SEIKO Metronome & Tuner STH200

INSTRUCTION MANUAL EN

Thank you for purchasing the Seiko Metronome & Tuner STH200. Please read this instruction manual carefully before using your STH200, as proper use is important to ensure the life of the product.
Store this instruction manual in a place that is readily accessible and refer to it regularly.

PRECAUTIONS

The following warnings and cautions are important in ensuring safe and proper use of the product, preventing injury to yourself and others, and preventing damage to your belongings.

- Do not disassemble, attempt to repair, or tamper with the product or battery.
- Do not handle the product with wet hands.
- Do not use or store the product in places where it may become wet such as in bathrooms, near sinks, or outdoors.
- Do not expose the batteries to fire.
- Use only the batteries specified for this product.
- Do not insert pins or other foreign objects into the product.
  In the event that such an object gets trapped in the device, cease use of the device and contact the store of purchase or a professional for assistance.
- Do not place the product on unstable surfaces.
- Do not intentionally throw or drop the product.
- Do not use or store the product in places where it may be exposed to extremely high temperatures such as near heaters, on devices that generate heat, in direct sunlight, or in vehicles.
- Do not use or store the product in places where it may be exposed to extremely high levels of humidity.
- Keep the product out of the reach of small children.
- Keep removed batteries and the battery lid out of the reach of small children. In the event that a child swallows these parts, contact a physician immediately.
- Do not apply excessive force to the switch or body of the product.
- Do not let leaked battery fluid come in contact with your skin.
- Do not use or store the product in dusty places or places prone to vibration.
- Do not use thinner or alcohol to clean the product.
- Remove the batteries when depleted or when not using the product for a long period of time.
- Use headphones at a safe volume.
- Install the battery properly, checking that the (+) and (-) terminals are oriented correctly.

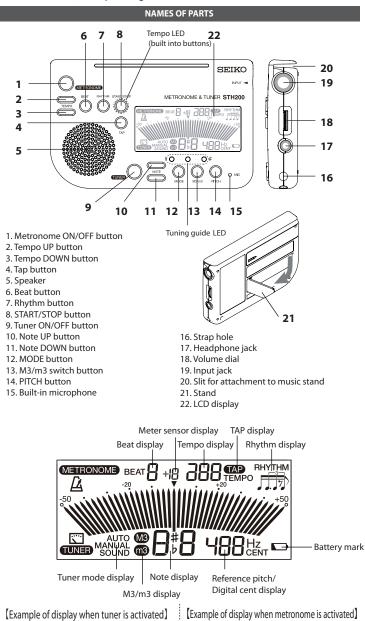Please refer to the "BATTERY REPLACEMENT" section and insert included batteries before use.
The batteries included with the metronome are for functionality testing and their life may be shorter than expected.

FEATURES OF THIS PRODUCT

This product allows you to activate and use the metronome and the tuner separately, or simultaneously.
In tuner mode, you can choose to use the tuner using the built-in microphone or by connecting a pickup microphone etc. to the input jack. You can also tune an instrument by using a reference tone when connecting a pickup microphone to the input jack. You can also practice minor thirds/major thirds based on just intonation.
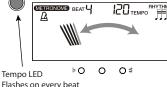Furthermore, you can also use 3 features simultaneously, including the metronome, reference tones and the meter, when practicing.

NAMES OF PARTS

1. Metronome ON/OFF button
2. Tempo UP button
3. Tempo DOWN button
4. Tap button
5. Speaker
6. Beat button
7. Rhythm button
8. START/STOP button
9. Tuner ON/OFF button
10. Note UP button
11. Note DOWN button
12. MODE button
13. M3/m3 switch button
14. PITCH button
15. Built-in microphone

16. Strap hole
17. Headphone jack
18. Volume dial
19. Input jack
20. Slit for attachment to music stand
21. Stand
22. LCD display

Tempo LED
Flashes on every beat
Upbeat: red Downbeat: green

POWER ON/OFF AND MEMORY BACK-UP

Turn Power ON
The power is turned on by pushing the Metronome ON/OFF button or the Tuner ON/OFF button.
Metronome mode is activated by pushing the Metronome ON/OFF button. METRONOME will be shown on the LCD display. Tuner mode (AUTO mode, reference tone OFF) is activated by pushing the Tuner ON/OFF button. TUNER will be shown on the LCD display. This device allows you to simultaneously activate the metronome and the tuner.

Turn Tuner OFF
The tuner is turned off by pushing the Tuner ON/OFF button while in tuner mode.

Turn Metronome OFF
The metronome is turned off by pushing the Metronome ON/OFF button while in metronome mode.

Memory Backup
From the second time using the device and onward, the device uses settings for reference pitch, pitch name, octave (sound mode), M3/m3, beat, rhythm, which are memorized from the last time the power was turned on.

HOW TO USE THE TUNER MODE

●Tuning using the tuning meter
First, connect the pickup microphone etc. to the input jack, if using one.
(If nothing is connected to the input jack, the built-in microphone will be used for tuning)

(1) Push the TUNER button to activate the tuner.
   TUNER will be shown in the LCD display and the pitch that is currently set (reference pitch) will be displayed.
(2) Set the reference pitch (A4 frequency). The reference pitch can be changed by pushing the PITCH button once, as shown below. Furthermore, you can fast-forward by holding down the button.   *The default value is "442"

$$440 \rightarrow 441 \rightarrow 442 \rightarrow 443 \rightarrow 444 \rightarrow 445$$
$$439 \leftarrow 438 \leftarrow \cdots \cdots 415$$

(3) Set the reference pitch using the PITCH button and select AUTO or MANUAL using the MODE button. (The SOUND function will be described later)
   AUTO MODE: The pitch name/octave closest to the note played and whether the note is sharp or flat will be shown in the tuning meter and the cent display.

   MANUAL MODE: Whether the played note is sharp or flat compared to the pitch name set using the NOTE button will be displayed on the tuning meter and on the digital cent display. The pitch name can be changed one semitone at a time by pushing the Note UP or Note DOWN button one (refer below). You can fast-forward a semitone at a time by pushing down the Note UP or Note DOWN button.

$$C \rightarrow C\# \rightarrow D \rightarrow E\flat \rightarrow E \rightarrow F$$
$$B \leftarrow B\flat \leftarrow A \leftarrow G\# \leftarrow G \leftarrow F\#$$
   *The default value is "A"

(4) Play a single tone with an instrument. (Move the instrument close to the device when using the built-in microphone to tune)
   The name and octave of the note closest to the note played and whether the played note is sharp or flat will be displayed on the tuning meter and on the cent display. Tune your instrument by playing a note and adjusting until the needle of the tuning meter is aligned with the ▼ mark, or until the cent display reads 0 cents.
   The green LED in the middle of the tuning guide will flash if the instrument is in tune.
   (Refer to Figure 1)

Figure 1 Example of display (just tuned)

* The built-in microphone of the tuner is disabled when the input jack is in use.
* Ambient sound or hum noise from electronic appliances may cause the tuner to behave as if in use. This is not a malfunction.
* In some cases, instruments that produce harmonic overtones or short-sustaining tones may not be tuned accurately.

【Tuning using major and minor thirds (M3/m3) function】
Since STH200 is capable of tuning to major thirds and minor thirds, it is equipped with an auxiliary function where the center display of the tuning meter can be moved -14 cents*1 (in the case of major thirds) and +16 cents (in the case of minor thirds). ⇒ M3/m3 mode

*1: While the pitches are shown as -14 (in the case of major thirds) and +16 (in the case of minor thirds) due to limitations of the LCD display, the actual pitches are -14⇒ -13.7 cents and 16 ⇒ 15.6 cents.

Each time you push TUNER "switch M3/m3 button", the center display of the tuning meter switches from "0"→ "-14" (major third)→ "+16" (minor third), and the M3/m3 section of the LCD display section switches from "non-displayed" (equal temperament mode) → "M3" (major third) → "m3" (minor third). (Refer to Figure 2)

* When in M3 mode (-14) or m3 mode (+16), the tuning guide LED and the cent display cannot be shifted in the same way. For example, when in M3 mode, the LCD display shows "-14 CENT" while tuning using just intonation, and the JUST (green) light will flash in the tuning guide LED.
* If the auxiliary function is not used, please set the meter center display in the LCD display to "0" (equal temperament mode).
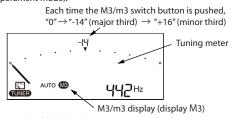
Each time the M3/m3 switch button is pushed,
"0"→ "-14" (major third) → "+16" (minor third)

Figure 2 Example of display when set to major third(-14) [just intonation]

・Usage example (how to use M3/m3 mode)
STH200 has a mode that is useful for practicing pitch control for the third pitch of a triad. Just intonation can be achieved by playing the third pitch 14 cents lower in the case of a major third, and 16 cents higher in the case of a minor third.
If a pickup microphone (e.g. STM30) is connected to the input jack, tuning can be done while playing a reference tone. In other words, pitch control can be practiced by harmonizing with the reference tone (which will be played at a pitch according to equal temperament).
First, listen closely to the reference tone played by the tuner and play a note 3 pitches higher than the reference tone. Practice pitch control by trying to play a pitch that is in tune with the reference tone. For example, when practicing playing a major triad with a B♭ as the root, play a D, and when practicing playing a minor triad, play a D♭. Since the meter center display changes from "0" → "-14" (major third) and → "+16" (minor third) when pushing the M3/m3 switch button when practicing playing chords, by changing to the appropriate display, the device can be set so that the needle in the meter points to the middle when a note is in tune, meaning the difference between the played pitch and the target pitch can be visually confirmed.

HOW TO USE THE TUNER MODE (Continuation)

●Confirming pitch with a reference tone
(1) A reference tone can be played by pushing the MODE button when in TUNER mode and switching the mode display for TUNER in the LCD display to SOUND. (Refer to Figure 3)
(2) Push the Note UP and Note DOWN buttons to change the pitch name. Fast-forward by holding down these buttons.
   Furthermore, push the PITCH button to change the pitch. Fast-forward by holding down the button.

C3 ⇔ C#3 ⇔ D3 ⇔ E♭3 ⇔ E3 ⇔ F3 ⇔ .... C6 ⇔ C3 ····

   * In SOUND mode, the reference tone will be played through the earphone jack or the speaker. Volume can be controlled using the volume dial.

Pitch name   Reference pitch

Figure 3 Display example of SOUND mode (playing a reference tone)

●Using a reference tone and the tuner function at the same time
This function can be used when the input jack is being used (with a pickup microphone, etc.).

(1) A reference tone can be played by pushing the MODE button when in TUNER mode, then setting the TUNER MODE DISPLAY in the LCD display to SOUND. (Refer to Figure 3)
(2) Push the Note UP and Note DOWN buttons to change the pitch name. Fast-forward by holding down these buttons.
   Furthermore, push the PITCH button to change the pitch. Fast-forward by holding down the button.
(3) Confirm/tune pitch by playing a single tone on an instrument.
(4) Push the MODE button to stop the reference tone, the device will switch to a different mode.
* Volume can be controlled using the volume dial.
* You can also tune your instrument by plugging your amplifier cord into the input jack of the tuner, or by plugging the Pickup Microphone STM30 etc. (sold separately) into the input jack of the tuner.
* The built-in microphone cannot be used in SOUND mode, even if nothing is connected to the input jack.

HOW TO USE THE METRONOME

Set tempo/beat/rhythm
(1) Push the Metronome ON/OFF button. The metronome pendulum will be shown in the LCD display and METRONOME will be shown in the upper left.
(2) Push the Tempo UP or Tempo DOWN button to change the tempo.
   You can fast-forward in 10 step increments by holding down these buttons.

   30 ⇔ 31 ⇔ 32 ··· 248 ⇔ 249 ⇔ 250 ⇔ 30···   *The default value is "120"

(3) When changing the beat, push the BEAT button and choose the desired setting.
   The beat display in the LCD display will change in the following order each time the BEAT button is pushed.   You can fast-forward by holding down the button.

   → 0 → 1 → 2 → 3 → 4 → 5 → 6 → 7 ┐

(4) When changing the rhythm, push the RHYTHM button and choose the desired setting.
   Each time RHYTHM is pushed, ♩ ♪♫ ♫ ♫ ♫ ♫ will change in order.

   You can fast-forward by holding down the button.
(5) The metronome can be activated by pushing the START/STOP button.
   The pendulum in the LCD display will go back and forth in sync with the tempo, and the LED will flash in sync with the movement of the pendulum.
(6) You can practice using your preferred metronome setting (refer to Figure 4)
(7) Push the START/STOP button to stop the metronome.
* Volume can be controlled using the volume dial.

Set the tempo using the TAP button
Perform the following operations in metronome mode
(1) Push the tap button a number of times in evenly spaced intervals. TAP will be shown in the LCD display when the TAP button is pushed.
   The device will measure the intervals between each push of the button and display the results in the tempo display in the LCD display.
* If the measured tempo is less than 30BPM, the tempo will be displayed as 30, and set as 30.
* If the measured tempo is higher than 250BPM, the tempo will be displayed as 250, and set as 250.
* Tempo can be set using the tap function while the metronome is activated

(2) The metronome can be activated using the START/STOP button.

Tempo LED
Flashes on every beat
Upbeat: Red
Downbeat: Green

Figure 4 Example of LCD display in METRONOME

USING THE METRONOME AND THE TUNER SIMULTANEOUSLY

This device allows you to use the tuner and the metronome simultaneously.

Practice methods using the tuner and metronome simultaneously
・Usage example
If you want to check whether your instrument is in tune or your pitch while practicing rhythm by playing with the metronome, the tuner can be used without deactivating the Metronome. Activate the device as follows.
(1) Push the Metronome ON/OFF button to activate the metronome.
(2) Set the tempo value.
(3) Activate the metronome by pushing the START/STOP button.
   Set the rhythm/beat as necessary.
(4) Activate the tuner mode by pushing the Tuner ON/OFF button.
   The tuning meter will be shown in the LCD display, which will allow you to check tuning etc. while the metronome is in motion.
(5) Play a single tone on your instrument to confirm/tune the pitch.
(6) If you want to deactivate the tuner, push the Tuner ON/OFF button.
   The device can be turned off by pushing the Tuner ON/OFF button along with the Metronome ON/OFF button.

OTHER FUNCTIONS

●External output
The sound of the metronome and the reference pitch can be output by connecting an external device to the output jack of this device via a cable.
The device can be amplified by connecting it to an external speaker or it can be listened to with earphones by plugging in earphones.
* A Φ3.5mm stereo plug should be used if connecting earphones to the device.
* It is recommended that volume control is done on the external device connected to the device. Furthermore, please check the volume beforehand when using earphones.

●Auto-poweroff
The product will turn off automatically if it is unused for a certain length of time. The length of time until the product turns off in each mode is as follows.
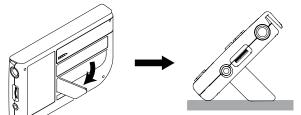・In tuner mode
  (1) When tuning with the tuning meter: 20 minutes after any operation or after 20 minutes waiting for tuning.
  (2) When sounding the reference note: 5 minutes after any operation.
・In metronome mode
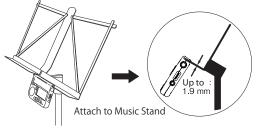   Metronome stand-by (during STOP) : after 20 minutes.
* The auto-poweroff function does not operate.

●How to use a stand
The device can be stood upright by using the stand on the back side of the device.

●How to use the slit to attach the device to a music stand
The device can be attached to a music stand by using the slit. When using this feature, make sure to slide the music stand deep into the slit. (The device can be attached to music stands that are up to 1.9mm in width)

Up to : 1.9 mm

Attach to Music Stand
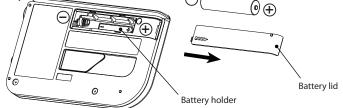
BATTERY REPLACEMENT

If the BATTERY MARK is shown in the LCD display, it means that it is time to change the battery.

☀ : Flashing battery charge: battery power remaining is getting low

▭ : Flashing battery mark: please change the battery soon

※Depending on the amount of battery power remaining, the sound from the device may change while the metronome is in motion, or the power may shut off. When this happens , the battery should be replaced regardless of whether the BATTERY MARK display is shown.

Battery mark

Turn the power OFF. Locate the battery lid on the back side of the tuner. Slide the battery lid in the direction of the arrow to remove it. Remove the depleted batteries. Install new batteries in the battery holder, making sure that the batteries are aligned with the polarity markings. Close the battery lid. After replacing the battery, confirm that the tuner functions normally.

Battery holder

Battery lid

* Be sure that the (+) and (-) terminals of the batteries are oriented correctly.
* Follow all local ordinances and regulations when disposing of depleted batteries.
* It is recommended to use AAA alkaline batteries. While nickel metal hydride (rechargeable) batteries can be used, the BATTERY MARK display may be displayed even when there is power remaining in the battery.
* The memory backup settings will be preserved even when the battery is replaced.
* Please remove and re-insert the batteries if a malfunction cannot be fixed by turning the device ON and OFF a number of times.

SPECIFICATIONS

■ Tuner
・Tuning mode : Auto , Manual , Sound
・Tuning range / Accuracy : A0 ~ C8 (for a sinewave), ±1 cent
・Reference tone range/Accuracy : C3 ~ C6 (37 notes), ±1 cent
・Pitch shift : A4= 415, 438 ~ 445Hz
・Other : M3/m3 mode(tuning support for major thirds(approximately -14 cents)/ minor thirds(approximately +16 cents))

■ Metronome
・Tempo range/Accuracy : 30 ~ 250 beats/min. (±0.1%)
・Beat : 0 ~ 7
・Rhythm types : ♩ ♪♫ ♫ ♫ ♫ ♫
■ Other
・Input : Built-in microphone, φ6mm jack (monaural)
・Output : φ3.5mm earphone jack, speaker
・Auto power-off : 20 min. (tuner), 5 min. (reference tone), 20 minutes (metronome stand-by)
・Memory backup : MANUAL MODE: Pitch name; SOUND mode: Octave/pitch name, reference pitch, M3/m3 mode, tempo, beat, rhythm
・Power supply : AAA Alkaline battery x 1 (1.5V)
・Battery life *2 : Approximately 70 hours (Continuous A4 input) Approximately 80 hours (continuous use at tempo 120, beat 4)
・Operating temperature range : 0°C - 40°C
・Dimensions/Weight : 114 (W) × 72(H) × 17(D) mm , approximately 96g (including batteries)
・Accessories : AAA Alkaline battery × 1 (for functionality testing), instruction manual

*2 : Depends on our measurement conditions/environment
* The design and specifications are subject to change without prior notice for product improvement.