



USER MANUAL

FIRE-FIGHTER'S PORTABLE RADIOTELEPHONE

ZXF-N2000

GENERAL INFORMATION

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III. Safety Warning



DON'T DISASSEMBLED THE EQUIPMENT

Access to the interior of the ZXF-N2000 should only be by a NSR-certified technician.

The lithium battery is used in this product, which is not allowed to be modified, shorted or burned.

IV. Product Category

This product is categorized as "portable" in accordance with the requirements as defined in IEC 60945.

V. Compass Safe Distance

Observe the compass safe distance to prevent deviation of a magnetic compass.

VI. Hardware / Software Version

Part Name	Part No	H/W Version	S/W Version
Transceiver	ZXF-N2000	ZXF101 V0.0	V1.XX
Recharge Battery	NBT200CX		

VII. Disposal Instruction

Dispose of the lithium battery carefully. The lithium battery should have two poles insulated prior to disposal because the remaining power could cause severe harm to human beings. Local regulations should be followed when batteries are disposed of to protect your environment.

MODIFY RECORD

No.	Modify by	Date	Paragraph	Version	Reason
1	Q/A	2015/04/20		01	First edition
2	Q/A	2016/01/26		02	General modification
3	Q/A	2018/07/20	1, 4	03	Modify the compliant IMO standards, Add the description of external PTT & Skull Mic/Headset
4	Q/A	2018/08/08	4.8	04	Add the photos of external PTT & Skull Mic/Headset
5	Q/A	2019/02/19		05	General modification
6	Q/A	pre2021/01/ 28	3	06	Modify Ex-proof marking
7	Q/A	2023/10/26		07	Some modification
8	Q/A	2025/08/05	All	08	Some modification

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1. OVERVIEW

ZXF-N2000 is fire-fighter's portable radiotelephone, an explosive-proof communication radio used for onboard fire-fighters.

ZXF-N2000 includes 19 VHF simplex channels assigned to marine use by ITU. The frequency range of those channels is 156.025MHz ~ 162.000MHz.

ZXF-N2000 can also be used as a normal VHF radiotelephone simply by upgrading the s/w to full ITU channels.

ZXF-N2000 is designed to comply with IMO MSC.515 (105), MSC.338 (91).

According to the requirements of MSC.338 (91):

- For ships constructed on or after 1 July 2014, a minimum of two two-way portable radiotelephone apparatus for each fire party for the fire-fighter's communication shall be carried on board. Those two-way portable radiotelephone apparatus shall be of an explosion-proof type or intrinsically safe.
- Ships constructed before 1 July 2014 shall comply with the above requirements not later than the first survey after 1 July 2018.

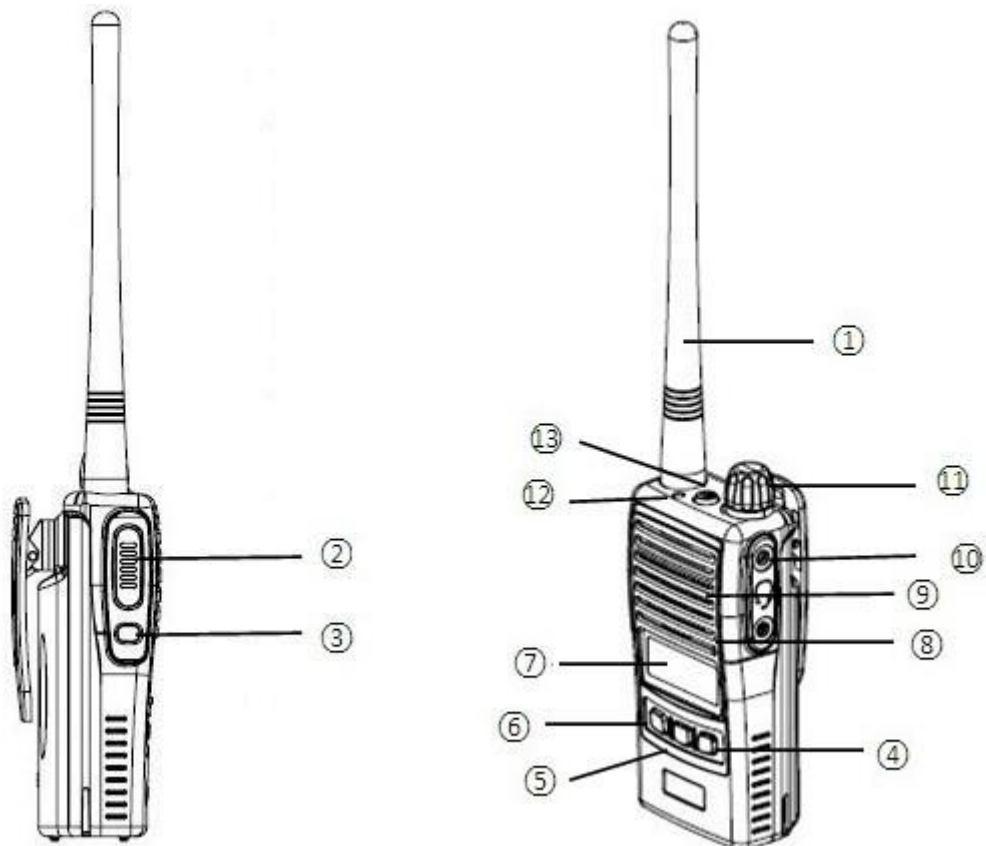
2. PRODUCT DESCRIPTION

2.1 Product Composition

Standard equipment list for ZXF-N2000:

No.	Item	Type	Q'ty	Part No.	Remarks
1	Standard				
1.1	Transceiver & Antenna	ZXF-N2000	1	N991620	
1.2	Rechargeable Battery	NBT200CX	1		
1.3	Wrist Rope		1		
1.4	Belt Clip		1		
1.5	Charger	NBT200CU	1		
1.6	AC/DC adaptor	NBT200CUA	1		
1.7	User Manual		1		
2	Optional				
2.1	External PTT & Skull Mic/Headset	ZXF-HM1000	1	N501621	

2.2 Description of Components



① Antenna**② PTT Key**

Press to transmit.

③ SQ LEVEL selection / Receiving Check Key

Used to set SQ LEVEL.

Press and hold this key for over 2 seconds to monitor an appropriate channel (◀) with beep sound.

To stop the function, press the key once again.

④ Up Key

Change the channel or select an alternative.

⑤ Enter Key

Confirm the selection or change the sub-menu.

⑥ Down Key

Change the channel or select an alternative.

⑦ LCD

Indicates channel number, current status of battery, selected function, etc.

⑧ Microphone

When transmitting, the microphone shall be positioned at a distance of 5~7cm from your mouth.

⑨ Speaker**⑩ Jack for external PTT & skull mic/headset**

External PTT & skull mic/headset can be connected via this jack.

If this has been connected, the internal microphone and speaker are muted..

⑪ Power on / off and Volume Control Switch

Used as an ON/OFF switch. When power has been turned ON, it can be used for adjusting a sound level.

⑫ LED

Indicate transmitting/receiving status by color in red and green correspondingly.


⑬ CHANNEL 16

Press the key to change to CH 16 immediately.

2.3 Display on LCD Panel

(1) H / L : Transmitting Output Power – H (3 W), L (0.5W)

(2)  : Button Lock

(3)  : BEEP ON

(4)  : Battery Level Indicator

(5)  : Dual Watch Mode

The dual watch mode allows CH 16 to be received when the other channel is activated. Refer to paragraph 5.4.

(6)  : Receiving Status Indicator



3. SPECIFICATIONS

- **Frequency range:** 156.025~157.425 MHz (TX)
156.050~162.000 MHz (RX)
- **Output Power:** HIGH 3.0W / LOW 0.5W
- **Communication Methods:** Simplex
- **Usable Channels:** 19 Channels (default)
- **Channel Space:** 25kHz
- **Warming Up Time:** Within 5 Sec
- **Battery Voltage:** 7.2V (DC)
- **Operating Temperature:** -20°C~ + 60°C
- **Compass Safe Distance:** 0.2m
- **Ex-proof marking** Exib IIB T4 Gb
- **Dimension** 56 (W) × 46.2 (D) × 256 (H) mm
- **Weight** Transceiver+Antenna: 150g
Transceiver+Antenna+rechargeable battery: 250g

4. GENERAL OPERATION

4.1 Power ON/OFF

- **Power ON**

Turn the knob of power ON/OFF & Volume Control clockwise to switch ON the equipment and company logo appears in a few seconds on the initial display and then a latest established status including channel number and usable battery capacity will be displayed.

It will take 1second from power ON to the standby condition.





- **Save the latest established data**





Turn the knob of power ON/OFF & Volume Control counterclockwise to switch the power OFF.


Now, if you switch it ON again, the latest used channel number, squelch level, output power level and other established menu items will be loaded automatically.

Attention: *The ON/OFF status of the Dual Watch Function is also saved.*

4.2 Channel Selection

To establish the desired channel number use  or  (UP/DOWN) key on the front of the equipment.


Press and hold on  or  (Up/Down) key to change the channel number one by one quickly. Pressing  key via the highest channel number will make a move to the lowest channel number and pressing  key via the lowest channel number will make a move to the highest channel number.




Press  key beside the antenna on the topside of the equipment to establish CH 16 instantly.

It could also be established through general channel selection.



Attention: *Just channels used with simplex from ITU VHF channels assigned for maritime mobile service have been established and only these channel numbers could be selected.*

4.3 Squelch Level Adjustment


Press  key located on the right of the front of equipment. The squelch level is ready to be adjusted.


Select a desired squelch level by using  or  key and press  (Enter) key to ensure selected squelch level. Then the display will return to initial screen.


Attention:

1. *If  or  key is not been pressed within 3 seconds, the value on the display will be established as a squelch level automatically and then will return to the status of the initial screen.*
2. *The value of the squelch level has been established at 8 by default.*

4.4 Transmission


To transmit on the current channel in receiving or standby mode, press  (PTT) key on the left side of the equipment and communicate simultaneously by positioning the microphone near your mouth.

Release  (PTT) key to stop speaking and return to receiving or standby mode.

By pressing  (PTT) key for transmission of a message, the Tx/Rx indicator will be lit up with red color on the upper right of the front.

4.5 Reception


To receive communication from another person via current established channel doesn't need to press any key.


If any signal has been detected in standby mode, it will make conversion to receiving mode automatically. Also, it will cause TX/RX indicator to be lit up with green color and  mark appears on the display.

Attention: *Receiving is impossible while the PTT key is pressed.*

4.6 Receiving Function Check

This function ensures that the receiving function is active.

Press  key for more than 2 seconds to keep on receiving operating and

press  key for a second time to stop receiving operating.

4.7 Volume Level Adjustment

To adjust the volume of the receiving sound, turn the knob of power ON/OFF & Volume Control in the desired direction.

Turn it clockwise to raise a receiving sound and turn it counterclockwise to reduce it.

Attention: *Turning to the maximum in counterclockwise direction will reduce the receiving sound and can make power off.*

4.8 External PTT & Skull Mic/Headset

PTT and skull mic/headset are used together with ZXF-N2000 fire-fighter's radio equipment.



The skull mic/headset part is designed for use by fire-fighters who work in very dangerous environment. The highly sensitive vibration sensor picks up the vibration of skull's vocal cords and the vibration is transformed into sound signals input to the VHF transceiver via the PTT part.

As specially designed, the skull mic/headset can be used with most standard masks/helmets used by fire-fighters. The headset installed won't affect the use of the mask or helmet itself.



The PTT part is so designed that it can be easily operated by fire-fighters who wear heavy uniforms and gloves. The PTT is robust with a PC case. It's watertight and can stand high water pressure and bounce.

5. SETUP FOR OPTIONAL FUNCTIONS


5.1 TX Power Level

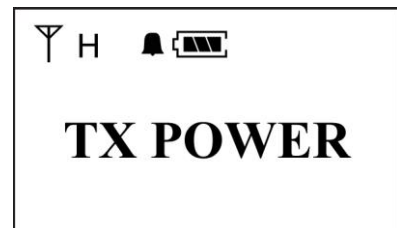
- First of all, ensure that which power level has been established in the receiving or standby mode. The High is displayed as “H”.




- The Low is displayed as “L”.






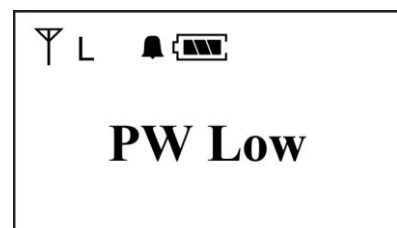
- To change the current power level, press  (Enter) key to enter the optional menu mode. The display appears to be as “TX POWER”.






- Press  (Enter) key in the above status to enable transmitting power level to be changed. If the High (2W) has been established.



- If the Low (0.5W) has been established to choose an alternate power level, press  or  key and then press  (Enter) key to enable a desired power level to be displayed.







Attention:

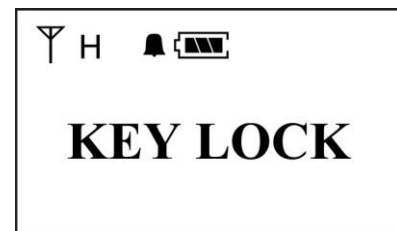
1. If  or  key is not been pressed consequently, the power level on the display will be established automatically and then the status of the initial screen will be returned.
2. It is not allowed to change Tx power level when the channel hasn't been changed completely by pressing enter key () or after an elapse of 3seconds.
3. Channel 15, channel 17 are fixed at L (0.5W).


5.2 KEY Locking

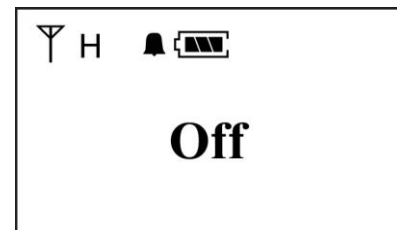
This function is used to prevent an inadvertent establishment resulting from carelessness or mistake of the operator.




If this function is established, all keys excluding the PTT switch, the Receiving Check key and the  key on the topside of the equipment couldn't be activated.

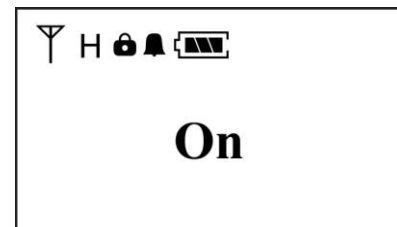
- Press  (Enter) key to enter the optional menu mode. Press  or  key several times so that the display indicates “KEY LOCK”.




- Press  (Enter) key to activate or release the key locking. If it is displayed as “Off”.




- Press  or  key within 3sec consequently to choose the ON status. Press  (Enter) key within 3seconds consequently to ensure the ON status is displaying.



- If the key locking function has been released and the initial screen was without a lock mark .










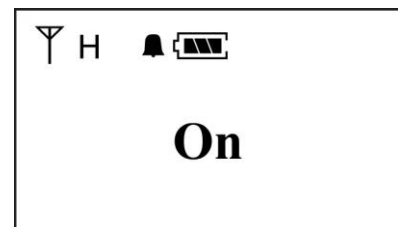
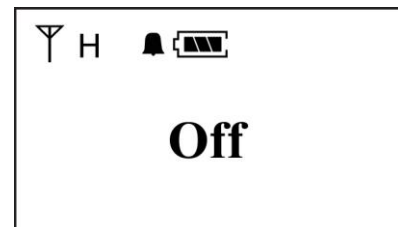
- To release the key locking, the  (Enter) key should be pressed more than 2sec.

Attention: Even if key locking has been established, PTT switch, Receiving Check key and CH 16 key are operational.

5.3 Battery Save Mode

This function enables to extend the usable time of the battery resulting by decreasing the power consumption in unnecessary devices. The establishment of the function permits to carry out minimized activities in operating equipment so that it could manage the required power for each built-in device effectively.

- To establish the economy battery mode, press  (Enter) key to enter the optional menu mode. Press  or  key within 3 seconds consequently in the above status until the display will indicate as “PWR SAVE”.
- Press  (Enter) key again within 3secs consequently in the above status to ensure the current status is "On" or "Off" If it hasn't been established for the economy battery mode, the display will indicate as “Off”.
- To establish the economy battery mode, press  or  key to choose and then press  (Enter) key to ensure it.




Attention: *Battery save mode has been set to OFF by default.*

5.4 Dual Watch


This function allows the receiving CH 16 emergency channel together with the current channel simultaneously.

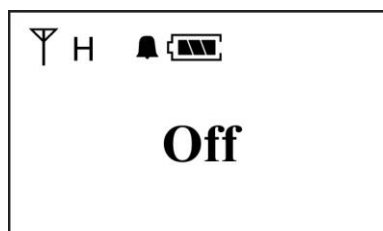
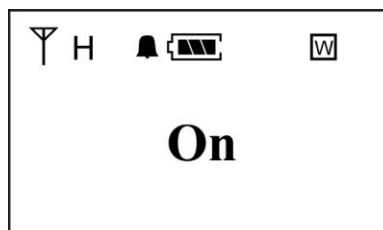
- The DW mark on the screen means that the dual watch function has been established.



- Press  (Enter) key to enter the optional menu mode. The display appears to be as “D-WATCH”.



- Press  (Enter) key within 3seconds consequently in the status and then “On” or “Off” is shown.






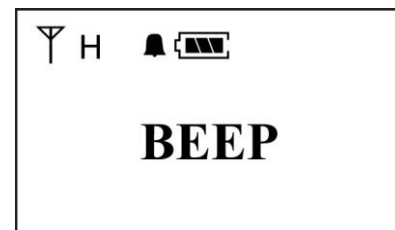
Attention: Dual watch mode has been set to OFF by default.


5.5 Beep Establishment

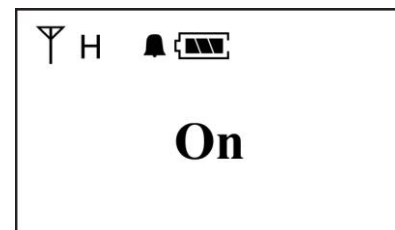
- This function is established to generate or mute an audible tone, such as "Pi-" sound when any key except the PTT switch is pressed. The bell mark "🔔" on the LCD indicates that the beep has been established.



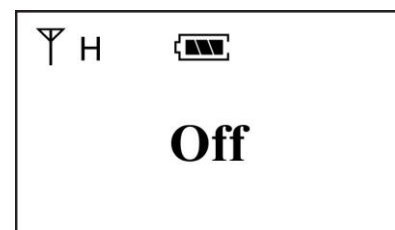
- Press  (Enter) key to enter the optional menu mode. Otherwise, press  or  key several times so the display would indicate as "BEEP".






- To continue, press  (Enter) key within 3sec consequently. If the beep has been established already, the display appears as "🔔".



- If the beep hasn't been established, the bell mark "🔔" doesn't indicated on the upper middle of the initial screen and the display appears as "OFF".






Attention:

1. Press  or  key to choose ON or OFF status and press  (Enter) key within 3sec consequently to ensure the desired status is displaying.
2. Beep mode has been set to ON by default.




5.6 Squelch Level

This function has been mentioned already in Paragraph 3.3-"Squelch Level Adjustment".

The squelch level can be established in the optional menu mode also.




- Press  (Enter) key to enter the optional menu mode. Otherwise, press  or  key several times so the display would indicate as "SQUELCH".



- Select a desired squelch level by using  or  key and then press  (Enter) key within 3 seconds consequently to ensure the selected squelch level. Then the display will return to initial screen.






Attention:

1. Press  or  key to choose ON or OFF status and press  (Enter) key within 3seconds consequently to ensure the desired status is displaying.
2. The value of Squelch Level has been set to "4" by default.


5.7 Location Indication

This function is to find the position of the equipment easily. If this function has been established, the LED for Tx/Rx indication would be blinked every 15 seconds with green color to ensure the position of the equipment in the darkness.

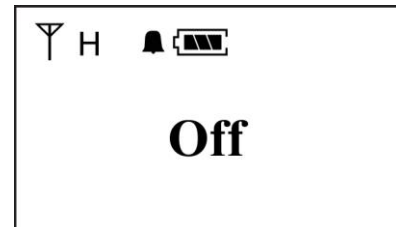
- To establish the position indication mode, press  (Enter) key to enter the optional menu mode.




Press  or  key within 3 seconds consequently in the above status until the display will indicate as “LOCATION”.

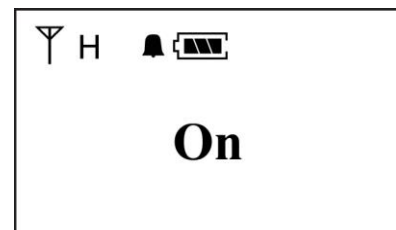


- Press  (Enter) key again within 3sec consequently in the above status to ensure the current status is “ON” or “OFF”.




If it hasn't been established for the position indication mode, the display will indicate “OFF”.



- To establish the position indication mode, press  or  key to indicate as and then press  (Enter) key to ensure it.



Attention:

1. Press  or  key to choose ON or OFF status and press  (Enter) key within 3seconds consequently to ensure the desired status is displaying.
2. The position indication mode has been set to “OFF” by default.

6. BATTERY & CHARGER

6.1 Install the battery



- Press the battery against the transceiver.
- Push the battery upside in position.

6.2 Remove the battery



- Press the black battery lock hardly with one hand.
- Pull the battery with the other hand.

Attention: *The battery cannot be easily removed if the black battery lock is not pressed enough to release.*

6.3 Rechargeable Battery (NBT200CX)

The recharge battery used for ZXFN2000 is a fast charging battery with stability and high-reliability.

The battery should be fully charged before using for the best capacity and safe operation.

Don't charge the battery with the charger not supplied by NEW SUNRISE because the battery is designed to use only the dedicated charger of manufacturer.

If the battery is assembled with the transceiver, it should be charged when the transceiver is powered off.

Don't make the battery be short-circuited.

The capacity of the rechargeable battery is 2200mAh.

6.4 Battery Charger

6.4.1 Specifications

- Input voltage: **DC 12V/1A**
- Charging time: **Around 160 minutes**
- Operating temperature: **0°C ~ +40°C**
- Charging current: **850mA (± 10%)**

6.4.2 Charging the battery

The charger can be used to charge the batteries in three ways:

- Only one battery
- Only one battery assembled with the transceiver
- One battery and the other battery assembled with the transceiver together

The charging status can be identified from the LED indicator as below:

* Charger LED indicator

Red LED	Charging
Green LED	Fully charged
Yellow LED	Charging pending or battery overheating
Red LED is blinking	Battery malfunction or pre-charging mode

Two LEDs, FRONT and REAR, will indicate the charging status for two batteries respectively.

6.4.3 Fast charging

In case of that the batteries are fully discharged, the charger goes into Pre-Charge Mode, in which the LED indicator blinks red.

Leave the fully-discharged battery to be charged for ten minutes until the normal voltage is reached. Then release the battery from the charger and put it back. The charger enters into Fast-Charge Mode, and the LED indicator stays red instead of blinking.

6.4.4 Install the charger

The charger can be mounted on the table.

Remove the two rubber caps from the two mount holes at bottom of two battery slots and fix the charger on table with two screws.



Attention 1:

- 1) It is strictly prohibited to attempt to pry open the battery cover.
- 2) Do not throw the battery into a fire.
- 3) Do not expose the battery to an environment with a temperature higher than 70°C.
- 4) Short-circuiting the positive and negative poles is strictly prohibited, and the poles should be well insulated with tape after the battery is replaced.

Attention 2:

Dispose of the lithium batteries carefully. Lithium batteries should have two poles insulated prior to disposal because the remaining power could cause severe harm to human beings. Local regulations should be followed when batteries are disposed of in order to protect your environment.

Attention 3:

The transportation of the battery pack must strictly comply with regulations on the transportation of lithium batteries. Before transportation, each battery should be packed (insulated) well to prevent exposure.

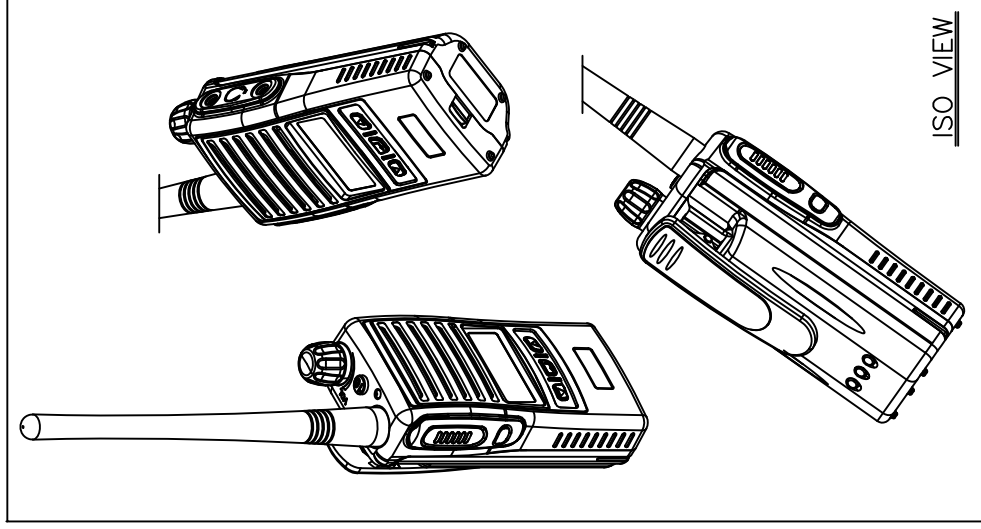
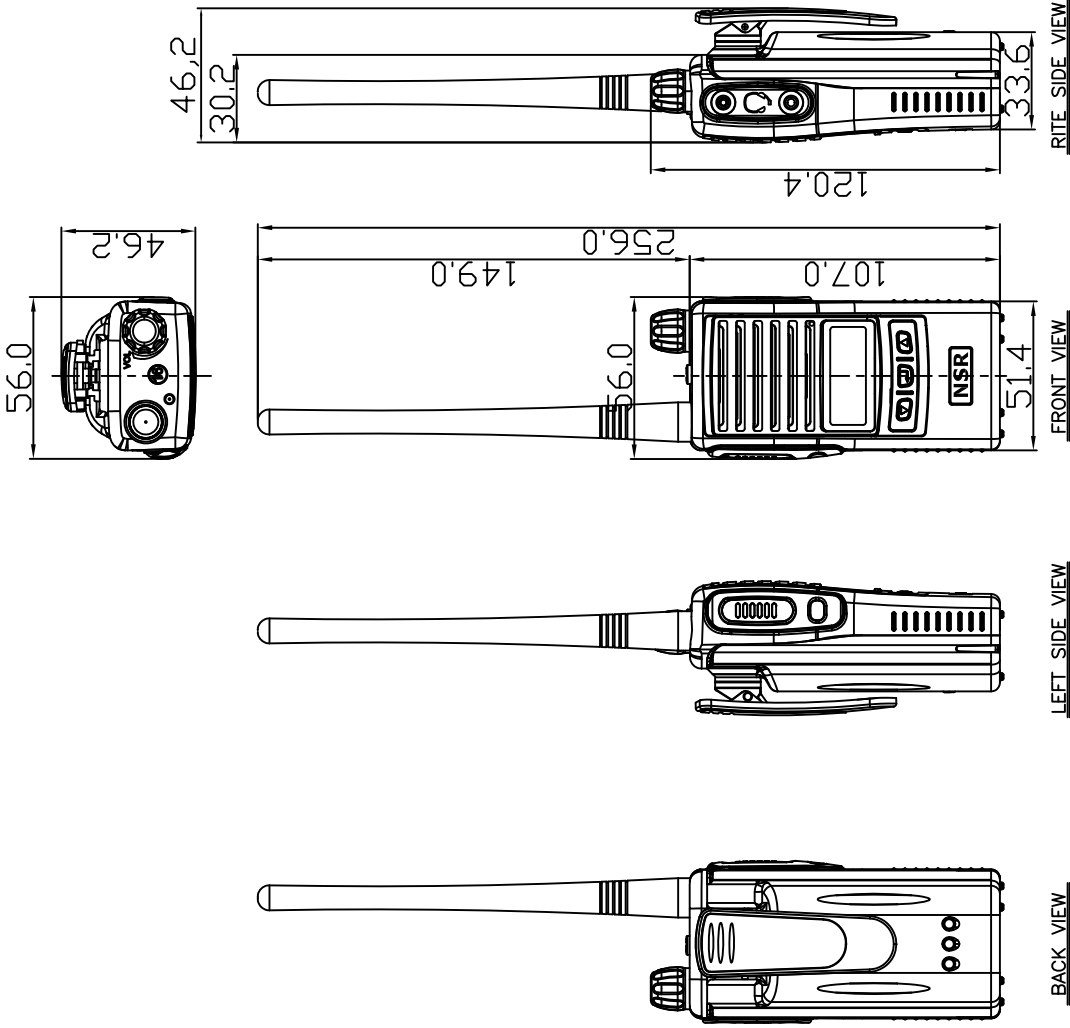
7. MAINTENANCE

The below troubleshooting table provides common symptoms of troubles and means to rectify them. Even if it is impossible to restore to normal operation, don't attempt to check inside the equipment. Any repairs should be done by a qualified technician.

SYMPTOM	INSPECTION
Can't turn on the power	<ul style="list-style-type: none"> ● Confirm that the battery has been assembled in its place properly. ● Separate the battery from the transceiver to ensure that the contact plane not to be wetted or covered with the dust. If the contact plane between battery and transceiver is wetted or covered with the dust, clean and dry it with a piece of cloth. ● Ensure whether battery has been discharged completely. The battery could be charged through the battery charger. ● Ensure that the knob of On/Off & Volume knob has been turned correctly. ● Contact the manufacturer or its authorized dealer for service.

APPENDIX SIZE DRAWINGS

Drawing No.	Description
ZXF-N2000-ID-001	ZXF-N2000 FIRE-FILTER'S PORTABLE RADIO TELEPHONE SIZE DRAWING
ZXF-N2000-ID-002	NBT200CU BATTERY CHARGER SIZE DRAWING



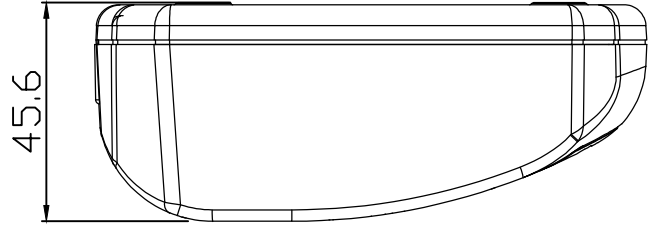
APPLICATION

ZXF-N20000 FIRE-FIGHTER'S PORTABLE RADIO TELEPHONE SIZE DRAWING

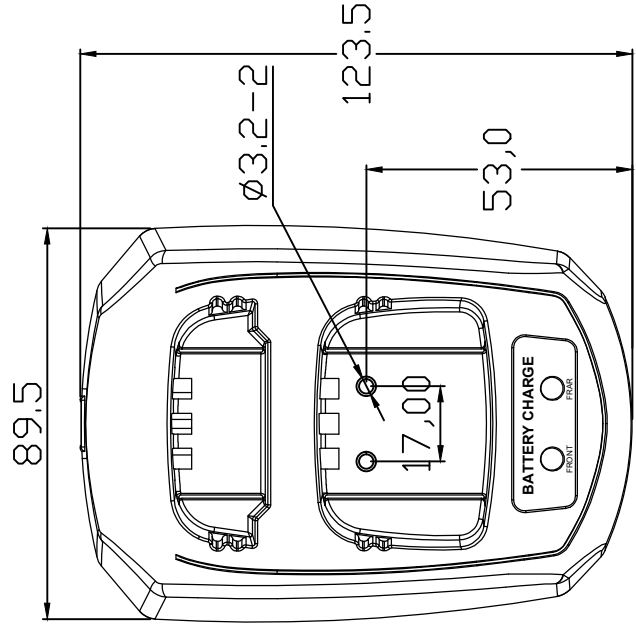
DATE	ITEM	SCALE	N/S	UNIT	mm	STANDARD	ISO 7243	SIZE	A4
APPROVAL	CHECKED	DRAWING	DWG. NO.	ZXF-N20000-ID-001	 NEW SUNRISE CO., LTD. <small>MARINE</small>				

NO.	DATE	REVISION & DESCRIPTION	REVIEWED	CHECKED
△				SIGNATURE

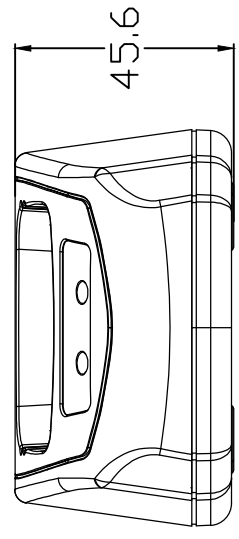
1 2 3 4 5 6




SIDE VIEW



FRONT VIEW



BOTTOM VIEW

APPLICATION		NBT200CU BATTERY CHARGER SIZE DRAWING		
DATE	2024-12-07	ITEM		SIZE A4
APPROVAL		SCALE	1:1	DATE
CHECKED		PROJ.		DATE
DRAWING		DWG. NO.	ZXF-N2000-ID-002	
 NSR NEW SUNRISE CO., LTD.				

A B C D E F G H I

1 2 3 4 5 6

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August, 2025