



Installation, Operation & Service Instructions

Covering Gas Fired Deep Fryers

Model Numbers: 35C+, 7, 14, 18, 24, 34, 12, 14R,
PR14, PM14, RPB14 with all options

P.O.Box 501, 509 Rt 3A, Bow, NH 03302 USA Tel # (603)225-6684 Fax # (603)225-8497
A Blodgett Company

WARNING

Do NOT attempt to make adjustments to sealed devices. They are set at the factory and DO NOT require further adjustments.

WARNING

Installation and all connections must be made according to National and Local Regulations and Codes in force.

WARNING

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

WARNING

To prevent burns, 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.

NOTICE

Installation should only be done by a Competent Service Technician. The Model & Serial Number, and the Gas Type & Pressure are stamped into the Data Plate, located on the inside panel of the door.

NOTICE

This appliance is intended for professional commercial use only and, as such, should be operated by fully trained personnel.

NOTICE

It is recommended that this machine be inspected by a Qualified Technician on yearly basis.

WARRANTY

Pitco Fryers will be warranted against defects in manufacturing or materials as follows:

1. Fry Tanks:
 - Stainless Steel - 10 Years
 - Plain Steel - 5 Years
2. All Other Parts - 1 Year

Parts will be repaired or replaced at our option and will include the parts only unless otherwise specified.

TABLES:

Appliance Model Number		Gas	Supply Pressure (mbar)	Appliance Category	Burner Pressure(mbar) (governor only)	Injectors (mm)	Pilot Injector (Code)	Input (nom) gross kw	Input (nom) net kw	nom rate m3/h	Governor	Amps at 230 v 50 Hz	kw at 230 v 50 Hz
Great Britain													
35C+	NAT	G20	20	I2H	10	2.44	N22	26	23.4	2.55	YES	0	0
	LP	G31	37	I3P	-	1.4	LP16	26	23.9	1	NO	0	0
7	NAT	G20	18/20	I2H	16	1.7	N22	11.7			YES		
	LP	G31	50	I3P	-	1.15	LP16	15.2			NO		
14	NAT	G20	18/20	I2H	16	1.75	N22	23.3			YES		
	LP	G31	50	I3P	-	1.15	LP16	27.2			NO		
18	NAT	G20	18/20	I2H	16	1.7	N22	27.8			YES		
	LP						LP16						
(PM)(PR)14 (R)	NAT	G20	20	I2H	10.8	2.44	N22	35.7	32.2	3.4	YES		
	LP	G31	37/50	I3P	29.4	1.51	LP16	35.7	33	1.31	YES		
RPB14A	NAT	G20	20	I12H3P	6.2	4.16		23.2	20.9	2.2	YES		
	LP	G37	37	I12H3P	15.3	2.18		23.2	21.4	0.86	YES		
RPB14B	NAT	G20	20	I12H3P	6.8	4.4		26.3	23.7	2.5	YES		
	LP	G37	37	I12H3P	19	2.18		26.3	24.2	0.97	YES		
12	NAT												
	LP												
24	NAT												
	LP												
34	NAT												
	LP												

Ireland

35C+	NAT	G20	20	I2H	10	2.44	N22	26	23.6	2.55	YES	0	0
	LP	G31	37	I3P	-	1.4	LP16	26	23.9	1	NO	0	0
7	NAT	G20	18/20	I2H	16	1.7	N22	11.7			YES		
	LP						LP16						
14	NAT	G20	18/20	I2H	16	1.75	N22	23.3			YES		
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RPB14A	NAT												
	LP												
RPB14B	NAT												
	LP												
12	NAT												
	LP												
24	NAT												
	LP												
34	NAT												
	LP												

France

35C+	NAT											0	0
	LP	G31	37	I3P	-	1.4	LP16	26	23.9	1	NO	0	0
7	NAT	G20	20/25	I2E+			N22	11.7			NO		
	LP	G31	50	I3P			LP16	15.2			NO		
14	NAT	G20	20/25	I2E+			N22	23.3			NO		
	LP	G31	50	I3P			LP16	27.2			NO		
18	NAT	G20	20/25	I2E+			N22	27.8			NO		
	LP												
(PM)(PR)14 (R)	NAT	G20/G25	20/25	I2E+		4 X 1.1	N22	35.7	32.2	3.31	NO		
	LP	G31	37	I3P		1.4	LP16	35.7	33	1.31	NO		
RPB14A	NAT	G20/G25	20/25	I2Esi	6.2	4.16		23.2/10.6	20.9/16.8	2.2	YES		
	LP	G31	37/50	I3P	15.3	2.18		23.2	21.4	0.86	YES		
RPB14B	NAT	G20/G25	20/25	I2Esi	6.8	4.4		26.3/21.4	23.6/19.3	2.5	YES		
	LP	G31	37/50	I3P	19	2.18		26.3	24.2	0.97	YES		
12	NAT												
	LP												
24	NAT												
	LP												
34	NAT												
	LP												

Appliance Model Number	Gas	Supply Pressure (mbar)	Appliance Category	Burner Pressure(mbar) (governor only)	Injectors (mm)	Pilot Injector (Code)	Input (nom) gross kw	Input (nom) net kw	nom rate m3/h	Governor	Amps at 230 v 50 Hz	kw at 230 v 50 Hz	
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	LP	G31	50	I3P	-	1.15	LP16	15.2			NO		
14	NAT	G20	18/20	I2H	16	1.75	N22	23.3			YES		
	LP	G31	50	I3P	-	1.15	LP16	27.2			NO		
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(PM)(PR)14 (R)	NAT	G20	20	I2H	10.8	2.44	N22	35.7	32.2	3.4	YES		
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	LP	G37	37	I12H3P	19	2.18		26.3	24.2	0.97	YES		
12	NAT												
24	LP												
	NAT												
34	LP												
	NAT												

Germany

35C+	NAT	G20	20	I2H	10	2.44	N22	26	23.6	2.55	YES	0	0
	LP	G31	37	I3P	-	1.4	LP16	26	23.9	1	NO	0	0
7	NAT	G20	18/20	I2H	16	1.7	N22	11.7			YES		
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14	NAT	G20	18/20	I2H	16	1.75	N22	23.3			YES		
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RPB14A	NAT												
LP													
RPB14B	NAT												
LP													
12	NAT												
LP													
24	NAT												
LP													
34	NAT												
LP													

Austria

35C+	NAT											0	0
	LP	G31	37	I3P	-	1.4	LP16	26	23.9	1	NO	0	0
7	NAT	G20	20/25	I2E+			N22	11.7			NO		
	LP	G31	50	I3P			LP16	15.2			NO		
14	NAT	G20	20/25	I2E+			N22	23.3			NO		
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	LP	G31	37/50	I3P	19	2.18		26.3	24.2	0.97	YES		
12	NAT												
LP													
24	NAT												
LP													
34	NAT												
LP													

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MODEL NUMBER RECOGNITION:

EXPLANATION OF MODEL NUMBER CONFIGURATION:

Most model numbers have a PREFIX and a SUFFIX. The explanation of the different Prefixes and Suffixes is listed below. Standard fryers, with NO options and a mild steel tank, will not have any PREFIX or SUFFIX but simply have a number (7, 14, 18 etc.)

EXPLANATION OF PREFIXES WITHIN BASIC MODEL NUMBERS:

- PR = Fryer utilizing a solid state T-Stat (GO) control and melt cycle. This includes four 15 cm (6") burners and tubes with high efficiency baffles.
- PM = Fryer utilizing a built-in computer control with four 15 cm (6") burner and tubes and high efficiency baffles.
- F = Fryers supplied with a filter system built adjacent to the fryer cabinet.
- RPB = Radiant Power Burner (With Automatic Ignition.)

EXPLANATION OF SUFFIXES WITHIN BASIC MODEL NUMBERS:

- D = Deep foam tank area. (In the 35C+ models, D denotes SS door.)
- DI = Drop-in deep fat fryer.
- F = Fish fryer with low splash back.
- FF = Food fryer with high splash back for submerger & drainboard.
- P = Donut fryer
- UFM = Under fryer filter (manual).
- WKS = Computer ready with float switch and SS tank. Bottom drain. (Special for K.F.C.)
- S = Fryers with stainless steel tank. This will follow the model number and precede the UFM notation.
- SS = Fryers with stainless steel tank and cabinet. This will follow the model number and precede the UFM notation.

EXPLANATION OF SUFFIXES OUTSIDE BASIC MODEL NUMBERS (OPTIONS):

The basic model number must be followed with a (-) then the suffixes. The (-) only applies to the first suffix used.

- | | |
|--|--|
| Option D = Bottom drain | Option T = Drain valve safety switch |
| Option E = Electric T-Stat (KX-299) | Option V = Universal tank |
| Option F = Front extensions | Option W = (Fast) Computer ready |
| Option H = Solid state T-Stat | Option ZA = (Intellifry) Computer, 14 size. Single |
| Option J = Electronic Ignition control | Option ZB = Computer, 7 size. Single |
| Option K = Float switch | Option Z/2A= Computer, 14 size. Dual |
| Option L = Basket lifts | Option Z/2B= Computer, 7 size. Dual |
| Option R = Rear extensions | |

INSTALLATION:

INSTALLATION CLEARANCES:

The fryer needs clearance around it to allow for correct combustion, cleaning and for fire hazard reasons. It is recommended that the fryers have a minimum of 15 cm of clearance from any combustible surface and have at least 15 cm floor clearance. If the fryer is equipped with a filter, it will be necessary to allow at least 0.75 m front clearance for the removal/installation of the filter pan/module.

VENTILATION & FIRE SAFETY SYSTEMS:

All fryers must be placed under a Hood style ventilation system. An adequate supply of fresh air shall be provided into the room or space enclosing equipment for the units ventilation and combustion requirements. Exhaust gases can reach high temperatures, therefore, it is important to install a fire safety system. Both the Ventilation Hood and Fire Safety System must be installed according to local and national codes.

GAS CONNECTION:

NEVER supply the fryer with a gas that is not indicated on the data plate, located on the inside of the door. To ensure peak performance and correct combustion Pitco Fryers must be supplied with an amount of Fuel Gas sufficient to meet the rating requirements shown on the data plate, found on the inside of the door. All gas connections must be made by a Certified Gas Service Technician.

FUEL LINE TESTING:

Since the internal gas valve of the Pitco Fryer is rated at 50 mbar maximum pressure, it is imperative that no testing be done at a pressure greater than this. If it is necessary to test at a pressure greater than this, the fryer should be isolated from the gas line so that damage to the gas valve does not occur.

INITIAL ASSEMBLY:

Remove the two (2) screws that mount the rear of the tank to the cabinet. Place the Flue Heat Deflector in place with the bend facing forward. Replace the tank mounting screws, through the Flue Heat Deflector into the tank. In some cases the fryers legs may need to be installed.

ELECTRICAL CONNECTIONS: (Some machines do not require an electrical connection)

Pitco Frialators are manufactured to run on a particular electrical supply. Do NOT attempt to connect any fryer to an electrical supply that is not indicated on the data plate on the inside of the door. All electrical connections must be made according to the local codes and regulations .

INITIAL ADJUSTMENTS:

Thermocouple: The pilot is set at the factory and requires NO further adjustment.

Gas Pressure (Only when Governors are installed.): The gas pressure should be adjusted until the manifold pressure reads the same pressure that is indicated on the data plate, located on the inside cover of the door.

Air Pressure (RPB14 ONLY): Use a pressure gauge capable of measuring under 3 mbar. Adjust the air pressure at each burner supply elbow to 2.21 mbar by adjusting the air slides at the blower.

Regulating Thermostats: These are preset at the factory and DO NOT need further adjustment. Do NOT attempt to make adjustments to this device.

Hi Limit Thermostats: These are preset at the factory and DO NOT need further adjustment. Do NOT attempt to make adjustments to this device.

INITIAL CLEANING:

Before filling any Pitco Frialator with oil, it is advised that it be thoroughly cleaned to remove any foreign particles from the cooking area. The machine should be filled with water to at least, the minimum level. Add the sample packet of Fryer Cleaner and set the temperature control between 90° and 100° C. Using the supplied brush and the appropriate protective clothing, brush the inside of the fry tank until clean. When finished, turn the machine OFF and drain, rinse the tank with fresh water and dry carefully. The machine should be filled with oil at this time and all exposed surfaces coated with a small amount of cooking oil to prevent surface rust.

OPERATION:

COVERS:

In case of an oil fire in the fryer the cover can be used to place on top of the fryer to extinguish the flames. It should be kept in a nearby location that is uncluttered and easy to reach.

FILLING THE FRY TANK WITH SHORTENING:

When using solid shortening, it must be cut into approximately 3 cm cubes and loosely packed around each of the heat tubes. Be careful not to obstruct the optional float switch. If installed, it will be located in the bottom of the fry tank at the rear as it must be allowed to float freely. Check that the oil level is at the minimum level once the oil has melted.

LIGHTING THE PILOT:

On NON Electronic Ignition Fryers: Turn the gas valve knob to the PILOT position and press inward. Light the pilot flame. Continue to press the gas valve knob for approximately 15 to 30 seconds. The pilot should remain lit when the gas valve knob is released, if NOT, try to reset the Hi-Limit and relight the pilot.

On Electronic Ignition Equipped Fryers: The pilot does NOT require lighting, since the machine will do this automatically.

RUNNING THE FRYER UP TO OPERATING TEMPERATURE:

GS Thermostat Equipped (The Thermostat is connected to the Gas Valve by 2 small gas lines): Turn the gas valve knob to the ON position and turn the Thermostat Dial to the desired level. The burners will automatically bring the oil up to the cooking temperature. You may now cook with your *Pitco* fryer.

Digital Thermostat Equipped: Turn the gas valve knob to the ON position and press the ON/OFF switch on the Display. The Digital control will illuminate and bring the shortening up to the desired temperature. You may now cook with your *Pitco* fryer.

Computer Equipped: Turn the gas valve knob to the ON position and press the Switch to the ON position. The computer display will come on and automatically bring the temperature up to the desired level and display READY. You may now cook with your *Pitco* fryer.

NOTE: On machines equipped with Digital Controls or Computers that are programmed with a melt cycle, the main burners will pulse on and off to slowly heat the oil. When the oil temperature has reached a preset level the main burners will run constantly until the set temperature has been reached.

FILTERING:

Filtering is recommended on a daily basis to keep the oil in as good a condition as possible. Follow the instructions below and refer to the appropriate Figure for your machine.

1. Turn the fryer OFF as described in the "SHUTTING THE FRYERS DOWN FOR AN EXTENDED TIME" section.
2. For Built In Filters (Filters located in a separate, but attached cabinet. Figure 1): Detach the Quick Disconnect at the end of the Return Hose and slide the tank outward. Pull the front and rear Hold Down handles from their locked position, and lift the Retaining Frame out. Lift the old filter paper out and replace with a new paper. Install the Hold Down Rack and replace the handles in a locked position. Push the pan back into place and attach the hose.
3. For UFM (Filters that are stored under the actual fryers. Figure 2): Detach the Quick Disconnect at the end of the Return Hose and pull the filter unit out from under the fryers. Pull the White handle apart on the Pickup. Unscrew the Pickup tube from the filter screen and lift the Clip Screen from the Support Screen and Paper. Remove the Support Screen from the Paper envelope and place it in a new Paper envelope. Fold the open end of the paper over twice and place the Clip Screen over the folded end of the paper. Screw the Pickup onto the screen and place it in the pan. Push the Pickup into its receptacle and push the filter under the fryer. Attach the Return Hose.
4. Open the GREEN drain valve for the fryer to be filtered. Allow the oil to drain from the fry tank. NEVER - Open more than ONE drain valve at the same time as the filter will NOT hold more than one (1) tank.
5. Open RED return valve for the tank being filtered.
6. Turn the pump ON and use the Cleaning Brush, Crumb Scoop and Cleaning Rod as needed to remove the debris from the fry tank. Turn the pump OFF when the fry tank is clean.
7. Close the GREEN drain valve and RED Return valve.
8. Return the oil to the fry tank. When air bubbles are present in the fry tank turn the pump OFF.
9. Close the RED return valve.
10. Turn the fryer ON as described in the operation section.

Figure 1.

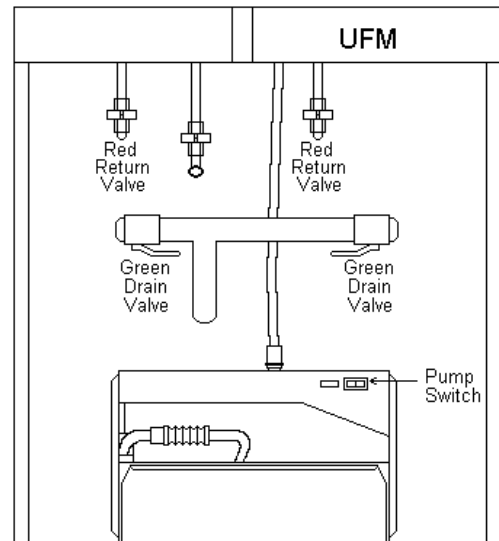
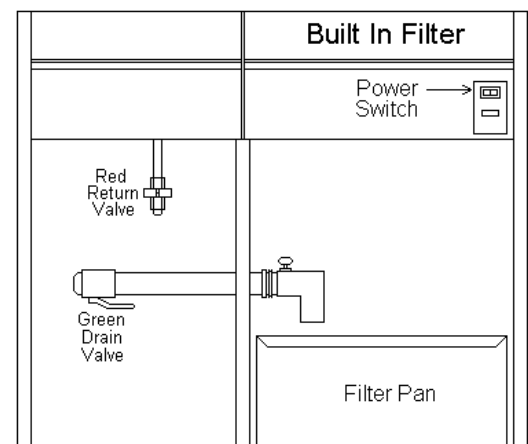


Figure 2.



SHUTTING THE FRYERS DOWN FOR A SHORT TIME:

On NON Electronic Ignition Fryers: If equipped with a Power Switch, turn it to the OFF position and turn the Gas Valve Knob to the PILOT position. This is recommended ONLY for short periods of time.

On Electronic Ignition Equipped Fryers: Turn the Power Switch to the OFF position and turn the Gas Valve Knob to the OFF position.


SHUTTING THE FRYERS DOWN FOR AN EXTENDED TIME:


On NON Electronic Ignition Fryers: Turn the power Switch (If the machine is equipped with one.) to the OFF position and turn the Gas Valve Knob to the OFF position. This is recommended when the machine is to be left unattended for a long time, such as overnight.

On Electronic Ignition Equipped Fryers: Turn the Power Switch to the OFF position and turn the Gas Valve Knob to the OFF position.

OPERATING THE COMPUTER CONTROL:

To check the ACTUAL Temperature Press the  key (After 5 seconds the display will return to the run mode.)


To check the SET Temperature Press the  key two times. (After 5 seconds the display will return to the run mode.)








To check the COOK, SHAKE or HOLD times press the  key and the desired **PRODUCT NUMBER** key. (The times will be automatically displayed in sequence, the display will return to the run mode.)



The BOIL mode will be automatically displayed when the computer senses a constant temperature of 100 °C. This will only happen when water is in the machine during the Weekly Cleaning process. To cancel the BOIL mode, turn the machine off and ON again. The computer will automatically exit the BOIL mode when the oil temperature exceeds 100 °C.



PROGRAMMING THE COMPUTER CONTROL:

To program the SET Temperature press   and enter the desired Temperature.

To return to the COOK mode at any time press 



To set COOK TIME press   and a PRODUCT KEY. Enter the desired time and press  to set its SHAKE TIME. Press  again to set its HOLD TIME. Press  &   to return to the COOK mode.



To enter the next level of programming press  and enter the PASSWORD (if one is set). Press  and SELECT will be displayed.



To change from °F to °C press  and use  to toggle between the options.



To set the PASSWORD option press  to display SET PASS and use  to toggle between PASREQ and NOPASS. When a PASSWORD is required press  and set the desired four digit password.

To set the BEEPER VOLUME press  and use  to toggle between the three available volume levels.


To set the LANGUAGE option press  and use  to toggle between the available options.

To set the desired MELT CYCLE option press  and use  to toggle between the NO MELT, LIQUID & SOLID melt cycle options.

To view the RECOVERY TEST TIME press  and use  again to display the recovery data.


To change CONTROL modes press  and use  to toggle between COMPUTER and TIMER control modes.

OPERATING THE DIGITAL CONTROL:

Press the  key to turn the machine ON and OFF.



Press the  key to start the Left Hand TIMER and BASKET LIFT (when installed.)









Press the  key to start the Right Hand TIMER and BASKET LIFT (when installed.)

Press the  key to check the ACTUAL Temperature.

Press the  key to enter the PROGRAMMING mode.

PROGRAMMING THE DIGITAL CONTROL:

Use the  and  keys to adjust the settings when a change is needed during the programming.

Press the  to enter the PROGRAMMING mode. The Left COOK TIME will be displayed, adjust as needed. Press the  again and the Right COOK TIME will be displayed, adjust as needed. Press the  again and the SET operating temperature will be displayed, adjust as needed. Press the  again and the MELT CYCLE option will be displayed, adjust as needed. Press the  key again and LOC or UNLOC will be displayed. The With/Without PASSWORD option may be changed. Press the  key again and the °F/°C option will be displayed, adjust as needed. Press the  key again and the Right COOK TIME will be displayed again. To EXIT the PROGRAMMING mode press and hold the  key until MELT, HEAT or DROP is displayed.

CLEANING / MAINTENANCE:

DAILY CLEANING:

Using a soft cloth and a mild detergent, wipe all external surfaces until they are free of debris. It is permissible to allow a thin film of cooking oil to remain on all exposed (NON PAINTED) surfaces. Be sure to clean the front panel and behind the door.

WEEKLY CLEANING:

Turn the gas valve knob to the PILOT position. The fryer should be completely drained of shortening. Fill the fry tank with water to above the minimum and below the maximum level lines. (For best results use Pitco Fryer Cleaner Part Number P6071397.) Turn the fryer ON as described in the "RUNNING THE FRYER UP TO THE OPERATING TEMPERATURE:" section. When the water boils, use a pair of insulated rubber gloves and the supplied cleaning brush (35C+ fryers are economy models and are not supplied with cleaning brush) to scrub the inside of the fry tank, taking care not to damage the thin capillary tubes inside the tank. When the fryer is clean, shut the fryer down as described in the "SHUTTING THE FRYERS DOWN FOR A SHORT PERIOD:" section. Drain the water into a container that is capable of withstanding boiling water. Rinse the inside of the tank with fresh water and dry with a soft cloth until all of the water is gone. This is a good time to perform the DAILY CLEANING. The fryer is now ready to be refilled and used.

OPTIONS:

There are many options available on Pitco Frialator Fryers, these may include one or more of the following:

DIGITAL CONTROLS:

Machines with this option are completely controlled by the Digital Control. For programming instructions, refer to the Operating section of this manual.

COMPUTERS:

All machines manufactured with the Computer option have a Back Up Thermostat. This Thermostat is located behind the door of the fryer. When the computer receives an Open Probe signal from the Temperature Sensing Probe, the Computer will display PROBE and the Back Temperature control will automatically begin to control the oil temperature. For programming instructions, refer to the Operating section of this manual.

FLOAT SWITCH:

Take care to keep the Float Switch Ball free of any obstructions and debris as this will effect the way the fryer will operate. When cleaning the Float Ball, the Clip must be removed first to provide access to the Float Ball. When replacing the Float Ball make sure the Stamped letters are on the top. This option requires no other operator maintenance.

BASKET LIFTS:

On machines that are equipped with Computers or Digital Controls, the Basket Lifts will automatically run when a product button is pressed. When the Product Cook Time has expired the Basket Lifts will raise automatically.

UFM OR BUILT IN FILTER (F) OPERATION:

Filter paper should be changed when it is no longer effectively filtering the operating oil. For instructions on how to filter, please refer to the Operating section of this manual.

TROUBLESHOOTING:

FRYING SYSTEM:

Should there be a problem with your machine, the following checks should be done prior to calling an Authorized Service Company. Make sure the machine is operated correctly and that the Computer or Digital Display (when installed) is programmed accordingly.

Check these items before calling your Authorized Service Company	
ITEM TO CHECK	HOW TO CHECK
Power to machine	Check main power to machine (When applicable.)
Hi-Limit reset	Press Hi-Limit reset button. Mounted on cabinet side behind door
Power switch on	Power switch should be in the ON position. (On RPB machines ONLY the manual reset switch must be pressed after there has been an interruption in power.)
Gas to machine	Make sure gas supply line is connected
Gas valve knob position	Should be in the appropriate position
Fuses	Check for blown fuses. (Where applicable.)
Check pilot	Make sure the pilot is lit

Locate the problem in the chart below then follow the instructions in the above chart.	
PROBLEM	ITEM TO CHECK
Machine will not run: No lights on the front panel	Power to machine (Where applicable.)
Machine will not run: Front panel lights are ON.	Hi-Limit switch Gas to machine Gas valve knob position
Pilot will not light	Hi-Limit reset Gas to machine Gas valve knob position
Pilot lights: Machine will not heat	Power switch ON Gas valve knob position Fuses Is Thermostat turned UP
Machine will not maintain temp: Is machine still running? YES NO	Gas valve knob position Check pilot
Machine will not maintain temp: Is pilot lit? YES NO	Call Authorized Service Company Relight pilot per the manual
Oil temp too hot or Machine runs constantly	Check Thermostat calibration (Where applicable.) Call Authorized Service Company
Shortening is leaking from fry tank	Call Authorized Service Company

FILTERING SYSTEM:

Check these items before calling your Authorized Service Company	
PROBLEM	CHECK
Power to machine	Check main power to the machine
Circuit breaker	Check filter circuit breaker on side of filter handle
Motor overheat trip	Remove cap on the left side at the rear of filter and push red button
Shortening return quick disconnect	Fitting should be tight and clean
Pick up tube	Steel nut should be tight on the filter Pick up screen inside tube should be clear Fitting at top of tube should be tight
Paper installation	Paper should be installed per directions in the manual
Pick up screen	Check the small screen in the end of the pick up tube (Inside the large steel nut.) to make sure it is clear
Filter pump NOT running	Check power to machine Check circuit breaker Check motor overheat trip
Filter pump running	Check quick disconnect Check pick up tube is attached correctly Check paper installation Check pick up screen installation

SERVICE

This chapter provides the qualified technician with the trouble shooting techniques necessary to diagnose individual components within the Pitco fryer.

Thermostats:

GS (The Thermostat is connected to the Gas Valve by two small tubes): This type of thermostat has an open port when the temperature at the probe is LESS than the Set temperature. When the temperature is above the Set level the port becomes closed. If Gas is leaking through the port the Thermostat must be replaced. If the thermostat will not calibrate or maintain calibration within $\pm 5^{\circ}\text{C}$ it should be replaced.

Gas Valves:

GS (The Thermostat is connected to the Gas Valve by two small tubes): Turn the Pilot Knob the PILOT position. Remove the Outlet tube from the gas valve actuator. Seal the Outlet port at the gas valve. Turn the Pilot Knob the ON position. With the Outlet Port sealed the main burners should not come ON, release the seal and the main burner should come ON. Cycle the Gas Valve several times. If the Gas Valve does not perform as expected it should be replaced.

Electric Actuated: Test for Voltage at the wires on the Gas Valve Actuator. If voltage IS present and the valve Actuator does NOT operate (Usually a small sound can be heard as the Actuator moves) the Gas Valve should be replaced. If the Actuator operates but the main burners still do not come ON the Actuator should be removed and inspected. If any part of the Actuator is damaged it should be replaced.

Electronic Ignition: These Gas Valves use Electric Actuators which should be diagnosed as described in the above section. These Gas Valves also use a small solenoid, mounted on the side of the body of the valve, to control the flow of gas to the pilot. Test for 24 vac between the wires at the solenoid, if voltage IS present and NO gas is evident at the Pilot, the Gas Valve should be replaced as a complete assembly.

Regulators: Vent caps must be kept clean and free from debris at all times.

Pilot Solenoids: Using a test meter capable of measuring 0 - 50 mv connect the negative lead to the pilot bracket and the positive lead to the bottom connection on the hi limit. Light the pilot and allow enough time for the voltage to increase to a normal level. Turn the Gas Valve Knob to the OFF position and allow the pilot to go out. Listen for a small noise made when the Pilot Solenoid drops out. The millivoltage reading when this happens should be no more than 10 mv.

Hi Limits Thermostats:

All Hi Limits are electric switches that OPEN at a pre determined temperature. Check for continuity across the terminations when the wires are disconnected.

Thermocouples:

Use a Multi Meter capable of measuring DC voltage below 1V. Attach the Negative lead to the Pilot Bracket and the Positive lead to the upper connection at the Hi Limit. Light the Pilot and measure the DC voltage. The voltage should be 25-35 mv. If the measured voltage is less than specified, the part should be changed.

Pilots:

Standard: Pilots must be kept clean and free from anything that might block the flow of gas.

Electronic Ignition: As with Standard pilots, care must be taken to keep this area clean. The Electronic Ignition Pilot Assembly incorporates the Spark Tip which is encased in a ceramic insulator. Check for any cracks or signs of damage. Check the spark gap which should be between 3 - 6 mm. The High Voltage wire should also be free of damage. If the High Voltage Wire is suspected of being at fault it should be checked for continuity.

Probes:

Unplug the probe wires at a convenient location and check for resistance. Also check the temperature of the oil. If the resistance is NOT close to that shown on the chart below it should be changed.

TEMP	RESISTANCE	TEMP	RESISTANCE	TEMP	RESISTANCE
21.11°C	108051 Ω	79.44°C	11719Ω	148.88°C	1734 Ω
37.77°C	53146 Ω	93.33°C	7586 Ω	162.77°C	1267 Ω
51.66°C	30902Ω	107.22°C	5055 Ω	176.66°C	942 Ω
65.55°C	18695Ω	121.11°C	3458 Ω	190.55°C	712 Ω
76.66°C	12832Ω	135.00°C	2422 Ω	204.44°C	547 Ω

Electronic Ignition Modules:

The module receives a 24 vac signal from the Temperature control system and starts a cycle to light the pilot and prove the pilot flame. Check the module by following the steps below:

- ◆ Check between the THS Terminal and GROUND for 24 vac to verify that the module is receiving a signal.
- ◆ Listen for a spark sound. If NO spark sound can be heard, Turn the fryer OFF. Unplug the High Voltage Wire from the module and replace it with a new Electronic Ignition Pilot Assembly. Temporarily ground the Pilot assembly against a suitable Ground. Turn the machine ON and listen for a spark sound. If a sound can now be heard check the ground wire on the installed Pilot and repair if damaged. If a spark CAN be heard go to the next step.
- ◆ Check for 24 vac between the two wires at the Pilot solenoid on the Gas Valve. If voltage is found, turn the fryer OFF and check the Pilot Solenoid for a Resistance of 60 Ohms. If the resistance varies more than 10 Ohms from normal the Pilot Solenoid is defective and the Gas Valve must be replaced.
- ◆ If the Pilot comes on normally and the Main Burners do NOT, check for 24 vac at the Main Burner Solenoid of the Gas Valve. If voltage is found, turn the fryer OFF and check the Main Solenoid for a Resistance of 60 Ohms. If the resistance varies more than 10 Ohms from normal the Main Burner Solenoid is defective and the Gas Valve must be replaced.
- ◆ If a spark can be heard but it continues without the Pilot lighting check the Flame Sensor as described in the appropriate section.

Flame Sensors:

Run the fryer and check between the Flame Sensor wire and GROUND for 150 mv. If the millivoltage is NOT present the Electronic Ignition Module is at fault. Turn the fryer OFF, unplug the wire from the connection on the sensor. Connect a test meter capable of measuring Microamps in Series with the wire and the Flame Sensor. Run the fryer so that the Pilot lights. The meter reading should be between 0.15 - 0.35 ma. Remove the meter and replace the Flame Sensor wire. If the Microamperage is NOT present but the Millivoltage is, the Flame Sensor is at fault.

Computers:

- ◆ If the computer does NOT have a lit display check for 24 vac between the Green/Yellow and Red wires on the fryer harness that plugs into the computer harness. If voltage is found, and the display is NOT lit the computer connections should be checked for integrity. If the connection is good the computer is faulty.
- ◆ If the display is lit but the Main Burners do NOT light, check for 24 vdc at the coil of the K6 relay. This is the Heat Demand Relay and is switched ON only when the computer calls for a heating cycle. If voltage is present when the computer is calls for a heat cycle the K6 relay may be at fault. If voltage is NOT present, check the computer

connections for integrity. If the connection is good the Probe should be checked as described in the appropriate section. If the Probe is not at fault the computer may be suspect.

- ◆ If the display is lit but the Main Burners are still controlled by the Alternate Thermostat, check for 24 vdc at the K5 relay. This relay is the Control Transfer Relay and is energized at all times when the computer is ON. When the computer senses an OPEN PROBE condition it will cease to energize the Control Transfer Relay and the Alternate Thermostat will control the Heat Demand.

Digital Controls:

Check for an input voltage of 24 vac between the Red and White/Black wires at the control. When the control is calling for a heating cycle check for a 24 vac output signal between Gray and the White/Black wires. If the control does NOT output a signal when calling for a heat cycle it should be replaced.

Basket Lifts:

Micro Switch: Check for continuity between all connections with the plunger in the in and out positions.

Motors: Check for the incoming voltage between the two wires leading to the motor. If voltage is present but the motor does NOT turn the motor is defective. If the Basket Lift assembly comes UP and stops but drifts down, the brake assembly on the motor is defective and the motor must be changed. If the Basket Lift assembly moves up and down when operated but stops and starts at different positions check and adjust the Switch Actuation Plate located on the output shaft of the motor.

Float Switches:

It is important to keep Float Switches clean and free from debris. The Float Ball should only be installed with the writing in the UP position. To check the switch, electrically isolate the wiring and check for continuity.

Interlock Switches:

These switches are mounted on the Drain Valve body and handle. When the handle is moved the Actuator (magnet) moves away from the switch and causes it to OPEN, this can be verified by checking for continuity between the two wires that lead to the switch. The nominal gap between the Actuator and Switch should be between 3 - 6 mm.

Relays:

When the correct voltage is supplied to the coil the switch section of the relay will close. Relays may be checked by checking continuity between Switch terminals when the Relay IS and IS NOT energized.

Hot Surface Ignitors (Also known as HSI - RPB14 Only):

Disconnect the wiring harness leading to the part. Check for a resistance of 3 - 5 W while the Ignitor is at room temperature. Run the fryer for five minutes and recheck the resistance. The reading should now be 5 - 7 W.

Hot Surface Ignition Modules (RPB14 Only):

Check between the TH terminal and GROUND for 24 vac. For the first 4 seconds after the module receives voltage there will be a 24 vac output to the HSI. At this time the Check Fryer Light will light. This can be measured between terminals HSI1 and HSI2. After this initial period, the module outputs a 24 vac signal to the gas valve solenoid between VAL and GROUND. At the same time the HSI module sends a signal to the gas valve it begins to sense a 0.15 - 0.35 ma signal from the Hot surface Ignitor. If this signal is NOT found the module will shut down and send a 24 vac signal to the Check Fryer Light. This can be found by checking between the LAMP and GROUND terminals.

Blower circuits (RPB14 Only):

The same 24 vac signal that controls the HSI module also energizes a Blower Relay. This relay switches a 240 vac signal to the Blower. Check for voltage at the Blower. The Relay can be checked in the same manner as described in the appropriate section.

Burners (RPB14 Only) :

In order to inspect the burners for defect they must be removed from the machine. There must be NO visible signs of damage, such as creases or holes. Remove the HSI before attempting to remove the burner, as they are easily damaged.

TROUBLE SHOOTING:

Before diagnosing any machine for defective components check the following items:

- Check all power cords and appropriate circuit breakers to ensure that electrical power is supplied to the machine.
- Check all machine gas shut off valves to ensure that gas is supplied to the machine.
- Check all machine fuses.
- Check any appropriate electrical connections within the machine.
- Check all appropriate switches and gas valve knobs to ensure that machine is operated correctly.

35C+, 7, 14, 18, 24, 34 & 14R with NO options:

SYMPTOM	POSSIBLE CAUSES
Pilot will NOT light, when depressing the Gas Valve Knob.	Plugged pilot orifice.
Pilot lights, goes out when Gas Valve Knob is released.	Defective Thermocouple. Defective or Tripped Hi Limit. Defective Pilot Solenoid. Defective Hi Limit Wire.
Main Burners will NOT ignite.	Defective Gas Valve. Defective Thermostat. Plugged Regulator Vent cap.
The temperature of the oil is constant but not maintaining the desired level.	Defective Thermostat. Defective Gas Valve.
The temperature of the oil is erratic.	Defective Thermostat. Defective Gas Valve.
Main Burners run constantly.	Defective Thermostat. Leaks in the Gas Valve to Thermostat tubing. Defective Gas Valve.
Computer will NOT light.	Defective OFF-ON-START Switch. Defective Computer.

Computer Option:

Computer Display shows PROBE.	Defective Probe.
Computer shows a display but Main Burners will NOT light.	Defective K6 Relay. Defective K1 Relay. Defective Electronic Ignition Module (if equipped). Defective Gas Valve.
Computer shows a display but Main Burners can be controlled by the Back Up Thermostat.	Defective K5 Relay.

Electronic Ignition Option:

Temperature control calls for heating, nothing else happens.	Defective Electronic ignition Module. Defective Spark Wire/Pilot assembly.
Spark sound can be heard but pilot does Not light.	Defective Electronic Ignition Module. Plugged Pilot orifice. Defective Pilot Solenoid.
Pilot lights but sparking continues.	Defective Electronic Ignition Module. Defective Flame sensor.
Pilot lights normally but Main Burners do NOT ignite.	Defective Electronic Ignition Module. Defective Main Burner Solenoid.

RPB14:

SYMPTOM	POSSIBLE CAUSES
Blower comes ON but Burners do NOT light.	Defective HSI. Defective HSI module.
HSIs blow but Burners do NOT come on.	Defective HSI module.
Burners come ON but shut down after a few seconds.	Defective HSI module. Defective HSI. Defective Burner. Incorrect Gas or Air pressure.
Burners try to ignite but Blower does NOT come on.	Defective Blower Relay. Defective Blower.
Machine makes Booming sound.	Defective HSI. Defective HSI module.

SCHEMATICS:

Description	Schematic Drawing #	# Pages
Schematic, Gas - ALL Options w/Digital T-Stat	700208	1
Schematic, Gas - ALL Options w/3600 1 TK CMPTR.	700209	2
Schematic, Gas - ALL Options w/3600 2 TK CMPTR.	700210	2
Schematic, Gas - RPB w/3600 - 1 TK CMPTR.	700211	2
Schematic, Gas - RPB w/3600 - 2 TK Computer	700212	2
Schematic, TSTAT Digital Gas - RPB	700213	1

PARTS LIST:

NOMENCLATURE	DESCRIPTION	PART #	COMMENT
A1	Cooking Controller	PP10940	Digital Control
A1	Cooking Controller	PP10804	Single control computer, 12 Product
A1	Cooking Controller	PP10805	Single control computer, 8 Product
A1	Cooking Controller	PP10806	Dual control computer, 12 Product
A1	Cooking Controller	PP10807	Dual control computer, 8 Product
A2	Electronic Ignition Module	PP10071	
A2 & A3	Ignition Control Module	PP10801	RPB machines only
E1	Flame Sensor	P5046626	
E2	Pilot/Ignitor Assembly	PP10280	
F1 & F2	Fuse, 4 Amp Slow Blow	P5045720	
F3	Fuse, 1 Amp Slow Blow	PP10122	
I1 & I2	Hot surface Ignitor	PP10717	RPB machines only
J1	15 position male connector		
J2 & J15	12 position male connector	PP10208	
J3, J8 & J11	4 position male connector	PP10203	
J4, J5, J7 & J10	2 position male connector	P5045839	
J6	3 position male connector	PP10089	
J14	9 position male connection	P5045838	
K1, K2, K4 & K5	Relay, 24 vdc	P5046690	Not used on Digital Control machines
K3	Relay, 24 vac	P5046686	Used on Computer equipped machines only
K4	Relay, 24 vdc solid state	PP10678	RPB machines only
K6	Relay, 24 vac	P5046688	RPB machines only
M1	Right Basket Lift Motor	PP109	
M2	Left Basket Lift Motor	PP109	
M3	Left Blower Motor	PP10394	RPB machines only
M3	Right Blower Motor	PP10393	RH RPB machines with UFM filters only
P1	15 position female connector		
P2 & P15	12 position female connector	PP10208	
P3, P8 & P11	4 position female connector	PP10202	
P4, P5, P7 & P10	2 position female connector	P5045829	
P6	3 position female connector	PP10090	
P12	Power supply cord	PP10439	
P14	9 position female connector	P5045860	
S1 & S3	Drain switch	PP10262	
S1 & S4	Start switch	PP10559	Computer equipped machines only
S2 & S3	Back Up Thermostat	P5047587	Computer equipped machines only
S2, S4 & S7	Hi Limit Thermostat	PP10084	
S5 & S6	Basket Lift Micro Switch	P5047169	
S7	Hi Limit Thermostat	PP10837	
T1	Transformer	PP10210	
T2	Transformer	PP10429	
V1	Gas Valve		Non Electronic Ignition, Nat Gas
V1	Gas Valve		Non Electronic Ignition, LP Gas
V1	Gas Valve		Electronic Ignition, Nat Gas
V1	Gas Valve		Electronic Ignition, LP Gas
V1	Gas Valve		RPB, Nat Gas
V1	Gas Valve		RPB, LP Gas

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