

PITCO FRIALATOR
ELECTRIC DEEP FAT FRYERS
INSTALLING AND OPERATING
INSTRUCTIONS

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SECTION 1. RECEIVING AND ASSEMBLING

Uncrate fryer and unwrap paper from all parts. Inspect fryer and parts for damage and report any damages to the delivering freight carrier within 15 days of receiving the fryer.

Check parts received against those listed on packing list to make sure all parts ordered have been received. Notify Pitco Frialator Co., Inc. immediately if there are any errors or omissions.

ATTACHING LEGS OR CASTERS

Models equipped with basket lifts or built-in filters are shipped with legs or casters factory installed. Legs or casters must be installed on all other models before fryer is connected to electric power supply as follows:

Lay a cloth, blanket, or clean piece of cardboard behind the fryer and tip fryer over on its back. Screw legs or casters to bottom of fryer. Screw heads should be on inside of fryer, nuts and lockwashers on the outside of bottom. Legs for counter model FE-16 screw into Nut-Serts welded to each bottom corner of fryer. Tighten securely. Do not put any strain on rear legs when tipping fryer back to an upright position.

ATTACHING SPLASH BACK - MODELS E24 and E34

Remove the screws from the hole in each top rear corner of the fryer cabinet and top of each cabinet side just at the rear of the top edge of the fry kettle. Place the splash back over the top rear edge of the kettle and over the top rear corners of the fryer cabinet. Line up the screw holes and replace screws in their respective holes. Tighten securely.

ATTACHING DRAINBOARD - MODELS E24 and E34

The drainboard may be attached to either side of the fryer. Set it on top of the fry kettle with the support bracket side facing up. The ends with a $\frac{3}{8}$ inch hole in the front and rear edges should be at the side of the fryer where the drainboard will be when it is opened. Slide the hinge rod through both holes in the drainboard, then through the tubing spacer bar, the hole in the bottom front corner of the splash back and the hole in the angle bracket inside the splash back. Screw the hinge rod front post to the top front corner of the fry kettle using the hex head screw provided. Lift the drainboard from the side opposite the hinge rod and swing it over until both support brackets drop into a vertical position to brace the drainboard against the side of the fryer. The drainboard pitch can be adjusted by turning the wing bolts on the support brackets, and moving the legs in or out. When the fryer is not in use, swing the drainboard over the fry kettle to keep dirt and dust out of the shortening.

SECTION 2. INSTALLING

PROPER CONNECTION TO ELECTRIC SERVICES AND PROPER VENTILATION ARE ESSENTIAL FOR EFFICIENT, SAFE AND TROUBLE FREE OPERATION OF EVERY FRYER.

1. Keep fryer toggle switch turned OFF until fryer is ready for use.
2. Electrical specifications are stamped on the data plate on the inside of the fryer door. Do not connect to any other type of power supply. See Wiring Diagram for details.
3. The electrical installation must be done by a licensed electrician and must comply with local codes and the National Electrical Code.

4. Select a firm, level location for the fryer and allow a clearance of at least 2 inches between the fryer and any combustible material.
5. The fryer should be leveled using the adjustment provided in the bottom of the legs.
6. Adequate but not excessive ventilation must be provided in the area where the fryer is to be used. The design of the venting system must be such that it can be easily cleaned and kept free of grease accumulation to prevent fire. An automatic fire extinguishing system should be provided. Consult a local ventilation contractor to determine the best venting system for your fryer.
7. When the installation is completed, it must be inspected and approved by the local authorities.

SECTION 3. OPERATING

FILLING THE FRY KETTLE

1. ALWAYS turn fryer toggle switch OFF before draining, filtering, or filling.
2. Do not fill kettle with cooking compound or touch the electrical elements, element bracket, and temperature sensing bulbs and clamps unless they have cooled to room temperature.
3. Close drain valve completely.
4. Tighten all screws in the heating element brackets and sensing bulb clamps.
5. If the fryer is new, it should be boiled out with water and cleaned thoroughly before filling with shortening. See CLEANING INSTRUCTIONS.
6. When filling, draining or cleaning the kettle, do not bend, break or twist the temperature sensing bulbs and/or any of their thin capillary wires.
7. Melt solid shortening before putting it in kettle. If this is not possible, cut the shortening into small pieces and completely fill the zone below the elements, all spaces between the elements, and at least one inch above the top of the horizontal section of the elements with the solid shortening. If any air spaces are left around the element surfaces, the elements will become red hot and burn the shortening when the fryer is turned on.
8. Fill kettle with liquid shortening to a depth of at least one inch above the horizontal section of the elements.
9. When melting shortening or heating from room temperature, set thermostat knob at 200° F and turn fryer toggle switch ON. When shortening between and above the elements has melted or the thermostat has cycled off, add additional shortening until the desired frying depth is reached.
10. Turn thermostat knob to desired frying temperature.
11. Always check thermostat calibration after filling kettle. See THERMOSTAT CALIBRATION INSTRUCTIONS.

OPERATING THE FRYER

1. THE FRYER ELECTRIC ELEMENTS MUST BE COVERED WITH LIQUID BEFORE TURNING FRYER ON. SEE FILLING INSTRUCTIONS.

2. Turn on building electric power supply to fryer.
3. Set thermostat knob at desired temperature.
4. Turn fryer toggle switch to ON position. The red "POWER ON" light will glow and remain on until the toggle switch is turned off. The amber "TEMP" light will glow and remain on until the shortening temperature reaches the thermostat knob temperature setting. Whenever the thermostat turns the heating elements on, the amber light will turn on.

SHUTTING DOWN

1. Turn fryer toggle switch to "OFF" position.

TEMPERATURE LIMIT CONTROL - MODELS E7, E12, E14, E14B, E18, E18B

Models E7 through E18 are equipped with a limit control to shut off the fryer automatically if the shortening temperature reaches 450° F. If this occurs, the red light marked "HIGH TEMP" will glow to indicate that the fryer has shut off and the fryer must be checked as follows:

1. Turn fryer toggle switch OFF.
2. Place a reliable fat thermometer in the center of the shortening.
3. Allow the shortening to cool down to 300°.
4. Turn thermostat knob to 350°.
5. Turn fryer toggle switch ON.
6. Fully depress the limit control reset button and release. The red "POWER ON" light and the amber "TEMP" light will turn on.
7. Calibrate thermostat as explained in THERMOSTAT CALIBRATION INSTRUCTIONS.
8. If the limit control continues to shut off the fryer after you have calibrated the thermostat, the limit control temperature cutoff setting is too low and the limit control must be replaced.

WARNING - SHUT OFF FRYER COMPLETELY BEFORE DRAINING

TEMPERATURE LIMIT CONTROL - MODELS FE16, E24 and E34

Models FE16, E24 and E34 are equipped with a limit control to shut off the fryer automatically if the shortening temperature reaches 450° F. If this occurs, the red light marked "HIGH TEMP" will go out to indicate that the fryer has shut off and the fryer must be checked as follows:

1. Turn fryer toggle switch OFF.
2. Place a reliable fat thermometer in the center of the shortening.
3. Allow the shortening to cool down to 300°.
4. Turn the thermostat knob to 325°.
5. Turn the fryer switch ON.

6. Fully depress the limit control reset button and release. The red "POWER ON" light, the amber "TEMP" light and the amber "HIGH TEMP" light will all glow.
7. Calibrate thermostat as explained in THERMOSTAT CALIBRATION INSTRUCTIONS.
8. If the limit control continues to shut off the fryer after you have calibrated the thermostat, the limit control temperature cutoff setting is too low and the limit control must be replaced.

WARNING - SHUT OFF FRYER COMPLETELY BEFORE DRAINING

SECTION 4. THERMOSTAT CALIBRATION

MODELS E7, E12, E14, E14B, E18, E18B

(Models equipped with solid state thermostats)

1. If fry kettle is empty, carefully follow FILLING DIRECTIONS.
2. Place a reliable fat thermometer in the shortening with the sensing portion close to the thermostat sensor.
3. Set thermostat knob at 325° .
4. Turn fryer toggle switch ON.
5. Allow the fryer to heat until the thermostat turns the heating elements off. If the shortening temperature reaches 350° before the thermostat turns the elements off, turn thermostat knob to a lower setting until the thermostat does shut off. If the thermostat does not shut off the heating elements even at its lowest setting, turn the fryer toggle switch to OFF. The thermostat has become defective and must be replaced. Refer to Section 6 for information on servicing the solid state thermostats.
6. When the thermostat is cycling automatically, allow it to turn on and off at least four times to get the shortening temperature stabilized.
7. Observe the thermometer temperature at the instant the thermostat turns the heating elements on automatically for the fifth time.
8. If the thermometer temperature does not agree with the thermostat knob setting, loosen the two set screws in the thermostat knob and, without turning the thermostat shaft, turn the knob until the knob setting agrees with the above thermometer reading. Tighten set screws in knob firmly.
9. Allow thermostat to cycle a few more times to make sure knob setting agrees with the thermometer reading at the instant the thermostat turns the heating elements on automatically.
10. Repeat steps 7 and 8 if necessary.

MODELS E24, E24F, E34, E34F

(Models equipped with Robertshaw KX series thermostats)

1. Make sure that the thermostat sensing bulb is firmly held in the clamps attached to the heating elements. Tighten the screws in these clamps if necessary.

2. Follow Steps 1 through 7 in preceding CALIBRATION INSTRUCTIONS.
3. If the thermometer temperature differs more than five degrees from the thermostat knob setting when the thermostat turns on automatically for the fifth time, pull the knob off the thermostat shaft without turning the shaft.
4. It may be necessary to scrape the sealing compound off the slotted head of the adjusting screw located down the inside of thermostat knob shaft.
5. Engage a thin screwdriver ($\frac{1}{8}$ " wide blade) in the slotted head of the adjusting screw. Hold the shaft so it does not turn and turn the screw clockwise to lower or counter clockwise to raise the thermostat "ON" temperature setting. One quarter turn of the screw will change the temperature setting about 25° F.
6. Remove screwdriver, replace knob on shaft and observe temperature the next time the thermostat turns on automatically.
7. Repeat Steps 3 through 6 until the knob setting is within five degrees of the thermometer temperature.

SECTION 5. CLEANING

CLEANING THE FRY KETTLE

Do This Daily:

1. Turn the fryer toggle switch OFF.
2. Screw the drain nipple into the drain valve.
3. Place a suitable container under the drain nipple and drain the kettle completely.
4. Flush out any sediment remaining in kettle with a little hot shortening.
5. Close drain valve and filter shortening back into the kettle.
6. Unscrew the drain nipple and wipe up any spilled shortening.

Do This Weekly:

1. Follow steps 1, 2, and 3 above.
2. Close drain valve and fill kettle with water and add some strong detergent.
3. Turn fryer toggle switch ON and bring the water to a gentle boil.
4. Turn fryer toggle switch OFF to prevent the water from boiling over.
5. Let the hot water stand until the carbon and gum deposits can be rubbed off. Bring to a gentle boil again if necessary.
6. Scrub all interior kettle surfaces, then, with fryer shut off, drain out the water and rinse kettle with clean hot water.
7. Close drain valve, refill kettle with clean water and add 2 ounces of vinegar per gallon of water.
8. Turn fryer on and bring to a gentle boil again.



9. Turn fryer off, drain water and rinse well with clean hot water.
10. Wipe all kettle and heating element surfaces dry with a clean cloth.
11. Close drain valve and fill kettle with new or filtered shortening.
12. Unscrew drain nipple and wipe up any spilled shortening. The fryer is now ready to operate.

CLEANING EXTERIOR SURFACES

1. Wash painted surfaces with warm water and a mild detergent.
2. Remove stubborn spots with a non-abrasive scouring powder.

SECTION 6. SOLID STATE THERMOSTATS

1. Check the serial number on the control to identify the control type. If the older style "T" or "A" thermostat has been changed to the new "G" style, a sticker on the entrance door may note this.

| Serial Number | Probe Type | Test Temp. | Resistance |
|-----------------|-------------|------------|------------|
| 86E4HE174BSE"T" | nickel iron | 70° - 75° | 110 Ω |
| | | 350° | 195 Ω |
| 86E4HE174BSE"A" | platinum | 70° - 75° | 110 Ω |
| | | 350° | 167 Ω |
| 86E4HE174BSE"G" | G5 | 70° - 75° | 100K Ω |
| | | 350° | 923 Ω |

2. With an Ohmmeter, check the resistance in the probe. Disconnect plug P1. Test for resistance across the two black wires #2 and #4 on the plug going into the fryer. If you detect an open circuit, replace the probe. If the resistance is incorrect by more than 25Ω on "T" and "A" types, or more than 200Ω on "G" types, replace the probe.
3. Check the resistance across both sides of the potentiometer. To test resistance on one side, test across pin #1 (violet wire) and pin #3 (yellow wire). For the other measurement, test across pin #5 (orange wire) and pin #3 (yellow wire). On each side, you should see the resistance vary between 0Ω and 475Ω as you turn the pot.
4. If the probe and the potentiometer seem OK, check the power connections to the module. The module receives 115VAC through pin #6 (blue wire). If the unit is not passing 115 VAC through to pin #8 (silver wire), replace the module.

ELECTRIC TROUBLESHOOTING CHART

| TROUBLE | POSSIBLE CAUSE | REMEDY |
|--|---|--|
| FRYER WILL NOT HEAT. "POWER ON" LIGHT AND "TEMP" LIGHT DO NOT GLOW | <ul style="list-style-type: none"> A. MAIN CIRCUIT BREAKER TRIPPED AT MAIN POWER PANEL B. FRYER CIRCUIT BREAKER TRIPPED C. TRANSFORMER DEFECTIVE D. DEFECTIVE "POWER ON" SWITCH | <ul style="list-style-type: none"> A. RESET IF NECESSARY B. RESET IF NECESSARY C. REPLACE D. REPLACE DEFECTIVE SWITCH |
| FRYER WILL NOT HEAT. "POWER ON" LIGHT AND "TEMP" LIGHT GLOW | <ul style="list-style-type: none"> A. FLOAT SWITCH, IF APPLICABLE, IS OPEN B. LOOSE WIRE TO CONTACTOR C. DEFECTIVE CONTACTOR D. DEFECTIVE HEATING ELEMENTS E. BLOWN ELEMENT FUSES | <ul style="list-style-type: none"> A. FLOAT BULB INSTALLED UPSIDE DOWN OR MISSING. TURN OVER OR INSTALL DEFECTIVE SWITCH. TEST AND REPLACE B. TIGHTEN OR REPAIR WIRE C. REPLACE CONTACTOR D. REPLACE ELEMENT(S) AS NEEDED E. REPLACE AS NEEDED |
| FRYER WILL NOT HEAT. "TEMP" LIGHT AND "HIGH TEMP" LIGHT GLOW | <ul style="list-style-type: none"> A. HEATING ELEMENTS NOT DOWN COMPLETELY OR MICROSWITCH OPEN B. LIMIT OPEN | <ul style="list-style-type: none"> A. LOWER ELEMENTS OR ADJUST MICROSWITCH B. RESET. IF IT WILL NOT RESET, REPLACE |
| HIGH LIMIT TRIPS DURING NORMAL OPERATION | <ul style="list-style-type: none"> A. SOLID SHORTENING NOT PACKED AROUND HEATING ELEMENT B. LOW OIL LEVEL C. HIGH LIMIT CAPILLARY TOUCHING HEATING ELEMENT D. DIRTY HEATING ELEMENTS E. THERMOSTAT SET TOO HIGH F. DEFECTIVE THERMOSTAT G. DEFECTIVE LIMIT CONTROL | <ul style="list-style-type: none"> A. KEEP SHORTENING THOROUGHLY PACKED AROUND HEATING ELEMENTS B. FILL TO OIL LEVEL MARK AND RESET LIMIT C. MOVE CAPILLARY AWAY FROM HEATING ELEMENT D. CLEAN HEATING ELEMENTS E. LOWER THERMOSTAT SETTING. RESET LIMIT CONTROL F. TEST FOR BAD THERMOSTAT. REPLACE BAD UNIT. G. REPLACE LIMIT CONTROL |
| OIL TOO HOT | <ul style="list-style-type: none"> A. LOW OIL LEVEL B. THERMOSTAT SETTING OR CALIBRATION TOO HIGH | <ul style="list-style-type: none"> A. FILL TO LEVEL MARK B. CHECK THERMOSTAT SETTING AND CALIBRATION, REFER TO SECTION 4 |
| OIL NOT HOT ENOUGH | <ul style="list-style-type: none"> A. THERMOSTAT SETTING OR CALIBRATION TOO LOW | <ul style="list-style-type: none"> A. CHECK THERMOSTAT SETTING AND CALIBRATION. REFER TO PROBE READ-OUT IN SECTION 4. |
| FRYER HEATS SLOWLY | <ul style="list-style-type: none"> A. COMPARE DATA PLATE RATING TO INCOMING VOLTAGE B. INCORRECT PHASE WIRE AT TERMINAL BLOCK C. ONE OR MORE ELEMENTS NOT HEATING | <ul style="list-style-type: none"> A. SHUT FRYER OFF IF VOLTAGE IS INCORRECT B. MAKE PROPER PHASE CONNECTION C. CHECK ELEMENT FUSE. CHECK AMPERAGE OF ELEMENTS. REPLACE IF DEFECTIVE |