SEIKO DIGITAL STOPWATCH FOR INDUSTRIAL MEASUREMENT Cal. S05A

You are now the proud owner of a SEIKO Digital Stopwatch Cal. S05A. For best results, please read the instructions in this booklet carefully before using your SEIKO Digital Stopwatch. Please keep this manual handy for ready reference.

WARNING

NOTES ON THE BATTERY
- Do not remove the battery from the stopwatch.
- If it is necessary to take out the battery, keep it out of the reach of children. If a child swallows it, consult a doctor immediately.
- Never short-circuit, heat or otherwise tamper with the battery, and never expose it to fire. The battery may burst, become very hot or catch fire.
- The battery is not rechargeable. Never attempt to recharge it, as this may cause battery leakage or damage to the battery.

NOTES ON THE STRAP
- The stopwatch has a strap for wearing it around your neck. Take good care lest it should be caught by something near you or wind around your neck.
- Please also note that the strap may damage your clothes, or injure your hands, neck or other parts of your body.

TO PRESERVE THE QUALITY OF YOUR STOPWATCH
- WATER RESISTANCE (5 bar)
  Your stopwatch is designed and manufactured to withstand up to 5 bar, such as accidental contact with splashes of water or rain. Do not operate the buttons when the stopwatch is wet or in water.
- TEMPERATURES
  If the stopwatch is left in direct sunlight for a long time, the display may become black, but this condition will be corrected when the stopwatch returns to normal temperature.
  - Do not leave your stopwatch in very low temperatures below -10°C (+14°F) for a long time since the cold may cause:
    a. a slight time loss or gain.
    b. the change of digits to become slow.
    c. the display light to dim.
  - However, the above conditions will be corrected when the stopwatch returns to normal temperature.
- SHOCKS
  Do not subject it to violent shocks.
- MAGNETISM
  Your stopwatch will not be affected by magnetism.
- CHEMICALS
  Be careful not to expose the stopwatch to solvents, mercury, cosmetic spray, detergents, adhesives or paints. Otherwise, the case, etc. may become discolored, deteriorated or damaged.
- PERIODIC CHECK
  It is recommended that the stopwatch be checked once every 2 to 3 years. Have your stopwatch checked by an AUTHORIZED SEIKO DEALER or SERVICE CENTER to ensure that the case, buttons, gasket and crystal seal remain intact.
- PRECAUTION REGARDING CASE BACK PROTECTIVE FILM
  If your stopwatch has a protective film and/or a sticker on the case back, be sure to peel them off before using it.
- STATIC ELECTRICITY
  The IC (Integrated Circuit) used in your stopwatch will be affected by static electricity which may disturb the display. Keep your stopwatch away from close contact with objects such as TV screens which emit strong static electricity.
- LIQUID CRYSTAL PANEL
  The normal life expectancy for a liquid crystal panel is approximately 7 years. After that it may decrease in contrast, becoming difficult to read. Please contact your AUTHORIZED SEIKO DEALER or SERVICE CENTER if you wish to have a new panel fitted (guaranteed one year).

FEATURES

The SEIKO Quartz Stopwatch for industrial measurement Cal. S05A is a digital decimal stopwatch that can be used for activities such as production control and performance analysis. The stopwatch features a lap time/split time memory function that can store and recall up to 100 sets of lap times and split times. Time/calendar, timer, and alarm functions are also provided.

STOPWATCH
The stopwatch can measure up to 99999.9 DM (999,999 minutes) in 1/10 DM (1/1000 minute) increments.
*DM (Decimal): Unit used in a decimal system

1 DM = 1/100 minute
100 DM = 1 minute
600 DM = 6 minutes
6000 DM = 60 minutes

LAP TIME, LAP TIME IN PROGRESS AND SPLIT TIME DISPLAYS
Three separate stopwatch displays are available for lap time, lap time in progress and split time measurements.

MEMORY FUNCTION
Up to 100 lap/split time data can be stored in memory, and they can be recalled either during or after the measurement.

TIME/CALENDAR
Year, month, day, date, hour, minutes and seconds are displayed. The calendar automatically adjusts for odd and even months including February of leap years from January 1, 2006 to December 31, 2055.

AUTOMATIC SHUT-OFF FUNCTION
When the stopwatch is left untouched for one hour, the display automatically becomes blank in order to minimize battery consumption.

DOUBLE REPEAT TIMER
- The built-in two descending timers (which allow you to set two different timer times) can be used repeatedly one after the other.
- Each Timer 1 and Timer 2 can be set for any desired amount of time from 10 seconds up to 99 hours, 59 minutes and 59 seconds in one-second increments.
- For easy distinction between Timer 1 and Timer 2, the time-up warning beeps are different in tones.
ALARM
- The daily alarm sounds once at the designated time (hour, minute) every 24 hours.

BATTERY LIFE INDICATOR

CHANGE OF DISPLAYS
Press Button D to change the display mode.

TIME/CALENDAR display
- \[ \text{WED 06 12-6} \]
- \[ \text{P 10:08 59} \]

STOPWATCH display
- \[ \text{LAP-000} \]
- \[ \text{00:00 00} \]

ALARM display
- \[ \text{A 12:00 on} \]
- \[ \text{P 10:08 59} \]

STOPWATCH display
- \[ \text{RLP-000} \]
- \[ \text{00:00 00} \]

STOPWATCH display
- \[ \text{SPL-000} \]
- \[ \text{00:00 00} \]

STOPWATCH display
- \[ \text{SPL-000} \]
- \[ \text{00:00 00} \]

TIME/CALENDAR SETTING

D Press to show the TIME/CALENDAR display.

B Press and hold for 2 seconds to show the TIME/CALENDAR SETTING display.
- The DAY disappears and the SECOND digits start flashing.

C Press repeatedly to select the digits (flashing) to be adjusted.

A Press to set the flashing digits or reset the SECONDS to “00.”
- The digits move quickly if Button A is kept pressed.

- 12-/24-hour indication setting:
  - Change between 12-and 24-hour indications is made alternately with each press of Button A.
  - Automatic shut-off function setting (ECO):
    - With each press of Button A, the automatic shut-off function (ECO) is alternately set to “ON” and “OFF.”

B After all the adjustments are completed, press to return to the TIME/CALENDAR display.

- The DAY is automatically set once the YEAR, MONTH and DATE are set.
- To quit the time/calendar setting, press Button B. When the stopwatch is left untouched, it automatically returns to the TIME/CALENDAR display within two to three minutes.
- The calendar adjusts automatically for odd and even months including February of leap years from January 1, 2006 to December 31, 2055.
- When setting the HOUR digits in the 12-hour indication, check that “A” (AM)/“P” (PM) mark is correctly set. In the 24-hour indication, no mark is displayed.
- If Button A and C are pressed simultaneously, all the digital segments light up. This is not a malfunction. Press any of Button A, B, C or D to return to the TIME/CALENDAR display.

STOPWATCH

- The stopwatch can measure up to 99999.9 DM in 1/10 DM increments.
- Three separate measurement displays are available; lap time, lap time in progress and split time displays.
STOPWATCH OPERATION

**1 Standard measurement**

- Press to show the LAP TIME, LAP TIME IN PROGRESS or SPLIT TIME display.

**2 Accumulated elapsed time measurement**

- Press to show the LAP TIME, LAP TIME IN PROGRESS or SPLIT TIME display.

**3 Lap time measurement**

- Press to show the LAP TIME or LAP TIME IN PROGRESS display.

**4 Split time measurement**

- Press to show the SPLIT TIME display.

**5 How to use the memory function**

- Press to show the MEMORY RECALL display.

- With each press, the stored data is recalled successively from the oldest to the newest.

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- Press to return to the STOPWATCH display.

**Before using the stopwatch, be sure to reset the digits to “00.”**

- When the stopwatch is stopped, press Button A.
- When it is counting, press Button C to stop the measurement and then press Button A.

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- Press to show the LAP TIME or LAP TIME IN PROGRESS display.

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- Press to show the SPLIT TIME display.

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- Press to return to the STOPWATCH display.

**Before using the stopwatch, be sure to reset the digits to “00.”**

- When the stopwatch is stopped, press Button A.
- When it is counting, press Button C to stop the measurement and then press Button A.
DOUBLE REPEAT TIMER

- Two timers are available for use either individually or in combination. When used together, Timer 2 starts counting down as soon as Timer 1 has finished counting down the set time. They repeat their respective countdown cycles alternately as many times as necessary unless stopped.
- Each Timer 1 and Timer 2 can be set for any desired amount of time from 10 seconds up to 99 hours, 59 minutes and 59 seconds in one-second increments.
- To use either Timer 1 or Timer 2 as a standard repeat timer, set the timer not in use to “00:00’00.”
- The number of times that the timers repeat their countdown cycles can be set from 1 to 100 times. If “---” is set for the number of repeating times, the timers will automatically start over a new counting until stopped by the user.

How to use the timer

In this way, both the timers repeat the countdown the number of times you have set, showing the number of times the countdown has been completed on the display.

To stop the time-up warning beep and time-up beep while sounding, press either Button A, B, C or D. This will not affect the time-up beeps for the subsequent countdown cycles.
The time-up beeps of Timer 1 and Timer 2 sound in different tones.
Restarting and stopping the timer can be repeated as many times as necessary by pressing Button C.

ALARM

- The daily alarm sounds once at the designated time (hour, minute) every 24 hours.
- The alarm sounds for approximately 20 seconds at the designated time and automatically stops.
- The alarm can be engaged (on) or disengaged (off) by pressing button C.
- Depending on which indication is selected in the Time/Calendar display, the alarm time is displayed in a 12-hour or 24-hour indication.

ENGAGEMENT/DISENGAGEMENT OF THE DAILY ALARM

Press to engage (on) or disengage (off) the alarm.

ALARMTIME SETTING

Press to show the ALARM display.
Press and hold for 2 seconds to show the ALARM SETTING display.
*The hour digit starts flashing.
BATTERY CHANGE

The miniature battery which powers your stopwatch should last approximately 3 years (or approximately 7 years if the ECO mode is activated). However, because the battery is inserted at the factory to check the function and performance of the stopwatch, its actual life once in your possession may be less than the specified period. When the battery expires, be sure to replace it as soon as possible to prevent any malfunction. For battery replacement, we recommend that you contact an AUTHORIZED SEIKO DEALER and request a SEIKO CR2032 battery.

Battery life indicator

When all the segments of the display start flashing in the TIME/CALENDAR display, or when "0:00" mark starts flashing in other displays, the stopwatch may run down in 2 to 3 days. We suggest that you have the battery replaced by a SEIKO DEALER.

* Even though the display is flashing, time accuracy is not affected.

SPECIFICATIONS

1. Frequency of crystal oscillator: 32,768Hz (Hz = Hertz ... Cycles per second)
2. Accuracy: ±0.0012% or 30 seconds per month at normal temperature (25°C ± 3)
3. Operational temperature range: -10°C - +60°C
4. Desirable temperature range of use: 0°C - 50°C
5. Display system
   - TIME/CALENDAR display: Hour, minutes, seconds, year, month, date and day of the week
   - STOPWATCH display: 2 rows of digital displays and a dot matrix display (5 x 35 dots)
   - LAP TIME display/LAP TIME IN PROGRESS display/SPLIT TIME display: Up to 100 sets of lap times and split times can be stored in memory.
   - TIMER display: Timer 1 and Timer 2 displays

   | Time of day (The calendar automatically adjusts for odd and even months including February of leap years from January 1, 2006 to December 31, 2055.)
   | Day of week (1-13 or 'Sun', 'Mon', 'Tues', 'Wed', 'Thurs', 'Fri', 'Sat', 'Sun')
   | Year (2006-2055)

   - ALARM display: Alarm time (hour, minute), current time (hour, minute, second)

6. Display medium: Nematic Liquid Crystal, FEM (Field Effect Mode)
7. Battery: SEIKO CR2032, 1 piece
8. Battery life: Approximately 3 years (or approximately 7 years if the automatic shut-off function is activated)
9. IC (Integrated Circuit): C-MOS-LSI, 1 piece
10. Battery life indicator

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