Chapter 5 Inspection and maintenance

This chapter describes how to perform regular inspection and maintenance to ensure the long operating life of the chamber.

5.1 List of consumables and regular replacement parts

The following parts must be replaced regularly. Replace the parts as soon as the replacement period is reached. You can also use the ESPEC maintenance and inspection service.
To request a part, contact your distributor or ESPEC.

Table 5.1 List of consumables and regular replacement parts

Component name	Replacement period	Replacement method
Door packing (inside/outside)	3 years	Contact your distributor or ESPEC.
Cable port rubber plug	3 years	Contact your distributor or ESPEC.
Chamber lamp	1 year (Or when lamp fails.)	See "6.6 Required action."

* Lithium battery
Chamber instrumentation is equipped with a lithium battery that, under normal use, will not become depleted and does not require replacement by you. (The designed operating life is at least 10 years.)

■ Notification function
The inspection and maintenance periods can be set from the instrumentation.
For details, see the Controller guide.

5.2 Inspection and maintenance items

WARNING

Use appropriate methods to periodically clean parts of the chamber such as the electrical compartment.

Failing to do so can result in burns and electric shock.

■ Inspection items

For a description of each item, ☞ see "5.3 Inspection".

If the inspection items listed below do not operate properly, contact your distributor or ESPEC.

Table 5.2 Inspection items

Operation inspection item	Inspection period
Testing breaker operation (Excluding 380V AC models)	• Once per month • Before long-time continuous operation
Testing overheat protector operation	• Before starting operation

■ Maintenance items

For a description of each item, ☞ see "5.4 Maintenance".

Table 5.3 Maintenance items

Maintenance item	Maintenance period
Cleaning the test area	Before starting operation
Cleaning condenser	Once a month
Cleaning electrical compartment	Once a year
Preparations before an extended period of non-use	When not used for an extended period
Test operation after an extended period of non-use	When restarting operation after a period of non-use six months in length or longer

5.3 Inspection

Testing breaker operation (excluding 380V AC models)

WARNING

Perform an operation test on the leakage breaker and check that it is operating normally before starting chamber operation.

Failing to do so can result in electric shock.

Test the breaker operation once a month or before starting long-term continuous operation.
Gently press the test button with the breaker on. When the test button is pressed, the breaker lever should lower.

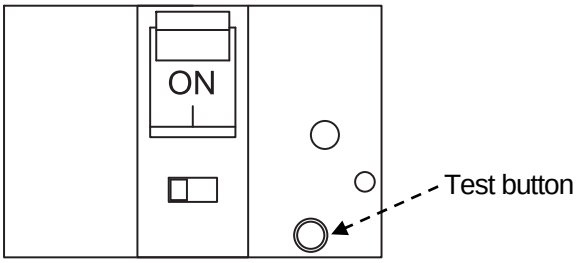

Fig 5.1 Test button

◆ Reference ◆

When the breaker lever lowers, it stops at a point halfway between on and off. To turn on the power, lower the lever to off and then raise it to on.

Testing overheat protector operation

WARNING

Before starting chamber operation, check that the overheat protector is operating normally.

Failing to do so can result in fire.

Before starting chamber operation, test the operation of the overheat protector.

<Procedure>

1) Check that the breaker is in the ON position.

2) Press the power switch to turn on the power of the instrumentation.
A menu appears.

3) Set the constant values and start constant operation.
Set the temperature close to room temperature or the current monitor temperature.

4) Configure the overheat temperature to a setting 5°C less than the temperature of the test area.
If the overheat protector is operating normally, a buzzer sounds and an alarm appears on the screen of instrumentation. All digits of the display on the setter flash.
If the buzzer does not sound, there is an error. Contact your distributor or ESPEC.

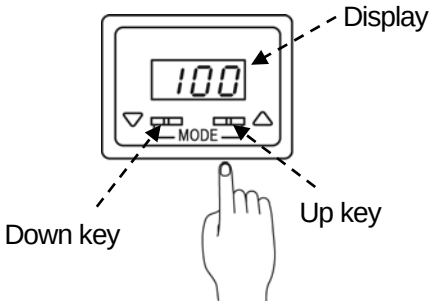

Fig 5.2 Overheat protector

5) Stop the buzzer, press the [Stop Beep] key on the alert screen.
The setting of the overheat protector returns to the original setting.

5.4 Maintenance

Cleaning the inside of the test area

The adhering of dust and impurities to the inside of the chamber can prevent accurate test results. Clean the test area before starting operation.

<Procedure>

1) Open the test area door.
2) Use a soft cloth to wipe the test area.
3) Close the test area door.

Cleaning the condenser

Operating the chamber with dust build-up on the condenser can cause a loss of refrigerating capacity and/or malfunction of the refrigerator. Clean the condenser once a month.

<Procedure>

1) Check to make sure that the breaker is turned off.
2) On the right side of the unit, use a Phillips head screwdriver to remove the two machinery compartment cover fixing screws.

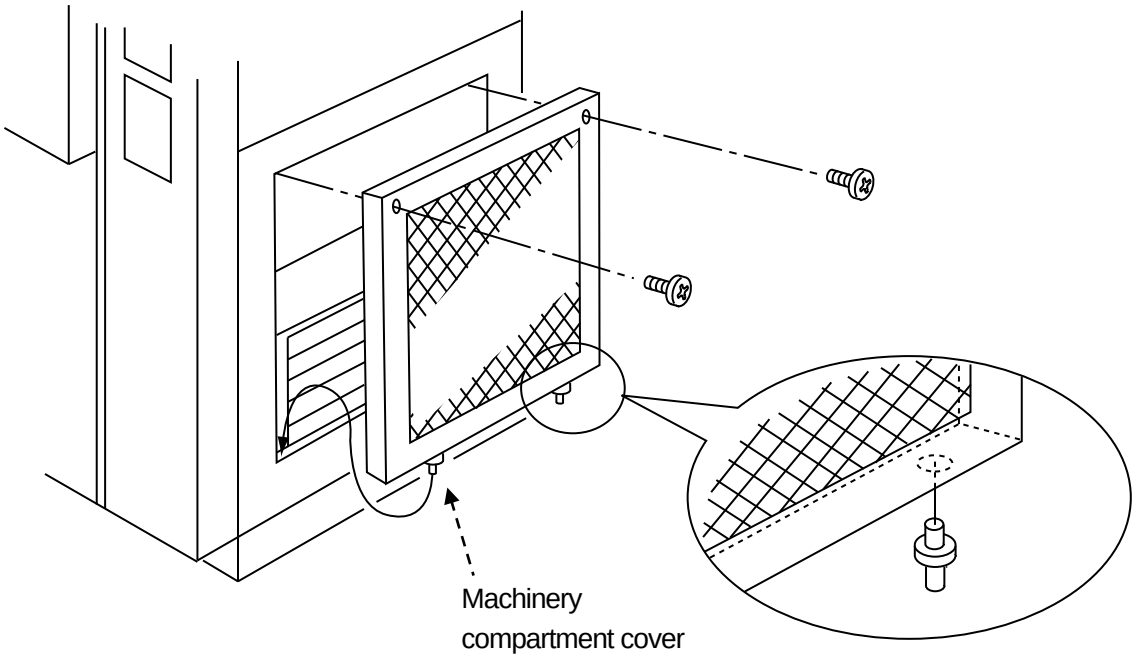

Fig. 7.2 Removing the machinery compartment cover

3) Use a brush and/or vacuum cleaner or other means to remove dust and dirt adhering to the condenser.
4) Re-install the machinery compartment cover.

Cleaning the electrical compartment

Dust build up in the electrical compartment can cause malfunction. Clean the electrical compartment once a year.

<Procedure>

1) Check to make sure that the breaker is turned off.
2) Use a Phillips head screwdriver to remove the two fixing screws from the top of the electrical compartment door, and then remove the door.
3) Use a vacuum cleaner or other means to remove dust from inside the electrical compartment.
4) Re-install the electrical compartment door.

Preparations before an extended period of non-use

If the chamber will not be used for an extended period of time, perform the steps below. Failure to do so may result in inaccurate testing and reduce the operating life of the chamber.

- Perform a dry operation.
- Turn off the breaker.

■ Performing a dry operation

> **◆ Note ◆**
>
> Under certain ambient conditions, suddenly stopping operation following low-temperature operation can cause condensation to form on the chamber surface. In some cases, this can result in water leakage in the chamber installation location.
> Return the temperature in the test area to room temperature before stopping operation.

To dry out the test area, perform a dry operation.
Stop the refrigerator, and then perform a constant operation for about 60 minutes at a temperature of at least 70°C . After operation is completed, open the test door slightly and operate in constant mode for approximately 15 minutes using the same setting.

<Procedure>

1) Check that the breaker is in the ON position.
2) Press [Details] on the Constant Setup screen. Press [OFF] in the refrigeration setting.
3) Set the temperature of the test area to a constant setting of 70°C or more.
4) Press the OPER./STOP key to start constant operation.
   Operate for approximately 60 minutes with the test area door closed. Then, stop operation, open the test area door, and leave it for approximately 30 minutes.
5) Check that there is no water on the test area door, close the door.

■ Turn the power OFF
Turn the breaker off, and then turn off the primary power supply.

Test operation after an extended period of non-use

Before you restart operations after a period of non-use six months in length or longer, perform test operations in order to protect the refrigerator.

<Procedure>

1) Set the refrigeration capacity setting to auto, and run continuously at 20°C for 30 minutes.