

# Operation Guide 5441

CASIO®

Congratulations upon your selection of this CASIO watch.

ENGLISH

## Applications

This watch has built-in sensors that measure direction and temperature. Measurement results are indicated by the watch's hands and displays. These features make this watch useful when hiking, mountain climbing, or when engaging in other such outdoor activities.

### Warning!

- The measurement functions built into this watch are not intended for taking measurements that require professional or industrial precision. Values produced by this watch should be considered as reasonable representations only.
- When engaging in mountain climbing or other activities in which losing your way can create a dangerous or life-threatening situation, always use a second compass to confirm direction readings.
- Note that CASIO COMPUTER CO., LTD. assumes no responsibility for any damage or loss suffered by you or any third party arising through the use of this product or its malfunction.

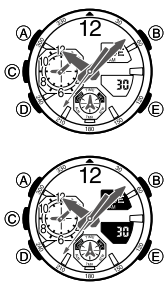
## Important!

- Whenever you use the digital compass of this watch for serious trekking, mountain climbing, or other activities, always be sure to take along another compass to confirm readings. If the readings produced by the digital compass of this watch are different from those of the other compass, perform bidirectional calibration of the digital compass to ensure more accurate readings.
- Direction readings and digital compass calibration will not be possible if the watch is in the vicinity of a permanent magnet (magnetic accessory, etc.), metal objects, high-voltage wires, aerial wires, or electrical household appliances (TV, computer, cellphone, etc.)

E

E-1

## About This Manual



- Depending on the model of your watch, display text appears either as dark figures on a light background, or light figures on a dark background. All examples in this manual are shown using dark figures on a light background.
- Button operations are indicated using the letters shown in the illustration.
- Note that the product illustrations in this manual are intended for reference only, and so the actual product may appear somewhat different than depicted by an illustration.

E-2

E-3

## Contents

|  |      |
|--|------|
| About This Manual .....  | E-2  |
| Things to check before using the watch .....                   | E-3  |
| Mode Reference Guide .....                                     | E-7  |
| Timekeeping .....  | E-13 |
| Configuring Home City Settings .....                           | E-14 |
| To configure Home City settings .....                          | E-14 |
| To change the daylight saving time (summer time) setting ..... | E-15 |
| Configuring Current Time and Date Settings .....               | E-16 |
| To change the current time and date settings .....             | E-16 |
| Hand Home Position Adjustment .....                            | E-19 |
| To adjust home positions .....                                 | E-19 |
| Using the Digital Compass .....                                | E-21 |
| To perform a digital compass operation .....                   | E-21 |
| To perform bidirectional calibration .....                     | E-25 |
| To perform magnetic declination correction .....               | E-27 |
| Taking Temperature Readings .....                              | E-31 |
| To take temperature readings .....                             | E-31 |
| To calibrate the temperature sensor .....                      | E-33 |

E-4

## Things to check before using the watch

### 1. Check the Home City and the daylight saving time (DST) setting.

Use the procedure under "To configure Home City settings" (page E-14) to configure your Home City and daylight saving time settings.

### Important!

Proper World Time Mode data depends on correct Home City, time, and date settings in the Timekeeping Mode. Make sure you configure these settings correctly.

### 2. Set the current time.

See "Configuring Current Time and Date Settings" (page E-16).

The watch is now ready for use.

|  |      |
|--|------|
| Specifying Temperature Unit .....                            | E-34 |
| To specify the temperature unit .....                        | E-34 |
| Checking the Current Time in a Different Time Zone .....     | E-35 |
| To enter the World Time Mode .....                           | E-35 |
| To configure World Time City and summer time settings .....  | E-36 |
| To swap your Home Time and World Time Cities .....           | E-37 |
| Using the Stopwatch .....                                    | E-38 |
| To enter the Stopwatch Mode .....                            | E-38 |
| To perform an elapsed time operation .....                   | E-38 |
| To pause at a split time .....                               | E-38 |
| To measure two finishes .....                                | E-39 |
| Using the Countdown Timer .....                              | E-40 |
| To enter the Countdown Timer Mode .....                      | E-40 |
| To specify the countdown start time .....                    | E-40 |
| To perform a countdown timer operation .....                 | E-41 |
| To stop the alarm .....                                      | E-41 |
| Using the Alarm .....  | E-42 |
| To enter the Alarm Mode .....                                | E-42 |
| To set an alarm time .....                                   | E-43 |
| To test the alarm .....                                      | E-43 |
| To turn an alarm and the Hourly Time Signal on and off ..... | E-44 |
| To stop the alarm .....                                      | E-44 |

E-5

|  |      |
|--|------|
| Illumination .....                                   | E-45 |
| To illuminate the display manually .....             | E-45 |
| To change the illumination duration .....            | E-45 |
| To enable or disable the auto light switch .....     | E-47 |
| Button Operation Tone .....                          | E-49 |
| To enable or disable the button operation tone ..... | E-49 |
| Low Battery Indication .....                         | E-50 |
| Troubleshooting .....                                | E-51 |
| Specifications .....                                 | E-55 |

E-6

## Mode Reference Guide

Your watch has 7 "modes". The mode you should select depends on what you want to do.

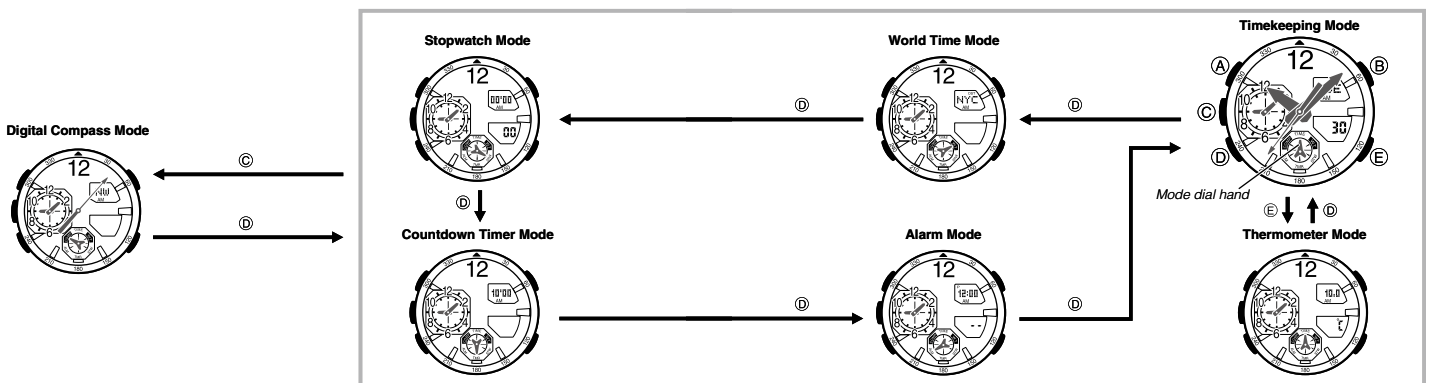
| To do this:   | Enter this mode:     | See: |
|---|----------------------|------|
| • View the current date in the Home City<br>• Configure Home City and daylight saving time (DST) settings<br>• Configure time and date settings | Timekeeping Mode     | E-13 |
| • Determine north and the bearing to a destination<br>• Determine your current location using the watch and a map                               | Digital Compass Mode | E-21 |
| Determine the temperature at your current location  | Thermometer Mode     | E-31 |
| View the current time in 48 cities (31 time zones) and UTC  | World Time Mode      | E-35 |
| Use the stopwatch to measure elapsed time   | Stopwatch Mode       | E-38 |
| Use the countdown timer   | Countdown Timer Mode | E-40 |
| Set an alarm time   | Alarm Mode           | E-42 |

E-7

## Selecting a Mode

- The illustration below shows which buttons you need to press to navigate between modes.
- To return to the Timekeeping Mode from any other mode, hold down **(D)** for about two seconds.

\* The mode dial hand indicates the watch's current mode.



E-8

E-9

## General Functions (All Modes)

The functions and operations described in this section can be used in all of the modes.

### Direct Timekeeping Mode Access

- To enter the Timekeeping Mode from any other mode, hold down **(D)** for about two seconds.

### Auto Return Features

- The watch will automatically return to the Timekeeping Mode if you do not perform any button operation for a particular amount of time in each mode.

| Mode Name                                 | Approximate Elapsed Time |
|---|--------------------------|
| Digital Compass                           | 1 minute                 |
| Thermometer                               | 1 to 2 minutes           |
| Alarm                                     | 2 to 3 minutes           |
| Setting screen (digital setting flashing) | 2 to 3 minutes           |

### Initial Screens

When you enter the Alarm, World Time, or Digital Compass Mode, the data you were viewing when you last exited the mode appears first.

### Scrolling

The **(C)** and **(B)** buttons are used on the setting screen to scroll through data on the display. In most cases, holding down these buttons during a scroll operation scrolls through the data at high speed.

E-10

## Moving the Hands Out of the Way for Better Viewing

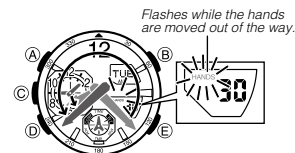
You can use the procedure below to temporarily move the hour and minute hands out of the way to better view what is on the display.

- This operation can be performed in any mode. In the case of a setting mode (setting flashing on the screen), the hands will move out of the way automatically, even if you do not perform the below operation.

1. While holding down **(E)**, press **(D)**.

- This will cause the hour and minute hands to move to a location where they do not block your view of the digital display.

Example: When the current time is 8:23



2. Holding down **(B)** again as you press **(D)** will cause the hands to return to their normal positions (normal timekeeping).

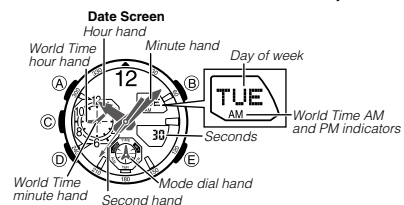
## Note

- Watch button functions are the same regardless of whether the hands are moved out of the way or at their normal positions.
- Changing to another mode will cause the hands to move back to their normal positions.
- The hands also will move back to their normal positions automatically if no operation is performed for about one hour.

E-12

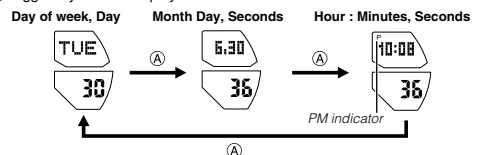
## Timekeeping

Use the Timekeeping Mode to view the current time and date, and the day of the week.



### Navigating between Display Screens

Each press of **(A)** toggles cycles the display screens as shown below.



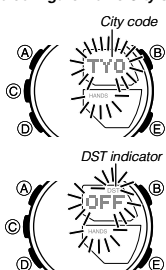
E-14

E-15

## Configuring Home City Settings

There are two Home City settings: actually selecting the Home City, and selecting either standard time or daylight saving time (DST).

### To configure Home City settings



- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
  - When you release **(A)** (after **ADJ** appears), city code will be flashing in the upper display. This is the setting mode.
  - Keep scrolling until the city code you want to select as your Home City is shown in the upper display.
  - For details about city codes, see the "City Code Table" at the back of this manual.
- Press **(D)**.
  - This will cause the **DST** indicator to appear in the upper display and the DST setting of the currently selected Home City to appear in the upper display.
- Press **(E)** to toggle the DST setting between daylight saving time (**ON**) and standard time (**OFF**).
  - Note that you cannot switch between standard time and daylight saving time (DST) while UTC is selected as your Home City.

5. After all of the settings are the way you want, press **(A)** to exit the setting screen.

- The **DST** indicator will be on the upper display while daylight saving time is turned on.

### Note

- After you specify a city code, the watch will use UTC\* offsets in the World Time Mode to calculate the current time for other time zones based on the current time in your Home City.
- \* Coordinated Universal Time, the world-wide scientific standard of timekeeping. The reference point for UTC is Greenwich, England.

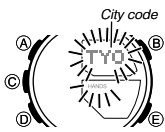
### To change the daylight saving time (summer time) setting

- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
  - When you release **(A)** (after **ADJ** appears), city code will be flashing in the upper display.
- Press **(D)**.
  - This will cause the **DST** indicator to appear in the upper display and the DST setting of the currently selected Home City to appear in the upper display.
- Press **(E)** to toggle the DST setting between daylight saving time (**ON**) and standard time (**OFF**).
- After all of the settings are the way you want, press **(A)** to exit the setting screen.
  - The **DST** indicator will be on the upper display while daylight saving time is turned on.

## Configuring Current Time and Date Settings

You can use the procedure below to adjust the Timekeeping Mode time and date settings if they are off. Changing the digital Home City data should cause the analog time setting to change accordingly. If the analog time does not indicate the digital time, check the home positions of the hands and make adjustments if necessary (page E-19).

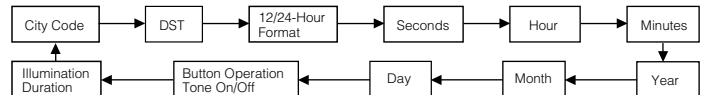
### To change the current time and date settings



- In the Timekeeping Mode, hold down (A) until **ADJ** appears in the upper display.
  - When you release (A) (after **ADJ** appears), city code will be flashing in the upper display.

E-16

2. Press (D) to move the flashing in the sequence shown below to select the other settings.



The following steps explain how to configure timekeeping settings only.

3. When the timekeeping setting you want to change is flashing, use (E) and/or (B) to change it as described below.

| Screen     | To do this:   | Do this:                       |
|------------|---|--------------------------------|
| TYO        | Change the city code  | Use (E) (East) and (B) (West). |
| DST<br>OFF | Toggle between daylight saving time (ON) and standard time (OFF).   | Press (E).                     |
| 12H        | Toggle between 12-hour (12H) and 24-hour (24H) timekeeping.   | Press (E).                     |
| 36         | Reset the seconds to <b>00</b> (If the current seconds count is between 30 and 59, one is added to the minute count). | Press (E).                     |
| P<br>10:08 | Change the hour or minutes  | Use (E) (+) and (B) (-).       |
| 2015.6.30  | Change the year, month, or day  |                                |

E-17

4. After all of the settings are the way you want, press (A) to exit the setting screen.

### Note

- For information about selecting a Home City and configuring the DST setting, see "Configuring Home City Settings" (page E-14).
- While the 12-hour format is selected for timekeeping, a **P** (PM) indicator will appear for times from noon to 11:59 p.m. No indicator appears for times from midnight to 11:59 a.m. With 24-hour format, time is displayed from 0:00 to 23:59, without any **P** (PM) indicator.
- The watch's built-in full automatic calendar makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except after you have the watch's battery replaced.
- The day of the week changes automatically as the date and/or year changes. Make sure that your date and year settings are correct.
- Refer to the pages shown below for more information on Timekeeping Mode settings.
  - Button operation tone on/off: "To enable or disable the button operation tone" (page E-49)
  - Illumination duration setting: "To change the illumination duration" (page E-45)

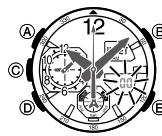
E-18

## Hand Home Position Adjustment

Strong magnetism or impact can cause the hands of the watch to be off.

Home position adjustment is not necessary when the analog time and digital time are the same time in the Timekeeping Mode.

### To adjust home positions



- In the Timekeeping Mode, hold down (A) and keep it depressed for about five seconds until **H.SET** appears on the upper display.
  - When you release (A) after **H.SET** appears, the second hand will move to 12 o'clock. This indicates the second hand home position adjustment mode.
  - Though **ADJ** will appear in the upper display about two seconds after you hold down (A), do not release the button yet. Keep it depressed until **H.SET** appears.
  - Home position adjustment is performed in the following sequence: second hand, current time hour and minute hand, World Time hour and minute hand, mode hand.

2. Use (D) to select the hand (s) you want to adjust.

The selected hand (s) will move to 12 o'clock, and the upper display and lower display will show the information below.

| Upper display        | Lower display      | Selected hand                    |
|----------------------|--------------------|----------------------------------|
| <b>H.SET</b>         | Flashing <b>00</b> | Second hand                      |
| Flashing <b>0:00</b> | Not displayed      | Hour and minute hands            |
| Flashing <b>SUB</b>  | Flashing <b>1</b>  | World Time hour and minute hands |
| Flashing <b>SUB</b>  | Flashing <b>2</b>  | Mode dial hand                   |

E-19

- If the selected hand does not move exactly to 12 o'clock, perform step 3 below to adjust it.
- The watch will return to regular timekeeping automatically if you do not perform any operation for about two or three minutes. Any changes you have made to settings up to that point will be saved.

3. Use (E) (+) and (B) (-) to adjust the position of the currently selected hand.

- Holding down either button will cause the hand to move at high speed. Once started, high-speed hand movement will continue even if you release the button. To stop high-speed hand movement, press any button.
- The second hand and mode dial hand will automatically stop high-speed movement after they complete one revolution. The minute hand will stop automatically after 12 revolutions.

4. Press (A) to exit home position correction and return to regular timekeeping.

### Note

After performing home position adjustment, check to make sure that the analog hands and the upper display indicate the same time. If they do not, perform home position adjustment again.

E-20

## Using the Digital Compass

You can use the Digital Compass Mode to determine the direction of north, and to check your bearing to a destination.

For information about what you can do to improve digital compass reading accuracy, see "Calibrating the Bearing Sensor" (page E-24) and "Digital Compass Precautions" (page E-29).

### To perform a digital compass operation

- Place the watch on a flat surface. If you are wearing the watch, make sure that your wrist is horizontal (in relation to the horizon).
- Point the 12 o'clock position of the watch in the direction you want to check.
- In any mode (except a setting mode), press (C) to perform a digital compass operation.
  - This will cause the mode dial hand to move to **COMP**.
  - After about two seconds, the second hand will point in the direction of magnetic north, and the upper display will show the direction or the bearing angle that 12 o'clock is pointed.
  - Press (A) to toggle the upper display between the direction and the bearing angle.

E-21

### Digital Compass Readings

- After the first reading is obtained, the watch will continue to take digital compass readings automatically for about one minute. After readings are complete, the watch will return to the mode you were in immediately before entering the Digital Compass Mode.
- The auto light switch is disabled while a Digital Compass reading operation is in progress.
- The following table shows the meanings of each of the direction abbreviations that appear on the upper display.

| Direction | Meaning | Direction  | Meaning         | Direction | Meaning   | Direction  | Meaning         |
|-----------|---------|------------|-----------------|-----------|-----------|------------|-----------------|
| <b>N</b>  | North   | <b>NNE</b> | North-northeast | <b>NE</b> | Northeast | <b>ENE</b> | East-northeast  |
| <b>E</b>  | East    | <b>ESE</b> | East-southeast  | <b>SE</b> | Southeast | <b>SSE</b> | South-southeast |
| <b>S</b>  | South   | <b>SSW</b> | South-southwest | <b>SW</b> | Southwest | <b>WSW</b> | West-southwest  |
| <b>W</b>  | West    | <b>WNW</b> | West-northwest  | <b>NW</b> | Northwest | <b>NNW</b> | North-northwest |

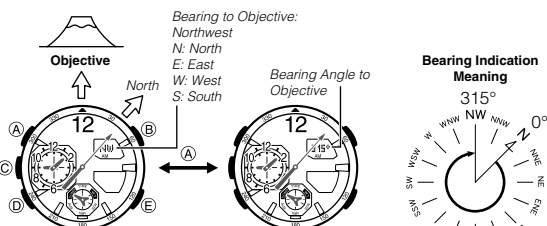
- The margin of error for the angle value and the direction indicator is  $\pm 15$  degrees while the watch is horizontal (in relation to the horizon). If the indicated direction is northwest (**NW**) and 315 degrees, for example, the actual direction can be anywhere from 300 to 330 degrees.
- Note that performing a digital compass operation while the watch is not horizontal (in relation to the horizon) can result in large error.
- You can calibrate the bearing sensor if you suspect the direction reading is incorrect.

\* See "Digital Compass Readings" (page E-23) for information about how direction readings are indicated by the watch.

4. To return to the mode you were in immediately before entering the Digital Compass Mode, press (D). To enter the Timekeeping Mode, hold down (D) for at least two seconds.

E-22

E-23



- Any ongoing digital compass operation is paused temporarily while the watch is performing an alert operation (daily alarm, Hourly Time Signal, countdown timer alarm) or while illumination is turned on (by pressing **B**). The digital compass operation resumes for its remaining duration after the operation that caused it to pause is finished.
- See "Digital Compass Precautions" (page E-29) for important information about taking direction readings.
- The direction indicated by the Digital Compass is magnetic north.
- You can use Magnetic Declination Correction to configure the watch to indicate true north, if you want. For details, see "Magnetic Declination Correction" below, "To perform magnetic declination correction" (page E-27), and "Magnetic North and True North" (page E-29).

## Calibrating the Bearing Sensor

You should calibrate the bearing sensor whenever you feel that the direction readings being produced by the watch are off. You can use any one of two different bearing sensor calibration methods: bidirectional calibration or magnetic declination correction.

### Bidirectional Calibration

Bidirectional calibration calibrates the bearing sensor in relation to magnetic north. Use bidirectional calibration when you want to take readings within an area exposed to magnetic force. This type of calibration should be used if the watch becomes magnetized for any reason.

### Important!

- To ensure correct direction readings by the digital compass, be sure to perform bidirectional calibration before using it. The digital compass may produce incorrect direction readings if you do not perform bidirectional calibration.

E-24

### Magnetic Declination Correction

With magnetic declination correction, you select a declination angle direction and input a magnetic declination angle (difference between magnetic north and true north), which allows the watch to indicate true north. You can perform this procedure when the magnetic declination angle is indicated on the map you are using.

### Precautions about bidirectional calibration

- You can use any two opposing directions for bidirectional calibration. You must, however, make sure that they are 180 degrees opposite each other. Remember that if you perform the procedure incorrectly, you will get wrong bearing sensor readings.
- Do not move the watch while calibration of either direction is in progress.
- You should perform bidirectional calibration in an environment that is the same as that where you plan to be taking direction readings. If you plan to take direction readings in an open field, for example, calibrate in an open field.

### To perform bidirectional calibration



- In the Digital Compass Mode, hold down **A**.
  - The second hand will move to 12 o'clock, indicating the bidirectional calibration mode.
  - At this time, the upper display will show an upward pointing arrow (**↑**) and the lower display will show **1**, indicating that the watch is ready for calibration of the first direction.

- Place the watch on a level surface facing any direction you want, and press **C**.
  - This will start calibration of the first direction.
  - is shown on the lower display while calibration is being performed.
  - When calibration of the first direction is successful, **OK** appears in the upper display and the arrow changes to downward pointing (**↓**). The lower display will show **2**, indicating that the watch is ready for calibration of the second direction.
- Rotate the watch 180 degrees.
- Press **C** again.
  - This will start calibration of the second direction.
  - is shown on the lower display while calibration is being performed.
  - After calibration is successful, **OK** appears in the upper display and the arrow changes to downward pointing (**↓**).
  - ERR** will appear on the upper display for a short while if an error occurs. After that, the screen will automatically return to the first direction calibration screen (the one that appears after **A** is held down in step 1).

E-26

### To perform magnetic declination correction

Magnetic declination direction (E, W) and angle



- In the Digital Compass Mode, hold down **A**.
  - The second hand will move to 12 o'clock, indicating the bidirectional calibration mode.
- Press **D**.
  - The watch will enter the magnetic declination correction mode.
  - The upper display will show the magnetic declination direction (E, W) and angle.

- Use **B** and **E** to change the magnetic declination direction and angle setting as required.

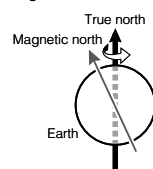
| North Setting  | Setting  |
|----------------|--|
| Magnetic North | 0° (OFF)   |
| True North     | E 90° to W 90°<br>E: East declination (Magnetic north is east of true north.)<br>W: West declination (Magnetic north is west of true north.) |

- Note that you can input the declination angle in whole degree units only, so you may need to round off the value specified on the map. If your map indicates the declination angle as 7.4°, you should input 7°. In the case of 7.6° input 8°, for 7.5° you can input 7° or 8°.
- Holding down **B** or **E** will scroll the setting at high speed.
- You can turn off (**0° (OFF)**) magnetic declination correction by pressing **B** and **E** at the same time.
- The illustration, for example, shows the value you should input and the direction setting you should select when the map shows a magnetic declination of 7° West.

- When the setting is the way you want, press **A** to exit the setting screen.

E-28

### Digital Compass Precautions Magnetic North and True North



The northerly direction can be expressed either as magnetic north or true north, which are different from each other. Also, it is important to keep in mind that magnetic north moves over time.

- Magnetic north is the north that is indicated by the needle of a compass.
- True north, which is the location of the North Pole of the Earth's axis, is the north that is normally indicated on maps.
- The difference between magnetic north and true north is called the "declination". The closer you get to the North Pole, the greater the declination angle.

### Location

- Taking a direction reading when you are near a source of strong magnetism can cause large errors in readings. Because of this, you should avoid taking direction readings while in the vicinity of the following types of objects: permanent magnets (magnetic necklaces, etc.), concentrations of metal (metal doors, lockers, etc.), high tension wires, aerial wires, household appliances (TVs, personal computers, washing machines, freezers, etc.)
- Accurate readings are also impossible indoors, especially inside ferroconcrete structures. This is because the metal framework of such structures picks up magnetism from appliances, etc.
- Accurate direction readings are impossible while in a train, boat, air plane, etc.

## Storage

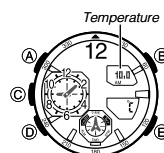
- The precision of the bearing sensor may deteriorate if the watch becomes magnetized. Because of this, you should store the watch away from magnets or any other sources of strong magnetism, including: permanent magnets (magnetic necklaces, etc.), concentrations of metal (metal doors, lockers, etc.), and household appliances (TVs, personal computers, washing machines, freezers, etc.)
- Whenever you suspect that the watch may have become magnetized, perform the procedure under "To perform bidirectional calibration" (page E-25).

E-30

## Taking Temperature Readings

This watch uses a temperature sensor to measure temperature.

### To take temperature readings



- While in the Timekeeping Mode, press **E**.
  - TEMP** will appear in the upper display and temperature measurement will start. After about one second, the measurement reading will appear in the upper display.
  - The watch will continue to take temperature readings every five seconds for about two minutes.
  - The watch will return to the Timekeeping Mode after the reading operation is complete (about two minutes).
  - Press **E** to restart temperature readings.
  - Pressing **D** while a reading operation is in progress will stop the operation and enter the Timekeeping Mode.

### Temperature

- Temperature is displayed in units of 0.1°C (or 0.2°F).
- The displayed temperature value changes to --- °C (or °F) if a measured temperature falls outside the range of -10.0°C to 60.0°C (14.0°F to 140.0°F). The temperature value will reappear as soon as the measured temperature is within the allowable range.

E-25

E-27

E-29

E-31

## Display Units

You can select either Celsius (°C) or Fahrenheit (°F) for the displayed temperature value. See "To specify the temperature unit" (page E-34).

## Temperature Sensor Calibration

The temperature sensor built into the watch is calibrated at the factory and normally requires no further adjustment. If you notice serious errors in the temperature readings produced by the watch, you can calibrate the sensor to correct the errors.

### Important!

- Incorrectly calibrating the temperature sensor can result in incorrect readings. Carefully read the following before doing anything.
  - Compare the readings produced by the watch with those of another reliable and accurate thermometer.
  - If adjustment is required, remove the watch from your wrist and wait for 20 or 30 minutes to give the temperature of the watch time to stabilize.

## To calibrate the temperature sensor



1. Take a reading with another measurement device to determine the exact current temperature.
2. With the watch in the Timekeeping Mode, press (E) to enter the Thermometer Mode.
3. Hold down (A) for about two seconds until the temperature reading disappears from the bottom display. Release (A) at this time, which will cause the temperature reading to flash, which indicates the setting mode.
4. Use (E) (+) and (B) (-) to calibrate the temperature value with the reading of another instrument.
  - Each press of a button changes the temperature value in units of 0.1°C (0.2°F).
  - To return the temperature to its uncalibrated value (OFF setting), press (E) and (B) at the same time.
5. Press (A) to complete calibration and restart the temperature reading operation.

## Thermometer Precautions

Temperature measurements are affected by your body temperature (while you are wearing the watch), direct sunlight, and moisture. To achieve a more accurate temperature measurement, remove the watch from your wrist, place it in a well ventilated location out of direct sunlight, and wipe all moisture from the case. It takes approximately 20 to 30 minutes for the case of the watch to reach the actual surrounding temperature.

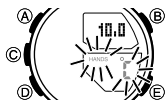
## Specifying Temperature Unit

Use the procedure below to specify the temperature unit to be used in the Thermometer Mode.

### Important!

When TOKYO is selected as the Home City, the temperature unit is set automatically to Celsius (°C). This setting cannot be changed.

### To specify the temperature unit

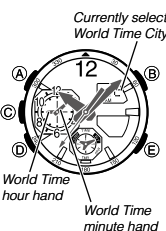


1. In the Timekeeping Mode, press (E) to enter the Thermometer Mode.
2. Hold down (A) for about two seconds until the temperature reading starts to flash.
3. Press (D) to display the current temperature unit in the upper display.
4. Press (E) to toggle the temperature unit between °C (Celsius) and °F (Fahrenheit).
5. After the setting is the way you want, press (A) to exit the setting screen.

## Checking the Current Time in a Different Time Zone

You can use the World Time Mode to view the current time in one of 31 time zones (48 cities) around the globe. The city that is currently selected in the World Time Mode is called the "World Time City". You also can swap the current World Time City and Home Time City in the World Time Mode (page E-37).

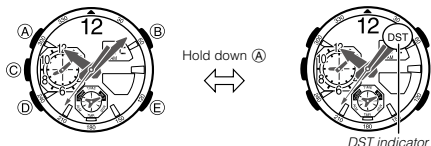
### To enter the World Time Mode



- Use (D) to select the World Time Mode as shown on page E-8.
- The mode dial hand will point to **WT**.
  - The city code of the currently selected World Time City will appear in the upper display.
  - Pressing (A) displays the current time (hour, minute second) of the World Time City in the upper display.

## To configure World Time City and summer time settings

1. In the World Time Mode, use (E) (East) to scroll through city codes.
  - For details about city codes, see the "City Code Table" at the back of this manual.
  - Holding down (E) will scroll at high speed.
  - Pressing down (B) and (E) at the same time will jump to the UTC city code.
2. To toggle between summer time (DST in the upper display) and standard time (DST not displayed), hold down (A).



- Using the World Time Mode to change the DST setting of the city code that is selected as your Home City also will change the Timekeeping Mode time DST setting.
- Note that you cannot switch between standard time/daylight saving time (DST) while **UTC** is selected as the World Time City.
- Note that the standard time/daylight saving time (DST) setting affects only the currently selected city code. Other city codes are not affected.

## Swapping the Home City and World Time City

You can use the procedure below to swap your Home Time City with your World Time City. This function comes in handy for those who often travel between two different time zones.

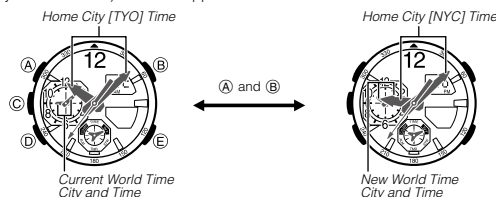
- You need to configure starting Home City and World Time City settings before performing the procedure below.

To configure Home City settings (page E-14)

To configure World Time City and summer time settings (page E-36)

### To swap your Home Time and World Time Cities

- Press (A) and (B) at the same time.
- The Home City time (indicated by the main hour and minute hands) and the World Time City time (indicated by the dial hands) will be swapped with each other.

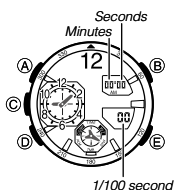


## Using the Stopwatch

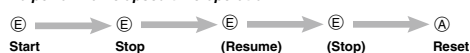
The stopwatch measures elapsed time, split times, and two finishes.

### To enter the Stopwatch Mode

Use (D) to select the Stopwatch Mode as shown on page E-8. The mode dial hand will move to **STW**.



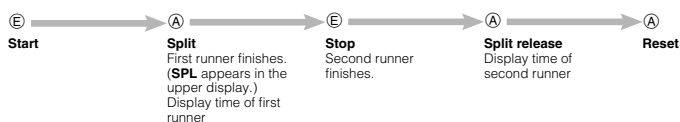
### To perform an elapsed time operation



### To pause at a split time



### To measure two finishes



### Note

- The Stopwatch Mode can indicate elapsed time up to 59 minutes, 59.99 seconds.
- Once started, stopwatch timing continues until you press (E) to stop it, even if you exit the Stopwatch Mode to another mode and even if timing reaches the stopwatch limit defined above.
- Exiting the Stopwatch Mode while a split time is frozen on the display clears the split time.

## Using the Countdown Timer

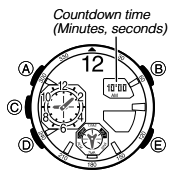
The countdown timer can be configured to start at a preset time and sound an alarm when the end of the countdown is reached.

### To enter the Countdown Timer Mode

Use **(D)** to select the Countdown Timer Mode as shown on page E-8.

- The mode dial hand will move to **TMR** and the upper display will show the current countdown time.

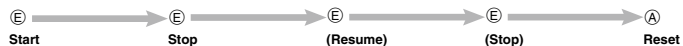
### To specify the countdown start time



1. Enter the Countdown Timer Mode.
  - If a countdown is in progress (indicated by the seconds counting down), press **(E)** to stop it and then press **(A)** to reset to the current countdown start time.
  - If a countdown is paused, press **(A)** to reset to the current countdown start time.
2. Hold down **(A)** until the minute setting of the current countdown start time starts to flash. This is the setting screen.
3. Use **(E)** (+) and **(B)** (-) to change the minute.
  - To set the starting value of the countdown time to 60 minutes, set **60'00**.
4. Press **(A)** to exit the setting screen.

E-40

### To perform a countdown timer operation



- Before starting a countdown timer operation, check to make sure that a countdown operation is not already in progress (indicated by the seconds counting down). If it is, press **(E)** to stop it and then **(A)** to reset to the countdown start time.
- An alarm sounds for ten seconds when the end of the countdown is reached. This alarm will sound in all modes. The countdown time is reset to its starting value automatically after the alarm sounds.

### To stop the alarm

Press any button.

E-41

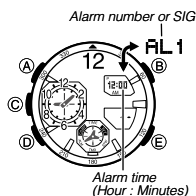
## Using the Alarm

You can set five independent daily alarms.

When an alarm is turned on, an alarm will sound for about 10 seconds each day when the time in the Timekeeping Mode reaches the preset alarm time. This is true even if the watch is not in the Timekeeping Mode.

You can also turn on an Hourly Time Signal, which will cause the watch to beep twice every hour on the hour.

### To enter the Alarm Mode



- Use **(D)** to select the Alarm Mode as shown on page E-8.
- The mode dial hand will move to **ALM**.
  - The upper display will initially show the currently selected alarm number indicator (**AL1** to **AL5**) or the hourly time signal indicator (**SIG**). Next, the indicator will alternate with the alarm time setting (in the case of an alarm) or **:00** (in the case of the hourly time signal).

### To set an alarm time

1. In the Alarm Mode, use **(E)** to scroll through the alarm screens in the upper display until the one you want to change is shown.



2. Hold down **(A)** until the hour digits of the alarm setting start to flash in the upper display.
  - This is the setting screen.



3. Press **(D)** to move the flashing between the hour and minute settings.
4. While a setting is flashing, use **(E)** (+) and **(B)** (-) to change it.
  - When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (no indicator) or p.m. (**P** indicator).
5. Press **(A)** to exit the setting screen.

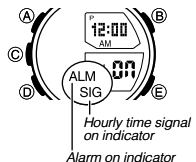
### To test the alarm

In the Alarm Mode, hold down **(E)** to sound the alarm.

E-42

E-43

### To turn an alarm and the Hourly Time Signal on and off



1. In the Alarm Mode, use **(E)** to select an alarm or the Hourly Time Signal.
2. When the alarm or the Hourly Time Signal you want is selected, press **(A)** to turn it on (**on**) and off (**-**).

- The alarm on indicator (when any alarm is on), and the Hourly Time Signal on indicator (when the Hourly Time Signal is on) are shown on the lower display in all modes.

### To stop the alarm

Press any button.

## Illumination

The display of the watch is illuminated for easy reading in the dark. The watch's auto light switch turns on the illumination automatically when you angle the watch towards your face.

- The auto light switch must be enabled (page E-47) for it to operate.

### To illuminate the display manually



Press **(B)** in any mode (except when a flashing setting screen is displayed) to illuminate the display.

- You can use the procedure below to select either 1.5 seconds or 3 seconds as the illumination duration. When you press **(B)**, the display will remain illuminated for about 1.5 seconds or 3 seconds, depending on the current illumination duration setting.
- The above operation illuminates the display regardless of whether the auto light switch is enabled or disabled.

### To change the illumination duration

1. In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
  - When you release **(A)** (after **ADJ** appears), city code will be flashing in the upper display. This is the setting mode.
2. Use **(D)** to cycle through the settings on the upper display until the current illumination duration (**LT1** or **LT3**) is shown.
  - See the sequence in step 2 of the procedure under "To change the current time and date settings" (page E-16) for information about how to scroll through setting screens.

E-44

E-45

3. Press **(E)** to toggle the illumination duration between three seconds (**LT3** displayed) and 1.5 seconds (**LT1** displayed).

4. After all of the settings are the way you want, press **(A)** to exit the setting screen.

### About the Auto Light Switch

While the Auto Light Switch is enabled, illumination will turn on whenever you position your wrist as described below in any mode. **Moving the watch to a position that is parallel to the ground and then tilting it towards you more than 40 degrees causes illumination to turn on.**

#### Warning!

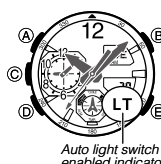
- Always make sure you are in a safe place whenever you are reading the display of the watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not startle or distract others around you.
- When you are wearing the watch, make sure that its auto light switch is turned off before riding on a bicycle or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can create a distraction, which can result in a traffic accident and serious personal injury.



#### Note

- The auto light switch is always disabled, regardless of its enabled/disabled setting, when any one of the following conditions exists.
  - While an alarm is sounding
  - While the watch is in the Digital Compass Mode
  - While a hand shift operation is in progress
- If you have Auto Light enabled, display illumination may be delayed if you angle the watch towards your face while a temperature reading operation is being performed.

### To enable or disable the auto light switch



In the Timekeeping Mode, hold down **(B)** for about three seconds to toggle the auto light switch between enabled (**LT** shown in the lower display) and disabled (**LT** not displayed).

- The auto light switch enabled indicator (**LT**) is on the lower display in all modes while the auto light switch is turned enabled.
- The auto light switch remains enabled for about six hours. After that it disables automatically.

### Illumination Precautions

- Illumination may be hard to see when viewed under direct sunlight.
- Illumination turns off automatically whenever an alarm sounds.
- Frequent use of illumination runs down the battery.

E-46

E-47

## Auto light switch precautions



- Illumination may not turn on if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- Illumination turns off after the preset illumination duration (page E-45), even if you keep the watch pointed towards your face.
- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If illumination does not turn on, try moving the watch back to the starting position (parallel with the ground) and then tilt it back towards your face again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.

E-48

## Button Operation Tone

When enabled, the button operation tone sounds any time you press one of the watch's buttons. You can enable or disable the button operation tone as desired.

- Even if you disable the button operation tone, the alarm, Hourly Time Signal, and Countdown Timer Mode alarm all operate normally.

### To enable or disable the button operation tone

- In the Timekeeping Mode, hold down **(A)** until **ADJ** appears in the upper display.
  - When you release **(A)** (after **ADJ** appears), city code will be flashing in the upper display.
- Use **(D)** to cycle through settings on the upper display until the current button operation tone setting (**MUTE** or **KEY J**) is shown.
  - See the sequence in step 2 of the procedure under "To change the current time and date settings" (page E-16) for information about how to scroll through setting screens.
- Press **(E)** to toggle the button operation tone setting between enabled (**KEY J**) and disabled (**MUTE**).
- After the setting is the way you want, press **(A)** to exit the setting screen.



E-49

## Low Battery Indication

A low battery indicator appears on the display when battery power is low. Have the batteries replaced as soon as possible.

### Note

- For information about battery life guidelines and supported battery types, see the product specifications.
- See "Specifications" (page E-55).

The conditions below are in effect while the low battery indicator is flashing.

### Low battery indicator



- All hands are stopped.
- Except for the low battery indicator, all other display functions are disabled.
- Watch tones are disabled.
- Display illumination is disabled.
- Watch operations are disabled.

### Note

- Sequentially or repeatedly performing sensor, light, alarm, and other power intensive operations over a short period can cause a sudden drop in battery power, which will make the low battery indicator flash. Even though the low battery indicator may disappear and watch functions may become re-enabled, battery replacement is recommended.

E-50

## Troubleshooting

### Time Setting

#### ■ The current time setting is off by a couple of hours.

Your Home City setting may be wrong (page E-14). Check your Home City setting and correct it, if necessary.

#### ■ The current time setting is off by one hour.

You may need to change your Home City's standard time/daylight saving time (DST) setting. Use the procedure under "To change the current time and date settings" (page E-16) to change the standard time/daylight saving time (DST) setting.

### World Time Mode

#### ■ The time for my World Time City is off in the World Time Mode.

This could be due to incorrect switching between standard time and daylight saving time. See "To configure World Time City and summer time settings" (page E-36) for more information.

E-51

## Batteries

### ■ The low battery indicator is flashing on the digital display.

#### Low battery indicator



The watch's battery power is low. Have the batteries replaced as soon as possible.

See "Low Battery Indication" (page E-50).

E-52

## Bearing and Temperature Readings

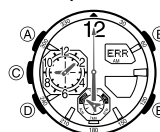
### ■ The temperature unit setting won't change.

The temperature unit setting is always Celsius (°C) whenever **TOKYO** is selected as the Home City. In this case, the setting cannot be changed.

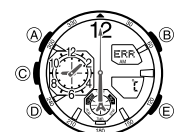
### ■ "ERR" appears while a sensor operation is in progress.

Subjecting the watch to strong impact can cause sensor malfunction or improper contact of internal circuitry. When this happens, **ERR** (error) will appear on the upper display and sensor operations will be disabled.

#### Digital Compass Operation



#### Temperature Measurement



- If **ERR** appears while a measurement operation is being performed in a sensor mode, restart the measurement. If **ERR** appears on the upper display again, it can mean there is something wrong with the sensor.
- If **ERR** keeps appearing during measurement, it could mean there is a problem with the applicable sensor.

E-53

### ■ "ERR" appears on the upper display following bidirectional calibration.

If --- appears and then changes to **ERR** (error) on the calibration screen, it means that there is something wrong with the sensor.

- If **ERR** disappears after about one second, try performing the calibration again.
- If **ERR** keeps appearing, contact your original dealer or nearest authorized CASIO distributor to have the watch checked.

Whenever you have a sensor malfunction, take the watch to your original dealer or nearest authorized CASIO distributor as soon as possible.

### ■ Incorrect direction readings.

- Incorrect bidirectional calibration. Perform bidirectional calibration (page E-25).
- Nearby source of strong magnetism, such as a household appliance, a large steel bridge, a steel beam, overhead wires, etc., or an attempt to perform direction measurement on a train, boat, etc. Move away from large metal objects and try again.

### ■ Different results produced by direction readings taken at the same location.

Magnetism generated by nearby high-tension wires is interfering with detection of terrestrial magnetism. Move away from the high-tension wires and try again.

### ■ Problems taking direction readings indoors.

A TV, personal computer, speakers, or some other object is interfering with terrestrial magnetism readings. Move away from the object causing the interference or take the direction reading outdoors. Indoor direction readings are particularly difficult inside ferro-concrete structures. Remember that you will not be able to take direction readings inside of trains, airplanes, etc.

E-54

## Specifications

**Accuracy at normal temperature:** ±15 seconds a month

**Digital Timekeeping:** Hour, minutes, seconds, p.m. (P), month, day, day of the week

Time format: 12-hour and 24-hour

Calendar system: Full Auto-calendar pre-programmed from the year 2000 to 2099

Other: Two display formats (month, day or time); Home City code (can be assigned one of 48 city codes); standard time / daylight saving time (summer time)

**Analog Timekeeping:** Hour, minutes (hand moves every 10 seconds), seconds, World Time timekeeping (Hands move every 20 seconds.)

**Digital Compass:** Continuous readings for one minute: 16 directions; Angle value 0° to 359°; Hand indication of north; Calibration (bidirectional); Magnetic declination correction

### Thermometer:

Measurement and display range: -10.0°C to 60.0°C (or 14.0°F to 140.0°F)

Display unit: 0.1°C (or 0.2°F)

Measurement timing: Every five seconds in the Thermometer Mode

Other: Calibration; Selectable measurement unit

### Bearing Sensor Precision:

Direction: Within ±15°

Values are guaranteed for a temperature range of -10°C to 40°C (14°F to 104°F).

North indicated by second hand: Error within ±20°.

### Temperature Sensor Precision:

±2°C (±3.6°F) in range of -10°C to 60°C (14.0°F to 140.0°F)

**World Time:** 48 cities (31 time zones)+ UTC; Home City/World Time City swapping

Other: daylight saving time/standard time

E-55

**Stopwatch:**

Measuring unit: 1/100 second  
 Measuring capacity: 59' 59.99"  
 Measuring modes: Elapsed time, split time, two finishes

**Countdown Timer:**

Measuring unit: 1 second  
 Countdown range: 60 minutes  
 Setting ranges: Countdown start time (1 to 60 minutes, 1-minute increments)

**Alarms:** 5 daily alarms; Hourly Time Signal

**Illumination:** LED light; Selectable illumination duration (approximately 1.5 seconds or 3 seconds); Auto Light Switch

**Other:** Button operation tone on/off, Low battery alert; Moving the Hands to View the Digital Display

**Battery:** Two silver oxide batteries (Type: SR927W)

Approximate battery operating time: 2 years under the following conditions:

- 1 illumination operation (1.5 seconds) per day
- Alarm: 10 seconds/day
- Direction readings: 20 times/month
- Temperature readings: Once/week

*Frequent use of illumination runs down the battery. Particular care is required when using the auto light switch (page E-46).*



## City Code Table

E-56

L-1

**City Code Table**

| City Code | City name      | UTC Offset/<br>GMT Differential |
|-----------|----------------|---------------------------------|
| PPG       | PAGO PAGO      | -11                             |
| HNL       | HONOLULU       | -10                             |
| ANC       | ANCHORAGE      | -9                              |
| YVR       | VANCOUVER      | -8                              |
| LAX       | LOS ANGELES    | -8                              |
| YEA       | EDMONTON       | -7                              |
| DEN       | DENVER         | -7                              |
| MEX       | MEXICO CITY    | -6                              |
| CHI       | CHICAGO        | -6                              |
| NYC       | NEW YORK       | -5                              |
| SCL       | SANTIAGO       | -4                              |
| YHZ       | HALIFAX        | -4                              |
| YYT       | ST. JOHN'S     | -3.5                            |
| RIO       | RIO DE JANEIRO | -3                              |
| FEN       | F. DE NORONHA  | -2                              |
| RAI       | PRAIA          | -1                              |

| City Code | City name | UTC Offset/<br>GMT Differential |
|-----------|-----------|---------------------------------|
| UTC       |           |                                 |
| LIS       | LISBON    | 0                               |
| LON       | LONDON    | 0                               |
| MAD       | MADRID    | 0                               |
| PAR       | PARIS     | 0                               |
| ROM       | ROME      | +1                              |
| BER       | BERLIN    | +1                              |
| STO       | STOCKHOLM | +1                              |
| ATH       | ATHENS    | +1                              |
| CAI       | CAIRO     | +2                              |
| JRS       | JERUSALEM | +2                              |
| MOW       | MOSCOW    | +3                              |
| JED       | JEDDAH    | +3                              |
| THR       | TEHRAN    | +3.5                            |
| DXB       | DUBAI     | +4                              |
| KBL       | KABUL     | +4.5                            |
| KHI       | KARACHI   | +5                              |

| City Code | City name  | UTC Offset/<br>GMT Differential |
|-----------|------------|---------------------------------|
| DEL       | DELHI      | +5.5                            |
| KTM       | KATHMANDU  | +5.75                           |
| DAC       | DHAKA      | +6                              |
| RGN       | YANGON     | +6.5                            |
| BKK       | BANGKOK    | +7                              |
| SIN       | SINGAPORE  | +7                              |
| HKG       | HONG KONG  | +8                              |
| BJS       | BEIJING    | +8                              |
| TPE       | TAIPEI     | +8                              |
| SEL       | SEOUL      | +9                              |
| TYO       | TOKYO      | +9                              |
| ADL       | ADELAIDE   | +9.5                            |
| GUM       | GUAM       | +10                             |
| SYD       | SYDNEY     | +10                             |
| NOU       | NOUMEA     | +11                             |
| WLG       | WELLINGTON | +12                             |

- This table shows the city codes of this watch. (As of December 2014)
- The rules governing global times (UTC offset and GMT differential) and summer time are determined by each individual country.

L-2

L-3