

# Frymaster Fryer

Electric and Gas models using an M2000 Computer

**Daily maintenance tasks**

- FR 2 D1     Cleaning fryer
- FR 2 D2     Maintenance filter

**Weekly maintenance task**

- FR 2 W1     Clean area behind fryers

**Bi-weekly maintenance task**

- FR 2 B1     Calibrate fryer

**Monthly maintenance task**

- FR 2 M1     Calibrate fryer recovery time

**Quarterly maintenance tasks**

- FR 2 Q1     Boil out fry vats (electric fryers only)
- FR 2 Q2     Verify high-limit controls
- FR 2 Q3     Replace filter O-rings

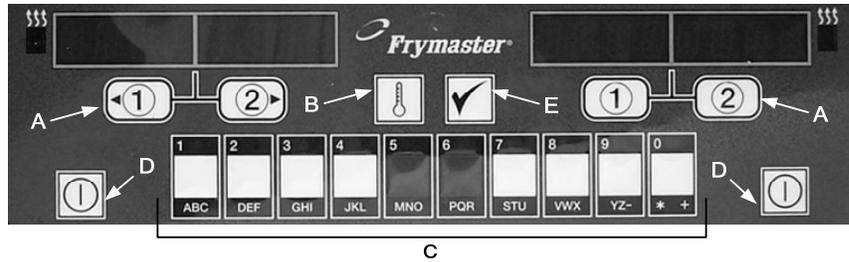
**Semi-annual maintenance task**

- FR 2 S1     Boil out fry vats (gas fryers only)

**Annual maintenance task**

- FR 2 A1-T    Service inspection (Gas fryers only)
- FR 2 A2-T    Service inspection (Electric fryers only)

Computer model M2000



A. Cook cycle buttons, B. Temp button, C. Product Buttons, D. ON/OFF, E. Programming button



**⚠ Hazards**

These icons alert you to a possible risk of personal injury.

**🔧 Equipment alerts**

Look for this icon to find information about how to avoid damaging the equipment while doing a procedure.

**★ Tips**

Look for this icon to find helpful tips about how to do a procedure.

APR 2013



<b>Why</b>	Removes caramelized oil from fryer and cleans element hub.	
<b>Time required</b>	5 minutes to prepare	15 minutes to complete (5 minutes per pot)
<b>Time of day</b>	Low-volume periods	For 24-hour restaurants: overnight or during low-volume periods
<b>Hazard icons</b>	 Hot Oil  Hot Surfaces  Sharp Objects/Surfaces  Electricity  Chemicals	

**Tools and supplies**



**Procedure**

- 1 Turn fryers off.**  
Turn all fryer power switches to the off position.



- 2 Put on protective gear.**  
Use all McDonald's approved safety equipment, including heat-resistance apron, face shield and neoprene gloves.



This procedure should be done for only one vat at a time.

 **Hot Oil**  
Hot oil can cause severe burns

- 3 Clean front and topside area of heating element hub (electric only).**  
Wearing heat resistant gloves, place covers on frypots ensuring they are square with the frypot.



 Hot Oil  Hot Surfaces

**Use a small amount of QSR Fryer Cleanser on a Hi-Temp pad (electric only).**  
Use Hi-Temp pad to clean around the element hub and surrounding housing area.



Once area has been cleaned, wipe off excess with a sanitizer soaked towel. **Ensure the towel is not dripping** with solution around hot oil.

## Daily Cleaning of Fryers (continued)

Remove frypot cover and remove basket rack using a fryer's friend, set aside. Lift elements using fryer's friend.



Replace frypot covers and wipe excess oil from the elements with paper towel.



### 4 Clean underside area of heating element hub (electric only).

Use a small amount of QSR Fryer Cleanser on a Hi-Temp pad.

Use Hi-Temp pad to clean the underside of the element hub and surrounding housing area.

Once area has been cleaned wipe off excess with a sanitizer soaked towel. **Ensure the towel is not dripping** with solution around hot oil.

Remove frypot cover. Using a fryer's friend, lower the elements and replace the basket rack.



### 5 Wipe down surfaces.

Spray a clean, sanitizer-soaked towel with Heavy Duty Degreaser solution to thoroughly wipe down all surfaces of the fryer to remove grease and soil build-up. Ensure the towel is not dripping with solution around hot oil. Allow surface to air dry.



Hot Surfaces



Hot Oil

Oil in fryer may be very hot.

#### Equipment Alert

When wiping down equipment, always be careful not to drip water into electrical components.

### 6 Repeat for remaining frypots.

**Why** Cleans the vat of crumbs and filters the oil thoroughly to prolong the life of the oil

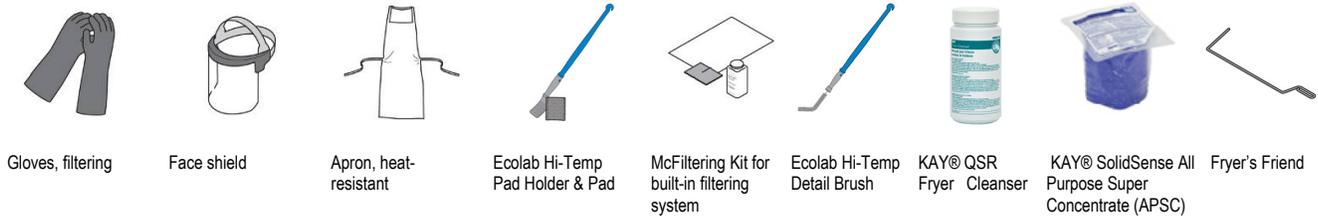
**Time required** 5 minutes to prepare 10 minutes per vat to complete

**Time of day** During low volume hours.

**Hazard icons**

	Chemicals		Electricity		Hot Liquids/Steam		Hot Oil		Hot Surfaces
	Manual Handling		Moving Parts		Sharp Objects/Surfaces		Slippery Floors		

**Tools and supplies**



**Procedure**

**1 Put on protective gear**  
Use all McDonald's approved safety equipment, including heat-resistance apron, face shield and neoprene gloves.



**CAUTION:** This procedure should be done for only one vat at a time.

 **Hot Oil**  
Hot oil can cause severe burns

**2 Check filter pan**  
Make sure filter drain pan and pan cover are properly in place.



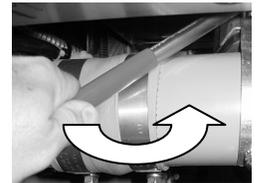
**3 Turn fryers off.**  
Turn all fryer power switches to the off position.



**4 Skim the vat**  
Using the skimmer skim large particles from oil before draining.



**5 Open the drain valve**  
Carefully open the drain valve and let the oil drain into the filter pan. Push any pieces of fried food or other sediment into the drain valve using the fryer's friend.



**CAUTION:** Do not drain more than one fryer at a time. To do so will cause overfilling of the filter pan.



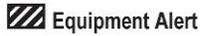
continued ▶

# Maintenance Filter (continued)

- 6 Lift elements (electric only)**  
Once oil has drained, raise the hinged elements.



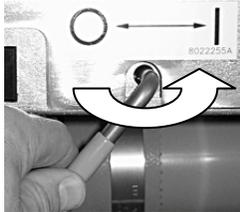
Use protective gloves when lifting elements or burns could result.



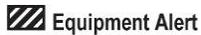
Be careful not to damage the probe in center of elements.



- 7 Open the return valve**  
Once oil has drained, open the return valve to begin the filter process.



- 8 Scrub inside vat**  
Use the Hi-Temp Pad Holder, pad, and a small amount of KAY QSR Fryer Cleanser to scrub the walls, corners and bottom of the inside of the vat. Use the Hi-Temp Detail Brush to remove debris build up from elements (electric only), corners of vats and other hard-to-reach areas.



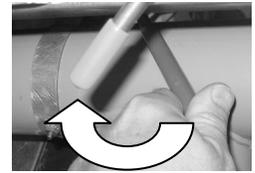
Be careful not to damage the probes.



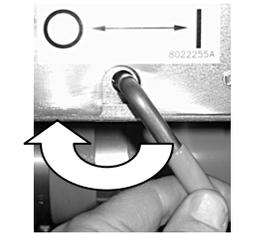
- 9 Filter the oil**  
Once the vat is clean, lower the elements (electric only) and allow the oil to circulate through the pot for five (5) minutes. This process is called polishing the oil. Polishing cleans the oil and washes small particles from the vat.



- 10 Close drain valve**  
Close the drain valve and allow the vat to fill.



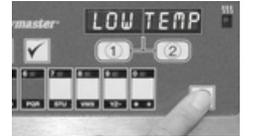
- 11 Close the return valve**  
Once the vat is full and bubbles appear in the oil, allow bubbling to continue 15-20 seconds to ensure the oil return lines are clear of residual oil then close the return valve.



- 12 Add oil**  
Some oil may be lost in the filtering process. Fill to the top oil level line.



- 13 Turn on fryer**  
Press the power button to turn the controller on and return the fryer to normal operation. The oil may drop below operating temperature during the filtering process. If so, the fryer will display **LOW TEMP** while heating the oil to operating temperature.



- 14 Filter additional fryers**  
Repeat steps 1 through 13 for each remaining fryer.

- 15 Pull-out filter pan**  
Open the door and pull the filter pan assembly out.  
 The filter pan may be hot! Use protective gloves, or severe burns may result.

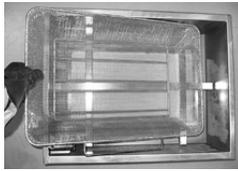


continued ►

## Maintenance Filter (continued)

### 16 Remove crumb basket

Lift the crumb basket from the filter pan. Wipe the oil and crumbs from the crumb basket. Clean the crumb basket with soap and water, and thoroughly rinse with hot water.



### Remove filter pad hold down ring

Remove the filter pad hold down ring and clean with hot SolidSense All Purpose Super Concentrate (APSC) solution at the compartment sink. Rinse **thoroughly** with hot water.



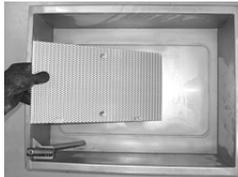
### 17 Remove filter pad from pan

Pull the filter pad from the pan and discard pad.



### 18 Remove bottom inner screen

Pull the bottom inner screen from pan and clean thoroughly with hot SolidSense All Purpose Super Concentrate (APSC) solution at the compartment sink. Rinse **thoroughly** with hot water.



### 19 Clean filter drain pan

Wipe the oil and crumbs from the filter pan.



### 20 Reassemble

Reassemble in reverse order, placing the bottom screen into the filter pan first, followed by the filter pad with rough side facing up, hold down ring and the crumb basket.

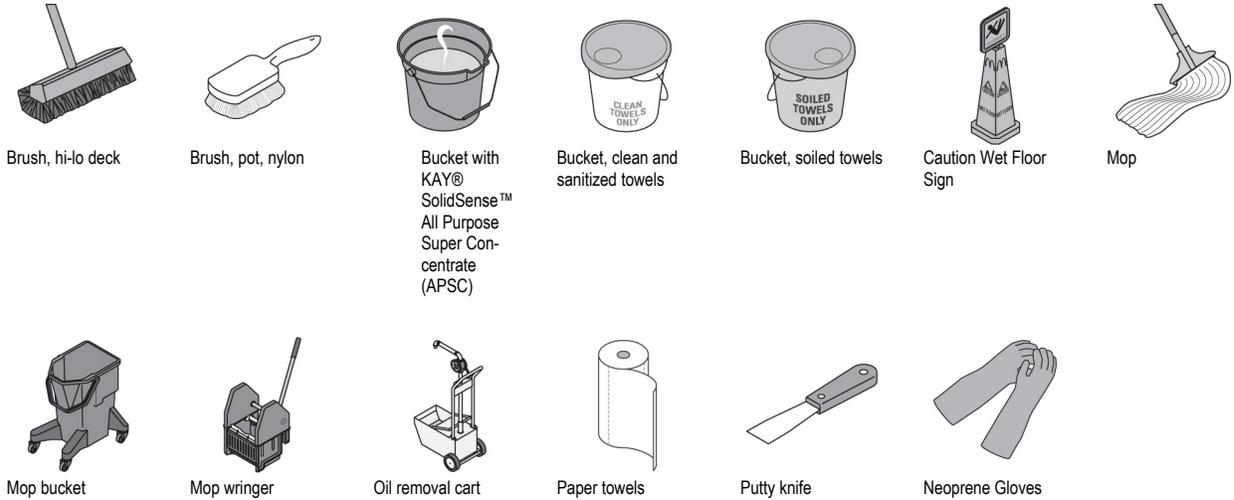


#### ★ Tip

Ensure the filter pan, bottom screen, crumb basket, and the hold down ring are thoroughly dry before placing filter pad into pan as water will dissolve the filter pad.

<b>Why</b>	To ensure high-quality fried products and reduce the possibility of a fire near the fryer	
<b>Time required</b>	5 minutes to prepare	45 minutes to complete
<b>Time of day</b>	After close	For 24-hour restaurants: overnight or during low-volume periods
<b>Hazard icons</b>	 Electricity  Hot Oil  Hot Surfaces  Manual Handling  Sharp Objects/Surfaces  Slippery Floors	

**Tools and supplies**



**Procedure**

**1 Turn fryers off.**  
Turn all fryer power switches to the off position.



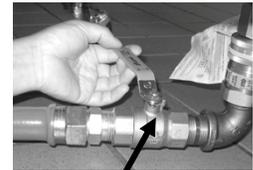
**2 Remove and empty grease trough and cup.**  
Remove the grease trough from the exhaust hood. Remove the grease cup from the hood. The trough and cup are located beneath the hood filters. Pour any oil in the trough and cup into the oil removal cart.



 **Hot Oil**  
Oil in trough and cup may be hot. Use gloves.

**3 Shut off and disconnect gas.**  
If the fryer is not a gas fryer, skip this step.

If the fryer is a gas fryer, use the manual gas shut-off valve to shut off the gas supply. The manual gas shut-off valve is located on the supply line before the quick disconnects. Then disconnect the gas line from the fryer via the quick disconnect.



Manual shut-off

 **Equipment Alert**  
Use only the manual shut-off valve to shut off the gas. *Do not use the quick disconnects.*

continued ►

## Clean area behind fryers (continued)

### 4 Prepare fryer for cleaning.

Release the locks on the fryer wheels.

If the fryer has a capping piece, lift the front of the capping piece far enough to let the backsplash clear the filter shelf. Roll the fryer carefully away from the firewall, just until the capping piece clears the filter shelf.

Secure the capping piece, if there is one. Place vat covers on all vats.

Roll the fryer farther away from the firewall, far enough to clean behind the fryer.



#### Hot Oil

Oil in fryer may be very hot. Roll the fryer slowly to avoid splashing the oil. Use gloves



### 5 Disconnect fryer from electricity.

Unplug the fryer's electrical cord from the outlet by pulling on the electrical plug's body. You may need to twist the plug to remove from the outlet.



#### Electricity

### 6 Clean fryer filters.

Remove the fryer filters from the exhaust hood. Take the filters to the three-compartment-sink and soak them in KAY® SolidSense™ All Purpose Super Concentrate (APSC).



#### Chemicals

KAY® SolidSense™ All Purpose Super Concentrate (APSC)



### 7 Scrape area behind fryer.

Use a putty knife to scrape off all soft grease and hard carbon from the area behind the fryer. Clean the following areas in this order: the parts of the stack you can reach; the back of the exhaust hood; the sides of the exhaust hood; and the fryer filter recess area.

On an electric fryer, next use the putty knife to scrape all soft grease and hard carbon from all sheet metal around the fryer, the standoff piece, and the fryer stand. Skip to step 8 after these areas are cleaned.

On a gas fryer, next use the putty knife to scrape all soft grease and hard carbon from these areas in this order: the flue restrictor, all sheet metal around fryer, the removable gravity blade, the seal angle, the stand-off piece, and the fryer stand.

On a gas fryer, be careful not to drop any soft grease or hard carbon into the fryer flue passage while cleaning.

#### Equipment Alert

Do not break the fire protection fusible link in the lower area of the stack. Breaking the link will activate the fire extinguishing system.

continued ►



## Clean area behind fryers (continued)

### 8 Clean area behind fryer.

Use a nylon pot brush, a hi-lo deck brush, and a bucket of hot KAY® SolidSense™ All Purpose Super Concentrate (APSC) solution to scrub all of the areas you scraped in step 7. Clean the areas in the same order that you scraped them in step 7. Then use the hi-lo deck brush to scrub the floor around the fryer.

Wipe all areas with paper towels until they are clean and dry.



#### Slippery Floors

The floor may be wet where you have scrubbed it.

### 9 Ask manager to inspect.

Ask a manager to inspect your work and approve the cleaning. Repeat any cleaning as your manager directs.

### 10 Wash fryer legs and casters.

Use a nylon pot brush and a bucket of hot KAY® SolidSense™ All Purpose Super Concentrate (APSC) solution to wash the legs and casters of the fryer. Wipe dry with paper towels.

### 11 Mop floor around fryer.

Use a mop and a bucket of hot KAY® SolidSense™ All Purpose Super Concentrate (APSC) solution to mop the entire floor around the fryer.



#### Slippery Floors

Floor may be wet from mopping.



### 12 Allow surfaces to dry.

Allow all fryer, wall, and floor surfaces to air dry.

### 13 Reconnect fryer to electricity.

Roll the fryer slowly toward the electrical outlet until it is close enough to connect the plug. Plug the fryer into the outlet.



#### Electricity



#### Hot Oil

Oil in fryer may be very hot. Roll the fryer slowly to avoid splashing the oil.

### 14 Prepare fryer for use.

Roll the fryer forward carefully until it is close to the filter shelf. Remove the vat covers from all vats. Lift the front of the capping piece until the backsplash clears the filter shelf, and roll the fryer carefully into its normal position.

### 15 Reconnect fryer to gas supply.

If the fryer is an electric fryer, skip this step.

Check both ends of the quick disconnect for grease. Wipe the quick disconnect clean if necessary. Reconnect the gas line coupling.



#### Equipment Alert

Be sure the gas quick disconnect is fully engaged and interlocked before turning on the gas supply.



continued ►

## Clean area behind fryers (continued)

### 16 Reinstall fryer filters and grease trough.

Lock wheels into place. Reinstall the fryer filters and the grease trough in the exhaust hood.



### 17 Turn on gas supply.

If the fryer is an electric fryer, skip this step.

Turn the manual gas shut-off valve to the on position. Turn the computer on to verify burners will re-light. Once the burners have been re-lit you can turn the computer off.



### 18 Clean area behind other fryers.

Repeat steps 1 through 17 for all remaining fryers.



**Why** To maintain food safety standards

**Time required** 1 minutes to prepare 5 minutes to complete, once fryer has reached cooking temperature. Cook temperature should be reached in approximately 45 minutes.

**Time of day** At open For 24-hour restaurants: during low-volume periods

**Hazard icons**  Hot Oil  Hot Surfaces

**Tools and supplies**



Pyrometer with fry vat probe



Neoprene Gloves

**Procedure**

**1 Calibrate pyrometer.**

Fill a hot beverage cup with ice and then add cold water from the drink tower up to the top of the ice. You should have 50 percent ice and 50 percent water.

**2 Place probe in water**

Place the probe in the ice water and stir continuously until the temperature readout stabilizes.

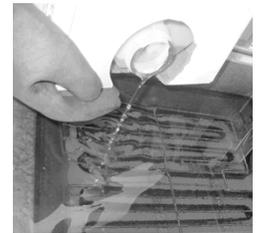
**3 Read temperature**

The readout should be 32°F (0°C), plus or minus 2°F (1°C). If not, you need to calibrate, repair, or replace the pyrometer. For calibration, follow the calibration, checking, and adjusting procedures supplied by the manufacturer of your pyrometer.



**3 Check oil level.**

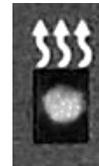
Check the oil level when the oil has reached cooking temperature. If the oil is above the “Oil Level” line, remove oil until the oil is at the line by draining oil into pan or disposal unit. If the oil is below the “Oil Level” line, add oil until the oil reaches the line.



Hot Oil  
Oil in the fryer is very hot.  
Use gloves.

**4 Cycle vat.**

Allow the vat to cycle on and off three times. The heat light will come on when the fryer is heating.



continued ►

**2 Turn on fryer and heat oil.**

Press the on/off button to turn the fryer on. Set the fryer for the product to be cooked. Allow the oil in the fryer to reach cooking temperature and then cycle off.



## Calibrate fryer (continued)

### 5 Read oil temperature.

Insert the fry vat probe of the pyrometer into the hot oil to within 1 inch (2.5 cm) of the probe's tip. The tip should be approximately 3 inches (7.6 cm) below the surface of the oil. Allow the temperature reading to stabilize.



### 6 Display temperature on fryer.

Press the temperature display switch for the vat where you took the pyrometer reading. The display will show the temperature for the vat.



### 7 Compare temperature readings.

Compare the temperature reading on the pyrometer with the corresponding temperature on the display.



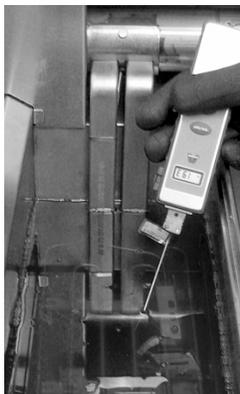
If the two temperatures are less than 5°F (3°C) apart (either plus or minus), you do not need to adjust the temperature setting.

If the two temperatures are more than 5°F (3°C) apart (either plus or minus), call a service technician to report the problem.

### 8 Repeat for other side of split-vat.

If the vat you tested was a full vat, skip this step and go to step 9.

If the vat you tested was one side of a split-vat, repeat steps 5 through 7 on the other side of the split-vat.



### 9 End calibration check.

When you have finished steps 5 through 7 for the vat (including both sides of a split-vat), press the on/off button to end the calibration check for the vat.



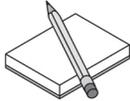
### 10 Calibrate remaining fryers.

Repeat steps 1 through 9 for all remaining fryers.



<b>Why</b>	To maintain food safety standards for fried products	
<b>Time required</b>	1 minute to prepare	5 minutes to complete,
<b>Time of day</b>	At open	For 24-hour restaurants: in the morning
<b>Hazard icons</b>	 Hot Oil  Hot Surfaces	

## Tools and supplies



Paper and pencil

## Procedure

### 1 Turn fryer off.

Press the on/off button to turn the fryer off. The display will show "OFF."



### 2 Check most recent recovery time.

The fryer automatically records the fryer's recovery time each time the vat temperature rises from 250°F (121°C) to 300°F (160°C).

Press the button marked with a checkmark to enter the fryer's programming mode. The left display will show "Code."

Press the buttons marked "1, 6, 5, 2" in that order to enter code 1652. The display will show the most recent recovery time in both displays. Write down the recovery time.



### 3 Compare most recent recovery time to acceptable recovery time.

The acceptable recovery time for electric fryers is less than 100 seconds. The acceptable recovery time for gas fryers is less than 145 seconds.

If the recovery time you wrote down is less than the fryer's acceptable recovery time, the fryer's performance is acceptable. Skip to step 5.

If the time you wrote down is more than the fryer's acceptable recovery time, the fryer's performance is not acceptable. Go to the next step.

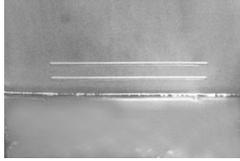


continued ►

## Calibrate fryer recovery time (continued)

### 4 Adjust fryer, if necessary.

If the fryer's recovery time is not acceptable, check the following items on the fryer. If you find any problems, correct them as described.



If the fryer filters are dirty, replace them.

If the oil is below the "Oil Level" line when the fryer is at cooking temperature, add oil until it reaches the "Oil Level" line.

If the oil is above the "Oil Level" line, remove oil until it reaches the "Oil Level" line.

For electric fryers only, confirm that the large power plug is properly plugged in. Adjust as necessary.

For gas fryers only, check the seal angle, gravity blade, and standoff. Adjust their placement if necessary.

For gas fryers only, check the air flow and combustion air blower. Adjust as necessary.

For gas fryers only, check the condition of the radiant burners.

Refer to trouble shooting guide in Operators manual.

### 5 Check recovery time again.

If Recovery Time is not achieved in the proper time, call the Frymaster Service Hotline for assistance at 1-800-551-8633.



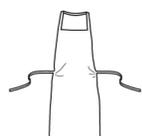
### 6 Recalibrate all remaining fryers.

Repeat steps 1 through 5 for all remaining fryers.



<b>Why</b>	To keep the fry vats clean and to maintain proper cooking temperatures	
<b>Time required</b>	5 minutes to prepare	75 minutes to complete
<b>Time of day</b>	At close	For 24-hour restaurants: during low-volume periods at night
<b>Hazard icons</b>	 Hot Liquids/Steam  Hot Oil  Hot Surfaces  Manual Handling  Slippery Floors	

## Tools and supplies



Apron, heat-resistant



Ecolab Hi-Temp Detail Brush



Bucket, plastic



Bucket, clean and sanitized towels



Bucket, soiled towels



Face shield



Fryer skimmer



Gloves, neoprene



Fryer's Friend



KAY® QSR Fryer Cleanser



KAY® QSR Heavy Duty Degreaser



Oil removal cart



Paper towels



Ecolab Hi-Temp Pad Holder and Pad

## Procedure

### 1 If this is first boil-out, program boil-out into fryer.

If the fryer is new, the boil-out procedure must be programmed into the fryer before it is boiled out for the first time.

If the fryer has been boiled out before, skip this step.

Press the on/off button to turn the fryer off.

Press the button marked with a check mark. The left display will show "code."

Press the number keys 1,6,5,0. Then press the button marked with a 1 and left arrow to step through the menu of items and products. Stop when you reach "boil out" (#40 product position).

Press a gray product button to store the "boil out" entry. The



green display of the button pressed will light up.

Press the on/off button to turn the fryer off.

# Boil out fry vats (electric fryers only) (continued)

## 2 Prepare for boil-out and turn fryer off.

Put on neoprene gloves, a heat-resistant apron, and a face shield. You must wear this equipment throughout this procedure.

This procedure should be done for only one vat at a time.

Confirm that the fryer filters are in place. Turn at least one exhaust fan on. The fan must stay on for the entire procedure.

Make sure the basket support rack is in place in the vat.

Press the on/off key to turn the fryer off.

### Equipment Alert

Avoid accidentally activating the fire extinguishing system by keeping an exhaust fan on and the fryer filters in place during the entire procedure.

## 3 Remove filter pan.

Open the doors to the filter area and remove the filter pan. Place it on the floor under the fryer's drain spout or use an oil removal cart.

After boil out is complete clean and dry filter pan.



## 4 Drain oil from vat.

Be sure the filter pan or an oil removal cart is in place underneath the drain spout on the fryer. If the fryer has a swivel drain spout, pull it outward.

Carefully open the drain valve, and let the oil drain into the oil removal cart or pan. Push any pieces of fried food or other sediment into the drain valve using the Fryer's Friend, so they drain out. Close the drain valve.



### Hot Oil

The oil may be very hot. Avoid splashing oil.

## 5 Add degreaser and hot water to vat.

Pour KAY® QSR Heavy Duty Degreaser carefully into the vat. Use 2 gallons (8 liters) of degreaser if you are cleaning a full vat. Use 1 gallon (4 liters) of degreaser if you are cleaning one side of a split vat. Finish filling the vat with hot water. Solution should be 1 inch above fill line.

## 6

Remove the fryer capping piece if the fryer has one.

Take back to sink and clean with KAY® QSR Heavy Duty Degreaser.



### Chemicals

KAY® QSR Heavy Duty Degreaser

## 7 Turn fryer on.

Press the on/off key to turn the fryer on. The display will show "low temp."



continued ►

# Boil out fry vats (electric fryers only) (continued)

## 8 Start boil-out.

Press the gray product button. The display will show a set of left arrows and right arrows. Locate the cook channel button under the vat you want to boil out. Press and hold the cook channel button for approximately 5 seconds, then release the button. The display near the button should show "boil out." Press the button under the display again. The boil-out should start.



## 9 Allow solution to heat up.

The solution will reach a temperature of 195°F (91°C). The solution should be at a soft, rolling simmer. Once the solution has reached its target temperature, let it simmer for approximately 60 minutes. Complete steps 9 through 11 while the timer is running.



### Hot Liquids/Steam

The solution should never come to a rolling boil, or it may boil over. If unit starts to boil over turn fryer off.

Never leave the fryer unattended during boil out.

## 10 Clean fry baskets.

Place the fry baskets into the cleaning solution. Have another crew person remove them when clean and take them to the three-compartment-sink. Rinse and dry them thoroughly.



continued ▶



### Equipment Alert

Do not place any aluminum parts in the boiling solution. The solid metal basket hangers are made of aluminum.

## 11 Clean basket support rack.

Use the Fryer's Friend to remove the basket support rack from the vat. Have another crew person take the rack to the three-compartment-sink, and rinse it thoroughly in hot water. Dry thoroughly.



### Hot Surfaces

The basket support rack is very hot.

## 12 Scrub inside of vat.

Scrub the side, front, and back walls of the vat with the Hi-Temp Pad Holder and pad and Kay QSR Fryer Cleanser. Use the Hi-Temp Detail Brush to scrub any hard-to-reach areas such as in between coils and in corners of vats.



## 13 Turn fryer off.

When the vat has simmered at a rolling simmer (boiled out) for approximately 60 minutes, press the on/off button to turn the fryer off.



# Boil out fry vats (electric fryers only) (continued)

- 14 Drain solution from fryer.**  
Place a 5-gallon (19-liter) bucket suitable to hold hot water under the fryer's drain. Open the fryer drain valve far enough to allow the solution to flow slowly into the bucket. Let 2 or 3 gallons of solution drain into the bucket. Close valve then change to an empty bucket and let 2 or 3 gallons of solution drain into the bucket. You will need several buckets to drain the fryer completely.



The cleaning solution should be discarded or re-used in another fryer within 3 hours. After 3 hours, discard the solution.



**Hot Liquids/Steam**

The solution will be very hot. Avoid splashing.

- 15 Scrub inside of vat.**  
Use the Hi-Temp Pad Holder, pad and fryer cleanser to remove any remaining deposits from the side, front, back and top of the vat.



- 16 Fill vat with water.**  
Fill vat with the appropriate amount of plain water.



continued ►

- 17 Drain solution from vat.**  
Place a 5-gallon (19-liter) bucket under the fryer's drain. Open the fryer drain valve far enough to allow the dirty solution to flow slowly into the bucket. Discard the dirty solution. Place the bucket under the fryer drain again and open the valve completely.

Do not place more than 2 or 3 gallons of solution in a bucket at a time.

Scrub any remaining deposits or carbon in the vat with a non-scratch pad.



**Hot Liquids/Steam**

The solution will be very hot. Avoid splashing.



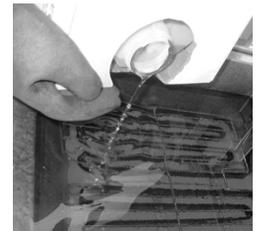
**Equipment Alert**

Drain the solution only into buckets. Do not drain into the filter pan or oil removal cart.

- 18 Rinse and dry vat.**  
Rinse the vat thoroughly with warm water (100°F or 38° C). Be sure to have a bucket underneath the drain to catch rinse water. Repeat with more clean, warm water. Wipe the vat down with a clean, sanitized towel. Close the fryer drain valve. Thoroughly dry the inside of the vat with paper towels.



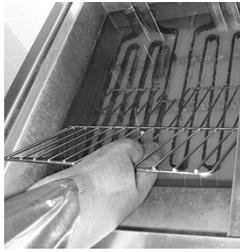
- 19 Fill vat with oil.**  
Fill the vat with the appropriate amount of oil.



## Boil out fry vats (electric fryers only) (continued)

### 20 Prepare fryer for use.

Place the basket support rack in the correct position in the fryer vat. If the fryer has a swivel drain spout, push the spout back inside the fryer cabinet. Carefully push the filter pan back into the fryer cabinet.



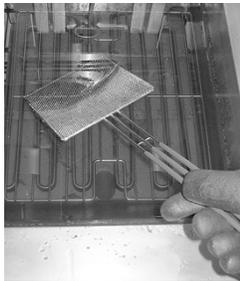
### 21 Turn fryer on.

Turn fryer on. Press the on/off key to turn the fryer on. The display will show "low temp."



### 22 Skim oil.

When the oil has heated, skim off any particles of carbon floating on the surface of the oil.



### 23 Season baskets and racks.

Season the baskets and the basket support racks by leaving them in the fresh oil for approximately 2 minutes at cooking temperature.



### 24 Boil-out remaining fryers.

Repeat steps 1 through 21 for each remaining fryer.



<b>Why</b>	To ensure fryer safety controls are working effectively	
<b>Time required</b>	45 minutes for fryer to heat up.	25 minutes per pot to complete. 1 hour for oil to cool down before disposal.
<b>Time of day</b>	After closing. Conduct this test when the cooking oil is due to be changed.	For 24-hour restaurants: during low-volume periods when oil is scheduled to be changed
<b>Hazard icons</b>	 Hot Liquids/Steam  Hot Oil  Hot Surfaces	

**Tools and supplies**



Oil removal cart



Neoprene Gloves

**Procedure**

**1 Prepare for tests.**

Confirm that the oil in the fryer is scheduled to be changed. The oil must be discarded at the end of the procedure.

Check the oil level in the fryer. It should be at the upper "Oil Level" line. If the oil level is below that line, add oil until it reaches the "Oil Level" line.

Check the temperature of the oil. The oil temperature should be above 180°F (82°C).

Confirm that the hood grease filters are in place, and turn the exhaust fans on. The fans must stay on for the entire procedure. During this procedure, the oil in the fryer is heated to very high temperatures. The oil may smoke slightly, and it will be extremely hot.



**2 Turn fryer off.**

Press the on/off key to turn the fryer off. The display will show "OFF."



**3 Put fryer into programming mode.**

Press the button marked "checkmark" to put the fryer into programming mode. The left display will show "Code."



continued ►

**4 Decide which vat to test.**

You can test either a full vat or the right-hand side of a split-vat, or the left-hand side of a split-vat.



To test a full vat or the right-hand side of a split-vat, press the key numbered "9" four times to enter the code 9999. The right display will show "Hi-Limit."

To test the left-hand side of a split-vat, press the key numbered "8" four times to enter the code 8888. The left display will show "Hi-Limit."

continued ►

## Verify high-limit controls (continued)

### 5 Equipment alert

Be extremely careful during this procedure.



Hot Liquids/Steam



Hot Oil



Hot Surfaces

#### Test the first (internal) high-limit control.

If you decided to test a full vat or the right-hand side of a split-vat, press the right cook channel button marked “1” and hold it until the heat indicator button lights up. This shows the fryer is calling for heat.

If you decided to test the left-hand side of a split-vat, press the left cook channel button marked “1” and hold it until the heat indicator button lights up. This shows the fryer is calling for heat.

The right display will alternate between displaying “Hi-Limit” and the current oil temperature until the temperature reaches 410°F (210°C). When the temperature reaches 410°F (210°C), the display will alternate between “Hi-1” and the current temperature. The heat indicator light will go out. If you see these things, the control has passed the first test.

If the display alternates between “Hi-1” and “bad,” the control has failed the test.

When the test is finished, reset the computer by pressing the on/off key to turn the computer off, and then press the on/off key again to turn the computer on.



### 6 Test second (mechanical) high-limit control.

If you are testing a full vat or the right-hand side of a split-vat, press and hold the right cook channel button marked “2.”

If you are testing the left-hand side of a split-vat, press and hold the left cook channel button marked “2.”

The display will alternate between “Hi-Limit” and the current oil temperature until the oil temperature reaches 425°F (218°C). At that temperature the display should show “Hi-2.” If it shows “Hi-2” at that temperature, the control has passed the test.

If the display alternates between “Hi-2” and “bad,” the control has failed the test.

Press the on/off button to clear the second test and turn the computer off.

continued ►



## Verify high-limit controls (continued)

### 7 Decide what to do if either control failed.

If both controls pass the test, skip this step.

If the fryer fails the first high-limit control test but passes the second one, the vat can be used if that is absolutely necessary. The computer controls should be replaced as soon as possible. Use extreme care when using the vat in this case.

If the fryer fails the second high-limit control test, *do not use the vat until the second (mechanical) high-limit control has been replaced.* Call a service technician immediately.

In the first test, if the heat indicator light goes out when the temperature is less than 410°F (210°C), that means that the high-limit control has activated at a lower temperature than normal. You do not need to replace the computer controls in this case unless they are interfering with proper cooking.

In the second test, if the display begins to alternate between “HI 2” and “bad” when the temperature is less than 425°F (218°C), that means that the high-limit control has activated at a lower temperature than normal. You do not need to replace the high-limit control in this case unless it is preventing you from testing the first high-limit control.

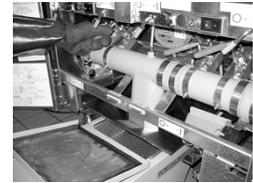


### 8 Discard oil.

When you have completed both tests, allow the oil to cool for one hour. Then discard the oil. Drain the oil into an oil removal cart. Use Neoprene Gloves



The oil is may be hot.



### 9 Verify high-limit controls for all remaining fryers.

Repeat steps 1 through 10 for all remaining fryers.



<b>Why</b>	To keep the fryer's filter pump in working order	
<b>Time required</b>	2 minutes to prepare	5 minutes to complete
<b>Time of day</b>	At open; the fryer must be cool	For 24-hour restaurants: During a low-volume period when the fryer can be turned off
<b>Hazard icons</b>	 Hot Oil  Hot Surfaces	

## Tools and supplies



O-rings for the filter pump



Flat tip screwdriver

## Procedure

### 1 Prepare fryer for procedure.

Check to make sure the fryer is cool. This procedure should be done only when the fryer is cool and the filter pan is empty.



### 2 Remove filter pan.

Pull the filter pan out of the cabinet.



### 3 Replace O-ring.

Remove the O-ring from the pan nozzle. Replace the O-ring with a new O-ring. O-rings can be purchased from your local authorized servicer.



### 4 Reinstall filter pan.

Reinstall the pan into the fryer cabinet.



### Equipment Alert

Use only the manufacturer's replacement O-ring. These rings are manufactured specifically for use with hot cooking oils. Generic O-rings cannot be used for this purpose.

<b>Why</b>	To keep the fry vats clean and to maintain proper cooking temperatures	
<b>Time required</b>	5 minutes to prepare	75 minutes to complete
<b>Time of day</b>	At close	For 24-hour restaurants: during low-volume periods at night
<b>Hazard icons</b>	 Hot Liquids/Steam  Hot Oil  Hot Surfaces  Manual Handling  Slippery Floors	

**Tools and supplies**



**Procedure**

**1 If this is first boil-out, program boil-out into fryer.**

If the fryer is new, the boil-out procedure must be programmed into the fryer before it is boiled out for the first time.

If the fryer has been boiled out before, skip this step.

To program boil-out into the fryer, follow these steps.

Press the on/off button to turn the fryer off.

Press the button marked with a check mark. The left display will show "code."



continued ▶

Press the number keys 1, 6, 5, 0. Then press the button marked "1 and left arrow" to step through the menu of items and products. Stop when you reach "boil out" (#40 product position).

Press a gray product button to store the "boil out" entry. The green display of the button pressed will light up.

Press the on/off button to turn the fryer off.

# Boil out fry vats (gas fryers only) (continued)

## 2 Prepare for boil-out and turn fryer off.

Put on neoprene gloves, a heat-resistant apron, and a face shield. You must wear this equipment throughout this procedure.

This procedure should be done for only one vat at a time.

Confirm that the fryer filters are in place. Turn at least one exhaust fan on. The fan must stay on for the entire procedure.

Make sure the basket support rack is in place in the vat.

Press the on/off key to turn the fryer off.

### Equipment Alert

Avoid accidentally activating the fire extinguishing system by keeping an exhaust fan on and the fryer filters in place during the entire procedure.

## 3 Remove filter pan.

Open the doors to the filter area and remove the filter pan. Place an oil removal cart or other container suitable to transport hot oil under the fryer's drain spout.

After boil out is complete clean and dry filter pan.



## 4 Drain oil from vat.

Be sure the oil removal cart or other container suitable to transport hot oil is in place underneath the drain spout on the fryer. If the fryer has a swivel drain spout, pull it outward.

Carefully open the drain valve, and let the oil drain into the oil removal cart or oil container. Push any pieces of fried food or other sediment into the drain valve using the Fryer's Friend. Close the drain valve.

### Hot Oil

The oil may be very hot. Avoid splashing oil.

## 5 Add degreaser and hot water to vat.

Pour KAY® QSR Heavy Duty Degreaser carefully into the vat. Use 2 gallons (8 liters) of degreaser if you are cleaning a full vat. Use 1 gallon (4 liters) of degreaser if you are cleaning one side of a split vat. Finish filling the vat with hot water. Solution should be 1 inch above fill line.

## 6 Take back to sink and clean with KAY® QSR Heavy Duty Degreaser.

### Chemicals

KAY® QSR Heavy Duty Degreaser

## 7 Turn fryer on.

Press the on/off key to turn the fryer on. The display will show "low temp".



continued ▶

# Boil out fry vats (gas fryers only) (continued)

## 8 Start boil-out.

Press the gray product button. The display will show a set of left arrows and right arrows. Locate the cook channel button under the vat you want to boil out. Press and hold the cook channel button for approximately 5 seconds, then release the button. The display near the button should show "boil out." Press the button under the display again. The boil-out should start.



## 9 Allow solution to heat up.

The solution will reach a temperature of 195°F (91°C). The solution should be at a soft, rolling simmer. Once the solution has reached its target temperature, let it simmer for approximately 60 minutes. Complete steps 9 through 11 while the timer is running.



### Hot Liquids/Steam

The solution should never come to a rolling boil, or it may boil over. If unit starts to boil over turn fryer off.

Never leave the fryer unattended.

## 10 Clean fry baskets.

Place the fry baskets into the cleaning solution. Have another crew person remove them when clean and take them to the three-compartment-sink. Rinse and dry them thoroughly.



### Equipment Alert

Do not place any aluminum parts in the boiling solution. The solid metal basket hangers are made of aluminum.

## 11 Clean basket support rack.

Use the Fryer's Friend to remove the basket support rack from the vat. Have another crew person take the rack to the three-compartment-sink, and rinse it thoroughly in hot water. Dry thoroughly.



### Hot Surfaces

The basket support rack is very hot.

## 12 Scrub inside of vat.

Scrub the side, front, and back walls of the vat with the Hi-Temp Pad Holder, pad and Kay QSR Fryer Cleanser to remove any remaining deposits.



continued ►

## 13 Turn fryer off.

When the vat has simmered at a rolling simmer (boiled out) for approximately 60 minutes, press the on/off button to turn the fryer off.



# Boil out fry vats (gas fryers only) (continued)

- 14 Drain solution from fryer.**  
Place a 5-gallon (19-liter) bucket suitable to hold hot water under the fryer's drain. Open the fryer drain valve far enough to allow the solution to flow slowly into the bucket. Let 2 or 3 gallons of solution drain into the bucket. Close valve then change to an empty bucket and let 2 or 3 gallons of solution drain into the bucket. You will need several buckets to drain the fryer completely.



The cleaning solution should be discarded or re-used in another fryer within 3 hours. After 3 hours, discard the solution.



**Hot Liquids/Steam**

The solution will be very hot. Avoid splashing.



- 15 Scrub inside of vat.**  
Use the Hi-Temp Pad Holder, pad and fryer cleanser to scrub any remaining deposits from the side, front, back and top of the vat. Use the Hi-Temp Detail Brush to remove soils from hard-to-reach areas such as between coils and in corners of the vat.



- 16 Fill vat with water.**  
Fill vat with the appropriate amount of plain water.



- 17 Drain solution from vat.**  
Place a 5-gallon (19-liter) bucket under the fryer's drain. Open the fryer drain valve far enough to allow the dirty solution to flow slowly into the bucket. Discard the dirty solution. Place the bucket under the fryer drain again and open the valve completely.

Do not place more than 2 or 3 gallons of solution in a bucket at a time.

Scrub any remaining deposits or carbon in the vat with a no-scratch pad.



**Hot Liquids/Steam**

The solution will be very hot. Avoid splashing.



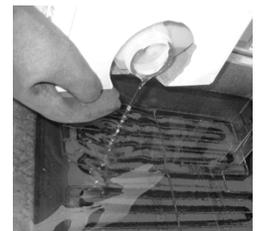
**Equipment Alert**

Drain the solution only into buckets. Do not drain into the filter pan or oil removal cart.

- 18 Rinse and dry vat.**  
Rinse the vat thoroughly with warm water (100°F or 38° C). Be sure to have a bucket underneath the drain to catch rinse water. Repeat with more clean, warm water. Wipe the vat down with a clean, sanitized towel. Close the fryer drain valve. Thoroughly dry the inside of the vat with paper towels.



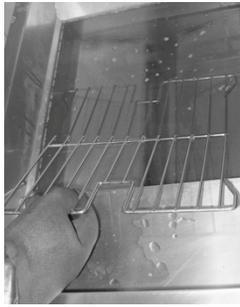
- 19 Fill vat with oil.**  
Fill the vat with the appropriate amount of oil.



## Boil out fry vats (gas fryers only) (continued)

### 20 Prepare fryer for use.

Place the basket support rack in the correct position in the fryer vat. If the fryer has a swivel drain spout, push the spout back inside the fryer cabinet. Carefully roll the filter pan back into the fryer cabinet.



### 21 Turn fryer on.

Turn fryer on. Press the on/off key to turn the fryer on. The display will show "low temp."



### 22 Skim oil.

When the oil has heated, skim off any particles of carbon floating on the surface of the oil.



### 23 Season baskets and racks.

Season the baskets and the basket support racks by leaving them in the fresh oil for approximately 2 minutes at cooking temperature.



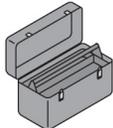
### 24 Boil out remaining fryers.

Repeat steps 1 through 21 for each remaining fryer.



<b>Why</b>	To ensure proper cooking temperatures	
<b>Time required</b>	45 minutes to prepare	20 minutes to complete
<b>Time of day</b>	At close	For 24-hour restaurants: during low-volume periods or at night
<b>Hazard icons</b>	 Electricity  Hot Liquids/Steam  Hot Oil  Hot Surfaces	

### Tools and supplies



Tools supplied by technician

### Procedure

#### QUALIFIED TECHNICIANS ONLY

##### 1 Cabinet inspection

Inspect the cabinet, inside and out, front and rear, for excessive oil buildup.



##### 2 Check regulated gas pressure.

Contact the local gas company or a service agency to check the gas pressure out of the fryer's gas regulator.

For natural gas, the pressure must be 3.0 in. W.C. (76 mm W.C.) For propane gas, the pressure must be 8.25 in. W.C. (210 mm W.C.)

If the pressure does not meet these standards, ask the service agency or gas company to adjust the pressure to meet the standard.

##### 3 Probe check

**Verify that the temperature and high-limit probes are properly connected, tightened and functioning properly, and that mounting hardware and probe guards are present and properly installed.**

##### 4 Clean and Replace gas valve vent tube.

Clean and replace the gas valve vent tube. Follow the cleaning procedure in the service manual.

##### 5 Clean combustion air blower.

Clean the combustion air blowers. Follow the cleaning procedure in the service manual.

##### 6 Check fryer recovery time.

Choose a vat on the fryer. Check the fryer's most recent recovery time for that vat, using the procedure in FR2 M1. The most recent recovery time should be less than 2:25 (two minutes, twenty-five seconds).

If the fryer's recovery time is less than 2:25 (two minutes, twenty-five seconds), the procedure is complete for this vat. Go to step 9.

##### 7 Check combustion.

If the fryer's recovery time is less than 2:25 (two minutes, twenty-five seconds), skip this step.

Connect the multimeter in series with the white flame sensor wire on the igniter. Allow the burner to operate for at least one minute after the melt cycle is completed. After 1 minute, the reading on the multimeter should be between 2.5 and 3.5 microamps. Any other reading is not acceptable.

After 90 seconds of continuous operation, check the color of the burner. The burner should glow bright orange-red. Use the Burner Color Comparison Chart inside the door of the fryer to identify the correct color. A blue flame or dark spots on the burner face are not acceptable.

## Annual Inspection (gas fryers only) (continued)

### 8 Adjust combustion air blower, if necessary.

If the fryer's recovery time is less than 2:25 (two minutes, twenty-five seconds), skip this step.

If either the multimeter reading or the burner color is not acceptable, adjust the combustion air blower intake plate.

Loosen the locking nuts on the intake plate with a small adjustable wrench. Open or close the plate to adjust the airflow while watching the multimeter reading and the color of the burner. A blue flame usually means the burner isn't receiving enough air. Dark spots on the burner usually mean the burner is receiving too much air.

When the microamp reading is in the acceptable range and the burner color is bright orange-red, hold the blower intake plate in place. Then tighten the blower intake plate locking nuts.

### 9 Safety device check

Verify that all safety features (i.e. drain safety switches, reset switches, etc.) are present and functioning properly.

### 10 Frypot examination

Verify that the frypot is in good condition and free of leaks and that the frypot insulation is in serviceable condition.

### 11 Wiring harness inspection

Verify that all wiring harnesses and connections are tight and in good condition.

### 12 Oil line inspection

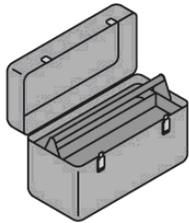
Inspect all oil-return and drain lines for leaks and verify that all connections are tight.

### 13 Calibrate remaining fryers.

Repeat steps 2 through 12 for each remaining vat and fryer.

<b>Why</b>	Frymaster recommends that a Factory Authorized Service Technician inspect this appliance at least annually. This will help ensure the equipment is in safe working order and operating at peak performance.	
<b>Time required</b>	N/A	1 hour per fryer to complete inspection
<b>Time of day</b>	The inspection should be scheduled by the store to ensure business is not interrupted and to give the servicer adequate access to the equipment.	
<b>Hazard icons</b>		

---

**Tools and supplies**


Tools supplied by technician

---

**Procedure**
**QUALIFIED TECHNICIANS ONLY****1 Cabinet inspection**

Inspect the cabinet, inside and out, front and rear, for excessive oil buildup.

**2 Element inspection**

Verify that heating elements are in good condition with no carbon/caramelized oil build up. Inspect the elements for signs of extensive dry firing.

**3 Tilt inspection**

Verify that the tilt mechanism is working properly when lifting and lowering elements and that the element wires are not binding and/or chafing.

**4 Check fryer recovery time.**

Choose a vat on the fryer. Check the fryer's most recent recovery time for that vat, using the procedure in FR2 M1. The most recent recovery time should be less than 1:40 (one minute, forty seconds).

If the fryer's recovery time is less than 1:40 (one minute, forty seconds). The procedure is complete for this vat. Go to step 6

**5 Adjust fryer, if necessary.**

If the fryer's recovery time is not acceptable, check the following items on the fryer. If you find any problems, correct them as described.

For electric fryers only, confirm that the large power plug is properly plugged in. Adjust as necessary. Continue to step 6.

**6 Amp-draw check**

Verify the heating element amp-draw is within the allowed range as indicated on the appliance's rating plate.

## Annual Inspection (electric fryers only) (continued)

### 7 Probe check

Verify that the temperature and high-limit probes are properly connected, tightened and functioning properly, and that mounting hardware and probe guards are present and properly installed.

### 8 Electrical component inspection

Verify that component box and contactor box components (i.e. computer/controller, relays, interface boards, transformers, contactors, etc.) are in good condition and free from oil build up or other debris.

### 9 Wiring connection inspection

Verify that component box and contactor box wiring connections are tight and that wiring is in good condition.

### 10 Safety device check

Verify that all safety features (i.e. contactor shields, drain safety switches, reset switches, etc.) are present and functioning properly.

### 11 Frypot examination

Verify that the frypot is in good condition and free of leaks and that the frypot insulation is in serviceable condition.

### 12 Wiring harness inspection

Verify that all wiring harnesses and connections are tight and in good condition.

### 13 Oil line inspection

Inspect all oil-return and drain lines for leaks and verify that all connections are tight.