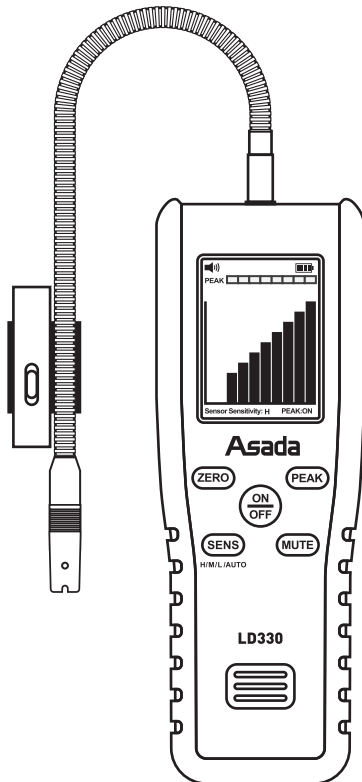


Asada

REFRIGERANT LEAK DETECTOR

LEAK DETECTOR LD330

INSTRUCTION MANUAL



[Read through this manual carefully before using the tool.]

LEAK DETECTOR LD330

SAFETY PRECAUTIONS

Thank you for choosing our Leak Detector LD330.

- This instruction manual must be retained by the user.
- Read this instruction manual carefully and completely before use and thoroughly understand the usage, capacity, cautions and maintenance for correct operation.
- Handle the tool properly to make full use of its functions for safe work.
- After reading the instructions, save this manual so that you can read it when necessary.
- Use the tool for the intended application only. It will do a better job and be safer at the rate for which it was designed.
- Upon receiving the tool, check the following.
 - Check that the tool is built conforming to the specifications stated in your order.
 - Check the overall tool for any damage or deformation caused in transit due to accidents or other reasons.
 - Check that all items and accessories delivered.

In case any discrepancy is found, immediately report the fact to the shop you purchased or our sale office. (The contents of this manual are subject to change without prior notice.)

CLASSIFICATION OF CAUTIONS

Precautionary signs are classified into the following 2 levels.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices.

CONTENTS

SAFETY PRECAUTION.....	2	Starting Detection	11
COMPONENTS OF THE TOOL.....	5	Prevention of misdetection	12
Main Parts	5	MAINTENANCE · INSPECTION	12
Specification	6	Calibration · Inspection Of Leak Detector	12
Standard Accessories	6	Maintenance Of Sensor Sensitivity.....	13
Optional Accessories	6	Exchanging Sensor.....	13
PREPARATION	7	Exchanging Battery.....	13
Charging Battery	7	Exchanging Filter.....	14
OPERATION	8	Installation of Extension Probe.....	14
Power ON/OFF · Wamp Up	8	BEFORE ASKING FOR REPAIRS OR SERVICES.....	15
Mute Setting	8		
Setting Sensitivity Mode	9		
Auto Sensitivity Mode	9		
Zero Reset	9		
Peak Hold Mode	10		
LED/UV Light	10		

LEAK DETECTOR LD330

CAUTIONS IN USE

- Basic cautions to use the tool safely are listed in this section.
- The detailed cautions in operation are described in each chapter.

WARNING

- ◆ **When operating tool, choose location that has good ventilation.**
Leakage of gas without sufficient ventilation may cause lack of oxygen and suffocation.
- ◆ **Burning refrigerant creates a deadly poisonous Carbon Oxy-Chloride and inhaling of this gas is very dangerous.**
There should be absolutely no flammable material near the working area and must operate under good ventilation.
- ◆ **Absolutely no fire material and smoking during the work in process.**
Cigarette light may create Carbon Oxy-Chloride and ignite fire.
- ◆ **Do not disassemble by un-authorized repair person.**
- ◆ **Use protective eye glass and hand glove during operation.**
- ◆ **Do not operate the tool with wet hands or in the rain.**
If you handle electric plug and power switch with wet hands or in the rain you may have electric shock.
- ◆ **Do not use the tool in location where there is much dust.**
It may lead to explosion and heating.
- ◆ **Do not use the tool in location where ambient temperature and humidity are high.**
It may lead to electric shock and a short in the electrical circuit.
Working temperature range of the tool is $-10 \sim 52^{\circ}\text{C}$, working humidity range is less than 90% RH.
- ◆ **Do not use the tool in location where ambient temperature is out of working temperature range.**
- ◆ **Do not store the tool in location where ambient temperature is out of $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$.**
- ◆ **Do not put heavy things on the cord of AC adapter.**
It may lead to electric shock or fire.
- ◆ **Do not use damaged AC adapter.**
It may lead to electric shock or fire.
- ◆ **Do not pull the cord of AC adapter to disconnect from the outlet.**
It may lead to electric shock, fire or inquiry.
- ◆ **Check AC adapter regularly whether it is abnormal, plug AC adapter completely.**
AC adapter with dust, oils and/or fats and uncompleted plugging may lead to electric shock or fire.

LEAK DETECTOR LD330

WARNING

- ◆ **Do not use the AC adapter concurrently with other electrical equipment and avoid overload connection.**

It may lead to fire.

Handling Battery (Lithium-ion)

- ◆ **Store the battery in a place inaccessible to small children and pets.**
It is extremely dangerous if swallowed or chewed.
- ◆ **In case something is wrong such as smell, heating, deformation, liquid leakage and any other abnormal things during operation, charging and storage, remove the battery and do not use.**
If keep using under abnormal condition, It may lead to smoking, burst, fire.
- ◆ **If the device will not be used for a long period, remove the battery.**
- ◆ **Never store or carry the battery with metallic items.**
Contact with metal can cause a short circuit, resulting in fire and severe burns.
- ◆ **Avoid damaging the battery. Do not drop, crush, or pierce it with any object.**
A damaged battery poses a serious risk of fire and overheating.
- ◆ **Always ensure the battery is installed with the correct polarity.**
Reversing the terminals can cause the battery to leak, overheat, burst, or ignite.
- ◆ **Use this battery only with the specified device.**
Do not use an unauthorized AC adapter for charging, and do not use the battery in other devices or for other purposes.
- ◆ **Do not use · charge battery in location where near from fire, hot weather, high temperature and high humidity (higher than 52°C , humidity: higher than 90%RH)**
- ◆ **Do not leave or store the battery in high-temperature locations.**
Avoid places such as near a stove or inside a vehicle under direct sunlight.
- ◆ **Stop using immediately if you notice any abnormality.**
If the battery emits an unusual odor, generates excessive heat, changes color, or becomes deformed, stop using it immediately.
- ◆ **Do not use a battery if its operating time has become significantly shorter.**
When the operating time has become shorter, replace the battery with a new rechargeable lithium-ion battery.
- ◆ **Do not disassemble and alter.**
- ◆ **Do not throw in fire, heat and wet battery.**

LEAK DETECTOR LD330

CAUTION

- ◆ Avoid direct eye and skin exposure to UV light
- ◆ If viewing the UV light is necessary, please use UV filtered glasses to avoid damage by the UV light

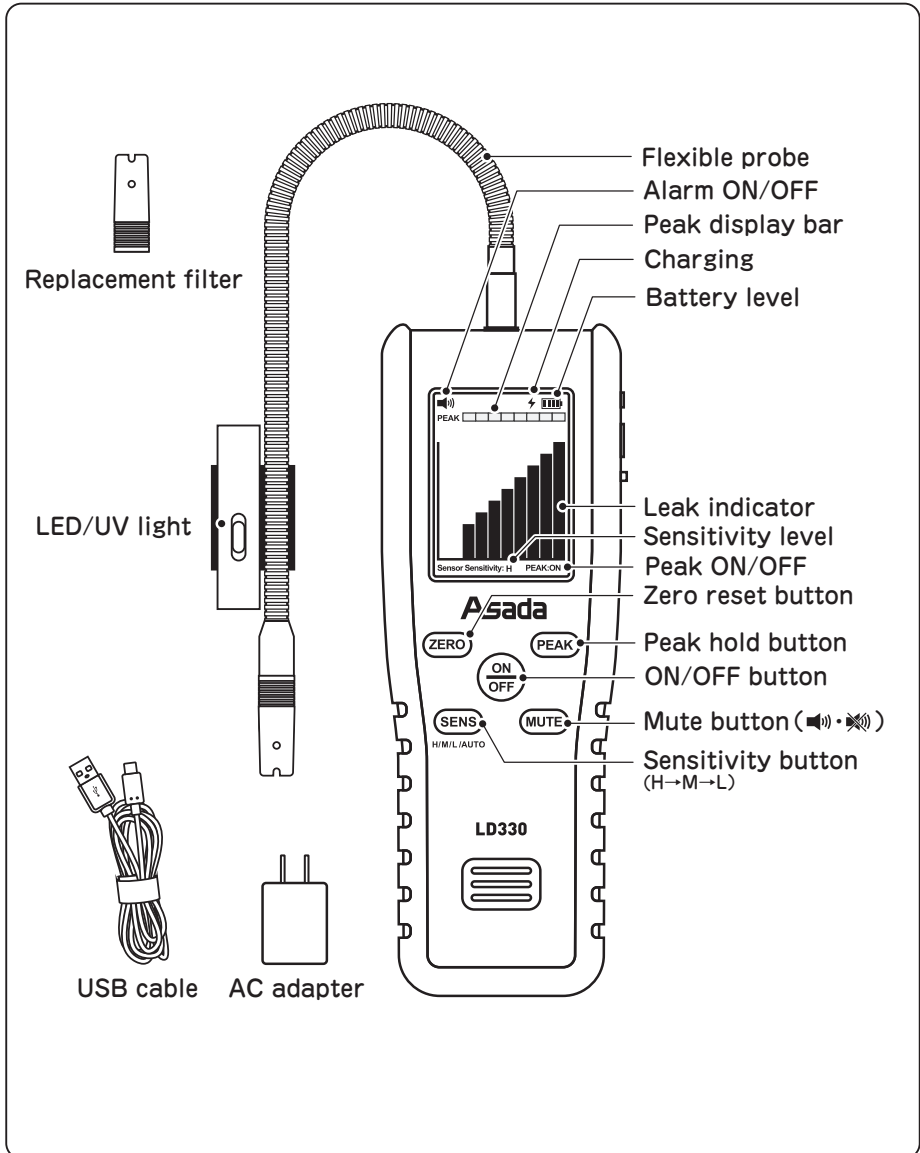
- ◆ Do not let visitors touch the tool.
- ◆ Do not use the tool when the result is unpredictable.
- ◆ Do not use the tool for purposes other than the original intent.
This tool is designed to detect refrigerant leakage.
- ◆ Do not operate under an excessive heavy load to the tool.
Operating under an excessive load can cause not only damage to the tool but also an accident.
- ◆ The operating platform and the work area must be kept neat and clean at all time and have enough lighting.
Poor working environment causes accident.
- ◆ Do not clean the tool with organic solvent.
Rub with dry cloth or use neutral detergent. The transparency of transmission window will drop.
- ◆ Do not operate the tool if the operator is under fatigue condition or influenced by alcoholic drink or medicines.
- ◆ When the tool is not in use, storage at dry space and out of reach by children.
- ◆ Do not use accessories other than referred in this manual or shown on our catalogue. Use of other accessories may cause problem.
- ◆ When the tool is dropped or hit, inspect immediately for damage, crack, dent, etc.
- ◆ Check every day if there is deformed or corroded area.
- ◆ If abnormal condition (strange smell, vibration, strange noise) is noticed, stop the unit and refer to the Page15 “ BEFORE ASKING REPAIRS ANDSERVICES” in the manual.
Contact our authorized distributors for repairs.

LEAK DETECTOR LD330

COMPONENTS OF THE TOOL

Main Parts

If the label comes off or became dirty and unreadable, request us for new label.
Replace the label at the same position on the tool.



LEAK DETECTOR LD330

Specification

Item	Leak detector LD330		
Code No.	LD330		
Applicable refrigerant	HFC/HCFC/CFC/HFO		
Detection method	Infrared type		
Sensitivity	H	M	L
	3g/year	7g/year	14g/year
Working temperature range	-10°C ~ 52°C		
Storage temperature range	-20°C ~ 60°C		
Working/Storage humidity range	Less than 90%RH		
Power	Lithium battery		
Battery life	12 hours(continuous operation)		
Auto power off	10 minutes		
Probe length	340mm		
Size(L x W x H)	72×35×200mm		
Weight	464g (with battery)		

Standard Accessories

Item	Code No.
Leak detector LD330 body	—
Replacement filter (5pcs)	LD064
LED/UV light	LD065
Light holder	LD066
Carring case	LD069
AC adapter (DC5V/1A)	—
USB cable (1.5m)	—
Instruction manual	IM0655

Optional Accessories

Item	Code No.
Extension Probe (Extendable up to 310mm)	LD063




LEAK DETECTOR LD330

PREPARATION

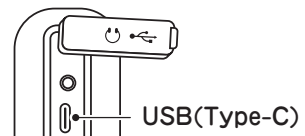
Charging Battery

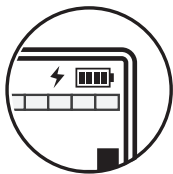
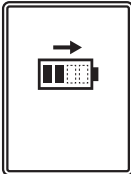
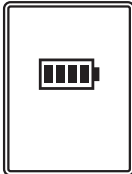
- Charge using the included AC adapter or a DC 5V/1A AC adapter.
 - Full charging time is for 7 hours and operating time is for approximately 12 hours. However it depends on usage.
 - Battery will be exhausted if leave Battery for a long time after charged.
 - The working time will be shorter if the charging time increases. In order to maintain battery life, avoid frequent additional charging.
 - When the operating time is short remarkably even though charged correctly, Battery is almost dead. Replace the battery as shown on P13.
- ① Check that the battery has enough charge before starting work.

(The battery level indicator will show “High” immediately after powering on. Please wait for about 15 seconds before checking for an accurate reading.)

Green: Battery Level - High	Yellow: Battery Level - Medium	Red: Battery Level - Low (Recharge Required)
		

- ② Connect the larger (Type-A) end of USB cable to AC adapter, and the smaller (Type-C) end to the side of the main unit.
- ③ Connect AC adapter to an AC100-240V power outlet. Charging will begin.



When the power is ON	When the power is OFF	
Orange: Charging / Green: Charging complete	Charging	Charging complete
		

⚠ CAUTION

- ◆ To preserve battery life, avoid complete discharges and frequent charging.
- ◆ If the unit will not be used for a long period, charge it before storage to prevent battery life degradation due to self-discharge. For storage periods longer than six months, recharge the battery periodically to avoid a complete discharge.
- ◆ Charge using a DC 5V/1A AC adapter.

LEAK DETECTOR LD330

OPERATION

⚠ CAUTION

- ◆ Do not turn on the unit for around 30 minutes after back to ordinary temperature from operation at temperature below freezing to avoid having dew condensation inside the unit.
- ◆ To use the unit frequently both at low-temperature place and normal temperature place, recommend to prepare 2units for each condition.
- ◆ When misdetect by condensation is suspected, keep the unit at low humidity room for around 1hour and retry the detection.

Power ON/OFF · Wamp Up

⚠ WARNING

- ◆ Do not use for inflammable gas.
It may lead to ignition.

- ① [Power ON] Press and hold ON/OFF button for 2 seconds.
- ② [Warm-up begins for 30 seconds]
※ Do not turn off the unit during warm-up.
- ③ [Warm-up complete]
The detection screen will be displayed.
- ④ [Power OFF] Press and hold ON/OFF button again for 2 seconds.



Mute Setting

- ① Press MUTE button to stop the alarm sound.
 - ② Press MUTE button again to start the alarm sound.
- ※ You can listen to the alarm sound through earphones by plugging them into the earphone jack on the side of the unit.

Alarm



Mute



Compatible earphones ϕ 3.5mm Mini Plug



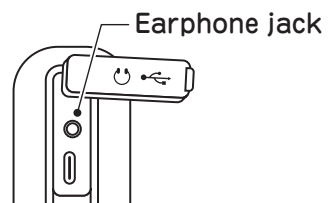
Stereo (3-pin) compatible



Stereo (4-pin) compatible



Monaural (2-pin) Not supported



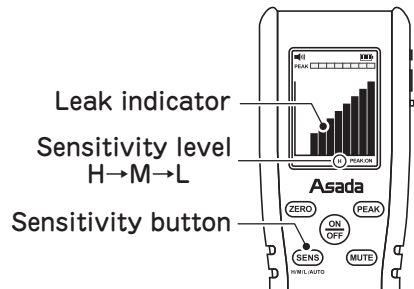
LEAK DETECTOR LD330

Setting Sensitivity Mode

① Use SENS (Sensitivity) button to set the sensitivity level. Each press cycles through the settings in the order of H (High) → M (Medium) → L (Low). The leak indicator shows the magnitude of the leak; the larger the leak, the more bars (from 1 to 8) will be displayed.

※ This unit is designed to detect relative changes in gas concentration. Therefore, it cannot accurately pinpoint a leak if the unit is held stationary, as the detected concentration will not change. For accurate detection, always move the sensor slowly while searching for a leak.

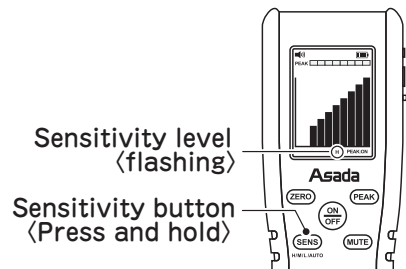
※ The unit may react again to remaining refrigerant after the unit reacted first due to high sensitivity of sensor, if the unit faces large amount of refrigerant with high sensitivity mode.



Auto Sensitivity Mode

The sensitivity automatically adjusts according to the leakage amount.

- ① Press and hold Sensitivity button (SENS) for 2 seconds. Sensitivity level flashes.
- ② When a leak is detected, the sensitivity mode automatically switches based on the leak volume to detect it.
- ③ To cancel Auto Sensitivity Mode, press and hold Sensitivity button (SENS) again for 2 seconds.

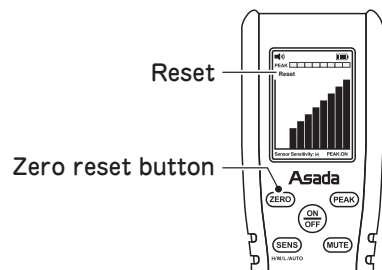


Zero Reset(※ This function does not operate in Auto Sensitivity Mode.)

Pressing Zero reset button displays "<Reset>" on the screen and sets the current ambient gas concentration as the new zero point.

※ If the surrounding atmosphere is already contaminated, pressing Zero reset button will set the current gas concentration as the new zero point. This allows the unit to detect leaks by reacting only to areas with an even higher concentration.

※ To restore the original zero point, move the unit to an area with fresh air and press Zero reset button again.



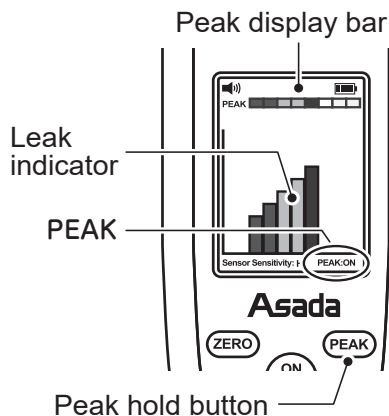
LEAK DETECTOR LD330

Peak Hold Mode

The Leak indicator shows more bars for a larger leak (1-8 bars).

Peak Hold Mode is available to record the highest leak value.

- 1 Press PEAK HOLD button.
<PEAK:ON> will be displayed.
- 2 The highest leakage value is stored in the Peak display bar.
- 3 Leak level indicator will increase if higher leakage level than the previous highest level leakage point is found. So that can detect leakage point.
- 4 Press the same button again to set <PEAK:OFF>, which will clear the peak display bar and cancel peak hold mode.



LED/UV Light

Can be switched between LED and UV light.

【LED light】

This is effective when the subject is difficult to see in dark places.

【UV light】

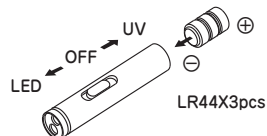
It can be used to detect leaks using UV dye.

【How to Replace the Battery】

Unscrew the cap on the back of the light and insert three (3) stacked LR44 button batteries with the negative (-) side facing inward.

The included batteries are for testing purposes only. For long-term use, please replace them with new batteries.

LED/UV Light



⚠ CAUTION

- ◆ Avoid direct eye and skin exposure to UV light
- ◆ If viewing UV light is necessary, please use UV filtered glasses to avoid damage by UV light
- ◆ Keep button batteries out of the reach of small children.
- ◆ If fluid from a leaking battery comes into contact with skin or clothing, rinse immediately with plenty of water.
- ◆ Do not heat, disassemble, or dispose of batteries in fire. Ensure correct polarity. Do not insert batteries with the positive (+) and negative (-) terminals reversed.
- ◆ Do not mix new and old batteries, or different types of batteries.

LEAK DETECTOR LD330

Starting Detection

<Point of setting sensitivity mode (manual) >

- ① Set high or middle sensitivity mode before narrow down the leakage point.
 - ② Set low sensitivity mode once the unit reacts and specify the leakage point.
 - ③ Check access port and connection part with high sensitivity mode.
 - ④ In case of checking at fixed point, check with "H" mode.
- ※ In case there is a large amount of leakage, blow air into Probe and check leakage again.

	leakage point	sensitivity
①	before narrowing	H (high)
		M (middle)
②	narrowing	L (low)
③	access port fitting	H (high)
④	Check of fixed point	H (high)

< Point of setting sensitivity mode (auto) >

- ① Press SENS button for more than 2 seconds, turn on auto sensitivity mode.
- ② In small amount leakage area, high sensitivity mode will be set and in large amount leakage area, low sensitivity mode will be set.

< Point of detection >

- ① Shut down air flows in detecting area.
- ② Point Probe to lower part of detecting point since refrigerant is heavier than air.
- ③ If it is hard to specify detecting leakage point, move Probe from lower part to upper part.
- ④ In case of vertical copper tubing line, check the lower part of connection of fitting mainly.
- ⑤ In case of horizontal copper tubing line, check the lower part of copper tube and fitting mainly.
- ⑥ Detect one continuous tubing line.
- ⑦ In the area where leakage may happen, move Probe by approximately 25mm/sec within the area 5 ~ 6mm range.
- ⑧ If the unit detects leakage, move Probe back and specify the leakage point.

LEAK DETECTOR LD330

Prevention of misdetection

- Compare with general infrared leak detector, misdetection is much less even swing or turn the unit rapidly.
- To detect refrigerant leakage properly without misdetect, pay attention below points.
 - ① Avoid rapid motion and move the unit slowly (about 25mm/sec.) to operate the unit.

The possibility of misdetection would be increased when a current of air blows against top of Probe.
 - ② Infrared sensor is hard to react to gas except refrigerant gas as the sensor reacts to infrared rays which has specific wavelength, however misdetect would be occurred in case with gas which has infrared rays with similar wavelength to refrigerant.
- ※ This unit is designed to detect relative changes in gas concentration. To accurately locate a leak, you must move the sensor slowly. The unit will not indicate a leak if it is held stationary.
- ※ The unit cannot detect a leak if the surrounding air is saturated with a higher concentration of gas than the leak you are trying to locate. In this situation, ventilate the area to reduce the background concentration, and then test again.
- ※ Due to high sensitivity sensor, after the unit react to large amount of refrigerant with High sensitivity level mode, the unit may react again to remaining refrigerant in Probe.

MAINTENANCE · INSPECTION

Calibration · Inspection Of Leak Detector

- The sensitivity of the unit cannot be calibrated. Therefore, issuance of a calibration certificate is illegal.

It is possible to issue an inspection certificate by the inspection based on our company standards.

Contact us for Inspection certificate (additional cost).

LEAK DETECTOR LD330

Maintenance Of Sensor Sensitivity

Leak detector detects refrigerant leakage through sensor. Detectable sensitivity varies depending on sensor condition. Inspect detector regularly to check whether maintain accurate detecting sensitivity.

Exchanging Sensor

In case, the unit does not react and cannot get prescribed sensitivity, the sensor may be worn out.

Refer to P15 [Trouble shooting] and contact our authorized distributors for exchanging Sensor.

Exchanging Battery

In case charging time become longer and operation time become shorter extremely despite of fully charged, Battery may be almost dead.

- ① Remove the screw on the back of the unit and open the battery cover.
- ② When replacing the battery, make sure the positive (+) and negative (-) terminals are aligned correctly.
- ③ Replace the battery cover.

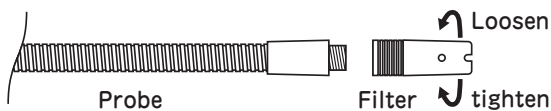
Please contact the authorized distributors for the replacement battery.

LEAK DETECTOR LD330

Exchanging Filter

The filter blocks large particulate contaminants and moisture, reducing false alarms caused by excessive humidity. If the filter becomes heavily soiled, replace it promptly.

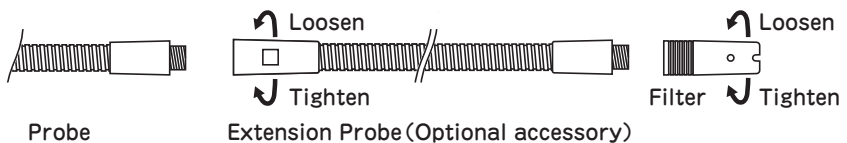
- ① Turn the filter at the tip of the probe counterclockwise to remove it.
- ② Insert the new filter into the probe tip by turning it clockwise.



Installation of Extension Probe (Optional Accessory)

For detection in hard-to-reach areas, you can attach the extension probe. (Cannot add more than two extension probes.)

- ① Turn the filter at the tip of the probe counterclockwise to remove it.
- ② Connect the probes by turning the extension probe clockwise.
- ③ Insert the filter into the probe tip by turning it clockwise.



BEFORE ASKING FOR REPAIRS OR SERVICES

- Refer to the following failure diagnosis before asking for repairs.
Contact our authorized distributors for repairs.

Symptom	Cause	Solution
No reaction, slow reaction	Filter is not clean	Exchange new Filter
	Expiry or breakage Sensor	Exchanging new Sensor Contact our authorized distributor for repair
	Pump does not work	Repair of pump Contact our authorized distributor for repair
Cannot turn on the unit	Battery runs out	Charging Battery
Cannot charge Battery Short operating time with fully charged Battery	Battery is dead	Exchange new Battery Contact our authorized distributor for repair
No alarm sound	Press Mute button	Press again Mute button to sound alarm

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