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OWNER'S MANUAL
INTRUCTIONS, INSTALLATION, OPERATION, MAINTENANCE MODELS: RHEF-45, 60, 75-DM2

****READ THIS MANUAL IN ITS ENTIRETY BEFORE USING THE FRYER****

FOR YOUR SAFETY	WARNING
DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.	**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.**

Instruction to be followed in the event the user smells gas shall be posted in a prominent location. This information shall be obtained by consulting the local gas supplier. This equipment is design engineered for commercial use only.

RETAIN THIS MANUAL FOR FUTURE REFERENCES.

IMPORTANT. Installing, Operating and Service Personnel:
Installation of the equipment should be performed by qualified, certified, licensed and/or authorized personnel who are familiar with and experienced in state/local installation codes. Operation of the equipment should be performed by qualified or authorized personnel who have read this manual and are familiar with the functions of the equipment. Service of the equipment should performed by qualified personnel who are knowledgeable with ROYAL RANGE OF CALIFORNIA, INC.

SHIPPING DAMAGE CLAIM PROCEDURE

The equipment is inspected & crafted carefully by skilled personnel before leaving factory. The transportation company assumes full responsibility for safe delivery upon acceptance of this equipment. If shipment arrives damaged:

1. **Visible loss or damage:** Note on freight bill or express delivery and have signed by the person making delivery.
2. **File claim for damages immediately:** Regardless of the extent of damage. 3.

Concealed loss or damage: If damage is noticed after unpacking, notify the transportation company immediately and file 'Concealed Damage' claims with them. This should be done within fifteen (15) days from the date delivery is made to you. Retain container for inspection.

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INSTALLATION INSTRUCTIONS

The area around the appliance must be kept free and clear of combustibles such as solvents, cleaning liquid, broom, rags, etc. Proper clearances must be provided at the front of the appliance for servicing and proper operation. Provisions shall be incorporated in the design of the kitchen, to ensure adequate supply of fresh air and adequate clearance for air openings into the combustion chamber, for proper combustion, and ventilation.

For proper operation of the appliance, do not obstruct the flow of combustion and ventilation air. The installation must conform with local codes, or in the absence of local codes, to the national fuel gas code, ANSIZ223.1-1988 (or latest addenda), national gas installation code, CAN/CGA-B 149.1, or the propane installation code, CAN/CGA-B 149.2 as applicable.

The appliance and its individual shut off valve must be disconnected from the gas supply piping system during any pressure testing of that system in excess of ½ PSI.

The appliance must be isolated from the gas supply piping system by closing its individual manual shut off valve during any pressure testing of the gas supply piping system at test pressure equal to or less than ½ PSI.

The gas supply line must be at least the same size as the inlet of the appliance. Installation on floor shall be with factory supplied legs or casters.

CLEARANCE:	**Combustible**	**Non-Combustible**
Sides	6”	0”
Rear	6”	0”

WARNING: Hot oil and hot surfaces can cause severe burns. Use caution when operating the fryer.
Do not attempt to move the fryer filled with hot oil or shortening.
Do not go near the area directly above the flue when fryer is in operation. Severe burns may be caused.
Drain hot oil in metal containers, do not use plastic buckets or glass containers.

FLEXIBLE COUPLINGS, CONNECTORS AND CASTERS

If the unit is to be installed with casters, the installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 or Connectors for Moveable Gas Appliances, CAN/CGA-6.16, and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41, or Quick Disconnect Devices For Use with Gas Fuel CAN1-6.9. Locking front casters are provided to limit the movement of the appliances without depending on the connector or associated piping. A suitable strain relief must be installed with the flexible connector.

Restraining device may be attached to the back frame/panel of the unit.

All connections must be sealed with a joint compound suitable for LP gas and all connections must be tested for leaks with a soapy water solution before lighting pilots.

MAINTENANCE

CLEANING:

For continued performance efficiency and longevity of your Fryer, it is essential to carry out a good maintenance program.

DAILY:

1. Remove all "LOOSE" parts (Basket hangers, baskets, crumb screen, etc.) and wash thoroughly.
2. Wipe clean all exterior and interior accessible surfaces and parts.
3. Filter the liquid oil/shortening at the end of the day, replace if necessary. If fryer is under heavy use, filter more often during the day.

WEEKLY:

1. Shut down the fryer. Allow oil to cool down.
2. Drain the oil in a filter pan or steel container. Flush out sediments at the bottom of the vessel with liquid oil.
3. Close the drain valve and fill the vessel with a mixture of boil-out solution and water.
4. Turn on the fryer.
5. When the solution starts to boil, turn fryer off.
6. Drain out solution, scrub the insides with a brush and rinse thoroughly.
7. Repeat the cleaning procedure, if necessary.
8. Wipe dry with soft towels and refill with clean oil/shortening.

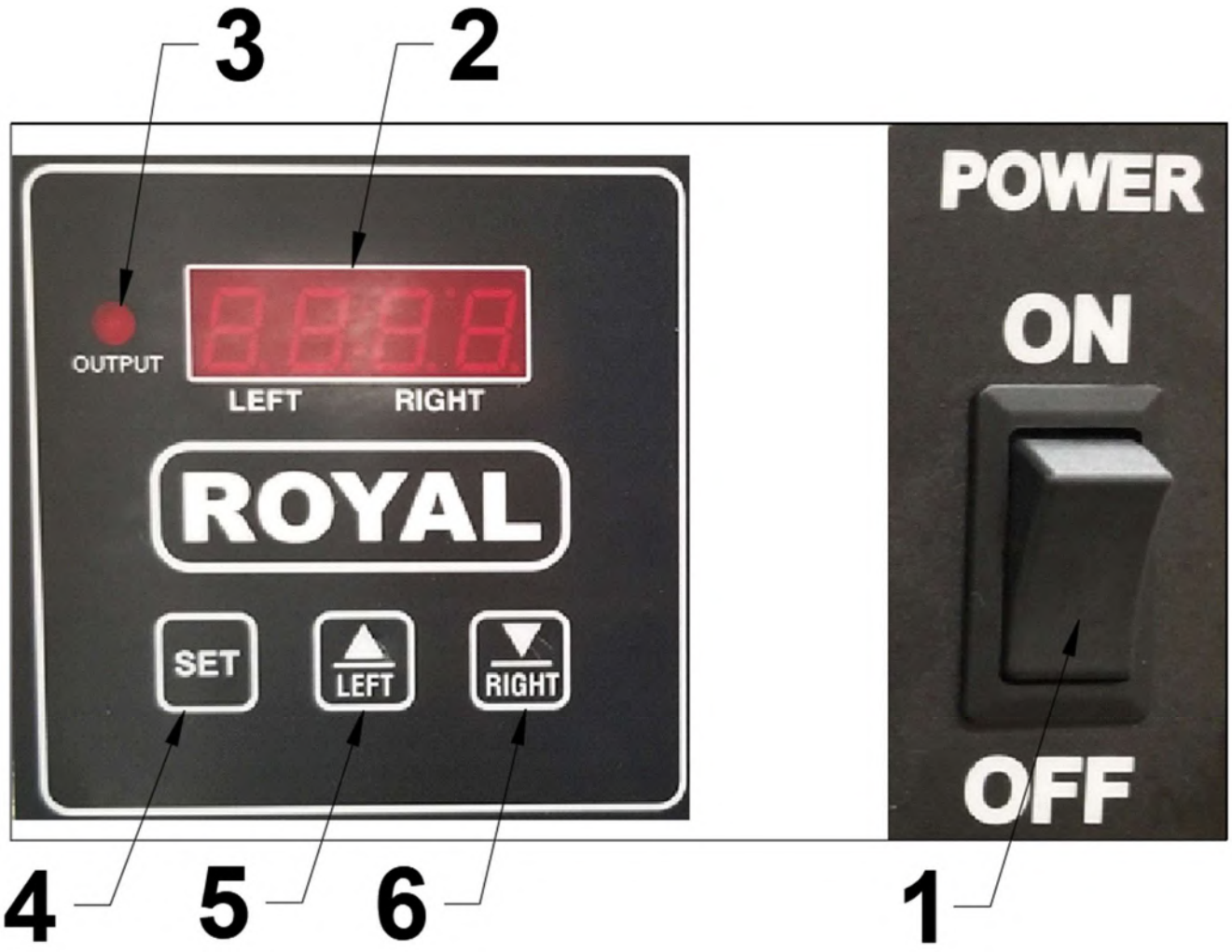
WARNING: All water must be removed before adding oil or shortening. Not doing so can result in splattering of hot oil.

STAINLESS STEEL PARTS

Do not use steel wool, abrasive cloths, cleaners or powders to clean stainless steel surfaces. All stainless steel parts should be wiped regularly with hot soapy water during the day and a stainless steel liquid cleaner at the end of the day. To remove encrusted materials, soak in hot water to loosen the material, then use a wood or nylon scraper.

Contact the factory, factory representative or an authorized, qualified service company to perform maintenance and repairs.

CONTROL PANEL DESCRIPTIONS



1. **POWER SWITCH**
   Main Power.

2. **DISPLAY**
   Displays modes, functions, and operation of the controller.

3. **HEAT DEMAND LED**
   When lit bright, indicates that the Thermostat is calling for heat.

4. **SET BUTTON**
   a. In “operating” mode - allows access to the programming mode.
   b. In “programming” mode - serves as an ACCEPT button.

5. **UP/LEFT BUTTON**
   Used for starting/stopping left timer.

6. **DOWN/RIGHT BUTTON**
   Used for starting/stopping right timer.

**** WARNING: DO NOT START THE FRYER UNLESS SHORTENING/OIL IS AT THE LEVEL INDICATED ON THE REAR WALL OF THE FRYER. STARTING THE FRYER WITHOUT SHORTENING/OIL COMPLETELY COVERING THE HEAT TUBES WILL CAUSE HEAT STRESS AND LEAD TO POTENTIAL OIL LEAKS. ****

PREPARATION FOR USE

New units have a coating of oil on the interior of the vessel (vat). To remove this coating, a BOIL OUT procedure must be performed. See section below.

WARNING: Oil is hot. Please use all precaution when operating Fryer. Apply all safety practices and attire to avoid getting burned

FRYER VESSEL BOIL-OUT

Boil out each new fryer. Follow the cleaning instructions on the boil out solution's label.

WARNING: ONLY USE A COMMERCIAL GRADE "NON-CHLORINE" BOIL-OUT PRODUCT!!

BOIL-OUT PROCEDURE:

1. Ensure that Drain Lever is in the closed position. Add water into the vessel (vat) to the level mark on the rear wall.
2. Add the amount of BOIL-OUT solution per directions on its label.
3. Turn the POWER switch to ON.
4. Fryer will automatically come on.
5. Allow to BOIL for 10 minutes.
6. During boil-out, frequently scrub the sides, front and rear of the fryer vessel (vat).
7. After 10 minutes, turn the Thermostat control off by pressing & holding all 3 buttons on the controller for several seconds OR turn power switch to OFF.
8. Carefully dispose of the boil-out solution.
9. Use a scrubbing pad to remove any buildup on the heating tubes and vessel (vat) walls.
10. Rinse with hot water until the water coming out of the drain valve is clear.
11. Thoroughly wipe the sides, heat tubes and bottom of vessel (vat) with clean, lint- free dry towels to remove any remaining water.

WARNING:

Hot water, hot oil and hot surfaces can cause severe burns. Use caution when operating the fryer. Do not attempt to move the fryer filled with hot water, oil or shortening, severe burns may be caused. Drain hot water or hot oil in metal containers, do not use plastic buckets or glass containers.

USE OF SOLID SHORTENING

MELTING SOLID SHORTENING:

1. Fryer must be off and cool.
2. Ensure that Drain Lever is in the closed position.
3. Remove crumb screen.
4. Place small pieces of shortening into the vessel (vat) and THOROUGHLY pack them between, below and above the HEAT tubes. Fill to level mark on the rear wall.
5. Turn the POWER switch to ON.
6. Fryer will automatically come on in "Melt Mode", ON for 5 seconds and OFF for 30 secs periodically to gently heat and melt the solid shortening until melt release temperature point (120°F) has been reached. If necessary continue adding solid shortening. Do not overfill the vessel.
7. Once the heat tubes are COMPLETELY covered with LIQUID to the level mark on the rear wall, place the crumb screen in the vessel (vat).
8. When shortening reaches the set temperature, thoroughly stir the shortening. The Fryer is now ready to cook.

Note: To abort the Melt cycle early and go directly to the fryer set point, press and hold the **"SET"** button for 2 secs.

USE OF OIL

1. Fryer must be off and cool.
2. Ensure that Drain Lever is in the closed position.
3. Add oil to the level mark on the rear wall. Do not overfill the vessel.
4. Turn the POWER switch to ON.
5. Fryer will automatically come on in "Melt Mode", ON for 5 seconds and OFF for 30 secs periodically to gently heat oil/liquid shortening until melt release temperature point (120°F) has been reached.
6. When oil/shortening reaches the set temperature, thoroughly stir the shortening. The Fryer is now ready to cook

Note: To abort the Melt cycle early and go directly to the fryer set point, press and hold the **"SET"** button for 2 secs.

OPERATION

LIGHTING/START:

1. Turn the POWER switch to ON.
2. Fryer will automatically come on in "Melt Mode", ON for 5 seconds and OFF for 30 secs periodically to gently heat oil/liquid shortening until melt release temperature point (120°F) has been reached.
3. When shortening reaches the set temperature, thoroughly stir the shortening. The Fryer is now ready to cook

** For complete **SHUT DOWN,** turn the Power Switch to "OFF". **

MOMENTARY PROGRAM DISPLAYS

DISPLAY READS	DISPLAY DESCRIPTIONS
"nELt"	Computer is in the MELT MODE stage. This feature can be bypassed by pressing and holding the **"SET"** button for 2 secs. Ensure there is liquid in the fryer when bypassing.
"HEAT"	Computer is in the heating stage (burners ON) to reach set point temperature.
"rdY"	Computer has reached set point temperature stage. The fryer is now ready to cook.
"ForC"	Computer is in the thermometric scale program mode. **"F"** for Fahrenheit or **"C"** for Celsius.
"dSPY"	Computer is in the temperature DISPLAY program mode. **"ACt"** for Actual temperature or **"SP"** for set point temperature.
"PrHt"	Computer is in the Melt temperature release setpoint program mode. 120°F is recommended.
"CYCL"	Computer is in the Melt cycle OFF time program mode. 30 secs is the least amount of time allowed
"FrSP"	Computer is in the COOK TEMPERATURE program mode. i.e. 350 for (350°F).
"HYS"	Computer is in the HYSTERESIS program mode. This program mode is intended for the Authorized, Qualified Service Agent. DO NOT change.
"OFS"	Computer is in the temperature OFFSET program mode. This program mode is intended for the Authorized, Qualified Service Agent. DO NOT change.

CONTROLLER PROGRAMMING

** **NOTE:** Thermostat controller programming mode can only be accessed while the controller is in the heating or ready stage.

** **NOTE:** Timer function can only be accessed when controller is in the ready stage.

FEATURE PROGRAMMING:

Feature programming allows the user to program:

a. Temperature Unit. (C or F). Default is F.
b. Temperature display. SP = Set Point or ACt = Actual Temperature. Default is ACt.
c. Melt temperature release set point. Default is 120°F.
d. Melt cycle OFF time. 30 to 50 secs. Default is 30 secs. On time is 5 seconds, fixed and not programmable.
e. Cook temperature. 200°F to 400°F. Default is 350°F.
f. Hysteresis (4°F).
f. Sensor Offset (Do not change).

** **NOTE:** A "programming timeout" will occur if no buttons are pressed for 10 seconds and the controller will return to normal operation.

HOW TO PROGRAM FEATURE:

1. Turn the POWER switch to ON.
2. Controller will come on automatically in MELT MODE stage. Display will read "nELt. Wait until controller goes into heating stage.
3. Once in heating stage, press and hold the **"SET"** button while entering the key sequence **DOWN, UP, UP**.
4. Controller will go into TEMPERATURE UNIT program; the display will read **"For C"** momentarily and then read **"F"**. Press SET to accept the default (Fahrenheit) or press the UP button to change temperature unit and then SET.
5. Controller is now in the DISPLAY program; the display will read **"dSPY"** momentarily and then read **"ACT"**. Press set to accept the default of Actual temperature being always displayed or press the UP button to change Set Point Temperature then press set.
6. Controller is now in the MELT TEMPERATURE RELEASE SETPOINT program; the display will read **"PrHt"** momentarily and then read **"120°F"**. This is the recommended setting. Press SET.
7. Controller is now in the MELT CYCLE OFF TIME program; the display will read **"CYCL"** momentarily and then read **"30"**. This is the recommended setting. Press SET.
8. Controller is now in the COOK TEMPERATURE program; the display will read **"FrSP"** momentarily and then read **"350°F**. Press the UP or DOWN buttons to the desired cook temperature and press SET.
9. Controller is now in the HYSTERESIS program; the display will read **"HYS"** momentarily then then read **"2°F".** This program mode is intended for the Authorized, Qualified Service Agent. DO NOT change. Press SET.
10. Controller is now in the OFFSET program; the display will read **"OFS"** momentarily and then read **"0"**. This program mode is intended for the Authorized, Qualified Service Agent. DO NOT change. Press SET and the controller will return to its normal operation. You Are Done

COOK TEMPERATURE PROGRAMMING:

Follow steps above until controller is in the COOK TEMPERATURE PROGRAM.

TIMER PROGRAMMING:

Press and hold the desired LEFT or RIGHT timer button for 3 seconds until current programmed time is displayed. Use the UP/DOWN buttons to change the cook time. When the desired time is displayed, press the SET button to save the new programmed time.