

SEIKO

ANALOGUE QUARTZ  
SOLAR Cal. V145  
&  
SOLAR DIVER'S WATCH CAL. V145

SEIKO

INSTRUCTIONS  
用法説明

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NSYV145 2001-9

Printed in Japan  
Printed on recycled paper

FEATURES

- POWERED BY LIGHT ENERGY
- NO NEED FOR BATTERY CHANGE
- LASTS FOR 6 MONTHS AFTER FULL CHARGE
- ENERGY DEPLETION FOREWARNING FUNCTION
- INSTANT-START FUNCTION
- OVERCHARGING PREVENTION FUNCTION
- 200 METER WATER RESISTANCE (For Diver's Watch)
- ROTATING BEZEL (For Diver's Watch)
- SCREW DOWN CROWN (For Diver's Watch)

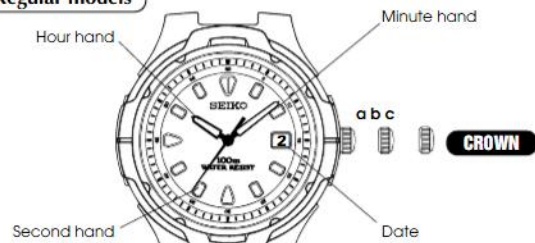
☆ If your watch is a diver's watch, "DIVER'S 200 M" is inscribed on the dial. Please read the instructions pertaining to your watch.

CAUTION for Diver's Watch model

- Diving is an inherently hazardous form of recreation and it is essential that you strictly observe all instructions for use and maintenance of the watch set forth in this booklet for safety's sake. Do not attempt to dive using this watch unless you have been properly trained in diving.
- Do not use the watch for saturation diving.

DISPLAY AND CROWN OPERATION

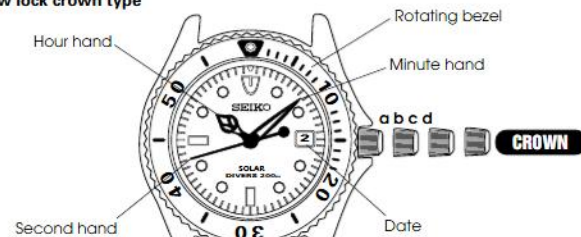
Most Regular models



- a) Normal position : Free
- b) First click : Date setting
- c) Second click : Time setting

Diver's Watch models / Some Regular models

Screw lock crown type



- a) Screwed-in position
- b) Normal position : Free
- c) First click : Date setting
- d) Second click : Time setting

☆ The solar cell is installed under the dial.

HOW TO CHARGE AND START THE WATCH

TO CHARGE THE WATCH

- When you start the watch or when the energy in the rechargeable battery is reduced to an extremely low level, charge it sufficiently by exposing the watch to light.
- Instant-start function:  
When the watch is exposed to sunlight or strong artificial light (of more than 1,000 lux), it will start operating immediately with Second hand moving at 2-second intervals.



- Expose the watch to sunlight or strong artificial light.  
\* When the watch has stopped operating, Second hand will start moving at 2-second intervals.
- Keep the watch exposed to the light until Second hand moves at 1-second intervals.
- When the watch is charged after it has completely stopped, set the date and time before wearing the watch.  
\* See "GUIDELINE OF CHARGING TIME".

NOTES:

- When the instant-start function is activated by exposing the watch to light, Second hand starts moving at 2-second intervals immediately, but the energy stored in the rechargeable battery is not sufficient. If the watch is turned away from the light, it may stop operating.
- It is not necessary to charge the watch fully. It is important, however, to charge the watch sufficiently, especially in case of initial charge.

CAUTION

Caution for charging

- When charging the watch, do not place it too close to a photoflash light, spotlight, incandescent light or other light sources as the watch temperature will become extremely high, causing damage to the parts inside the watch.
- When exposing the watch to sunlight to charge it, do not leave it on the dashboard of a car, etc. for a long time, as the watch temperature becomes extremely high.
- While charging the watch, make sure the watch temperature does not exceed 50° C.

GUIDELINE OF CHARGING TIME

Illumination (lux)	Light source	Environment	Time required (approx.)		
			A	B	C
500	60-watt incandescent light	Distance of 60 cm (2 ft.)	250 hours	15 hours	60 minutes
700	Fluorescent light	Office, overhead	175 hours	11 hours	50 minutes
1,000	30-watt fluorescent light	Distance of 70 cm (2 ft. 4 in.)	120 hours	6 hours	30 minutes
3,000	30-watt fluorescent light	Distance of 20 cm (8 in.)	40 hours	2 hours	10 minutes
5,000	30-watt fluorescent light	Distance of 12 cm (5 in.)	22 hours	80 minutes	6 minutes
10,000	30-watt fluorescent light	Distance of 3 cm (1 in.)	10 hours	30 minutes	3 minutes
10,000	Sun	Cloudy weather	10 hours	30 minutes	3 minutes
100,000	Sun	Fair weather	3 hours	8 minutes	1 minute

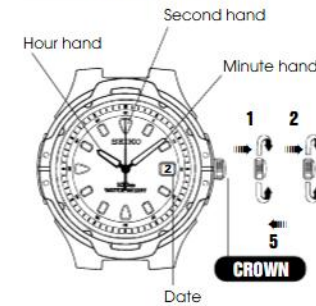
A: for full charge B: for 1-second intervals C: to maintain 1-day usage

☆ The values in this column represent the charging times required until Second hand moves constantly at 1-second intervals after the watch starts operating with Second hand moving at 2-second intervals. Even if the watch is not charged for the time specified in the column, Second hand may temporarily move at 1-second intervals. But, it will soon resume moving at 2-second intervals, and therefore, charge the watch for more than the specified period.

- The above table provides only a general guideline.
- When the watch is fully charged, it will keep operating for approximately 6 months.

TIME/CALENDAR SETTING

Most Regular models



CROWN

- Pull out to first click and turn to set the previous day's date.
- Pull out to second click when Second hand is at the 12 o'clock position.
- Turn until the desired date appears.
- Turn to set Hour and Minute hands to the desired time.
- Push back in to normal position in accordance with a time signal.

Diver's Watch models / Some Regular models

Screw lock crown type



CROWN

- Unscrew by turning counterclockwise.
- Pull out to first click.
- Turn to set the previous day's date.
- Pull out to second click when Second hand is at the 12 o'clock position.
- Turn until the desired date appears.
- Turn to set Hour and Minute hands to the desired time.
- Push back in to normal position in accordance with a time signal.
- While pressing, turn clockwise to screw in completely.

NOTES:

- Do not set the date between 9:00 p.m. and 1:00 a.m. Otherwise, it may not change properly.  
\* If it is necessary to set the date during that time period, first change the time to any time outside it, set the date and then reset the correct time.
- When setting Hour hand, check that AM/PM is correctly set.  
\* The watch is so designed that the date changes once in 24 hours. Turn the hands past the 12 o'clock marker to determine whether the watch is set for the A.M. or P.M. period. If the date changes, the time is set for the A.M. period. If the date does not change, the time is set for the P.M. period.
- When setting Minute hand, first advance it 4 to 5 minutes ahead of the desired time and then turn it back to the exact minute.
- It is necessary to adjust the date at the end of February and 30-day months.

ENERGY DEPLETION FOREWARNING FUNCTION

- When the energy stored in the rechargeable battery is reduced to an extremely low level, Second hand starts moving at 2-second intervals instead of the normal 1-second intervals.
- In that case, recharge the watch as soon as possible by exposing it to light. Otherwise, the watch may stop operating in about 3 days. (For recharging the watch, see "HOW TO CHARGE AND START THE WATCH")

TO PREVENT THE ENERGY DEPLETION

- Wear the watch so that it is not covered by your clothes.
- When the watch is not in use, leave it in a bright place as long as possible.  
\* Make sure that the watch temperature does not exceed 50° C.

NOTE ON POWER SUPPLY

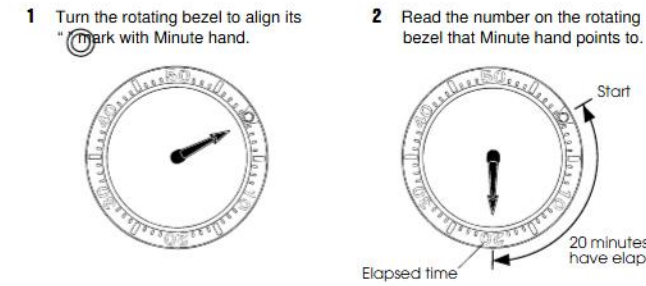
- This watch is provided with a rechargeable battery for exclusive use with the watch. Unlike conventional battery-powered watches, therefore, battery replacement is not necessary.
- The solar cell is a clean energy source, having no adverse effect on the natural environment.

CAUTION

- Never insert a conventional silver oxide battery in your watch as it may explode, generate an intense heat or catch fire. The watch is so designed that even if the battery is installed in the watch, the watch will not operate.

ROTATING BEZEL

- The rotating bezel can show up to 60 minutes of elapsed time.



\* The rotating bezel turns only counterclockwise for safety's sake.

PRECAUTIONS FOR DIVING

for Diver's Watch model

Before diving

Check that:

- the watch operates normally.
- the second hand is moving at 1-second intervals. If it is moving at 2-second intervals, do not use the watch for diving. (For recharging the watch, see "HOW TO CHARGE AND START THE WATCH")
- the time and date are properly indicated.
- the rotating bezel turns counterclockwise smoothly (the rotation must not be too loose or too tight) and the "Start" mark aligns with the minute hand.
- the crown is locked tightly in place.
- there are no visible cracks in the crystal or the watch band.
- the strap or bracelet is securely fastened to the watch case.
- the buckle or clasp keeps the strap or bracelet firmly secured to the wrist.
- the metal bracelet is sized to fit your wrist if your watch has it.

If there are any malfunctions, we recommend that you contact an AUTHORIZED SEIKO DEALER before using the watch.

While diving

- While you are underwater, never unscrew the crown or pull it out.
- Take care not to hit the watch against hard objects such as rocks.
- Bezel rotation may become slightly harder in the water but this is not a malfunction.

After diving

- After making a dive, be sure to rinse the watch in fresh water, and wash out all seawater, soil, sand, etc.
- After cleaning the watch in fresh water, be sure to wipe it thoroughly dry to prevent possible rust on the case.
- To maintain the excellent water resistant quality of the watch, we recommend that you have the watch overhauled and that you have the gaskets for case back and crown replaced by an AUTHORIZED SEIKO DEALER periodically.

SPECIFICATIONS

1 Frequency of crystal oscillator ..	32,768 Hz (Hz = Hertz ... Cycles per second)
2 Loss/gain (monthly rate) .....	±20 seconds at normal temperature range (5° C ~ 35° C) (41° F ~ 95° F)
3 Operational temperature range ..	-5° C ~ +50° C (23° F ~ 122° F)
4 Driving system .....	Step motor
5 Power supply .....	Titanium-lithium ion rechargeable battery
6 Duration of life	
Full charge .....	Approx. 6 months
2-second interval operation ..	Approx. 3 days
7 Additional function .....	Instant-start function, energy depletion forewarning function and overcharging prevention function
8 IC (Integrated Circuit) .....	C-MOS-IC, 1 piece

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

TO PRESERVE THE QUALITY OF YOUR WATCH

WATER RESISTANCE

Indication on case back	Condition of use Degree of water resistance*	Accidental contact with water such as rain and splashes	Swimming, yachting and taking a shower	Taking a bath and shallow diving	Scuba diving**
WATER RESISTANT	3 bar	Yes	No	No	No
WATER RESISTANT 5 BAR	5 bar	Yes	Yes	No	No
WATER RESISTANT 10/15/20 BAR	10/15/20 bar	Yes	Yes	Yes	No
DIVER'S 200 M	20 bar	Yes	Yes	Yes	Yes

Non-water resistant

- If the watch becomes wet, have it checked by an AUTHORIZED SEIKO DEALER or SERVICE CENTER.

Water resistant 5/10/15/20 bar

- Before using in water, be sure the crown is pushed in completely.
- Do not operate the crown when the watch is wet or in water. If used in sea water, rinse the watch in fresh water and dry it completely.
- Do not operate the crown when the watch is wet with soapy water or shampoo.
- If the watch is left in warm water, a slight time loss or gain may be caused. This condition, however, will be corrected when the watch returns to normal temperature.

\* Pressure in bar is a test pressure and should not be considered as corresponding to actual diving depth since swimming movement tends to increase the pressure at a given depth. Care should also be taken on diving into water.  
\*\* Do not use the watch for saturation diving.

TEMPERATURES

Your watch works with stable accuracy within a temperature range of 5° C and 35° C (41° F and 95° F). Temperatures over 50° C (122° F) or below -5° C (+23° F) may cause a slight time loss or gain or shorten the duration within which the watch keeps operating. However, the above conditions will be corrected when the watch returns to normal temperature.

MAGNETISM

Your watch will be adversely affected by strong magnetism. Keep it away from close contact with magnetic objects.

CARE OF CASE AND BRACELET

To prevent possible rusting of the case and bracelet, wipe them periodically with a soft dry cloth.

CHEMICALS

Be careful not to expose the watch to solvents, mercury, cosmetic spray, detergents, adhesives or paints. Otherwise, the case, bracelet, etc. may become dis-colored, deteriorated or damaged.

SHOCKS & VIBRATION

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

PRECAUTION REGARDING CASE BACK PROTECTIVE FILM

If your watch has a protective film and/or a sticker on the case back, be sure to peel them off before using your watch.

PERIODIC CHECK

It is recommended that the watch be checked once every 2 to 3 years by an AUTHORIZED SEIKO DEALER or SERVICE CENTER to ensure that the case, crown, gasket and crystal seal remain intact.