

V. IN CASE NOTHING ABNORMAL HAS BEEN FOUND THROUGH THE CHECKING PROCEDURES

(1) Analogue Quartz

Defective phenomenon	Time gain
Checking result	Accuracy (timing rate) is normal.
<p>Diagnosis:</p> <p>It is an extremely rare occurrence that an analogue quartz watch would gain time, yet nothing be found wrong with its accuracy.</p> <p>The most possible cause is the effect of AC magnetism.</p> <p>Unlike DC magnetism, however, AC magnetism seldom magnetizes watch parts. As a result, it is not possible to detect the effect of AC magnetism on the watch. (Refer to page 7.)</p>	

(2) Digital Quartz

Defective phenomenon	Abnormal display
Checking result	Abnormal display is corrected by resetting the circuit.
<p>Diagnosis:</p> <p>Digital quartz watches may show an abnormal display after a battery is installed.</p> <p>Check with the customer to ascertain if such an abnormal display appeared after battery replacement. If it was not after battery replacement, check and repair it by referring to page 38 ("BLANK DISPLAY/INTERMITTENT BLANK DISPLAY/SUDDEN TIME INACCURACY").</p>	

(3) Additional function

Defective phenomenon	The alarm does not ring.
Checking result	The alarm rings by alarm test operation.
<p>Diagnosis:</p> <p>It can be considered that the customer is unaccustomed to alarm setting and has failed to set the alarm correctly. Check the following:</p> <p style="padding-left: 40px;">A.M./P.M. is incorrectly set for the alarm time.</p> <p style="padding-left: 40px;">The alarm is not engaged.</p>	




Defective phenomenon	Solar cell failure (stoppage, blank display)
Checking result	Nothing wrong with recharge condition.
<p>Diagnosis:</p> <p>The cause can be ascribed to insufficient recharge. The customer should be well advised to wear the watch on the wrist out from the edge of a shirt sleeve or jacket cuff so that the solar cell can be exposed to light for daily recharging.</p>	

VI. OVERHAUL AND CLEANING




Quartz watch parts are grouped into metal parts, plastic parts, and combined parts of metal and plastic. Clean them in their respective appropriate cleaning methods as specified in the following tables.

1. CLEANING METHOD

• Movement/module parts

Parts name	Cleaning	Solution	Drying	Remarks
<ul style="list-style-type: none"> • Metal main plate  <ul style="list-style-type: none"> • Other metal parts (excluding the parts that must not be cleaned) 	Clean with cleaning machine, rinse, or scrub with a soft brush	Benzine, Daiflon S-3, or alcohol	Warm air	<ul style="list-style-type: none"> • Be careful not to deform or remove the parts fixed to the main plate. Ex. • Antimagnetic shield plate • Rotor stator
<ul style="list-style-type: none"> • Step rotor 	Rinse or scrub with a soft brush			<ul style="list-style-type: none"> • Use an especially clean solution as the step rotor is magnetized. Any dust or sludge that does not yield to cleaning should be removed by "RODICO" or adhesive tape.
<ul style="list-style-type: none"> • Plastic main plate and other plastic parts • Parts combining metal and plastic materials, such as main plate and battery connection (-) 	Rinse or scrub with a soft brush	Daiflon S-3 or alcohol	Warm air	<ul style="list-style-type: none"> • Do not wash the liquid crystal panel frame with bulb.
<ul style="list-style-type: none"> • Connector 	Rinse or scrub with a soft brush	Alcohol	Cool air	<ul style="list-style-type: none"> • Never use Daiflon S-3 or benzene. Dry the connector thoroughly before reassembling.

• **Casing parts**

Parts name	Cleaning	Solution	Drying	Remarks
<ul style="list-style-type: none"> • Metal parts, such as case middle, case back, case ring, and bezel 	Clean with ultrasonic cleaner, rinse, or scrub with a soft brush	Soap-and-water solution, benzine, or Daiflon S-3	Warm air	<ul style="list-style-type: none"> • To clean those parts that are coated or printed, do not use a solution but wipe them with a soft cloth moistened with a mild water solution of neutral detergent.
<ul style="list-style-type: none"> • Glass (Hardlex or sapphire glass) 	Clean with ultrasonic cleaner or wipe off with a dry cloth	Alcohol, soap-and-water solution, benzine, or Daiflon S-3	Warm air	<ul style="list-style-type: none"> • If the glass has any marking on the inside surface, do not use any solution but wipe off dust with a dry, soft cloth.
<ul style="list-style-type: none"> • Gasket (case back gasket, crown with gasket, button with gasket) 	Rinse or scrub with a soft brush	Alcohol	Cool air	<ul style="list-style-type: none"> • Clean within 5 minutes. Never use benzine or Daiflon S-3.

* When a soap-and-water solution is used, be sure to rinse the solution off in fresh water and then to dry the parts completely with warm air.

• **Metal bracelet**

Parts name	Cleaning	Solution	Drying	Remarks
<ul style="list-style-type: none"> • Independent-type bracelet (detachable from the case) 	Clean with ultrasonic cleaner	Soap-and-water solution	Warm air	
<ul style="list-style-type: none"> • Integral-type bracelet 	Scrub with a soft brush			<ul style="list-style-type: none"> • Be careful to avoid spilling of water on the watch.

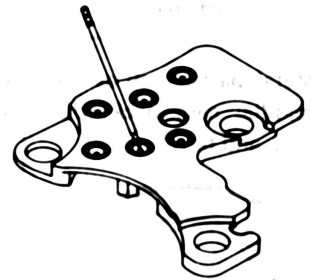
* After cleaning, be sure to rinse the soap-and-water solution off in fresh water and then to dry the parts completely with warm air.

2. POINTS IN CLEANING

● Checkup after cleaning the holes for wheels of the bridges and the main plate

There are areas that cannot be easily dusted off with a cleaning machine or a soft brush. If the gear train mechanism in particular is installed with any contamination remaining, this may cause difficulty with repairing any possible irregularity. After cleaning, therefore, be sure to check that there is no contamination left.

If there is any residual contamination, scrape it off with a wooden toothpick or something else with a soft pointed tip. At this time, be careful not to scratch the parts.



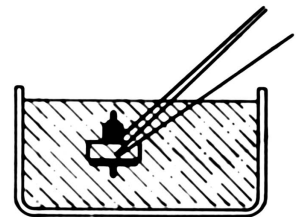
On both the front and the back of the holes for wheels

● Accumulation of sludge on the step rotor at the time of cleaning

Since the step rotor is magnetized, sludge may easily gather on the step rotor if it is washed at the bottom of a cleaning vessel.

To avoid such accumulation of sludge on the step rotor, rinse it or scrub it with a soft brush vertically midway in the solution.

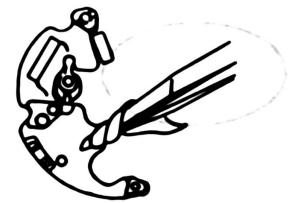
When cleaning the step rotor, hold its magnet with tweezers.



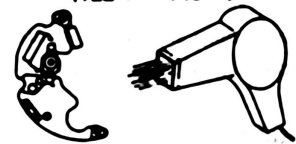
● How to clean parts that are soiled with battery leakage

■ Circuit block

1. Wipe off battery leakage.
2. Wipe the battery leakage affected portion with a nylon cloth moistened with water.
3. Wipe the portion completely dry with a nylon cloth moistened with alcohol. Otherwise, the circuit block may rust at the portion where there is still water left.
4. Using a dryer, dry it completely with warm air. (Be careful not to overheat it.)



50°C ~ 60°C
(122°F ~ 140°F)



[Warm air drying]




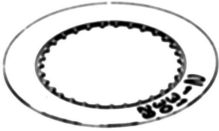
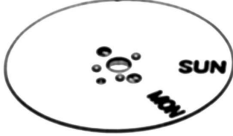



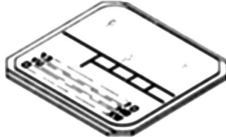

■ Other parts – Battery connections (+) and (-), Switch spring, etc.

1. Scrub each part with a soft brush in water.
2. Rinse it in alcohol.
3. Using a dryer, dry it completely with warm air.

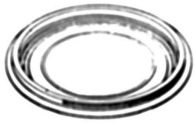





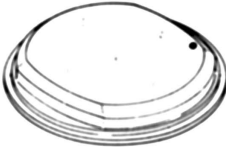

In the case of serious battery leakage that may cause rust, replace the parts with new ones.

3. PARTS THAT MUST NOT BE CLEANED

● Movement/module parts

 Circuit block	 Coil block	 Crystal unit cushion	 Date dial
 Day star with dial disk Moon phase indicator	 Speaker block	 Bulb (incl. bulbs fixed to liquid crystal panel frames)	 Battery
 Liquid crystal panel	 Reflecting mirror		

● Casing parts

 Insulating sheet Case back with piezo- electric element	 Glass-adhered case	 Parts with markings	 Dial
 Panel cover	 Hands	 Acrylic glass	 Solar cell

* If these parts are contaminated, wipe off contamination with a soft, dry cloth.

4. PRECAUTIONS ON CLEANING

1. Perform cleaning jobs in a well-ventilated room. Do not leave a cleaning solution container uncapped for hours, especially in a closed or poorly-ventilated room.
The solution has slight narcotic toxicity.
Prolonged breathing of its vapor may induce drowsiness, nausea, headache, or dizziness.
2. Never perform cleaning jobs near fire.

After the overhaul and cleaning procedure is completed, proceed to page 79 ("REASSEMBLING, LUBRICATING, AND CIRCUIT RESETTING").