

Transport and Handling

The machine must be transported and handled solely in a vertical position and following the instructions printed on the packaging. This precaution is necessary to avoid contamination of the compressor with oil which may cause the rupture of valves, of the cooling coils and problems with electric motor starting.

The accessories supplied with the machine (slides, wire shelves, drawers, baskets, etc.) are shipped inside the unit. The machine is fixed on a wooden pallet by means of screws, wrapped with polyethylene and packaged in cardboard or a wooden crate.

The machine must be handled using a forklift or pallet truck with suitable forks (fork length at least equal to 2/3 length of the unit).



CAUTION If the machine needs to be set down in order to bring it into the installation location, it is absolutely necessary to wait at least 6 hours before switching it on.

The manufacturer declines any responsibility for problems due to transport carried out in any condition different from those specified above.

Positioning

Incorrect positioning can cause damage to the machine and create dangerous conditions for users; therefore, the installer must comply with the following general rules:

- Position the machine keeping a minimum distance of 100 mm from all walls. If the machine is embedded in any type of furniture, a correct air flow of the condensing unit (compressor/fan motors) must be always ensured. The warranty will immediately expire, if this is not guaranteed.

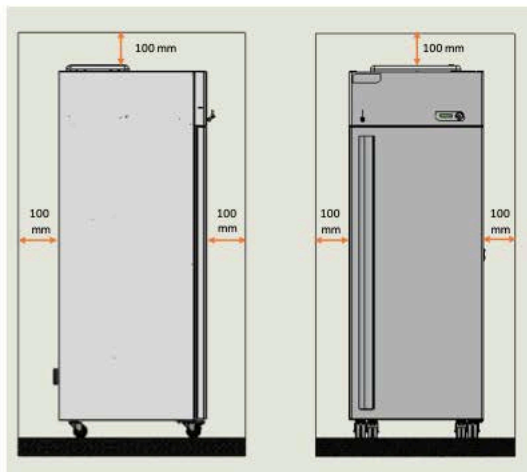


Figure 1. Equipment Position

Set the machine in a sufficiently ventilated environment.

- Place the machine far from heat sources and far from sources of electromagnetic interferences (such as motors, generators, infrared beams, telephones) which can have negative effects on equipment functioning.
- Avoid exposure to direct sunlight and air conditioning flows.
- Remove the supplied accessories and the wooden pallet base.
- Position the machine with the aid of a spirit level.

Cleaning

Equipment is shipped already cleaned. However, it is advised to carry out a further washing following the instructions below:

- Remove the protective PVC film from the external surfaces of the machine.

- Clean the inside of the chamber with a cloth dampened with alcohol in order to eliminate the protective oil.



The glass door must be cleaned using a cloth dampened with water.

Do not therefore use chemicals.

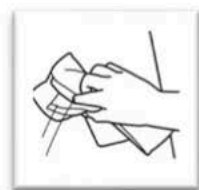


Figure 2. Glass Cleaning Label

Wiring and Electrical Connection

The electrical system and connection must be set up by qualified personnel.

Follow the instructions below for safety reasons:

- Make sure that the system is suitably sized for the absorbed power of the machine.
- It is essential to properly connect the machine to an effective grounding system set in accordance with current legislation.
- In the event of incompatibility between the outlet and machine plug, replace the outlet with a suitable type, provided that the part is approved according to the laws in force.
- If electrical cable is damaged, it must be replaced by qualified personnel to prevent any risk.
- If the freezer is supplied without a plug, connect it directly under the switch board.
- Do not interpose adapters and/or reducers.

Electrical Protections

ThermoFisher Scientific devices are equipped with 2 safety fuses (phase and neutral) with integral protection against electric shocks, short circuits and over-currents, and according to the standards for laboratory devices.

The fuses can be accessed from the front: open the refrigerator door and the fuses will be found behind the front control unit panel. The replacement must be done by qualified personnel.

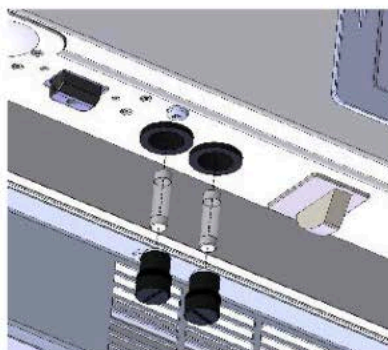


Figure 3. Fuse Housing

Set-Up Operations

Before turning on the appliance, it is necessary to check that it has not been damaged during transport, handling and installation.

- Check the condition of the packaging (it must not show dents and/or breakages).
- Check the condition of the external frame (it must not show dents and/or breakages).
- Check the condition of the power cord (it should not have scratches or cuts).
- Check that the wheels are stable.
- Check that door opens correctly and closes hermetically
- Check door gaskets (they should not have scratches or cuts).
- Check that display do not show cracks.

Use of Internal Compartment or Material Storage

The stainless-steel rack system allows for the installation of shelves.

Maintenance

The information in this section is addressed to both users (non-specialized personnel) and routine maintenance workers.

Prohibition of Safety Device Removal

Do not remove safety protections without having switched off the refrigerator cabinet and disconnecting it from the electrical mains.

The manufacturer disclaims all liability that may arise if this regulation is not observed.

Cleaning the Unit

We recommend cleaning both inside and outside surfaces of the unit at least twice a year. Disconnect the power cord before any cleaning.

The following is indicated for this purpose:

- **Cleaning products:** Water and non-abrasive neutral detergents. **DO NOT USE SOLVENTS OR THINNERS.**
- **Cleaning method:** Use a cloth or sponge soaked in a suitable cleaning product to clean the inside and outside parts of the cabinet.
- **Disinfection:** Do not use substances that can alter the organoleptic characteristics of stored products.
- **Rinsing:** Use a cloth or sponge soaked in water. **DO NOT USE WATER JETS.**
- **Frequency:** At least twice a year or at different intervals depending on the type products stored.

Cleaning the Condenser

Failure to clean the condenser, as well as temperature being too high in the environment in which it is installed, is one of the main causes of difficult cabinet operation. Cleaning must be carried out every 2-3 months, even in the cleanest environments.

You must access the condenser coil, placed in all models in the technical compartment near the compressor, and clean it with one of the following:

- Long bristle brush
- Vacuum cleaner
- Compressed air



CAUTION: DO NOT USE METAL BRUSHES. DO NOT BEND CONDENSER FINS.



CAUTION: ALWAYS DISCONNECT THE POWER CORD BEFORE THIS OPERATION.

In order to ensure optimal unit operation, follow the manufacturer instructions, arranging for periodic maintenance to be carried out by qualified technicians.

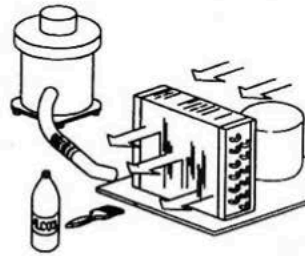


Figure 16. Representation of Condenser

Follow these below cleaning instructions according to the bought model:

1. TSG400R & TSG400F

- **PHASE 1:** Use a Phillips head screwdriver to remove the guard (3 screws).
- **PHASE 2:** Use a vacuum cleaner, air jet, or a long bristle brush to remove any dust on the condenser fins. Perform this procedure backwards to restore correct fastening of the guard.
- **PHASE 3:** Restore the electrical current and switch back on the device.

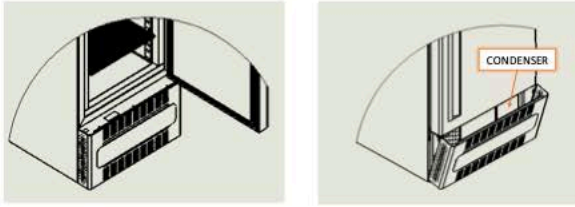


Figure 17. Condenser Position in Models with Lower Compartment Motor

2. Model TSG700R, TSG1500R, TSG700F & TSG1500F

- **PHASE 1:** In models with higher motors (700-1500L), the condenser can be accessed directly from the outside using a ladder.
- **PHASE 2:** Use a vacuum cleaner, air jet, or a long bristle brush to remove any dust on the condenser fins.
- **PHASE 3:** Restore the electrical current and switch back on the device.

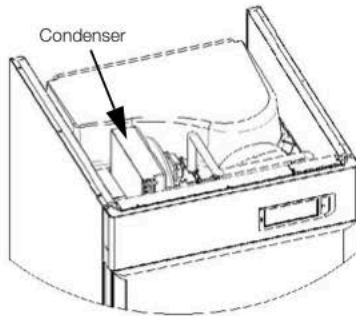


Figure 18. Condenser Position

Condensate Water Draining

Defrosting causes the formation of condensate water. The water evaporates automatically in models with motor compartment in lower position.

Replacing Buffer Batteries

To ensure maximum efficiency, we suggest periodically changing backup batteries at least every 2 years. This operation can be performed by users, easily accessing the housing located.

- At the rear of the device

- At the upper of the device (models with upper motor compartment)

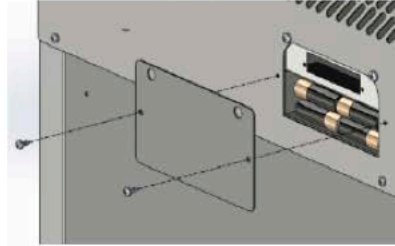


Figure 19. Battery position

Troubleshooting

The table below lists information regarding the possible causes and actions to be taken for the most common faults, which do not need automatically technical servicing.

Servicing on the electrical system must also be carried out by trusted electricians.

Problem	Possible Cause	Solution
The unit does not switch on.	Controller set to "Stand-by"	Switch on the controller.
	No mains	Check the plug, outlet, fuses and electrical line.
	Power plug not connected to the electrical outlet.	Connect the power cord to the electrical socket.
	Control panel fault	Contact Technical Support.
Unit does not reach the set temperature.	Too much material has been placed in the compartment.	Reduce the quantity and leave space between the shelves and walls.
		Place products in the cabinet a few at a time after the temperature has stabilised.
	Material was placed in the freezer area at room temperature (i.e. +25°).	Store only already frozen products.
	Prolonged or too frequent door openings	Reduce door openings and close the door more quickly.
	Ambient temperature is too high.	Air condition the environment.
	Condenser clogged by dust or dirt.	Clean the condenser.
	Electronic controller operating fault	Contact Technical Support.
Cooling system operating fault	Contact Technical Support.	
The unit is noisy	Unit instability	Eliminate the cause.
	Contact with objects (e.g. cardboards, polystyrene or other materials)	Move and/or remove objects touching the equipment.
Repeated alarm or fault signals or alarm noticed	Unit has detected an alarm.	Visualize alarms
Products wet	Formation of ice in the evaporator or sudden defrosting	Contact Technical Support.
	High humidity level in the environment	Air condition or ventilate the environment.
Glass door wet	High humidity level in the environment	Air condition or ventilate the environment.