

Pitco Frialator[®]

There's Always Something Cooking!

Installation, Operation, and Maintenance Manual
For Gas Fryers With Solo Filter

Models:
SF14 UFM & SF14R UFM



Pitco Frialator, Inc., P.O. Box 501, Concord, NH 03302-0501 • 509 Route 3A, Bow, NH 03304
(800) 258-3708 • (603) 225-6684 • FAX (603) 225-8497

A **BLODGETT** Company

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 instructions 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

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

WARNING

The fryer is equipped with an oil proof, electrical supply cord with a three prong safety plug. This is to protect operators from electrical shock hazard in the event of an equipment malfunction. DO NOT cut or remove the grounding (third) prong from this plug.

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.

WARNING

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.

WARNING

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

WARNING

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

WARNING

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

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.

WARNING

At operating temperature the shortening temperature may be greater than 300°F. Extreme care should be used when filtering operating temperature shortening to avoid personnel injury.

SAFETY

WARNING

It will be easier and safer if the filter assembly has cooled to room temperature before handling any filter parts.

WARNING

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.

WARNING

A cooker equipped with casters and a flexible power cord, must be connected to the gas supply with a Quick-Disconnect device. This quick disconnect must comply with ANSI Z24.41. To limit the movement of the cooker without depending on the connector or quick disconnect, a restraining cable must also be installed.

WARNING

The power supply must be disconnected before servicing or cleaning the appliance.

SAFETY

SAFETY

SAFETY

SAFETY

SAFETY

Table of Contents

Section	Title	Page
	Safety Notice	
	Table of Contents	i-ii
	List of Tables and Figures	iii
Chapter 1:	General Information and Installation	1-1
11	WHICH FRYER DO I HAVE?	1-1
12	CHECKING YOUR NEW FRYER	1-2
121	Check Your Order	1-2
13	ASSEMBLY AND LEVELING	1-2
131	Heat Deflector Installation	1-2
132	Leveling	1-3
14	INSTALLATION	1-3
141	Installation Clearances	1-4
142	Gas Connection	1-4
1421	Fuel Types	1-4
1422	Gas Line Connection	1-5
1423	Quick Disconnect Gas Connection	1-5
1424	Fuel Supply Line Leak and Pressure Testing	1-5
143	Electrical Connection	1-5
144	Ventilation and Fire Safety Systems	1-6
15	INITIAL ADJUSTMENTS	1-7
151	Visual Checks	1-7
152	Burner Ignition Systems	1-8
1521	Lighting Instructions for Manual Pilot Lights	1-8
15211	Pilot Flame Adjustment	1-9
153	Main Burner System	1-11
1531	Gas Line Requirements	1-12
1532	Burner Adjustment	1-12
154	Initial Cleaning	1-13
155	Thermostat Calibration Check	1-14
156	Thermostat Calibration	1-14
157	High Limit Test	1-15
Chapter 2:	Operating Instructions	2-1
21	FILLING THE FRYER	2-1
211	Filling the Fryer With Liquid Shortening	7-1
212	Filling the Fryer With Solid Shortening	7-1
22	MELTING SOLID SHORTENING	7-7

Table of Contents (Continued)

Section	Title	Page
23	OPERATING INSTRUCTIONS	2-2
231	Fryer Start-Up	2-2
232	Fryer Shutdown	2-3
233	Power Failure	2-3
24	SHORTENING FILTER PROCEDURES	2-4
241	General Filter Hints	2-5
242	Filter Procedures	2-6
25	DAILY CLEANING	2-7
CHAPTER 3: Owner Maintenance and Adjustments		3-1
31	FILTER MEDIA REPLACEMENT	3-1
32	WEEKLY FRYER CLEANING (BOIL OUT)	3-4
33	FLUE INSPECTION	3-4
34	TROUBLESHOOTING	3-5
341	Fryer Troubleshooting	3-5
342	Filter Troubleshooting	3-6

List of Tables and Figures

Table	Title	Page
1-1	Fryer Model Information	1-1
1-2	Ventilation and Fire Safety References	1-6
Figure	Title	Page
1-1	Inside View of Fryer	1-9
1-2	Pilot Assembly, Flame Adjustment	1-9
1-3	Gas Valve Showing Location of Pressure Regulator and Pilot Adjusters	1-10
1-4	Main Burner Conditions	1-11
1-5	Air Collar	1-12
2-1	Fryer Illustrating Filter Components	2-4
3-1	Filter Module	3-2

Chapter 1: General Information and Installation

The frying system you have selected for your establishment is the Pitco Frialator Model SF14 UFM series. This model combines the convenience of built-in filtration and the compactness of under fryer filtration into one easy to use unit. This fryer will give you many years of reliable service if you follow the simple operation and maintenance procedures in this manual. Contained in this manual are the general installation, operation, and maintenance procedures for the SF14UFM and SF14RUFM.

1.1 WHICH FRYER DO I HAVE?

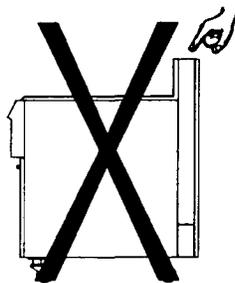
There are two models available with solo filters and both can use the same options. To find out which model you have, look inside the door at the equipment identification plate. This plate has a lot of useful information, but to identify which fryer you have, look at the model number block. The model number identifies which fryer and what features you have. A brief description of each model and its features is provided in table 1-1.

Table 1-1 Fryer Model Information

Specification Description	SF14UFM	SF14RUFM
Hourly Gas Input	110,000 BTUs (27,720 Kcal)	122,000 BTUs (30,744 KCal)
Number of Heat Tubes	4	4
Hourly French Fry Production	75 Lbs. (34.0 Kg)	102 Lbs. (46.3 Kgs.)
Minimum Fat Capacity	40-50 Lbs. (19.76 L)	42-50 Lbs. (20.5 L)
Frying Area	14" x 14" (35.6 cm x 35.6 cm)	14" x 14" (35.6 cm x 35.6 cm)
Frying Depth	4" (10.2 cm)	4" (10.2 cm)
Drain Valve Size	1-1/4" Full Port (3.175 cm)	1-1/4" Full Port (3.175 cm)
Shipping Weight	250 Lbs. (113.4 Kg)	275 Lbs. (124.7 Kg)
Gas Connection Size	1/2" (1.27 cm)	1/2" (1.27 cm)

1.2 CHECKING YOUR NEW FRYER

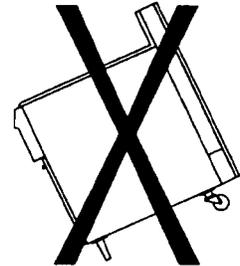
Your new fryer and its filter have been carefully packed into one crate. Every effort has been made to ensure that your fryer will be delivered to you in perfect condition. As you unpack your new fryer, inspect each of the pieces for damage. If something is damaged, DO NOT sign the bill of lading. Contact 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. As you unpack the fryer and it's accessories be careful to keep the weight of the fryer evenly distributed.



Flue Vents

CAUTION

To prevent equipment damage, don't tilt the fryer onto any two of its casters or pull the unit by the flue vents.



Locate your Pitco Frialator warranty and fill in the serial number of the fryer and the date received. You will find the serial number on the plate inside the door. Put your warranty card in a safe place for future reference. DO NOT return the card to Pitco Frialator.

1.2.1 Check Your Order

The crate containing the fryer unit will also contain the items listed below. These items are very important and MUST be retained for future use. A complete description of each component is contained in the Shortening Filter Procedure in Chapter 2.

(2)	Fry baskets per fryer	(1)	Fry Basket Hanger per fryer
(2)	Pitco Cleaner Sample	(1)	Drain Clean Out Rod
(1)	Filter Crumb Catch	(1)	Precoat Filter Aid
(25)	Filter Paper	(1)	Cleaning Brush (Fryer)
(1)	Fryer Crumb Scoop	(1)	Filter Crumb Scoop
(1)	Heat Deflector		

1.3 ASSEMBLY AND LEVELING

When you receive your fryer it is completely assembled with the possible exception of the heat deflector.

1.3.1 Heat Deflector Installation

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. 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.

1.3.2 Leveling

Using an appropriate wrench and level ensure that the unit is level.

- a. Place the level across the front of the tank and rotate the adjustment on the front legs to level the unit.
- b. Perform step a to level the unit front to back by placing the level along the side of the tank.

1.4 INSTALLATION

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.

WARNING

The fryer must be properly restrained to prevent movement or tipping. This restraint must prevent the fryer from movements that would splash hot liquids on personnel. This restraint may be any means (alcove installation, adequate ties, or battery installation).

1.4.1 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"	6"
Sides	6"	6"
Floor - Combustible	N/A	N/A

In addition to the clearances required for proper fryer operation, there must be at least 23 inches of aisle space in front of the fryer to remove/install the filter pan.

1.4.2 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 Latest Edition. In Canada, install the fryer in accordance with CAN/CGA-B149.1 or .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 (main shut off) 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.

1.4.2.1 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

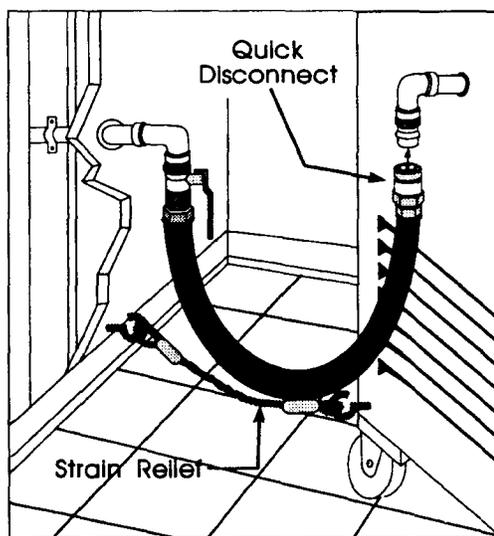
DO NOT use an open flame to check for gas leaks!

1.4.2.2 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 Z21.69-1987). If you are installing a fryer with casters use a quick disconnect refer to the Quick Disconnect installation instruction, 1.4.2.3. Connect the gas line to the fryer using a pipe joint sealant that is resistant to liquefied petroleum. If the fryer was disconnected during the fuel line testing, use a solution of soap and water to leak test the new connection.

NOTICE

NEVER use an adapter 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.

1.4.2.3 Quick Disconnect Gas Connection - Gas fryers equipped with casters must be installed with connectors that comply with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69-1987, and Addenda Z21.69A-1989. This connection should include a quick disconnect device that complies with the Standard for Quick Disconnect Devices for Use With Gas Fuel, ANSI Z21.41-1989. When installing a quick disconnect you must also install a means for limiting the movement of the fryer. This device will prevent the gas line or the quick disconnect from being strained. The restraining device should be attached to the cooker on the back panel as shown in the illustration. The quick disconnect, hose, and restraining device can be obtained from your dealer.



1.4.2.4 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.

1.4.3 Electrical Connection

The electrical service used by the fryer must comply with local codes. If there are no local codes that apply, refer to the National Electrical Code (NEC) to install the service. In Canada refer to CSA Standard C22.1 and local codes. Wiring diagrams are provided inside the fryer door. The power requirements for the fryer are shown below.

Input Voltage	120 VAC, 60Hz	220 (or 240) VAC, 50Hz
Current per fryer	7 Amps	3.5 Amps

WARNING

The fryer is equipped with an oil proof, three prong (grounding) plug for your protection against electrical shock hazard in the event of equipment malfunction. DO NOT cut or remove the grounding (third) prong from this plug. This plug must be plugged into a properly grounded three prong receptacle.

The fryer has one power supply for the fryer controls and the filter module. The fryer must be grounded in accordance with local code; if there is not a local code, comply with NEC ANSI/NFPA No. 70-1990. The fryer should be plugged into a receptacle at all times to keep power supplied to the filter line heat tape.

1.4.4 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/UL 710-1981	ANSI/NFPA 96-1987
Ventilation Hood	ANSI/UL 705-1984	ANSI/NFPA 96-1987
Filter Unit	ANSI/UL 586-1985 ANSI/UL 900-1987	ANSI/NFPA 96-1987
Types of Fire Extinguishers 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. 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.

1.5 INITIAL ADJUSTMENTS

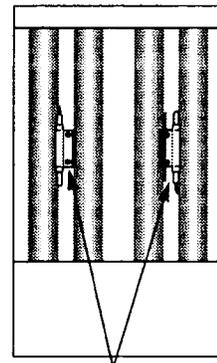
After your fryer has been installed as described in section 1.4, it needs to be adjusted to ensure that it will perform as designed. These adjustments must be performed by a **qualified person**. To perform these adjustment the following tools will be needed:

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

1.5.1 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 for levelness. Any additional leveling that is necessary can be performed as described in section 1.3.
- 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 typical location. Look down inside the fryer tanks to see the probes.



Ensure that these parts are not loose.

1.5.2 Burner Ignition Systems

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 OIL 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.

1.5.2.1 Lighting Instructions for Manual Pilot Lights - To light the pilot light refer to these instructions and Figure 1-1. The numbers in parenthesis refer to Figure 1-1 callouts.

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. Turn the thermostat control knob (1) counterclockwise to the off position.
- c. Turn the Unitrol gas valve knob (tan knob) (2) to the PILOT position and push in on the knob. Hold the knob in for approximately one minute to purge the air out of the line. Hold a flame to the pilot light until the pilot (3) 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 and then release. 
- 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 (tan knob) counterclockwise to the ON position. 
- f. Set the thermostat control knob to the desired temperature setting.

- g. The main burner (4) will light and be controlled by the thermostat. The pilot burner will remain lit regardless of the switch position.

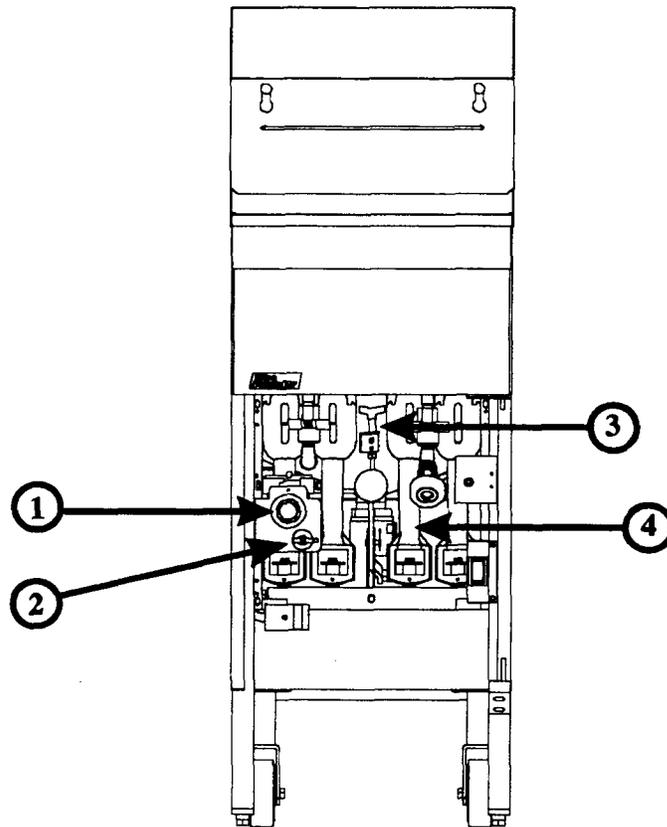


Figure 1-1 Inside View of Fryer

1.5.2.1.1 Pilot Flame Adjustment - The pilot flame should be adjusted to produce the proper millivolt output from the pilot sensing device. Millivolt output for the thermopile should be between 300 and 500 millivolts. Figure 1-2 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.

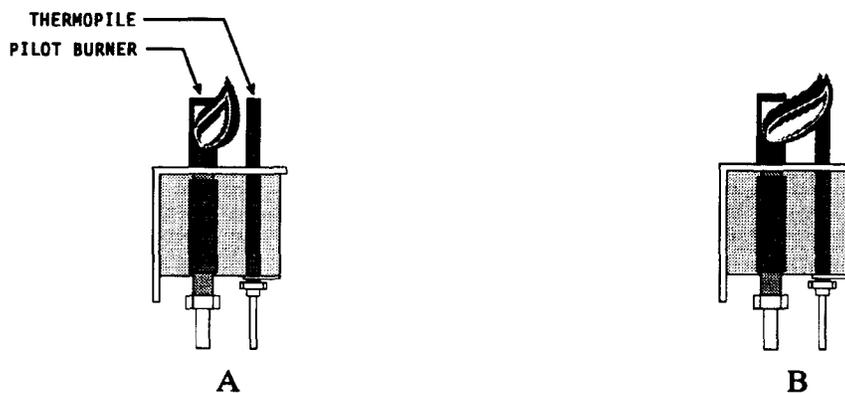


Figure 1-2 Pilot Assembly, Flame Adjustment

- a. This test requires a DC millivolt meter set to a scale of 0-1000mv.
- b. Locate the thermopile wires coming from the thermostat/High Limit box going to the gas shut off valve. The wire insulation size decreases near the gas valve connections.
- c. Connect the negative (-) test probe to pilot bracket.
- d. Connect the positive (+) test probe to one of the High Limit terminal connections
- e. Remove the pilot flame adjustment cover.

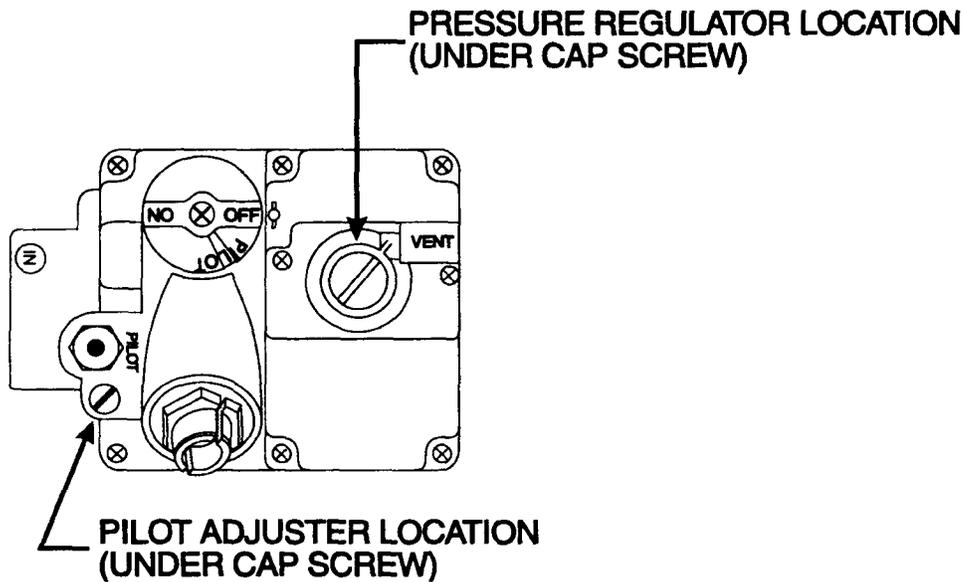


Figure 1-3 Gas Valve Showing Location of the Pressure Regulator and Pilot Adjusters

- f. Turning the flame adjusting screw 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.

1.5.3 Main Burner System

For the burners to work the gas supply valve must be open and the main power switch must be on. 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 and the pilot will ignite the burners. After the burner system is operating, perform the burner adjustments in the following procedure. Figure 1-5 illustrates the different conditions possible for the main burner.

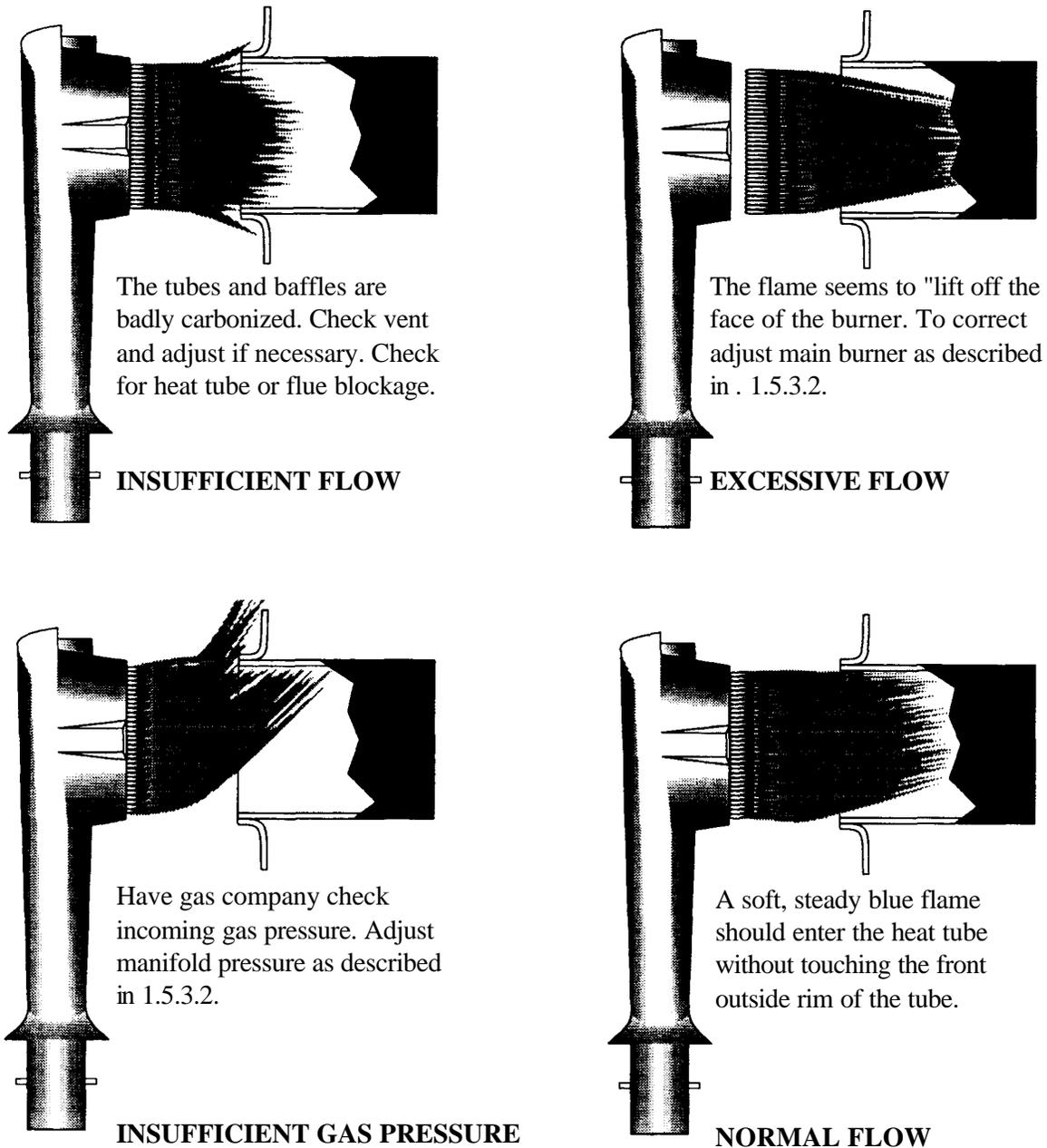


Figure 1-4 Main Burner Conditions

1.5.3.1 Gas Line Requirements - A properly installed gas supply system will deliver 7.0 ± 2.0 " w.c. natural gas (12.0 ± 2.0 " w.c. LP) to all appliances connected to the line, operating at full demand.

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

- a. Ensure that the gas control valve is in the OFF position. Remove the manifold pressure tap plug and connect an accurate pressure gauge (range of 0-16" w.c. in 0.1" increments) or manometer.
- b. Light the pilot burner (see 1.5.2) for the unit being tested and adjust the thermostat to light the main burners.
- c. The installed pressure gauge 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 e, 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 gauge, turn gas control valve to OFF. Remove the gauge and install the pressure tap plug.

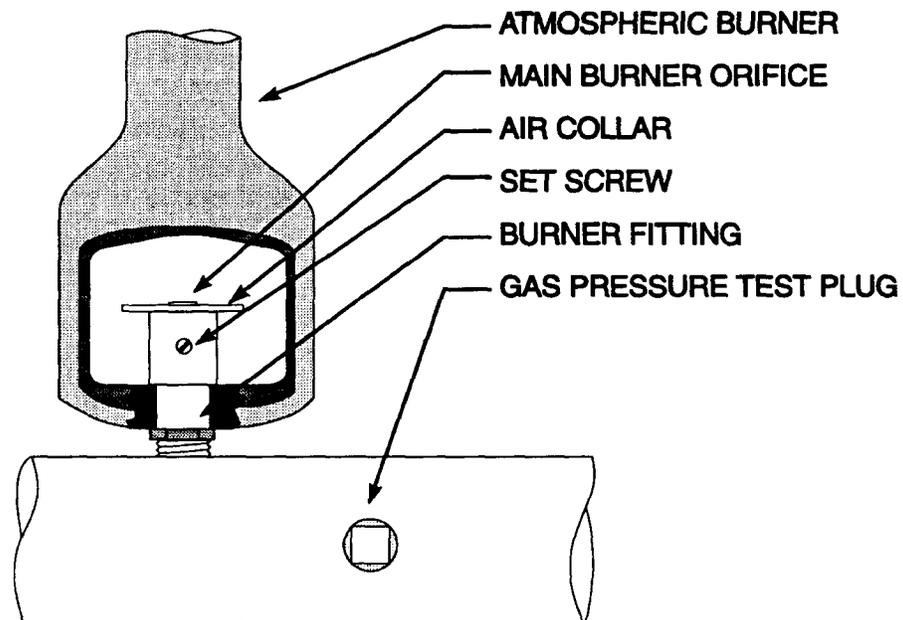


Figure 1-5 Air Collar

- 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. Turn the gas control valve to ON 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.
- i. When the flames have been properly adjusted, lock the collars in place with the set screw provided.

1.5.4 INITIAL CLEANING

When the fryer is shipped, many of its parts are covered with a thin coat of 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.

- a. Fill the tank with water and add one packet of Pitco fryer cleaner or a mild detergent.
- b. Turn the fryer on and set the thermostat to 200°F. Allow the fryer to heat for 15 minutes.

NOTICE

Do not leave the fryer unattended during cleaning. Never let the water level go below the "OIL 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 off the fryer main burners and turn gas valve knob to the PILOT position. If the fryer has electronic ignition turn the gas control valve to the OFF 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.

1.5.5 Thermostat Calibration Check

NOTICE

Thermostat calibration requires that the temperature of the fryer be raised above boiling. Therefore, you will need to drain the water from the fryer and fill it with oil. Before removing the water, perform the initial cleaning of the fryer. Cleaning the fryer now will prevent you from having to drain the oil and refill with water later.

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

- 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, calibrate the thermostat using the appropriate calibration procedure in this manual.

1.5.6 Thermostat Calibration

To calibrate the thermostat the dial must be removed from the shaft. The adjustment for the thermostat is inside the dial shaft.

- a. Place the tip of the thermometer in the shortening approximately 1" above the temperature sensors.
- b. Set the Thermostat to 325°F and wait for the temperature reading on the thermometer to rise.
- c. Let the fryer cycle 4 to 6 times to ensure that the temperature has stabilized. Compare the thermometer temperature against the thermostat setting. If the values are more than 5°F apart, calibrate the thermostat using the following procedure.

- d. Set the thermostat dial to 325°F.
- e. Remove the thermometer dial by pulling the knob straight out. DO NOT rotate the dial.
- f. Hold the outside of the shaft so it does not move. Use the tip of a small, flat tip screw driver to scrape away the sealing compound from the adjustment screw.
- g. Turn the adjustment screw clockwise to lower the temperature setting and counterclock-wise to raise the temperature. One quarter turn changes the temperature approximately 25°F.
- h. Turn the adjustment until the burners turn on at 325°F. Replace the knob and allow the fryer to cycle 4 to 6 times. Check the temperature of the thermometer against the thermostat dial, if it is greater than 5°F difference repeat the calibration procedure.
- i. When the calibration is correct, remove the thermometer and replace the tube screen.

1.5.7 High Limit Test

THIS TEST SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY

Chapter 2: Operating Instructions

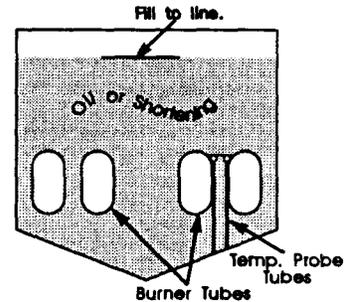
This chapter describes how to operate your fryer to obtain the best performance. Included in this chapter are filling, operating, and cleaning instructions for gas fryers.

2.1 FILLING THE FRYER

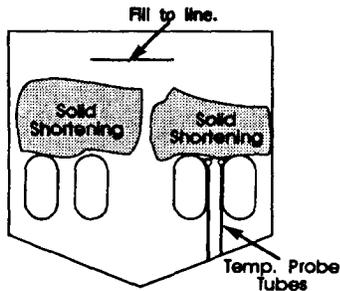
Both liquid and solid shortening can be used in the fryer. If solid shortening is used, it is recommended that you use the melt cycle feature (optional) to melt the shortening. You can melt solid shortening without the melt option, but you must carefully follow the instruction in section 2.2.2.

2.1.1 Filling the Fryer With Liquid Shortening

- Make sure the drain valve is completely closed.
- Fill the fryer with oil to the "Oil Level" line marked on the back of the tank.



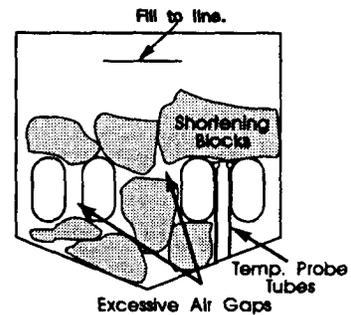
2.1.2 Filling the Fryer With Solid Shortening



WARNING

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

- Make sure the drain valve is completely closed.
- Remove the screen covering the tubes.
- 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 tank. DO NOT bend or break the temperature sensor probes. If these are damaged the fryer will not function properly.
- Once the fryer is packed with shortening, the shortening must be melted. To melt the shortening refer to the Fryer Start-Up section for your fryer.



2.2 MELTING SOLID SHORTENING

NOTICE

The melting procedure below requires the manual cycling of the fryer. Watch carefully for smoke. If smoke is noticed, the shortening is scorching. To prevent this, decrease the time you leave the burners on.

- a. Rotate the thermostat to cause the main burners to light and remain lit for 4 seconds.
- b. Rotate the thermostat back to off for 30 seconds.
- c. Continue cycling the main burners until most of the solid shortening is liquefied and the temperature reaches 150°F. At 150°F leave the thermostat set at the desired temperature. The burners will remain on constantly until the shortening temperature reaches the thermostat setting.
- d. Once at temperature, the fryer is now operating normally and ready to use.

23 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.

CAUTION

The fryer has been installed using restraining devices to prevent accidental tipping or movement. Do not attempt to move the fryer when it has hot liquid in it. Splashing hot liquids can cause severe burns.

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.

2.3.1 Fryer Start-Up

DO NOT START FRYER WITHOUT FILLING WITH OIL!

- a. Light the pilot light as described in section 1.5.2.

- 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. The main burners will light and cycle at the thermostat setting.

2.3.2 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 (if fryer has an electronic ignition turn the gas valve to the Off position). The fryer 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 counterclock-wise to the OFF position and turn the power switch off (if used). The fryer is now completely shut down and can be cleaned and filtered.

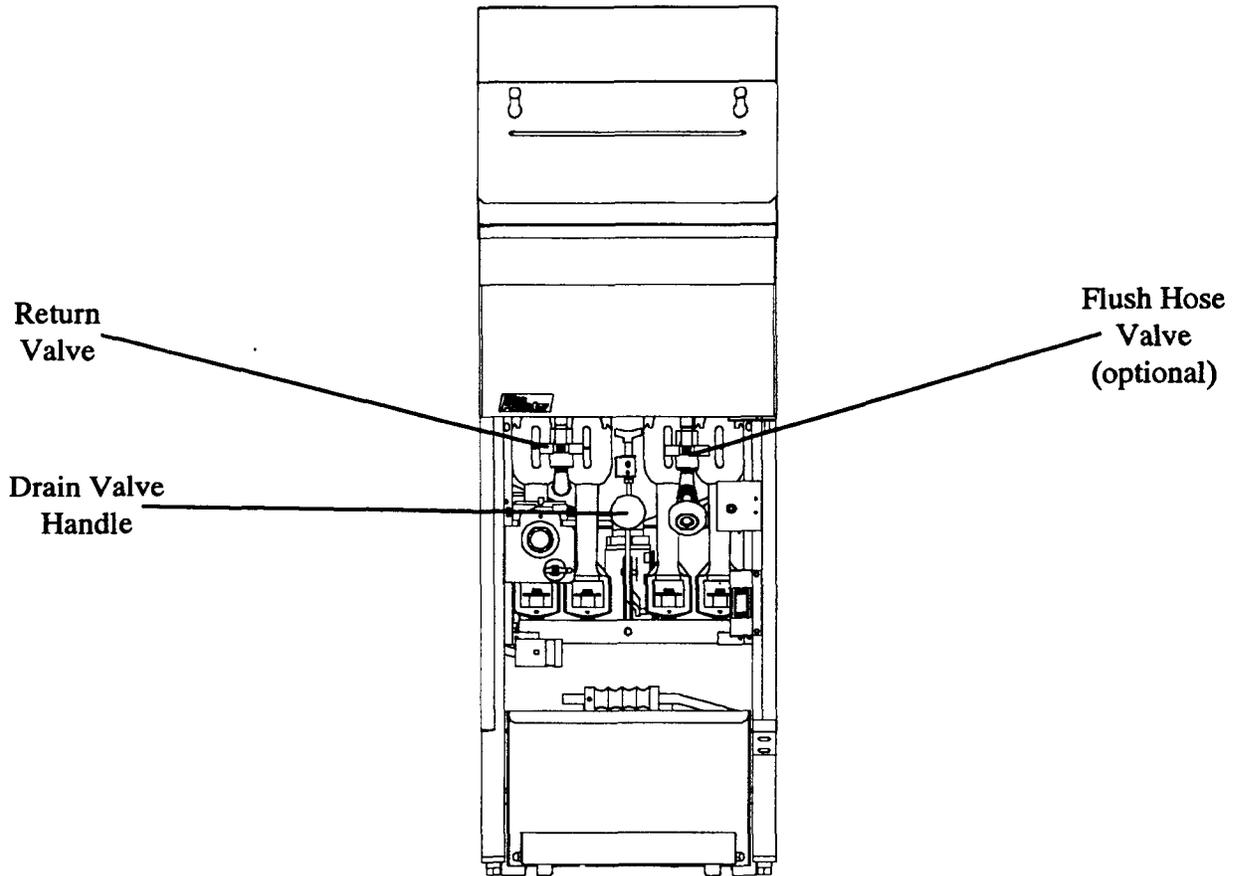


2.3.3 Power Failure

If power is removed from the fryer during filtering, place the filter switch in the OFF position and close the return valve. When power is restored restart the filter procedure

2.4 SHORTENING FILTER PROCEDURES

This section describes the procedures used to filter fryers using the solo filter unit. Figure 2-1 shows the locations of the components used in the filter process. The filter accessories and tools you should have to perform normal filtering operations are described on page 2-5. Frequent filtering of your shortening will prolong the shortening's usable life. Daily shortening filtering is strongly recommended.



NOTE
See Maintenance Section for Filter
Operational Information.

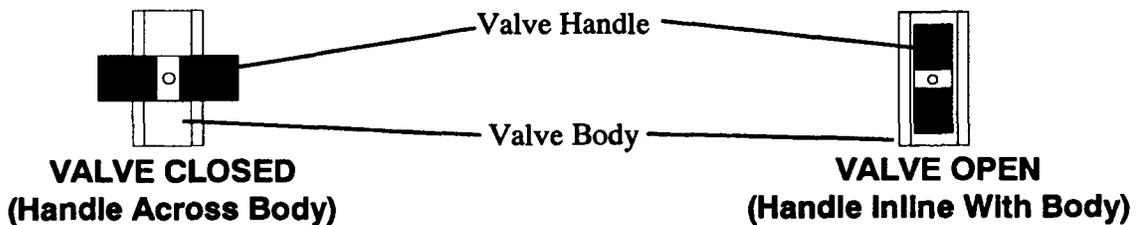


Figure 2-1 Fryer Illustrating Filter Components

Return Valve RED - When open, with the filter pump on, allows the shortening to return to the fryer tank.

Drain Valve BLACK- Drain the oil from the fryer tanks to the filter pan.

Oil Return Connection - Disconnect for return oil from the filter unit to the fryer. Simply push to left on fitting to connect. Pull to right to disconnect.

Filter Unit Cord - Provides electrical power to the filter unit.

Filter Paper - Package of pre-cut filter paper.

Filter Crumb Catch -Mounts in the filter pan lid and catches large debris during filtering.

Flush Hose (OPTIONAL) - Attached to the filter piping, this hose and nozzle is used to flush out the fryer tank. This hose is an optional item.

Filter Crumb Scoop - Short handle wide pan design, this scoop is used to remove the debris from the filter pan.

Cleaner - Used during fryer boil-out cleaning.

Drain Clean Out Rod - Long handled design, this tool is used to clean out the drain openings.

Precoat Filter Aid - Coarse Diatomaceous earth used to enhance the filter ability of the filter media.

Cleaning Brush -This long handled stiff bristle brush is used to brush down the crumbs inside the fryer tank during shortening filtering.

Fryer Crumb Scoop -A specially designed long handle scoop for scooping out the fryer. The scoop section is narrow enough to fit down between the fryer burner tubes.

WARNING

At operating temperature the shortening temperature may be greater than 300°F. Extreme care should be used when filtering operating temperature shortening to avoid personal injury.

2.4.1 General Filter Hints

1. Ensure that all oil in the filter pan is returned before it cools and hardens. This is very important if you are using solid shortening.
2. Always use **Pitco Precoat®** for fastest filtrations, maximum labor saving, and cleanest/clearest shortening possible. Impaired filter performance will result without the use of a filter aid.
3. The longevity of your oil is related to how clean you keep it. With a Pitco solo filter system, it is easy to do a quick drain/refill anytime. By removing suspended particles often, it prevents them from burning.

4. When the time it takes to refill the fryer after filtering exceeds 3:00 minutes, scrape the filter bag or paper. If scraping does not bring the refill time back down change the filter paper as described in 3.1.
- 5. The filter pump is protected from clogging by a special screen in the pickup tube. Clean this screen each time a new filter is installed** (see Chapter 3,3.4.2)
6. If you have filter system problems refer to section 3.4.2.
7. Purge the filter lines by allowing the filter pump to run 15 seconds after air bubbles are seen inside the fryer tank.

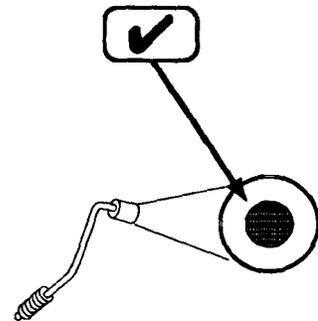
2.4.2 Filter Procedures: Numbers in parenthesis refer to Figures 2-1 and 2-2.

NOTICE

- When working with hot oil ALWAYS wear oil-proof, insulated gloves.

NEVER

- Run the filter system without a filter bag/paper.
 - Attempt to filter more than one fryer tank at a time.
 - Empty the oil from the fryer before turning OFF the fryer burners.
 - Store the UFM Filter Unit anywhere other than in the fryer filter cavity.
- a. Disconnect the filter pan, slide it out and empty the crumb basket. Scrape previously filtered residue off the filter paper. Examine the filter bag for dark, scuffed, or torn areas. Refer to 3.1.1 for filter bag replacement instructions. Re-install the pan.
 - b. Turn the fryer OFF (See Standby Shutdown, section 2.3.2). Remove the baskets from the fryer tank(s). Use the clean out rod to lift out the tube screens. If there are excess crumbs in the fryer tank, remove them with the crumb scoop.
 - c. If you have replaced or scraped the filter paper, stir in Precoat Filter Aid to the shortening in fryer (8 oz. by volume). After cleaning out the excess debris with the fryer scoop sprinkle the powder into the first fryer to be filtered and stir the powder into the oil.



NOTICE

Always open a system valve before starting the filter pump.

- d. Slowly open the drain valve by using the black knobbed extension rod. If necessary use the clean-out rod to clear the crumbs from the drain. Use the long handled brush to clean the sides of the tank as the oil drains.
- e. Open the red handled return valve to the tank you are filtering. When the tank is empty close the drain valve and turn on the filter pump. As the tank fills, brush the inside of the tank to remove crumbs.
- f. When bubbles are seen coming out of the oil return spout, turn off the pump. Open the drain valve and allow the tank to drain again. Repeat steps b through d until the tank is clean.
- g. When cleaning is complete, turn the pump off, close the drain valve, and replace the tube screen. Open the red handled return valve and turn on the pump to refill the fryer with the filtered oil. Continue to run the filter pump until bubbles come out the oil return opening. Turn the pump off and close the red handled return valve. If necessary add more shortening to the tank to return the shortening level to the fill mark. The fryer is now ready for use.

2.5 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.
- b. Use warm water with a mild detergent to clean surfaces. Be careful not to get water in the shortening. Rinse completely and dry thoroughly before use.
- 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 3.2.

Chapter 3: Owner Maintenance and Adjustments

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.

WARNING

The power supply must be disconnected before servicing or cleaning the appliance.

3.1 FILTER MEDIA REPLACEMENT

This section describes the filter system's components and details the procedures necessary to replace the filter media.

WARNING

At operating temperature, the shortening in the fryer may be hotter than 375°F (190°C). This hot, melted shortening will cause severe burns. Do not let the hot shortening touch your skin or clothing. Always wear insulated oil-proof gloves when working on the filter system.

The filter module stores neatly under the fryer. The unit is very easy to use and allows for quick installation and filtration, even under the busiest conditions. The filter module is shown in Figure 3-1 with specific components and features pointed out and briefly described.

Follow the procedures below to change the filter paper.

WARNING

It will be easier and safer if the filter assembly has cooled to room temperature before handling any filter parts.

- a. To remove the filter pan, disconnect the filter tube connection. This is done by sliding the insulated portion of the connector out of the receiving portion of the connector.
- b. Grasp the filter pan and gently pull the assembly out the front of the fryer, remove the filter pan lid.
- c. Remove the crumb catch tray from the top of the filter pan. Discard any debris that may be in the crumb catch.

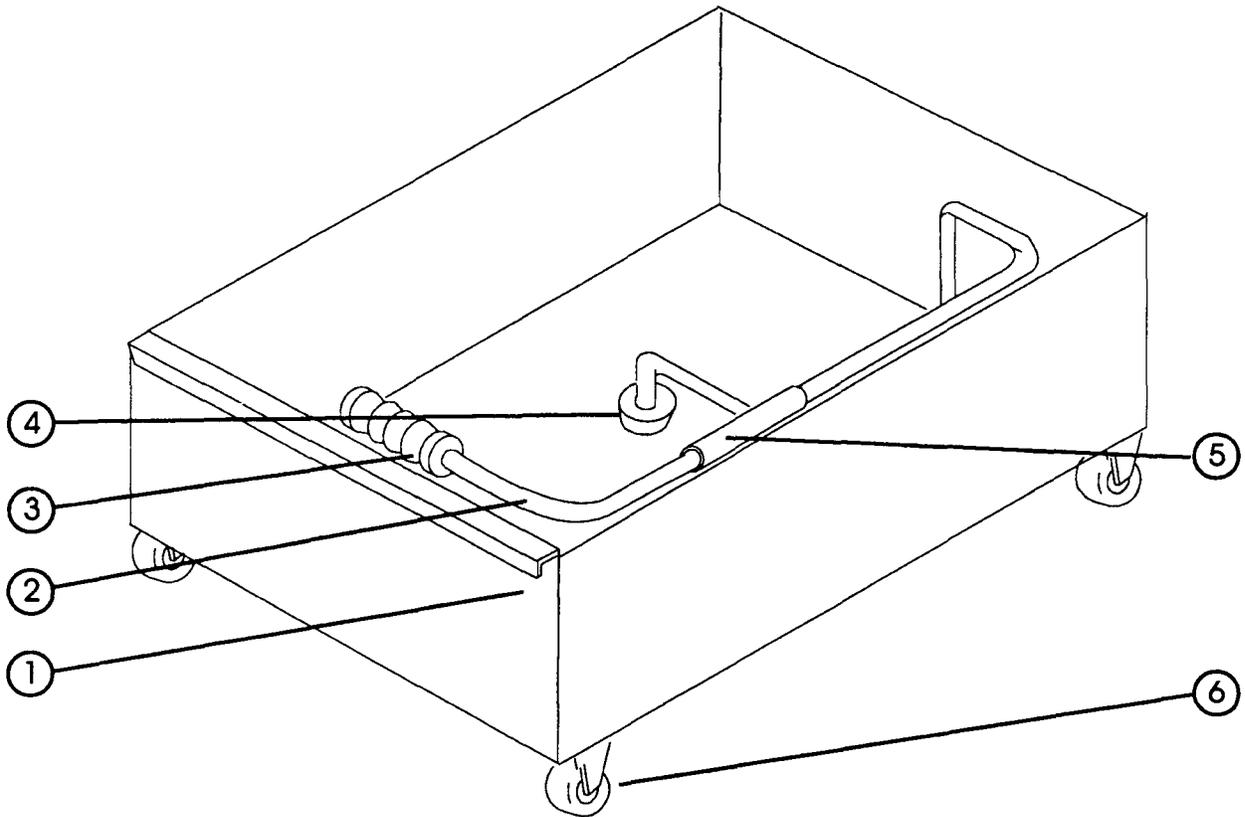


Figure 3-1 Filter Module

(1) **Filter Pan** - Holds the oil from the fry tank.

(2) **Pick-Up Tube** - Connects filter envelope assembly to piping. Incorporates a strainer to protect filter pump from grit in the event of envelope failure.

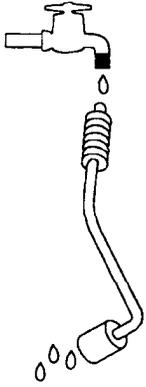
(3) **Filter Assembly Connector** - An insulated handle covers the filter pan assembly connection. This connection separates the filter pick-up assembly from the filter piping for removing the filter pan for cleaning.

(4) **Filter Media Connector** - Connects the filter pick-up tube to the filter media rack. An internal screen keeps debris out of the filter pump.

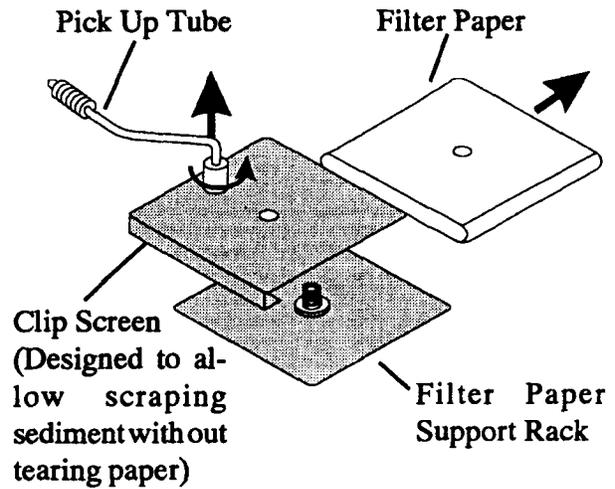
(5) **Flexible Coupling** - Flexible coupling allows for easy movement when connecting and disconnecting the pickup tube from the fryer.

(6) **Casters** - Allows for easy movement of the pan.

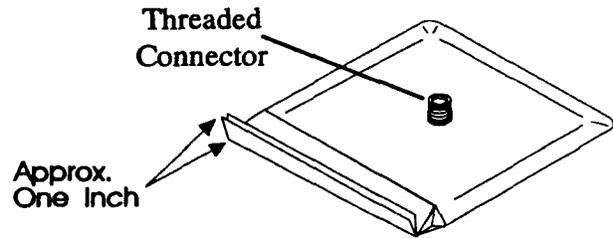
- d. Lift up on the filter paper assembly and remove from the filter pan. Unscrew the suction tube from the filter paper support rack. Remove the clip screen and slide the filter paper support rack assembly out of the filter bag.



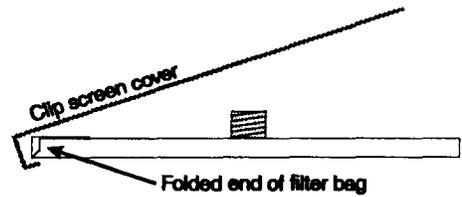
- e. All of the filter pick up assembly parts can be washed in a dish washer or a pot sink. Flush out the suction tube assembly with hot water. The pick up tube screen keeps grit and solid material from binding the pump. After flushing the pick up tube screen check to ensure that the screen is free of debris. After cleaning, it is very important to thoroughly dry the parts before re-assembling. Water and oil do not mix. Water in hot oil will cause the oil to splatter.



- f. Start re-assembling the filter pick up assembly by sliding the new filter paper on to the filter paper support rack. Ensure that the hole in the filter paper goes over the pick up tube assembly threaded connector.



- g. Fold the open end of the bag in two folds. The first fold should be approximately 1 inch from the end and the second should be over the edge of the rack assembly.



- h. Slide the clip screen over the folded end of the filter paper. Ensure the opening of the clip screen goes over the pick up tube connection. Screw the suction tube assembly onto the threaded connection.
- i. Place the filter rack assembly in the filter pan and install the crumb catch tray in the top of the filter pan lid. Place lid on filter pan.
- j. Slide the filter pan assembly back into the fryer and attach the pick up tube connector to the filter unit connection.

3.2 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. This would also be a good time to replace the filter paper if necessary.

- a. You will need a container large enough to hold the volume of the tank. This container should also be able to withstand boiling water temperatures.

CAUTION

Completely shut down the fryer when the oil is to be replaced by water, and when the heating portion of the cleaning is complete. This will prevent the heating system from coming on during the oil draining and water filling procedure.

- b. Drain the oil from the fryer and discard or save for reuse. Remove tube rack/mesh tube screens and remove any large debris from the bottom of the fry tank. Once clean, return tube rack/mesh screens to the fry tank. Close the drain valve and fill the fry tank with water and noncaustic detergent. For best results use Pitco Fryer Cleaner.
- c. Restart your fryer as described in 2.3 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. Once the water is at a slow boil turn off the fryer.
- d. Allow the fryer to soak for 20 minutes to soften shortening deposits and carbon. Use fryer brush to remove any residue from tank, heating tubes, and side walls. Perform the daily cleaning procedure described in section 2.5.
- e. Remove the filter unit from under the fryer. Slide a container to catch the water under the fryer so that the pipe that is normally aimed into the filter pan is aimed into the container and open the drain valve.
- f. Drain the hot water to the container and rinse the tank with clean warm water.
- g. Wipe the tank dry with clean cloth wipes. Close the drain valve and remove the large container.
- h. Refer to section 2.1 to refill the fryer.

3.3 FLUE INSPECTION

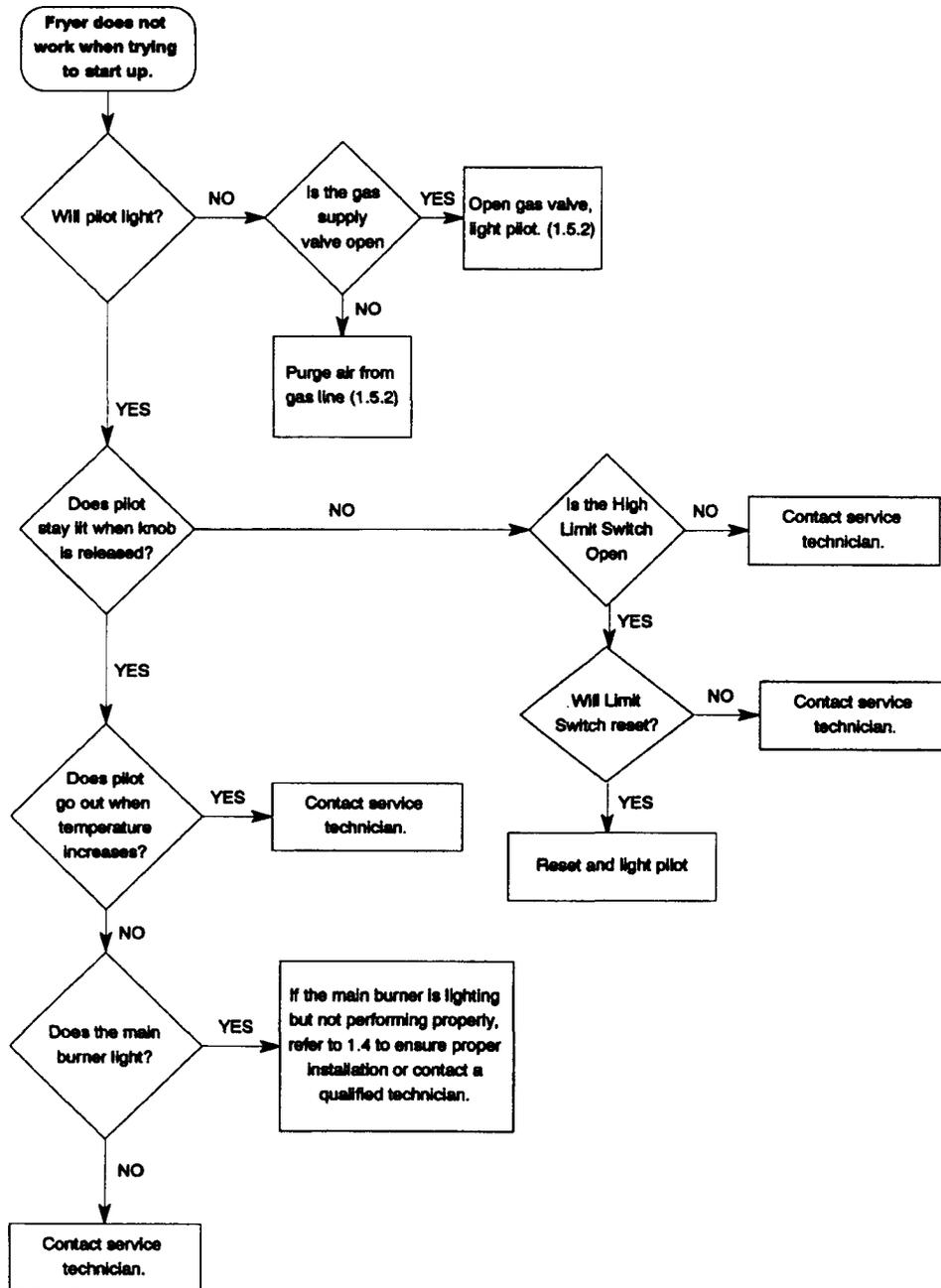
It is recommended that once every six months, with the cooker cooled down, you examine the flue area. Check for corrosion or blockage of the flue. Ensure that the cooker is shutdown and do not turn it on during the examination. Examination of the flue area during cooking may cause bodily injury.

3.4 TROUBLESHOOTING

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.

3.4.1 Fryer Troubleshooting

Refer to this section to correct common problems that may be encountered in equipment operation.



3.4.2 Filter Troubleshooting

Refer to this section to correct common problems that may be encountered during filter operation.

