



## OPERATING INSTRUCTIONS

# UHF WIRELESS MICROPHONE

**WM-4310**

**WM-4310A**

**WM-4310H**

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.

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TOA Corporation

# 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 wireless microphone WM-4310 is of lavalier type, while the WM-4310A and WM-4310H are of headset type, and all are designed for use on UHF band.

The WM-4310/-4310A/-4310H accommodate the supplied microphone unit or headset with a cardioid pick-up pattern and are suitable for speech reinforcement applications. The built-in circuitry is so designed to minimize the influence from ambient noise.

The WM-4310A differs from the WM-4310H in that the WM-4310A features sweat-proof design and is supplied with a waist pouch.

## 3. FEATURES

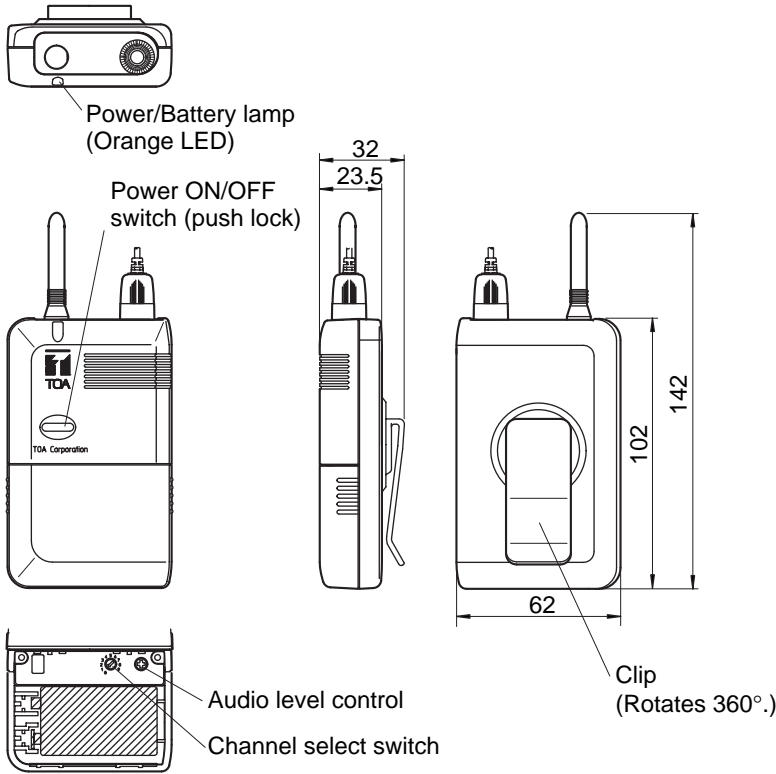
- One frequency can be selected from 16 operating frequencies of 16 frequencies of 690 – 865 MHz.
- An optimized PLL-synthesizer minimizes the oscillation frequency drift resulting from the ambient temperature or voltage fluctuation.
- Audio level control adjusts the microphone sensitivity.
- Battery lamp indicates battery consumption to prevent the unit from malfunctioning when the battery level remarkably decreases.
- Compact size and high reliability
- Sweat-proof handset with an adjustable fixing band is exclusively designed for use by aerobics instructors. (WM-4310A only)

## 4. HANDLING PRECAUTIONS

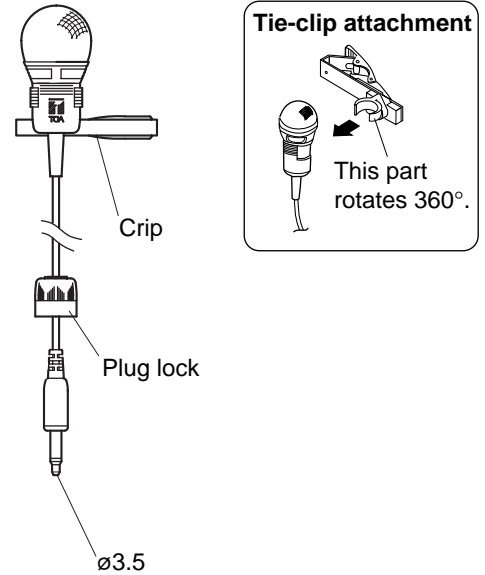
- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in unit failure.
- Never open nor remove the unit case to modify the unit. Refer all servicing to your nearest TOA dealer.
- Take care not to drop the unit onto the floor nor 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

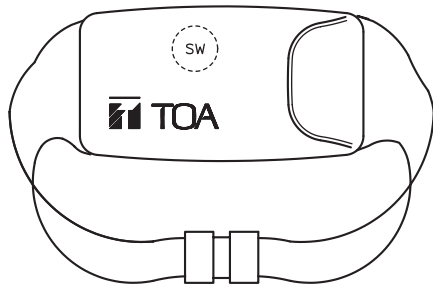
## [ Main unit ]



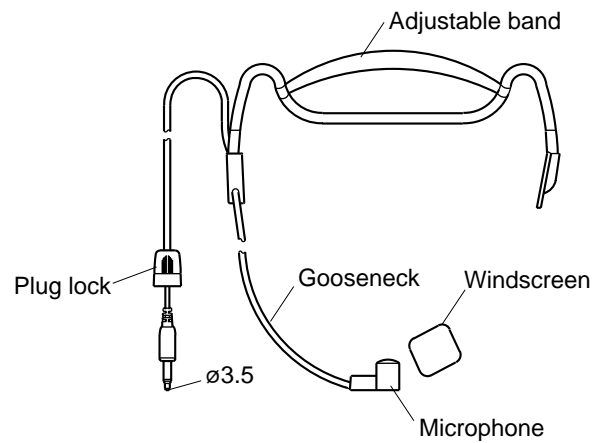
## [ Microphone unit ] (WM-4310 only)



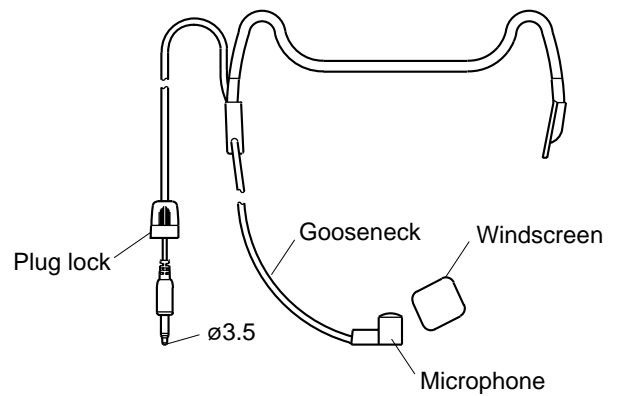
## [ Waist pouch ] (WM-4310A only)



## [ Headset ] (WM-4310A only)



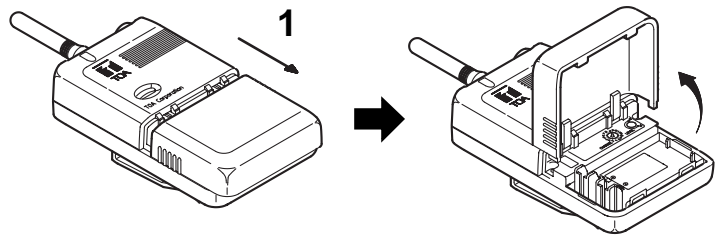
## [ Headset ] (WM-4310H only)



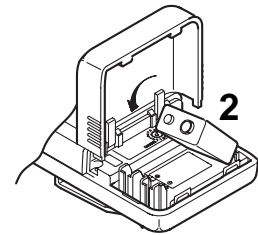
Unit: mm

## 6. BATTERY INSERTION

**Step 1.** Holding the microphone body, slide the battery cover down to open it. The battery cover is designed not to be removed from the body.



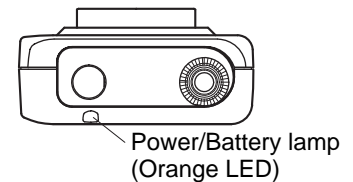
**Step 2.** Insert the battery 6LR61 (Alkaline 9 V) according to the instructions attached to the inside of the battery compartment. Pay attention to the correct polarity when inserting the battery.



**Step 3.** Replace the battery cover.

### 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.



## 7. OPERATION

**Step 1.** Plug the microphone's plug into the input connector as illustrated.

**Step 2.** Make sure that the receiver and the wireless microphone are of the same channel (frequency).

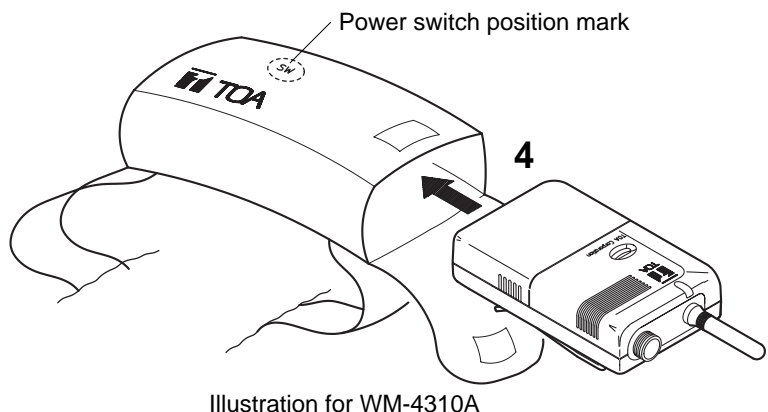
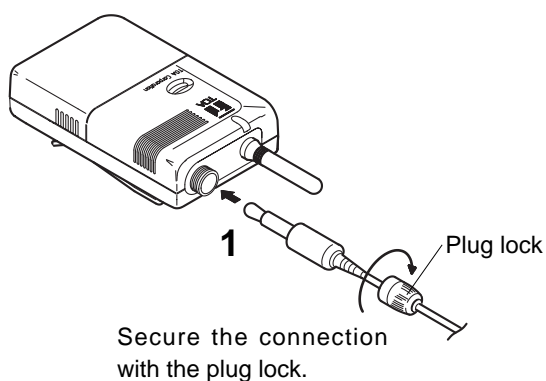
**Step 3.** If they are not identical in channel, you have to adjust the channel switch.

**Step 4.** Press the microphone ON/OFF switch to turn on the microphone.

The orange LED indicates the circuit is active.

As for the WM-4310A, insert the main unit into the waist pouch as indicated by the arrow. The main unit's power switch should be located under the switch indication position (SW mark) of the pouch. When turning on the microphone, press SW mark on the pouch.

**Step 5.** Make sure to press the ON/OFF switch again to turn off the microphone after using.



## 8. OPERATIONAL HINTS

- The microphone's service distance is 3 – 120 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. DISTANCE BETWEEN THE MICROPHONE AND THE MOUTH

### [Lavalier type version (WA-4310)]

Keep your mouth 15-20 cm away from the microphone for the best possible sound reproduction. Take care not to bring your mouth too close to the microphone (within 5 cm) as this impairs speech clarity if you speak loudly.

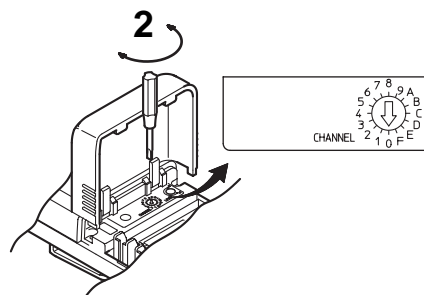
### [Headset type version (WA-4310A, WA-4310H)]

By adjusting the gooseneck, locate the microphone with the supplied windscreen in front of your mouth, and position it 3-5 cm away from your mouth for the best sound reproduction. When the microphone is too close to your mouth or you speak too loud, speech clarity will be impaired, making it hard for the audience to hear announcements.

## 10. CHANNEL NUMBER SETTING

**Step 1.** Slide the battery cover down to open it.

**Step 2.** Using the supplied screwdriver, set the Channel setting switch pointer to the desired channel number.



**Step 3.** Replace the battery cover.

**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.

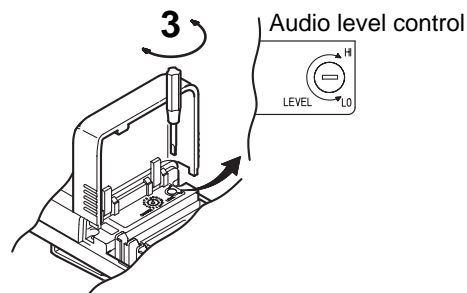
## 11. AUDIO LEVEL ADJUSTMENT (SENSITIVITY CONTROL)

To change the factory-preset level, follow the procedures below.

**Step 1.** Holding the microphone body, slide the battery cover down to open it. The battery cover is designed not to be removed from the body.

**Step 2.** Switch on the power of the tuner and microphone.

**Step 3.** Adjust the audio level control using the supplied screwdriver. The microphone sensitivity increases as the control is rotated clockwise, and decrease as rotated counterclockwise.



**Step 4.** Adjust the corresponding tuner's volume control so that its knob points to the 2 o'clock position. If the tuner's AF PEAK indicator remains lit, readjust the microphone's audio level control to the position that causes the indicator to flash when the tuner output level reaches its peak. The AF PEAK indicator lights when the output level reaches the point of about 3 dB below the clipping level.

**Note**

The AF PEAK indicator operates in response to the volume control position. However, the AF LEVEL indicator (on the WT-4810) indicates the level regardless of the volume control setting.

**Step 5.** Replace the battery cover.

## 12. 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.

## 13. SPECIFICATIONS

[ WM-4310 ]

|                       |   |
|-----------------------|---|
| Microphone Element    | Electret condenser type, cardioid pattern |
| Emission              | F3E                                       |
| Frequency Range       | 690 – 865 MHz, UHF                        |
| Selectable Channel    | 16 channels                               |
| RF Carrier Power      | Less than 50 mW                           |
| Tone Frequency        | 32.768 kHz                                |
| Modulation System     | PLL synthesizer                           |
| Maximum Input Level   | 120 dB SPL                                |
| Battery               | 6LR61 (9 V x 1)                           |
| Battery Life          | 10 hours (alkaline)                       |
| Indicator             | Power/Battery lamp (common use)           |
| Antenna               | 1/4 λ herical type                        |
| Operating Temperature | -10 to +50°C                              |
| Finish                | Resin, coating, dark gray                 |
| Dimensions            | 62 (w) x 142 (h) x 32 (d) mm              |
| Weight                | 150 g (with battery)                      |

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

• **Accessories**

- Screwdriver (for setting) ..... 1
- Channel identification seal ..... 1
- Storage case ..... 1

[ WM-4310A, WM-4310H ]

|                       |                                  |
|-----------------------|----------------------------------|
| Main unit             |                                  |
| Emission              | F3E                              |
| Frequency Range       | 690 – 865 MHz, UHF               |
| Selectable Channel    | 16 channels                      |
| RF Carrier Power      | Less than 50 mW                  |
| Tone Frequency        | 32.768 kHz                       |
| Modulation System     | PLL synthesizer                  |
| Maximum Input Level   | 120 dB SPL                       |
| Battery               | 6LR61 (9 V x 1)                  |
| Battery Life          | 10 hours (alkaline)              |
| Indicator             | Power/Battery lamp (common use)  |
| Antenna               | 1/4 λ herical type               |
| Operating Temperature | -10 to +50°C                     |
| Finish                | Resin, coating, dark gray        |
| Dimensions            | 62 (w) x 142 (h) x 32 (d) mm     |
| Weight                | 150 g (with battery)             |
| Headset               |                                  |
| Microphone Element    | Electret type, cardioid pattern  |
| Power Source          | DC (supplied from lavalier pack) |
| Output Impedance      | 1.6 kΩ ± 30% (1,000 Hz)          |
| Cable Length          | 1.45 m                           |
| Connector             | ø3.5 mm mini-plug                |

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

• **Accessories**

|                                   |   |
|-----------------------------------|---|
| Screwdriver (for setting) .....   | 1 |
| Channel identification seal ..... | 1 |
| Waist pouch (WM-4310A only) ..... | 1 |



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