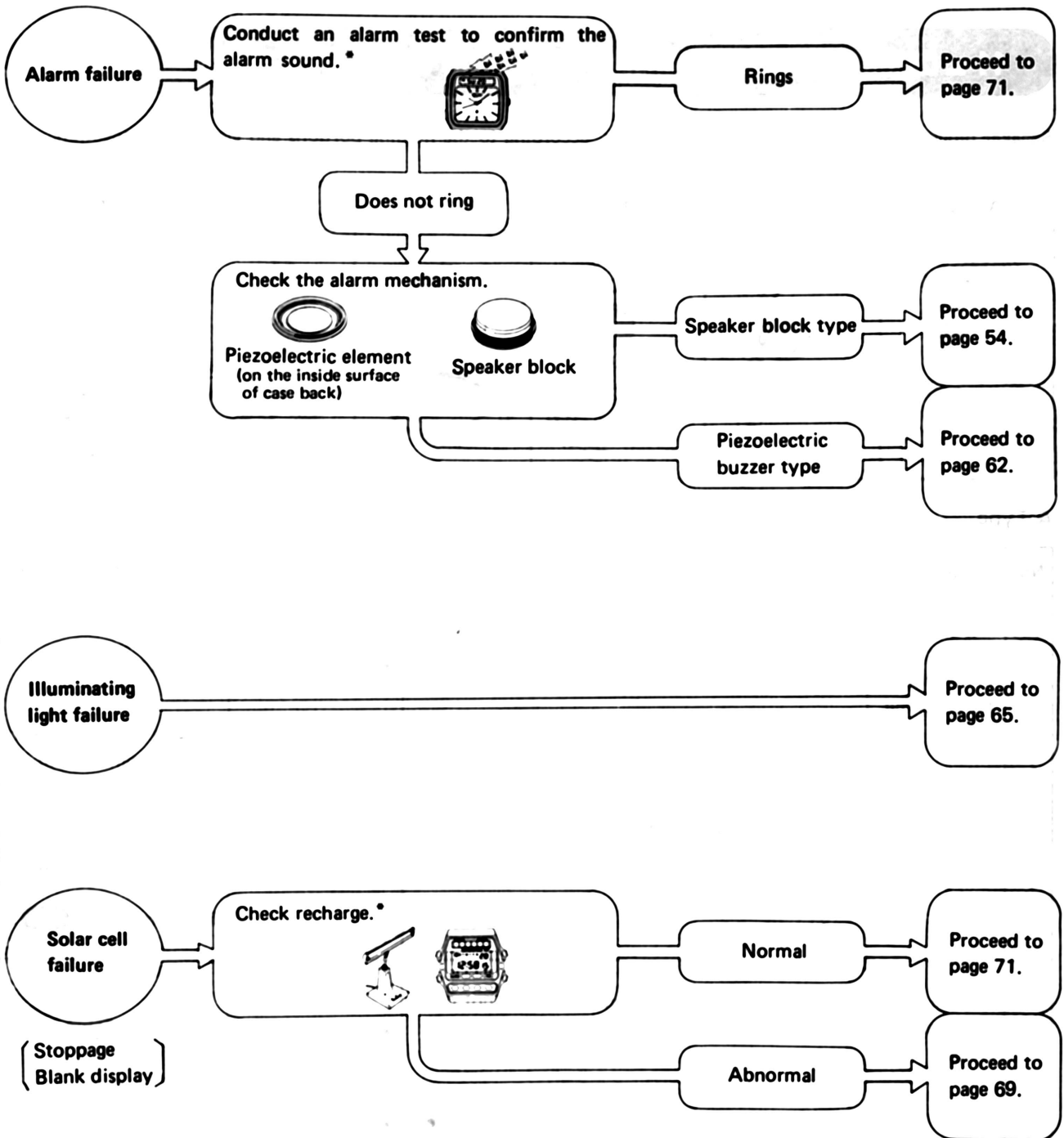


IV. ADDITIONAL FUNCTIONS CHECKING/REPAIRING PROCEDURE

GUIDE TABLE



* For information on the alarm test method and the battery recharge check method, refer to the Instruction Booklets by caliber.

Note:

- For the respective measuring methods, refer to Chapter 5 "MEASUREMENT".
- For the specified standard values, refer to each caliber's "PARTS CATALOGUE/TECHNICAL GUIDE" or ANALOGUE QUARTZ or DIGITAL QUARTZ "VALUE CHECKING LIST".

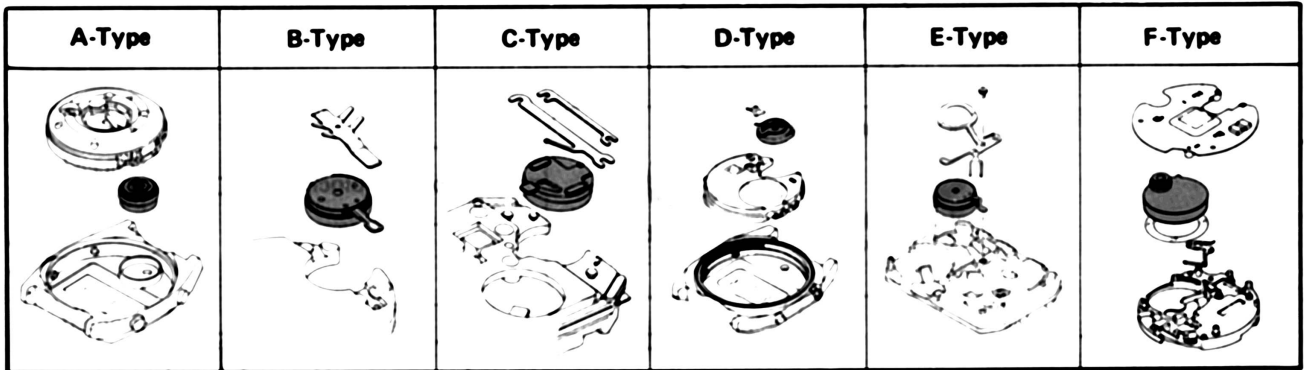
11. ALARM FAILURE (SPEAKER BLOCK TYPE)

[Symptoms and Conditions]

- The alarm does not ring.

11-a: CHECK AND REPAIR CONTACT CONDITION OF SPEAKER BLOCK

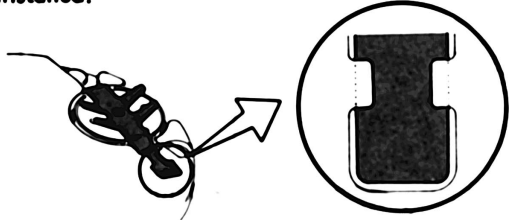
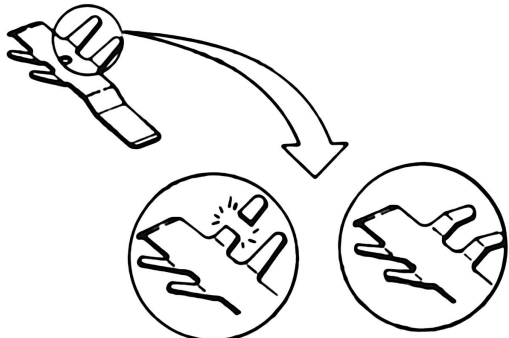
Speaker blocks can be divided into six main types according to the holding portions and electrical connection.



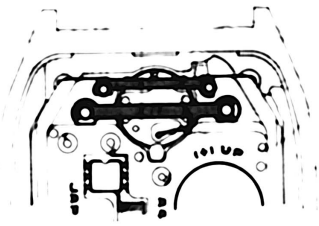
A-Type

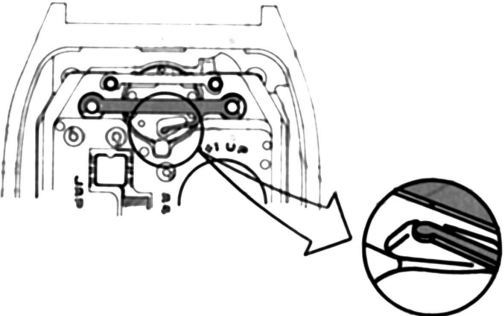
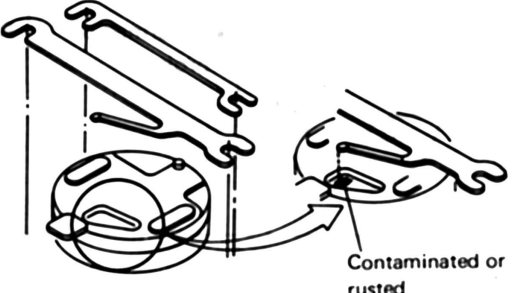
No.	Preparation	Checking points	Result	Adjustment and Repair
①	Install the speaker block in the module for checking.	<p>Installing the speaker block in the module, check that the speaker lead terminal properly touches the speaker block's input terminal.</p> <p>Tweezers Speaker block's input terminal Speaker lead terminal</p>	<ul style="list-style-type: none"> • Touches • Does not touch 	<p>Proceed to ② .</p> <p>Replace the speaker lead terminal with a new one. If it is soldered to the circuit block, replace the circuit block with a new one. Then, proceed to 11-b .</p>
②	Module without speaker block	<p>Check that the speaker lead terminal is not contaminated.</p> <p>Speaker lead terminal</p>	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to 11-b .</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. Then, proceed to 11-b .</p> <p>Replace the speaker lead terminal with a new one. If it is soldered to the circuit block, replace the circuit with a new one. Then, proceed to 11-b .</p>

B-Type

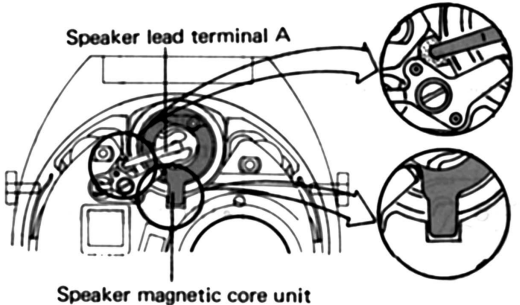
No.	Preparation	Checking points	Result	Adjustment and Repair
①	Watch complete without case back	<p>Check that the speaker fixing spring is properly installed.</p> 	<ul style="list-style-type: none"> • Properly installed • Off the groove 	<p>Proceed to ② .</p> <p>Reset the speaker fixing spring in position. Then, proceed to ② .</p>
②	Speaker fixing spring alone	<p>Check that the speaker fixing spring is not deformed or broken.</p> 	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ③ .</p> <p>Replace the speaker fixing spring with a new one. Then, proceed to 11-b .</p>
③		<p>Check that the speaker fixing spring is not contaminated or rusted.</p>	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to 11-b .</p> <p>Wash off contamination. Then, proceed to 11-b .</p> <p>Replace the speaker fixing spring with a new one. Then, proceed to 11-b .</p>






C-Type

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Watch complete without case back	<p>Check that the speaker lead terminal and the speaker fixing spring are properly installed.</p> 	<ul style="list-style-type: none"> • Properly installed • Off the groove 	<p>Proceed to ② .</p> <p>Reset them in position. Then, proceed to ② .</p>

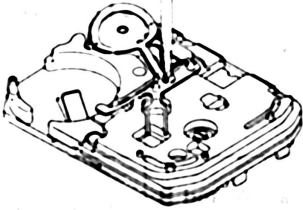
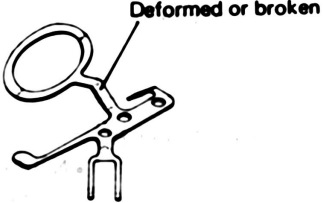
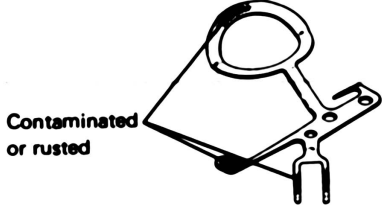
No.	Preparation	Checking points	Result	Adjustment and Repair
②	Watch complete without case back	<p>Check that the speaker fixing spring is not deformed or broken.</p> 	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ③ .</p> <p>Replace the speaker fixing spring with a new one. Then, proceed to ③ .</p>
③		<p>Check that the speaker lead terminal and the speaker fixing spring are not contaminated or rusted.</p> 	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to 11-b .</p> <ul style="list-style-type: none"> • Speaker lead terminal and speaker fixing spring: Wash them. • Speaker block: Wipe off contamination with a nylon cloth moistened with alcohol. <p>Then, proceed to 11-b .</p> <p>Replace the rusted part with a new one. Then, proceed to 11-b .</p>

D-Type

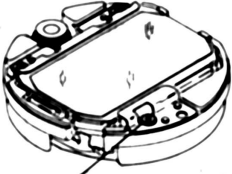
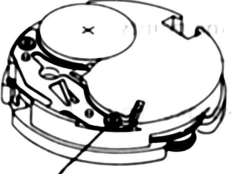


No.	Preparation	Checking points	Result	Adjustment and Repair
①	Watch complete without case back	<p>Check that the speaker magnetic core unit and the speaker lead terminal A are properly installed.</p> 	<ul style="list-style-type: none"> • Properly installed • Not properly installed 	<p>Proceed to ② .</p> <p>Reset them in position. Then, proceed to ② .</p>

No.	Preparation	Checking points	Result	Adjustment and Repair
②	Watch complete without case back	<p>Check that the speaker lead terminal B screw is not loosened.</p> 	<ul style="list-style-type: none"> • Not loosened • Loosened 	<p>Proceed to ③ .</p> <p>Tighten up the speaker lead terminal B screw. Then, proceed to ③ .</p>
③	Speaker lead terminals A and B alone	<p>Check that the speaker lead terminals A and B are not deformed or broken.</p> <p>Deformed or broken</p>   <p>Deformed or broken</p>	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ④ .</p> <p>Replace the defective terminal with a new one. Then, proceed to 11-b .</p>
④		<p>Check that the speaker lead terminals A and B are not contaminated or rusted.</p> <p>Contaminated or rusted</p>   <p>Contaminated or rusted</p>	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to 11-b .</p> <p>Wash the contaminated terminal. Then, proceed to 11-b .</p> <p>Replace the rusted terminal with a new one. Then, proceed to 11-b .</p>

E-Type

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Watch complete without case back	<p>Check that the speaker fixing spring screw is not loosened.</p> 	<ul style="list-style-type: none"> • Not loosened • Loosened 	<p>Proceed to ② .</p> <p>Tighten up the speaker fixing spring screw. Then, proceed to ② .</p>
②	Speaker fixing spring alone	<p>Check that the speaker fixing spring is not deformed or broken.</p> 	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ③ .</p> <p>Replace the speaker fixing spring with a new one. Then, proceed to 11 b .</p>
③		<p>Check that the speaker fixing spring is not contaminated or rusted.</p> 	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to 11 b .</p> <p>Wash the speaker fixing spring. Then, proceed to 11 b .</p> <p>Replace the speaker fixing spring with a new one. Then, proceed to 11 b .</p>

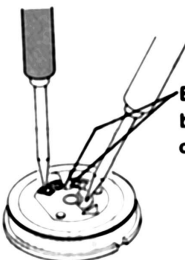

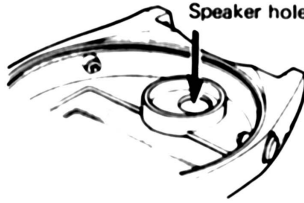
F-Type

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Module alone	<p>Check that the liquid crystal panel holder screw and the switch spring screw are not loosened.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Liquid crystal panel holder screw</p> </div> <div style="text-align: center;">  <p>Switch spring screw</p> </div> </div>	<ul style="list-style-type: none"> • Not loosened • Loosened 	<p>Proceed to ② .</p> <p>Tighten up the loosened screw. Then, proceed to ② .</p>
②	Speaker lead terminal and switch spring alone	<p>Check that the speaker lead terminal and the switch spring are not deformed or broken.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Speaker lead terminal</p> </div> <div style="text-align: center;">  <p>Switch spring</p> </div> </div>	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ③ .</p> <p>Replace the defective part with a new one. Then, proceed to 11-b .</p>
③		<p>Check that the speaker lead terminal and the switch spring are not contaminated or rusted.</p>	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to 11-b .</p> <p>Wash off contamination. Then, proceed to 11-b .</p> <p>Replace the rusted part with a new one. Then, proceed to 11-b .</p>

11-b: CHECK AND REPAIR SPEAKER BLOCK

All the types of the speaker blocks are essentially the same in their construction.

A-Type is taken below as an example to describe how to check and repair the speaker block.

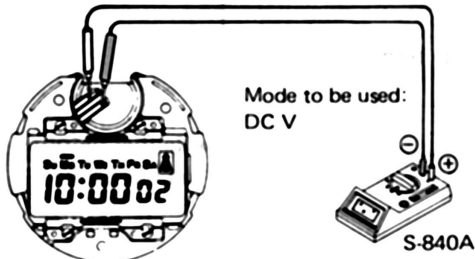
No.	Preparation	Checking points	Result	Adjustment and Repair
①	Speaker block alone	<p>Measure resistance of the speaker coil. *1</p>  <p>Be careful not to break the speaker coil's wires.</p>	<ul style="list-style-type: none"> • Within the specified value. *2 • Out of the specified value. *2 	<p>Proceed to ② .</p> <p>Replace the speaker block with a new one. This is the end of procedure. *3</p>
②		<p>Check that the sound diaphragm is not deformed or rusted.</p>  <p>Sound diaphragm</p>	<ul style="list-style-type: none"> • Neither deformed nor rusted • Deformed or rusted 	<p>Proceed to ③ .</p> <p>Replace the speaker block with a new one. This is the end of procedure. *3</p>
③	Case alone	<p>Check that the speaker hole is not clogged with dust or lint.</p>  <p>Speaker hole</p>	<ul style="list-style-type: none"> • Not clogged with dust or lint • Clogged with dust or lint 	<p>Proceed to 11-c .</p> <p>Wipe off dust or lint. This is the end of procedure. *3</p>

*1. For the measuring method, refer to page 101 ("MEASURING RESISTANCE OF THE COIL").

*2. For the specified standard resistance value of the speaker block, refer to each caliber's "PARTS CATALOGUE/ TECHNICAL GUIDE" or "VALUE CHECKING LIST".

*3. If the trouble source has been successfully located in the procedure so far, proceed to page 82 ("CHECKING AND ADJUSTMENT").

11-c: CHECK AND REPAIR CIRCUIT BLOCK

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Module with battery installed	<p>Check alarm output signal of the circuit block while the alarm is ringing. *1</p> 	<ul style="list-style-type: none"> • Output signal • No output signal 	<p>End of procedure *2</p> <p>Replace the circuit block with a new one. This is the end of procedure. *2</p>

*1. For the measuring method, refer to page 102 ("MEASURING ALARM OUTPUT SIGNAL").

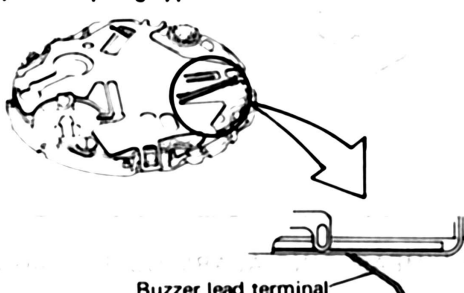
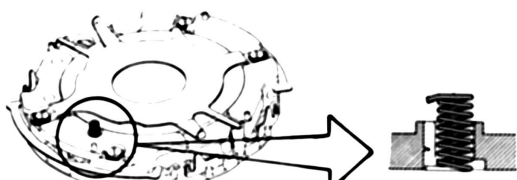
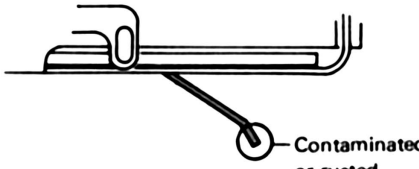
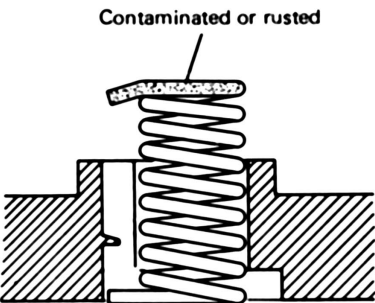
*2. If the trouble source has been successfully located in the procedure so far, proceed to page 82 ("CHECKING AND ADJUSTMENT").

12. ALARM FAILURE (PIEZOELECTRIC BUZZER TYPE)

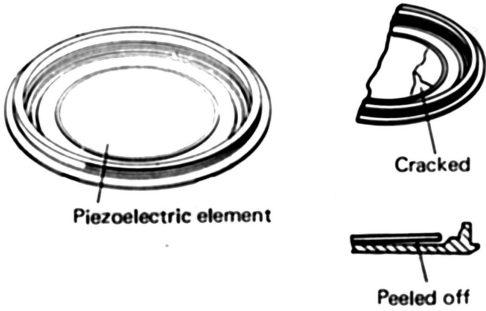
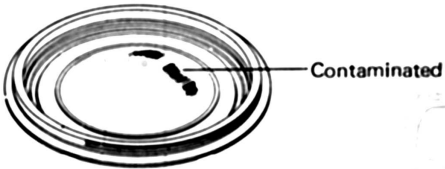
[Symptoms and Conditions]

- The alarm does not ring.

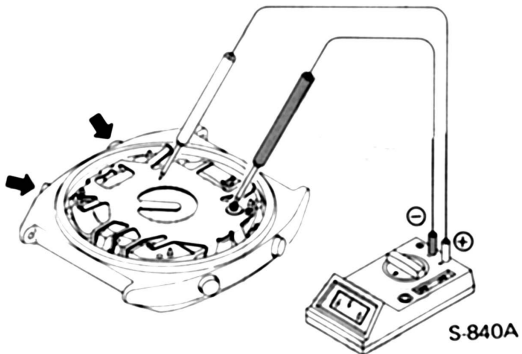
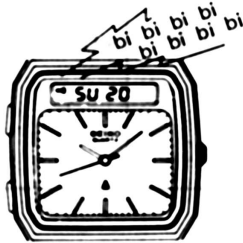
12-a: CHECK CONTACT CONDITION OF THE BUZZER LEAD TERMINAL

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Watch complete without case back	<p>Check that the buzzer lead terminal is not deformed or broken.</p> <p>(1) Leaf spring type</p>  <p>(2) Coil spring type</p> 	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ② .</p> <p>Replace the buzzer lead terminal with a new one. Then, proceed to 12-b .</p>
②		<p>Check that the buzzer lead terminal is not contaminated or rusted.</p> <p>(1) Leaf spring type</p>  <p>(2) Coil spring type</p> 	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to 12-b .</p> <p>Wash the buzzer lead terminal clean. Then, proceed to 12-b .</p> <p>Replace the buzzer lead terminal with a new one. Then, proceed to 12-b .</p>

12-b: CHECK AND REPAIR PIEZOELECTRIC ELEMENT

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Case back alone	<p>Check that the piezoelectric element is not cracked or has not peeled off.</p>  <p>The diagrams illustrate three states of a piezoelectric element: a normal circular element labeled 'Piezoelectric element', a cross-section showing a crack labeled 'Cracked', and a cross-section showing a portion of the element missing from the case labeled 'Peeled off'.</p>	<ul style="list-style-type: none"> • Neither cracked nor peeled off • Cracked or peeled off 	<p>Proceed to ②.</p> <p>Replace the piezoelectric element or the case with a new one. Then, proceed to 12-c.</p>
②		<p>Check that the piezoelectric element is not contaminated.</p>  <p>The diagram shows a piezoelectric element with dark spots on its surface, labeled 'Contaminated'.</p>	<ul style="list-style-type: none"> • Not contaminated • Contaminated 	<p>Proceed to 12-c.</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. Then, proceed to 12-c.</p>

12-c: CHECK ALARM OUTPUT SIGNAL

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Watch complete without case back	<p>Check alarm output signal while the alarm is ringing. *1</p>  <p>Mode to be used: DC V</p>	<ul style="list-style-type: none"> • Output signal • No output signal 	<p>Proceed to ② .</p> <p>Replace the circuit block with a new one. This is the end of procedure. *2</p>
②	Watch complete	<p>Test that the alarm rings.</p> 	<ul style="list-style-type: none"> • Rings • Does not ring 	<p>End of procedure. *2</p> <p>Replace the piezoelectric element with a new one. This is the end of procedure. *2</p>

*1. For the measuring method, refer to page 102 ("MEASURING ALARM OUTPUT SIGNAL").

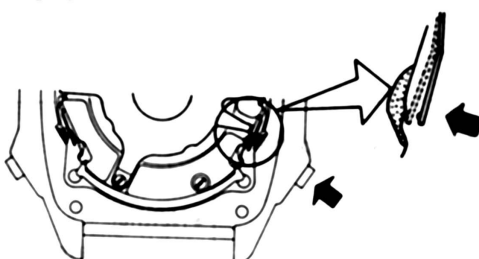
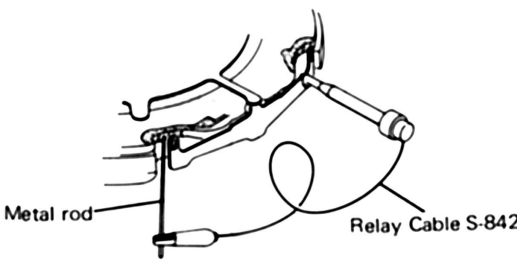
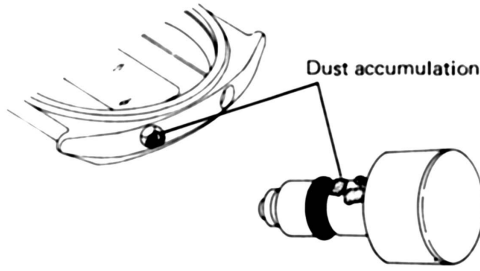
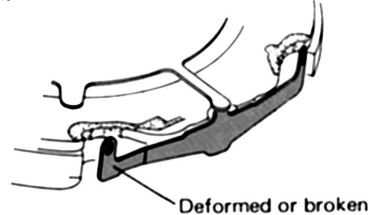
*2. If the trouble source has been successfully located in the procedure so far, proceed to page 82 ("CHECKING AND ADJUSTMENT").

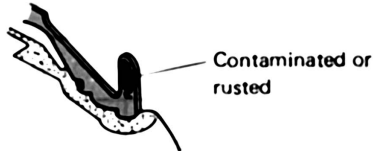
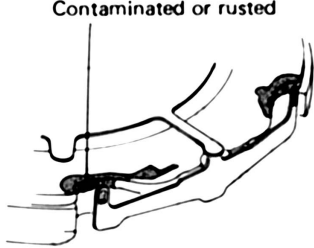
13. ILLUMINATING LIGHT FAILURE

[Symptoms and Conditions]

- The illuminating light does not light up when button is pressed.

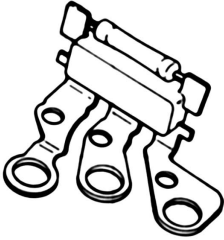
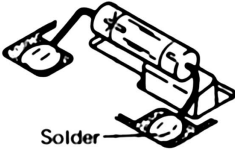
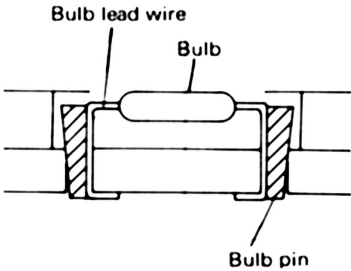
13-a: CHECK AND REPAIR CONTACT CONDITION OF SWITCH SPRING

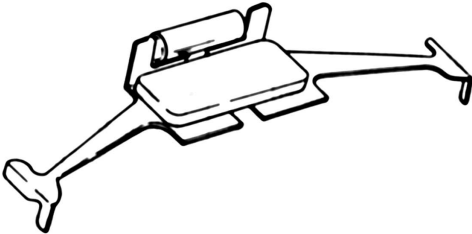
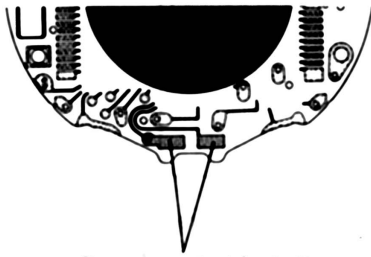
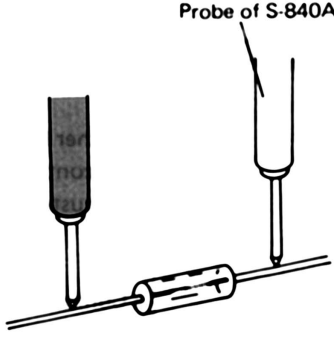
No.	Preparation	Checking point	Result	Adjustment and Repair
①	Watch complete without case back	<p>Check that the switch spring touches the circuit block's switch pattern portion when the illuminating light button is pressed.</p> 	<ul style="list-style-type: none"> • Touches • Does not touch 	<p>Proceed to ② .</p> <p>Proceed to ③ .</p>
②	Module alone	<p>Check that the illuminating light is activated when the circuit block's switch pattern portion and the battery connection (+) are connected.</p> 	<ul style="list-style-type: none"> • Lights up • Does not light up 	<p>Proceed to ④ .</p> <p>Proceed to 13-b .</p>
③	Button and case alone	<p>Check that there is no dust accumulated on the button or in the button hole</p> 	<ul style="list-style-type: none"> • No dust accumulation • Dust accumulation 	<p>Proceed to ④ .</p> <p>Remove dust accumulation. Then, proceed to ① .</p>
④	Module alone	<p>Check that the switch spring is not deformed or broken.</p> 	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ⑤ .</p> <p>Replace the switch spring with a new one. Then, proceed to ⑥ .</p>

No.	Preparation	Checking point	Result	Adjustment and Repair
⑤	Module alone	<p>Check that the switch spring is not contaminated or rusted.</p> 	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to ⑥ .</p> <p>Wash off contamination. Then, proceed to ⑥ .</p> <p>Replace the switch spring with a new one. Then, proceed to ⑥ .</p>
⑥		<p>Check that the circuit block's switch pattern portion is not contaminated or rusted.</p> 	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>End of procedure *1</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. This is the end of procedure. *1</p> <p>Replace the circuit block with a new one. This is the end of procedure. *1</p>

*1. If the trouble source has been successfully located in the procedure so far, proceed to page 82 ("CHECKING AND ADJUSTMENT").

13-b: CHECK AND REPAIR BULB CONDITION

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Module alone	<p>Check that the bulb is properly installed and is also in good contact.</p> <p>(1) Screw type – Check that</p> <ul style="list-style-type: none"> • the bulb holder screws are not loosened. • the bulb lead terminals are not contaminated or rusted. <div style="text-align: center; margin: 10px 0;">  </div>	<ul style="list-style-type: none"> • Screws not loosened, bulb lead terminals neither contaminated nor rusted • Screws loosened • Contaminated • Rusted 	<p>Proceed to ② .</p> <p>Tighten up the bulb holder screws.</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol.</p> <p>Replace the bulb or the bulb lead terminal(s) with a new one (new ones). Then, proceed to ② .</p>
	Circuit block alone	<p>(2) Soldered type</p> <ul style="list-style-type: none"> • Check that the bulb lead terminals are securely soldered. <div style="text-align: center; margin: 10px 0;">  </div>	<ul style="list-style-type: none"> • Securely soldered • Break in soldered portion 	<p>Proceed to ③ .</p> <p>*Solder the bulb lead terminals securely. Then, proceed to ③ .</p>
	Liquid crystal panel frame (with bulb) alone	<p>(3) Bulb pin type</p> <ul style="list-style-type: none"> • Check that the bulb lead wire is not broken, contaminated, or rusted. <div style="text-align: center; margin: 10px 0;">  </div>	<ul style="list-style-type: none"> • Neither broken, nor contaminated, nor rusted • Contaminated • Broken or rusted 	<p>Proceed to ② .</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. Then, proceed to ② .</p> <p>Replace the bulb with a new one. Then, proceed to ② .</p>

No.	Preparation	Checking point	Result	Adjustment and Repair
①	Bulb (with lead terminals) alone	<p>(4) Bulb lead terminal type</p> <ul style="list-style-type: none"> • Check that the bulb lead terminals are not deformed, contaminated, or rusted. 	<ul style="list-style-type: none"> • Neither deformed, nor contaminated, nor rusted • Contaminated • Deformed or rusted 	<p>Proceed to ② .</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. Then, proceed to ② .</p> <p>Replace the bulb (with lead terminals) with a new one. Then, proceed to ② .</p>
②	Circuit block alone	<p>Check that the circuit block's output terminals for bulb are not contaminated or rusted.</p>  <p>Output terminal for bulb</p>	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to ③ .</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. Then, proceed to ③ .</p> <p>Replace the circuit block with a new one. Then, proceed to ③ .</p>
③	Bulb alone, or bulb with liquid crystal panel frame or bulb with circuit block	<p>Check that the bulb lights up when supplied with electricity.</p>  <p>Probe of S-840A</p>	<ul style="list-style-type: none"> • Lights up • Does not light up 	<p>Replace the circuit block with a new one. This is the end of procedure. *1</p> <p>Replace the bulb with a new one. This is the end of procedure. *1</p>

*1. If the trouble source has been successfully located in the procedure so far, proceed to page 82 ("CHECKING AND ADJUSTMENT").

14. SOLAR CELL FAILURE



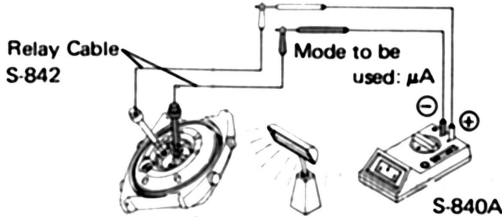
[Symptoms and Conditions]

- The stoppage (analogue quartz) or the blank display (digital quartz) is not corrected by exposing the solar cell to light.
- Even if fully charged, the solar cell does not last for the expected period of time.

The solar cell can be classified into two major types:

- The one with solar cell and secondary battery → Start the procedure with **14-a**.
- The one with solar cell alone → Start the procedure with **14-b**.

14-a: CHECK AND REPAIR SECONDARY BATTERY

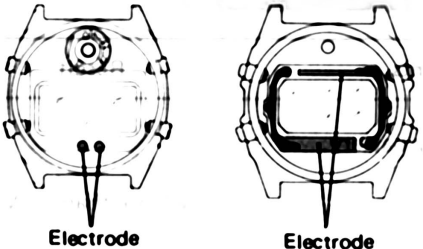
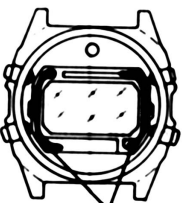
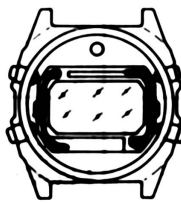
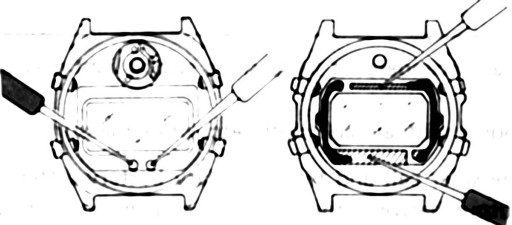
No.	Preparation	Checking points	Result	Adjustment and Repair
①	Secondary battery alone	<p>Check voltage of the secondary battery.</p> 	<ul style="list-style-type: none"> • More than 1.5V • Less than 1.5V 	<ul style="list-style-type: none"> • Analogue quartz: Proceed to 2-a. • Digital quartz: Proceed to 6 on page 38. Replace the secondary battery with a new one. Then, proceed to 2.
②	Watch complete without case back	<p>Check that electric current flows between the solar cell and the secondary battery. *1</p> <ul style="list-style-type: none"> • With the glass up to expose the solar cell to light, check that there is an electric current flow. 	<ul style="list-style-type: none"> • Flows • Does not flow 	<ul style="list-style-type: none"> Proceed to 3. Proceed to 14-b.
③		<p>Measure current consumption for the whole of the movement (module). *2</p> 	<ul style="list-style-type: none"> • Less than the specified value *3 • More than the specified value *3 	<ul style="list-style-type: none"> Proceed to 14-b. • Analogue quartz: Proceed to 3-a. • Digital quartz: Proceed to 8-a.

Note: Do not check current consumption under an incandescent lamp since strong light may cause the watch to consume excessive current.

Be sure to protect the movement or the module with a black cloth, etc. while measuring.

- *1. The measuring method of output between the solar cell and the secondary battery differs, depending on calibers. For details, refer to page 105 ("Measuring output between the solar cell and the secondary battery").
- *2. For the measuring method, refer to page 96 ("MEASURING CURRENT CONSUMPTION FOR THE WHOLE OF THE MOVEMENT/MODULE").
- *3. For the specified standard value of current consumption for the whole of the movement/module, refer to each caliber's "PARTS CATALOGUE/TECHNICAL GUIDE" or ANALOGUE QUARTZ or DIGITAL QUARTZ "VALUE CHECKING LIST".

14-b: CHECK AND REPAIR SOLAR CELL

No.	Preparation	Checking points	Result	Adjustment and Repair
①	Case alone	<p>Check that the solar cell electrodes are not contaminated or rusted.</p>  <p>Electrode Electrode</p>	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to ② .</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. Then, proceed to ② .</p> <p>Replace the solar cell unit with a new one. This is the end of procedure. *2</p>
②		<p>Check that the solar cell lead terminals are not deformed or broken.</p>  <p>Solar cell lead terminal</p>	<ul style="list-style-type: none"> • Neither deformed nor broken • Deformed or broken 	<p>Proceed to ③ .</p> <p>Replace the solar cell lead terminal with a new one. This is the end of procedure. *2</p>
③		<p>Check that the solar cell lead terminals are not contaminated or rusted.</p> 	<ul style="list-style-type: none"> • Neither contaminated nor rusted • Contaminated • Rusted 	<p>Proceed to ④ .</p> <p>Wipe off contamination with a nylon cloth moistened with alcohol. Then, proceed to ④ .</p> <p>Replace the solar cell lead terminal with a new one. This is the end of procedure. *2</p>
④		<p>Check output voltage of the solar cell. *1</p> 	<ul style="list-style-type: none"> • Output voltage • No output voltage 	<p>End of procedure *2</p> <p>Replace the solar cell unit with a new one. This is the end of procedure. *2</p>

*1. The output measuring method of the solar cell differs, depending on calibers or case models. For information on its measuring method, refer to page 104 ("MEASURING OUTPUT OF THE SOLAR CELL").

*2. If the trouble source has been successfully located in the procedure so far, proceed to page 82 ("CHECKING AND ADJUSTMENT").