

セイコークォーツデジタル
ストップウォッチ
セイコーシステムプリンタ
取扱説明書 INSTRUCTION

S143・SP12

このたびは「セイコーデジタルストップウォッチS143」「セイコーシステムプリンタSP12」をお買い上げいただきありがとうございました。

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FEATURES OF Cal. S143

SEIKO Stopwatch Cal. S143 is a digital stopwatch features a print-out function that prints out the measurements using the connected printer immediately after they are obtained. It is also equipped with a large-sized three-row display panel that can display the split time, lap time and total elapsed time or lap time in progress at the same time in separate rows, and a memory function that stores the measurements. In addition, the stopwatch is water resistant and withstands up to 3 bar. Therefore, it is suitable for aquatic sports or use in rainy weather.

- Large-sized three-row display panel.....Total elapsed time or lap time in progress, split time and lap time are displayed at the same time, and they can be measured successively without releasing split or lap time measurement.
- Memory recall function.....Up to 300 measurement data can be stored in memory. Measurement data obtained from the start to finish of the measurement is recorded as a block without erasing the data in the previous block, and up to 100 blocks of data can be stored in memory. This function is very useful for separately keeping the data measured at different time and date.
- Besides, the stopwatch is equipped with such convenient functions as ID No. function useful for keeping the data of individual users separately, and memory capacity indicator and fastest lap time recall functions.
- Time/calendar display.....Year, month, date, hour, minutes and seconds can be displayed while the stopwatch not used.
- An antibacterial agent is applied to the case surface of the stopwatches.
- ※ It loses its antibacterial effect gradually over time and the effective period differs depending on the conditions of use.

HOW TO USE THE STOPWATCH

① Display and button operation

● Press button **(D)** to show the Accumulated elapsed time display of the Stopwatch mode.

Button **(C)** (Recall of the stored data)
Stored lap times and split times are recalled by pressing the button.

Button **(B)** (Lap time/split time measurement, reset)
With each press of the button after the measurement is started, lap time/split time is measured. By pressing the button after stopping the measurement, the new block number for the next measurement is displayed.

Button **(A)** (Start/stop)
Restart and stop of the stopwatch can be repeated by pressing the button.
Split time (2 hours, 2 minutes and 45 seconds 5/100)
Lap time (1 minute and 28 seconds 33/100)
Total time (Accumulated elapsed time) (2 hours, 3 minutes and 56 seconds 38/100)
Memory capacity indicator
Mode mark
Button **(D)** (Changeover of modes)
With each press of the button, the mode changes over in the following order
Accumulated elapsed time display of the stopwatch mode
lap time measurement in progress display of the stopwatch mode
time/calendar mode.

Lap/split number

Split time is a time measured partway from the start, and lap time is an elapsed time measured in a section.

② Notes on the block of data in memory

③ Standard measurement

- The SEIKO Stopwatch Cal. S143 features a "Block Memory" stopwatch operation system. The data obtained from start till finish of a race is recorded as a block and stored in memory.
- The time and date of starting the measurement of a block of data are automatically stored in memory.
- Before the measurement is started, the block number is assigned to the block of data to be measured.
- Up to 300 data can be stored in memory.
- A block of data includes at least three data. If more than one block is used to store the data, the memory may become full even before the number of lap time/split time measurements in memory amounts to 300.

Press the buttons in the following order : **(A)→(A)→(B)**

④ Accumulated elapsed time measurement

Press the buttons in the following order : **(A)→(A)→(A)→...→(A)→(B)**

⑤ How to measure lap time/split time (When the accumulated elapsed time display of the Stopwatch mode is used, for example, in a marathon race)

Press the buttons in the following order : **(A)→(B)→(B)→...→(B)→(A)→(B)**

⑥ How to measure lap time / split time (When the lap time measurement in progress mode is used)

Press button **(D)** to show the lap time measurement in progress display of the stopwatch mode.

Lap time measurement in progress display... While a lap time is being measured, the measurement in progress is displayed.

⑦ How to use the memory recall function

- The data obtained in the measurement can be recalled and displayed.
- Up to 100 blocks of data or 300 data can be stored and recalled.
- Besides being recalled and displayed, the data in memory can also be printed out.
(Refer to "4 ⑤ printout")
- The stored data is recalled by pressing button **C**. The data is recalled successively if the button is kept pressed.
- The stored data can be recalled while the stopwatch is measuring.
- The data can be stored in memory even while the stopwatch is connected to the printer to print out the data during the measurement.
- Order of recalling the stored data

| | |
|-------------------------------|--|
| | With each press of button C |
| When the stopwatch is stopped | The data is recalled starting from the oldest one. |
| When the stopwatch is in use | The data is recalled starting from the newest one. |

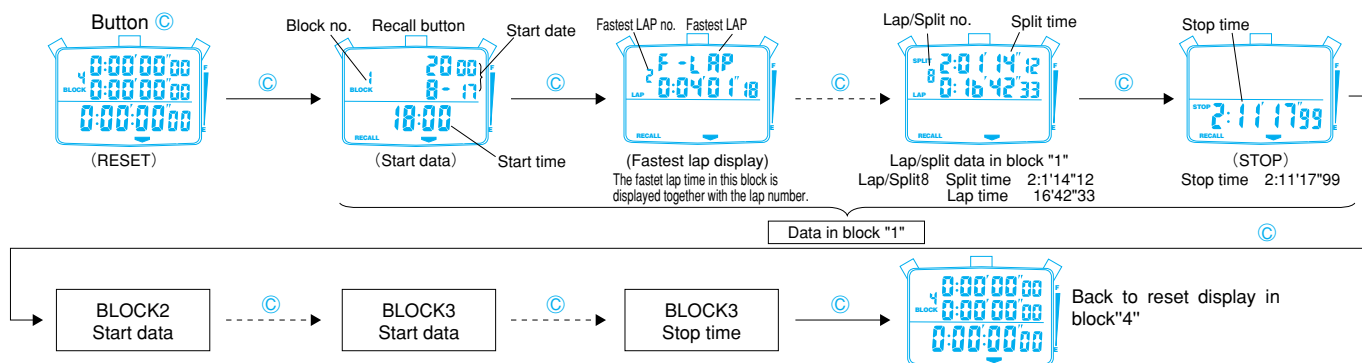
- Button operation while the stored data is recalled

| Display before recall | Button A | Button B | Button D |
|-----------------------|--|--|--|
| Reset | Returning to the display before recall | Clearing the data in memory | Returning to the display before recall |
| Stopped | Returning to the display before recall | Returning to the display before recall | Returning to the display before recall |
| Measuring | Stopping the measurement | Measuring lap/split time | Returning to the display before recall |

- When the stopwatch is reset or stopped :

The data is recalled starting from the first data in block "1".

<Ex.> When the display is reset to "00" in block "4".>

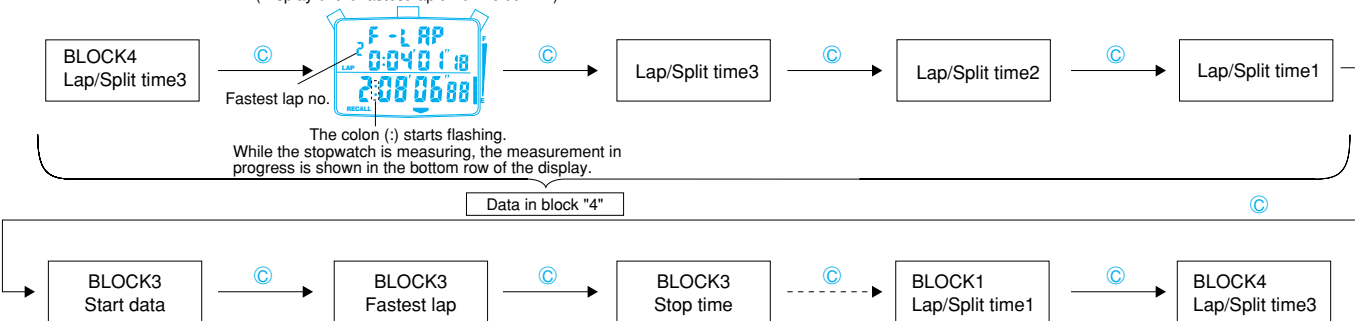


- When the stopwatch is measuring:

The data is recalled starting from the newest one.

<Ex.> When the measurement of the third lap /split time in block "4" has been completed->

(Display of the fastest lap time in block "4")



⑧ How to clear the stored data (All clear of data)

- The memory clear function is useful in the following cases.
 - When the stored data becomes unnecessary.
 - When the residual memory is not sufficient for a new measurement.
- Once the following steps are taken to clear the data, all the stored data is erased from memory. The stored data cannot be erased one by one or block by block.

- While the stopwatch is measuring or when the digits are not reset after the end of the measurement, the stored data cannot be erased from memory. In that case, end the measurement and reset the stopwatch by following the procedure below.

- Press button **C** (recall button).
In the memory recall display, the stored data can be erased irrespective of which data is displayed.

- Keep button **B** pressed for more than 1.5 seconds.
While button **B** is kept pressed, the display below is shown with warning beeps.
After 1.5 seconds, the stored data is erased from memory with a long beep.
All the data is erased from memory and the initial measurement display is shown.



(Memory clear procedure)

※ When the memory clear procedure is performed, the mode mark will move toward the "RECALL" mark.

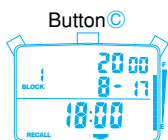
※ Unless button **B** is kept pressed for more than 1.5 seconds, the stored data will not be erased from memory.



(Digits reset to "00")



(Digits reset to "00")



(Start data)

⑨ Notes on memory capacity

- The number of data in memory is shown graphically by the memory capacity indicator.
- Besides the measured lap times/split times, the start time data and block number are also retained in memory as two separate data. Therefore, a block of data includes at least three data. If more than one block is used to store the data, the memory become full even before the number of lap time/split time measurements in memory amounts to 300.



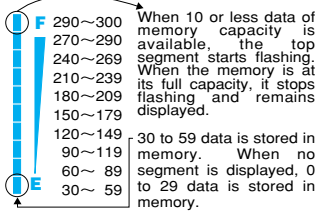
- Memory data guide during recall
While the data is recalled, a segment of the bar flashes to indicate the measurement order of the data being recalled.
In the illustration below, 210 to 239 data is stored in memory and the data being recalled is between 120th and 149th data in memory.



It flashes.

- How to read the memory capacity indicator
The number of data stored in memory is displayed graphically with a 10-segment bar. Each segment of the bar corresponds to 30 data. The segments are displayed one by one from the bottom to indicate the number of data in memory.

Number of data in memory



- When the memory reaches its full capacity:
All the segments of the bar are displayed.
The 30th data and those measured thereafter will be displayed but will not be stored in memory for later recall.

⑩ TIME/CALENDAR DISPLAY ① Display and button operation

- Press button **D** to show the time/calendar display

With each press of the button, the display changes over between contrast adjustment display and time/calendar display alternately.

Setting the digits to be adjusted (The digits can be advanced quickly by keeping the button pressed.)

Year

Month and date

Time (displayed in the 24-hour indication)

time/calendar display mark

With each press of the button, the display changes over in the following order:

Accumulated elapsed time display of the stopwatch mode

lap time measurement in progress display of the stopwatch mode

time/calendar mode.

Selection of the digits to be adjusted.

Setting the digits to be adjusted.

With each press of the button, the display changes over between contrast adjustment display and time/calendar display alternately.

Year

Month and date

Time (displayed in the 24-hour indication)

time/calendar display mark

With each press of the button, the display changes over in the following order:

Accumulated elapsed time display of the stopwatch mode

lap time measurement in progress display of the stopwatch mode

time/calendar mode.

SEIKO MODE

PRINTER

300 LAP/SPLIT MEMORY WATER RESISTANT

RECALL

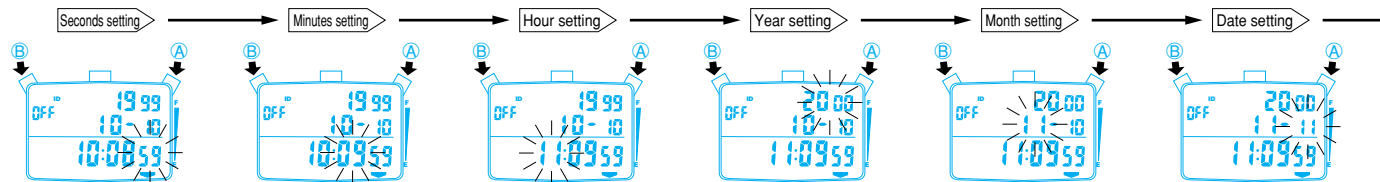
START STOP

SYSTEM STOPWATCH

LAP/SPLIT RESET

ID no.

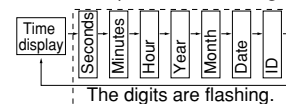
② Time/calendar setting



- Press **B** and the second digits will flash.
- Press **A** in accordance with a time signal to reset the second digits to "00".
- Press **B** and the minute digits will flash.
- With each press of **A**, one minute is advanced.
- Press **B** and the hour digits will flash.
- With each press of **A** one hour is advanced.
- Press **B** and the year digits will flash.
- With each press of **A**, one year advanced.
- Press **B** and the month digits will flash.
- With each press of **A**, one month is advanced.
- Press **B** and the date digits will flash.
- With each press of **A**, one day is advanced.

- ※ When the second digits count any number from "30" to "59" and **A** is pressed, one minute is added and the second digits are reset to "00".
- ※ The digits move quickly if **A** is kept pressed. The hour, year, month and date digits can also move quickly if the button is kept pressed.

- With each press of **B**, the digits to be adjusted change over in the following order.

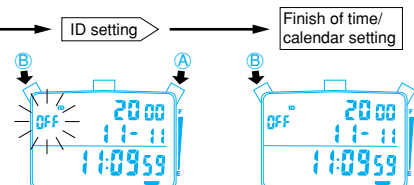


- Any of the digits can be adjusted individually. Press **B** to select the digits to be adjusted, and then press **A** to set them.
- ※ The year digits can be set from 1999 to 2048. The calendar adjusts automatically for add and even months including February of leap years.

③ Adjustment of the contrast on the display

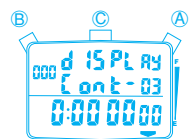
- The contrast of the display can be adjusted.

- Show the time/calendar mode.



- When button **B** is pressed, the identification number digits start flashing.
- With each press of button **A**, one digit is advanced. "OFF" means that no identification number is set.
- After all the adjustment are completed, press **B**.

- Press button **C** to show the contrast adjustment display.
The contrast can be adjusted for 10 levels from level "1" to "10". The display is the lightest at level "1" and the darkest at level "10".

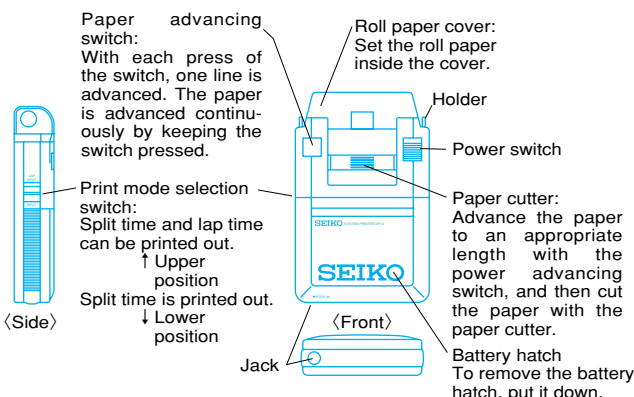


- contrast adjustment display
- Button **A** : Increasing the level (darker)
- Button **B** : Decreasing the level (lighter)

- Press button **C** or **D** to return to the time/calendar mode.

④ FEATURES OF PRINTER SP12 ① How to use

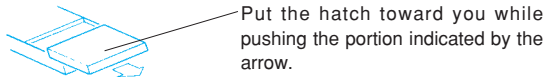
The SEIKO System Printer SP12 is a portable light-weight printer that can print out measurement data immediately after they have been measured, by being connected to a system stopwatch. SP12 can be connected to the SEIKO Stopwatch Cal. S111, S119, S123, S124, S143, S701 and S930.



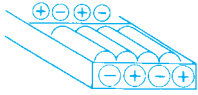
② How to insert batteries into the printer

Use four SUM-3 (R6P) dry batteries.

- Slide the power switch to "OFF" and then remove the battery hatch.



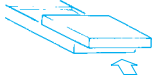
- Inset the batteries into the battery compartment as shown in the illustration below, checking that the (+) and (-) terminals are properly set.



- Proper positions of the batteries are indicated inside the battery compartment.

- Insert the batteries from the (-) terminals.

- Close the battery hatch.



- Slide the battery hatch along the grooves of the battery compartment.

③ How to set the paper in the printer

Besides the thermal paper S950 included with the printer SP12, the thermal paper S951 is available for printing out the stored data. It is a long-type thermal paper that can print out up to 2,800 lines, and sold for ¥550. To use S951, the paper holder SVAZ007 for exclusive use with it is necessary. It is sold separately for ¥3,800.

- Cut the first pasted position of the paper straight.
- Open the paper cover as shown in the illustration.

- Slide the power switch to "ON". At this time, the motor runs for approximately 1 second to indicate that the power is supplied.

- Inset the end of the paper into the paper insertion slot.
(Be sure to set the paper with the right side up. It can only be printed on one side.)



Power switch

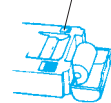


Roll paper



- Keep the paper advancing switch pressed until the end of the paper is advanced out 2 to 3 cm from the printer.
(Do not pull out the paper by force.)

Paperadvancing switch



- Put the roll paper into the holder and close the paper cover.
(If the roll paper gets out of shape, make it round before inserting it into the holder.)



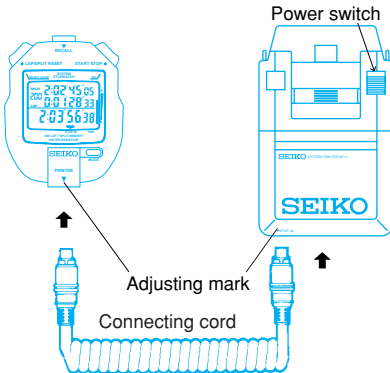
Notes 1. Do not pull the paper in the reverse direction (opposite to the direction of advancing the paper), as this will damage the printer. When replacing the remaining roll paper with a new one, first cut the paper in the holder, then remove the rest of it by pressing the paper advancing switch, or pull it out in the direction of advancing the paper.

2. Be sure to use the roll paper S-950 (or S951) for exclusive use with SP12. Otherwise, poor printing or malfunction will be caused.

④ How to connect the printer to the stopwatch

(S143)

(SP12)



Connecting procedure

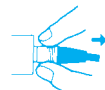
- Securely insert both plugs of the connecting cord into the jacks of the stopwatch and printer until they click, holding the connecting cord with fingers as shown in the illustration. (The plugs can be inserted into either of the jacks.) The guide groove is provided on the plugs of the connecting cord.
- After use, slide the power switch of SP12 to "off", and then pullout the connecting cord, holding it with fingers at the portion shown in the illustration.

* While the stopwatch is not in use, be sure to set the power switch of SP12 to "OFF".

* S143 Can not connect to the printer "SP11"



Set the plug in the guide groove.



⑤ Printout

Printout during the measurement

- Connect the stopwatch and printer, and turn on the power switch of the printer.
- Printout of the measurement data
 - When the printout is started, the following data is printed out.
Identification number (If it is set)
Block number
Start date
Start time
 - Measured lap times/split times are automatically stored in memory at the same time when they are printed out. Up to 300 data can be stored in memory.

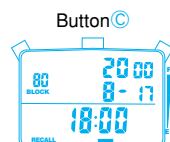
※ When the power switch of the printer is turned on after the measurement is started, the data is printed out starting from the next measurement data.

Printout after the measurement

- The stored data can be printed out as many times as necessary.
- Printout can be selected from only the desired block of data and all the blocks of data.

● To print out the desired block of data

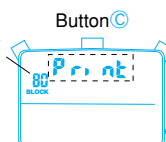
- Show the memory recall display, and select the block of data you wish to print out.
The printout can be started when any data in the block is displayed.



(Start data)

- Connect the stopwatch and printer, and turn on the power switch of the printer.
- Keep button C pressed. When the stopwatch confirms the connection to the printer, flashing "Print" is displayed.
If button C is released immediately after flashing "Print" is displayed, the printout will be canceled and the display returns to the memory recall.

Block No. for the block of data to be printed



(Printout display for desired block of data)

④ Keep button **C** pressed for 1 second, and then release it as "Print" stops flashing and remains displayed. The data in the selected block is displayed quickly one after another, and then printout is started. (While the data in the block is displayed quickly one after another, the stopwatch checks for the fastest lap time in the selected block.)



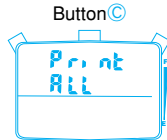
The total elapsed time of the block is displayed.

● To print out the data in all the blocks in memory

① Connect the stopwatch and printer, and turn on the power switch of the printer.

② Show the memory recall display, and keep button **C** pressed. Flashing "Print" is displayed.

③ Keep button **C** pressed further until "Print All" is displayed.



(Printout display for the data in all the blocks)

④ Then, release button **C**. The data in all the blocks is displayed quickly one after another starting from block "1", and will be printed out at a stretch.

(While the data is displayed quickly one after another, the stopwatch checks for the fastest lap time in each block.)

Notes:

※ While the printout is under way, none of the stopwatch buttons will work.

• Once started, the printout cannot be canceled halfway.

• While the data is displayed quickly before printout or while the data is printed out, do not turn off the power switch of the printer or disconnect the stopwatch from the printer. Otherwise, a malfunction will result.

⑥ Printout of split time and lap time

● With the print mode selection switch of the printer printout can be selected from 'both split time and lap time' and 'lap time only'.

| Printer switch | Printout by the printer |
|----------------------------|---|
| LAP SPLIT ↓ SPLIT | (Ex. 1,500m race) BLOCK : 1 Year · Month · Date 1999 10 10 START 10:19 SPLIT Split time 1 1 - 0:05 03 76 2 " 2 - 0:05 12 33 3 " 3 - 0:05 41 13 4 " 4 - 0:05 59 06 5 " 5 - 0:06 17 98 6 " 6 - 0:06 43 56 7 " 7 - 0:07 21 47 8 " 8 - 0:07 36 48 Finish time /S/0:08' 02 58 |
| LAP SPLIT ↑ SPLIT | (Ex. Marathon) ID : 1 BLOCK : 1 Year · Month · Date 1999 10 10 START 10:19 SPLIT/LAP Split time + Lap time 1 1 - 0:18' 05 33 2 - 0:36' 37 78 3 - 0:18' 32 45 4 - 0:18' 35 33 5 - 0:18' 25 34 6 - 0:18' 12 23 7 - 0:18' 12 23 8 - 0:18' 12 23 9 - 1:01' 57 55 10 - 0:18' 32 21 11 - 1:49' 32 78 12 - 0:17' 35 23 13 - 2:07' 31 04 14 - 0:17' 58 26 15 - 2:25' 43 62 16 - 0:18' 12 56 Finish time /S/2:34' 05 77 |

※ The ranking or section No. is printed out from "1" to "99". After "99" they return to "0" and start again from "1".

⑦ Printout of lapse of time.

While the stopwatch is set in the time mode, the time when the stopwatch button is pressed to measure the split time can be printed out.

① Reset the stopwatch.

② Show the time/calendar mode.

③ Measure a lap time in the same manner as you do in the stopwatch mode.

※ The time a lap time is measured is not stored in memory

⑤ PRECAUTIONS ① Remarks on using printer

- (1) When the power switch of the printer is turned on during the measurement, the data measured thereafter will be printed out.
- (2) While the printer is printing out, do not pull out the roll paper or do not pull it back. Also, do not operate the stopwatch without installing the roll paper on the printer, as this will cause a malfunction of the printer.
- (3) When the printer is not used, be sure to turn the power switch of the printer "OFF".
- (4) After use, slide the power switch of SP12 to "OFF", and then pull out the connecting cord, holding it with fingers at the portion shown in the illustration of "4 How to connect the printer to the stopwatch".

② Remarks on using stopwatch

- (1) When the printer is not used, be sure to put the cap on the jack of stopwatch.

③ Remarks on roll paper (thermal paper)

Since this SP12 is a thermal printer, which prints on thermal paper by heating it, it is not necessary to replace the ink. Be sure to observe the following.

- To preserve new thermal paper, put it in a box to avoid direct light and keep it in a dry cool place.
- Do not touch the printing surface of the thermal paper, as the sweat or oil on the palm will cause poor printing.
- Besides the thermal paper S950 included with the printer SP12, the thermal paper S951 is available for printing out the stored data. It is a long-type thermal paper that can print out up to 2,800 lines, and sold for ¥550. To use S951, the paper holder SVAZ007 for exclusive use with it is necessary. It is sold separately with the printer for ¥3,800.

● To preserve the printed thermal paper, be sure to observe the following.

- (1) Do not expose thermal paper to bright light for a long time. Printed digits or letters may be faded.
- (2) Keep the thermal paper away from high temperature, high humidity, or direct sunlight. The roll paper may be discolored.
- (3) In case the printed paper are kept attached on a pasteboard, etc., do not use the paste or adhesives containing volatile organic solvent. Also, do not use cellophane adhesive tape. The thermal paper may be discolored. It is recommended that the starch or synthetic paste be used.
- (4) Do not place the thermal paper near the copies reproduced by the copier using ammonia. The thermal paper may be discolored.
- (5) Do not leave the thermal paper in contact with vinyl chloride films for a long time. It may be discolored, or the printed digits or letters may be faded.

※Be sure to use the roll paper S-950 or S-951 for exclusive use with the printer SP12. Otherwise, defective printing or damage of the printer will be caused.

④ Replacement of the liquid crystal panel

After about 7 years of use, the liquid crystal panel will decrease in contrast, becoming difficult to read. Have the panel replaced with a new one by the retailer from whom your stopwatch was purchased or an AUTHORIZED SEIKO DEALER. The replacement will be made at cost.

⑤ Remarks on batteries

(1) Battery life

When a new normal battery is installed, the stopwatch will operate approximately 3 years.

※If the stopwatch is used for more than 3 hours a day, the battery life may be less than 3 years.

● When four new and normal SUM-3 manganese dry batteries are installed, the printer can print approximately 10,000 lines (approx. 14 rolls of paper) if it continuously operates at 24°C. When alkaline manganese batteries are used, it can print approximately 20,000 lines (approx. 28 rolls).

※If the printer is used at extremely low temperatures, the battery power becomes weak, and it cannot print as many lines as it prints at normal temperature range. It is recommended, therefore, that alkaline manganese batteries be used at such low temperatures.

● When the following conditions occur with the power switch set at "ON", replace the batteries with new ones.

- (1) Printing speed has reduced.
- (2) Printed digits or letters are uneven or incomplete.
- (3) The digits or letters are too lightly printed.
- (4) The paper is not advanced at all or advanced irregularly.
- (5) The printer will not print at all.

If the above conditions occur, replace the batteries with new ones as soon as possible following the procedure in "4 ② How to insert batteries into the printer".

(2) Monitor battery

The battery in your watch may run down in less than three 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 watch.

(3) Battery change

- ① For battery replacement, be sure to have the battery replaced with a new one at the retailer from whom the watch was purchased or at an authorized SEIKO DEALER, and request the battery for exclusive use with the SEIKO watches.
- ② If the old battery is left in the watch for a long time, a malfunction may be caused due to battery leakage, etc. Have it replaced with a new one as soon as possible.
- ③ Battery replacement is charged even if it runs down within the guarantee period.

(4) Battery life indicator(stopwatch)

● When the battery nears its end, flashing battery mark "BATT" is displayed. In that case, have the battery replaced with a new one as soon as possible by the retailer from whom your stopwatch was purchased or an AUTHORIZED SEIKO DEALER. When the battery is replaced with a new one, all the stored data will be erased from memory. Before battery replacement, therefore, print out the data you wish to keep.

⚠ WARNING

1. Do not remove the battery from the watch.
2. If it is necessary to take out the battery, keep it out of the reach of children.
3. If the child swallows it, consult a doctor immediately as it will adversely affect the health of the child.






⚠ CAUTION

1. Never short-circuit, tamper with or heat the battery, or never expose it to fire as it may explode, generate and intense heat or catch fire.
2. The battery in your watch is not rechargeable. Never attempt to recharge it, as this may cause battery leakage or damage to the battery.
3. If the watch is left in a temperature below +5°C or above +35°C for a long time, the battery leakage may result, causing the battery life to be shortened.

⑥ CARE OF YOUR WATCH

⚠ CAUTION

● WATER RESISTANCE

| | | | | | |
|--|---|---|---|---|---|
| |  |  |  |  |  |
| | Designed and manufactured to withstand the water usually exposed in a daily living such as splashes and rain. | Designed and manufactured for swimming and kitchen work. | Skindiving without scuba. | Genuine diving using scuba. | Button operation when the watch is wet. |
| "WATER RESISTANT" is inscribed on the back of your watch case. | ○ | × | × | × | × |

* If your watch is not water-resistant, be careful not to get it wet with water or sweat. When it gets wet with water or sweat, wipe it thoroughly dry with a hydroscopic cloth.

⚠ WARNING

- If your watch is 3 bar water resistant, do not use it in water.

● PLACES TO KEEP YOUR WATCH



- If the watch is left in a temperature below -10°C or above +60°C for a long time it may function improperly or stop operating.

※ This watch is so adjusted that it will maintain stable time accuracy in normal temperatures.(5°C~35°C) It will lose or gain slightly, but it will regain high time accuracy when it returns to normal temperature.



- Do not leave the watch in a place where it is subjected to strong magnetism or static electricity.
- Do not leave the watch in a dusty place.

⚠ CAUTION

- If your watch is of the fob or pendant type, the strap or chain attached to the watch may damage your clothes, or injure the hand, neck, or other parts of your body.



- Do not expose the watch to gases or chemicals. (Ex.: Organic solvents such as benzine and thinner, gasoline, nail polish, cosmetic spray, detergent, adhesives, mercury, and iodine antiseptic solution.)
- Do not leave the watch in a hot spring, or do not keep it in a drawer having insecticides inside.

● PERIODIC CHECK

- We suggest that you have your watch checked by the retailer from whom your stopwatch was purchased every 2 or 3 years or when the battery is replaced for oil condition, battery electrolyte leakage or damage due to water or sweat. After checking the watch, adjustment and repair may be required.

⑦ Remarks on replacement parts

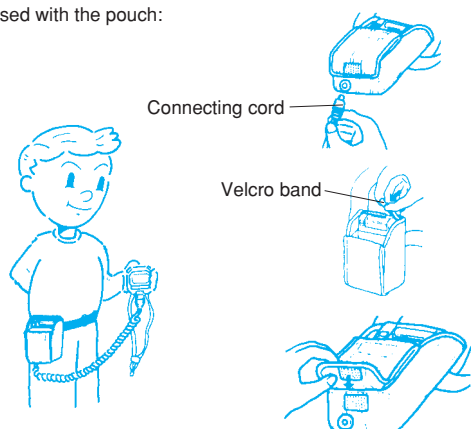
- SEIKO makes it policy to usually keep a stock of spare parts for its watches for 7 years. In principle, your watch can be reconditioned within this period if used normally. (Replacement parts are those which are essential to maintaining the functional integrity of the watch.)
- The number of years that a watch is considered repairable may vary greatly depending on the conditions under which it was used, and normal accuracy may not be achieved in some cases. We recommend, therefore, that you consult the retailer from whom the watch was purchased when having them repair your watch.
- The case, dial, hands, glass and bracelet, or parts there of may be replaced with substitutes if the originals are not available.

⑧ Remarks on after-sales servicing

- If the watch requires service, take it to the retailer from whom the watch was purchased. If the trouble occurs within the guarantee period, submit the certificate of guarantee together with the watch.
- For repair after the guarantee period or for any other information regarding the watch, contact the retailer from whom the watch was purchased or the "SEIKO S-YARD CO., LTD."
- Guarantee coverage is spelled out in the certificate of guarantee. Please read it carefully and keep the certificate for ready reference.

⑨ Accessories

●When used with the pouch:



●When used with the shoulder strap for the printer.



⑥ TROUBLESHOOTING GUIDE

Before requesting service, please check your stopwatch following the table below.

| Problem | Possible cause | Solution | Problem | Possible cause | Solution |
|--|--|--|---|---|---|
| The motor does not run even if the power switch of the printer is turned "ON". | <ul style="list-style-type: none"> Weak batteries. The batteries are not installed properly. The paper is stuck. | <ul style="list-style-type: none"> Replace the battery with new ones. Install the batteries properly. Remove the paper. | By pressing the start button, the data are printed out, but the paper is not advanced or is advanced irregularly. | <ul style="list-style-type: none"> The paper is stuck. Weak batteries. | <ul style="list-style-type: none"> Remove the paper. Replace the batteries with new ones. |
| The paper is not advanced by pressing the paper advancing switch. | <ul style="list-style-type: none"> Weak batteries. The paper is stuck. The roll paper gets out of shape. | <ul style="list-style-type: none"> Replace the battery with new ones. Remove the paper. Make the roll paper round. | By pressing the start button, no data are printed out and the paper is not advanced at all. | <ul style="list-style-type: none"> Weak batteries. The batteries are not installed properly. The power switch of the printer is not set to "ON". The cord is not connected properly. Water or foreign matters are sticking to the cord plug. | <ul style="list-style-type: none"> Replace the batteries with new ones. Insert the batteries correctly. Turn the power switch "ON", and then press the start button. Connect the cord properly. Wipe off water or foreign matters. |
| By pressing the start button, the paper is advanced, but the printed digits or letters are defective or the data are not printed at all. | <ul style="list-style-type: none"> The cord is not connected properly. Water or foreign matters are sticking to the cord plug. The paper is not set properly. | <ul style="list-style-type: none"> Connect the cord correctly. Wipe off the water or foreign matters. Inset the paper properly. | | | |

※If your stopwatch and printer will not operate properly despite the solutions in the table, take them to the retailer from whom your stopwatch was purchased for repair.

⑦ SPECIFICATIONS (STOPWATCH S143)

- Frequency of crystal oscillator32,768Hz (Hz=Hertz··Cycles per second)
- Loss/gain (monthly rate)Less than 15 seconds at normal temperature range (5°C ~ 35°C)
- Operational temperature range-10°C ~ +60°C
Desirable temperature range of use 0°C ~ +50°C
- Display systemMeasures up to 10 hours. Hour, minutes, seconds, 1/100 seconds, three-row display of split time/lap time/total elapsed time or lap time in progress. No. of blocks, no. of split times (0 ~999), 300 memory recall, BLOCK, SPLIT, LAP, STOP, RECALL, stopwatch marks, memory indicator, BATT.
- Time/calendar displayHour (24hour indication), minutes, seconds, year, month, date and calendar mark. ID no. (OFF/01~99), contrast adjustment display.
- Display mediumNematic Liquid Crystal, FEM (Field Effect Mode)
- BatteryLithium battery SB-T74, 1 piece
- Battery LifeA new normal battery will last approximately three years.
※If the stopwatch is used for more than 3 hours a day, the battery life may be less than 3 years.
- IC (Integrated Circuit)C-MOS-LSI, 1 piece
- Battery life indicator "BATT" mark start flashing when the battery life nears its end.

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

8 SPECIFICATIONS (PRINTER SP12)

1. PrinterModel: MTP102
Printing system: Thermal serial dot printing system
Printing method: One-way printing (from left to right)
Printing speed: Approx. 1.5 lines/sec. (DC 5.0V. at 25°C)
Number of digits printed: 13 digits/line (including space)
2. Recording paperRoll paper S-950
38mm (width) (+0~0.5mm), overall length 2,400 mm or more (approx.
700 lines can be printed per roll.)
3. Power supplyDC 6.0V (SUM-3 or AM3 dry battery, 4 pieces)
4. Power consumption.....During printing: Approx. 1.5W (DC 6.0V)
With power switch turned "ON" (No printing): Approx. 0.02W (DC 6.0V)
5. Battery lifeManganese battery: Approx. 10,000 lines can be printed. (Equivalent to
approx. 14 rolls)
Alkaline manganese battery: Approx. 20,000 lines can be printed.
(Equivalent to approx. 28 rolls)
(When the printer is connected to stopwatch S111, S119, S123, S124,
S143, S701 or S930, and prints out data continuously at 24°C, the
battery life may vary depending on the battery type, condition of use, etc.)
6. Operational temperature range0°C ~ 40°C (The depth of printout does not change even if the
temperature changes.)
7. Outside dimensions and weigh130.8mm (Length)×81.6mm (Width)×28.5mm (Thickness): Approx.
220g (including the batteries and roll paper)

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