

PULSAR

CAL. NH38, NH39 & NH70 MECHANICAL WATCHES

- Hour, minute and second hands
- 24-hour hand (NH39 only)
- Automatic winding type with manual winding
- 24 jewels

ENGLISH

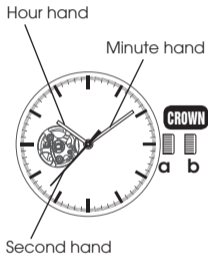
CHARACTERISTICS OF A MECHANICAL WATCH

English

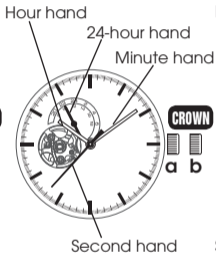
- This mechanical watch operates using power obtained from a mainspring.
- If the watch is completely stopped, manually turn the crown approximately 20 times to wind up the mainspring to start the watch.
- While loss/gain of a quartz watch is indicated by a monthly or annual rate, accuracy of a mechanical watch is normally indicated by a daily rate (loss/gain per day).
- Normal usage accuracy of a mechanical watch varies according to conditions of use (time period that the watch is worn on the wrist, temperature environment, hand movement, and winding state of the mainspring).
- When the watch is affected by strong magnetism, it temporarily gains or loses time. If the watch encounters a strong magnetic field, the parts of the watch may be magnetized. In this case, repairs such as removal of magnetism are required. Contact the retailer from whom the watch was purchased.

DISPLAY AND CROWN

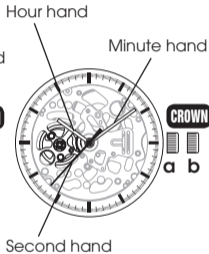
NH38



NH39



NH70



English

CROWN

- a) Normal position : winding up the mainspring (manual operation)
- b) First click position : time setting

SCREW DOWN CROWN

[for models with screw down crown]

Unlocking the crown

1. Turn Crown counterclockwise until you no longer feel the threads turning.
2. Crown can be pulled out.



Locking the crown

1. Push Crown back in to normal position.
2. Turn Crown clockwise while pressing it lightly until tight.



HOW TO USE THE WATCH

This watch is an automatic watch equipped with a manual winding mechanism.

- When the watch is worn on the wrist, the motion of the wearer's arm winds the mainspring of the watch.
- If your watch is completely stopped, it is recommended that you manually wind the mainspring by turning the crown.

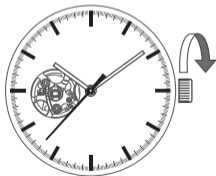
■ HOW TO MANUALLY WIND THE MAINSPRING BY TURNING THE CROWN

CROWN

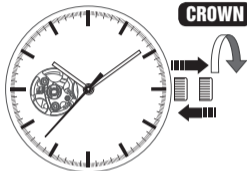
1. Slowly turn clockwise (in the 12 o'clock direction) to wind the mainspring.

Turning the crown counterclockwise (the 6 o'clock direction) does not wind the mainspring.

2. Continue to turn until the mainspring is sufficiently wound. The second hand will start moving.
3. Set the time and date before putting the watch on your wrist.



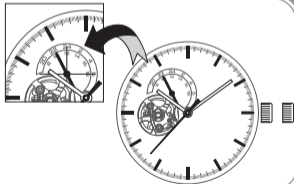
TIME SETTING



1. Pull out to the first click when the second hand is at the 12 o'clock position. (The second hand stops on the spot.)
2. Turn to set the hour and minute hands to the correct time.
3. Push back in to the normal position in accordance with a time signal.

For Cal. NH39

- *The 24-hour hand moves correspondingly with the hour hand.*
- *When setting the hour hand, check that the 24-hour hand is correctly set.*



ACCURACY OF MECHANICAL WATCHES

- The accuracy of mechanical watches is indicated by the daily rates of one week or so.
- The accuracy of mechanical watches may not fall within the specified range of time accuracy because of loss/gain changes due to the conditions of use, such as the length of time during which the watch is worn on the wrist, arm movement, whether the mainspring is wound up fully or not, etc.
- The key components in mechanical watches are made of metals which expand or contract depending on temperatures due to metal properties. This exerts an effect on the accuracy of the watches. Mechanical watches tend to lose time at high temperatures while they tend to gain time at low temperatures.
- In order to improve accuracy, it is important to regularly supply energy to the balance that controls the speed of the gears. The driving force of the mainspring that powers mechanical watches varies between when it is fully wound and immediately before it is unwound. As the mainspring unwinds, the force weakens.

Relatively steady accuracy can be obtained by wearing the watch on the wrist frequently for the self-winding type and winding up the

mainspring fully everyday at a fixed time to move it regularly for the wind-up mechanical type.

- When affected by external strong magnetism, a mechanical watch may loss/gain time temporarily. The parts of the watch may become magnetized depending on the extent of the effect. In such a case, consult the retailer from whom the watch was purchased since the watch requires repair, including demagnetizing.

LUMIBRITE™

LumiBrite is a newly developed luminous paint that is completely harmless to human beings and the natural environment, containing no noxious materials such as radioactive substances. LumiBrite absorbs the energy of sunlight or artificial light in a short time and stores it to emit light in the dark. For example, if exposed to a light of more than 500 lux for approximately 10 minutes, LumiBrite can emit light for 5 to 8 hours.

Please note, however, that, as LumiBrite emits the light it stores, the luminance level of the light decreases gradually over time. The duration of the emitted light may also differ slightly depending on such factors as the brightness of the place where the watch is exposed to light and the distance from the light source to the watch.

When you make a dive in dark water, LumiBrite may not emit light unless it has absorbed and stored light sufficiently

Before diving, therefore, be sure to expose the watch to light under the conditions specified above, so that it fully absorbs and stores light energy. Otherwise, use the watch together with an underwater flashlight.

< Reference data on luminance >

(A) Sunlight

[Fine weather]: 100,000 lux

[Cloudy weather]: 10,000 lux

(B) Indoor (Window side during daytime)

[Fine weather]: more than 3,000 lux

[Cloudy weather]: 1,000 to 3,000 lux

[Rainy weather]: less than 1,000 lux

(C) Lighting apparatus (40-watt daylight fluorescent light)

[Distance to the watch: 1 m]: 1,000 lux

[Distance to the watch: 3 m]: 500 lux (average room luminance)

[Distance to the watch: 4 m]: 250 lux

* "LUMIBRITE" is a trademark of SEIKO HOLDINGS CORPORATION.

TO PRESERVE THE QUALITY OF YOUR WATCH

WATER RESISTANCE

● Non-water resistant



If “WATER RESISTANT” is not inscribed on the case back, your watch is not water resistant, and care should be taken not to get it wet as water may damage the movement. If the watch becomes wet, we suggest that you have it checked by an AUTHORIZED PULSAR DEALER or SERVICE CENTER.

● Water resistance (3 bar)



If “WATER RESISTANT” is inscribed on the case back, your watch is designed and manufactured to withstand up to 3 bar, such as accidental contact with splashes of water or rain, but it is not designed for swimming or diving.

● Water resistance (5 bar)*



If “WATER RESISTANT 5 BAR” is inscribed on the case back, your watch is designed and manufactured to withstand up to 5 bar and is suitable for swimming, yachting and taking a shower.

● Water resistance (10 bar/15 bar/20 bar)*



If “WATER RESISTANT 10 BAR”, “WATER RESISTANT 15 BAR” or “WATER RESISTANT 20 BAR” is inscribed on the case back, your watch is designed and manufactured to withstand up to 10 bar/15 bar/20 bar and is suitable for taking a bath, shallow diving, but not for scuba diving. We recommend that you wear a PULSAR Diver’s watch for scuba diving.

- * *Before using the water resistance 5, 10, 15 or 20 bar watch 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.*
- * *When taking a shower with the water resistance 5 bar watch, or taking a bath with the water resistance 10, 15 or 20 bar watch, be sure to observe the following:*
 - *Do not operate the crown when the watch is wet.*
 - *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.*

NOTE:

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.

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) may cause battery leakage or shorten the battery life. Do not leave

your watch in very low temperatures below -5° C (+23° F) for a long time since the cold may cause a slight time loss or gain. However, the above conditions will be corrected when the watch returns to normal temperature.

SHOCKS & VIBRATION

Light activities will not affect your watch, but be careful not to drop your watch or hit it against hard surfaces, as this may cause damage.

CHEMICALS

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

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.

CARE OF CASE AND BRACELET

To prevent possible rusting of the case and bracelet caused by dust, moisture and perspiration, wipe them periodically with a soft dry cloth.

MAGNETISM

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

PERIODIC CHECK

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