



## OPERATING INSTRUCTIONS

# VHF WIRELESS MICROPHONE

**WM-3210**  
**WM-3220**

Please follow the instructions in this manual to obtain the optimum results from this unit.  
We also recommend that you keep this manual handy for future reference.

## 1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy for future reference.

### Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazards.

#### **WARNING**

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

#### **CAUTION**

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

#### **WARNING**

- To prevent the electromagnetic wave from badly influencing medical equipment, make sure to switch off the unit's power when placing it in close proximity to the medical equipment.

#### **CAUTION**

- When the unit is not in use for 10 days or more, be sure to take the battery out of the unit because battery leakage may cause personal injury or contamination of environment.

- Make sure to observe the following handling precautions so that a fire or personal injury does not result from leakage or explosion of the battery.

- Do not short, disassemble, heat nor put the battery into a fire.
- Never charge batteries of the type which are not rechargeable.
- Do not solder a battery directly.
- Be sure to use the specified type of battery.
- Note correct polarity (positive and negative orientation) when inserting a battery in the unit.
- Avoid locations exposed to the direct sunlight, high temperature and high humidity when storing batteries.

## 2. GENERAL DESCRIPTION

The WM-3210 Wireless Microphone employs a dynamic microphone element and is suitable for vocal applications.

The WM-3220 Wireless Microphone employs an electret condenser microphone element and is suitable for speech applications.

## 3. FEATURES

- One frequency can be selected from 6 operating frequencies of 169 – 216 MHz.
- An optimized PLL-synthesizer minimizes the oscillation frequency drift resulting from the ambient temperature or voltage fluctuation.
- Battery lamp indicates battery consumption to prevent the unit from malfunctioning when the battery level remarkably decreases.

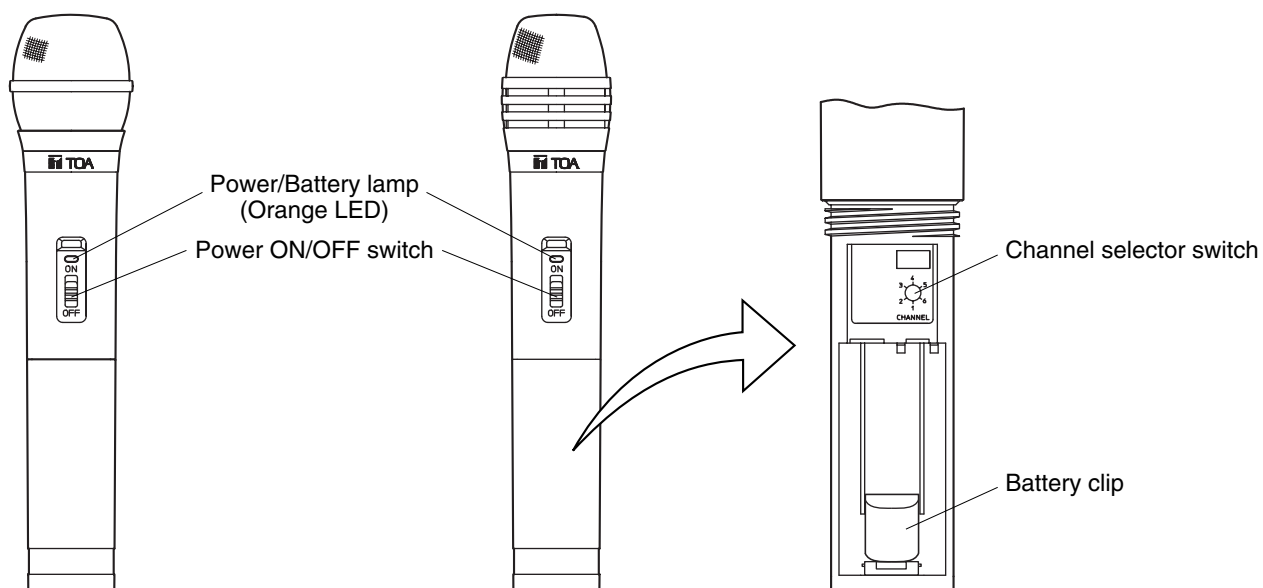
## 4. HANDLING PRECAUTIONS

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in unit failure.
- Never open nor remove the unit case to modify the unit. Refer all servicing to your nearest TOA dealer.
- Take care not to drop the unit onto the floor nor bump it against a hard object as the unit could fail.
- Do not place the unit in locations of high temperature (ex. in a car parked in summer) or high humidity as the unit could fail.
- Do not use the unit in locations where it is exposed to seawater.
- To clean, use a dry cloth. When the unit gets very dirty, wipe lightly with a cloth dampened in a dilute neutral cleanser, then wipe with a dry cloth. Never use benzine, thinner, or chemically-treated cleaning towel.
- Avoid using a mobile telephone near the wireless microphone in use. Noise could be picked up.

## 5. NOMENCLATURE

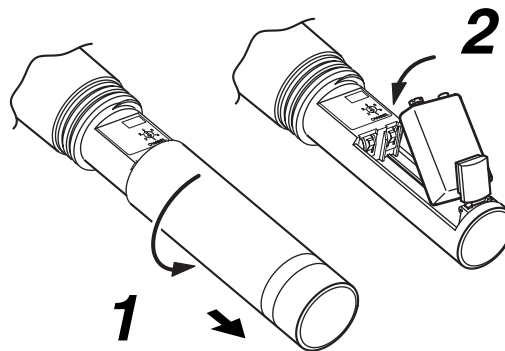
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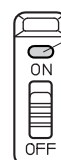
## 6. BATTERY INSERTION

- Step 1.** Hold the microphone body and rotate the microphone grip counterclockwise to remove it.
- Step 2.** Insert the battery 6LR61 (Alkaline 9 V) according to the instructions attached to the inside of the battery compartment. Pay attention to the correct polarity when inserting the battery.
- Step 3.** Replace the microphone grip by sliding and rotating it clockwise.



### Battery replacement

- A brand-new battery will provide the power enough to operate the unit continuously for 10 hours.
- As long as the battery has sufficient power for the microphone to function properly, the orange LED will light. When the orange LED starts to fade and then flash, replace it with a new one.



Orange LED  
Indicates the battery level by lighting or flashing.

## 7. OPERATION

- Step 1.** Make sure that the receiver and the wireless microphone are of the same channel (frequency).
- Step 2.** If they are not identical in channel, you have to adjust the channel switch.
- Step 3.** Place the power ON/OFF switch in the ON position.  
The orange LED indicates the circuit is active.
- Step 4.** Make sure to shift the ON/OFF switch back to the OFF position after using the wireless microphone.

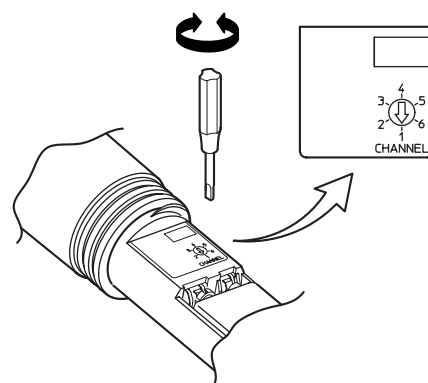
## 8. OPERATIONAL HINTS

- The microphone's service distance is 3 – 100 m. When the microphone user moves in a facility, signal dropouts (momentary losses of signal reception) may be encountered. These dropouts are caused by the building's architectural designs or materials which block the travel of or reflect the radio signal. If this occurs, the user needs to change locations for better signal reception.
- The proper operation of your wireless system may be interfered with by other system operating on the same frequency. In such cases, change the operating frequency of your system. (As to dealing with the interference, refer to the operating instructions of the wireless tuner.)
- Should you have any questions regarding the use or availability of TOA wireless products, please contact your local TOA dealer.

## 9. CHANNEL NUMBER SETTING

- Step 1.** Switch off the power. Rotate the microphone grip counterclockwise to remove it.
- Step 2.** Using the supplied screwdriver, set the channel selector switch pointer to the desired channel number.
- Step 3.** Replace the microphone grip.

**Note:** Make sure that the wireless microphone is identical to the wireless tuner in the channel number. Should the microphone's setting differ from that of the tuner, the tuner does not receive the microphone signal.



## 10. SPECIFICATIONS

Model No.	WM-3210	WM-3220
Microphone Element	Dynamic type, cardioid pattern	Electret condenser type, cardioid pattern
Emission	F3E	
Frequency Range	169 – 216 MHz, VHF	
Selectable Channel	6 channels	
RF Carrier Power	Less than 50 mW	
Tone Frequency	32.768 kHz	
Maximum Input Level	125 dB SPL	120 dB SPL
Maximum Deviation	±15 kHz (FCC Part 90), ±40 kHz	
Audio Frequency Response	150 – 12,000 Hz	200 – 12,000 Hz
Dynamic Range (AF Circuit)	More than 95 dB (with WT-3810)	
Battery	6LR61 (9 V x 1)	
Battery Life	More than 10 hours (alkaline)	
Indicator	Power/Battery lamp (orange LED)	
Antenna	Built-in type	
Operating Temperature	–10 to +50°C	
Finish	Resin, coating, dark gray	
Dimensions	ø50 x 235.2 mm	ø45 x 235.2 mm
Weight	250 g (with battery)	

**Note:** The design and specifications are subject to change without notice for improvement.

### • Accessories

Microphone holder (with stand adapter) ..... 1  
Screwdriver (for setting) ..... 1

### License requirement

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

