skcbiotech™

USER MANUAL

Refrigerator & Freezer

Laboratory use only · RDM / FDM Series

RD-15M · RD-25M · RD-45M · FD-15M · FD-25M · FD-45M
Digital controller (control dial)

Read this manual completely before use and keep it for future reference.

SKCBIOTECH Co., Ltd. · Images may differ from the actual product.

LABORATORY REFRIGERATOR · FREEZER



CONTENTS

Contents

From safety instructions to installation, controller operation, inspection and warranty, in order.

00 Product Overview 03

01 Safety Instructions 04–06

02 Installation 07–08

03 Product Information 09–11

04 Using the Controller 12–13

05 Alarms 14

06 Inspection · Troubleshooting 15–16

07 Warranty · Customer Support 17–19

00 Product Overview

Laboratory Refrigerator & Freezer

A refrigerator/freezer for laboratory use only. Not for medical use.
Indirect cooling for high efficiency and stability.

RDM Series · Refrigerator

+2 ~ +8℃

RD-15M · RD-25M · RD-45M

FDM Series · Freezer

−15 ~ −25℃

FD-15M · FD-25M · FD-45M

Typical uses

Samples in universities and labs; specimens in special industries

Common features

Indirect cooling · Digital controller (dial) · Sliding shelves · Casters



From left: RD-15M · RD-25M · RD-45M

Reading the Safety Symbols

These instructions protect users from injury and property damage. Read them and use the product correctly.

WARNING Failure to follow may result in death or serious injury

CAUTION Failure to follow may result in injury or property damage

Symbols used in this manual


General caution


Dangerous behavior by children prohibited


Improper handling prohibited


Mandatory action


Grounding to prevent failure and electric shock

WARNING

WARNING Failure to follow may result in death or serious injury



Do not let children play inside
A closed door makes an airtight space and is dangerous.



Install indoors only
Rain may cause electrical leakage or shock.



Keep flammable materials away from the unit
Risk of explosion or fire.



Do not spray water directly on the unit
May cause leakage or electric shock.



Do not disassemble, repair or modify
Risk of fire, electric shock or injury.



Do not let children operate the unit
It may malfunction or damage stored items.



Do not touch the cord or unit with wet hands
Risk of electric shock.



Have a damaged power cord replaced by A/S
Continued use risks electric shock.



Test the earth leakage breaker twice a month
A faulty breaker may cause fire or shock.



Always ground the unit when installing
Without grounding, failure or shock may occur.

CAUTION

CAUTION Failure to follow may result in injury or property damage

Move with a forklift or 4+ healthy adults
Elderly people or children may be injured or damage it.

Wear work clothes and gloves when moving
Clothes may catch, feet may trip, hands may be hurt.

Rated voltage is 220V~, 60Hz
Check the voltage before connecting power.

Leave 30 cm above and at the sides
Makes inspection and part replacement easier.

Do not let it tip over or damage the cord
May cause shock, fire or injury.

Clean the plug and insert it fully
Unplug by holding the plug. Risk of shock or fire.

Install in a dry place without standing water
A wet floor may cause electrical leakage.

Do not put items on top or hands underneath
May cause injury.

Transport and Installation Environment

+15 ~ +25℃ · 40 ~ 70% RH

Room temperature and humidity for installation. Outside this range performance may drop.

220V~ · 60Hz

Check the rated voltage and use a grounded outlet.

Clearance

30 cm above and at the sides; 10 cm from walls at the back and sides.

When transporting

- Use a forklift or 4+ healthy adults.
- Wear work clothes and gloves.
- Move slowly; do not tip it or damage the cord.

Where to install

- Indoors, on a level, firm floor
- A dry place without standing water
- Away from flammable materials
- Do not put items on top.

NOTICE All alarm functions start working 2 hours after power is first turned on.

Checking the Grounding

Case 1

220V outlet with a ground terminal

Connecting to an AC 220V outlet with a ground terminal needs no separate grounding work.

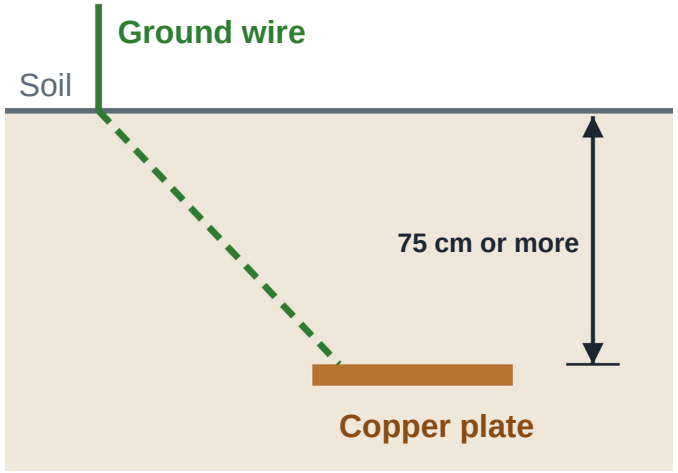
Check that the outlet is grounded before installing.

Case 2

No ground wiring in the building

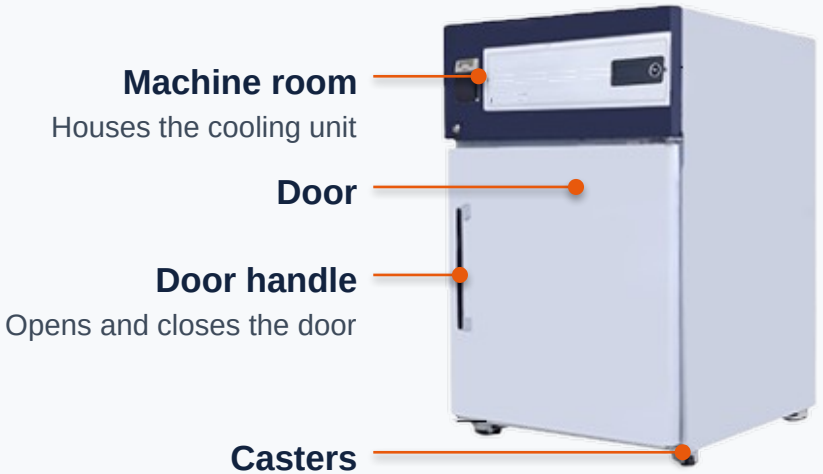
Wire to a copper plate buried 75 cm+ deep in moist soil.

Copper plate: 0.7 mm thick, 900 cm²



WARNING Do not ground to gas pipes, water pipes or phone lines. Leave grounding work to a qualified electrician.

Parts and Names



Machine room
Houses the cooling unit

Door

Door handle
Opens and closes the door

Casters
For moving only



Digital controller
Set the temperature with the dial

Sliding shelves
Pull forward to remove

Refrigerator Specs (RDM)

Laboratory refrigerator

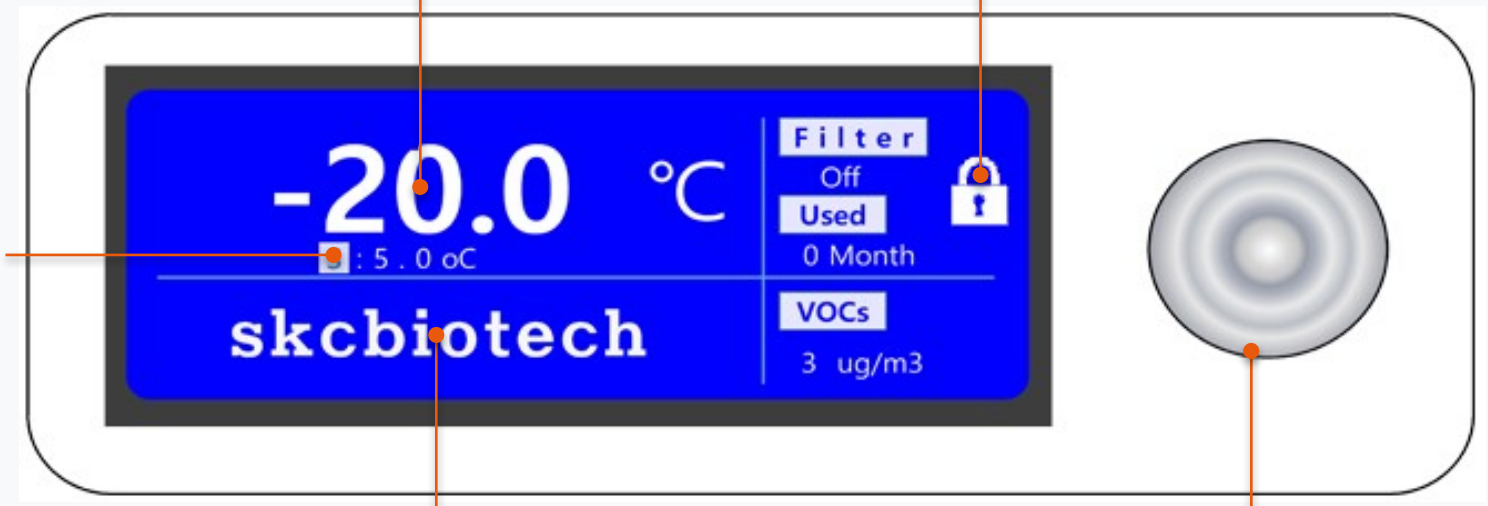
Item	RD-15M	RD-25M	RD-45M
Cooling method	Indirect cooling	Indirect cooling	Indirect cooling
Temp. setting range	+2 ~ +8℃	+2 ~ +8℃	+2 ~ +8℃
Installation env.	+15 ~ +25℃, 40 ~ 70% RH	+15 ~ +25℃, 40 ~ 70% RH	+15 ~ +25℃, 40 ~ 70% RH
Sensor	Digital	Digital	Digital
Compressor	1/3 HP × 1	1/3 HP × 1	1/3 HP × 2
Refrigerant	R-134a, 370g	R-134a, 370g	R-134a, 370g × 2
Controller	Digital controller	Digital controller	Digital controller
Shelves	Sliding coated shelf × 3	Sliding coated shelf × 5	Sliding coated shelf × 10
Material (inner · outer)	HI-POLYMER Coated steel	HI-POLYMER Coated steel	HI-POLYMER Coated steel
Inner size (W×D×H, mm)	550 × 530 × 600	620 × 635 × 1,430	540 × 630 × 1,450
Outer size (W×D×H, mm)	650 × 690 × 1,060	742 × 815 × 1,940	1,260 × 815 × 1,940
Rated voltage	220 VAC, 60Hz (2.4A)	220 VAC, 60Hz (2.4A)	220 VAC, 60Hz (4.8A)

Freezer Specs (FDM)

Laboratory freezer

Item	FD-15M	FD-25M	FD-45M
Cooling method	Indirect cooling	Indirect cooling	Indirect cooling
Temp. setting range	−15 ~ −25℃	−15 ~ −25℃	−15 ~ −25℃
Installation env.	+15 ~ +25℃, 40 ~ 70% RH	+15 ~ +25℃, 40 ~ 70% RH	+15 ~ +25℃, 40 ~ 70% RH
Sensor	Digital	Digital	Digital
Compressor	1/2 HP × 1	1/2 HP × 1	1/2 HP × 2
Refrigerant	R-134a, 370g	R-134a, 370g	R-134a, 370g × 2
Controller	Digital controller	Digital controller	Digital controller
Shelves	Sliding coated shelf × 3	Sliding coated shelf × 5	Sliding coated shelf × 10
Material (inner · outer)	HI-POLYMER Coated steel	HI-POLYMER Coated steel	HI-POLYMER Coated steel
Inner size (W×D×H, mm)	550 × 530 × 600	620 × 635 × 1,430	540 × 630 × 1,450
Outer size (W×D×H, mm)	650 × 690 × 1,060	742 × 815 × 1,940	1,260 × 815 × 1,940
Rated voltage	220 VAC, 60Hz (4.0A)	220 VAC, 60Hz (4.0A)	220 VAC, 60Hz (7.2A)

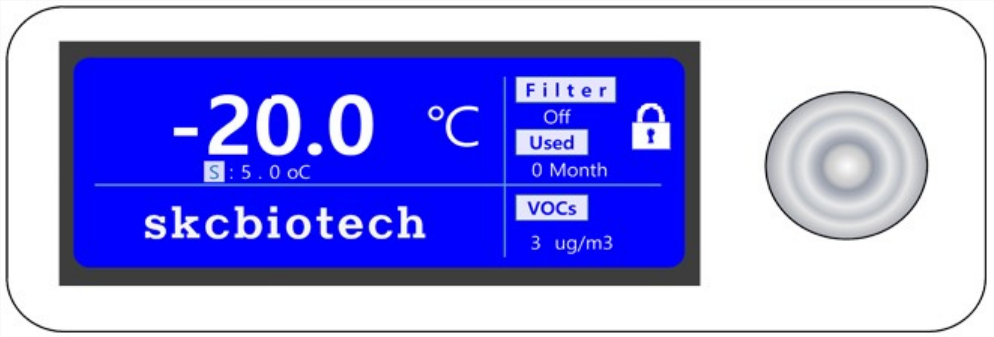
Controller Parts



A closed lock means locked; an open lock means it can be operated. Screen values are examples.

Setting the Temperature

1. **Press and hold the dial for about 3 s to unlock**
   The lock icon changes to open.
2. **Press the dial once briefly**
3. **Turn the dial left or right to set the temperature**
   Only values within the usable range can be set.
4. **Press the dial once briefly to save**
5. **Check the set temperature by the S: value below the display**



Usable range

Ref. +2 ~ +8℃
Frz. −15 ~ −25℃

Factory setting

Ref. +5℃
Frz. −20℃

When an Alarm Sounds

High / low temperature alarm

- Factory-set at ±10℃ from the set temperature.
- High-Temp or Low-Temp is shown and the alarm beeps.
- It clears automatically when the temperature returns to normal.
- If it keeps recurring, contact the A/S center.

Door open alarm

- The alarm beeps 30 s after the door opens.
- After 2 more minutes, a door-open voice message plays.

Sensor fault

- If the sensor is open or shorted, ERR-S1 is shown and the alarm beeps.
- Contact the A/S center.

Silencing the alarm

- Press the control dial 5 times or more to silence the beep.
- Warnings such as High-Temp stay on screen until the cause is solved.
- Door open 1 min+ in a hot, humid room may trigger the high alarm.

NOTICE All alarm functions start working 2 hours after power is first turned on.

Regular Inspection and Care

Item	How to check	Interval
Earth leakage breaker	Press the test button; it is normal if the switch turns OFF.	Twice a month or more
Power cord	Check the outer cord for peeled or worn insulation. Damage may cause shock or fire.	Regularly

Inspect and clean often

Inspect and clean regularly for safe and economical use.

During thunder or lightning

Always cut the power. Damage from natural disasters is not covered by the free warranty.

Beware of moisture

Do not use in very humid places. Wipe off any water on the unit before running it.

WARNING Always turn the power OFF before inspection or cleaning.

Troubleshooting

Screen is off or no power

- Is the power cord fully plugged in?
- If the rear breaker is down, switch it up.
- Water or overcurrent can trip the breaker.
- If the breaker keeps tripping, call A/S.
- If still off, check for a building power outage.

It smells when opened

- Is a reagent bottle broken or open?
- Check the filter housing replacement time.
- Is the door fully closed?

Strange noise

- Is the floor level and firm?
- Is it 10 cm or more from the walls?
- Is anything placed on top?

A tingling shock

Check the grounding. (See page 8)

Still not solved?

Do not disassemble. Contact the A/S center (042-931-0228).

Warranty Information

Free repair

When the product itself is defective from installation, or fails on its own during normal use

Warranty period	Coverage	Repair	Replace
1 year from purchase	Main controller and sensors	Free	Parts free

Defects caused by installation work by SKCBIOTECH or its authorized contractor are repaired free of charge if found within the warranty period.

Paid repair

Expired parts, consumables, and these cases:

- Faulty installation or unauthorized modification
- User negligence or intentional damage
- Impact or breakage
- External wiring or breakers
- Abnormal voltage
- Natural disaster, flooding or fire
- Improper cleaning or storage
- Repair by non-authorized persons

Warranty Card

Product

Item	Details
Product name	
Model	
Serial number	
Purchase date	Y M D

Dealer · Customer

Item	Details
Dealer	
Dealer phone	
Customer	
Customer phone	

Fill in the blanks at purchase and show this card when requesting service. The warranty period starts from the purchase date.

Customer Support

A/S · Product inquiries

042-931-0228

When contacting us, tell us the model, serial number and the alarm shown on screen so we can help you faster.

Head office	55-12, Techno 11-ro, Yuseong-gu, Daejeon, Korea
Fax	042-931-0229
E-mail	info@skcbiotech.co.kr
Website	www.skcbiotech.co.kr
IoT monitoring	monitor.skcbiotech.co.kr