Sections of Every Chapter

Important Safety Messages ->

Safety and General Information ->

Product Description ->

All Models – Installation ->

Cabinet Models – Operation ->

Countertop (Bench-top) Models – Operation ->

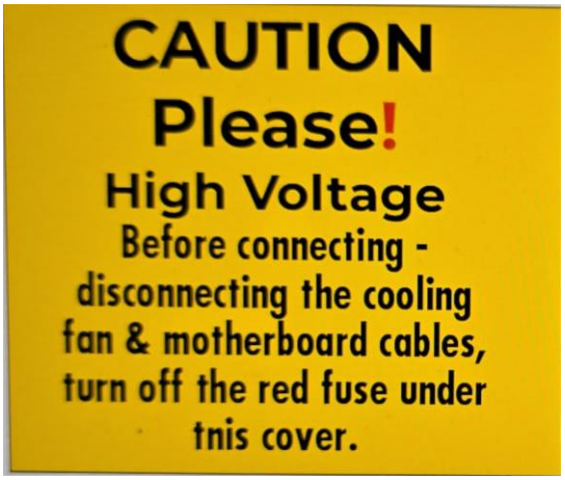
All Models – Operation ->

All Models – Service ->

Warranty Terms ->

Important Safety Messages

Keep these instructions for future reference in order to consult them during installation, operation, and maintenance.



To support familiarization with the device and its procedures, we strongly recommend that you carefully read the entire manual and examine the device accordingly.
This indicator is used on the device to emphasize that special attention must be paid to the relevant section. Failure to do so may result in injury or death.
The indicators listed above also include and cover the risks associated with the indicators listed below.

DANGER  The DANGER indicator signifies that, if the necessary precautions are not taken, the relevant situation may result in death or serious injury.
CAUTION The CAUTION indicator signifies that, if the necessary precautions are not taken, the relevant situation may result in injury.
WARNING  Indicates that failure to take the necessary precautions may result in minor injury, or damage to the device or its surroundings.
INFORMATION Information that is not related to physical injury, but highlights points that must be considered for the proper use, maintenance, or installation of the device.

Safety and General Information

READ THE OPERATING AND MAINTENANCE INSTRUCTIONS CAREFULLY BEFORE INSTALLING THIS DEVICE.

Incorrect installation or improper replacement of parts may cause damage to the product or result in personal injury. Our company shall not be held responsible for damages caused by intentional misuse, failure to comply with instructions and regulations, negligence, or incorrect connections. Unauthorized intervention with the device will void the product warranty.

Upon receipt of the package, check the contents and inspect for any damage. In case of any irregularity, notify the authorized dealer/seller immediately.

- *The invoice of the device also serves as the warranty certificate; please keep the invoice in a safe place.*
- *For safe and efficient operation, comply with the electrical regulations of your country/region.*
- *The device **MUST** be connected to an electrical line equipped with a residual current device (RCD).*
- *Before performing any intervention on the device, this manual must be read in full, the red switch on the device must be turned off, and, when necessary, the circuit breaker of the electrical line must be switched off and/or the electrical connection of the device must be disconnected.*
- *All connections must be carried out by a qualified and authorized electrician.*
- *Any intervention, modification, or alteration carried out without the intervention or written authorization of **Demir EcoFry** will void the device warranty.*
- *This device is intended for **indoor use only**. For any use under different conditions, obtain written approval by consulting an authorized company representative or dealer.*
- *During cleaning, make sure not to direct pressurized water directly at or from below the electrical control box.*
- *Do not operate the device in areas without adequate ventilation hoods or sufficient lighting.*

- *Ensure that the device is securely installed on a level surface.*
- *The device must be operated only by competent and properly trained personnel who have read the user manual and received fire response training.*
- ***HEAVY DEVICE!** Always ensure that the device is transported and positioned under suitable conditions and in a stable manner. Do not move the device while it contains oil.*
- *When the device is not in use, store it with the lid closed, filled with oil, and with the electrical line's circuit breaker switched off.*
- *If the device will not be used for an extended period, disconnect it from the electrical supply, drain the oil, close all lids, clean the device, and store it with the tank cover closed in a dry, room-temperature, vibration-free, and secure environment.*

Product Description

The **EF Series fryers** are eco-friendly industrial kitchen fryers developed by **Demir EcoFry**, operating with the patented **ThermaShell technology**. They meet international standards and are designed to save oil.

Models are available with different oil capacities, countertop or cabinet configurations, and various equipment options.

Technical Specifications

Product Code	Product Name	Dimensions (mm)	Net Weight (kg)	Packed Dimensions
EF12S	12 Litre Countertop	400x420x600	38	530x450x650 mm
EF20S	20 Litre Countertop	400x420x650	43	530x450x700 mm
EF20D	20 Litre Cabinet	400x800x900	56	530x810x1130 mm
EF27D	27 Litre Cabinet	400x800x900	62	530x810x1130 mm

Description

Product Code	Electrical Input	Cable Cross-section (mm^2)	Power (kW)	Capacity (L)
EF12S	380 V. AC 3N PE	5x4	9.0	12
EF20S	380 V. AC 3N PE	5x4	12.0	20
EF20D	380 V. AC 3N PE	5x4	12.0	20
EF27D	380 V. AC 3N PE	5x4	17.7	27

Common Features

- ThermaShell technology
- Adjustable automatic temperature control
- Oil level optimization
- Cold lower tank isolated with a wavebreaker
- Internal and external surfaces made of 304-grade stainless steel
- 2-year product warranty and 10-year spare parts availability guarantee

All Models – Installation

THIS PAGE IS DESIGNED EXCLUSIVELY FOR AUTHORIZED AND TRAINED TECHNICAL SERVICE PERSONNEL.
If you are not an authorized technician, do not attempt any installation or intervention on the device.
Please contact our technical service for assistance.

Transportation and Installation Instructions

TRANSPORTATION: Ensure that the device is kept upright during transport. Since the centre of gravity is high, always make sure the oil has been drained before moving the device.

UNPACKING: The device must be unpacked in accordance with the regulations of the country of use, and the packaging should be disposed of properly.

Check that all parts of the device have been delivered and inspect for any damage that may have occurred during transport.

INSTALLATION: *The device must be installed and serviced by a qualified professional authorized by* ***Demir EcoFry*** *(or its local partner in the relevant country) in accordance with the electrical regulations of the region. Failure to comply will void the device warranty.*

The device ***MUST*** *be connected to an electrical line equipped with a residual current device (RCD).*

Package Contents

1 x Corresponding Demir EcoFry Model
1 x Single/Double Fryer Basket(s) (See: Sectional View – Device Parts)
1 x Wavebreaker (See: Sectional View – Device Parts)
1 x Piped Tube (See: Sectional View – Device Parts)
1 x Frying Barrier
1 x Power Cable
1 x Relevant Invoice

(Designed for a single device; contents may vary depending on the order quantity.)

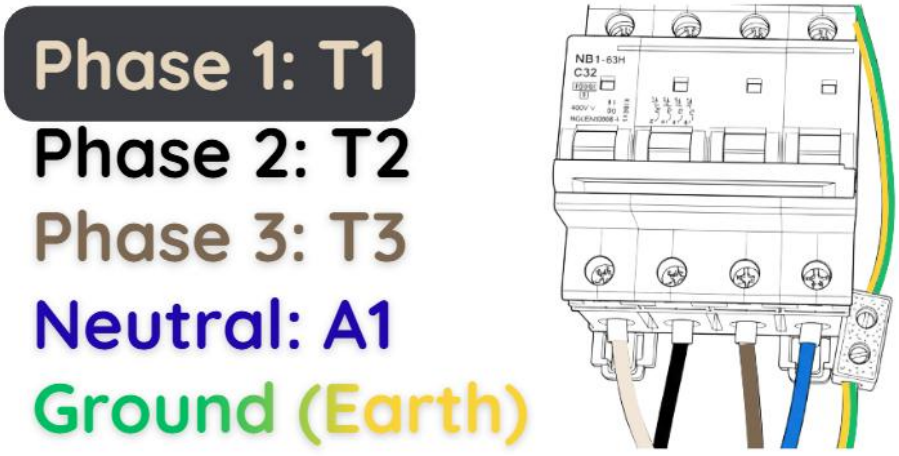
All Models – Installation

Installation Procedure

IF AN UNUSUAL SITUATION OCCURS AND THE ELECTRICAL LINE TO WHICH THE DEVICE WILL BE CONNECTED DOES NOT MEET SAFETY STANDARDS, DO NOT PROCEED WITH INSTALLATION!
Report the situation to the central office and request that the facility make the necessary adjustments before notifying the service team. Do not remove the device from its packaging.
1. Determine the location for installation and the electrical line, and verify that all requirements are met.
2. Check the device for any missing parts. If any are missing, report them with photos to the central office or the relevant dealer **before proceeding with the installation**.
3. Remove the external packaging of the device and dispose of it in the appropriate recycling or waste bin.
4. Remove the surface coverings and protective films from the device.
5. After switching off the electricity to the line, connect the device to the relevant circuit as shown in the illustration, taking the necessary precautions. Ensure that the line is properly grounded, the amperage is sufficient, and that a residual current device (RCD) is installed.

Connect the device to a **B32/C32 fuse** as shown in the illustration, ensuring that the line has a residual current device (RCD) and complies with regulations.

CAUTION! This guide is **not applicable for colour-blind users**.



6. Before starting to use the device, provide the user with basic information about the device and recommend that they read the user manual.
7. Before starting to use the device, clean it according to the instructions in this manual.
8. The user's invoice, stamped by the service and dated at installation, serves as the warranty certificate. Stamp the invoice and record the installation date.

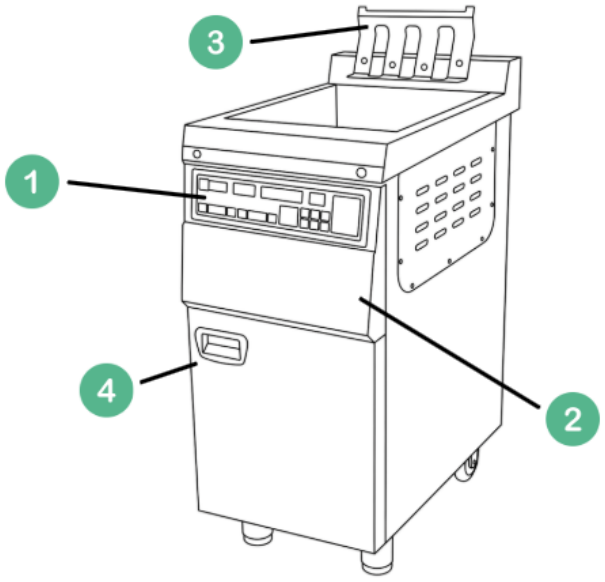
Cabinet Models – Operation

External Components and Sectional Views

External Components of Cabinet Models

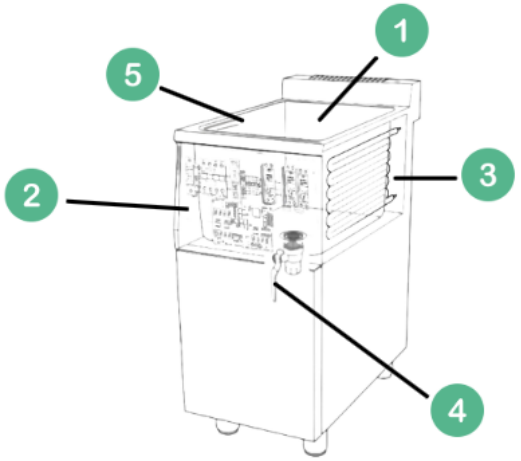
1. Control Panel
2. Information Panel
3. Basket Hanger
4. Cabinet Door Handle

In cabinet models, the oil draining elements are located inside the cabin. Refer to the section views for their exact positions.



Cabinet Models (Sectional View)

1. Frying Tank
2. Electrical Control Box
3. Heating Elements
4. Oil Drain Valve
5. Temperature Sensors

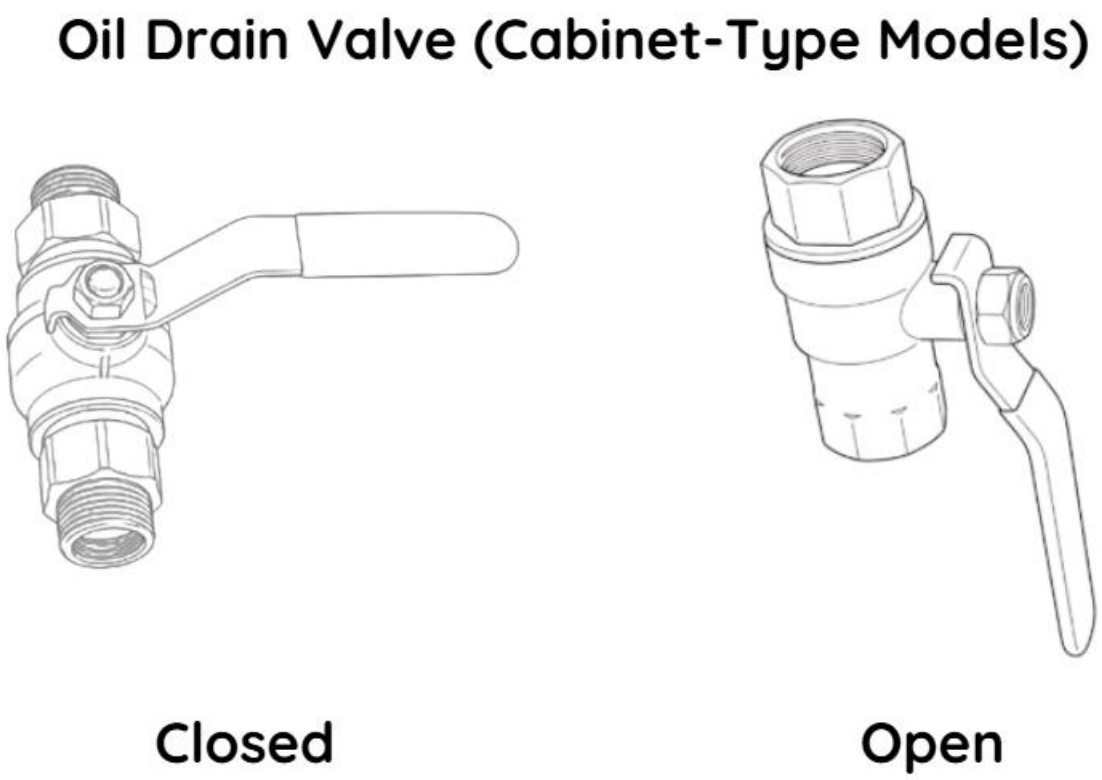


Cabinet Models – Operation

Separating Elements

*By reading the **Information Panel**, you can learn the basic elements.*
The oil drainage components of cabinet models are located inside the cabinet and can be accessed by opening the cabinet door.
OIL DRAINAGE IS PERFORMED THROUGH THE OIL DRAIN VALVE WHILE IT IS OPEN.
*Before opening or closing the **oil drain valve**, ensure that the device is stable and will not move. While one person operates the valve, at least one other person must always hold the device securely in place.* ⚠

*Until the oil has been drained, ensure that the **oil drain valve** remains in the closed position.* ⚠

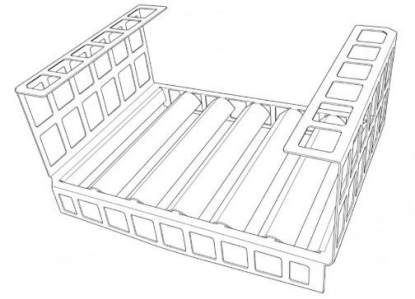


Cabinet Models – Operation

Special and Shared Additional Parts

1. Wavebreaker

   Function: Prevents cold oil and food particles at the bottom of the tank from entering the frying area.

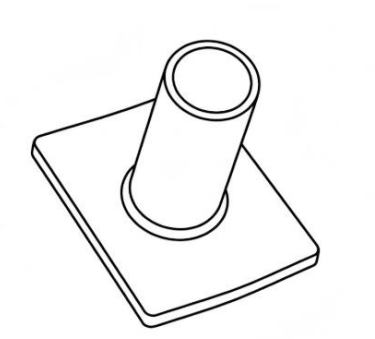


Attention ⚠

When inserting or removing the **wavebreaker** from the tank, ensure that the sensor gaps on the wavebreaker align with the corner where the sensors are located.
Insert and remove the wavebreaker **carefully and slowly**.
Clean the wavebreaker **periodically**.
Avoid any impact or pressure on the wavebreaker.

2. Piped Tube

   Function: Prevents food particles at the bottom of the tank from blocking the drainage tube during oil removal.



Attention ⚠

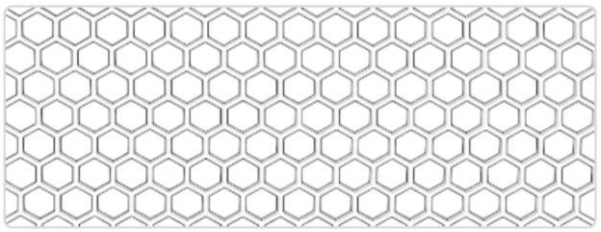
Ensure that the **piped tube** fits snugly into its designated slot.
Insert and remove the piped tube **carefully and slowly**.
Clean the piped tube **periodically**.
Avoid any impact or pressure on the piped tube.

Cabinet Models – Operation

Special and Shared Additional Parts

3. Frying Barrier

Function: Prevents food particles from falling into the cold area when the oil level rises during frying, and keeps the basket stable.

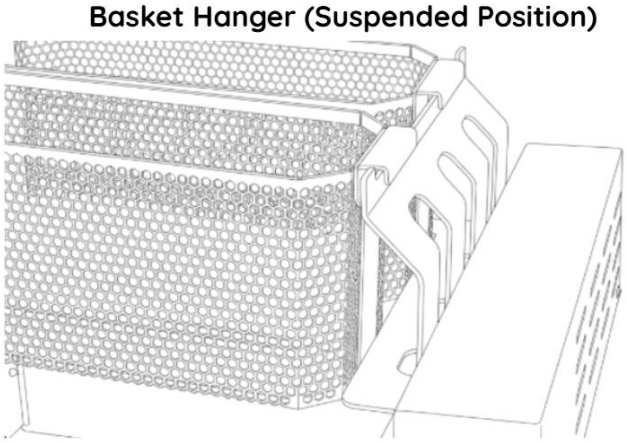


Attention ⚠

When inserting or removing the **frying barrier** from the tank, ensure that the sensor gaps on the barrier align with the corner where the sensors are located.
Insert and remove the frying barrier **carefully and slowly**.
Clean the frying barrier **periodically**.
Avoid any impact or pressure on the frying barrier.

4. Frying Basket/Baskets

Function: Holds the food together during frying, allowing for easy, fast, and safe frying.



Attention ⚠

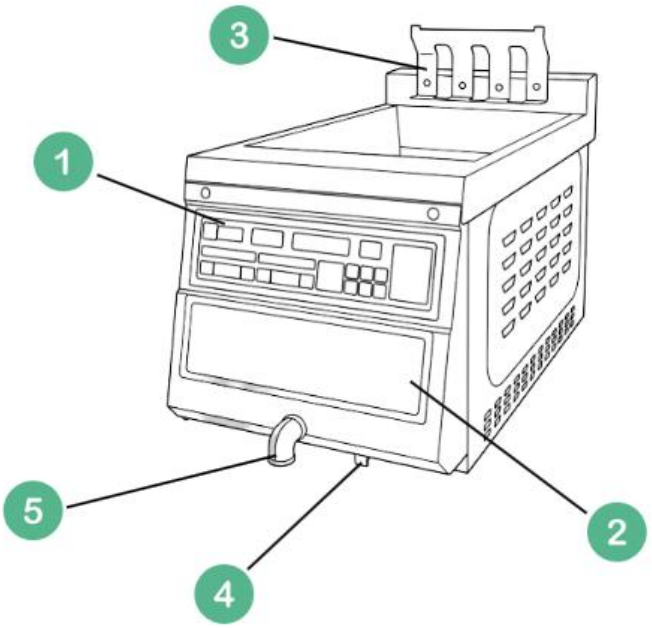
As shown in the illustration, ensure that the hooks on the back of the basket(s) are fully seated on the basket hanger. **Do not leave the baskets on the hanger unless fully seated.**
Clean the baskets **periodically**.
Avoid any impact or pressure on the baskets.

Countertop (Bench-top) Models – Operation

External Components and Sectional Views

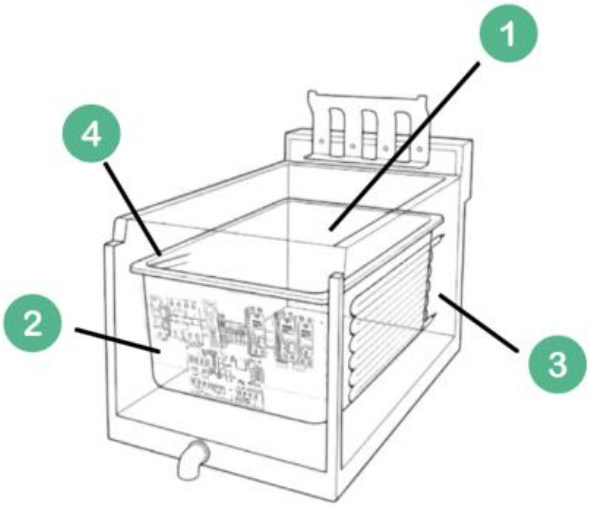
External Components of Countertop Models

1. Control Panel
2. Information Panel
3. Basket Hanger
4. Oil Drain Lever
5. Oil Drain Valve



Countertop Models (Sectional View)

1. Frying Tank
2. Electrical Control Box
3. Heating Elements
4. Temperature Sensors



Countertop (Bench-top) Models – Operation

Separating Elements

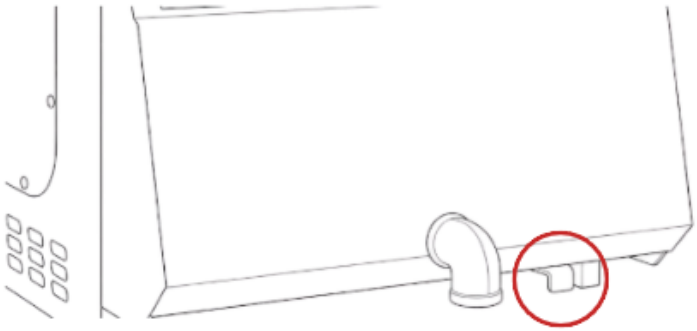
*By reading the **Information Panel**, you can learn the basic elements.*
*On countertop models, the oil drain valves are located at the front, and the drain levers are embedded on the **left side of the valve** (when viewed from the front, they are on the user's right).*

OIL DRAINAGE IS PERFORMED THROUGH THE OIL DRAIN VALVE WHILE THE LEVER IS OPEN.

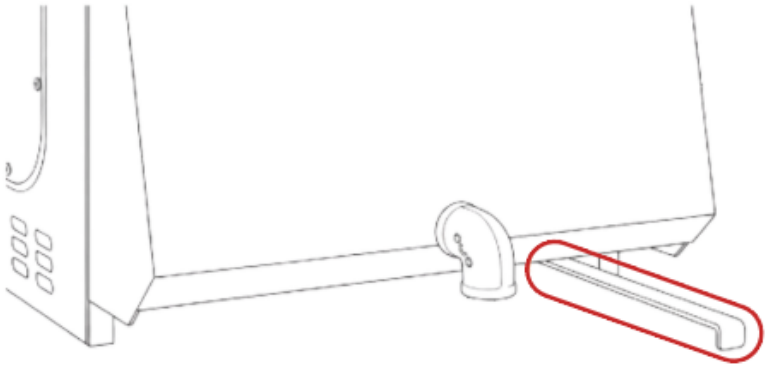
*Before opening or closing the **oil drain lever**, ensure that the device is stable and will not move. While one person operates the lever, **at least one other person must always hold the device securely in place**.* ⚠

*Until the oil has been drained, ensure that the **oil drain valve** remains in the **closed** position.* ⚠

Oil Drain Lever (Countertop Models)



Lever Closed



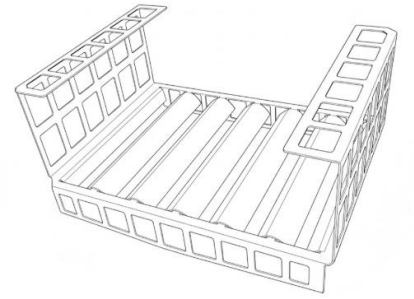
Lever Open

Countertop (Bench-top) Models – Operation

Special and Shared Additional Parts

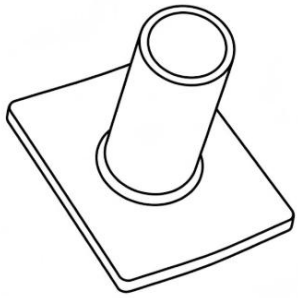
1. Wavebreaker

   Function: Prevents cold oil and food particles at the bottom of the tank from entering the frying area.



Attention ⚠
When inserting or removing the **wavebreaker** from the tank, ensure that the sensor gaps on the wavebreaker align with the corner where the sensors are located.
Insert and remove the wavebreaker **carefully and slowly**.
Clean the wavebreaker **periodically**.
Avoid any impact or pressure on the wavebreaker.

2. Piped Tube
   Function: Prevents food particles at the bottom of the tank from blocking the drainage tube during oil removal.

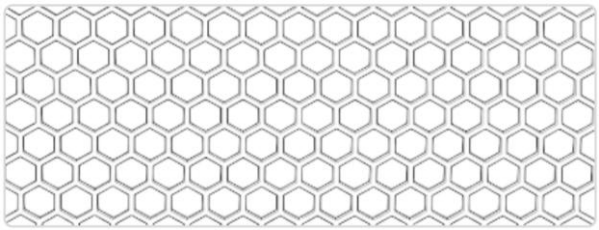


Attention ⚠
Ensure that the **piped tube** fits snugly into its designated slot.
Insert and remove the piped tube **carefully and slowly**.
Clean the piped tube **periodically**.
Avoid any impact or pressure on the piped tube.

Countertop (Bench-top) Models – Operation

Special and Shared Additional Parts

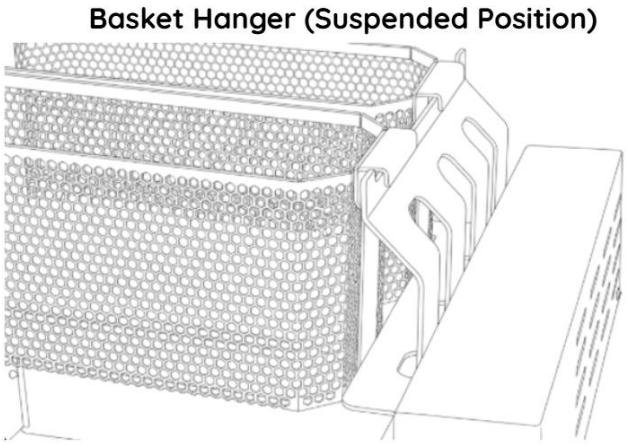
3. Frying Barrier
   Function: Prevents food particles from falling into the cold area when the oil level rises during frying, and keeps the basket stable.



Attention ⚠
When inserting or removing the **frying barrier** from the tank, ensure that the sensor gaps on the barrier align with the corner where the sensors are located.
Insert and remove the frying barrier **carefully and slowly**.
Clean the frying barrier **periodically**.
Avoid any impact or pressure on the frying barrier.

4. Frying Basket/Baskets

Function: Holds the food together during frying, allowing for easy, fast, and safe frying.



Attention ⚠
As shown in the illustration, ensure that the hooks on the back of the basket(s) are fully seated on the basket hanger. **Do not leave the baskets on the hanger unless fully seated.**
Clean the baskets **periodically**.
Avoid any impact or pressure on the baskets.

Countertop (Bench-top) Models – Operation

Special and Shared Additional Parts

5. Drain Valve Nozzle

Function: Directs the oil flow into a container during drainage.

Attention ⚠
Do not remove the **drain valve nozzle** unless the drainage tube is blocked or service is required.
Removal of the drain valve nozzle by anyone other than authorized personnel is not recommended.
Clean the drain valve nozzle **periodically** (can be washed without removing it).
When installing or removing the drain valve nozzle, ensure it is turned in the correct direction and the threads are properly engaged.
Do not perform oil drainage until the drain valve nozzle is fully seated.
Avoid any impact or pressure on the drain valve nozzle.

All Models – Operation

Operating Instructions

TRANSPORTATION: Ensure that the device is kept upright during transport. ⚠

ATTENTİON!

In the event of a fire, flame flare-up, or any similar incident in the area where the device is used, quickly turn off the gas valves and circuit breakers (if available) and use a fire extinguisher. **Never use water to extinguish the flames.** ⚠

The oil level must not fall below the minimum level. ⚠

Do not operate the device in facilities without adequate lighting. ⚠

Do not load the device below or above its specified capacity. ⚠

Do not operate the device while it is empty. ⚠

Do not perform any intervention on the device without appropriate protective equipment. ⚠

Ensure that the grounding connection complies with regulations and meets the device's standards. Our company cannot be held responsible for any damage caused by insufficient grounding. ⚠

Do not place un-drained or excessively frozen food into the oil. ⚠

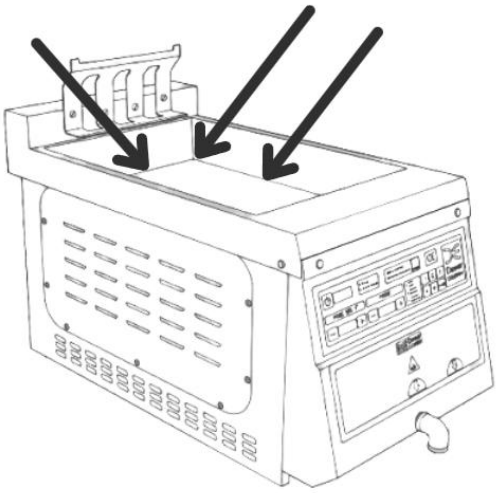
The frying capacity for a single batch varies by model and is indicated on the information panel of the device. **Do not exceed this frying capacity.** ⚠

Oil Level Optimization:

The oil level must be maintained **stably at the curve point of the tank**, as shown in the illustration. Devices operated with oil levels above or below this point will not perform at full efficiency. ⚠

If the oil level falls below the upper sensor, the device will issue an alarm and stop heating until the oil level is restored.

If the oil level is too high, there is a risk of spillage and safety hazards.



All Models – Operation

Unusual Situations

Device Does Not Operate:

1. Check whether the device is connected to the power outlet. **CAUTION!** Three-phase electrical connections must be performed by authorized and qualified personnel, taking all necessary

precautions. ⚠
2. Check whether the circuit breaker for the line is switched on.
IF THE PROBLEM PERSISTS, CONTACT OUR AUTHORIZED SERVICE FOR ASSISTANCE.

Device Stopped:
1. Check the **Fault Indicator** on the device; if any message appears, consult the authorized service.
2. If the oil temperature exceeds 220°C during operation, our special software will cut power to the heaters. In this case, the device will not operate. To restore power to the heaters, allow the oil and device to cool sufficiently. The device should resume operation within **15 minutes**; if it takes longer, **TURN THE DEVICE OFF AND ON AGAIN**.
3. The device may stop due to low voltage. In this case, take the necessary safety precautions and check the voltage. (**CAUTION!** Voltage checks must be performed by authorized and qualified personnel, taking all necessary precautions.) ⚠
IF THE PROBLEM PERSISTS, CONTACT OUR AUTHORIZED SERVICE FOR ASSISTANCE.

Poor Frying Performance:
1. Check the oil level and ensure it is at the required level.
2. Check the oil temperature while avoiding direct contact, taking necessary safety precautions.
IF THE PROBLEM PERSISTS, CONTACT OUR AUTHORIZED SERVICE FOR ASSISTANCE.

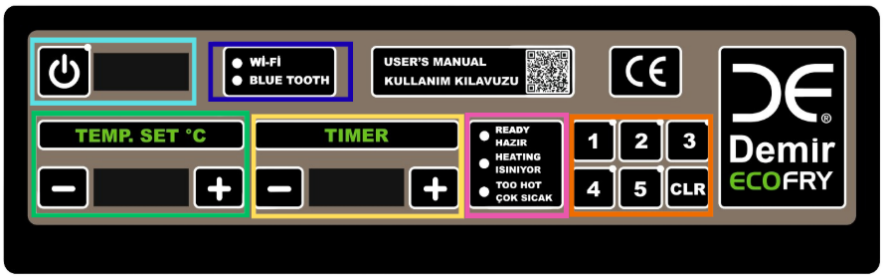
Device Overheating:
1. Check the **Fault Indicator** on the device, note the error code, and **turn off the device immediately.** ⚠
2. Turn off the device. ⚠
3. If you cannot turn off the device, switch off the circuit breaker. ⚠
4. If the heating does not stop, or if there is a flame or flare-up, respond according to the fire safety regulations in your area or request assistance. ⚠
5. For general intervention, contact our authorized service for assistance.

DO NOT USE THE DEVICE!
IF THE FRYING IS NOT OF PROPER QUALITY OR IF ONE OR MORE SAFETY FUNCTIONS ARE NOT WORKING. ⚠

All Models – Operation

Using the Control Panel
NOT APPLICABLE FOR COLOR-BLIND USERS, PLEASE SEEK ASSISTANCE.

Control Panel:



Indicators:

Error	Indicates the presence of an active fault/error, if any.
Wi-Fi & BlueTooth	Indicates Wi-Fi/Bluetooth connection status when connected.
Temp. Set	Indicates the temperature setting.
Timer	Indicates the timer setting.
Hazır/Ready	Indicates that the device is ready for frying at the current settings.
Isınıyor/Heating	Indicates that the device is heating and has not yet reached the required frying temperature.
Aşırı Sıcak/Overheated	Indicates that the device has overheated.
Üç Durum Göstergesi Aynı Anda Yanıp/Sönüyor	Indicates a temperature sensor malfunction.
Buzzer	If the buzzer sounds and the oil does not heat up, this indicates that the oil level is insufficient. Refill the oil to the required level.

Buttons:

⏻	Turns the device ON/OFF.
+/- (Temp Set)	Located below the "Temp Set." indicator. The "+" button increases the temperature setting, and the "–" button decreases it. The current temperature setting is displayed on the screen between the two buttons. For the setting to take effect, no button must be pressed for 5 seconds after adjustment. (+5 / –5 °C)
+/- (Timer)	Located below the "Timer" indicator. The "+" button increases the timer value, and the "–" button decreases it. The current timer setting is displayed on the screen between the two buttons. For the setting to take effect, no button must be pressed for 5 seconds after adjustment. (+30 / –10 seconds)
1, 2, 3, 4, 5	Press the relevant button to start a preset. To assign a new preset or modify an existing one, press and hold the button until the indicator flashes and an audible alarm is heard. Set the Temp Set and Timer, wait 3 seconds, and the preset is saved when the flashing stops.
CLR	Resets the current settings or exits the preset mode.

All Models – Operation

Using the Control Panel

Wi-Fi & Bluetooth and Accessing the User Manual:

Wi-Fi Connection:

Each Demir EcoFry device has its own Wi-Fi network, which you can connect to using your smartphone.

1. Turn on your smartphone.
2. Open the "Wi-Fi / Connect to a Network" section and ensure that your Wi-Fi module is active.
3. Select and connect to the network named "Demir EcoFry …".

Each device has a network specific to its model and serial number. You can find this serial number on the Information Panel on the front of the device. No password is required to connect via Wi-Fi.
Bluetooth Connection:

1. Turn on your smartphone.
2. Open the Bluetooth section and ensure that your Bluetooth module is active.
3. Select and connect to the device named “Demir EcoFry …”.

Each device has a network specific to its model and serial number. You can find this serial number on the Information Panel on the front of the device.
Accessing the User Manual:
If you want to access this user manual virtually from the device, scan the QR code on the Information Panel using your smartphone’s QR scanner/camera. You can also access the same manual at demirecofry.com.
Basic Usage Guide:

1. Ensure the tank is filled with oil, all necessary safety precautions are taken, and the drain valve/lever is closed. ⚠️
2. Press the power button to turn on the device.
3. On the control panel, set the “Temp Set.” parameter to your desired temperature.
4. Wait for the device to reach the set temperature.
5. After the Ready indicator lights up, set the “Timer” parameter if needed.
6. You can start frying within the basket capacity specified on the Information Panel on the front of the device.

All Models – Operation

Oil Change and Cleaning.

You can access the necessary guides by scanning the QR code.
If the device is to be cleaned after use, wait at least one hour after turning it off for it to cool down.
We recommend cleaning it before starting work in the morning.
Oil residues that accumulate on hot surfaces and are not properly cleaned can harden over time, causing odour and smoke. To prevent this, it is very important to clean the device and strain the oil daily.

Avoid using tools such as steel wool or spatulas that may scratch the surfaces.
Daily periodic cleaning of the device is recommended.
The used oil must be replaced before exceeding the legal maximum polar matter limit. ⚠️

OIL CHANGE

Step 1
Ensure the fryer is turned off and cooled down.

Step 2
Cabinet Models: Open the lower cabinet and place a container under the valve.
Countertop Models: Place a container under the valve.

Step 3
Open the valve and strain the cold oil.

Step 4
After the oil level has dropped, remove the frying barrier and wavebreaker from the tank, clean any food residues around the piped tube, and remove the piped tube as well.

Step 5
Wait for the remaining oil to drain completely.

Step 6
Close the valve and ensure it is fully closed; for cabinet models, also close the cabinet door.

Step 7
Reinstall the piped tube, wavebreaker, and frying barrier in order.

Step 8
Strain the oil and pour it back into the tank.

All Models – Operation

Oil Change and Cleaning.

CLEANING

Step 1
Ensure the fryer is turned off and cooled down.

Step 2
Cabinet Models: Open the lower cabinet and place a container under the valve.
Countertop Models: Place a container under the valve.

Step 3
Open the valve and strain the cold oil.

Step 4
After the oil level has dropped, remove the frying barrier, wavebreaker, and piped tube from the tank, then clean and dry them.

Step 5
Wait for the remaining oil to drain completely.

Step 6
Clean the device with soapy water and dry it. Apply the same process to the removed parts. (Scan the QR code on the control panel to access the detailed cleaning guide.)

Step 7
After cleaning and drying, close the oil drain valve and refill the tank with oil.

Step 8
Reinstall the piped tube, wavebreaker, and frying barrier.

Step 9
Ensure the drain valve is closed; for cabinet models, close the cabinet door.

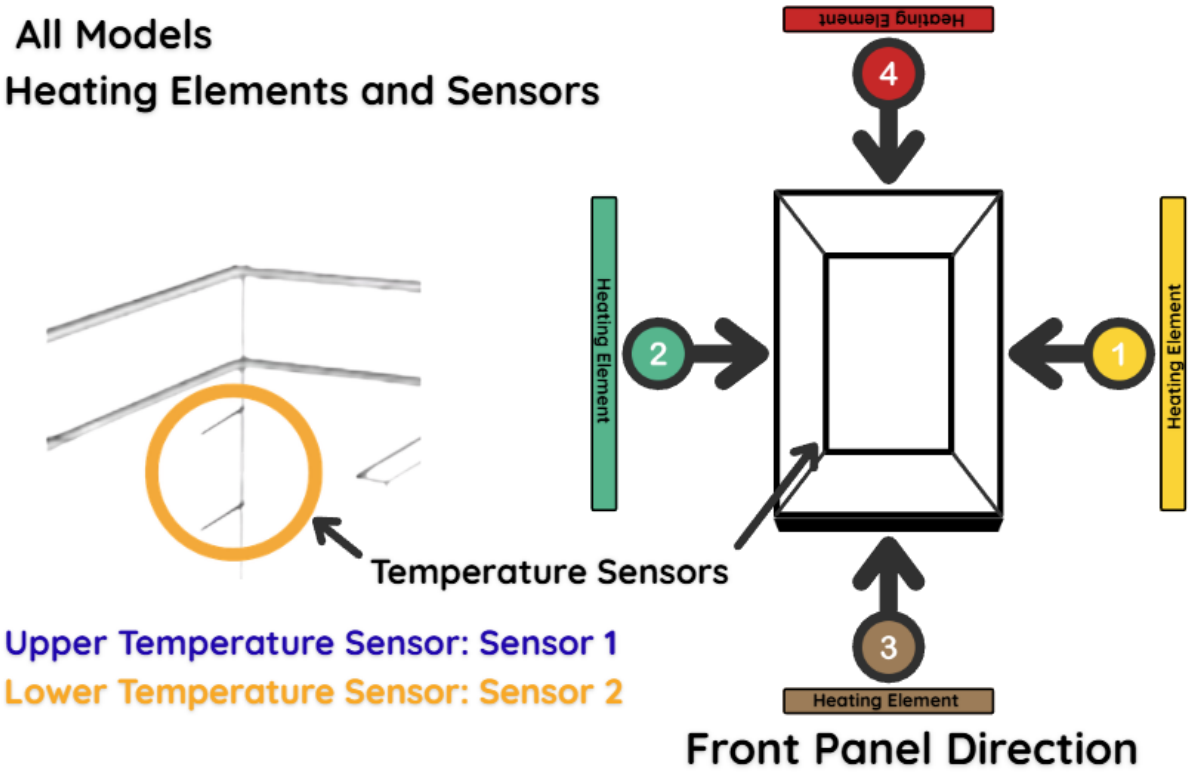
Step 10
Strain the oil and pour it back into the tank, ensuring the oil level is adequate. If the level is low, top it up.

All Models – Service

This section is designed exclusively for authorized and trained technical service personnel. If you are not an authorized technician, do not attempt installation or repair on the device and contact our technical service for assistance. ⚠

Heaters and Sensors

In EF Series fryers, there are two temperature sensors located in the front-left corner of the fryer tank, and four heaters located on the side, front, and rear panels (two on the sides, one at the front, and one at the back).



All Models – Service

TEMPERATURE SENSORS

A. Sensor Fault Detection

1. During the procedure, the device must be turned off and cooled down.
2. Take the necessary precautions and turn off the red fuse. **CAUTION!** At this stage, there is electricity at the lower input of the contactor. If it is necessary to cut power at the contactor, the device must be disconnected from the main power supply. ⚠
3. The device should be moved to a safe, flat, and dry surface near the line for ergonomic and safe operation, and the movable components inside the tank should be removed.
4. The oil is drained to a level approximately 5 cm below the sensor that will be replaced.

5. Set the multimeter to the circuit mode.
6. Touch the multimeter probes to the cable connections in sequence and check whether there is a short circuit with the body or any other coloured wire.
7. If a short circuit is detected, the sensor is faulty and must be replaced.

B. Sensor Replacement/Sensor Fault Repair

Preparation

1. During the procedure, the device must be turned off and cooled down.
2. Take the necessary precautions and turn off the red fuse. **CAUTION!** At this stage, there is electricity at the lower input of the contactor. If it is necessary to cut power at the contactor, the device must be disconnected from the main power supply. ⚠
3. The device should be moved to a safe, flat, and dry surface near the line for ergonomic and safe operation, and the movable components inside the tank should be removed.
4. Ensure that the identified sensor is indeed faulty.
5. Open the electrical control panel.

Removing the Old Sensor

1. First, disconnect the sensor from the mainboard connections.
2. Remove the sensor from the connector, leaving its cable free.
3. Using an appropriate tool, unscrew the sensor from the body in sync with its cable to remove the old sensor.
4. If the device/component is still under warranty, package the old sensor to be sent to the centre for inspection.

All Models – Service

Assembly of the New Sensor

1. Remove the new sensor from its packaging and inspect it for any visible damage or defects. Perform a short-circuit test using a multimeter in circuit mode. Report any abnormality to the service centre.
2. Wrap 20–30 turns of Teflon tape tightly around the sensor to ensure proper sealing.
3. **Important:** During sensor assembly, rotate the sensor into its socket **synchronously with its cable**. Install the sensor using an appropriate tool, making sure the cable rotates in sync with the sensor; otherwise, the wires may twist and break, causing a short circuit.
4. Ensure the sensor is firmly seated in its socket to achieve proper sealing.
5. If the sensor is the upper one, wrap 3–4 turns of blue tape around the end of the terminal; if it is the lower sensor, use yellow tape.
6. Fill the device with cold oil and verify that no oil leaks from the new sensor entry.

7. After the leak test, pass the sensor cables through the connector and connect them to the mainboard, ensuring the cables do not rotate around themselves during connection.

Closure

1. Turn on the red fuse and close the electrical control panel cover.
2. Take the necessary precautions. ⚠
3. Reinstall the movable components inside the tank.
4. Operate the device and check its functionality and overall operation; after starting the device, remain on-site for approximately 25–30 minutes as a precaution.
5. If no issues are observed, record the service log and conclude the service procedure.

All Models – Service

Heaters

A. Heater Fault Detection

1. During the procedure, the device must be turned off and cooled down.
2. Take the necessary precautions and turn off the red fuse. **CAUTION!** At this stage, there is electricity at the lower input of the contactor. If it is necessary to cut power at the contactor, the device must be disconnected from the main power supply. ⚠
3. Move the device to a safe, flat, and dry surface near the line for ergonomic and safe operation, and remove the movable components inside the tank.
4. Touch the multimeter probes to the heater(s) whose connections have been disconnected.

5. Check the ohm (Ω) value to determine whether the relevant heater is faulty.
6. If the value is outside the expected range, the heater is faulty and must be replaced.

B. Heater Replacement/Heater Failure Repair

Preparation

1. During the procedure, the device must be turned off and cooled down.
2. Take the necessary precautions and turn off the red fuse. **CAUTION!** At this stage, there is electricity at the lower input of the contactor. If it is necessary to cut power at the contactor, the device must be disconnected from the main power supply. ⚠
3. Move the device to a safe, flat, and dry surface near the line for ergonomic and safe operation, and remove the movable components inside the tank.
4. Open the outer covers of the heater(s) that need to be inspected.
5. Ensure that the identified heater is indeed faulty.
6. Open the control panel.

Replacing of The Old Heaters

1. Disconnect the wiring of the relevant heater.
2. Remove the cassette clamps holding the heater cassette and take the cassette out of its place.
3. **Important:** The cassette of the old heater will be reused for the installation of the new heater, so it must be preserved. Remove the old heater from the cassette.
4. If the device/component is still under warranty, package the old heater to be sent to the service centre for inspection.

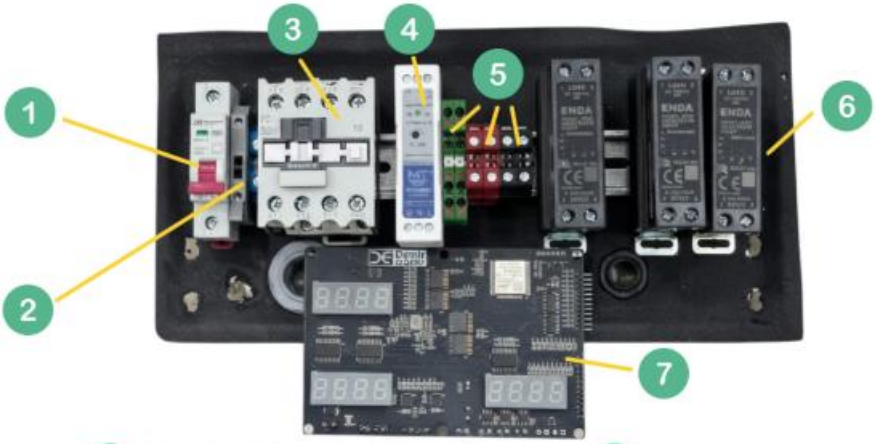
Closure

1. Turn on the red fuse and close the electrical control panel cover.
2. Take the necessary precautions. ⚠
3. Assembly the movable components inside the tank.
4. Start the device and verify its function and overall operation; after starting, keep the device running for precautionary 25–30 minutes.
5. If no issues are observed, record the service report and conclude the service procedure.

All Models – Service

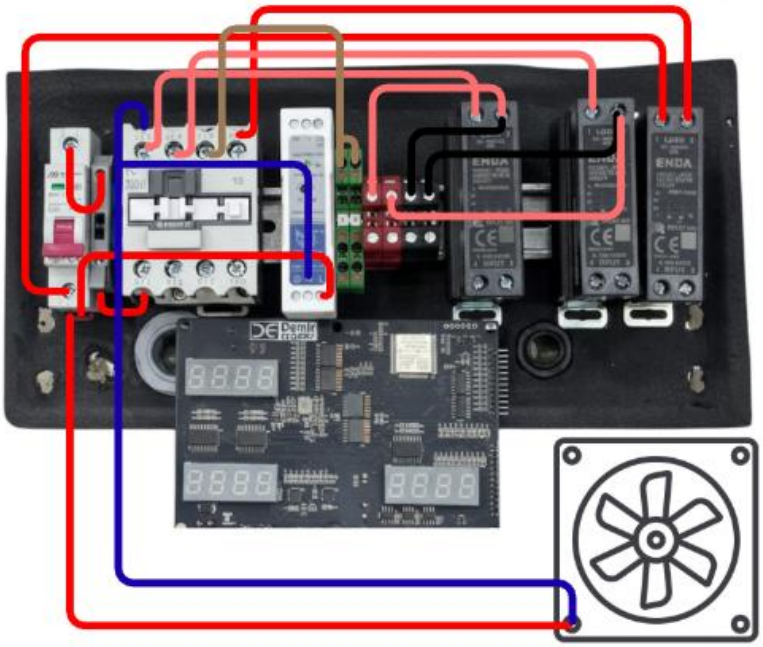
Control Panel Components and Wiring

Electrical Control Box Plan



1. Main Circuit Breaker
2. Glass Fuse
3. Contactor
4. Power Adapter
5. Terminal Blocks
6. Relays
7. Mainboard

Electrical Control Box Cable Mapping



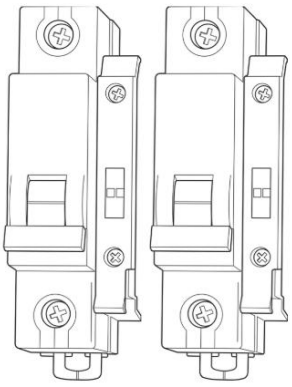
All Models – Service

1. Main Circuit Breaker

Main Circuit Breaker

1.1 The Position of the Main Circuit Breaker

The main circuit breaker is in the ON position when the red switch is in the upward position, and in the OFF position when it is in the downward position.



1.2 Main Fuse Connections and Replacement

1. *Main Fuse top terminal is connected to the top terminal of the Glass Fuse:*
    - ***Main Fuse top → Glass Fuse top***
2. *Main Fuse bottom terminal is connected to the upper left terminal of Relay 3 (220V SSR Triggering):*
    - ***Main Fuse bottom → Relay 3 top left***

1.3 Main Fuse Replacement

1. Ensure the device is powered off and cooled down. ⚠
2. Turn off the Main Switch and disconnect the power supply; verify no electricity is present. ⚠
3. Once safe, remove the Main Fuse by disconnecting the terminals in order.
4. Install the new Main Fuse and reconnect the terminals firmly following the installation guide.
5. If no further work is needed, restore power safely and turn on the Main Switch.

All Models – Service

2. Glass Fuse

2.1 Glass Fuse Connections

1. *Glass Fuse top terminal is connected to the top terminal of the Main Fuse:*
    - ***Glass Fuse top → Main Fuse top***
2. *Glass Fuse bottom terminal is connected to the Contactor T2 terminal:*
    - ***Glass Fuse bottom → Contactor T2***

2.2 Glass Fuse Replacement

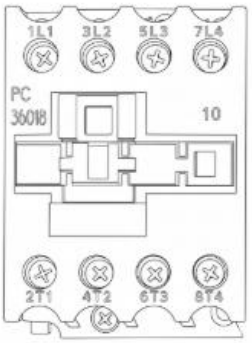
1. Ensure the device is powered off and cooled down. ⚠
2. Take precautions and turn off the Main Switch. CAUTION: The Contactor lower input may still be live; if electricity must be cut here, disconnect the device from the mains. ⚠
3. Once safe, disconnect the terminals in order and remove the Glass Fuse from the panel.
4. Install the new Glass Fuse and reconnect the terminals firmly following the installation guide.
5. If no further work is needed, restore power safely and turn on the Main Switch.

Glass Fuse

All Models – Service

3 Contactor

Contactor



3.1 Contactor Connections

1. Contactor T1, T2, T3 terminals are connected to the phases, and A1 terminal is connected to neutral:
    - **Contactor T1 ← Phase 1**
    - **Contactor T2 ← Phase 2**
    - **Contactor T3 ← Phase 3**
    - **Contactor A1 ← Neutral**
2. Contactor T2 terminal is connected to the bottom terminal of the Glass Fuse:
    - **T2 → Glass Fuse bottom**
3. Contactor A2 terminal is connected to Relay 3 (220V SSR Trigger) top right terminal:
    - **Contactor A2 → Relay 3 top right**
4. Contactor L1 terminal is connected to Relay 1 (380V Heater Relay) top left terminal:
    - **Contactor L1 → Relay 1 top left**
5. Contactor L2 terminal is connected to Relay 2 (380V Heater Relay) top left terminal:
    - **Contactor L2 → Relay 2 top left**
6. Contactor L3 terminal is connected to the top terminals of Terminal Block 1 & 2 (Green terminal blocks):
    - **Contactor L3 → Terminal Block 1 top**
    - **Contactor L3 → Terminal Block 2 top**

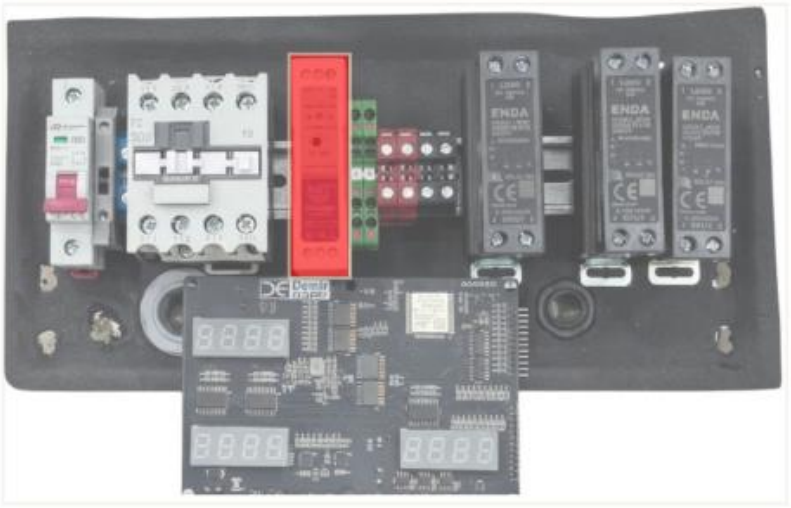
3.2 Contactor Replacement

1. Ensure the device is powered off and cooled down. ⚠
2. Turn off the Main Switch and disconnect the power supply; verify no electricity is present. ⚠
3. Once safe, disconnect the terminals in order and remove the Contactor from the panel.
4. Install the new Contactor and reconnect the terminals firmly following the installation guide.
5. If no further work is needed, restore power safely and turn on the Main Switch.

All Models -- Service

4 Adapter

Power Adapter



3.2 Power Supply / Adapter Connections

1. Adapter L terminal is connected to the bottom terminal of the Main Switch:
    - **Adapter L → Main Switch bottom**
2. Adapter N terminal is connected to the top terminal of the Blue Terminal Block:
    - **Adapter N → Blue Terminal Block top**
3. Adapter V+ and V- terminals are connected to the Main Board 12V + & - terminals:
    - **Adapter V+ → Main Board 12V +**
    - **Adapter V- → Main Board 12V -**

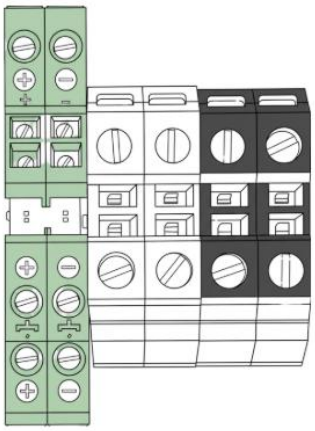
4.2 Power Supply / Adapter Replacement

1. Ensure the device is powered off and cooled down. ⚠
2. Take precautions and turn off the Main Switch. CAUTION: The Contactor lower input may still be live; if electricity must be cut here, disconnect the device from the mains. ⚠
3. Once safe, disconnect the terminals in order and remove the Adapter from the panel.
4. Install the new Adapter and reconnect the terminals firmly following the installation guide.
5. If no further work is needed, restore power safely and turn on the Main Switch.

All Models – Service

5 Terminal Blocks

Terminal Blocks



5.1 Green Terminal Blocks Connections

1. Top terminals of Terminal Block 1 & 2 (Green) are connected to Contactor L3 terminal:
    - **Terminal Block 1 top → Contactor L3**
    - **Terminal Block 2 top → Contactor L3**
2. Bottom terminals of Terminal Block 1 & 2 (Green) pass through the panel slots and connect directly to the heaters:
    - **Terminal Block 1 bottom → Slot 2 → Heater 1 & Heater 3**
    - **Terminal Block 2 bottom → Slot 4 → Heater 2 & Heater 4**

5.2 Red Terminal Blocks Connections

1. Top terminal of Terminal Block 3 (Red) is connected to top right terminal of Relay 1:
    - **Terminal Block 3 top → Relay 1 top right**
2. Bottom terminal of Terminal Block 3 (Red) is connected to Heater 1:
    - **Terminal Block 3 bottom → Heater 1**
3. Top terminal of Terminal Block 4 (Red) is connected to top right terminal of Relay 2:
    - **Terminal Block 4 top → Relay 2 top right**
4. Bottom terminal of Terminal Block 4 (Red) is connected to Heater 2:
    - **Terminal Block 4 bottom → Heater 2**

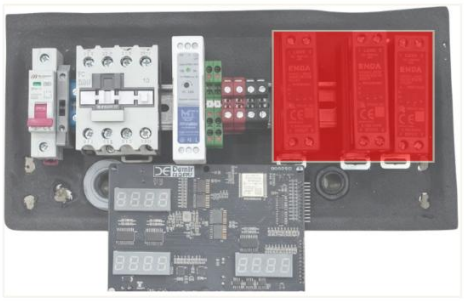
5.3 Black Terminal Blocks Connections

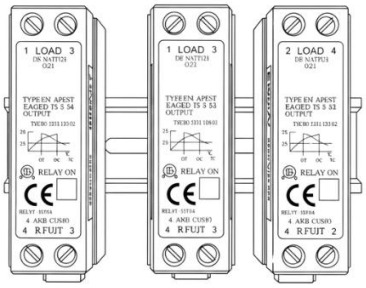
1. Top terminal of Terminal Block 5 (Black) is connected to top right terminal of Relay 1:
    - **Terminal Block 5 top → Relay 1 top right**
2. Bottom terminal of Terminal Block 5 (Black) is connected to Heater 3:
    - **Terminal Block 5 bottom → Heater 3**
3. Top terminal of Terminal Block 6 (Black) is connected to top right terminal of Relay 2:
    - **Terminal Block 6 top → Relay 2 top right**
4. Bottom terminal of Terminal Block 6 (Black) is connected to Heater 4:
    - **Terminal Block 6 bottom → Heater 4**

All Models – Service

6 Relays

Relays





6.1 Relay Connections

1. Relay 1 (380V Heater Relay) top left terminal is connected to Contactor L1 terminal. Relay 1 top right terminal is connected to Terminal Block 3 & 5 (Red 1 & Black 1):
    - **Relay 1 top left → Contactor L1**
    - **Relay 1 top right → Terminal Block 3 (Red 1)**
    - **Relay 1 top right → Terminal Block 5 (Black 1)**
2. Relay 2 (380V Heater Relay) top left terminal is connected to Contactor L2 terminal. Relay 2 top right terminal is connected to Terminal Block 4 & 6 (Red 2 & Black 2):
    - **Relay 2 top left → Contactor L2**
    - **Relay 2 top right → Terminal Block 4 (Red 2)**
    - **Relay 2 top right → Terminal Block 6 (Black 2)**
3. Relay 1 bottom terminals are connected to Main Board + & - Relay Trigger terminals and also connected in parallel to Relay 2 bottom terminals:
    - **Relay 1 bottom → Main Board + & - Relay Trigger**
    - **Relay 1 bottom → Relay 2 bottom (parallel)**
4. Relay 2 bottom terminals are connected in parallel to Relay 1 bottom terminals:
    - **Relay 2 bottom → Relay 1 bottom (parallel)**
5. Relay 3 (220V SSR Trigger) top left terminal is connected to bottom terminal of Main Fuse. Relay 3 top right terminal is connected to Contactor A2 terminal:
    - **Relay 3 top left → Main Fuse bottom**
    - **Relay 3 top right → Contactor A2**
6. Relay 3 bottom terminals are connected to Main Board + & - Contactor Trigger terminals:
    - **Relay 3 bottom → Main Board + & - Contactor Trigger**

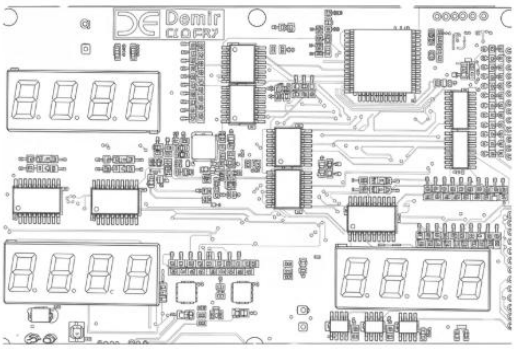
6.2 Relay Replacement

1. Ensure the device is powered off and cooled down. ⚠
2. Take precautions and turn off the Main Switch. CAUTION: The Contactor lower input may still be live; if electricity must be cut here, disconnect the device from the mains. ⚠
3. Once safe, disconnect the terminals in order and remove the relevant Relay(s) from the panel.
4. Install the new Relay(s) and reconnect the terminals firmly following the installation guide.
5. If no further work is needed, restore power safely and turn on the Main Switch.

All Models – Service

7 Mainboard

Mainboard



7.1 Main Board Connections

1. Main Board 12V + & - terminals are connected to Adapter 12V + & - terminals:
    - **Main Board 12V + → Adapter 12V +**
    - **Main Board 12V - → Adapter 12V -**
2. Main Board Upper Sensor and Lower Sensor terminals are connected to the Temperature Sensors:
    - **Main Board Upper Sensor → Upper Temperature Sensor**
    - **Main Board Lower Sensor → Lower Temperature Sensor**
3. Main Board Power Relay terminal is connected to Relay 3 (220V SSR Trigger):
    - **Main Board Power Relay → Relay 3**
4. Main Board Relay 1 + & - terminals are connected to Relay 1 bottom + & - terminals:
    - **Main Board Relay 1 + → Relay 1 bottom +**
    - **Main Board Relay 1 - → Relay 1 bottom -**
5. Main Board Relay 1 + & - terminals are also connected to Relay 2 bottom + & - terminals:
    - **Main Board Relay 1 + → Relay 2 bottom +**
    - **Main Board Relay 1 - → Relay 2 bottom -**
6. Main Board Control Panel terminals are connected to the Control Panel label:
    - **Main Board Control Panel Output → Control Panel Label**

7.2 Main Board Replacement

1. Ensure the device is powered off and cooled down. ⚠
2. Take precautions and turn off the Main Switch. CAUTION: The Contactor lower input may still be live; if electricity must be cut here, disconnect the device from the mains. ⚠
3. Once safe, disconnect the terminals in order and remove the Main Board from the panel.
4. Install the new Main Board and reconnect the terminals firmly following the installation guide.
5. If no further work is needed, restore power safely and turn on the Main Switch.

Warranty Terms

Manufacturer: Demir EcoFry

Contact Information:
Address: Köprübaşı, Kavacik Caddesi No 18/2, 48640 Ula/Muğla, Turkey
Phone: +90 252 242 26 00
E-mail: demir@demirecofry.com
Website: www.demirecofry.com
Additional contact information can be found at www.demirecofry.com

1. Documents Serving as Warranty Certificate
   The sales invoice and, if available, the service installation form serves as the warranty certificate for your Demir EcoFry device. For the invoice to be accepted under warranty, the device must have been sold by Demir EcoFry or a distributor/dealer authorized by Demir EcoFry.
2. Warranty Start Date
   For devices installed by authorized service, the service technician will note the installation date on the invoice or prepare a separate service installation form. If the installation date is not recorded on the invoice or no service form is provided, the warranty start date will be based on the installation date registered in Demir EcoFry's system.
3. Document Retention
   It is the consumer's responsibility to keep the sales invoice and, if applicable, the service installation form for the duration of the warranty period. If these documents are lost or cannot be presented, warranty rights cannot be claimed.
4. Warranty Period
   The warranty period for the device and original spare parts is 2 (two) years from the installation date.
5. Situations Not Covered by Warranty
   The following situations are not covered by the warranty, and Demir EcoFry is not responsible for any faults or issues resulting from them:

- Malfunctions caused by user error or incorrect use
- Interventions, repairs, or modifications performed by unauthorized persons
- External events such as accidents, natural disasters, lightning, fire, or flooding
- Issues caused by normal wear and tear
- The baskets of the device
- Any indirect issues arising from the above situations

Authorized Service Information:
The list of authorized service centres and their contact information is available at www.demirecofry.com
These warranty terms are prepared in accordance with the Turkish Law on Consumer Protection No. 6502 and the Warranty Certificate Regulation.
Demir EcoFry