

S321

0410

SEIKO
セイコーデジタル
タイムキーパー
取扱説明書
INSTRUCTION

S321

このたびは セイコーデジタルタイムキーパー
S321をお買い上げいただきありがとうございます。
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うえ正しくご愛用くださいますようお願い申し上
げます。なおこの取扱説明書はお手もとに保存し、
必要に応じてご覧ください。

FEATURES OF SEIKO TIMEKEEPER Cal. S321

The SEIKO Timekeeper Cal. S321 is a digital timer with alarm which can be set easily for a desired amount of time with the rotary switch. It has also the stopwatch function and others useful for sports.

Easy for starting the timer

- All that is required to set the timer is just to turn the rotary switch to the desired minutes on the dial.

With the alarm function

- when the time set is over, the alarm rings for 2 seconds.
- An announcing sound beeps every second from 3 seconds before the time set is over.

Two different displays available

- The timer can be changed over, with one touch operation, between the count-down display to show remaining time and the count-up display to show elapsed time.

With the graphic display

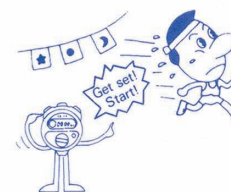
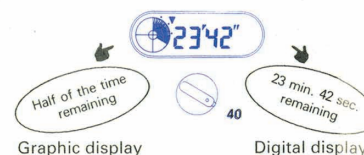
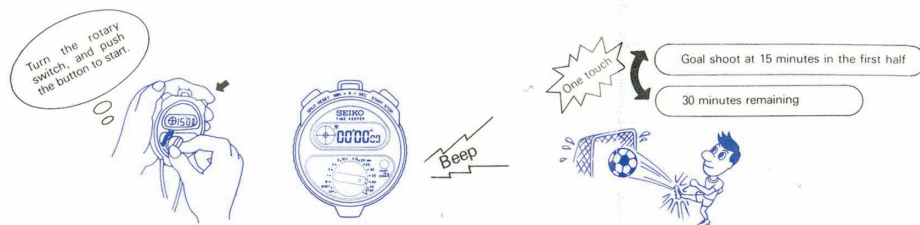
- In addition to the digital display, the timer is also displayed graphically. The graphic display by a 60-minute circle graph helps you see the elapsed or remaining time at a glance.

With the stopwatch function

- Up to 60 minutes (59 minutes 59 seconds and 99/100) can be measured in 1/100 second.
- Split time measurement is also available.

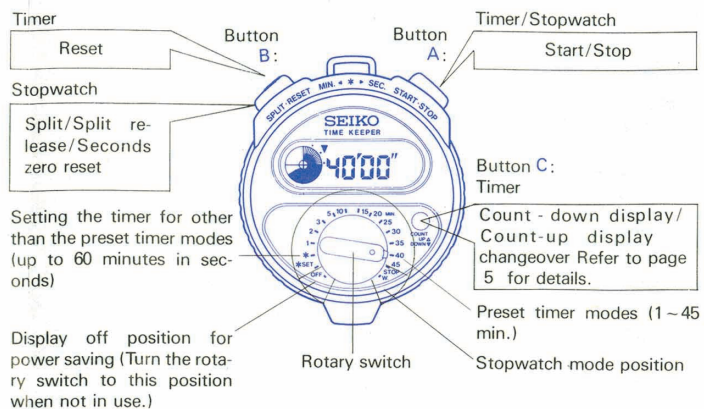
Others

- The timer can be set for any desired amount of time (other than the preset timer modes) up to 60 minutes in seconds.
- The timekeeper is water resistant and is manufactured to withstand up to 3 atmospheres of pressure/bar (water pressure at a 30-meter or 100-foot depth).
- Operation confirmation sound "PiP" can be heard whenever pushing the buttons.



HOW TO USE THE TIMER/THE STOPWATCH

Display and button operation



How to use:

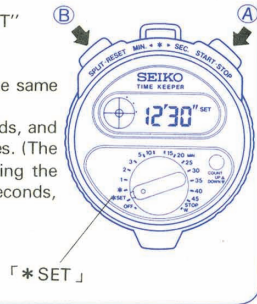
- 1 Turn the rotary switch to the desired preset timer mode. ("OFF" is the position where the display is turned off for power saving. The timer/stopwatch is also reset there. For explanations of "*SET" and "**", refer to HOW TO USE THE TIMER FOR OTHER THAN THE PRESET TIMER MODES.)
- 2 Depress button "A" to start and stop the timer/stopwatch. (Start and stop can be repeated as many times as necessary.)
- 3 Depress button "B" to reset the timer/stopwatch. (When the stopwatch is stopped in procedure 2, the digits are reset to "00" by depressing button "B".) Also depress button "B" to measure a split time and to make split release. (Split and split release can be repeated as many times as necessary when making a stopwatch measurement.) For an effective use of split time measurement, refer to EFFECTIVE WAY OF USE

HOW TO USE THE TIMER FOR OTHER THAN THE PRESET TIMER MODES

Turn the rotary switch to the " *SET" position, and the timer can be set for a desired amount of time (other than the preset timer modes) up to 60 minutes in seconds. Follow the procedures of operation as follows:

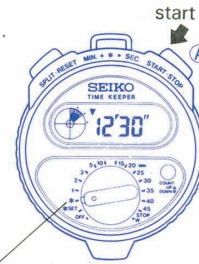
First, set the timer.

- 1 Turn the rotary switch to the " *SET" position.
- 2 Depress buttons "A" and "B" at the same time to reset the digits to "00'00".
- 3 Depress button "A" to set the seconds, and depress button "B" to set the minutes. (The digits are advanced quickly by keeping the buttons depressed for more than 2 seconds, respectively.)



Now, start counting.

- 1 Turn the rotary switch to the " * " position.
- 2 Depress button "A" to start the timer.
- 3 Depress button "A" to stop the timer.
- 4 Depress button "B" to reset the timer.



These procedures can be operated repeatedly.

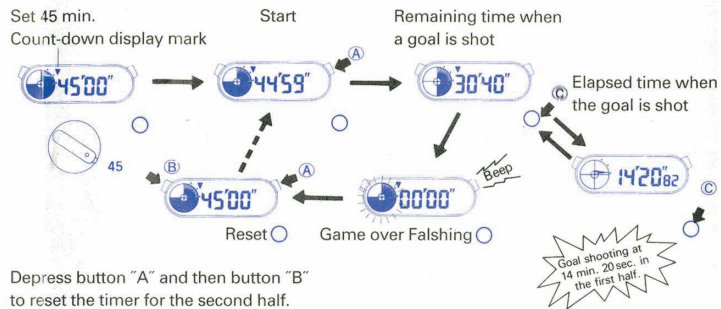
[The time, once set, remains valid in the memory until it is set newly. So, set the frequently used time for convenience.]

EFFECTIVE WAY OF USE

TIMER'S CHANGEOVER BETWEEN THE COUNT-DOWN DISPLAY AND THE COUNT-UP DISPLAY

EX.: In such a game as soccer, its time is counted down.

To see the elapsed time when a goal is shot, depress the buttons as follows:



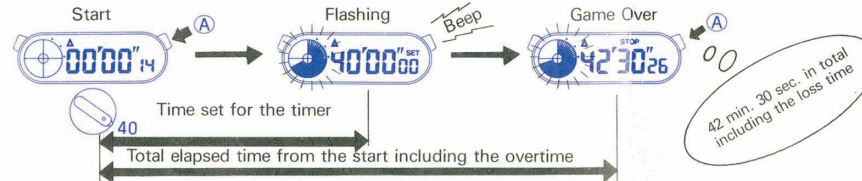
Depress button "A" and then button "B" to reset the timer for the second half.

• This changeover also permits you, with one-touch operation of button "C", to see elapsed time shortly after the game starts and to see remaining time shortly before the game is over.

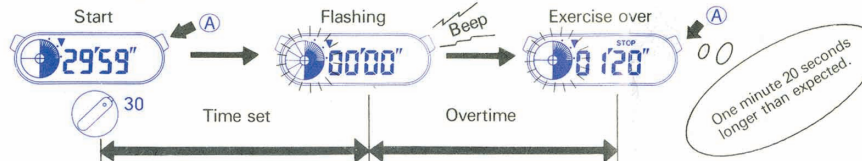
OVERTIME MEASUREMENT BY THE TIMER

The SEIKO Timekeeper Cal. S321 continues counting after the time set has elapsed, and can consequently measure overtime as below.

Ex. 1: Rugby--The game time is counted up to the 40 minutes.



Ex. 2: Doing a 30-minute exercise. The time is counted down from 30 minutes.

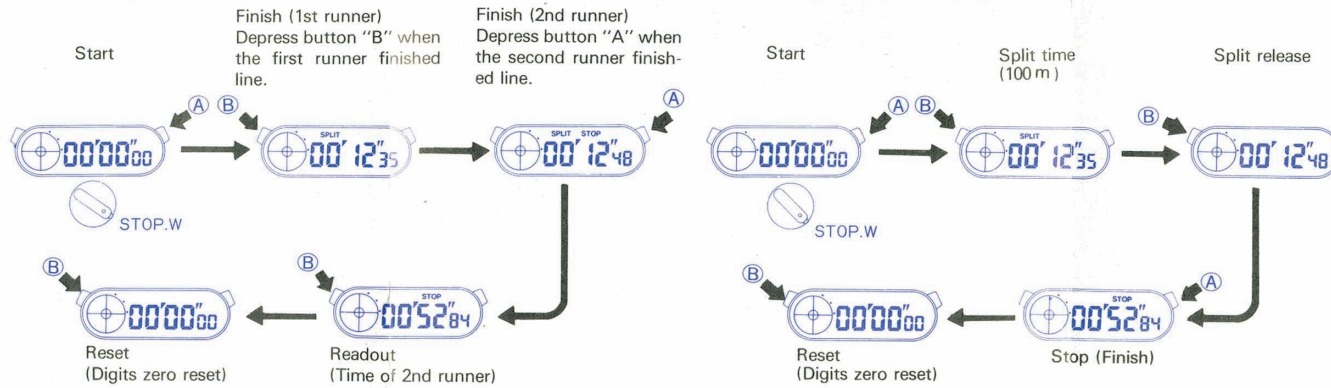


• CONTINUOUS TIME MEASUREMENT OF TWO COMPETITORS

• SPLIT TIME MEASUREMENT

Ex.: 200 meter race

Ex.: 400 meter race



■ RESETTING THE IC

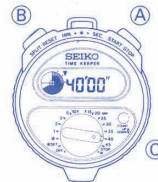
If an abnormal display (broken digits, etc.) appears, follow the procedure below. The built-in IC will be reset and The SEIKO Timekeeper will resume normal operation.

*The function "Resetting the IC" can only be done with the model that has the inscription marked with "S321-4001" on the case back.



● How to reset the IC

Keep buttons "A", "B" and "C" pressed at the same time for 2 to 3 seconds. After a short time all display will disappear followed by the initial display according to the position of the rotary switch.



*Resetting the IC can be done anytime regardless of the position of the rotary switch.

*After resetting the IC the timer previously set at the [* SET] position will be reset. Please set again.

SPECIFICATIONS

1. Frequency of crystal oscillator 32,768 Hz (Hz = Hertz...Cycles per second)
2. Loss/gain Less than $\pm 0.001\%$ at normal temperature range (5°C ~ 35°C)
(equivalent to a monthly rate of less than ± 30 seconds)
3. Operating temperature range -10°C ~ +60°C
Temperature range of use 0°C ~ +50°C
4. Display system

<input type="checkbox"/> OFF	Display off
<input checked="" type="checkbox"/> *SET	Minute, minute mark, seconds, seconds mark, and "SET" mark

<input type="checkbox"/> Timer display	
- Count-down display	"▲" mark, minute, minute mark, seconds, seconds mark, "STOP" mark, and graphic display
- Count-up display	"△" mark, minute, minute mark, seconds, seconds mark, 1/100 second, "STOP" mark, and graphic display
- Time to be set for the timer	1, 2, 3, 5, 10, 15, 20, 25, 30, 35, 40, and 45 min. (Any other desired time up to 60 minute 00 second)
<input type="checkbox"/> Stopwatch display	Minute, minute mark, seconds, seconds mark, 1/100 second, "STOP" mark, and "SPLIT" mark. Up to 60 minutes.
5. Display medium Nematic Liquid Crystal, FEM (Field Effect Mode)
6. Battery Lithium battery, SB-T11, 1 piece
7. IC (Integrated Circuit) C-MOS-LSI, 1 piece

* The specifications are subject to change without prior notice, for product improvement.

CARING FOR YOUR TIMEKEEPER

1. WATER RESISTANCE

Your timekeeper is water resistant and is manufactured to withstand up to 3 atmospheres of pressure/bar (water pressure at a 30-meter or 100-foot depth). It can be used at an athletic meet or when playing sports where there may be accidental contact with water, such as rain or splashes.

2. SHOCKS

Be careful not to drop your timekeeper or hit it against any hard surfaces.

3. MAGNETISM

Your timekeeper will not be affected by magnetism.

4. TEMPERATURES

Your timekeeper is preadjusted to function with stable accuracy when used at a normal temperature range (5°C ~ 35°C).

- Extremely high temperatures
Keep your timekeeper away from direct sunlight or a hot place.
* If it is used or left in such a place, the digital display may become black. But this condition will disappear without any aftereffect when the temperature returns to normal.
- Extremely low temperatures
Do not use or leave your timekeeper in a cold place. If it is used or left in such a place for a long time:

- 1) A small amount of time loss/gain may occur.
- 2) The change of the digits may become slow. (The timekeeper remains accurate.)

The normal performance of your timekeeper, however, will return when the temperature returns to normal.

- * If it is exposed to a temperature below -10°C or over +60°C for a long time, this may cause the timekeeper to stop, the battery electrolyte to leak, or the battery life to be shortened.

LIQUID CRYSTAL PANEL

When the liquid crystal panel of your timekeeper is used for more than 7 years, its contrast may decrease and it may become difficult to read digits on the panel.

TO PRESERVE THE QUALITY OF YOUR WATCH

PERIODIC CHECK

It is recommended that your timekeeper be checked at the time of the battery replacement or once every 2 to 3 years for oil condition, battery electrolyte leakage, entrance of moisture or perspiration, etc. by the retailer from whom your timekeeper was purchased.

An adjustment or repair may be required, depending on the result of the check.

- * Take this opportunity to have the gasket replaced with a new one.
- * When replacing parts, be sure to specify the "SEIKO parts".

BATTERY CHANGE

BATTERY LIFE

A new normal battery will last approximately 2 years.

- * If the timekeeper is used for more than 2 hours a day and the alarm more than 5 times a day (more than 25 seconds with the announcing sound included), the battery life will be less than 2 years.
The battery will last approximately 3,000 hours in continuous use as the 30-minute timer.
- * The battery in your timekeeper may run down in less than 2 years after the date of purchase, as it is a monitor battery which is inserted at the factory to check the function and performance of the timekeeper.
- * The price of the monitor battery is not included in that of the timekeeper. It will therefore be replaced with a new one only at cost even if it runs down within the guarantee period.

BATTERY REPLACEMENT

When replacing the battery, be sure to take your timekeeper to the retailer from whom it was purchased or an AUTHORIZED SEIKO DEALER, and specify the "SEIKO SB battery".

If an old battery is kept in the timekeeper for a long time, a battery electrolyte leakage may occur and cause a malfunction of your timekeeper. When the battery has run down, replace it as soon as possible to prevent any possible malfunction.

- * When the battery is taken out of the timekeeper, keep it out of the reach of children. If children happen to swallow it, consult a doctor immediately.