

User Handbook (INSTRUCTION MANUAL)

UHF TRANSCEIVER

**LD-500**

---

---

---

---



---

## ABOUT CE

CE Versions of the LD-500 which display the “CE” symbol on the serial number seal, comply with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/EC.

This warning symbol indicates that this equipment operates in nonharmonised frequency bands and /or may be subject to licensing conditions in the country of use. Be sure to check that you have the correct version of this radio or the correct programming of this radio, to comply with national licensing requirement.

---

## INSTALLATION NOTES

•SAR compliance for body-worn operations is restricted to belt-clips, holsters or similar accessories that have no metallic component in the assembly and must provide at least 1.5 cm separation between the device and the user's body."

---

## FOREWORD

Thank you for purchasing the LD-500 FM transceiver.

**READ ALL INSTRUCTIONS** carefully and completely before using the transceiver.

Professional radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) regarding human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE (FCC) and ICNIRP exposure limits for occupational/controlled RF exposure environment at duty cycles of up to 50% talk-50% listen and should be used for occupational use only. In terms of measuring RF energy for compliance with the FCC exposure guidelines, your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode.

**Note:** The approved batteries supplied with this radio are rated for a 5-5-90 duty cycle (5% talk-5% listen-90% standby), even though this radio complies with the FCC occupational RF exposure limits at duty cycles of up to 50% talk.


---


**SAVE THIS INSTRUCTION MANUAL**-This instruction manual contains important operating instructions for the transceiver.


---

## IMPORTANT

---

 **CAUTION! NEVER** hold the transceiver so that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting. The transceiver will perform best if the microphone is 5 to 10 cm away from the lips and the transceiver is vertical.

 **CAUTION! NEVER** operate the transceiver with a headset or other audio accessories at high volume levels.

 **CAUTION! NEVER** short the terminals of the battery pack..

**DO NOT** push the PTT when not actually desiring to transmit.

**AVOID** using or placing the transceiver in direct sunlight or in areas with temperatures below -10 °C or above +50 °C.

The basic operations, transmission and reception of the transceiver, are guaranteed within the specified operating temperature range (depending on version).

**DO NOT** modify the transceiver for any reason.

**KEEP** the transceiver from the heavy rain, and **Never** immerse it in the water.

The transceiver construction is **water resistant**, not water proof.

The use of non-Icom battery packs/chargers may impair transceiver performance and invalidate the warranty.

The device may only be used in an occupational environment

The transmitter frequencies can only be programmed in the factory and that the user of the device cannot change the frequencies programmed into the device

---

## TABLE OF CONTENTS

---

|   |       |
|---|-------|
| ABOUT CE.....                               |       |
| INSTALATION NOTES.....                      |       |
| FOREWORD.....                               | -     |
| IMPORTANT.....                              |       |
| TABLE OF CONTENTS.....                      |       |
| 1 ACCESSORIES.....                          | 1     |
| 2 PANEL DESCRIPTION.....                    | 2-3   |
| ■Switches,controls,keys and connectors..... | 3     |
| 3 BATTERY PACKS.....                        | 4-7   |
| ■Battery pack replacement.....              | 4     |
| ■Battery cautions.....                      | 5     |
| ■Battery charging.....                      | 6     |
| ■Charging NOTE.....                         | 7     |
| 4 PROGRAMMABLE FUNCTIONS.....               | 8-11  |
| 5 CONVENTIONAL OPERATION.....               | 12-14 |
| ■Receiving and transmitting.....            | 12    |
| ■Call procedure.....                        | 13    |
| ■Transmitting notes.....                    | 14    |
| 6 CLONING.....                              | 15    |
| 7 OPTIONS.....                              | 16-17 |
| ■Options.....                               | 16-17 |

---

## ACCESSORIES 1

### ■ Accessory attachment

#### Supplied accessories

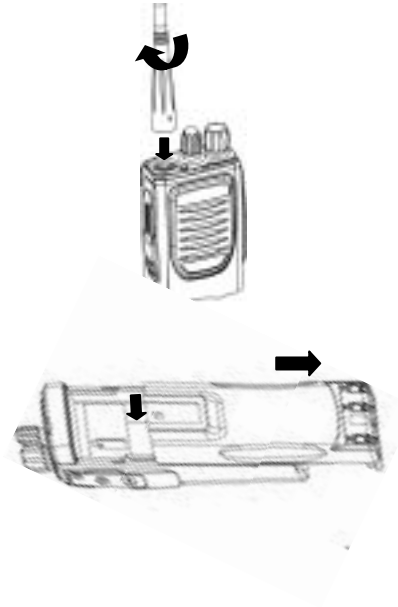
The transceiver comes supplied with the following accessories.

Flexible antenna (may differ according to version)

Belt clip

#### Antenna

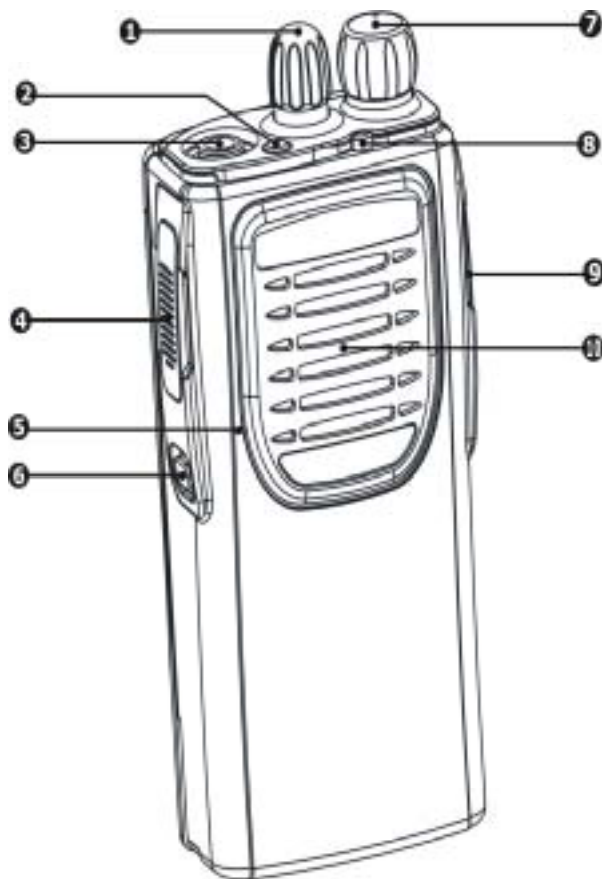
The antenna screws onto the transceiver as illustrated right.





## 2 PANEL DESCRIPTION

### ■ Switches, controls, keys and connectors



- ❶ ROTARY SELECTOR [SEL]**  
Selects operating channel, or bank, depends on setting.
- ❷ DEALER-PROGRAMMABLE KEY [F0 (Red)]**
- ❸ ANTENNA CONNECTOR**  
Connects the supplied antenna.
- ❹ PTT SWITCH [PTT]**  
Push and hold to transmit; release to receive.
- ❺ Microphone**
- ❻ DEALER-PROGRAMMABLE KEYS [F2(Black)], [F3 (Black)]**
  - Push to select the operating channel.
  - Can be programmed as [★]/[#]. (SmarTrunk mode only)
- ❼ VOLUME CONTROL [VOL]**  
Turns power ON and adjusts the audio level.
- ❽ TRANSMIT/BUSY INDICATOR**  
Lights red while transmitting; lights green while receiving a signal, or squelch is open.
- ❾ MULTI CONNECTOR**  
Connect optional speaker-microphone, etc..
- ❿ Speaker**



---

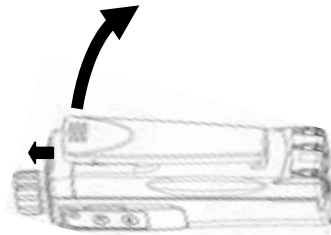
## BATTERY PACKS

**3**

### ■ Battery pack replacement

Before replacing the battery pack, the volume control **MUST** be rotated fully counterclockwise, until a click is heard, to turn the power OFF.

- Slide the battery release forward, then pull the battery pack upward with the transceiver facing you.



#### BATTERY PACKS

| Battery pack | Voltage                            | Capacity | Charging period |                             | Battery life* |
|--------------|------------------------------------|----------|-----------------|-----------------------------|---------------|
|              |                                    |          | BC-137          | BC-119 or BC-121 with AD-94 |               |
| BP-208       | Battery case for AA(R6)x6 alkaline |          | N/A             | N/A                         | —             |
| BP-209       | 7.2V                               | 1100 mAh | 15 hrs.         | 1.5 hrs.                    | 7 hrs.        |
| BP-210       | 7.2V                               | 1650 mAh | 15 hrs.         | 2.0 hrs.                    | 11 hrs        |

\*<sup>1</sup> Battery life is calculated under the following conditions;

Tx:Rx:standby=5:5:90

\* Operating period depends on alkaline cells used.

## ■ Battery cautions

•**CAUTION! NEVER** short terminals (or charging terminals) of the battery pack. Also, current may flow into nearby metal objects such as a necklace, so be careful when placing battery packs (or the transceiver) in handbags, etc. Simply carrying with or placing near metal objects such as a necklace, etc. causes shorting. This will damage not only the battery pack, but also the transceiver.

•**NEVER** incinerate used battery packs. Internal battery gas may cause an explosion.

•**NEVER** immerse the battery pack in water. If the battery pack becomes wet, be sure to wipe it dry **BEFORE** attaching it to the transceiver.

•**Clean** the battery terminals to avoid rust or miss contact.

•**Keep** battery contacts clean. It's a good idea to clean battery terminals once a week.

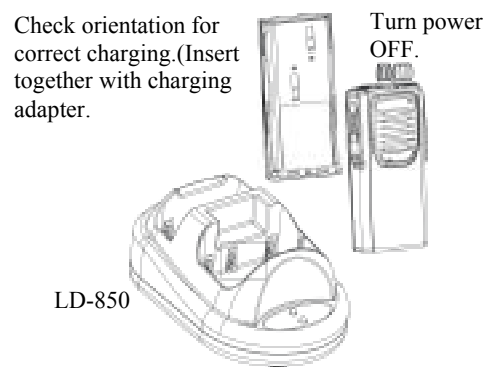
If your battery pack seems to have no capacity even after being charged, completely discharge it by leaving the power ON overnight. Then, fully charge the battery pack again. If the battery pack still does not retain a charge (or only very little charge), a new battery pack must be purchased.(p.9)

## ■ Battery charging

### Rapid charging with the LD-850

The optional LD-850 provides rapid charging of optional battery packs. The following are additionally required:

- One LD-850
- An AC adapter (may be supplied with the LD-850 depending on version).



When using the LD-850 in a vehicle: If the charge indicator flashes orange, the vehicle battery voltage is low and charging may not be performed. Check the vehicle battery voltage in this case. If the charge indicator flashes red, there may be a problem with the battery pack (or charger). Re-insert the battery pack or contact your dealer.

## ■ Charging NOTE

Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation.

- Recommended temperature range for charging:  
+10 to +40 (50°F to 140°F).
- Use the supplied charger only. **NEVER** use other manufacturers' chargers.

The LD-950 battery packs include rechargeable batteries and can be charged approx. 300 times. Charge the battery pack before first operating the transceiver or when the battery pack becomes exhausted.

If you want to charge the battery pack more than 300 times, the following points should be observed:

- Avoid over charging. The charging period should be less than 48 hours.
- Use the battery until it becomes almost completely exhausted under normal conditions. We recommend battery charging after transmitting becomes impossible.

### **Battery pack life**

When the operating period becomes extremely short even after charging the battery pack fully, a new battery pack is needed.

**SCAN FUNCTION**

The scan function allows you to search a pre-programmed group of channels for signals.

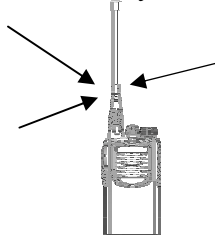
Push the [Scan] switch to start/stop scan.

- Scan pauses on a channel when receiving a signal.
- Depending on programming,a message may appear while scanning.
- “Lockout SCAN”(pre-programmed list SCAN)or “Priority SCAN” can be pre-programmed.
- when the “Power-save function”is activated,the transceiver checks all pre-programmed channels then returns to the “Power-save function”again.

—

### MONITOR AUDIBLE FUNCTION

The monitor function allows you to open the transceiver's squelch manually to check whether a channel is busy or not. The transceiver has 2 conditions for receive standby:



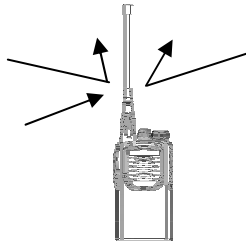
All signals are received.

#### Audible condition:

This condition mutes audio **ONLY** when no carrier is present. You can receive (or monitor) any signals on a channel.

- Push and hold the [Moni(Audi)] switch to select the audible condition.

Any audio mute functions are cancelled while pushing the [Moni(Audi)] switch.



Only signals containing the proper tone are received.

#### Inaudible condition:

This condition mutes **ALL** signals except those directed to you. Therefore you should check a channel's condition (busy or not) with the monitor function before transmitting.

- Push the [Moni(Audi)] switch momentarily to select the inaudible condition.

### TALK AROUND

The talk around function changes duplex channels to simplex channels.

- **Duplex** allows you to contact your base station, repeaters, etc.
- **Simplex** allows you to contact other portable transceivers directly (portable-to-portable contact).

Push the [Talk Around] switch to toggle the function **ON** and **OFF**.

---

## 4 PROGRAMMABLE FUNCTIONS

### **EMERGENCY FUNCTION**

The emergency function allows you to send your ID quickly and easily to your Base Station, etc. in case of emergency.

Push and hold the [Emergency Single/Repeat] switch for 1 sec. to activate the emergency function.

- The transceiver selects a pre-programmed channel, then sends an emergency signal to your Base Station.
- The pre-programmed channel remains selected until a control signal is received from the Base Station, or power is turned OFF.
- The emergency call is repeatedly transmitted at pre-programmed intervals.





## 5 CONVENTIONAL OPERATION

### ■ Receiving and transmitting

**NOTE:** Transmitting without an antenna may damage the transceiver. See p.1 for antenna attachment.

Turn power ON as described on p.1.

Receiving:

Rotate the [SEL] to select a channel.

Listen for a transmission and adjust [VOL] to a comfortable listening level.

- When no transmission is heard, push and hold monitor while adjusting [VOL].

The transceiver is now set to receive desired calls on the selected channel.

Transmitting:

Wait for the channel to become clear to avoid interference.

While pushing and holding [PTT], speak into the microphone at a normal voice level.

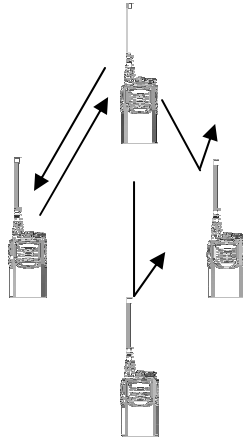
- When a tone signalling system is used, the call procedure described at right may be necessary.

Release [PTT] to return to receive.

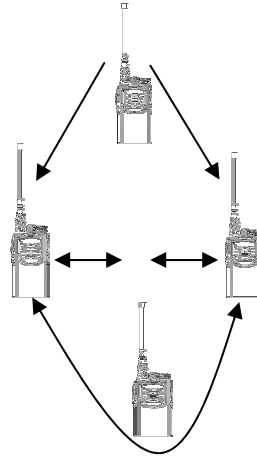
**IMPORTANT:** To maximize the readability of your transmitted signal, pause a few seconds after pushing [PTT], hold the microphone 5 to 10 cm from your mouth and speak at a normal voice level.

## ■ Call procedure

Selective calling



Non-selective calling



---

## 5 CONVENTIONAL OPERATION

### ■ Transmitting notes

#### **TIME-OUT TIMER**

After continuous transmission for a pre-programmed period, the time-out timer is activated, causing the transceiver to stop transmitting and automatically select receive.

#### **PENALTY TIMER**

Once the time-out timer is activated, transmission is further inhibited for a period determined by the penalty timer.



## 6 CLONING

---

### ■ Cloning

Cloning allows you to quickly and easily transfer the programmed contents from one transceiver to another transceiver; or data from PC to a transceiver using the optional CS-F30G CLONING SOFTWARE.

#### **PC-to-transceiver cloning**

Please refer to the HELP file that comes with the CS-F30G CLONING SOFTWARE.

**CAUTION:** Imprudent cloning operation causes a cloning error. In such a case, memory contents may be lost. Cloning must then be repeated.

**BATTERY PACKS**

- **LD-950** Ni-MH BATTERY PACK  
7.2V/1600 mAh Ni-MH battery pack, allows approx..11 hours operation.

**CHARGER**

- **LD-850** MULTI-CHARGER+**AD-94#02** CHARGER ADAPTOR (6 pcs.)  
For rapid charging of up to 6 battery packs (six AD-94's are required) simultaneously. An AC adapter may be supplied depending on version. Charging time: 1.5 to 2 hrs.

---

## 7 OPTIONS

### OTHER OPTIONS

- **EM-80/EM-89** SPEAKER-MICROPHONES

Combination speaker-microphone that provides convenient operation while hanging the transceiver from your belt.

SmarTrunk ™ is a trademark of the SmarTrunk System Corporation. LTR is a registered trademark of the EF Johnson Radio Systems.