



COMMERCIAL ELECTRIC FRYER

FL-20B-SEA

INSTRUCTION MANUAL

FOR END USER

HOSHIZAKI CORPORATION

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L178FE101 (110123)

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IMPORTANT SAFETY INFORMATION

Throughout this manual, notices appear to bring your attention to situations which could result in death, serious injury, or damage to the unit.

⚠DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a hazardous situation which, if not avoided, could result in damage to the unit.
⚠HYGIENE	Indicates important precautions for hygiene and food safety.
IMPORTANT	Indicates important information about the use and care of the unit.

IMPORTANT

This booklet is an integral and essential part of the product and should be kept and preserved by the user.

Please read carefully the guidelines and warnings contained herein as they are intended to provide the installer/user with essential information for the proper installation and the continued safe use and maintenance of the product. In addition, it provides GUIDANCE ONLY to the user on the correct services and site location of the fryer.

Please preserve this booklet for any further consultation that may be necessary.

⚠WARNING

This is a commercial fryer, and should be destined only to be used for the purpose for which it has been expressly designed.

Any other use should be considered improper and therefore dangerous. The manufacturer will not be held liable or responsible for any damage caused by improper, incorrect and unreasonable use.

The installation, and relocation if necessary, must be carried out by qualified personnel, in accordance with current regulations, according to the manufacturer's instructions.

ENGLISH

The use of any electrical appliance involves the observance of some fundamental rules. In particular:

- * Instances of high humidity and moisture increase the risk of electrical short circuits and potential electrical shocks. If in doubt, disconnect the fryer.
- * Do not damage the power cord or pull it in order to disconnect the fryer from the electrical supply network.
- * The supply cord and/or the plug should need to be replaced, it should only be done by a qualified service engineer.
- * Do not touch the electrical parts or operate the switches with damp hands.
- * This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, it can however be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge providing they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- * Children shall not play with the appliance.
- * Cleaning and user maintenance shall not be made by children without supervision.
- * Do not attempt to modify the fryer. Only qualified personnel may disassemble or repair the appliance.

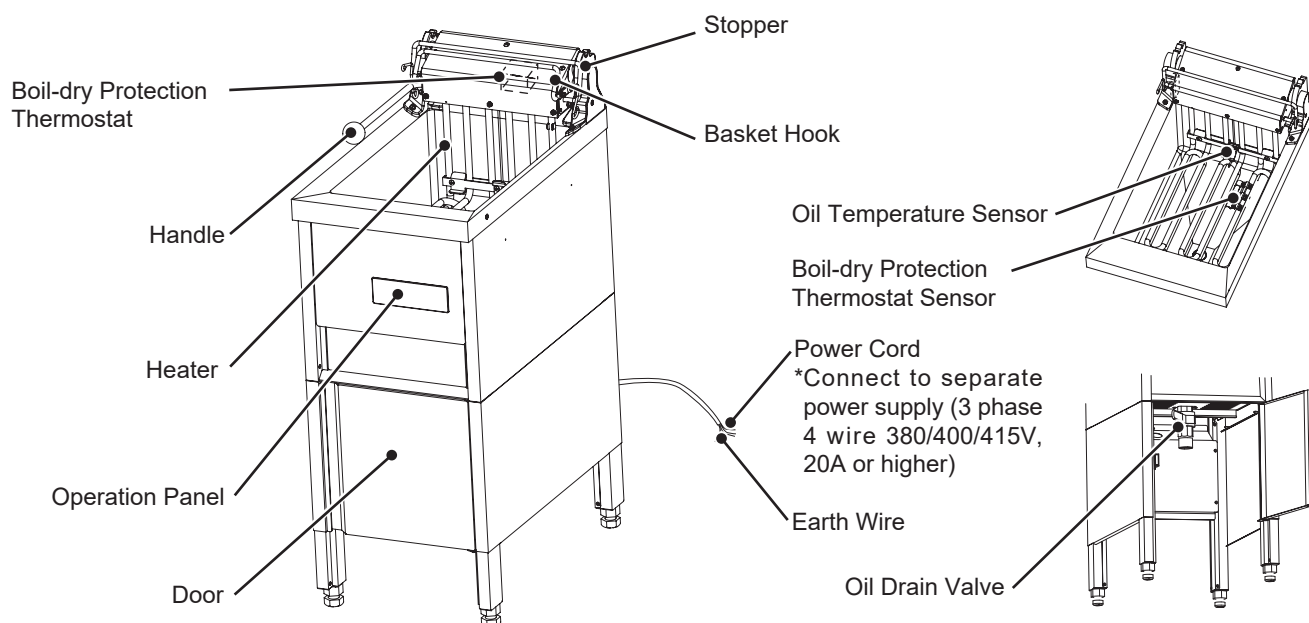
When positioning the appliance, ensure the supply cord is not trapped or damaged.

Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.

In case of a gas leak, turn off the gas and ventilate the room. To avoid the risk of ignition and explosion, do not touch or unplug the unit.

I. INSTALLATION INSTRUCTIONS

1. CONSTRUCTION



2. LOCATION

⚠ DANGER

Adequate ventilation system must be provided to prevent serious accidents.

Allow adequate clearance between the product and the walls or other object to prevent fire.

⚠ WARNING

This fryer is not intended for outdoor use.

This fryer is not suitable for installation in an area with a high humidity or where a water jet could be used.

Do not install the fryer close to fire or where flammable gas may leak.

⚠ CAUTION

The location should provide a firm and level foundation for the fryer.

Do not install the fryer under wall shelves.

Do not install the fryer in an area that can be affected by oil splattering.

IMPORTANT

Normal operating ambient temperature should be within 5°C to 40°C.

Avoid prolonged exposure of the appliance to direct sunlight.

ENGLISH

3. ELECTRICAL CONNECTIONS

⚠ WARNING

THIS APPLIANCE MUST BE EARTHED

This fryer requires an earth that meets the national and local electrical code requirements.

Do not connect the earth wire to a gas line, water line, lightning rod or telephone earth wire. Improper earth connection may cause electric shock.

The unit must have a separate power supply. Branching off the power cord, using an extension cord, or sharing a single power supply with other appliances may result in electric shock, heat generation or fire.

The supply cord must be away from oil or detergent. Damaged supply cord may cause electric shock, malfunction of the unit or fire.

Disconnect the main power supply before making any electrical connections to prevent possible electric shock. Attach a sign to warn against turning on the power supply during the electrical work.

⚠ CAUTION

The maximum allowable voltage variation must be as follows.

380V: ± 10 percent of the rated voltage

400V: +8 percent or -10 percent of the rated voltage

415V: +4 percent or -10 percent of the rated voltage

Operation of the unit outside of this range may cause smoking, ignition, damage to the unit or reduction of the performance.

* Usually an electrical permit and services of a licensed electrician are required.

II. OPERATING INSTRUCTIONS

⚠ DANGER

Do not walk away from the unit while it is running. Be sure to turn off the operation switch at the closing time or before walking away from the unit.

Do not splash water directly onto the unit. It may cause burn, short circuit, electric shock, corrosion or failure.

Do not touch the surfaces of the unit during or right after use. The oil tank and unit surfaces may be very hot and cause burn.

Do not boil dry. Boil-dry may cause burn, smoke, fire or malfunction of the unit. Put oil into the oil tank before turning on the operation switch. Turn off the operation switch and let the oil cool before filtering or draining the oil tank.

⚠ WARNING

If the earth leakage breaker trips, contact your local Hoshizaki service agent. To prevent electric shock or fire, do not turn it back on.

Do not put oil into the oil tank if there is water inside the tank. Boiled water may cause oil splashes and burn.

Oil must be in liquid form. If solid oil is put into the oil tank, the heater may be partly heated and combust.

Use the specified amount of oil to prevent the risk of fire caused by overheating.

In case of trouble, disconnect the main power supply, and immediately contact your local Hoshizaki service agent. To prevent possible electric shock or fire, do not keep the unit in operation.

When shutting down the unit for more than a week, turn off the operation switch, and disconnect the main power supply. Dust may collect and cause heat generation or ignition.

Do not swing up the heater during use to prevent burn.

⚠ CAUTION

Do not connect the main power supply without putting oil into the oil tank.

Do not use combustible spray or place volatile and flammable substances near the unit. They could catch fire from a spark of a switch or the like.

Use the oil tank cover when the unit is not in operation.

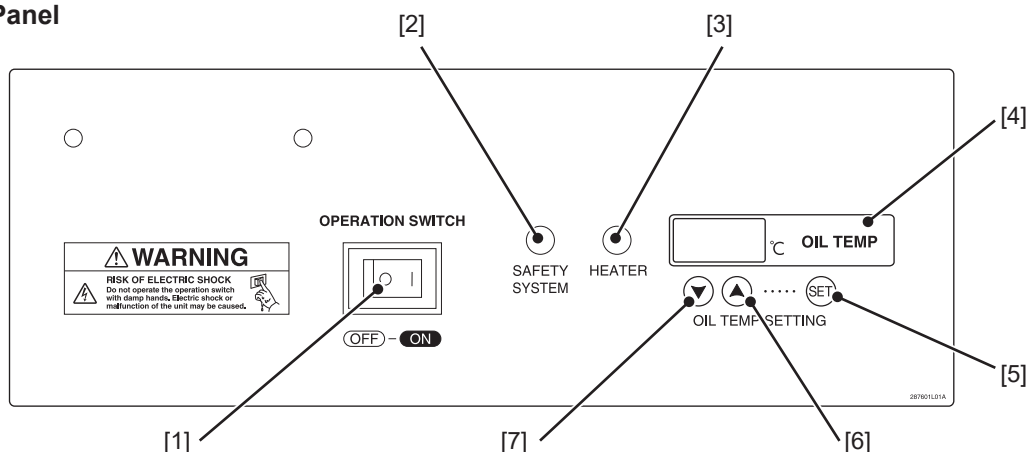
Do not use this appliance other than for cooking with oil.

Do not place anything near the unit that can be affected by heat.

IMPORTANT

Do not use oil other than cooking oil.

Operation Panel

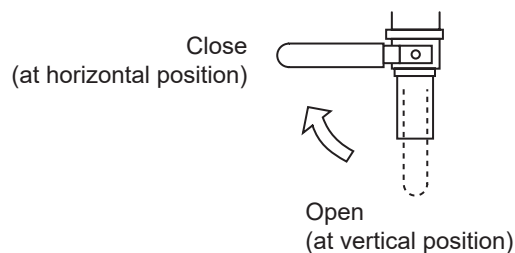


- [1] Operation switch
Turns on/off the unit at the opening/closing time.
- [2] Safety system lamp
Lights up when the boil-dry protection thermostat trips.
- [3] Heater lamp
Lights up when the heater is energized.
- [4] Oil temperature indicator
Indicates oil temperature. When the setting button is pressed, the display indicates the set temperature of oil.
- [5] Setting button
Sets/changes the oil temperature.
- [6] Up button
Increases the set temperature of oil.
- [7] Down button
Decreases the set temperature of oil.

1. OPERATION

[a] PREPARATION FOR OPERATION

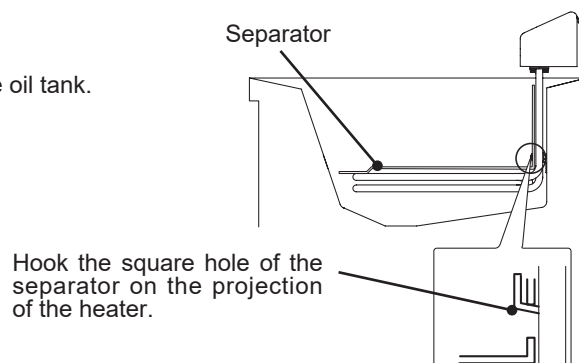
- 1) Close the oil drain valve. Make sure that the valve handle is in the closed position.



- 2) Place the oil can with the oil can strainer under the oil drain valve.

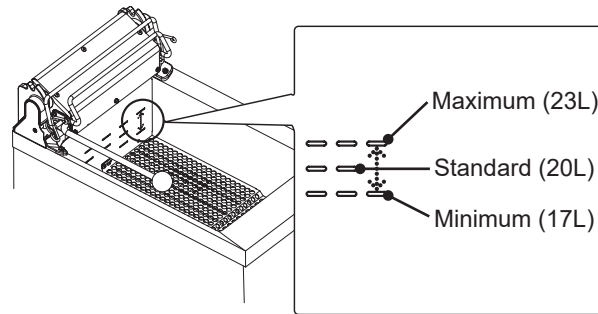
- 3) Remove the oil tank cover.

- 4) Install the separator inside the oil tank.



ENGLISH

5) Pour the cooking oil into the oil tank according to the scale on the separator.



6) Turn on the main power supply.

7) Turn on the operation switch. If the oil temperature is below 50°C, the display indicates "Lo".

[b] OIL TEMPERATURE SETTING

The default oil temperature setting is 180°C. Adjust the temperature as needed.

- 1) Press and hold the setting button for 2 seconds. The oil temperature indicator flashes and indicates the current setting temperature.
- 2) Adjust the setting temperature while the indicator is flashing. After 5 seconds without any adjustment, the indicator goes back to the current temperature indication. Press the up button to increase the setting temperature, and the down button to decrease. The oil temperature is adjustable from 50 to 200°C in accordance with food items.
- 3) After 5 seconds from the adjustment, the indicator stops flashing and goes back to the current oil temperature indication.

[c] OPERATION

Wait until the oil temperature reaches the setting temperature, then put food into the oil tank.

⚠ CAUTION

Do not turn on the operation switch with the tank cover on. The tank cover will be hot and cause burn. Use the cover not during operation, but after turning off the operation switch and letting the oil cool.

IMPORTANT

The amount of oil decreases during cooking. Add oil to keep the oil surface above the lowest line on the separator.

Before cooking, check the oil temperature and the oil amount.

Do not put in anything other than food.

2. RESETTING SAFETY SYSTEM (BOIL-DRY PROTECTION THERMOSTAT)

⚠ WARNING

If the safety system repeatedly operates, contact your local Hoshizaki service agent. Continuous use may cause fire.

Clean the thermostat sensor everyday. If the sensor is dirty, it will not work properly and may cause fire.

⚠ CAUTION

If the oil temperature is high, let the oil cool to prevent burn before resetting the safety system. Also, the reset button does not work if the heater temperature is high.

Before resetting the safety system:

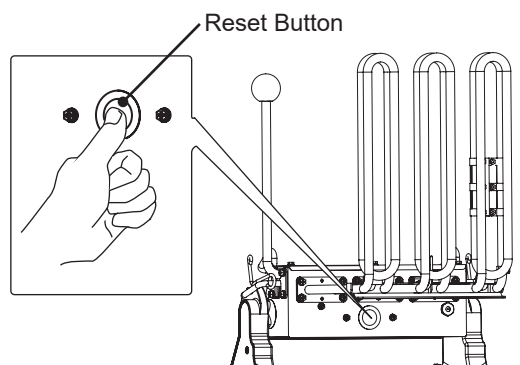
* Turn off the operation switch.

* When ambient temperature or oil temperature is below 0°C, the safety system may operate. Let the ambient temperature rise, and heat the oil using other equipment, then reset the thermostat. The reset button may not work if the ambient temperature or oil temperature is below 0°C.

1) Swing up the heater according to "III. 1. [a] SWINGING UP HEATER".

2) Press and hold the reset button with your thumb until the button clicks. The reset button is stiff to prevent oil from getting into the unit.

3) Turn on the operation switch according to "II. 1. OPERATION". If the reset has been successful, normal operation starts without the safety system lamp lighting up.



3. SHUT DOWN

1) Turn off the operation switch to stop heating the oil.

2) Disconnect the main power supply.

3) Cover the oil tank with the oil tank cover while the unit is not in operation.

⚠ CAUTION

Use the oil tank cover after letting the oil cool. Otherwise, the cover becomes hot and may cause burn.

4. OIL DRAINING

⚠ DANGER

Before draining the oil tank, turn off the operation switch and disconnect the main power supply to prevent the risk of burn, fire, smoke and damage to the appliance.

⚠ WARNING

To prevent burn, drain the oil tank after the temperature of oil drops below 100°C.

Before draining the oil tank, completely dry the oil can.

Use a clean oil can strainer.

To prevent burn, slowly drain the oil tank.

Pull out the oil can after the drained oil cools.

Do not leave a large amount of batter scraps. Batter scraps may spontaneously combust due to heat of oxidation. Appropriately dispose of them.

1) Turn off the operation switch to stop heating oil.

2) Disconnect the main power supply.

3) Wait for about 4 hours until the oil temperature drops below 100°C.

4) Make sure that the oil can and the oil can strainer are placed under the oil drain valve. The oil can must be free from moisture.

5) Move the oil drain valve lever slowly to the opened position. Then drain oil into the oil can.

6) After the oil is drained, move the oil drain valve lever to the closed position.

7) Wait until the oil temperature drops to normal, and pull out the oil can. Then dispose of the drained oil.

Note: Do not use any oil can other than the accessory oil can.

III. MAINTENANCE

1. CLEANING

⚠ WARNING

Disconnect the main power supply before any maintenance, repairs or cleaning is undertaken.

Before carrying out any cleaning or maintenance operations, drain the oil tank to prevent burn or malfunction of the unit.

When swinging up the heater from the oil tank, be sure to turn off the operation switch and let the oil cool to prevent burn or fire.

When oil is inside the oil tank, slowly swing up the heater to prevent burn caused by splashed oil.

In case of trouble (e.g. burning smell), disconnect the main power supply, and immediately contact your local Hoshizaki service agent. To prevent possible electric shock or fire, do not keep the unit in operation.

NOTICE

To prevent damage to the painted or plastic surfaces, do not use thinner, benzene, alcohol, petroleum, soap powder, polishing powder, alkaline detergent, acid, scrub brush, and especially cleanser for use on fans and cooking ranges. Also, to prevent corrosion, do not use a chlorine bleach (sodium hypochlorite).

After using a neutral cleaner, wipe thoroughly with a cloth containing clean water.

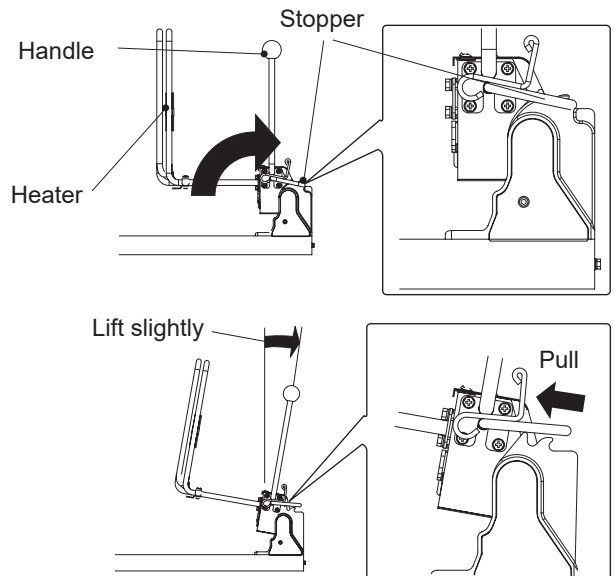
Dry inside the valve thoroughly after cleaning.

When using chemical wipes, follow the manufacturer's instructions.

Use a clean cloth with clean hands.

[a] SWINGING UP HEATER

- 1) Drain the oil tank according to "II. 4. OIL DRAINING".
- 2) Remove the separator, oil pan and oil pan strainer.
- 3) Hold the handle and swing up the heater. Make sure that the stopper is locked. Then release the handle.
- 4) To move the heater back to its original position, slightly lift up the heater and pull the stopper toward you to unlock. Then swing down the heater slowly.



⚠ CAUTION

The heater is heavy. Tightly hold the handle and slowly swing up or down the heater. If the handle is released halfway or swung up/down quickly, deformation of oil tank or oil splash in case oil is inside the oil tank may be caused.

[b] OIL TANK (Daily)

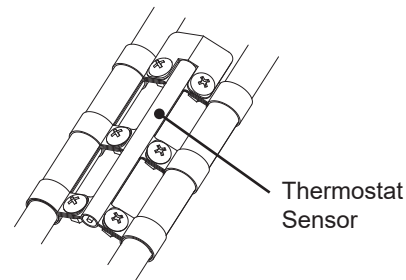
- 1) Drain the oil tank according to "II. 4. OIL DRAINING". Then make sure that the oil drain valve lever is in the closed position.
- 2) Clean inside the oil tank using a neutral cleaner.
- 3) Rinse inside the oil tank with clean water and drain thoroughly.
- 4) Wipe dry with a soft cloth.

[c] BOIL-DRY PROTECTION THERMOSTAT (Daily)

⚠ WARNING

When cleaning the thermostat sensor, be careful not to put hard items in touch with the sensor. If the sensor gets damaged, it will not work properly and may cause fire.

- 1) Drain the oil tank according to "II. 4. OIL DRAINING". Then make sure that the oil drain valve lever is in the closed position.
- 2) After the heater and the oil tank interior cool, clean the thermostat sensor using a neutral cleaner and a soft sponge. Rinse it after cleaning.
- 3) Wipe dry with a soft cloth.



[d] EXTERIOR (Daily)

- * Clean the exterior periodically to wipe off the buildup of oil, moisture and dust. Even the stainless steel exterior may corrode.
- * Remove heavy soil by using a cloth containing warm water and a neutral cleaner. After using a neutral cleaner, wipe thoroughly with a cloth containing clean water.

NOTICE

To avoid haze or crack, do not use alkaline detergent to clean the operation panel cover.

Do not use polishing powder, benzene and thinner to clean the exterior.

[e] OIL TANK (When oil tank is dirty)

- * Black carbide attached to the heater and oil/batter scraps stuck to the oil tank may cause malfunction of the unit. Oil in the oil tank becomes degraded.

- 1) Drain the oil tank according to "II. 4. OIL DRAINING". Then make sure that the oil drain valve lever is in the closed position.
- 2) Put 23 liters of water with alkaline detergent into the oil tank.
- 3) Set the temperature to 80°C according to "II. 1. [a] OIL TEMPERATURE SETTING". Connect the main power supply and turn on the operation switch to heat for 30 minutes.
- 4) Turn off the operation switch and wait until the heated water cools down.
- 5) Drain the oil tank.
- 6) Clean inside the oil tank using a neutral cleaner. Rinse with water.
- 7) Put clean water into the oil tank and heat.
- 8) Completely drain the oil tank and wipe thoroughly. Restore the original temperature setting.

2. BEFORE CALLING FOR SERVICE

If the fryer does not work properly, check the following table before calling for service. If the problem still exists, turn off the operation switch and contact your local Hoshizaki service agent. When contacting your local Hoshizaki service agent, let them know the model name, serial number, date of installation (see warranty card) and state of the trouble.

Do not attempt to repair the unit by yourself. Only qualified personnel may repair the unit.

ENGLISH

[a] ERROR CODE INDICATION

Code	Description
E1	Oil temperature above 220°C. Immediately contact your local Hoshizaki service agent.
E2	Open circuit of oil temperature sensor. Immediately contact your local Hoshizaki service agent.
E3	Short circuit of oil temperature sensor. Immediately contact your local Hoshizaki service agent.
EEE	Control board error. Immediately contact your local Hoshizaki service agent.
Lo	This is not an error. When oil temperature is below 50°C, this code is indicated.

[b] NO ERROR CODE INDICATION

Problem	Possible cause
Oil temperature does not rise	The power cord is disconnected.
	Power failure.
	Main power supply is off. Contact your local Hoshizaki service agent.
	If the safety system lamp comes on, the safety system has been operating. See "III. 3. [c] WHEN SAFETY SYSTEM LAMP COMES ON".
	The heater is not set in the oil tank properly.
Warp or deformation of oil tank	Difference between the oil tank temperature (around 180°C) and the ambient temperature (around 30°C) may cause warp or deformation inside the oil tank. No problem for use.

[c] WHEN SAFETY SYSTEM LAMP COMES ON

When the safety system lamp comes on, check for possible causes. If none of them are applicable, contact your local Hoshizaki service agent.

Problem	Possible cause	Remedy
Boil-dry protection thermostat tripped	Boil dry.	* Put proper amount of oil into the oil tank. * If the boil-dry protection thermostat sensor is dirty, clean it. * If the heater is covered by batter scraps, remove them. After carrying out above remedies, reset the boil-dry protection thermostat sensor according to "II. 2. [Reset of boil-dry protection thermostat]".
	Insufficient oil amount.	
	Black carbide is attached to heater surface or boil-dry protection thermostat sensor.	
	Heater is swung up during operation.	
	Heater is covered by batter scraps.	
	Oil tank is drained during or right after operation.	
	Ambient temperature is low (below 0°C).	
	Vibration is applied to the unit during installation.	

IV. INSPECTION

1. POWER CORD (ANNUALLY/BIANNUALLY)

⚠ WARNING
Do not damage the power cord. It should not be additionally processed, jerked, bundled, weighed down or caught in. It could cause electric shock or fire.

Check the power cord once or twice a year to see if:

* The power cord is connected to a separate power supply.

* The power cord is not overheated, damaged, melted, weighed down or caught in. In case of any trouble, immediately contact your local Hoshizaki service agent.

2. EARTH WIRE (ANNUALLY/BIANNUALLY)

* Check for disconnection or loose connection of the earth wire once or twice a year. In case of any trouble, contact a licensed electrician and ask for a repair.

3. MAGNETIC CONTACTOR (EVERY FIVE YEARS)

IMPORTANT
Replacement of the magnetic contactor is required every five years. The service life depends on the operating time. Consult with your local Hoshizaki service agent.

V. OTHER INFORMATION

1. RELOCATION, DISPOSAL, TRANSFER

* In case of relocation or disposal of the product, contact your local Hoshizaki service agent.

* When selling or transferring this product, tape this instruction manual and the installation manual to the exterior to provide the new owner with information on safe and proper use of the product.

2. WARRANTY

Hoshizaki warrants to the original owner/user that all Hoshizaki branded products shall be free of defects in material and/or workmanship for the duration of the "warranty period". The warranty shall be effective for one year from the date of installation. Hoshizaki's liability under the terms of the warranty are limited and shall exclude routine servicing, cleaning, essential maintenance and/or repairs occasioned by misuse and installations not in accordance with Hoshizaki guidelines.

Warranty repairs should be completed by an approved Hoshizaki dealer or service agency using genuine Hoshizaki components.

To obtain full details of your warranty and approved service agency, please contact your local Hoshizaki service agent, or the nearest Hoshizaki Service office:

Hoshizaki Singapore
 TEL: +65 6225 2612
 FAX: +65 6225 3219
 sales@hoshizaki.com.sg (Sales)
 serviceadmin@hoshizaki.com.sg (Technical support)

Hoshizaki Vietnam
 TEL: +8428 5417 3853
 sales@hoshizaki.com.vn (Sales)
 service@hoshizaki.com.vn (Technical support)

Hoshizaki Indonesia
 TEL: +62 21 2937 5551/2
 FAX: +62 21 2937 5553

Hoshizaki Malaysia
 TEL: +60 3 8023 5823
 FAX: +60 3 8024 1823

ENGLISH

SPECIFICATIONS

Model	FL-20B-SEA
Power Supply	3 phase 4 wire 380 / 400 / 415V 50Hz Capacity: 5.6kVA (8.5A) / 6.2kVA (9.0A) / 6.6kVA (9.2A)
Electric Consumption	5.6 / 6.2 / 6.6kW
Dimensions	450mm(W) x 590mm(D) x 800mm(H) (overall height: 920mm)
Weight	Net: 53kg (Gross: 60kg)
Oil Tank Dimensions	390mm(W) x 430mm(D) x 260mm(H)
Effective Cooking Dimensions	390mm(W) x 376mm(D)
Oil Heating Time	Approx. 15 min (ambient temp 30°C, oil temp 20°C to 180°C)
Oil Amount	Standard: 20L (minimum 17L, maximum 23L)
Oil Drain System	Valve (1 inch ball valve)
Cabinet	Stainless steel
Oil Tank	Stainless steel
Safety System	Earth leakage breaker with overload protector (on-site arrangement), boil-dry protection thermostat, safety switch
Heater	Immersion sheathed heater