F (65°C) the burners will remain on constantly until the shortening reaches the thermostat setting.

e. The Melt Cycle switch can be left ON after reaching normal temperature. The fryer is now at normal operating temperature and ready for use.

2.2.2 Fryer Shut-Down

There are two shutdown modes of fryer operation, STANDBY and COMPLETE. The standby mode removes the ability for the fryer's main burners to cycle. Complete shutdown turns off the gas supply to the fryer. Shut down the fryer by:

STANDBY Turn the thermostat to OFF. Depress and turn the gas valve clockwise to the PILOT position. The cooker is now in Standby and can remain this way for only brief periods of time. NEVER leave the cooker in standby overnight.

COMPLETE To completely shut down the cooker, turn the gas valve counter clockwise to the OFF position and turn the power switch OFF. The fryer is now completely shut down and can be cleaned.

2.3 DAILY CLEANING

Your fryer should be cleaned every day to maintain peak performance and appearance. Perform the procedures below every day.

a. Wipe up any shortening that spills onto the exterior of the fryer. This should be done with a clean soft cloth while the oil is still warm.
b. Use warm water with a mild detergent to clean surfaces. Be careful not to get water in the shortening and to remove any detergent from the fry tank.
c. Use a non-abrasive scouring powder or pad to clean stains if necessary.
d. Perform the weekly boil out cleaning of your fryer described in section 3.1.

Chapter 3: Maintenance, Adjustments, and Service

This chapter provides you with the information and procedures necessary to perform basic fryer maintenance and adjustments. If after performing maintenance on your fryer it does not perform properly, contact your authorized service center.

3.1 WEEKLY FRYER CLEANING (BOIL OUT)

The fryer should be thoroughly cleaned once a week. This cleaning should include a complete draining of the fryer and a boil out.

a. You will need a container large enough to hold 1-1/2 times the oil in one tank. This container should also be able to withstand temperatures in excess of 350°F (177°C).

CAUTION

Completely shut down the fryer before draining the oil and replacing with water. If possible, allow the oil to cool to less than 130°F (54.4°C).

WARNING

At operating temperatures, the shortening in the fryer may be hotter than 375°F (190°C). This hot, melted shortening can cause severe bums. Do not let hot shortening touch your skin or clothing. Always wear insulated oil-proof gloves and eye protection when working with hot oil

b. Drain the oil from the fryer and discard or save for reuse. Remove the tube screens. Close the drain valve and fill the tank with warm water and non-caustic detergent. For best results use Pitco Fryer Cleaner part number P6071397 (sample packet included with the fryer).

c. Restart your fryer as described in 2.2 and set the thermostat to 200°F and bring the water to a slow boil. DO NOT allow water to boil because excessive foaming will occur.

d. Allow the fryer to soak for 20 minutes to soften shortening deposits. Use fryer brush to remove any residue from tank, tubes, and side walls. Perform the daily cleaning procedure described in section 2.3.

e. Drain the hot water into a container and dispose of the oil in an ecologically sound manner. Rinse the tank with clean warm water.

f. Wipe the tank dry with clean cloth wipes taking care to remove **ALL** of the water. Close the drain valve and remove the large container.

g. Replace the tube screens and refer to section 2.1 to refill the fryer.

3.2 FLUE AND BAFFLE INSPECTION

It is recommended that once every six months with the cooker cooled down you examine the flue area and the burner tube baffles. Check for corrosion or blockage of the flue and erosion of the baffles. Ensure that the cooker is shutdown and cooled to room temperature. Do not turn it on during the examination. Examination of the flue area during cooking may cause bodily injury.

3.3 SERVICE

This section is provided to aid you in the event of fryer or filter troubles. If these troubleshooting procedures do not correct your problem contact a qualified technician or the factory. The troubleshooting procedures are in a flowchart format.

3.3.1 Replacement Procedures

These procedures are provided to the qualified technician as a guide to removal and replacement of various fryer components. If a test is required to verify component operation after installation, it will be referenced.

To prevent bums, always ensure the fryer is completely SHUT DOWN and COOLED down before working on the fryer. Do not break any fryer gas connections while the unit is connected to a gas supply line.

3.3.1.1 Main Burner Removal and Replacement

a. Loosen the set screw in the base of the burner casing.

b. Unscrew and remove the two hex head screws at the top of the burner.

c. Loosen the set screw. Lift the burner and air collar up to clear the top of the burner fitting. Remove the burner from the fryer.

d. To reinstall the burner, reverse the procedure.

3.3.1.2 Changing the Main Burner Orifice

a. Unscrew the orifice with a 3/8" wrench and remove the orifice.

d. Insert the new orifice and tighten with the 3/8" wrench. Ensure the orifice is tight enough to prevent gas leakage around the orifice.

3.3.1.3 Replacing the Heat Baffles

a. Remove the Main Burner as described in 3.3.1.1.

b. The heat baffles are located inside the heat tubes. They are attached to the rear of the baffle supported by tack welds. Using a chisel, break away the baffle support and remove the old baffles. Be careful not to puncture the heat tubes because this will require complete tank replacement.

c. Insert the new baffles in the tubes in the original position.

d. Install the main burners.

3.3.1.4 Pilot Burner Removal and Replacement

a. Unscrew the tubing nut from the pilot tubing connection at the gas valve. Disconnect the thermopile from the connection on the gas valve.

b. Unscrew and remove the two screws that attach the pilot assembly to the fryer tank. Lift the entire pilot assembly out of the fryer.

c. To replace the pilot assembly, reverse the procedure.

3.3.1.5 Pilot Orifice Replacement

a. Remove the pilot assembly as described in 3.3.1.4.

b. Unscrew the tubing nut from the pilot tubing connection at base of the pilot burner. The pilot orifice is located inside the tubing connection.

c. Remove the orifice and replace with the new orifice. Ensure the orifice is tight enough to-prevent gas leakage around the orifice.

d. Replace the tubing in the pilot tubing connection and tighten the tubing nut tight enough to prevent gas leakage.

e. Replace the pilot assembly and adjust the pilot flame as described in 1.4.2.

3.3.1.6 Thermopile Replacement

a. Remove the pilot assembly as described in 3.3.1.4.

b. Unscrew and remove the thermopile from the pilot assembly.

c. Unscrew the thermopile from the gas valve magnet.

d. Screw the new thermopile into the pilot assembly and the gas valve magnet.

e. Replace the pilot assembly and adjust the pilot flame as described in 1.4.2.

f. Ensure that all nuts and screws are tight.

3.3.1.7 Temperature Control Board Replacement

a. Disconnect the power from the fryer.

b. Shut the gas supply valve to the fryer.

c. Turn the unit 180° so that the back of the fryer is toward you.

d. Remove the four hex head slotted screws from the entrance box at the bottom of the unit. Remove the box and set it down gently.

e. Disconnect the white nine socket jack and the four socket jack. The box should now be free.

f. Disconnect all 11 spade terminations from the temperature control board.

g. Remove the two hex nuts fastening the board to the box. Remove the defective board and discard.

h. Install the new temperature control board by refastening the hex nuts and reconnecting the spade termination. Refer to the schematic for the proper connection.

i. Reconnect the white nine socket jack and the four socket jack. Refasten the entire box to the fryer.

3.3.1.8 High Limit Control Replacement - The High Limit control includes a temperature sensor inside the fryer tank, control unit inside the fryer cabinet, and connecting capillary tubing.

CAUTION

The High Limit control capillary tubing is very delicate. Be VERY CAREFUL when working with the capillary tubing. If the tubing is kinked or broken the High Limit control is no longer usable.

a. Drain the oil from the fryer and remove the heat tube screens.

b. The High Limit control probe (heat sensor) is clamped to the right hand heat tube inside the tank. Unscrew and remove the two screws in the probe clamp.

c. Remove the probe from the clamp and gently straighten the capillary tubing. Unscrew the small hex nut inside the cabinet at the bottom of the tank for the High Limit control. Make sure the capillary tube is free.

d. Unscrew the large connector nut from the tank and pull the probe and capillary tubes through the opening.

e. Remove the two mounting screws from the High Limit control bracket and remove the High Limit control unit. Disconnect the wires from the High Limit body.

f. Reverse the procedure to install the new High Limit control.

g. Use pipe joint compound on the large fitting before installing to prevent oil leakage. DO NOT use joint compound on the small nut.

3.3.1.9 Thermostat Probe Replacement

a. Drain the oil from the fryer and remove the heat tube screen. The thermostat probe (heat sensor) is clamped to the left hand heat tube inside the tank. Unscrew and remove the two screws in the thermostat probe clamp.

b. Remove the thermostat probe from the clamp. Unscrew the small hex nut inside the cabinet under the tank for the thermostat control.

c. Unscrew the large connector nut from the tank and pull the thermostat probe through the opening.

d. Unplug the electrical connection.

e. Install the new thermostat in reverse order.

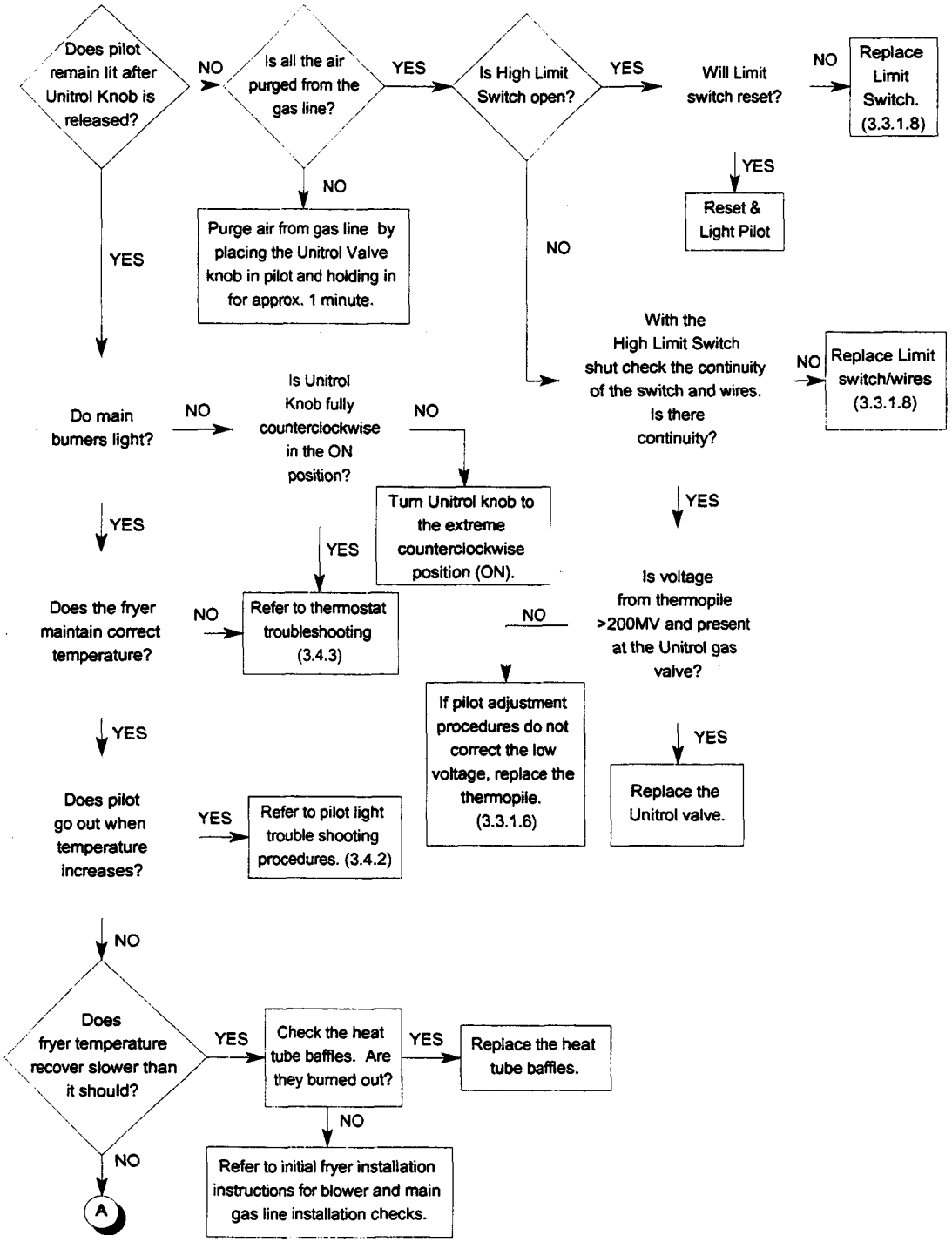
f. Use pipe joint compound on the large fitting before installing to prevent oil leakage. DO NOT use joint compound on the small nut.

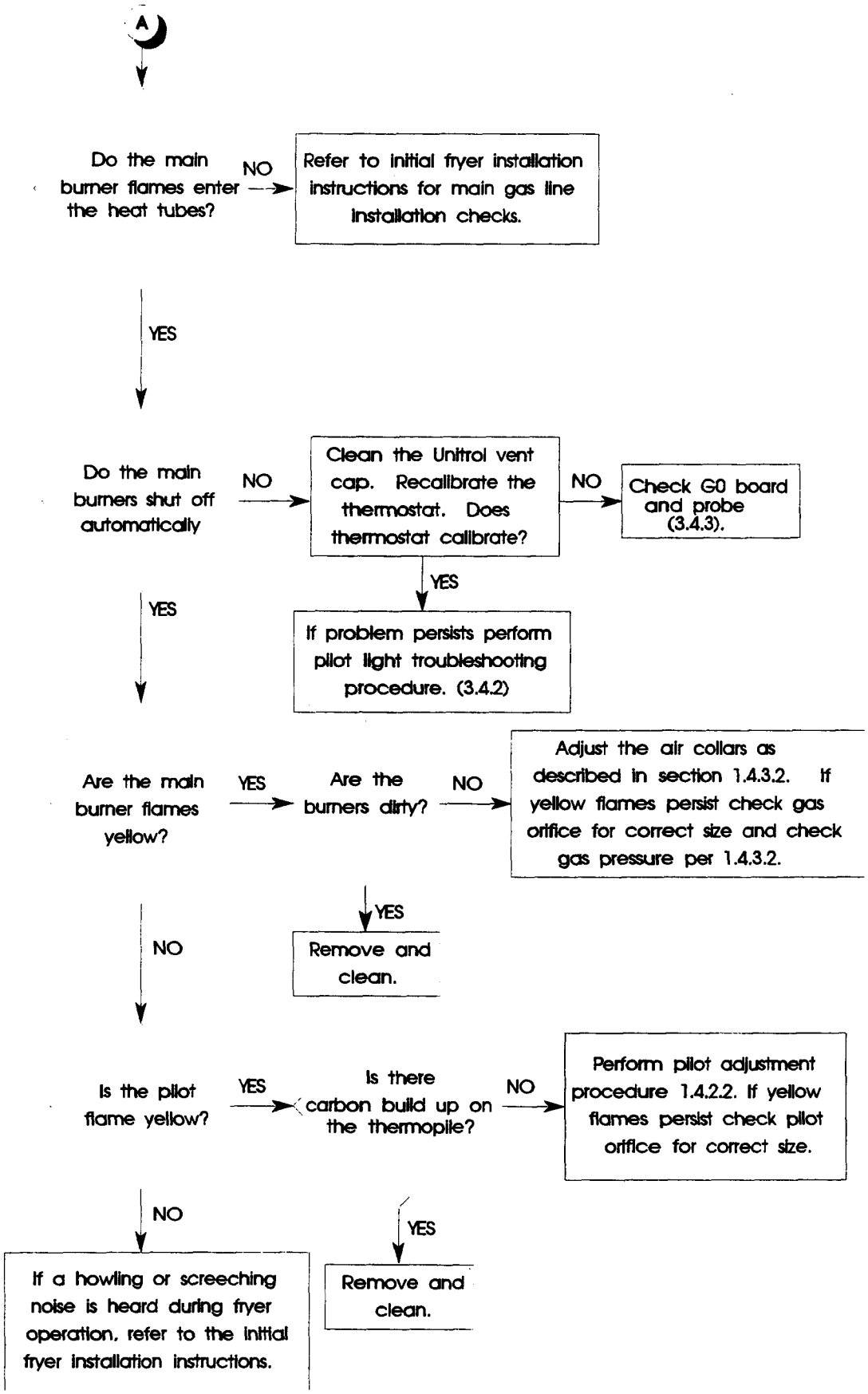
g. Perform the calibration procedures detailed in section 1.4.5.

3.4 TROUBLESHOOTING

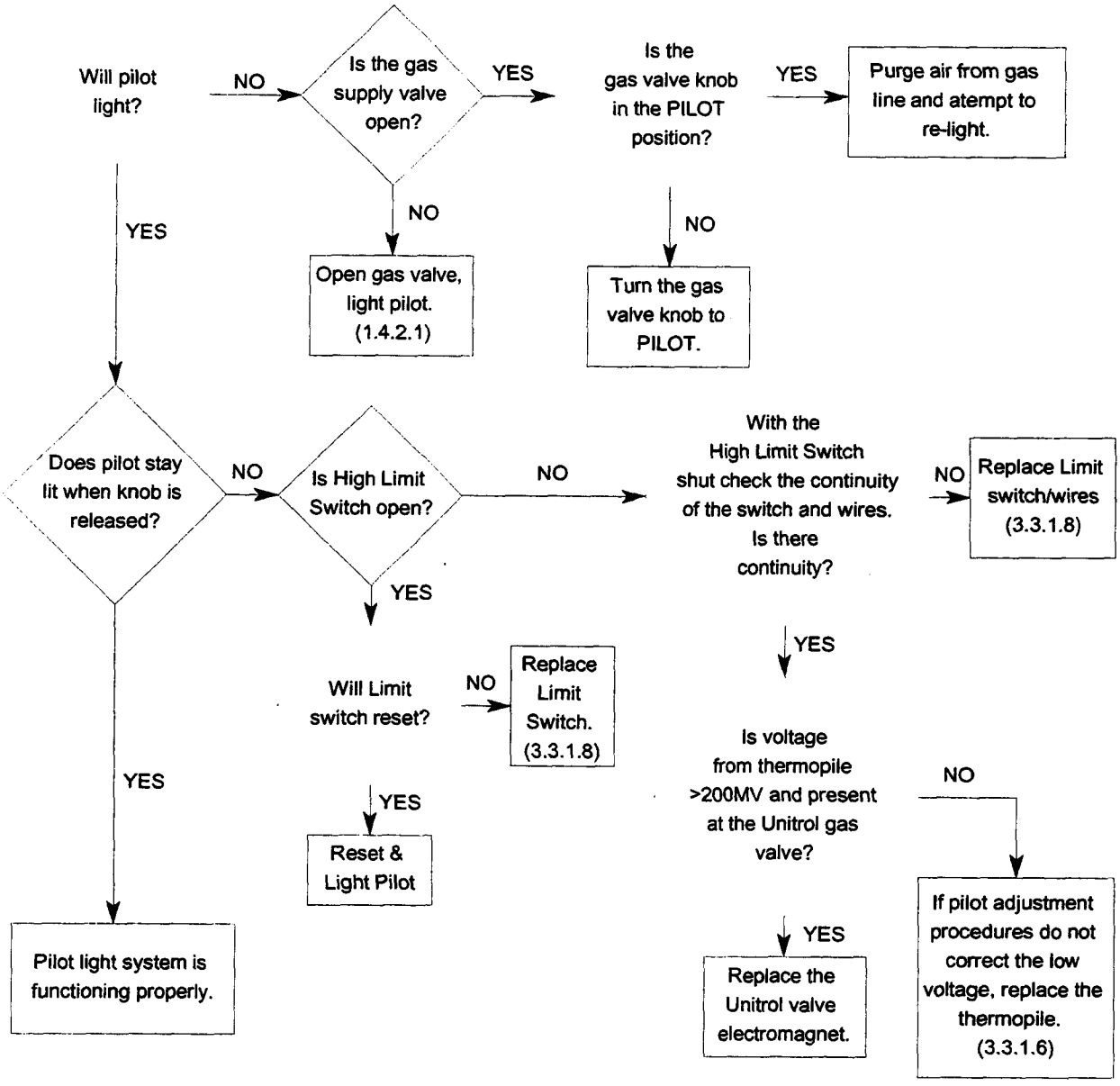
This section is provided to aid you in the event of fryer troubles. If these troubleshooting procedures do not correct the problem contact a qualified technician or the factory. The troubleshooting procedures are in flowchart format.

3.4.1 Troubleshooting Fryers With Unitrol Valves

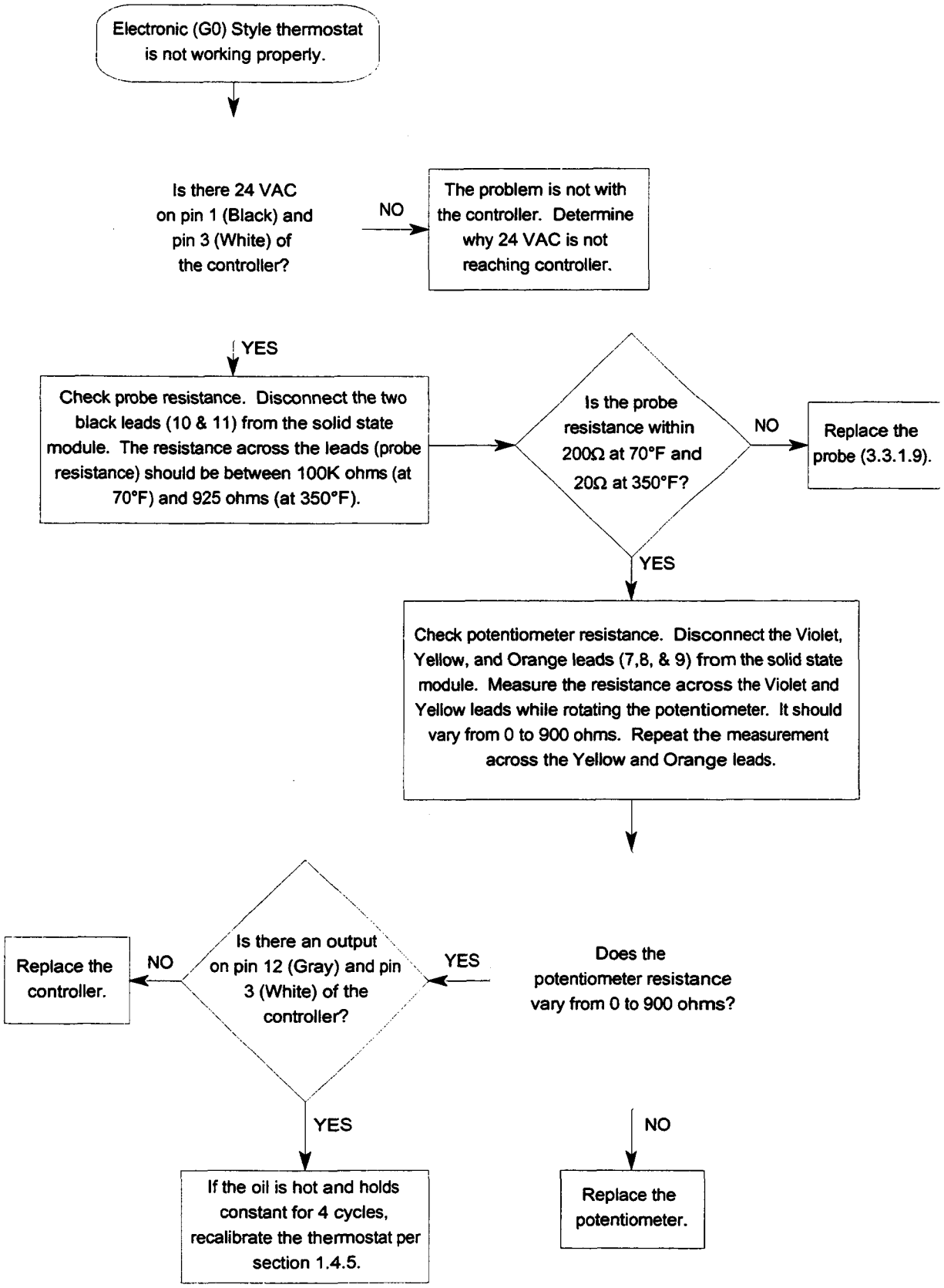



A
Do the main burner flames enter the heat tubes?
NO
Refer to initial fryer installation instructions for main gas line installation checks.
YES
Do the main burners shut off automatically
NO
Clean the Unitrol vent cap. Recalibrate the thermostat. Does thermostat calibrate?
NO
Check G0 board and probe (3.4.3).
YES
YES
If problem persists perform pilot light troubleshooting procedure. (3.4.2)
Are the main burner flames yellow?
YES
Are the burners dirty?
NO
Adjust the air collars as described in section 1.4.3.2. If yellow flames persist check gas orifice for correct size and check gas pressure per 1.4.3.2.
YES
Remove and clean.
NO
Is the pilot flame yellow?
YES
Is there carbon build up on the thermopile?
NO
Perform pilot adjustment procedure 1.4.2.2. If yellow flames persist check pilot orifice for correct size.
NO
YES
If a howling or screeching noise is heard during fryer operation, refer to the initial fryer installation instructions.
Remove and clean.

3.4.2 Troubleshooting Pilot Lights



3.4.3 Troubleshooting Thermostat System



Chapter 4: Parts

This chapter contains listings of the components used in the different models of McDonald's fryer. These components are listed in two places, with the illustration and in ordered part lists. The illustrations in this chapter are provided to show relative location of component of the fryer. With each illustration there is a table of components in numerical order by illustration number. The illustration has numbered lines pointing to components which are listed in the table.

At the end of this chapter there are alphabetical and numerical listings of all parts used in the fryer. The alphabetical part list is arranged in alphabetical order according to the part name. Each part name also has the Pitco Frialator part number. The numerical list is in Pitco Frialator part number order. A brief description of each component is provided for each part.

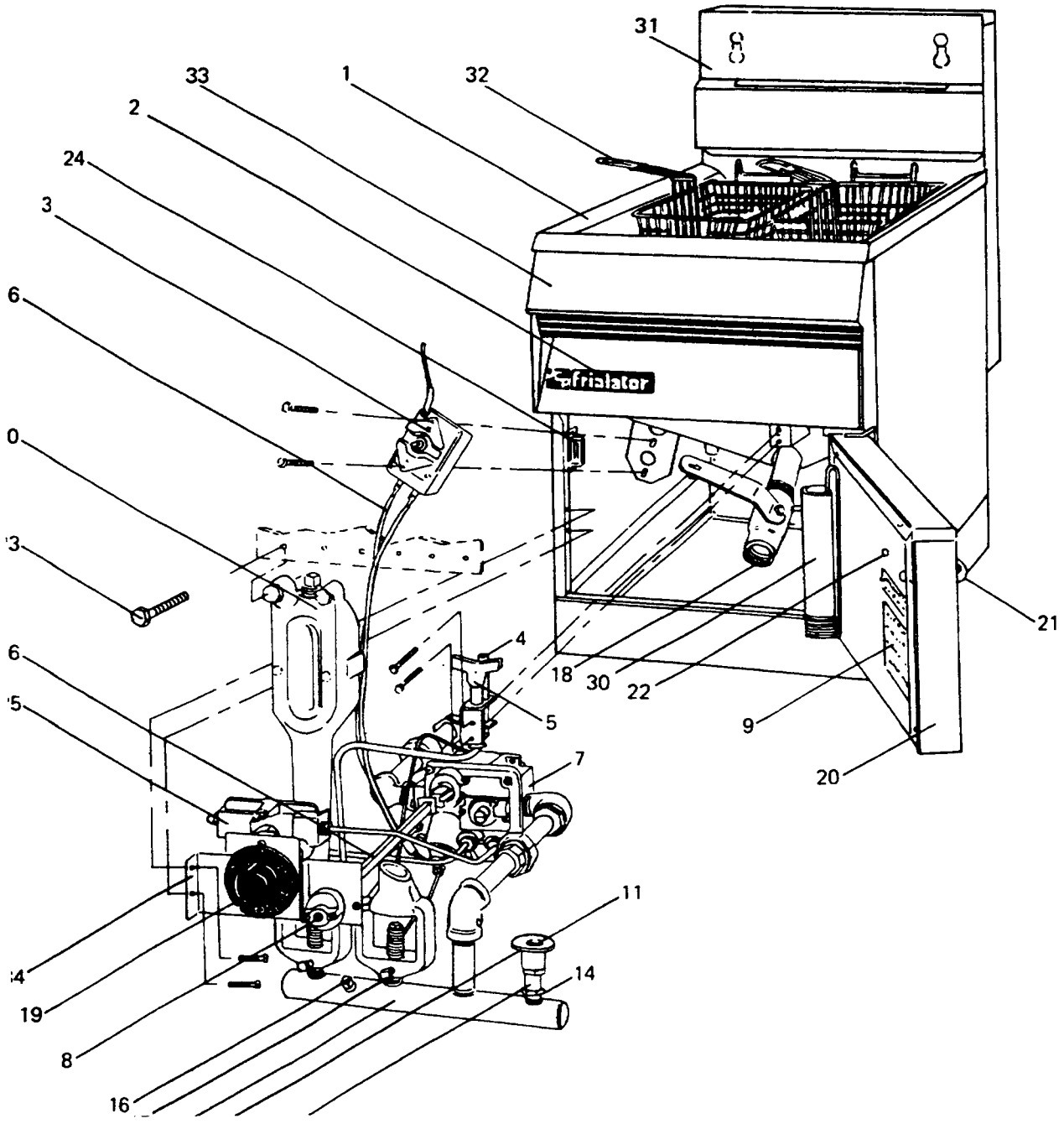


Figure 4-1 Counter Top 12 Exploded View

Table 4-1 Counter Top 12 Exploded View (Index)

Index Number	Description	Index Number	Description
1	Cabinet, Weldment	8	Door Assembly 12 MCD
2	Tank Weldment SS	8A	Handle, Chrome
2A	Baffle, Removable 6,12	8B	Plug, Hole 1/2" Chrome
3	Flue Weldment	9	Probe, Thermistor Gas
4	Front Panel 12A Gas	10	Piping, Pilot 12C Nat
5	Entrance Box, Assembly	10A	Thermopile CP2 24"
5A	Control, Temperature 24 VAC GO On-8, Off-22	11	Switch, Hi Limit
5B	Transformer, 40 VA 120/208/240 to 24	12	Burner, Pitco 4"
6	Auxiliary Box, Assembly	13	Valve, Ball 1" Plated
6A	Fuse, 1 Amp Slow Blow Glass	14	Piping Collar Air
6B	Potentiometer, 0-900 ohm	15	Top Door Hinge
6C	Switch, Toggle (ON-OFF-ON) DPDT	16	Hinge, Door Bottom Weldment
6D	Knob, Thermostat McDonald's	17	Cabinet, Bracket Magnet Catch
7	Piping, Supply Gas 12C Nat	18	Magnet
7A	Valve, Gas 1/2" Thermopile Nat	19	Cabinet, Bracket Magnet Catch
7B	Orifice #45	20	Hanger, Basket 12 SS

* For complete part information, refer to the part lists later in this chapter.

ALPHABETICAL PART LIST

Part Description	Pitco Frialator Part Number
AIR COLLAR	A8001001
AUXILIARY BOX, ASSEMBLY	B4301901
BAFFLE, REMOVABLE 6,12	B1002704
BURNER, PITCO 4"	P6071050
CABINET, BRACKET MAGNET CATCH	A1815501
CABINET, BRACKET MAGNET CATCH	A1817902
CABINET, WELDMENT	B1813801
CONTROL, TEMPERATURE 24 VAC GO ON-8, OFF-22	PP10561
DOOR ASSEMBLY 12 MCD	B2301801
ENTRANCE BOX, ASSEMBLY	B2907501
FLUE WELDMENT	B3501211
FRONT PANEL 12A GAS	B7200802
FUSE, 2 AMP SLOW BLOW GLASS	P5045700
FUSE HOLDER	P5045794
HANDLE, CHROME	P6071516
HANGER, BASKET 12 SS	A 1102904
HINGE, DOOR BOTTOM WELDMENT	B3800501
KNOB, THERMOSTAT MCDONALD'S	P6071265
MAGNET	P6071300
ORIFICE #45	P6071345
PIPING, PILOT 12C NAT	B7550207
PIPING, SUPPLY GAS 12C NAT	B8012104
PLUG, HOLE 1/2" CHROME	P6071493
POTENTIOMETER, 0-900 OHM	P5046582
PROBE, THERMISTOR GAS	B6700601
SWITCH, HI LIMIT	PP10084
SWITCH, TOGGLE (ON-OFF-ON) DPDT	P5047165
TANK WELDMENT SS	B3312602
THERMOPILE CP2 24"	P5047541
TRANSFORMER, 40 VA 120/208/240 TO 24	PP10210
VALVE, BALL 1" PLATED	P6071769
VALVE, GAS 1/2" THERMOPILE NAT	P5045638
VALVE, GAS 1/2" THERMOPILE LP	P5045639

NUMERICAL PART LIST

Pitco Frialator Part Number	Part Description
A1102904	HANGER, BASKET 12 SS
A1815501	CABINET, BRACKET MAGNET CATCH
Al817902	CABINET, BRACKET MAGNET CATCH
A8001001	AIR COLLAR
B1002704	BAFFLE, REMOVABLE 6,12
B1813801	CABINET, WELDMENT
B2301801	DOOR ASSEMBLY 12 MCD
B2907501	ENTRANCE BOX, ASSEMBLY
B3312602	TANK WELDMENT SS
B3501211	FLUE WELDMENT
B3800501	HINGE, DOOR BOTTOM WELDMENT
B4301901	AUXILIARY BOX, ASSEMBLY
B6700601	PROBE, THERMISTOR GAS
B7200802	FRONT PANEL 12A GAS
B7550207	PIPING, PILOT 12C NAT
B8012104	PIPING, SUPPLY GAS 12C NAT
P5045638	VALVE, GAS 1/2" THERMOPILE NAT
P5045639	VALVE, GAS 1/2" THERMOPILE LP
P5045700	FUSE, 2 AMP SLOW BLOW GLASS
P5045794	FUSE HOLDER
P5046582	POTENTIOMETER, 0-900 OHM
P5047165	SWITCH, TOGGLE (ON-OFF-ON) DPDT
P5047541	THERMOPILE CP2 24"
P6071050	BURNER, PITCO 4"
P6071265	KNOB, THERMOSTAT MCDONALD'S
P6071300	MAGNET
P6071345	ORIFICE #45
P6071493	PLUG, HOLE 1/2" CHROME
P6071516	HANDLE, CHROME
P6071769	VALVE, BALL 1" PLATED
PP10084	SWITCH, HI LIMIT
PP10210	TRANSFORMER, 40 VA 120/208/240 TO 24
PP10561	CONTROL, TEMPERATURE 24 VAC GO ON-8, OFF-22