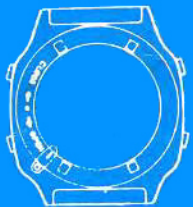
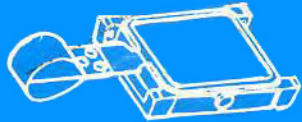
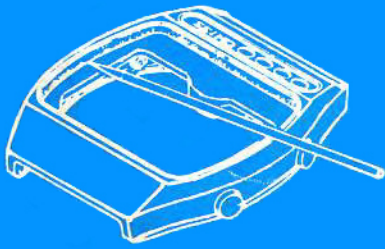


SEIKO

CASE SERVICING GUIDE



P R E F A C E

In recent years, watch cases have become more and more diversified, with many new advances in the technology of time-piece manufacturing. Many improved new case designs have been adopted, which often are very different in the opening and closing methods required, from what people in the service field are accustomed to. To further complicate the problem, there has been no casing guide which listed all of the various constructions and the proper opening and closing techniques in one volume. This has caused cases to be damaged, at times, through improper opening or closing due to lack of the required information.

SEIKO has reviewed the existing casing guides, for SEIKO watches, and has compiled a new guide; using a system which classifies casing information according to the watch construction mark, which is stamped on the case back.

The methods of servicing (replacement of) the crystal, how to open and/or close the various types of cases (for battery replacement), contained in this booklet have been simplified as much as possible. The booklet should prove useful to people in the service field, particularly to those who may have no watch repair training or experience; but who may be required to replace a battery from time to time.

New cases *are* damaged, at times beyond repair, by using improper methods and techniques. This booklet should help you avoid this unhappy occurrence with *SEIKO* watches.

Technical Department, New York

April 1982

TABLE OF CONTENTS

This guide is organized according to the operation to be performed. If, for instance, you wish to install a battery in a SEIKO watch, you should consult the section of the table of contents headed, "Battery". To open and/or close a case, or to install a crystal, you should consult the appropriate heading in the table of contents.

The "Battery" section is self explanatory. You will find certain cases which require that the back be opened to replace a battery; in which case you will be referred to the "Opening/Closing Cases" section of this guide.

Use the "Opening/Closing Case" section by comparing the illustrations in the table of contents to the watch. When you have identified the type of case construction, turn to the page number opposite the illustration for instructions on the proper method of opening and/or closing the case.



The "Crystal Installation" section explains how to identify the type of crystal installation required for each watch design.

I. "BATTERY" HATCH	PAGE
Case with Battery Hatch	1
Case without Battery Hatch	(refer to Opening/Closing case)

II. OPENING/CLOSING CASES

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1. Screw type

Six Recesses (notches)		2
Four Recesses (notches)		3



2. Snap type		PAGE
Tension Outside Case Back Seat		} 4
(Snap on)		
Tension Inside Case Back Seat		
(Snap in)		
Tension With Case Back Wall		
(Snap in)		

B. Other Types

1. With Leaf Spring

Two Retention Points		} 5
One Retention Point		

2. Without Leaf Spring

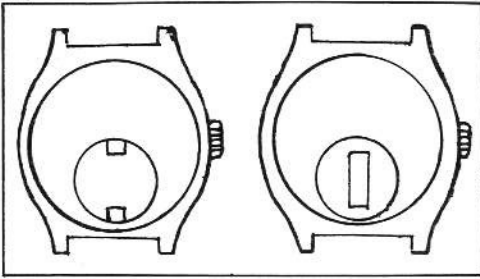
Snap Type		} 6
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III. CRYSTAL INSTALLATION

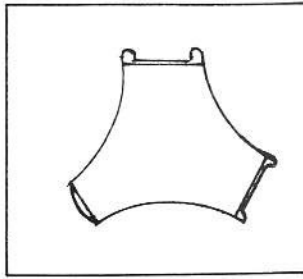
What is a Construction mark		} 7
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BATTERY HATCH

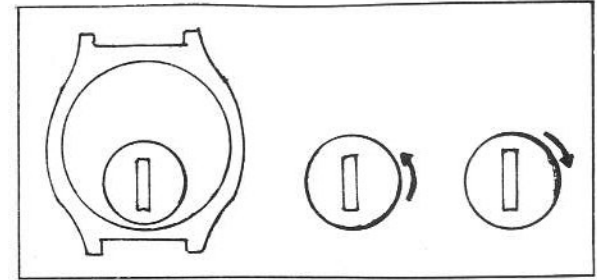
A.



Screw Type (No mark on battery hatch)



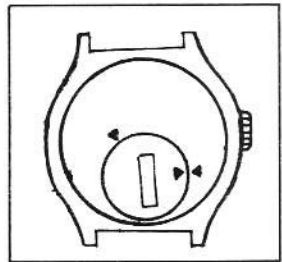
1. Use a suitable battery hatch opener such as SEIKO S-822.



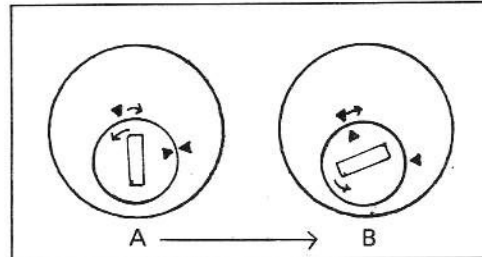
2. Using the opener S-822, open (loosen) the battery hatch, turn *counterclockwise* ↺, and *clockwise* ↻ to close (tighten). Loosen the battery hatch completely. Turn over the watch and let the battery hatch drop off on your palm to prevent the dust from falling into the movement.

REMARK: Be sure the gasket is seated properly before closing the battery hatch. (See Gasket Installation below).

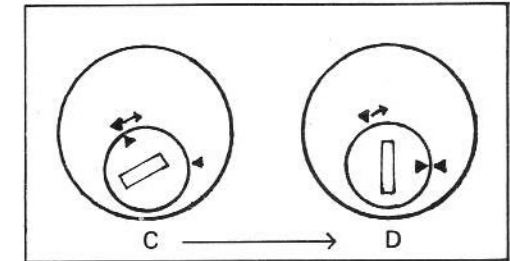
B.



Twist type with a ▲ mark on battery hatch and two ▲ marks on case back.

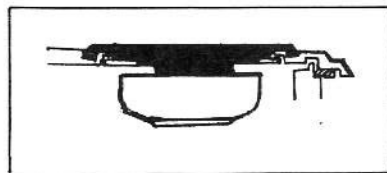


To open the battery hatch, be sure to turn *counterclockwise* ↺ the battery's hatch ▲ mark to match the ▲ → close mark on case back as illustrated in Figures A to B.

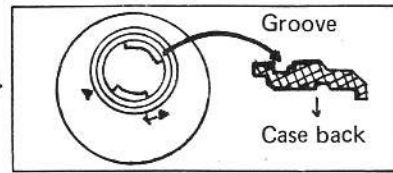


To close the battery hatch, match the ▲ mark on battery hatch to ▲ → closing mark on case back. Turn *clockwise* ↻ as illustrated in Figures C to D.

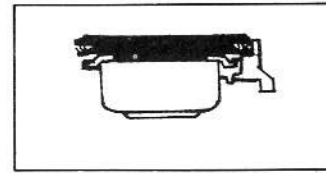
GASKET INSTALLATION



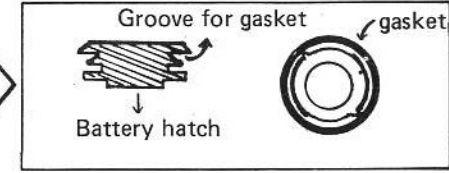
A. Gasket is to be seated on case back.



Identify the groove in the case-back's battery hatch opening as illustrated.

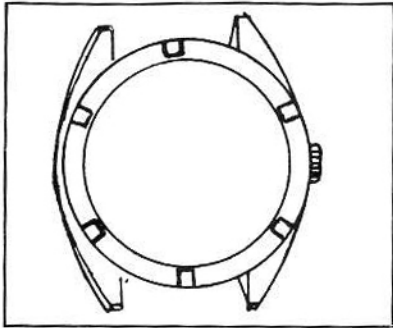


B. Gasket to be seated on battery hatch.

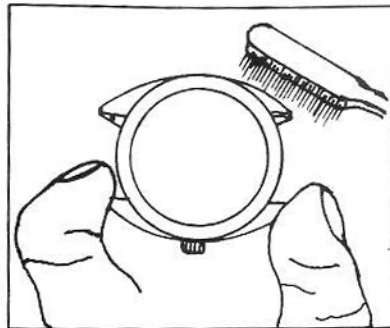


Identify from the battery hatch as illustrated, a groove for gasket to be seated is provided on the battery hatch.

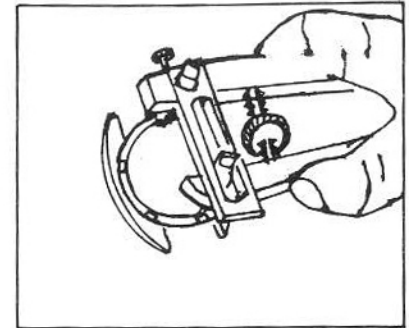
HOW TO OPEN AND CLOSE SIX NOTCH SCREW-TYPE CASE-BACK



Notch type (screw-type)

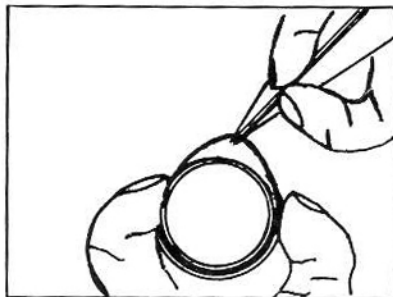


1. Brush off any dust on case-back.

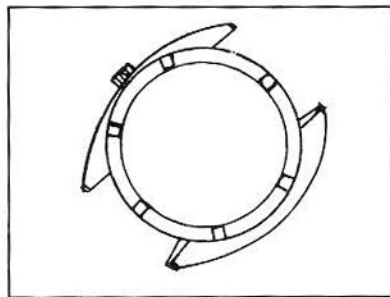


2. Adjust the size of the case opener (S-194) *OR* similar adjustable case-back opener according to the distance between two notches which are located opposite each other. Loosen the case-back by turning the opener *counterclockwise*. ↺

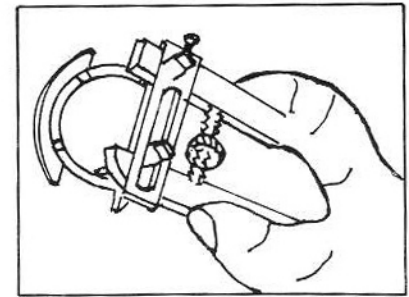
REMARK: Hold case in suitable case vise or holder such as SEIKO S-210



3. Wipe off dust on the gasket and make sure that it is seated properly.



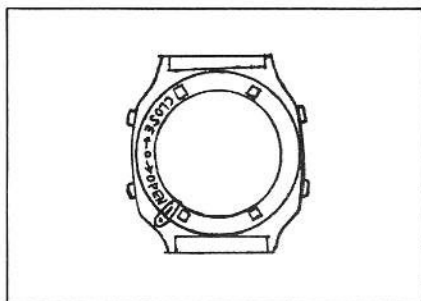
4. Put the case-back on by hand (2 turns *clockwise* ↻). Check the gasket to be sure that it is seated properly. No portion of gasket should be seen outside caseback.



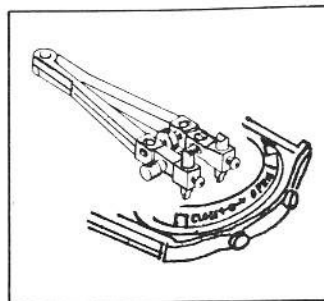
5. Tighten the case-back with the S-194 *OR* similar adjustable case-back opener.

HOW TO OPEN AND CLOSE FOUR NOTCH BAYONET TYPE CASE-BACK.

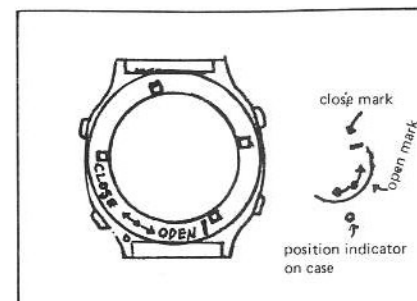
REMARK: Hold case in suitable case vise or holder such as SEIKO S-210.



Four notch bayonet
(closed position)

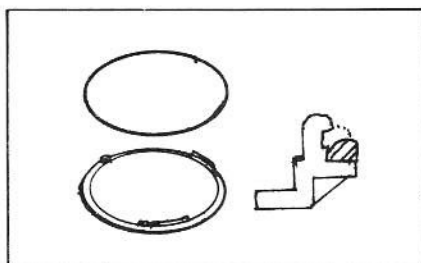


1. Adjust the size of the case opener (S-194) according to the distance between the two notches which are located opposite each other. Using the case opener, turn the case-back counterclockwise 45° .

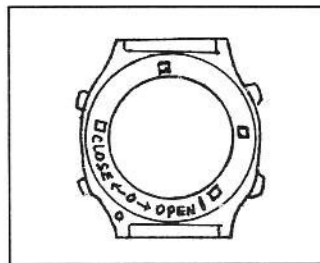


2. Be careful not to turn the case-back excessively, but, be sure the "Open" mark matches with the position indicator on the case.

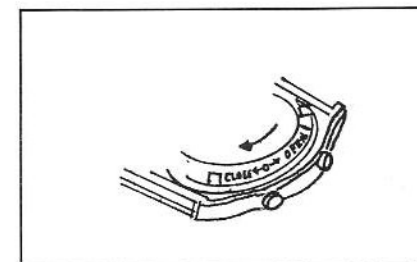
***Remark:** Opening and/or closing marks may vary on other cases, however, the method to apply is the same as the one mentioned above.



3. Wipe off dust on the gasket and make sure that it is seated properly.



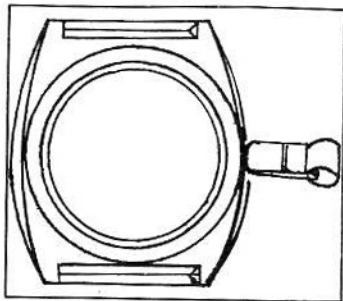
4. Put the case-back on by hand. Be sure the "Open" mark matches with the position indicator on the case.



5. Tighten the case-back with S-194. Turn the case-back 45° clockwise. Be sure the "Close" mark matches with the position indicator "o" on the case.

HOW TO OPEN AND CLOSE SNAP TYPE CASE-BACK (THREE TYPES)

(Carefully read step 1 - 5 preceding operation)



1. Open case-back, using a snap back case opener such as SEIKO S-280 at the notch. (Every case-back has a notch for opening).

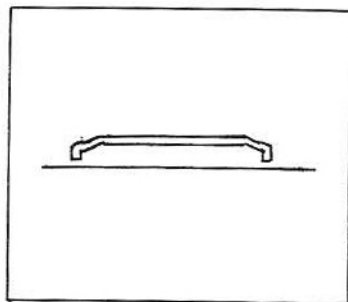
2. Carefully identify the case back as type "A", "B" OR "C" as shown on the illustration.

3. Use a crystal press such as SEIKO S-220 to close the case. Be sure to select the closing disk according to the type of tension of the case back. Support the main body of the case (Bezel) with a disk that supports the bezel just outside the glass.

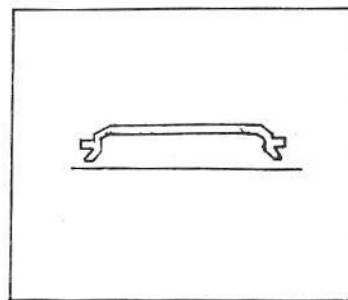
Make sure that the pressure is applied parallel to the support.

4. If case has a battery hatch, always close the case-back *without* battery hatch on the case back.

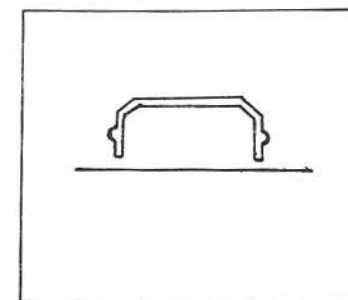
5. For best results, to close "B" OR "C" type of case back, the *band on the watch must be removed*.



A. TENSION ON OUTSIDE
(Snap on)

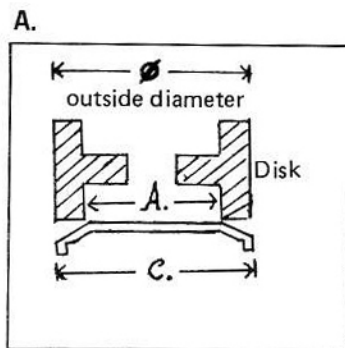
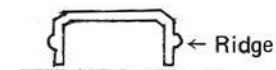
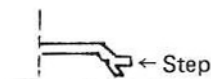
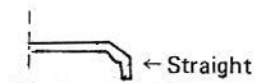


B. TENSION ON INSIDE
(Snap in)

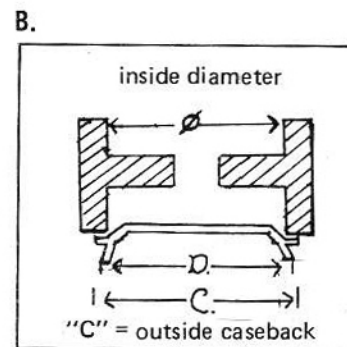


C. TENSION ON WALL
(Snap in)

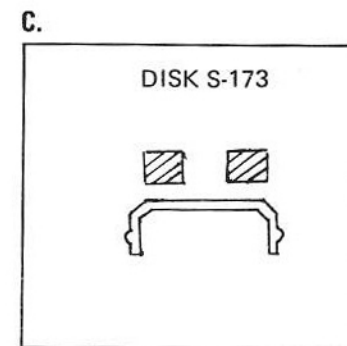
TO JUDGE WHICH TYPE OF CASE BACK, PUT THE CASE BACK ON BENCH TOP AS ILLUSTRATED.



A. To close the case back use an inserting disk whose *outside* diameter matches the case back. "A" portion should touch the case back as illustrated.

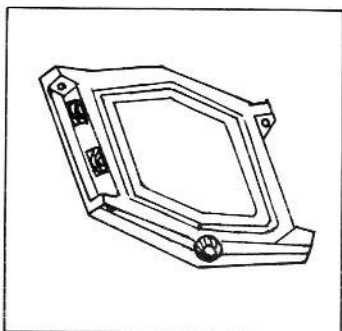


B. To close the case back use an inserting disk whose *inside* diameter \emptyset is the same as "Diameter D", as illustrated.

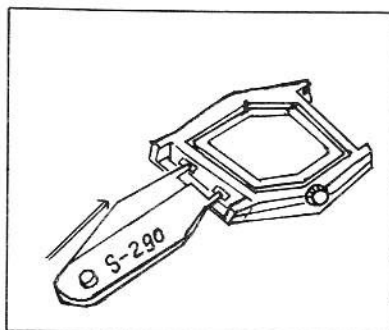


C. Use a *flat* disk on the crystal press to close the case back.

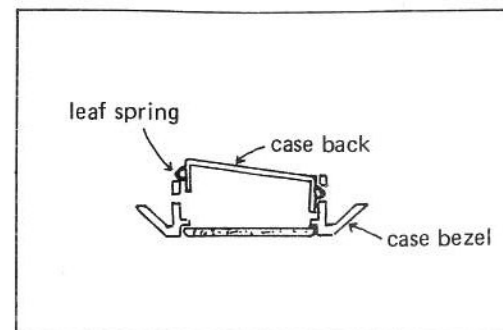
HOW TO OPEN AND CLOSE CASE BACK WITH LEAF SPRING



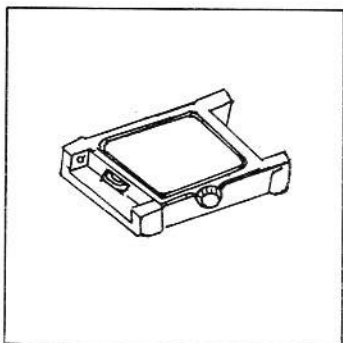
TWO RETENTION POINTS



1. Adjust the size of the case opener (S-290) according to the distance of the groove. Insert the tips of the opener in the groove. Press down the leaf spring to open case back.

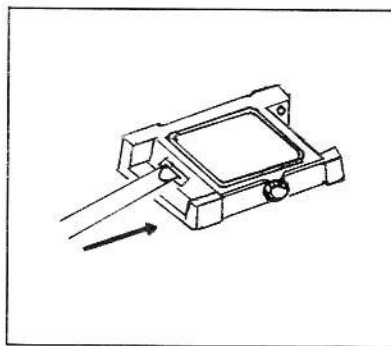


2. To close the case back, slide one end of the case back into the case bezel. Be sure to push the leaf spring into the side of the case which is open. Snap the case back in completely.

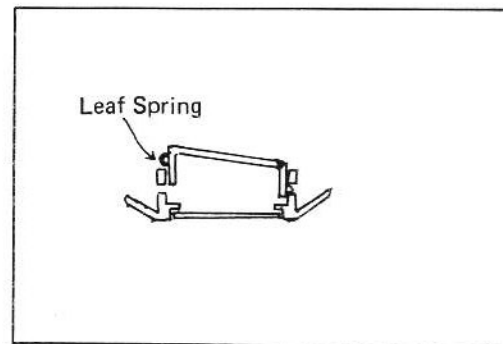


ONE RETENTION POINT

- I. Case with open groove (on case bezel)
- II. Case with open notch (on case back)

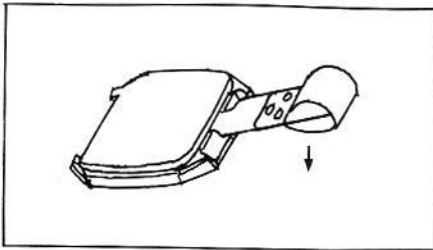


1. To open, insert the tip of the opener S-280 to the open notch *OR* use an opener whose tips are able to get into the case open groove. Press down the leaf spring and open the case back.

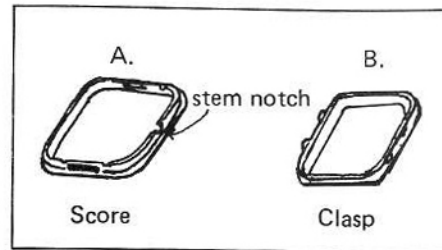


2. To close the case back, insert one end of the case-back into the bezel. Depress the leaf spring on the open end while snapping the case closed.

HOW TO OPEN AND CLOSE CASE BACK WITHOUT LEAF SPRING



1. Insert the tip of the opener S-280 to the case open notch and open the case back.

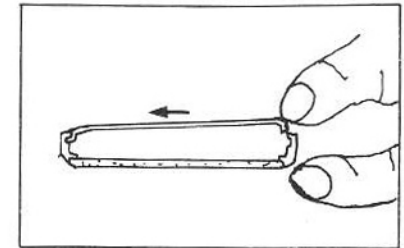


2. There are two designs of snap:

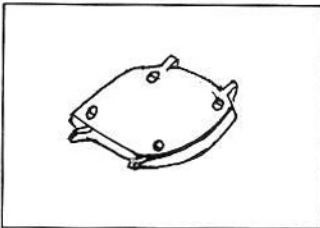
A. SCORE TYPE: The snap is always located at "12" and "6" o'clock position.

B. CLASP TYPE: The snap can be located at "12 and 6" and/or "3 and 9" o'clock position.

REMARK: Be sure the stem notch faces the crown side.

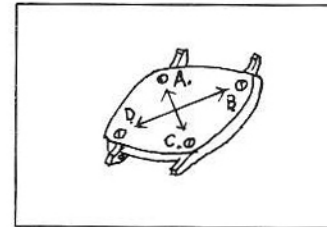


3. To close the case back, one side of the snap (score *OR* clasp) must be inserted into the case bezel. Press down the case back from the other side. (By hand as illustrated above).



CAP SCREW TYPE

This type of case design applies to gold watches and/or ultra-thin watches.



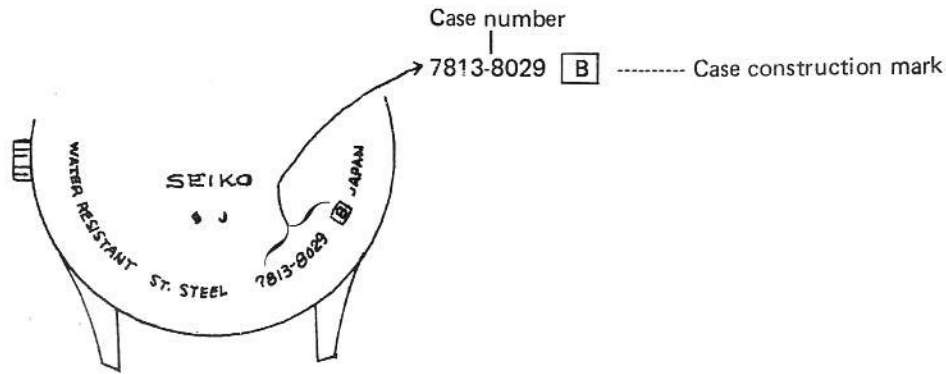
1. To open and close the case back, use a screw driver whose blade matches the cap screw diameter.
Using a screw driver, loosen *OR* tighten the screws in crossing order. (ie: A to C, and B to D as illustrated above.)

1. OUTLINE OF CASE CONSTRUCTION MARK (CODE)

"A mark indicating the watch case construction is inscribed on the case-back".

A. NEW SYSTEM

Example:



The construction mark consists of a framed letter, at times, followed by a number. The framed letter represents the basic construction of the case, and the number represents a deviation from the basic construction.

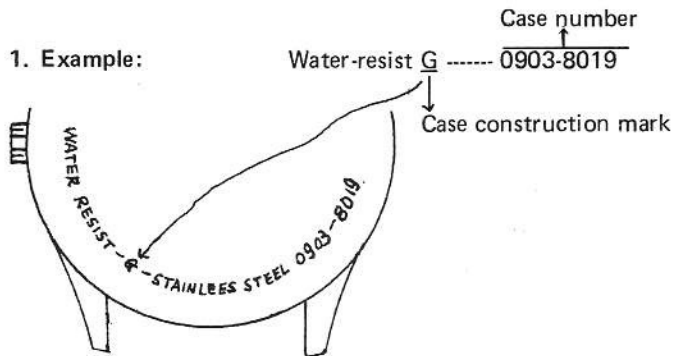
Remark 1: The order of the number is: "0", "1", "2", etc.

Remark 2: When the number is "0", only the framed letter is indicated.

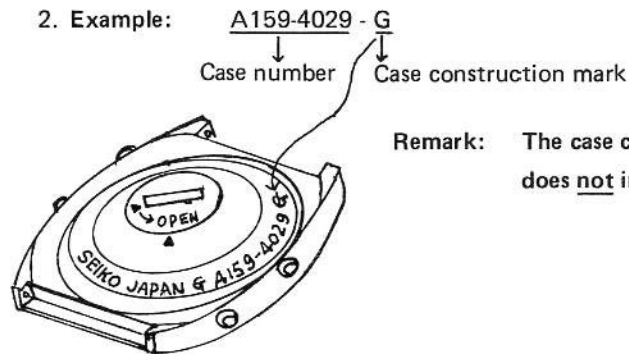
Example: B 0 ----- B

B. EXISTING OLD CODING

1. Example:



2. Example:



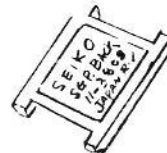
Remark: The case construction mark such as "G" does not indicate the case color.

C. WITHOUT MARKING

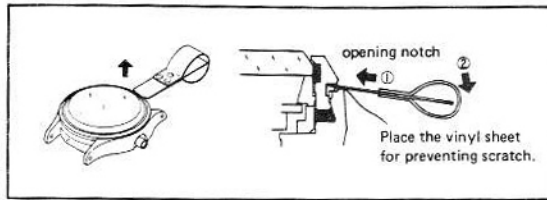
Example: 11-3809 ----- Case number

Japan-R ----- Factory production code. This is not a case construction mark.

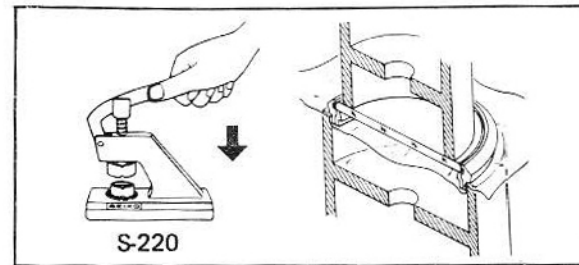
Remark: This marking is very common on cases with plastic crystals.



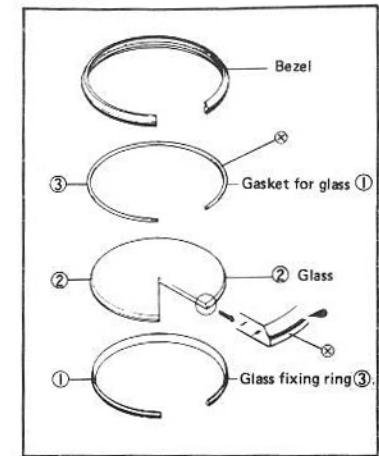
HOW TO CHANGE GLASS OF CASE WITH "B" OR "F" CONSTRUCTION MARK



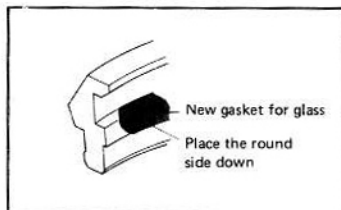
1. Locate the open notch on the bezel. Insert the tip of the opener S-280 into the notch and pry-up the bezel. (Glass and bezel will come out as one unit).



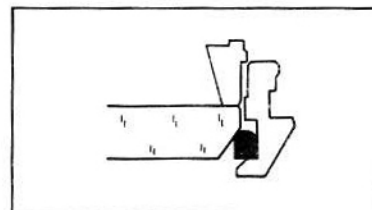
2. Remove the glass by *supporting* the bottom face of the bezel with a disk whose diameter is slightly larger than the bezel. Using a disk whose diameter is smaller than the glass, press down the glass by using tightening tool S-220 as shown above.



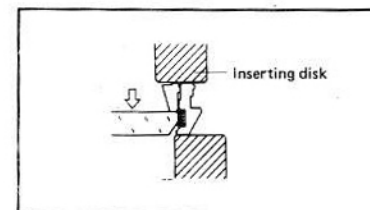
3. Three parts will be pressed down as shown in the above illustration. Please note that the gasket for glass usually remains in the bezel.



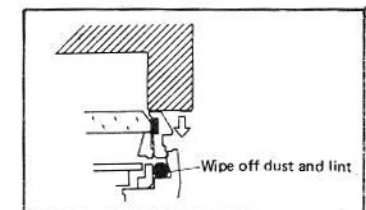
4. Be sure to install the gasket into the groove of the bezel properly. This only applies if the gasket fell-off during step 2 and/or if the gasket is being replaced.



5. Install new glass:
 - I. Place the glass into the bezel. Be sure the shaded bevel side is facing the gasket for glass.
 - II. Place the glass fixing ring on the glass.

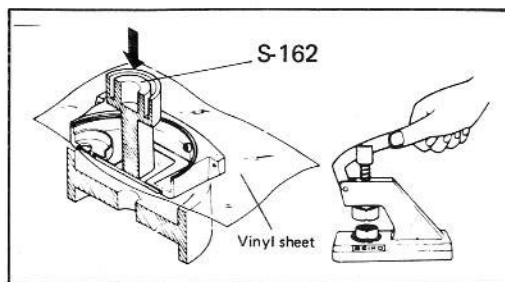


6. Push the glass fixing ring by using inserting disk and tightening tool S-220. The glass fixing ring is flush with the bottom surface of the bezel.

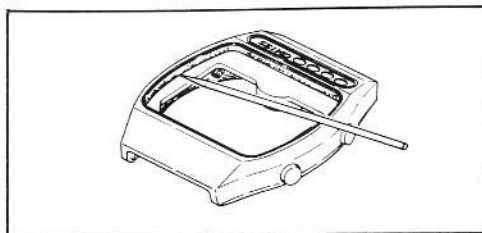


7. After the bezel is set evenly to the case-band, push it in as shown above. Using the inserting disk and tightening tool, press down the bezel into the case-band.

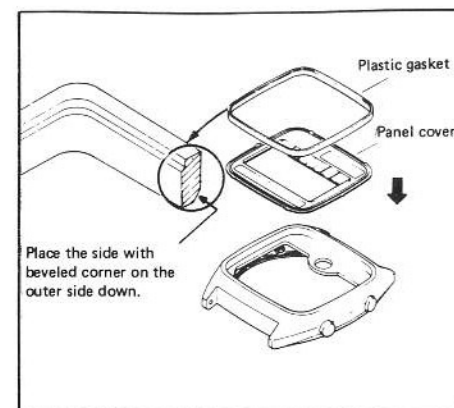
HOW TO CHANGE GLASS OF CASE WITH "E" OR "A" CONSTRUCTION MARK



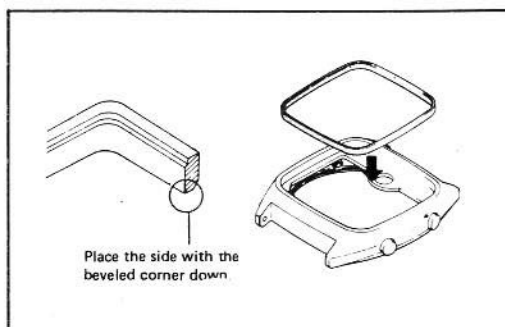
1. Use a disk whose opening is *larger* than the glass to support the case bezel side. Push the glass out by using inserting disk and tightening tool S-220. (Be sure to push the glass out from the inside).



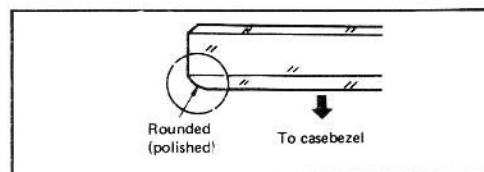
2. Be sure to pry the plastic gasket with a pegwood so as not to scratch the case bezel.



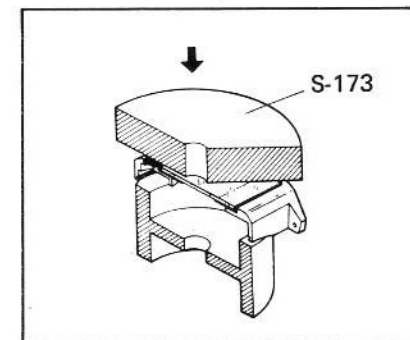
3. Parts will be disassembled as shown above.



4. Be sure that the plastic gasket is replaced on the case band properly.



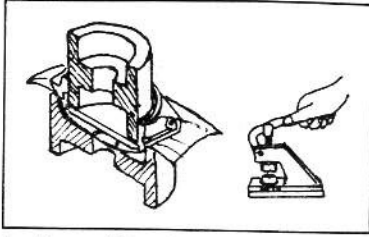
5. Place the new glass. (Rounded side down)



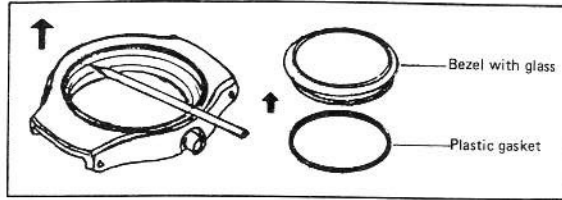
6. Press down the glass into the case bezel by using tightening tool with a flush type disk as shown above.

HOW TO CHANGE GLASS OF CASE WITH "C" OR "G" CONSTRUCTION MARK

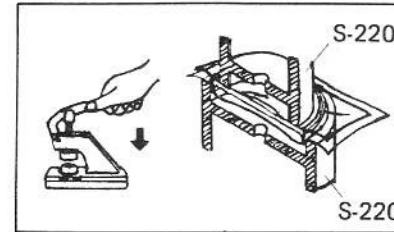
Remark: Movement unit **MUST BE** removed first.



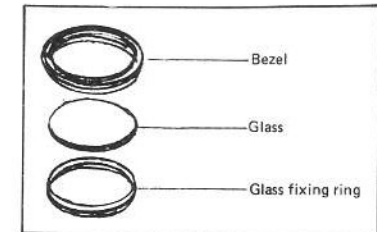
1. Use a *disk* whose diameter is *larger than the bezel* to support the case. Push the glass fixing ring with an inserting *disk* whose diameter matches the *glass fixing ring*. Use the tightening tool to press down the bezel.



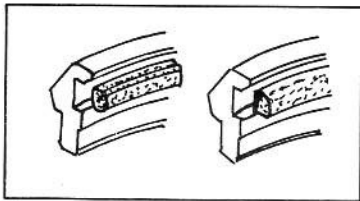
2. Bezel with glass will come out as one unit. However, the gasket may or may not stay on the case-band. If a gasket replacement is needed, pry the gasket up with a soft stick so as not to scratch the case-band.



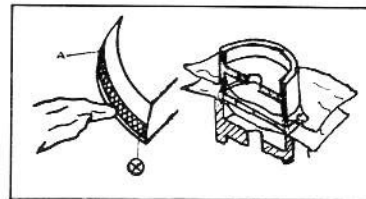
3. Support the bottom edge of the bezel with a *disk* with an *inside diameter larger than the glass*. Press out the glass with a *disk* slightly smaller than the *glass*.



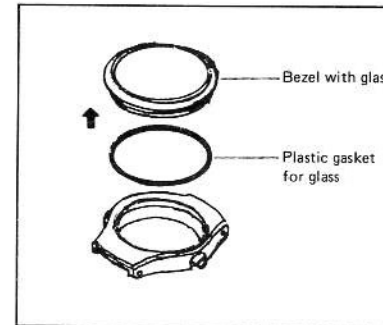
4. Parts will be press down as shown on above illustration.



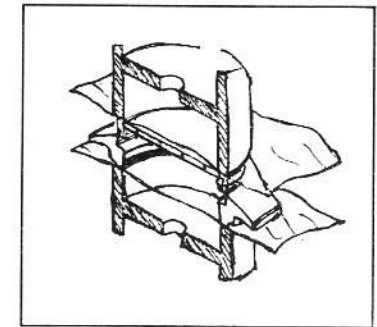
5. Gasket for glass usually stays in the groove of the bezel. If a new gasket is replaced, make sure that the gasket is seated properly as illustrated above.



6. Installation of new glass:
 1. Place the glass into the bezel. Be sure the shaded bevel side is facing the gasket.
 2. Push the glass fixing ring into the bezel by using a tightening tool.

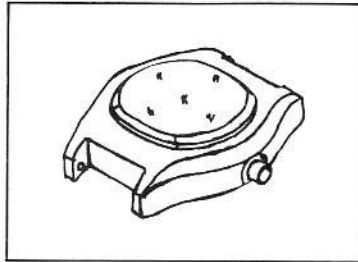


7. Place the plastic gasket into the case-band. Be sure the bevel side of the gasket is facing down to the case-band.

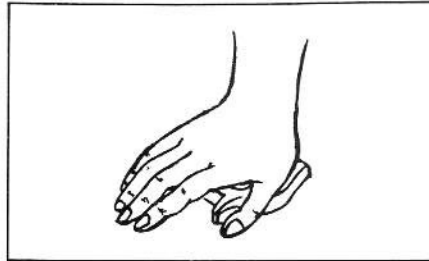


8. After the bezel is set evenly to the case-band, push the bezel down as illustrated above, by using both, the inserting disk and a tightening tool.

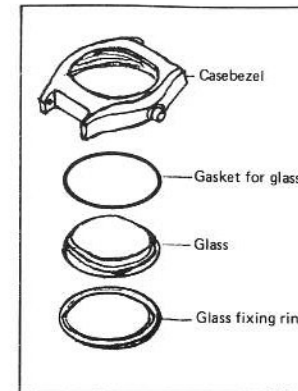
HOW TO CHANGE CRYSTAL OF CASE WITH "K" OR "H" CONSTRUCTION MARK



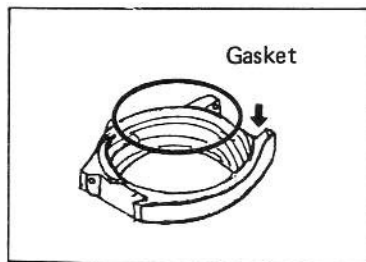
1. Remove the movement from the case.



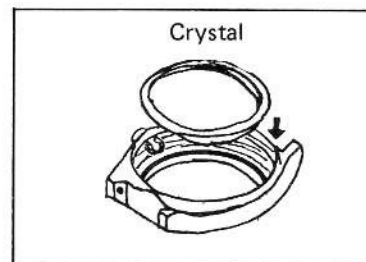
2. Using the palm of your hand, push the crystal as shown above.



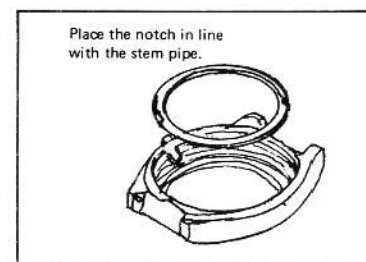
3. Parts are disassembled as shown in the above illustration:
 - I. Glass fixing ring
 - II. Glass
 - III. Gasket for crystal



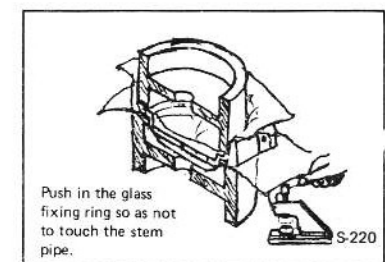
4. Set the gasket for glass to the case bezel.



5. Set the crystal to the case bezel.

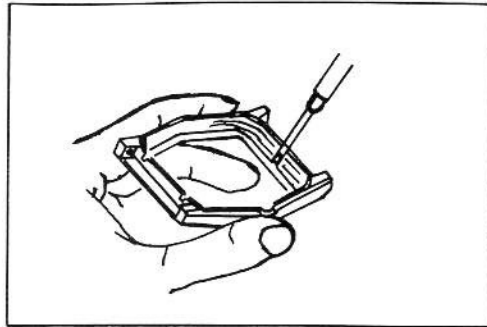


6. Place the notch of the crystal fixing ring in line with the stem pipe.

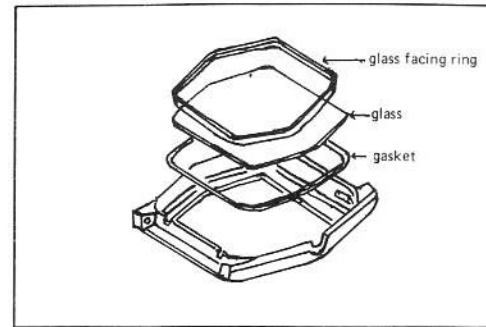


7. Push in the crystal fixing ring with tightening tool S-220 as shown above.

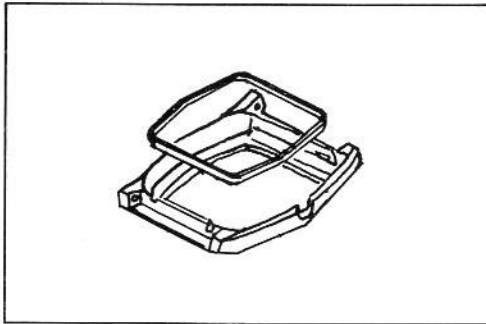
HOW TO CHANGE GLASS OF CASE-BACK WITH "M" OR "L" CONSTRUCTION MARK



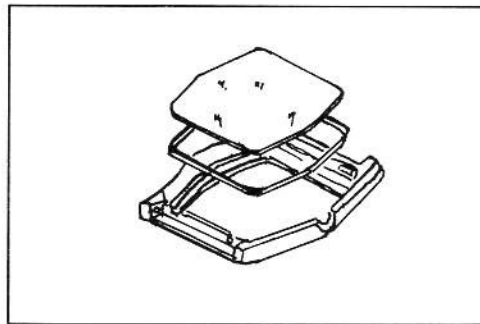
1. Insert the tip of a screwdriver into the opening notch and remove the glass fixing ring.



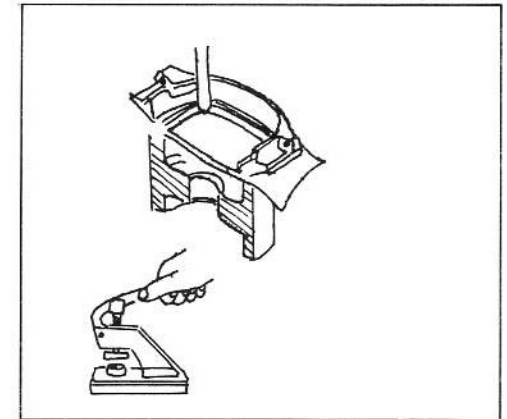
2. Push the glass out by finger. Above illustration shows the parts being assembled.



3. Place the gasket for glass on the case bezel.
Be sure it's seated properly.

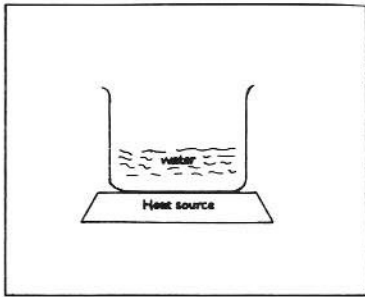


4. Place the glass into the case bezel.
Be sure the shaded bevel side is face down.

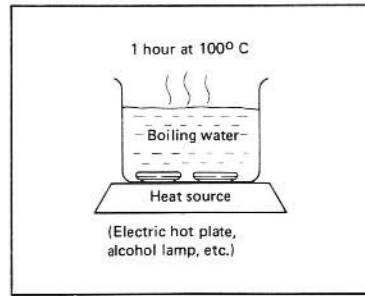


5. Reinstall the glass fixing ring back to the case bezel.

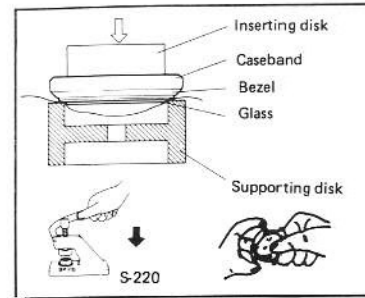
HOW TO REPLACE CRYSTAL (CASE BACK WITH "P" OR "R" CONSTRUCTION MARK).



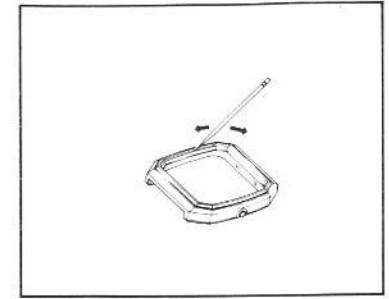
1. Set up heater and a glass jar, fill it up with just enough water to cover the case. Allow water to boil.



2. Place the bezel (case) in boiling water for about 5 to 10 minutes.

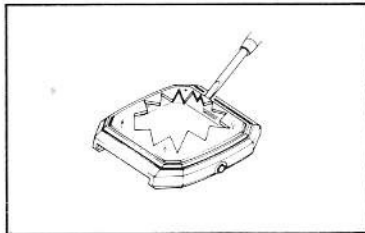


3. Push out the glass using a disk and/or a thumb. Make sure to use a cloth covering the finger.

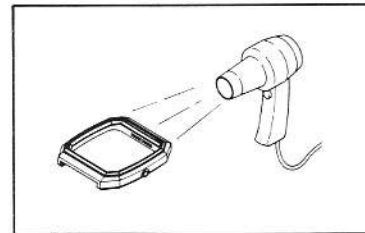


4. Using a soft stick (PEG-WOOD), scrap off the old glue.

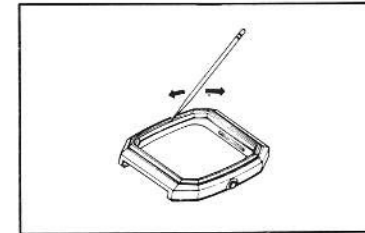
*Remark: Other sources of heat can be applied, however, boiling water method is the safest.



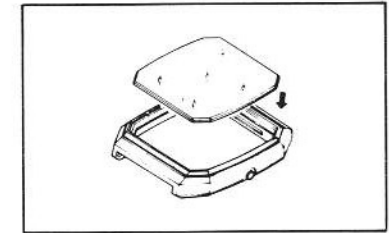
5. If crystal was broken, pry the glass by using a soft stick. (pegwood)



6. Dry the case bezel thoroughly.



7. Apply crystal glue with a pegwood to the glass seat of the case bezel.



8. Install the glass on the case bezel and wait for the glue to dry.

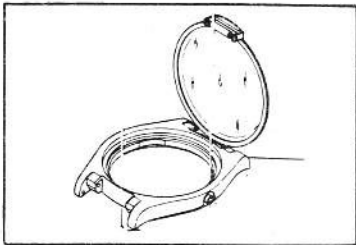
Remarks:

1. **GLUE TO USE:** SEIKO glue S-310. (Dries within 24 hours).
2. Ordinary crystal glue is not satisfactory, nor is ALPHA type (fumes may damage circuit and/or dial's color).
3. Should you wish to apply a faster drying kind of Epoxy Adhesive, please consult the SEIKO Technical Department.

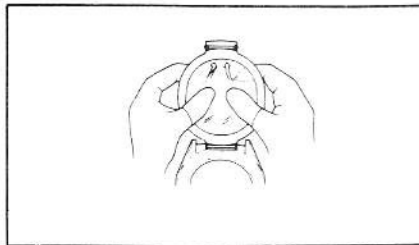
HOW TO CHANGE GLASS OF CASE WITH "Z" CONSTRUCTION MARK

Remark: "Z" Construction mark applies to all of the cases design which cannot be classified into the general case construction system. Therefore, you may have to refer to the individual casing guide.

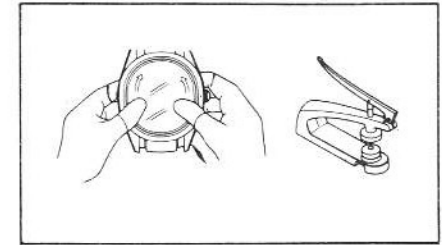
EXAMPLE: BRAILLE WATCH



1. Open the dial cover

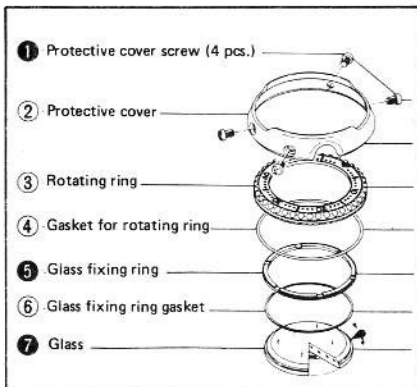


2. Push the crystal from inside directly with fingers and remove it.



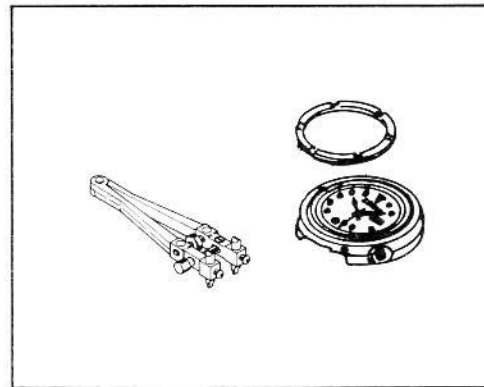
3. To install new crystal, press the crystal into the bezel gradually while squeezing it with fingers *OR* use a squeeze type inserting tool.

EXAMPLE: DIVER'S WATCH

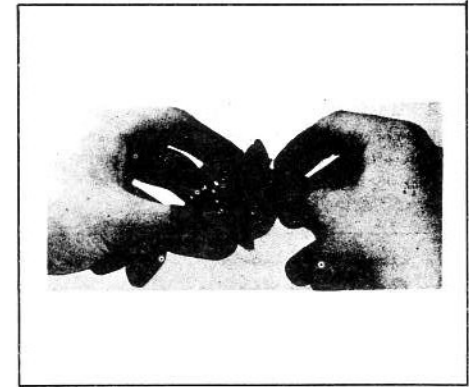


1. Remove the protective cover, screw, and rotating ring as shown above (1) TO (4)

REMARK: When reassembling the rotating ring, make sure the gasket for rotating ring is placed properly.



2. Remove the glass fixing ring with a casing instrument S-20R *OR* S-194 case opener, by turning the opener counterclockwise.



3. Remove the glass with the suction pad.

TO INSTALL A NEW GLASS

Do not scratch *OR* stain the back surface of the glass as it is specially coated. If there are any stains, wipe it off with a soft clean cloth.

SEIKO

For further information, contact Technical Services Department:
East Coast: (212) 977-2929 West Coast: (213) 640-3333

To order batteries or parts, please contact your local material distributor.

Seiko Time Corporation, 555 West 57th Street, N.Y., N.Y. 10019