セイコークオーツデジタル
ストップウォッチ
セイコーチシステムプリンタ
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」「セイコーチシステムプリンタSP12」をお買い上げいただきありがとうございます。

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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 re-setting 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 is not used.

An antibacterial agent is applied to the case surface of the stopwatch, it loses its antibacterial effect gradually over time and the effective period differs depending on the conditions of use.

Notes on the block of data in memory

- 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.

Accumulated elapsed time measurement

Press the buttons in the following order: A → A → A → A → B

(Start of the game)

(Stop of the game)

(Restart of the game)

(Reset to “00”)

The new block number for the next measurement is displayed with the digits reset to “00”.

How to measure lap time/split time

Press the buttons in the following order: A → B → B → B → B → B

(5km point)

Lap 1: Split time

14:58’08’’

(10km point)

Lap 2: Split time

29:57’21’’

Lap time

15:01’13’’

The lap time can be measured repeatedly by pressing C.

How to measure lap time / split time

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.

It indicates that the lap time measurement in progress display is shown.

The lap time measurement in progress is displayed. Each time button E is pressed to measure the lap time/split time, the digits are reset to “00” and the stopwatch starts counting from “00”.

When the lap time measurement in progress exceeds 1 hour, the hour digit appears in place of the mark for lap time in progress mark.

Display and button operation

Press button A to show the Accumulated elapsed time display of the StopWatch mode.

Accumulated elapsed time display of the stopWatch mode

Lap time measurement in progress display of the stopWatch mode

Time/calendar mode.

Notes on the block of data in memory

- 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.

Standard measurement

Press the buttons in the following order: A → A → B

(Start)

(Stop)

(Reset to “00”)

The new block number for the next measurement is displayed with the digits reset to “00”.

How to measure lap time/split time

Press the buttons in the following order: A → B → B → B → B → B

(5km point)

Lap 1: Split time

14:58’08’’

(10km point)

Lap 2: Split time

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The lap time can be measured repeatedly by pressing C.

How to measure lap time / split time

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.

It indicates that the lap time measurement in progress display is shown.

The lap time measurement in progress is displayed. Each time button E is pressed to measure the lap time/split time, the digits are reset to “00” and the stopwatch starts counting from “00”.

When the lap time measurement in progress exceeds 1 hour, the hour digit appears in place of the mark for lap time in progress mark.
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 "5. printout")
- The stored data is recalled by pressing button ①. 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

<table>
<thead>
<tr>
<th>Display before recall</th>
<th>Button ①</th>
<th>Button ②</th>
<th>Button ③</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset</td>
<td>Returning to the display before recall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stopped</td>
<td>Returning to the display before recall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring</td>
<td>Stopping the measurement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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")

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

- The memory clear function is useful in the following cases.
  a. When the stored data becomes unnecessary.
  b. 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.

1. When 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.
   a. Press button ① (recall button).
   b. Keep button ① pressed for more than 1.5 seconds.
   c. While button ① is kept pressed, the display below is shown with warning beeps.
   d. After 1.5 seconds, the stored data is erased from memory with a long beep.
   e. All the data is erased from memory and the initial measurement display is shown.

2. Press button ③ (recall button).
   a. In the memory recall display, the stored data can be erased irrespective of which data is displayed.
   b. Unless button ③ is kept pressed for more than 1.5 seconds, the stored data will not be erased from memory.

3. Keep button ③ pressed for more than 1.5 seconds.
   a. While button ③ is kept pressed, the display below is shown with warning beeps.
   b. After 1.5 seconds, the stored data is erased from memory with a long beep.
   c. All the data is erased from memory and the initial measurement display is shown.

4. The memory clear function is useful in the following cases.
   a. When the stored data becomes unnecessary.
   b. When the residual memory is not sufficient for a new measurement.
Notes on memory capacity

- The number of data in memory is shown graphically by the memory capacity indicator.
- If you exceed the number of times that you can make a split time or recall, the start time and data 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 becomes 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 that is being recalled. The first segment (1-20) is data that was stored in the memory and the second segment (21-239) is data that was recalled. The first segment is indicated as "1-20" and the second segment is indicated as "21-239." The digits move quickly if the button is kept pressed. The hour, year, month, day, and time digits can also move quickly if the button is kept pressed.

Time/calendar setting

How to read the memory capacity indicator

The number of data that is 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

- **290-300**
- **270-290**
- **250-269**
- **230-249**
- **210-229**
- **190-209**
- **170-189**
- **150-169**
- **130-149**
- **110-129**
- **90-109**
- **70-89**
- **50-69**
- **30-49**

Press button **C** to show the time/calendar display

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

Selection of the digits to be adjusted

- **41** Setting the digits to be adjusted
- (The digits can be advanced quickly by keeping the button pressed.)
- With each press of the button, the display changes over in the following order:
  - The year digits and data measured thereafter will be displayed but will not be stored in memory for later recall.

Adjustment of the contrast on the display

- The contrast of the display can be adjusted.
- Show the time/calendar mode.

Press button **B**

- With each press of the button, the display changes over between contrast adjustment display and time/calendar display alternately.
- Any of the digits can be adjusted individually.
- Press **A** to select the digits to be adjusted, and then press **B** to set them.
- The year digits can be set from 1999 to 2048.
- The calendar adjusts automatically for odd and even months including February of leap years.

FEATURES OF PRINTER SP12

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.

Paper advancing switch:

- With each press of the switch, one line is advanced. The paper is advanced continuously by keeping the switch pressed.

Print mode selection switch:

- Split time and lap time can be printed.
- Upper position
- Split time is printed out.
- Lower position

Holder:

- Power switch
- Paper cutter: Advance the paper to an appropriate length with the power advancing switch, and then cut the paper with the paper cutter.
- Battery hatch: To remove the battery hatch, put it down.
How to insert batteries into the printer

1. Use four SUM-3 (R6P) dry batteries.
2. Put the hatch toward you while pushing the portion indicated by the arrow.
3. Inset the batteries into the battery compartment as shown in the illustration below, checking that the (+) and (-) terminals are properly set.
4. Insert the batteries from the (-) terminals.
5. Slide the battery hatch along the grooves of the battery compartment.

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.
1. Cut the first pasted position of the paper straight.
2. Open the paper cover as shown in the illustration.
3. Slide the power switch to “ON”. At this time, the motor runs for approximately 1 second to indicate that the paper is supplied.
4. 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.)
5. 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.)
6. 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.)

How to connect the printer to the stopwatch

Connecting procedure
1. 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.
2. 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.

Printout

Printout during the measurement
1. Connect the stopwatch and printer, and turn on the power switch of the printer.
2. Set the plug in the guide groove.
3. 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
   • 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.

Printout display for desired block of data
Keep button 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.

(Printout display for the data in all the blocks)

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'.

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.
4. The time a lap time is measured is not stored in memory.

Precautions

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 "How to connect the printer to the stopwatch".

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 "How to connect the printer to the stopwatch".

Remarks on using stopwatch

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 "How to connect the printer to the stopwatch".
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.

1. To preserve new thermal paper, put it in a box to avoid direct light and keep it in a dry cool place.
2. Do not touch the printing surface of the thermal paper, as the sweat or oil on the palm will cause poor printing.
3. Besides the thermal paper S550 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 SVAZ2007 for exclusive use with it is necessary. It is sold separately with the printer for ¥3,800.
4. 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, detective printing or damage of the printer will be caused.

Remarks on batteries

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.

(1) Battery life
When a new normal battery is installed, the stopwatch will operate approximately 3 years.
   (1) If the stopwatch is used for more than 3 hours a day, the battery life may be less than 3 years.
   (2) 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).
   (3) 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.
   (4) 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 "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 -10°C or above +30°C for a long time, the battery leakage may result, causing the battery life to be shortened.
### CARE OF YOUR WATCH

**CAUTION**

**WATER RESISTANCE**

<table>
<thead>
<tr>
<th>WATER RESISTANT* is inscribed on the back of your watch case.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not water-resistant</td>
</tr>
</tbody>
</table>

* 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.

- 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.

**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 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.
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.

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 5-YARD CO., LTD.”.
- Guarantee coverage is spelled out in the certificate of guarantee. Please read it carefully and keep the certificate for ready reference.

6 TROUBLESHOOTING GUIDE

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

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Solution</th>
<th>Problem</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The motor does not run even if the power switch of the printer is turned “ON”.</td>
<td>Weak batteries.</td>
<td>Replace the battery with new ones.</td>
<td>The paper is stuck.</td>
<td>Remove the paper.</td>
<td></td>
</tr>
<tr>
<td>The batteries are not installed properly.</td>
<td>Install the batteries properly.</td>
<td>By pressing the start button, the data are printed out, but the paper is not advanced or is advanced irregularly.</td>
<td>Weak batteries.</td>
<td>Replace the batteries with new ones.</td>
<td></td>
</tr>
<tr>
<td>The paper is stuck.</td>
<td>Remove the paper.</td>
<td>The power switch of the printer is not set to “ON”.</td>
<td>The cord is not connected properly.</td>
<td>Weak batteries.</td>
<td></td>
</tr>
<tr>
<td>The paper is not advanced by pressing the paper advancing switch.</td>
<td>Weak batteries.</td>
<td>The paper is stuck.</td>
<td>The cord is not connected properly.</td>
<td>Remove the paper.</td>
<td></td>
</tr>
<tr>
<td>The cord gets out of shape.</td>
<td>Remove the paper.</td>
<td>Make the roll paper round.</td>
<td>Water or foreign matters are sticking to the cord plug.</td>
<td>Connect the cord properly.</td>
<td></td>
</tr>
<tr>
<td>The cord is not connected properly.</td>
<td>Disconnect the cord correctly.</td>
<td>Wipe off the water or foreign matters.</td>
<td>The paper is not set properly.</td>
<td>Insert the paper properly.</td>
<td></td>
</tr>
</tbody>
</table>

*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)

1. Frequency of crystal oscillator .................................................. 32,768Hz (Hz=Hertz=Cycles per second)
2. Less/gain (monthly rate) .................................................. Less than 15 seconds at normal temperature range (5°C ~ 35°C)
3. Operational temperature range .................................................. –10°C ~ +60°C
4. Desirable temperature range of use ............................................. 0°C ~ +30°C
5. Display system .................................................. Measures up to 10 hours, Hour, minutes, seconds, 1/100 seconds, three-row display of split time/loop 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.
6. Time/calendar display .................................................. Hour (24hour indication), minutes, seconds, year, month, date and calendar mark. ID no. (OFF/01 ~ 99), contrast adjustment display.
7. Display medium .................................................. Nematic Liquid Crystal, FEM (Field Effect Mode)
8. Battery .................................................. Lithium battery SB-T74, 1 piece
9. IC (Integrated Circuit) .................................................. 4-BMC5-LSI, 1 piece
10. 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.
SPECIFICATIONS (PRINTER SP12)

1. Printer
   - Model: 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 paper
   - Roll 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 supply
   - DC 6.0V (SUM-3 or AM3 dry battery, 4 pieces)
   - During printing: Approx. 1.5W (DC 6.0V)

4. Power consumption

5. Battery life
   - With power switch turned "ON" (No printing): Approx. 0.02W (DC 6.0V)
   - Alkaline manganese battery: Approx. 10,000 lines can be printed. (Equivalent to approx. 14 rolls)
   - 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 range
   - 0°C ~ 40°C (The depth of printout does not change even if the temperature changes.)

7. Outside dimensions and weigh
   - 130.4mm (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.