WATCH CASE

WATCHCASE

■COMMON ITEMS ON CITIZEN WATCHCASES

■STRUCTURES OF CITIZEN PARAWATER WATCHCASES

COMMON ITEMS ON CITIZEN WATCHCASES

INDEX NO.

SYMBOLS INDICATED ON CASE BACKS

On case backs of Citizen wrist watches, there are certain symbols engraved to facilitate handling of Citizen watches. The symbols indicated on case backs, which you should be familiar with when performing overhauls and repairs of Citizen watches, are shown in the table below.

Symbols	Indicating contents	Remarks
⊗ (See Fig. 2)	One-piece type, "Parawater" watchcase using a joint winding stem (Excluding square flange type).	
GN	Crystal glass with metal ring type, "Parawater" device watchcase (Not requiring O-Ring setter).	
GN-1-U	Crystal glass with metal ring type, "Parawater" device watchcase (Not requiring O-Ring Setter).	Movement is removed from glass side.
GN-1-S	Crystal glass with metal ring type, "Parawater" device watchcase (Not requiring O-Ring Setter).	Movement is removed from case back side.
GN-2	Crystal glass type, "Parawater" device watchcase (Not requiring O-Ring Setter).	
GN-3-U	GN-3 type, "Parawater" device watchcase (Not requiring O-Ring Setter).	Movement is removed from glass side.
GN-3-S (See Fig. 3)	GN-3 type, "Parawater" device watchcase (Not requiring O-Ring Setter).	Movement is removed from case back side.
OR (See Fig. 2)	O-Ring Setter No. (In the blanks following OR, the reference number of an O-Ring Setter piece is inserted).	This is engraved on cases requireing O-Ring Setter.
 Fig. 1	One-piece type, Parawater watchcase with ordinary winding stem. Indicates the removal procedures of the movement: remove the bezel (or glass), push the setting lever, remove the winding stem.	In case of "OPEN THRU CASE BACK" indication . . . Square type parawater device In case of "OPEN THRU GLASS" indication . . . Tension ring type Parawater device, friction bezel type Parawater device, etc.

or GLASS

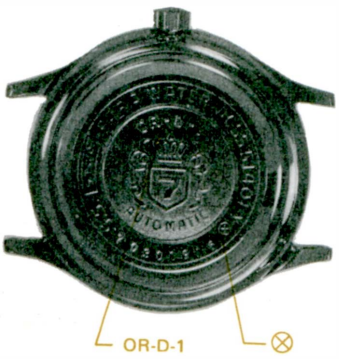


Fig. 2

Fig. 3

STRUCTURES OF CITIZEN PARAWATER CASE BACKS

Case backs can be largely classified into 3 types, snap back type, screw back type and one-piece type.

1. Snap Back Type

The case back of this type adopts a sna--on method and is widely used for both non-parawater watchcases and parawater watchcases.

Snap Back Type Parawater Watchcases

This is a type which maintains air-tightness by inserting a packing in the indented portion of the case center body and for pushing in the case back, the Citizen Multi-Purpose Watchcase Opener and the endpieces are used. Pushing in can be performed manually (See Fig. 1).

Remarks:
Two type of packings, black and white, are used but the white packing does not necessitate the applying of silicon oil.

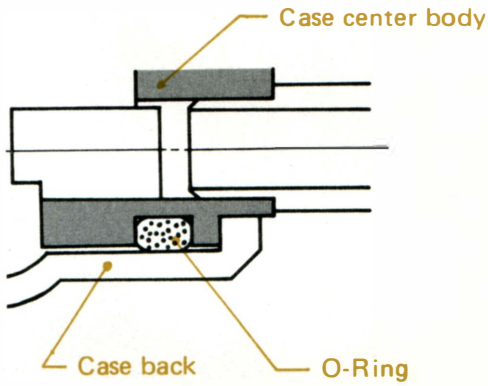


Fig. 1

2. Screw Back Type

This type is a case back type which is used for parawater watchcases and air-tightness is maintained by compressing the packing attached to the outer perimeter of the case back or the indented portion of the case center body. Opening and closing of the case back is performed by using the Citizen Multi-Purpose Watchcase Opener and the three-pronged movable endpiece (or a similar type movable end-piece). There are two type of screw back types, one with a outer screw type and the other with a inner screw type. Fig. 2 indicates a inner screw type.

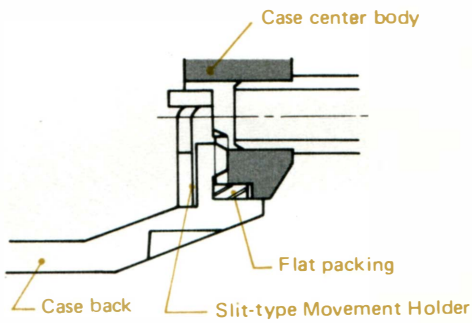


Fig. 2

3. One-Piece Type

This type has integrated the case center body with the case back for further promoting the air-tightening property. On the case back of a one-piece watchcases, you will either find a ⊗ mark (Ones that use a joint winding stem) or the following engravings.

OPEN THRU CASE BACK (or GLASS)
PUSH SET-LEVER
PULL STEM

Remarks;
Refer to the "TYPES OF SETTING LEVERS" paragraph.

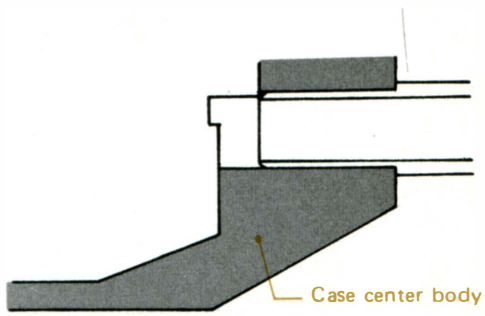


Fig. 3

C 2

STRUCTURES OF REGISTER RINGS

There are two types of register rings: Outer register ring and inner register ring.

1. Outer Register Ring

1-1 Structure

The outer register ring consists of the register ring portion and the register ring spring.

Since the register ring is maintained by a fixed pressure to the bezel indented portion by the polygonal register ring spring, the rotating slip (idle running) of the register ring is avoided and a smooth rotation is maintained. (Fig. 1).

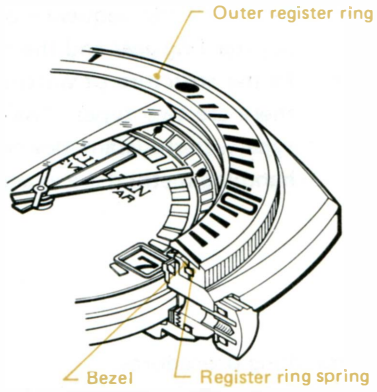


Fig. 1

1-2 Handling procedures

[1] Removing method

Insert a case opener between the register ring and the case center body and pry open in a manner as opening a bezel.

Remarks: It can be removed easier by turning the register ring and opening the place where the upper and lower play is the greatest.

[2] Attaching method

Apply one end of the register ring spring to the indented portion of the bezel and push the register ring spring into the indented portion of the bezel along its surrounding.

Remarks: After pushing in, check whether or not the register ring has settled in the indented portion of the bezel.

[3] Adjusting method of rotation

a. When the rotation is loose:
Bend each side of the polygonal register ring inwards and reduce the diameter (Fig. 2).

b. When the rotation is tight:
Contrary to when its is loose bend each side of the register ring outwards to increase the diameter (Fig. 3).
When adjusting the register ring spring, bend each side equally.

Remarks:
Since the register ring spring has a cut portion in one place, it can be easily removed from the register ring portion with tweezers, etc.

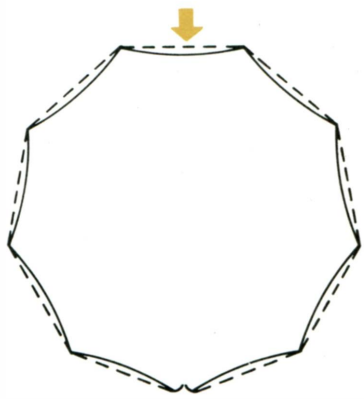


Fig. 2

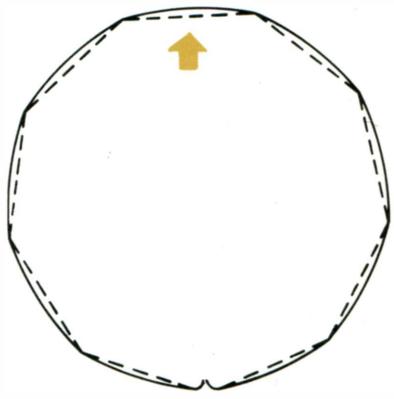


Fig. 3

C 3

2. Inner Register Ring

2-1. Structure

- In an inner register ring, the register ring is installed in the inner surface of the watchcase. Rotation is transmitted in the sequence of crown, register ring pinion, register ring gear and the register ring.
- In the structure of watchcases with inner register rings, there are two types: The metal ring type and the GN-3 type waterresistant device. However, their register ring handling method are exactly the same (Fig. 4).

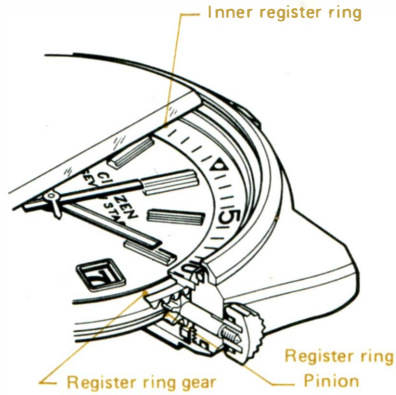


Fig. 4

2-2 Handling procedures

It can be simply removed when the case is slanted so the dial is faced down after removing the bezel, glass, oval ring, etc.

Remarks:

Particularly when the rotation of the register ring is tight or there is a rubbing on the register ring in assembly, oil the tip of the register ring that touches the dial with a suitable amount of Synt-V-Lube oil.

When oiling, be careful not to cause the oil soak into the dial.

ADHESIVE AGENTS FOR REPAIRING PURPOSE

The adhering of appearance parts should be performed under the following method.

1. Adhering Method

For adhering procedures on odd-shaped crystal glass and golder type bands, please refer to items 2 and 3.

(1) Selection of adhesive agents

Adhesive agents used on appearance parts slightly differ according to places of usage, however, they are generally classified as in the following table.

Adhering places	Use of adhesive agent
Glass, odd-shaped crystal glass and applied figure	Adhesive agent for glass (Example: Glaserkitt)
Crown	Adhesive agent for screw locking (Example: Loctite)
Case pipe	Adhesive agent for case pepe bonding (Example: Araldite)
Hinged type band	Adhesive agent for metal bonding example: (Aron alpha 202, Cemendine 3000, S-dine 800)

(2) Removal of adhesive agent

Remove the adhesive agent adhered by a probing rod or the like.

Remarks: When removing adhesive agent for glass (Glaserkitt), immerse in diluent of Ligroine or xylol and remove after softening the adhesive agent. This allows clean exfoliation.

(3) Cleaning

After removing the adhesive agent, clean the adhering surface with benzine, etc., and remove oil from the surface.

(4) Applying the adhesive agent

Apply a suitable amount of adhesive agent to the adhering portion with a brush or others.

Remarks: The forced out adhesive agent should be removed with a brush or others prior to drying.

(5) Drying

Normally, it is left to dry in normal temperature for more than 24 hours.

2. Adhering Procedures of Odd-Shaped Crystal Glass

(1) Remove the crystal glass by pushing from the inner side (It comes off at a load under 6 kg).

(2) Immerse in diluted solvents and remove the adhesive agent with a brush or others after the adhesive agent becomes soft.

Diluted solution

Ligronine .... Immer for about 30 minutes

Xylol ..... Immer for about 15 minutes

(3) Clean the crystal glass and the case center body with benzine or others and remove oily substances.

(4) Confirm the adhering condition between the crystal glass and the case center body. No problems when the play amount is between 0~0.15 mm.

(5) Apply the adhering agent to the case center body with a brush or others (Use Glaserkitt).

Remarks: Apply a suitable amount so it will not be forced out.

(6) Inser the crystal glass

Insert the crystal glass promptly before the adhesive agent dries.

Remarks: Remove the adhesive agent forced out with a brush or others before the adhesive agent dries.

(7) Perform drying

Leave in normal temperature for more than 24 hours.

3. Adhering Procedures of Hinged Type Band

(1) Thoroughly remove oil from tips and screw holes of all screws including screws not adjusted.

(2) Apply a very small amount of adhesive agent for screw locking to the tips of the screw and screw holes (Use the instant binding agent Aron alpha or cemendine 3000 or S-dine 800).

Remarks: Don't forget to adhere the screws not adjusted and screws on the clasp portion.
When oil is applied to portions other than screws or a large amount is applied, it may flow to other portions to cause the highes of the band to become stuck.
Oil can be cleverly applied by a sharpened toothpick, match or others.

(3) Perform drying
Leave in normal temperature for more than 24 hours.

4. Notes on the Maintenance of Adhesive Agents

1) Avoid places of high temperature and preserve in normal temperature.
2) Take care so foreign substances such as dust, metal powder, etc., are not mixed.
3) For detailed instructions on the adhesive agent, please read the instruction book accompaning the adhesive agent.

TYPE OF SETTING LEVERS

There are three types of setting levers; Screw-type, Pin type and the Set lever type.

1. Screw Type

In this type, as the setting lever axle is engaged to the setting lever by a xcrew, attachment and removal of the winding stem is performed by loosening the setting lever axle by a driver.

2. Pin Type

This is a type where the pressure spring for setting lever is held down by the setting lever axle portion and the setting lever axle and the setting lever are integrated. Attachment and removal of the winding stem is performed by pushing the tip portion of the setting lever axle with tweezers.

3. Set Lever Type

This is a pin type setting lever, however, the setting lever is attached to the setting lever axle portion so a normal winding stem can be used on one-piece watchcases and attachment and removal of the winding stem can be performed from the dial side.

3-1 Set lever type handling method (Fig. 1)

(1) When pushing the tip of the setting lever, the sweeping portion of the plate acts as the fulcrum to lift up the setting lever and the meshing with the winding stem becomes disengaged.

(2) Removal and attachment of the winding stem is performed by pushing the tip of the setting lever.

(3) The engaging portion of the setting lever and the setting lever axle is in a snap ring shape so removal and attachment can be made from sideways.

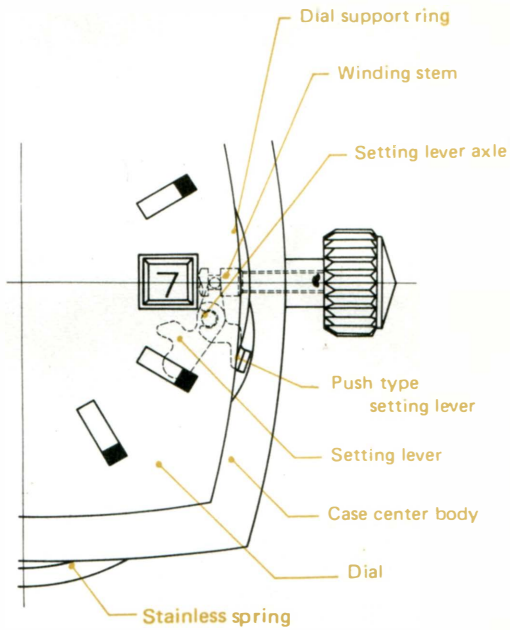


Fig. 1

3-2 Identification method (Fig. 2)

On the back cover of watchcases using this type of setting lever, there is always the following engravings.

OPEN THRU CASE BACK (or GLASS)
PUSH SET-LEVER
PULL STEM

These engravings indicate the removal procedures of the movement:

remove the bezel (or glass),
push the setting lever,
remove the winding stem.

Remarks:

In case of "OPEN THRU CASE BACK" indication

..... Square type parawater device

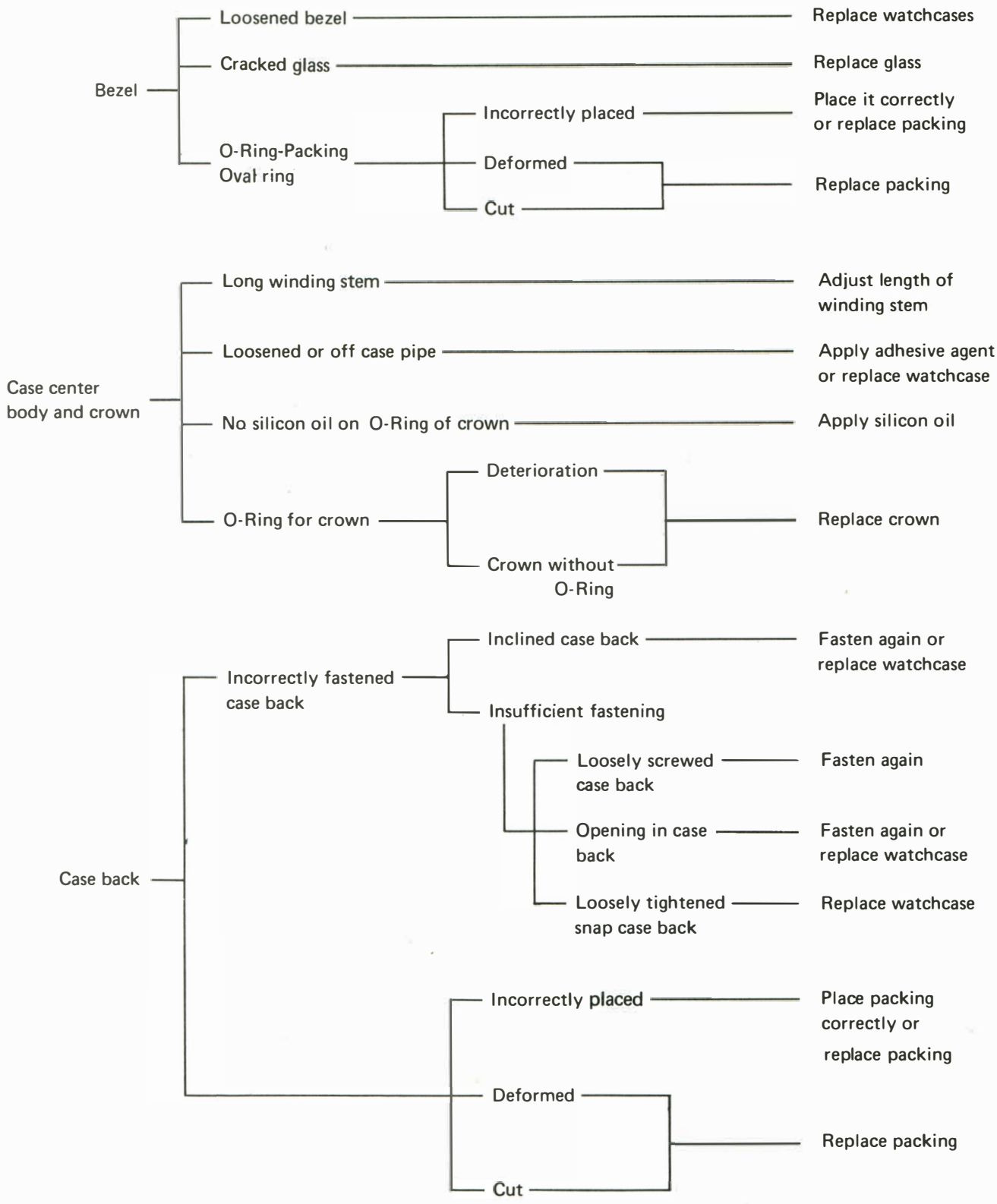
..... Tension ring type parawater device, friction bezel type parawater device, etc.

Fig. 2

C 5

TROUBLE SHOOTING CHART FOR PARAWATER WATCHCASES

The table shown blow is the summary of causes of inferior parawater quality and trouble shooting chart which ensure repair of Citizen parawater watchcases.
Please make use of this table in case of finding causes of inferior parawater quality and repair.



STRUCTURERS OF CITIZEN PARAWATER WATCHCASES

INDEX NO.

LIST OF CITIZEN PARAWATER WATCHCASES

The structures of Citizen parawater watchcase are listed below.
The item to be known is found by the index number listed below.
For index number, refer to the bottom corner of each page.

Structures of bezel sides	Structures of case back	Index No.
Friction bezel type	Snap back type	
	Screw back type	S2
Tension ring type	Snap back type	
	Screw back type	S3
Oval tension type	Screw back type	S4
Square flange 1 type	One-piece type	S5
Square flange 2 type	One-piece type	S6
Crystal glass with metal ring GA-1 type	Screw back type	S7
	One-piece type	
Crytsal glass GA-2 type	Screw back type	S8
	One-piece type	S9
Crystal glass with metal ring GN or GN-1 type	Screw back type	S10
Crystal glass GN-2 type	Screw back type	S11
Crystal glass GN-3 type	Snap back type	
	Screw back type	S12
Oval crystal glass GN-3 type	Screw back type	S13
Crystal glass NG-4 or GN-4W type	Screw back type	S14

FRICTION BEZEL–SCREW BACK TYPE

1. Structure

This device maintains air-tightness by bringing the plastic glass and the case center body into close contact by using bezel.
The case center body and the case back are screwed on tightly.

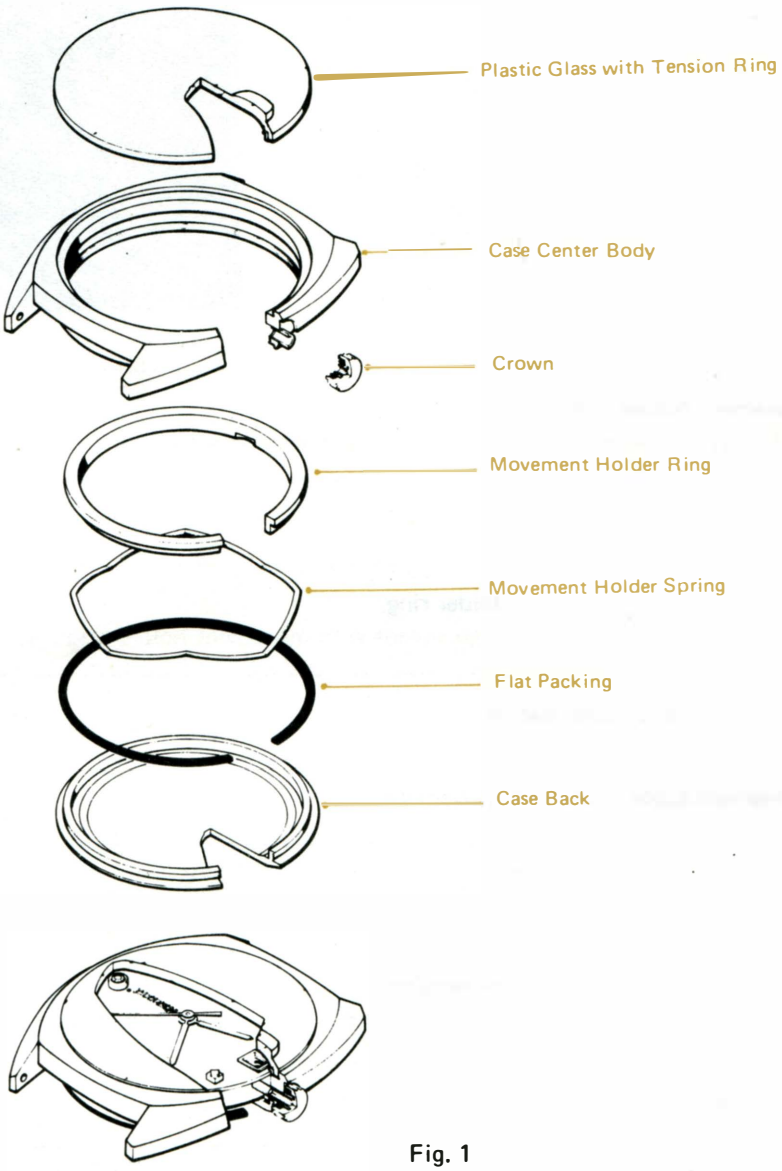


Fig. 1

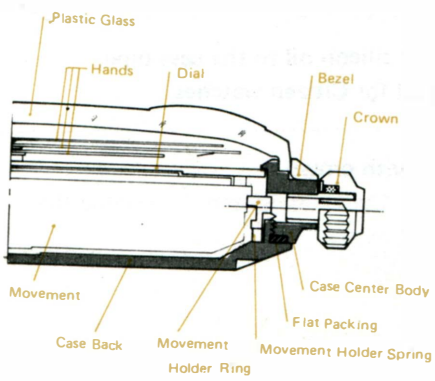


Fig. 2

2. Disassembly and Assembly

[1] Disassembly

(1) Remove the case back.
○ Use the Citizen Multi-Purpose Watchcase Opener (Fig. 3).

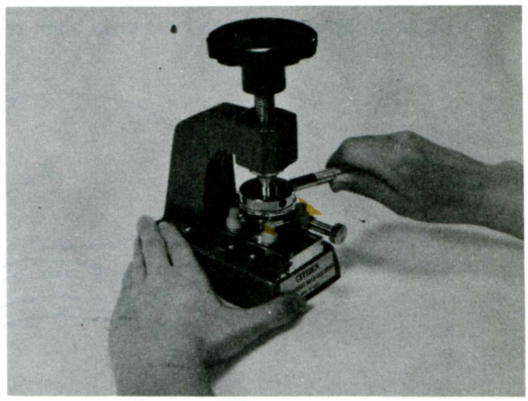


Fig. 3

(2) Remove the movement holder spring.
Remarks: There are watchcases that do not use the movement holder spring.

(3) Pull out the winding stem with crown.

(4) Remove the movement with movement holder ring.
Remarks: Place the dial side up, then the movement with movement holder ring is set to be removed.

(5) Remove the case screws and casing clamps.

(6) Remove the movement holder ring from movement.

[2] Assembly

(1) Attach the movement holder ring to the movement.
Remarks: Align the recess of the movement holder ring to the winding stem position.

(2) Secure it with the case screws and casing clamps.

(3) Insert the movement with movement holder ring into the case.
Remarks: Align the position of the winding stem with the case pipe.

(4) Apply a proper amount of silicon oil to the case pipe.
○ Use special O-Ring oil for Citizen watches.

(5) Attach the winding stem with crown.
Remarks: Check the set of the winding stem by pulling the crown.

(6) Attach the movement holder spring to the top portion of the movement holder ring.
Remarks: There are watchcases that do not use the movement holder spring.

(7) Apply a proper amount of silicon oil to the flat packing.
○ Use the Citizen O-Ring Lubricator.

(8) Fasten the case back with flat packing.
○ The Citizen Multi-Purpose Watchcase Opener should be used when fastening the case back.
Remarks: After fastening the case back, check whether the case back is correctly screwed or not.

3. How to Change the Plastic Glass

The following procedures should be followed when changing the plastic glass.

(1) Remove the bezel.
Remarks: Use a watchcase opener and pry off the bezel evenly throughout the rim so as not to distort the bezel.

(2) Remove the plastic glass.
Remarks: When there is difficulty in removing the plastic glass, use a rubber sucker.

(3) Insert a new plastic glass.
Remarks: Check the inside face of the plastic glass so that no dirt or soil is on.

(4) Push in the bezel.
○ Use the Citizen Multi-Purpose Watchcase Opener.
Remarks: Check the position of the opening for prying.
It is advisable that a sheet of vinyl or similar material be applied between the upper endpiece and the bezel so as not to scratch or dent it.
After pushing in the bezel, check whether the bezel correctly snaps or not throughout the rim.

TENSION RING–SCREW BACK TYPE

1. Structure

Air-tightness is maintained through the tightly pressed portion of the plastic glass reinforced with a tension ring and the case center body.
The center body and the case back are screwed on tightly.

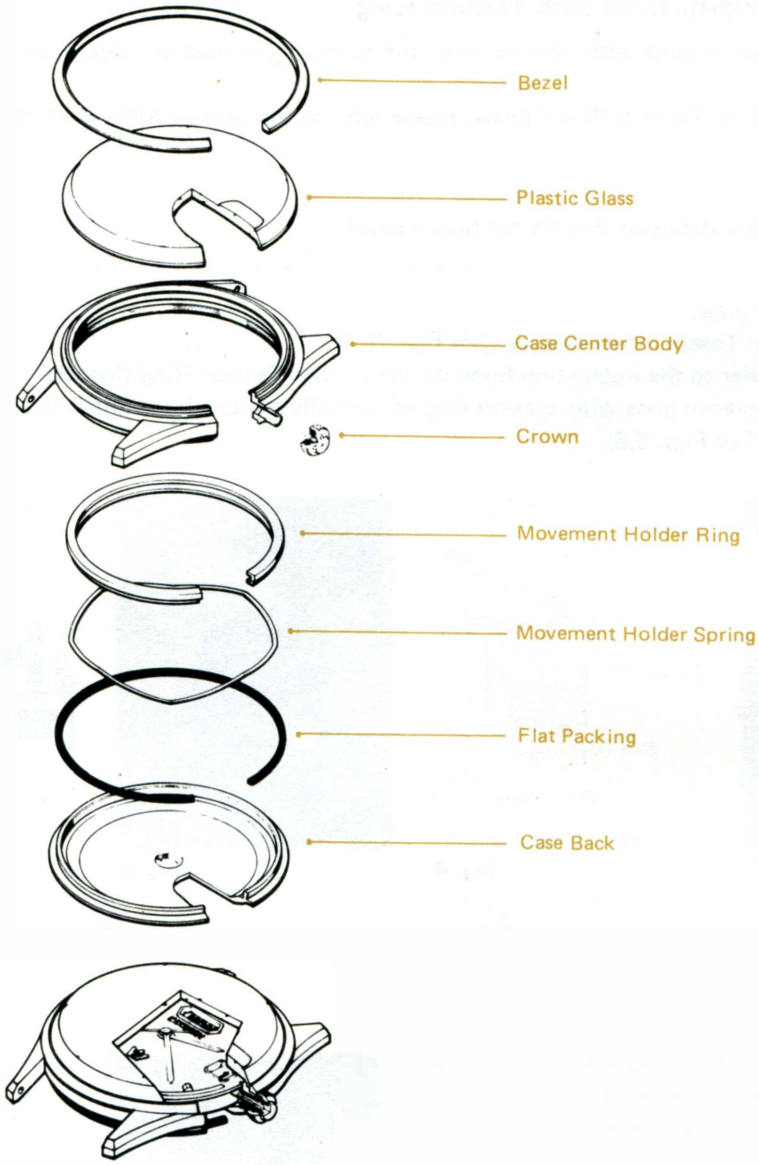


Fig. 1

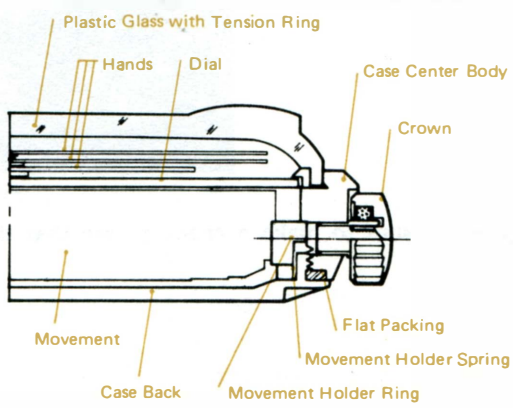


Fig. 2

S3

2. Disassembly and Assembly

Disassembly and Assembly of this watchcase is to be performed in the same manner as for the aforementioned FRICTION BEZEL-SCREW BACK TYPE watchcase.

3. How to Change the Plastic Glass with Tension Ring

When changing the plastic glass with tension ring, the following procedures should be followed using the Citizen Tension Ring Opener.
For how to use the Citizen Tension Ring Opener, please refer to the item of APPARATUS AND TOOL.

(1) Remove the bezel.
Remarks: There are watchcases that do not have a bezel.

(2) Remove the plastic glass.
○ Use the Citizen Tension Ring Opener (See Figs. 3, 4).
(For details, refer to the instruction book on the Citizen Tension Ring Opener.)
Remarks: For the plastic glass with tension ring of specially-designed, use the Citizen Multi-Purpose Watchcase Opener (See Figs. 5,6).

Fig. 3

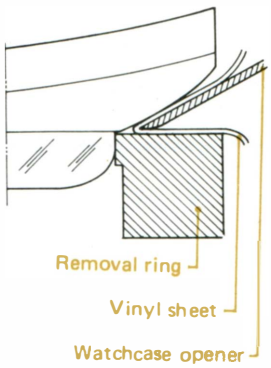


Fig. 4

Fig. 5

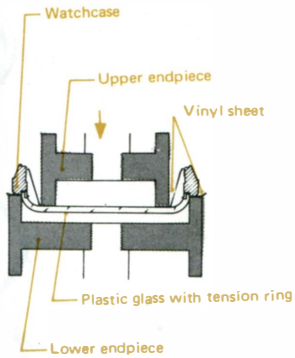


Fig. 6

(3) Push in the new plastic glass.
○ Use the Citizen Multi-Purpose Watchcase Opener.
(For details, refer to the instruction book on the Citizen Multi-Purpose Watchcase Opener.)
Remarks:
For the plastic glass with a curved shoulder, use the pushing endpiece and push in the plastic glass (See Figs. 7, 8).

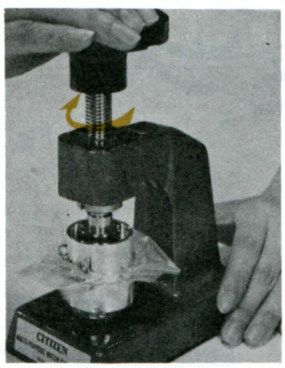


Fig. 7

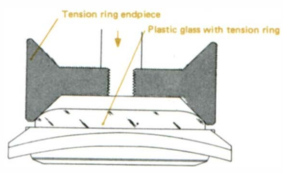


Fig. 8

After pushing in the plastic glass, be sure to make a check to see that the plastic glass has been correctly inserted.

OVAL TENSION RING–SCREW BACK TYPE

1. Structure

The oval ring is compressed to the case center body by the lower surface of the oval glass reinforced with a tension ring and air-tightness is maintained. There is no bezel and the attractive curve of the oval glass is clearly designed. The case center body and the case back are screwed on tightly.

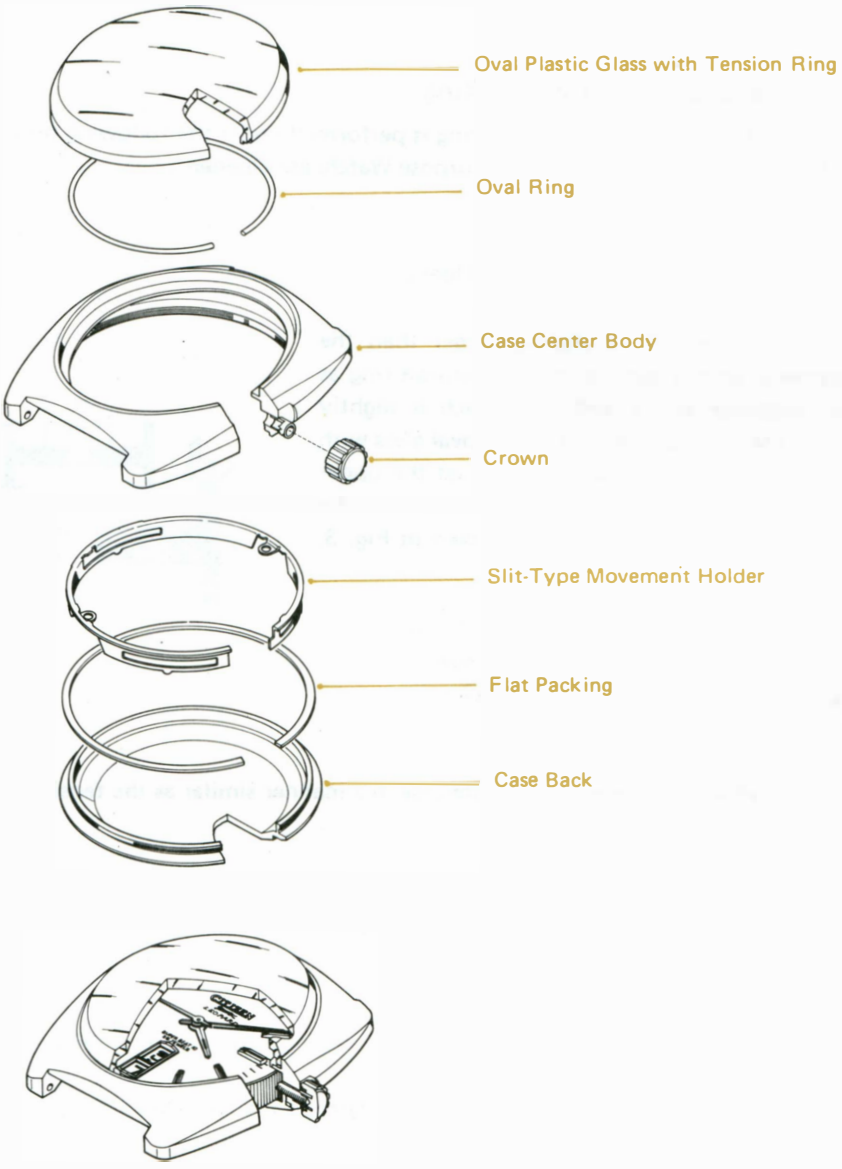


Fig. 1

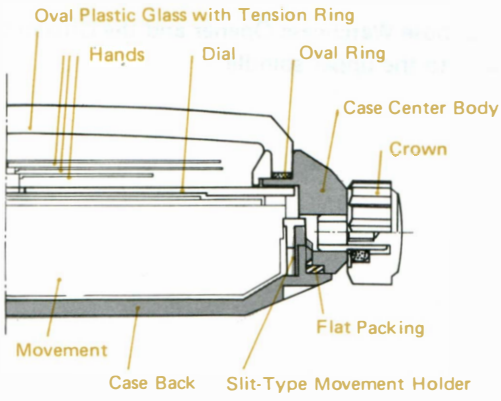


Fig. 2

S4

2. Disassembly and Assembly

Disassembly and assembly other than glass replacement (Removal of Movement, etc.) of the oval tension ring type parawater device is to be performed in the same manner as for the bottom opening method of the crystal glass GN-3 parawater device in Index No. S12.

* For glass replacement, follow the procedures in 3.

3. Replacement of Oval Glass with Tension Ring

The replacement of the oval glass with tension ring is performed under the following procedures using the oval bezel tightening snap endpieces of the Citizen Multi-Purpose Watchcase Opener.

(1) Remove the glass.

○ Use the Citizen Multi Purpose Watchcase Opener.

a. Select a endpiece which is slightly larger than the longer diameter of the oval glass with tension ring as the lower endpiece and a endpiece which is slightly smaller than the shorter diameter of the oval glass with tension ring as the upper endpiece and set the upper endpiece, the watchcase and the lower endpiece, the watchcase and the lower endpiece as shown in Fig. 3.

Remarks:
A piece of vinyl sheet or something similar should be inserted between the watchcase and the lower endpiece and between the glass and the upper endpiece.

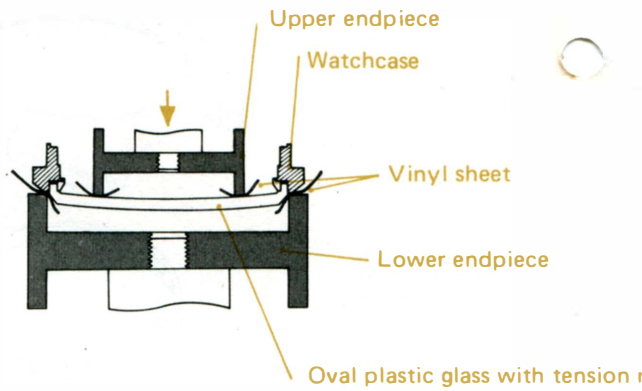


Fig. 3

b. While being careful not to move the watchcase in a manner similar as the tension ring type, push the upper endpiece downwards and remove the glass.

(2) Remove the oval ring.

(3) Set the oval ring.

(4) Set the glass.

Remarks: Push the glass in with the fingers to such a degree as the chamferred portion of the glass lower surface becomes attached to the watchcase.

(5) Push the glass in.

○ Use the Citizen Multi-Purpose Watchcase Opener and the Citizen Oval Bezel Setter.

a. Set the pushing endpiece to the upper spindle.

b. Select an oval endpiece which fits the outer perimeter of the glass upper surface and a lower endpiece which fits the watchcase and set the oval endpiece, the watchcases and set the lower endpiece as shown in Fig. 4.

Remarks:
The oval endpiece may be allowed to accept the slanted surface of the glass.

Set the oval endpiece on the center of the glass and match the indented portion on the outer perimeter of the oval endpiece to the crown position.

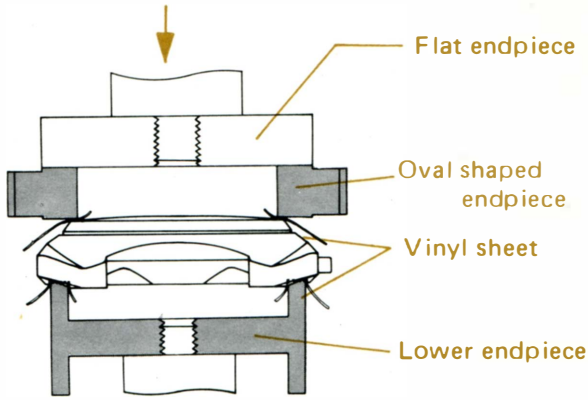


Fig. 4

c. Hold the oval endpiece with fingers so it will not move and tighten the Flat endpiece.

Remarks:
After tightening, check that the lower surface of the tension ring is on the same surface as the watchcase lower surface (See Fig. 5).

When it is not on the same surface, it is pushed in halfway and will become the cause to inferior water resistance so it should be pushed in until they are on the same surface.

Check whether or not the oval ring bulges out.
Insert a vinyl sheet or something similar between the wathcase and the lower endpiece.

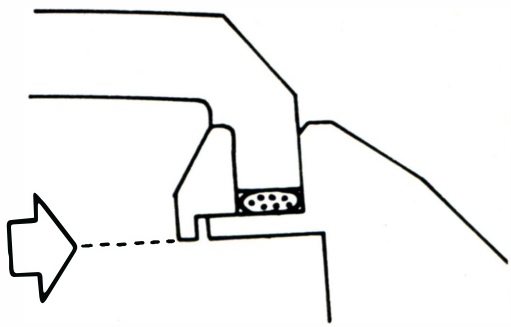


Fig. 5

SQUARE FLANGE 1–ONE-PIECE TYPE

1. Structure

The flat packing rests between the case back and the under surface of the plastic glass. Air-tightness is maintained by the flat packing which is compressed vertically by the plastic glass when the bezel is tightened.

The vertically compressed flat packing also stabilizes the movement and protects it from shock. The bezel is fixed securely to the case back by means of a stabilizing spring for bezel.

On this configuration, the case back and the case center body are a single piece and a joint winding stem is used.

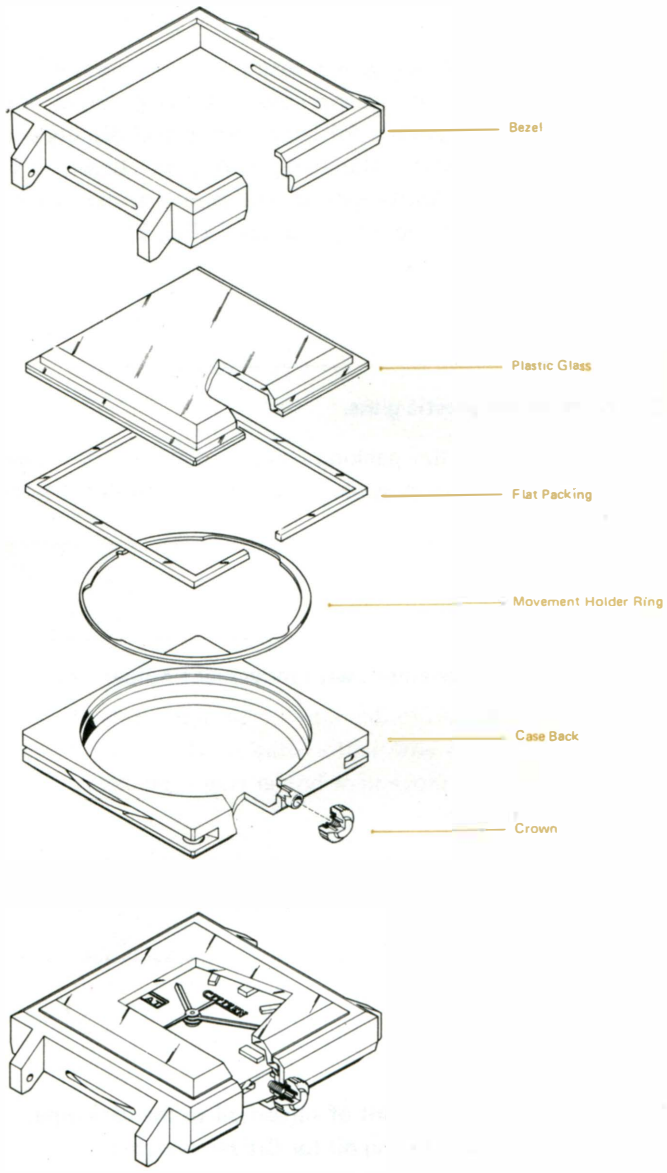


Fig. 1

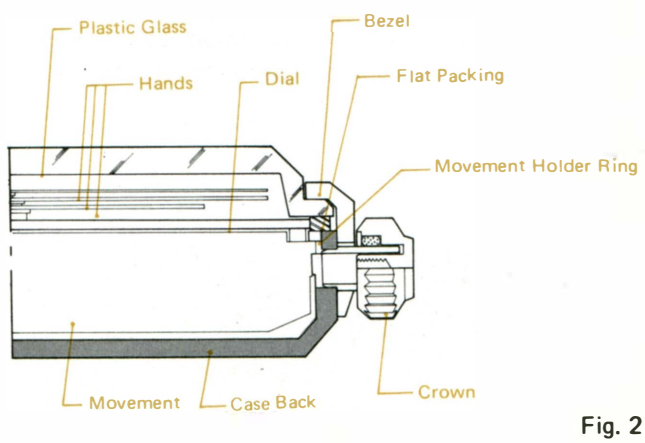


Fig. 2

2. Disassembly and Assembly

[1] Disassembly

(1) Remove the bezel.

Remarks:
Insert the watchcase opener into the groove on the side of the bezel that accepts the stabilizing spring for bezel. Push the spring for bezel firmly and disconnect the bezel from the stabilizing spring for bezel. Disconnect the opposite side in the same manner. Then, remove the bezel from the case back (Fig. 3).

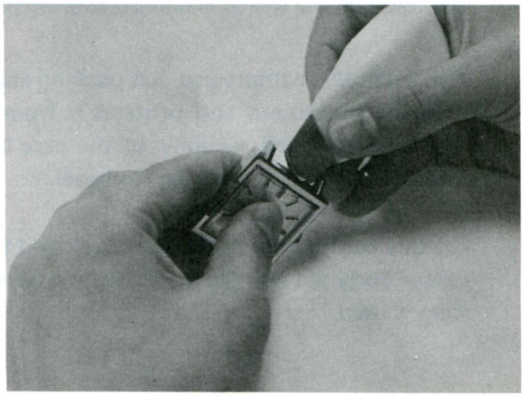


Fig. 3

(2) Remove the plastic glass.

Remarks: The flat packing usually remains in the case back but sometimes it comes off together with the plastic glass. So, be careful not to soil the dial face wit silicon oil of the O-Ring.

(3) Remove the flat packing.

(4) Remove the movement with movement holder ring.

Remraks: Place the dial side down and rotate the winding crown slowly. The movement will usually come loose with half a rotation. If not, pat the case lightly while rotating the winding crown.
The movement holder ring is placed between the dial and the movement. Remove it by taking off the dial.

(5) Remove the winding stem with crown.

[2] Assembly

(1) Apply a proper amount of silicon oil to the case pipe.
○ Use special O-Ring oil for Citizen watches.

(2) Insert the winding stem with the crown into the case pipe.

Remarks: Position the convexed joint portion of stem into the case pipe in vertical position to the case (Fig. 4).

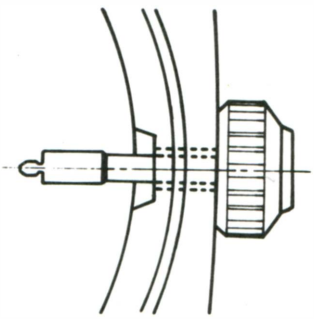


Fig. 4

(3) Assemble the movement with movement holder ring into the case back.

Remarks: Place the slit of the joint portion of the stem fitted in the movement in the same vertical portion, so that the two stems can engage properly.
When there is difficulty in fitting, it does not matter if the crown with the joint winding stem is pushed in after the movement has been set. Then check the meshing position of the joint position by slowly rotating the crown at one stroke.

(4) Set the flat packing on the top surface of the case back.

Remarks: Place the wide portions of the flat packing at the twelve and six o'clock positions and the narrow portions at the three and nine o'clock positions.
The flat packing need not be oiled.

(5) Mount the plastic glass.

Remarks: Place the plastic glass on the flat packing with the wide flanges in the twelve and six o'clock posistions and the narrow portions at the three and nine o'clock positions.
When placing the plastic glass on the flat packing, be careful not to move the flat packing.

(6) Assemble the bezel.

Remarks: This assembly step should be performed gently so that the flat packing and plastic glass are not moved out of posistion.
Be careful not to chip or deform the flat packing.
Next, hold the case firmly and mesh the bezel stabilizing spring for bezel with the groove on the bezel by pressing firmly on the spring with a watchcase opener (Fig. 5).
Then, mesh the opposite side in the same way.

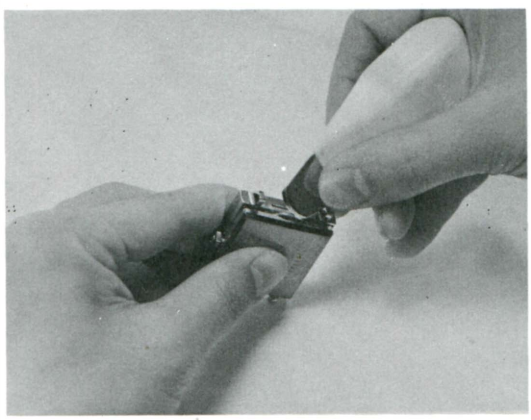


Fig. 5

SQUARE FLANGE 2–ONE-PIECE TYPE

1. Structure

The O-Ring rests between the case center body and the outer rim of the plastic glass. Air-tightness is maintained through the elasticity of the O-Ring. The O-Ring is inserted together with the flange of the plastic glass when the plastic glass is inserted.

On this configuration, the case back and the case center body are a single piece.

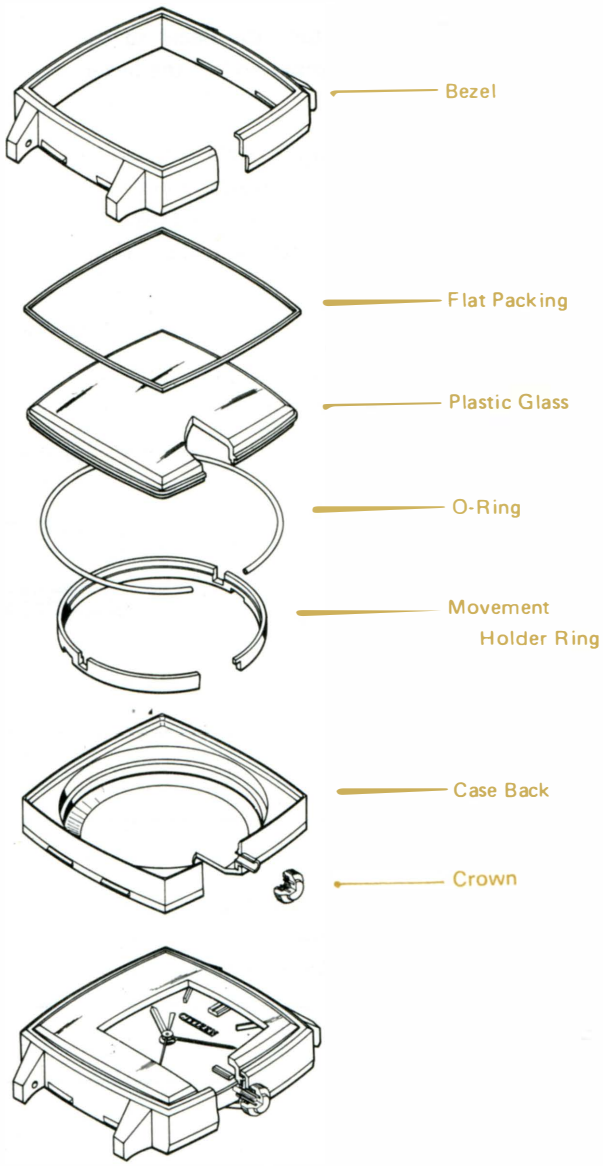


Fig. 1

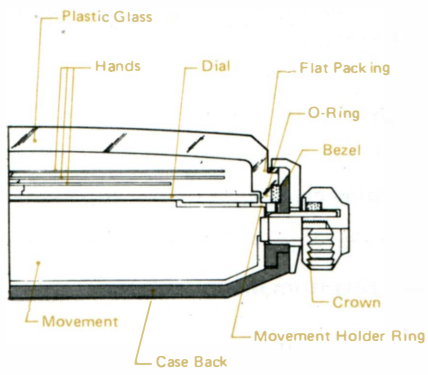


Fig. 2

2. Disassembly and Assembly

[1] Disassembly

(1) Remove the bezel.

a. Put the lugs of the bezel on a working block or a desk and push firmly the upper side of the plastic glass from both ends with your thumbs. (Fig. 3).

b. After one side of the bezel has been loosened, return the bezel to the position parallel to the case back. Then remove the other end of the bezel.

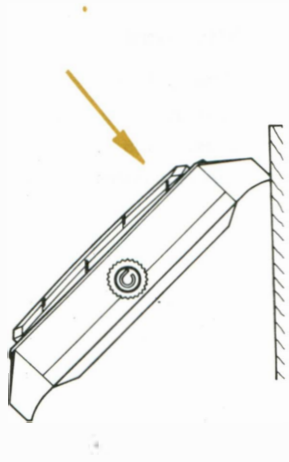


Fig. 3

Remarks:

When the meshing of the bezel is extremely tight, push the plastic glass to the working table and insert a watchcase opener perpendicularly between the bezel and the case back. Then, apply an outward expanding power to the bezel with the watchcase opener and press the bezel downwards (Fig. 4).

Do not pry the bezel as in opening a snap-on type case.
It is advisable that a sheet of vinyl or similar material be applied between the work desk and the plastic glass so as not to scratch or dent it.

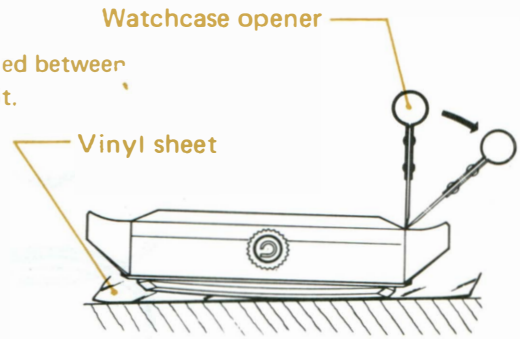


Fig. 4

(2) Remove the flat packing.

(3) Remove the plastic glass.

Remarks: The plastic glass is removed easily by using a rubber sucker.
The O-Ring usually remains in the case but sometimes it comes off together with the crystal glass. So, be careful not to soil the dial face with silicon oil of the O-Ring.

(4) Remove the O-Ring.

(5) Remove the movement.

Remarks: Place the dial side down and rotate the winding crown slowly.
The movement will usually come loose with half a rotation. If not, pat the case lightly while rotating the winding crown.

(6) Remove the winding stem with crown.

(7) Remove the case screws and casing clamps.

(8) Remove the movement holder ring from movement.

[2] Assembly

(1) Attach the movement holder ring to the movement.

Remarks: Be sure to align the position of the winding stem with the opening on the upper circumference of the slit-type movement holder ring.

(2) Secure the movement with case screws and casing clamps.

(3) Insert the movement with movement holder ring into the case center body.

Remarks: Match the slit of movement holder ring and case pipe.

(4) Coil the O-Ring (white and opaque) around the flange portion of the plastic glass.

Remarks:
Because the O-Ring is round, it will be slightly stretched out when coiled on the square plastic glass. In this case, do not extend just one portion of the O-Ring for fitting the square plastic glass but be sure that all four sides are equally extended (Fig. 5).

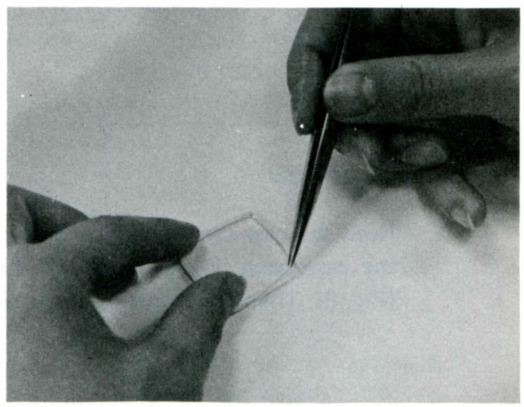


Fig. 5

(5) Insert the plastic glass with the O-Ring into the case back.

Remarks:
Hold the plastic glass with the coiled O-Ring with your hands or with a rubber sucker and push it into the case center body by applying equal pressure to all four sides (Fig. 6).

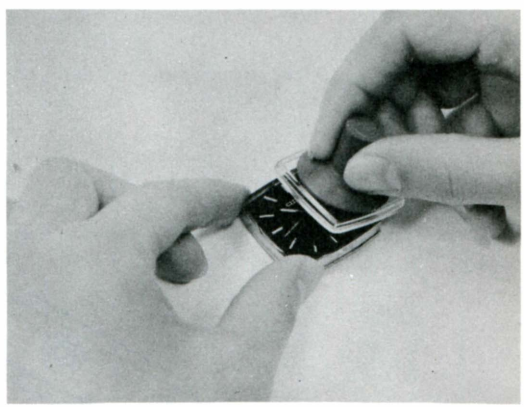


Fig. 6

(6) Apply a proper amount of silicon oil to the case pipe.
○ Use special O-Ring oil for Citizen watches.

(7) Attach the winding stem with crown.

Remarks:
Insert the winding stem with crown into the case pipe, then check the meshing position of the joint portion by slowly rotating the crown and push the winding stem with crown in with one stroke (Fig. 7).

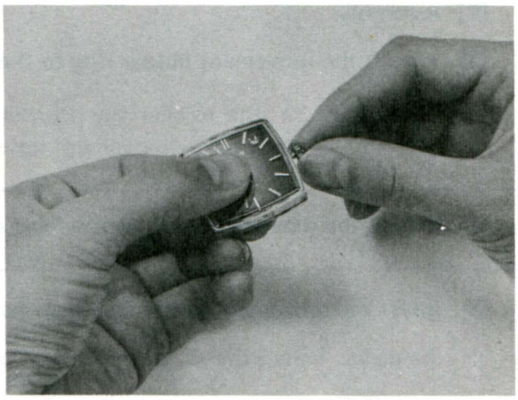


Fig. 7

(8) Place the flat packing on the plastic glass.

Remarks: Set the flat packing on the upper surface of the flange of the plastic glass with tweezers.
Do not oil the packing.

(9) Mount the bezel

a. Hold the case center body with the bezel placed in position with both hands and place your thumbs on the case back. Place the lug of the bezel on a working desk and mount the bezel by pressing firmly (Fig. 8). Then fasten the opposite side under the same procedures.

Remarks: In case the fastening is very tight, the Citizen Multi-Purpose Watchcase Opener should be used. As shown in Fig. 9, all four sides of the bezel are supported by a selected lower endpiece that can accept the maximum diameter (diagonal direction) of the plastic glass. Select a upper endpiece size that can accept the surface of the case back and push it in parallel as done when tightening the snap-on type bezel.

Over tightening will damage the plastic glass.

After mounting the bezel, check whether the bezel has been correctly mounted or not.

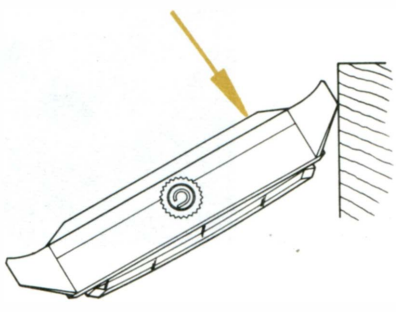


Fig. 8

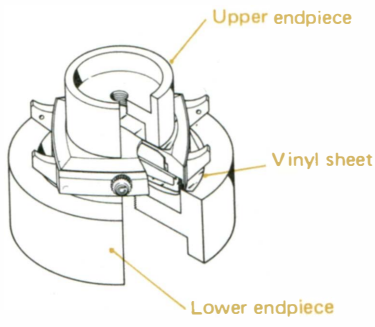


Fig. 9

CRYSTAL GLASS WITH METAL RING GA-1–SCREW BACK TYPE

1. Structure

The O-Ring rests between the outer rim of the metal ring which is cemented to the crystal glass and the case center body, thus maintaining air-tightness through its elasticity. When inserting the O-Ring, O-Ring Setters designed exclusively for Citizen watches should be used.

The case center body and the case back are screwed on tightly. Air-tightness is maintained through the elasticity of the flat packing.

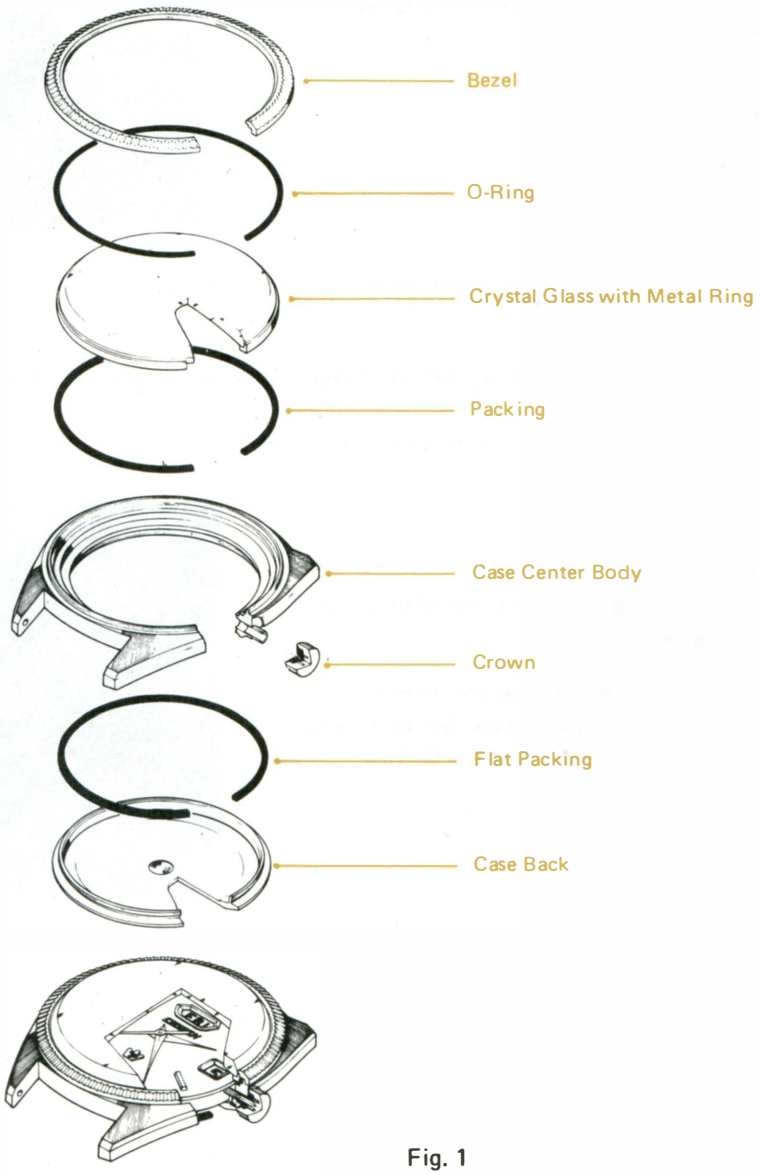


Fig. 1

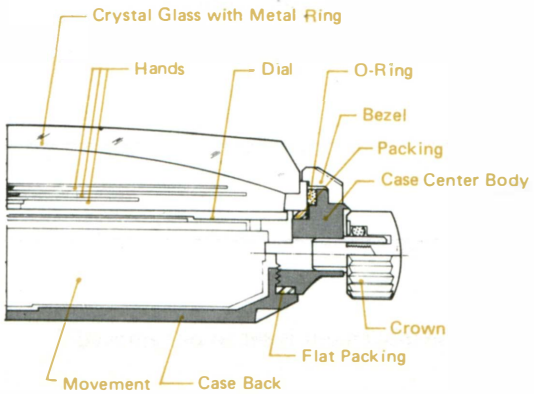


Fig. 2

2. Disassembly and Assembly

[1] Disassembly

(1) Unscrew the case back.

○ Unscrew the case back by half a rotation using the Citizen Multi-Purpose Watchcase Opener (Fig. 3)

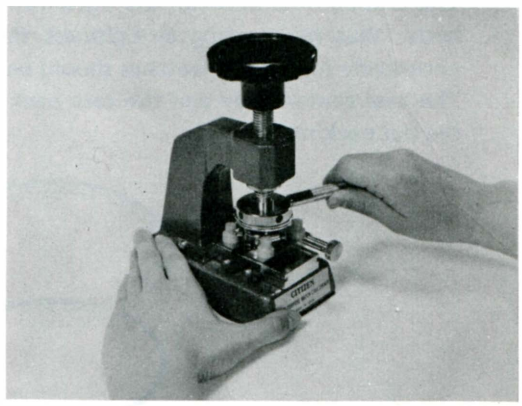


Fig. 3

(2) Remove the bezel.

Remarks: Use a watchcase opener and pry off the bezel evenly along the rim so as not to distort the bezel.

(3) Remove the crystal glass.

Remarks:
Apply a rubber sucker tightly on the crystal glass surface and pull it upright (Fig. 4).

The O-Ring usually remains in the case but sometimes it comes off together with the crystal glass. So, be careful not to soil the dial face with silicon oil of the O-Ring.

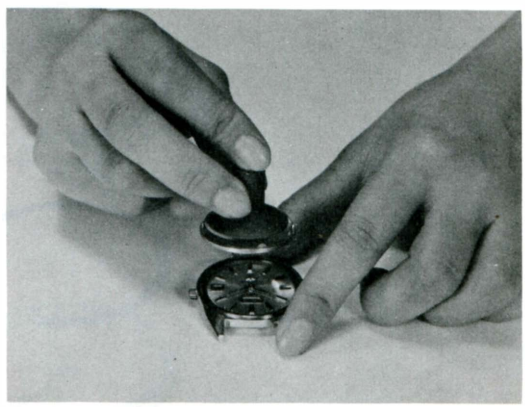


Fig. 4

(4) Remove the O-Ring.

(5) Remove the packing.

(6) Remove the case back.

Remarks: This can be easily done by hand as it has alredy been loosened.

(7) Pull out the winding stem with crown.

(8) Remove the case screws and casing clamps.

(9) Remove the movement from the case.

Remarks: Place the dial face down, and then the movement is set to be removed.

[2] Assembly

(1) Put the movement back into the case.

Remarks: Align the position of the winding stem with case pipe.

(2) Apply a proper amount of silicon oil to the case pipe.

○ Use special O-Ring oil for Citizen watches.

(3) Attach the winding stem with crown.

(4) Secure the movement with the case screws and casing clamps.

(5) Place the packing.

Remarks: Do not apply oil to the packing.

(6) Place the crystal glass on the packing.

Remarks: Check the inside face of the crystal glass and the dial face so that not dirt or soil is on.

(7) Apply a proper amount of silicon oil to the flat packing.

○ Use the Citizen O-Ring Lubricator.

(8) Temporarily secure the case back by hand.

Remarks: In some watcases, the packing is pushed in the circular groove of the case body.

(9) Apply a proper amount of silicon oil to the O-Ring.

○ Use the Citizen O-Ring Lubricator.

(10) Insert the O-Ring Setter.

○ Use the O-Ring Setter.

The appropriate number of O-Ring Setter is engraved on the case back.

Example. OR-D-1

a. Set the auxiliary piece of the appropriate O-Ring Setter on the top of the crystal glass (Fig. 5).

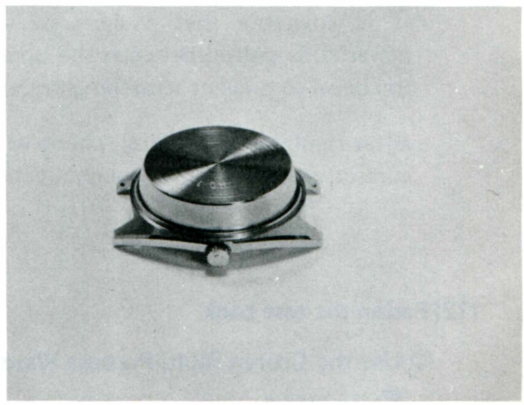


Fig. 5

b. Set the lower endpiece on the top of the watchcase (Fig. 6).

Fig. 6

c. Place the O-Ring between the lower endpiece and the auxiliary piece and insert with tips of tweezers evenly along the rim carefully (Fig. 7).

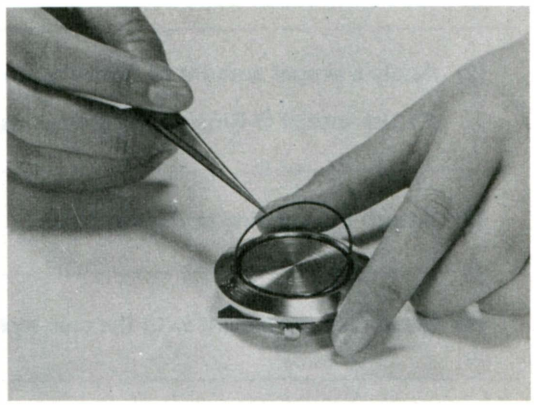


Fig. 7

d. Push the upper endpiece down (Fig. 8).
   i) Onsert the upper endpiece slowly so that equal force is exerted along the rim.
   ii) Tightly hold the lower endpiece and the auxiliary piece and push the upper end-piece down at one stroke.

Remarks:
Check whether the O-Ring has been properly inserted.

Fig. 8

(11) Push in the bezel.

○ Use the Citizen Multi-Purpose Watchcase Opener (Fig. 7).

Remarks:
Do not over-tighten, or the bezel way be damaged.
Check the position of the opening for prying.

It is advisable that a sheet of vinyl or similar material be palced between the upper endpiece and the bezel to prevent scratching or denting..

After rightening the bezel, check whether the bezel correctly snaps or not throughout the rim.

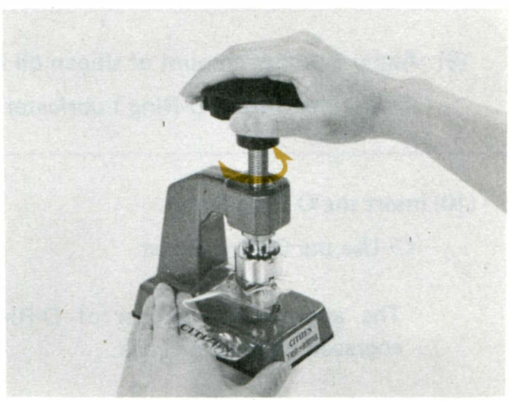


Fig. 9

(12) Fasten the case back.

○ Use the Citizen Multi-Purpose Watchcase Open-er.

CRYSTAL GLASS GA-2–SCREW BACK TYPE

1. Structure

The O-Ring rests between the outer rim of the crystal glass and the case center body, thus maintaining air-tightness through the elasticity of the O-Ring. When inserting the O-Ring, O-Ring Setters designed exclusively for Citizen watches should be used.
The case center body and the case back are screwed on tightly.

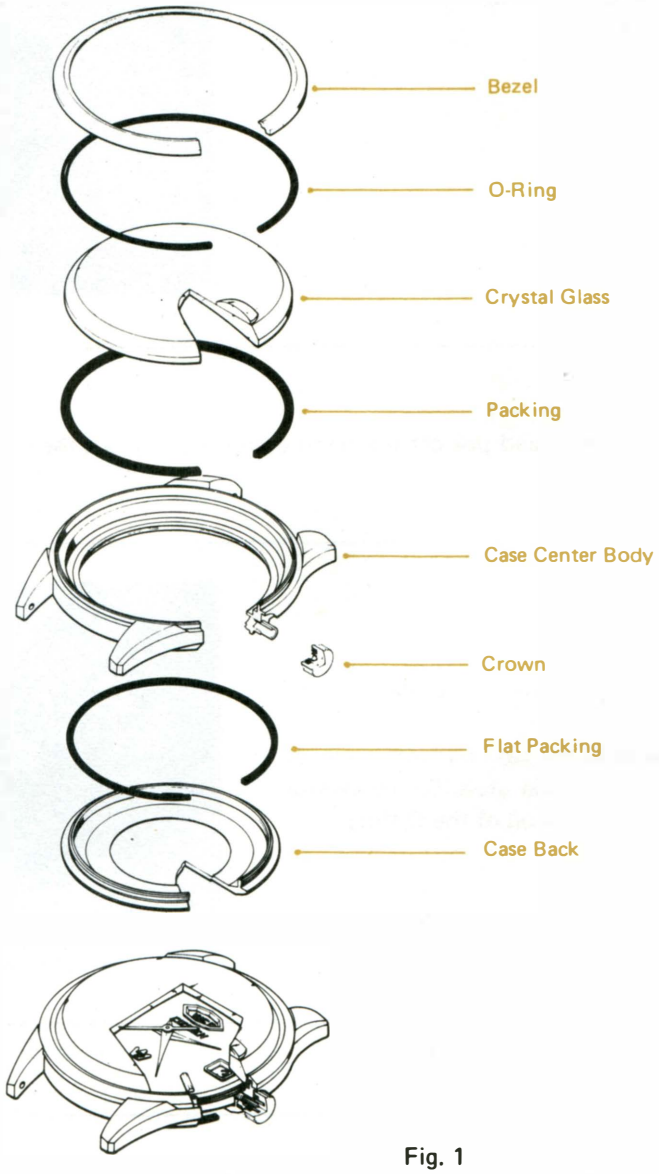


Fig. 1

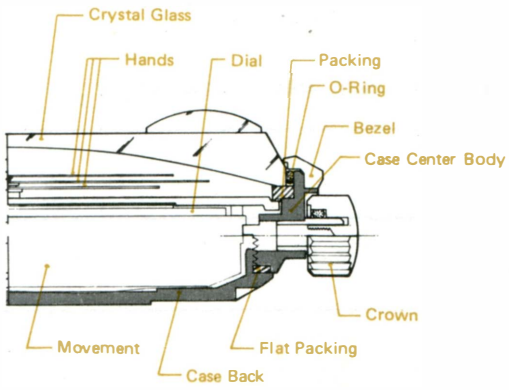


Fig. 2

2. Disassembly and Assembly

[1] Disassembly

(1) Unscrew the case back.

○ Unscrew the case back by half a rotation using the Citizen Multi-Purpose Watchcase Opener (Fig. 3).

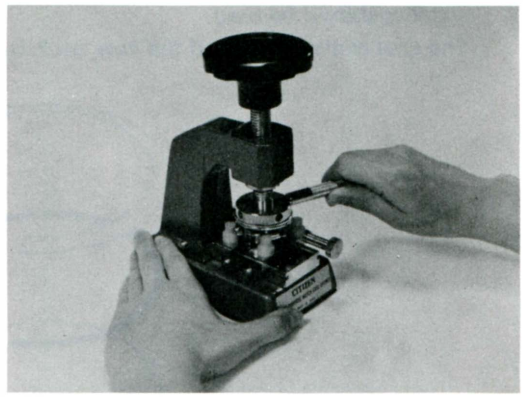


Fig. 3

(2) Remove the bezel.

Remarks: Use a watchcase opener and pry off the bezel evenly throughout the rim so as not to distort the bezel.

(3) Remove the crystal glass

Remarks:
Apply a rubber sucker tightly on the crystal glass surface and pull it upright (Fig. 4).
The O-Ring usually remains in the case but sometimes it comes off together with the crystal glass. So, be careful not to soil the dial face with silicon oil of the O-Ring.

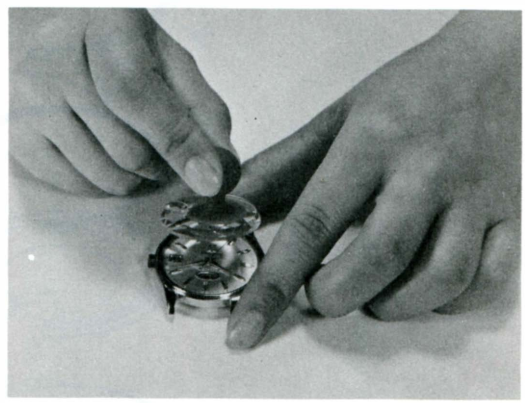


Fig. 4

(4) Remove the O-Ring.

(5) Remove the packing.

(6) Remove the case back.

Remarks: This can easily be done by hand as it has been already loosened.

(7) Pull out the winding stem with crown.

(8) Remove the case screws and casing clamps.

(9) Remove the movement from the case.

Remarks: Place the dial side down, then the movement is set to be removed.

[2] Assembly

(1) Put the movement back into the case.

Remarks: Align the posistion of the winding stem with the case pipe.

(2) Apply a proper amount of silicon oil to the case pipe.

○ Use special O-Ring oil for Citizen watches.

(3) Attach the winding stem with crown.

(4) Secure the movement with the case screws and casing clamps.

(5) Place the packing.

Remarks: Do not apply oil to the packing.

(6) Place the crystal glass on the packing.

Remarks: Check the inside face of the crystal glass so that not dirt or soil is on.

(7) Apply a proper amount of silicon oil to the flat packing.

○ Use the Citizen O-Ring Lubricator.

(8) Temporarily secure the case back by hand.

Remarks: In some watchcases, the packing is pushed in the circular groove of the case body.

(9) Apply a proper amount of silicon oil to the O-Ring.

○ Use the Citizen O-Ring Lubricator.

(10) Insert the O-Ring.

○ Use the O-Ring Setter. The appropriate number of O-Ring Setter is engraved on the case back.

Example. OR-D-1

a. Set the lower endpiece of the appropriate O-Ring Setter on the top of the watchcase (Fig. 5).

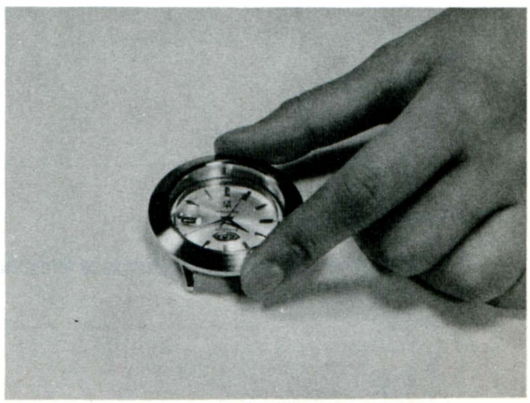


Fig. 5

b. Place the O-Ring between the crystal glass and the lower endpiece and insert with the tips of tweezers evenly along the rim carefully (Fig. 6).

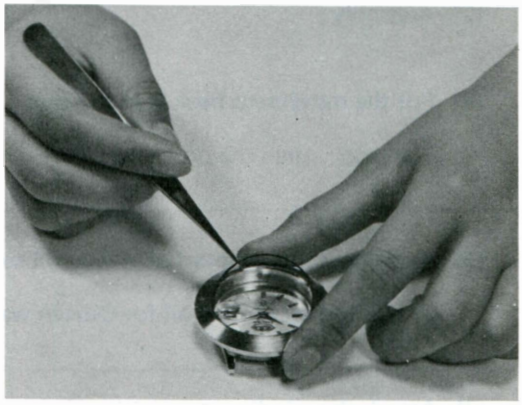


Fig. 6

c. Push the upper endpiece down (Fig. 7).

i) Insert the upper endpiece slowly so that equal force is exerted along the rim.
ii) Tightly hold the crystal glass and the lower endpiece and push the upper endpiece down at one stroke.

Remarks:
Check whether the O-Ring has been properly inserted.

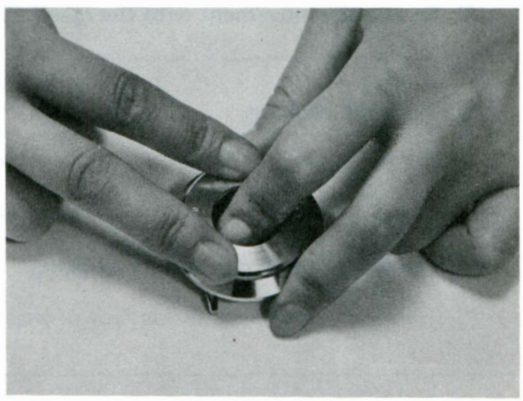


Fig. 7

(11) Push in the bezel.

○ Use the Citizen Multi-Purpose Watchcase Opener (Fig. 8).

Remarks:
Do not over-tighten, or the bezel may be damaged.
Check the position of the opening for prying.
It is advisable that a sheet of vinyl or similar material be placed between the upper endpiece and the bezel to prevent scratching or denting.
After tightening the bezel, check whether the bezel correctly snaps or not throughout the rim.

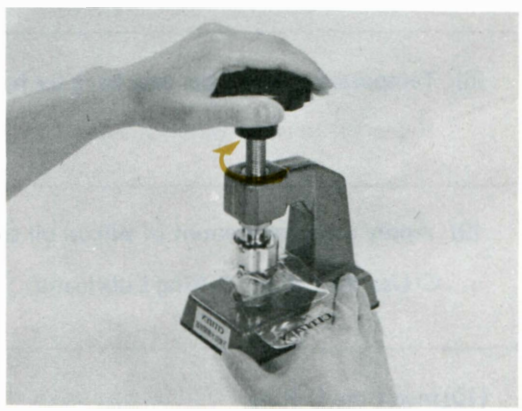


Fig. 8

(12) Fasten the case back tightly.

○ Use the Citizen Multi-Purpose Watchcase Opener.

CRYSTAL GLASS GA-2–ONE-PIECE TYPE

1. Structure

The O-Ring rests between the outer rim of the crystal glass and the case center body, thus maintaining air-tightness through the elasticity of the O-Ring. When inserting the O-Ring, O-Ring Setters designed exclusively for Citizen watches should be used.

On this configuration, the case back and the case center body are a single piece. A joint winding stem is used.

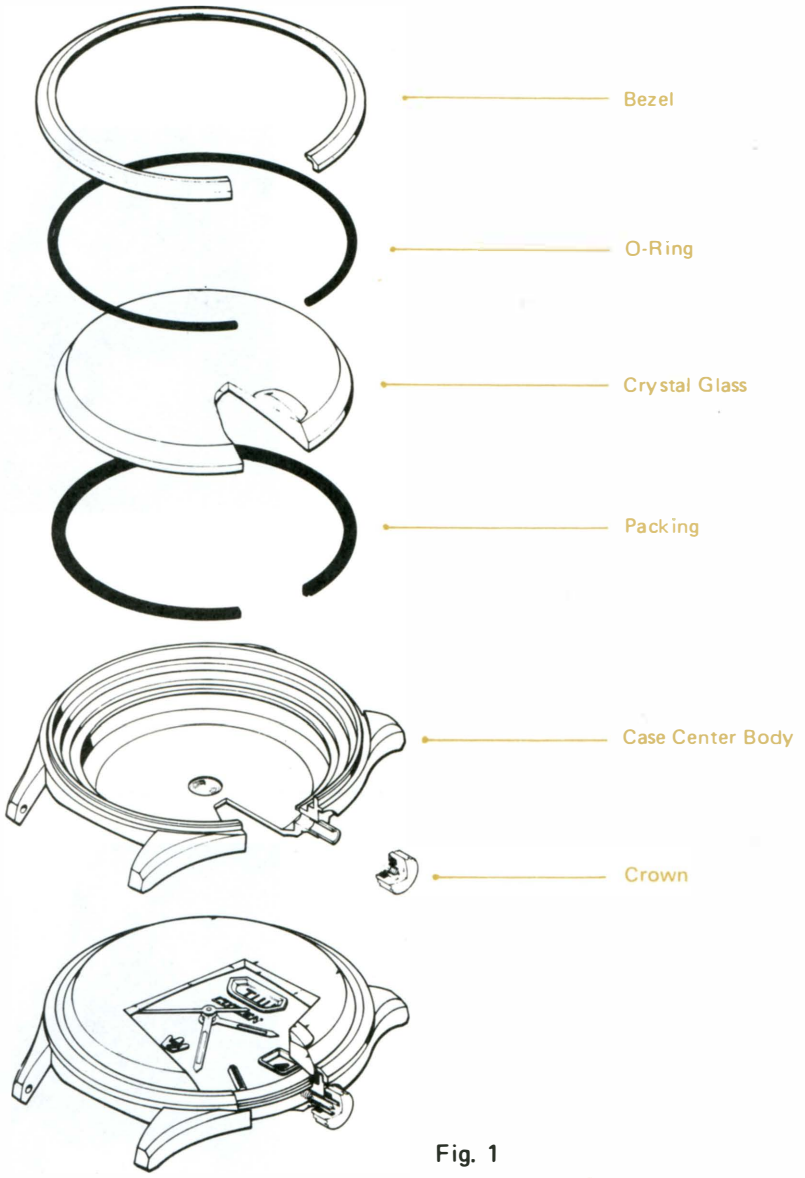


Fig. 1

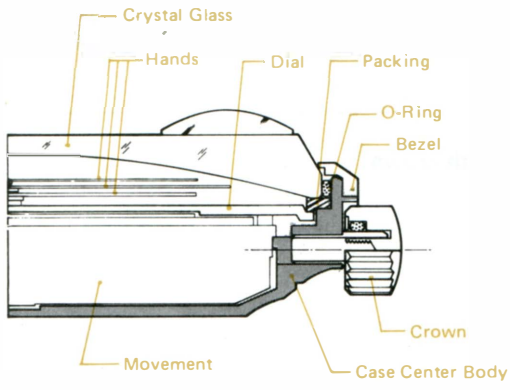


Fig. 2

S9

2. Disassembly and Assembly

[1] Disassembly

(1) Remove the bezel.

Remarks: Use a watchcase opener and pry off the bezel evenly throughout the rim so as not to distort the bezel.

(2) Remove the crystal glass.

Remarks:
Apply a rubber sucker tightly on the crystal glass surface and pull it upright (Fig. 3).

The O-Ring usually remians in the case but sometimes it comes off together with the crystal glass. So, be careful not to soil the dial face with silicon oil of the O-Ring.

Fig. 3

(3) Remove the O-Ring.

(4) Remove the packing.

(5) Remove the movement.

Remarks:
Place the dial side down and slowly rotate the winding corwn. The movement will usually come loose with half a rotation. If not, put the case lightly while rotating the winding crown (Fig. 4).

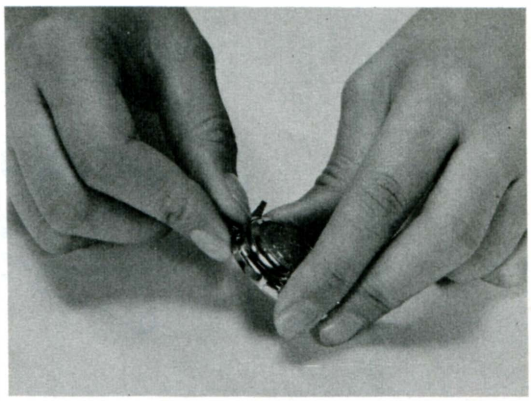


Fig. 4

(6) Remove the winding stem with crown.

[2] Assembly

(1) Apply a proper amount of silicon oil to the case pipe.

○ Use special O-Ring oil for Citizen watches.

(2) Insert the winding stem with crown into the case pipe.

Remarks:
Insert the convexed joint portion of stem into the case pipe in vertical position to the case (Fig. 5).

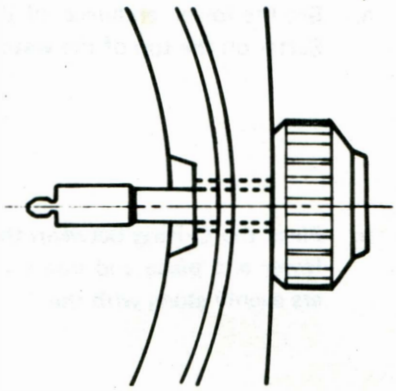


Fig. 5

(3) Assemble the movement into the case.

a. Place the slit of the joint portion of the stem fitted in the movement in a same vertical position so that the two stems can engage properly (Fig. 6).

Remarks:
When there is difficulty in fitting, it does not matter if the crown with the joint winding stem is pushed in after the movement has been set. Then check the meshing posistion of the joint portion by slowly rotating the crown and push in the winding stem with corwn at one stroke.

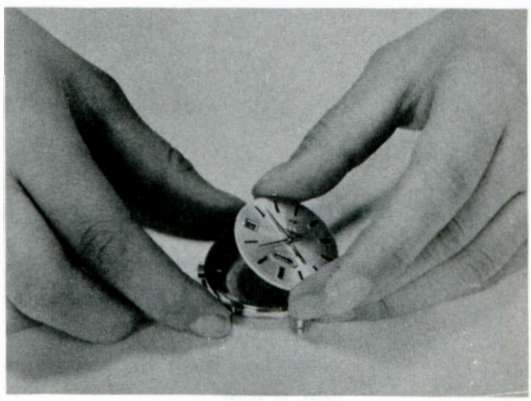


Fig. 6

(4) Place the packing.

Remarks: Do not apply oil to the packing.

(5) Place the crystal glass on the packing.

Remarks: Check the inside face of the crystal glass and the dial face so that no dirt or soil is on.

(6) Apply a proper amount of silicon oil to the O-Ring.

○ Use the Citizen O-Ring Lubricator.

(7) Insert the O-Ring.

○ Use the O-Ring Setter.
The appropriate number of O-Ring Setter is engraved on the case back.

Example. OR-D-1

a. Set the lower endpiece of the appropriate O-Ring Setter on the top of the watchcase (Fig. 7).

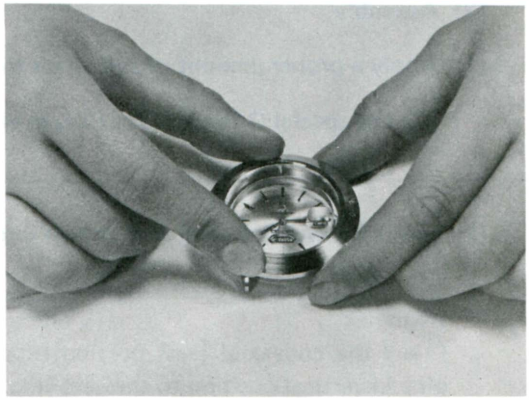


Fig. 7

b. Place the O-Ring between the crystal glass and the lower end piece and insert with the tips of tweezers evenly along with the rim carefully (Fig. 8).

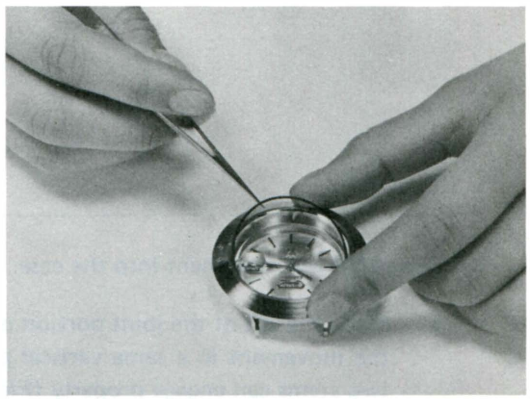


Fig. 8

c. Push the upper endpiece down (Fig. 9).

i) Insert the upper endpiece slowly so that equal force is exerted along the rim.
ii) Tightly hold the crystal glass and the lower end piece and push the upper endpiece down at one stroke.

Remarks:
Check whether the O-Ring has been properly inserted.

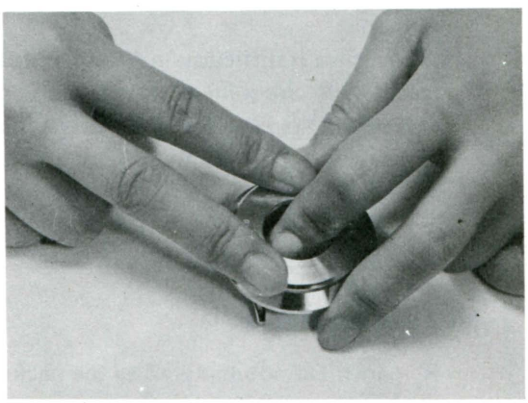


Fig. 9

(8) Push in the bezel.

○ Use the Citizen Multi-Purpose Watchcase Opener (Fig. 10).

Remarks:
Do not over-tighten or the bezel may be damaged.

Check the position of the opening for prying.

It is advisable that a sheet of vinyl or similar material be placed between the upper endpiece and the bezel to prevent scratching or denting.
After tightening the bezel, whether the bezel correctly snaps or not throughout the rim.

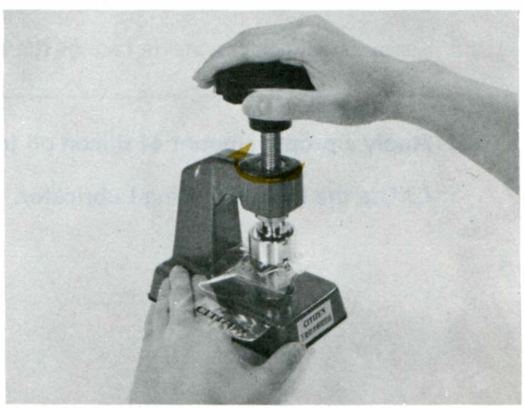


Fig. 10

CRYSTAL GLASS WITH METAL RING GN OR GN-1–SCREW BACK TYPE

1. Structure

The O-Ring rests between case center body and the outer circumference of the metal ring which is cemented to the outer rim of the crystal glass, thus maintaining air-tightness through the elasticity of the O-Ring. The flange of the metal ring facilitates insertion of the O-Ring. Therefore, O-Ring Setters are not required.
The case center body and the case back are screwed on tightly.

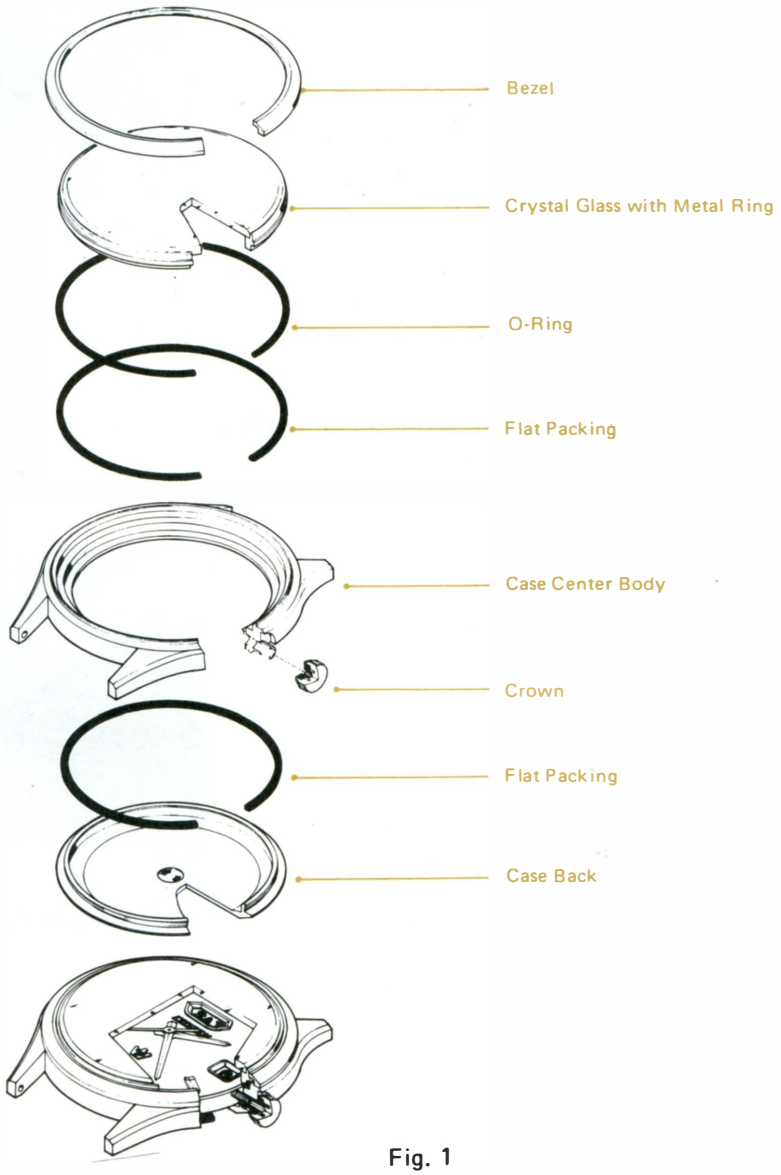


Fig. 1

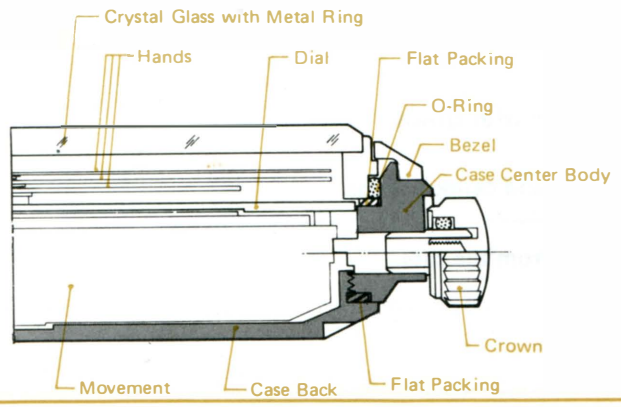


Fig. 2

2. Disassembly and Assembly

[1] Disassembly

(1) Unscrew the case back.

○ Unscrew the case back by half a rotation using the Citizen Multi-Purpose Watchcase Opener (Fig. 3).

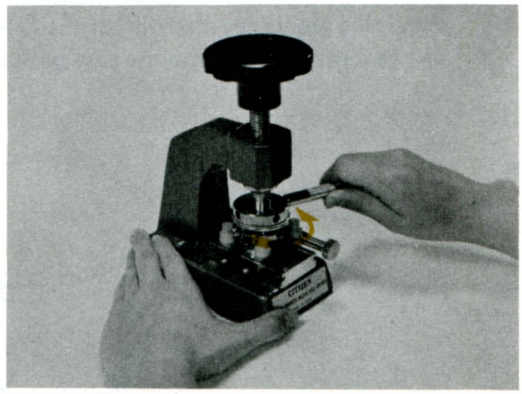


Fig. 3

(2) Remove the bezel.

Remarks: Use a watchcase opener and pry off the bezel evenly along the rim so as not to distort the bezel.

(3) Remove the crystal glass.

Remarks:

Apply a rubber sucker tightly on the crystal glass surface and pull it upright (Fig. 4).

The O-Ring usually remains in the case but sometimes it comes off together with the crystal glass. So, be careful not to soil the dial face with silicon oil of the O-Ring.

Fig. 4

(4) Remove the O-Ring.

(5) Remove the packing.

(6) Remove the case back.

Remarks: This can easily be done by hand as it has already been loosened.

(7) Pull out the winding stem with crown.

(8) Remove the case screws and casing clamps.

(9) Remove the movement from the case.

Remarks: Place the dial side down, and then the movement is set to be removed.

[2] Assembly

(1) Put the movement back into the case.

Remarks: Align the position of the winding stem with case pipe.

(2) Apply a proper amount of silicon oil to the case pipe.

○ Use special O-Ring oil for Citizen watches.

(3) Attach the winding stem with crown.

(4) Secure the movement with case back and casing clamps.

(5) Apply a prper amount of silicon oil to the flat packing.

○ Use the Citizen O-Ring Lubricator.

(6) Temporarily secure the case back with packing by hand.

Remarks: In some wachcases, the packing is pushed in the circular groove of the case body.

(7) Place the packing.

Remarks: Do not apply oil to the packing.

(8) Apply a proper amount of silicon oil to the O-Ring.

○ Use the Citizen O-Ring Lublicator.

(9) Attach the O-Ring around the metal ring of the crystal glass.

Remarks:
Pick up the crystal glass with a rubber sucker from the top of crystal glass and place it upon the O-Ring, so that the O-Ring will cling to the metal ring (Fig. 5).

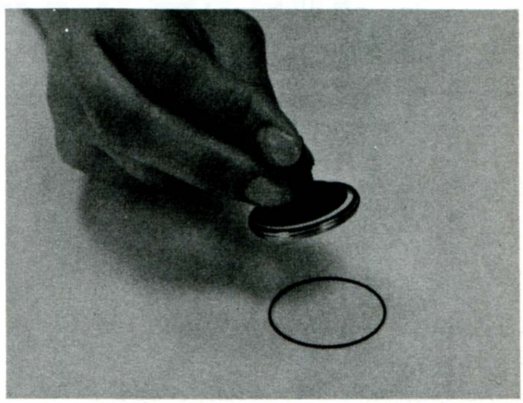


Fig. 5

(10) Place the crystal glass with metal ring mounted O-Ring to the watchcase.

a. To push in, apply the index and middle fingers of both hands at the proper places of the crystal glass surface so that an even amount of force may be added (Fig. 6).

b. After pushing in, remove the rubber sucker so as the crystal glass does not float.

Remarks:

Check whether the crystal glass is firmly in place and the O-Ring does not bulge out.
Check the inside face of the crystal glass and the dial face so that no dirt or soil is on.

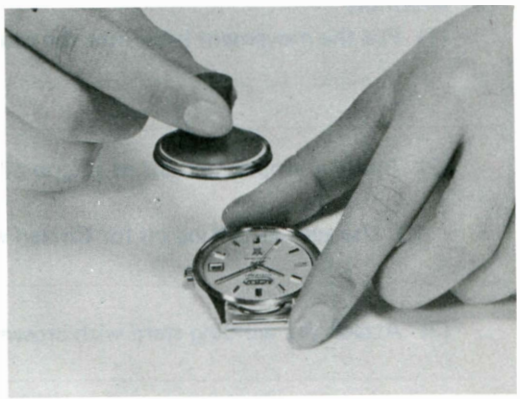


Fig. 6

(11) Push in the bezel

○ Use the Citizen Multi-Purpose Watchcase Opener (Fig. 2).

Remarks:

Do not over-tighten or the bezel may be damaged.
Check the position of the opening for prying.

It is advisable that a sheet of vinyl or similar material be placed between the upper endpiece and the bezel to prevent scratching or denting.

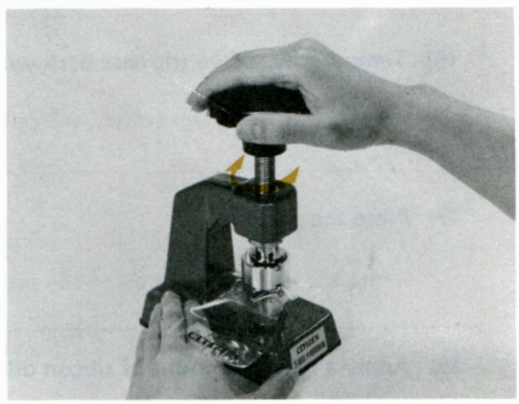


Fig. 7

After tightening the bezel, check whether the bezel correctly snaps or not throught the rim.

(12) Fasten the case back.

○ Use the Citizen Multi-Purpose Watchcase Opener.

CRYSTAL GLASS GN-2–SCREW BACK TYPE

1. Structure

This Parawater device adopts the method of maintaining air-tightness by utilizing the elasticity of the compressed packing and O-Ring between the crystal glass and the case center body. The O-Ring Setters are not required in disassembly or assembly.

The case center body and the case back are screwed on tightly.

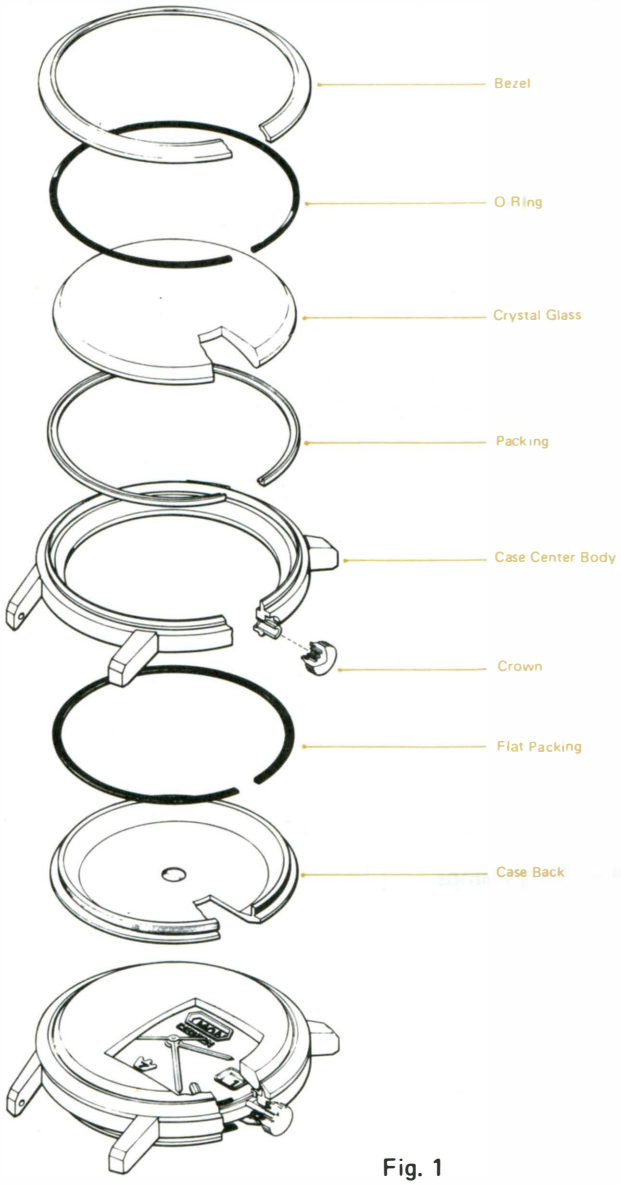


Fig. 1

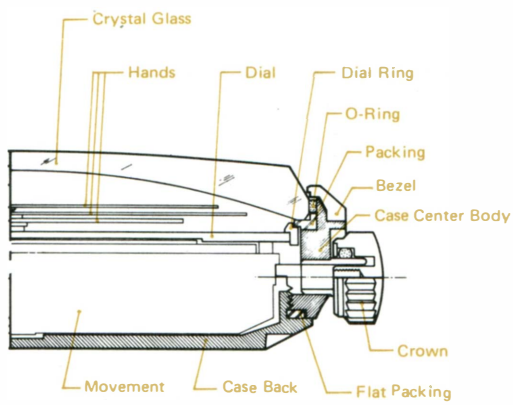


Fig. 2

S11

2. Disassembly and Assembly

[1] Disassembly

(1) Unscrew the case back.

○ Use the Citizen Multi-Purpose Watchcase Opener and Unscrew about half a rotation.

(2) Remove the bezel.

(3) Removy the crystal glass.

Remarks:
Apply a rubber sucker tightly on the crystal glass surface and pull it upright.

The O-Ring usually remains in the case but sometimes, it comes off together with the crystal glass. So, be careful not to dirty the dial face with silicon oil of the O-Ring.

(4) Remove the O-Ring.

(5) Remove the case back.

Remarks: Since it has already been loosened beforehand, it can be manually removed.

(6) Pull out the winding stem with crown.

(7) Remove the case screws and the casing clamps.

(8) Remove the packing.

Remarks:
As the packing is pushed into the inner wall of the case center body, push it lightly from the back side of the movement.

(9) Remove the dial ring.

(10) Remove the movement.

Remarks: The movement can be removed from the case center body when the dial surface is slanted downwards.

[2] Assembly

(1) Insert the movement into the case center body.

Remarks: Align the position of the winding stem with the case pipe.

(2) Apply a proper amount of silicon oil to the case pipe.

○ Use special O-Ring oil for Citizen watches.

(3) Attach the winding stem with crown.

(4) Attach the casing clamps and the case screws.

(5) Apply a proper amount of silicon oil to the case back packing.

○ Use the Citizen O-Ring Lubricator.

(6) Temoporarily secure the case back with packing by hand.

Remarks: In some watchcases, the packing is pushed in the circular groove of the case center body.

(7) Attach the dial ring.

Remarks: Match the hour graduation on the dial with the minute graduation on the dial ring.

(8) Push in the packing.

a. Push in the packing lightly into the inner wall of the case center body and by using the crystal glass maintained by a rubber sucker, push the packing in until it settles.

b. After checking the setting condition of the pakcing, pull out the crystal glass.

Remarks: It is not necessary to oil the packing with silicon oil.

(9) Apply a proper amount of silicon oil on the O-Ring.

○ Use the Citizen silicon oil lubricator.

(10) Set the O-Ring on the upper surface of the packing.

Remarks:
Check the setting condition of the packing along the entire perimeter.

Be careful so that the silicon oil on the O-Ring does not dirty on the dial.

(11) Push in the crystal glass

Remarks:
Use a rubber sucker.

After pushing in the crystal glass, check whether or not the crystal glass does not float and the O-Ring is in the normal position.

(12) Push in the bezel.

○ Use the Citizen Multi-Purpose Watchcase Opener.

Remarks:
Do not over-tighten or the bezel may be damaged.

Check the position of the opening for prying.

It is advisable that a sheet of vinyl or similar material be placed between the upper end piece and the bezel to prevent scratching or denting.

After tighting the bezel, check whether the bezel correctly snaps or not through the rim.

(13) Fasten the case back

○ Use the Citizen Multi-Purpose Watchcase Opener.

CRYSTAL GLASS GN-3–SCREW BACK TYPE

1. Structure

The elliptical-ring rests between the case center body and the bottom outer rim of the crystal glass. Air-tightness is maintained by tightening the bezel which compresses the elliptical-ring in vertical direction through the crystal glass. This type does not require the O-Ring Setter in disassembly or assembly.
The case center body and the case back are screwed on tightly.

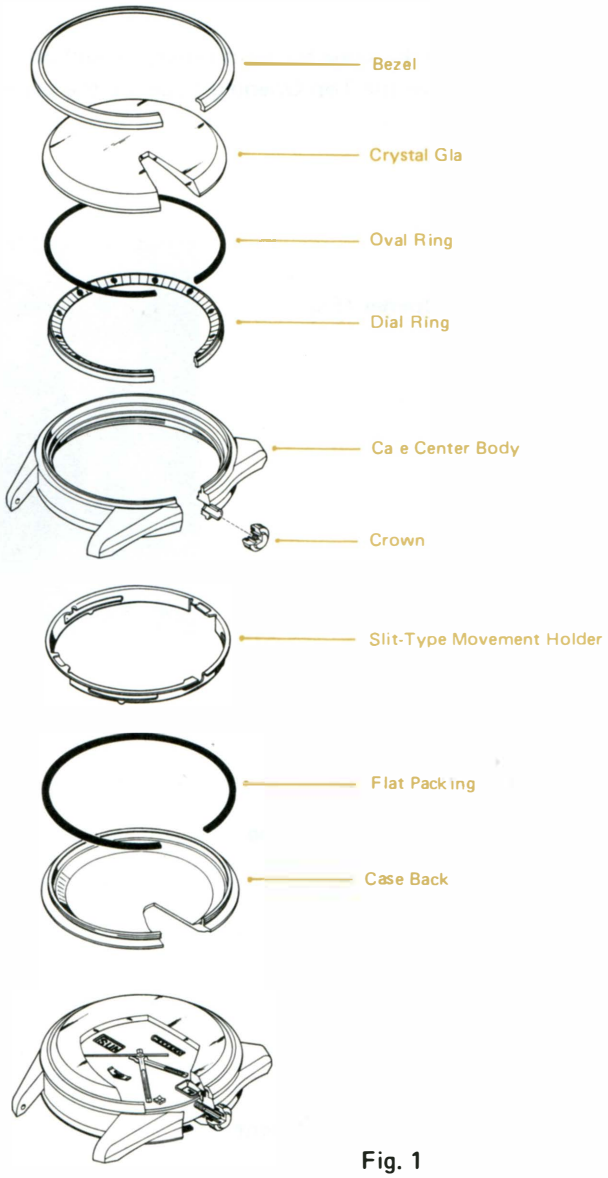


Fig. 1

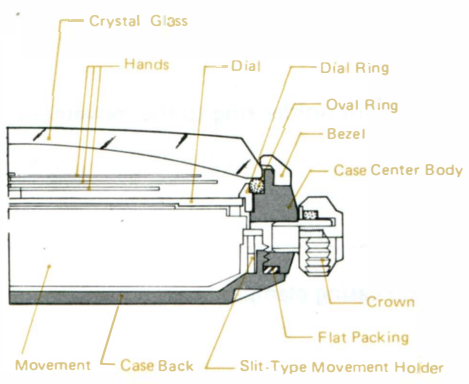


Fig. 2

2. Disassembly and Assembly

There are two configurations for the Crystal Glass GN-3.

On the Top Opening Type, the movement is removed from the bezel side.

On the Bottom Opening Type, the movement is removed from the case back side.

Since the basic handling procedures are otherwise the same for both types, we will only expalin the Bottom Opening Type. The disassembly and assembly procedures for the Top Opening Type are the same as outlined below.

[1] Disassembly

(1) Remove the case back.

○ Use the Citizen Multi-Purpose Watchcase Opener (Fig. 3).

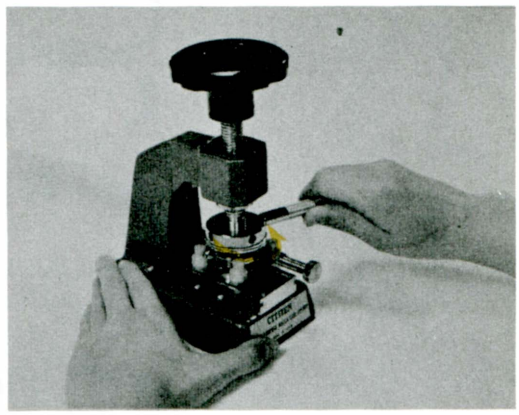


Fig. 3

(2) Pull out the winding stem with crown.

(3) Remove the movement with the slit-type movement holder ring.

Remarks: Place the dial side up, then the movement with the slit-type movement holder ring will come off the case.

(4) Remove the case screws and casing clamps.

(5) Remove the slit-type movement holder ring from the movement.

[2] Assembly

(1) Attach the slit-type movement holder ring to the movement.

Remarks: Align the position of the winding stem with the opening on the upper circumference of the slit-type movement holder ring.

(2) Secure the case screws and casing clamps.

(3) Insert the movement into the case.

Remarks: Match the hour graduation on the dial with the minute graduation on the dial ring.

(4) Apply a proper amount of silicon oil to the case pipe.

○ Use special O-Ring oil for Citizen watches.

(5) Attach the winding stem with crown.

(6) Apply a proper amount of silicon oil to the slit-type movement holder ring.

Remarks:
Apply a proper amount of silicon oil on the upper surface of the protruding portion on the slit-type movement holder ring in 3 places, so as to reduce the friction at the point where the slit-type movement holder ring contacts the inner side of the case back and to allow smooth tightening of the case back (Fig. 4).

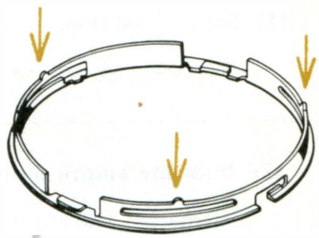


Fig. 4

(7) Apply a proper amount of silicon oil to the flat packing.

○ Use the Citizen O-Ring Lubricator.

(8) Fasten the case back with packing.

Remarks: In some watchcases, the packing is pushed in the circular groove of the case body.

3. Disassembly and Assembly of Bezel

Disassembly and assembly of the bezel is done as outlined below.

[1] Disassembly

(1) Remove the bezel.

Remarks:
The bezel on this watchcase is a little tighter than on other cases with crystal glass. This tightness is designed to maintain vertical compression of the elliptical-ring (Fig. 5).

Therefore, two openings are provided for prying so the bezel can be removed evenly along the rim.
Pry off the bezel evenly so as not to distort it.

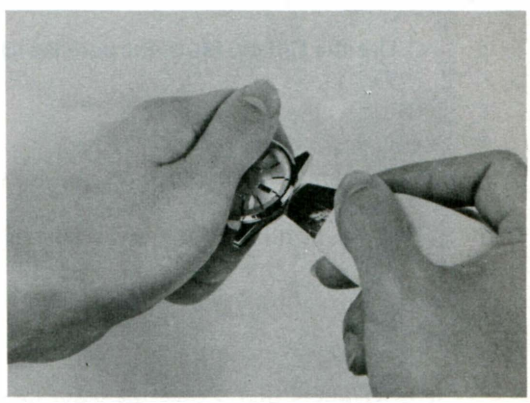


Fig. 5

(2) Remove the crystal glass.

○ Apply a rubber sucker to the crystal glass surface and pull it upright.

(3) Remove the elliptical-ring.

(4) Remove the dial ring.

[2] Assembly

(1) Set the dial ring.

Remarks: Match the hour graduation on the dial with the minute graduation on the dial ring.

(2) Inser the elliptical-ring

Remarks: The elliptical-ring should be set to make close contact with the inner walls of the watchcase.

Do not apply oil to the elliptical-ring.

(3) Insert the crystal glass.

a. Hold the crystal glass with a rubber sucker. Then press the crystal glass strongly against the elliptical-ring and place it into posistion (Fig. 6).

b. Remove the rubber sucker so as not to move the crystal glass after it has been positioned.

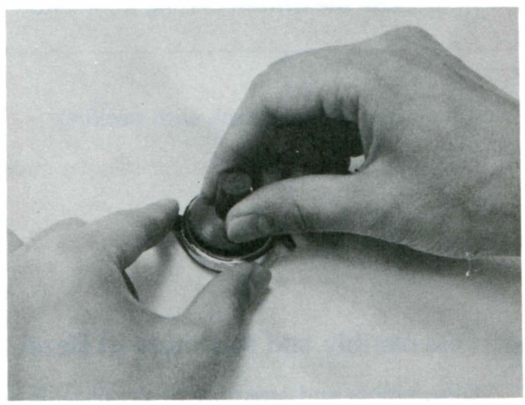


Fig. 6

(4) Tighten the bezel.

○ Use the Citizen Multi-Purpose Watchcase Opener (Fig. 7).

Remarks:
The bezel may be damaged when it is over-tightened.

Check the position of the two openings for prying.

Fig. 7

It is advisable that a sheet of vinyl or similar material be placed between the upper endpiece and the bezel to prevent scratching or denting.

After tightening the bezel, check whether the bezel correctly snaps or not throughout the rim.

OVAL CRYSTAL GLASS GN-3-SCREW BACK TYPE

1. Structure

This watchcase is a GN-3 type watchcase which has adopted an oval crystal glass and is a method which maintaing air-tightness by compressing the oval ring with the bezel. The O-Ring Setters are not required for disassembly or assembly.

The case center body and the case back are screwed on tightly.

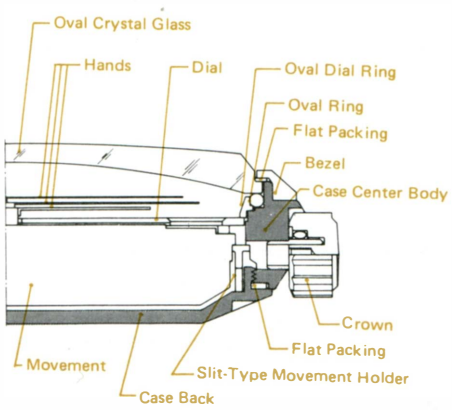


Fig. 2

S13

2. Disassembly and Assembly

With the exception of glass replacement, perform disassembly and assembly of the oval crystal type GN-3 Parawater device similarly as for the bottom-opening crystal type GN-3 Parawater device mentioned in Index No. S12.

* For glass replacement, follow the procedures mentioned in 3.

3. Disassembly and Assembly of Bezel Portion

When performing crystal glass replacement, the following procedures should be taken.
For the assembly of the bezel, use the Citizen Oval Bezel Setter.

[1] Disassembly

(1) Remove the oval bezel.

Remarks: In order to securely maintain the compression of the oval ring, the fastening of the bezel in this watchcase is made slightly stronger than in conventional crystal type.

Be careful not to deform the bezel configuration when prying open.

(2) Remove the flat packing.

Remarks: Since the flat packing clings around the oval crystal glass, be careful not to deform the packing.

(3) Remove the oval crystal glass.

○ Use a rubber sucker.

(4) Remove the oval ring.

(5) Remove the oval dial ring.

[2] Assembly

(1) Set the oval dial ring.

Remarks: Fit the sorrounding of the oval dial ring correctly.

(2) Set the oval ring.

Remarks: The oval ring is set so it closely adheres to the watchcase inner wall.

It is not necessary to oil the oval ring with silicon oil

(3) Set the oval crystal glass.

Remarks: Hold the oval crystal glass with a rubber sucker and stabilize its position by strongly pressing it against the oval ring.

After setting, remove the rubber sucker so as the oval crystal glass is not moved.

(4) Attach the flat packing.

Remarks:
Cling the packing to the flange surface of the oval crystal glass (Fig. 3).

It is not necessary to oil the flat packing with silicon oil.

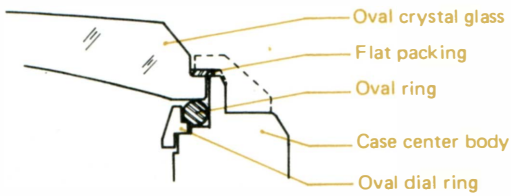


Fig. 3

(5) Push in the oval bezel.

○ Use the Citizen Multi-Purpose Watchcase Opener Set and Citizen Oval Bezel Setter (Fig. 4).

a. Set the lower endpiece to the lower spindle and the flat endpiece to the upper spindle.

b. Place the watchcase with the dial up on the lower endpiece.

c. Set the bezel.

Remarks: Set it so it will correctly fix to the oval crystal glass.

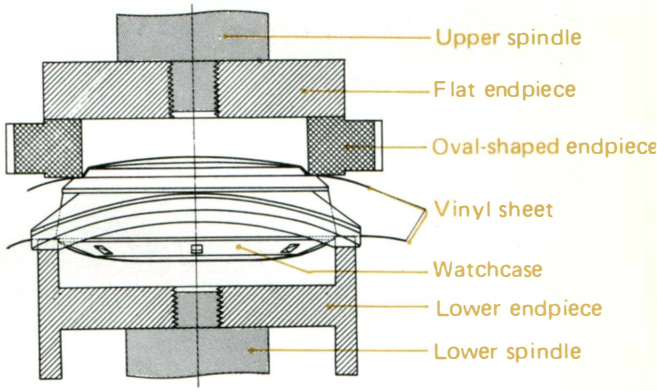


Fig. 4

d. Place the oval endpiece on the bezel.

Remarks: Match the indented portion of the oval endpiece to the crown position.

e. Push in the oval bezel.

Remarks:
Apply the flat endpiece on the oval endpiece and after confirming the setting condition of the oval bezel, push in the oval bezel.

When pushing in, be careful that the oval endpiece does not move and particularly, on the movement in the rotating direction.

Push in moderately.

Check the pry opening posistion.

A piece of vinyl sheet or something similar should be inserted between the watchcase and the endpiece so the watchcase is not damaged.

After pushing in, check the meshing between the oval bezel and the case center body along its surrounding.

CRYSTAL GLASS GN-4 OR GN-4W—SCREW BACK TYPE

1. Structure

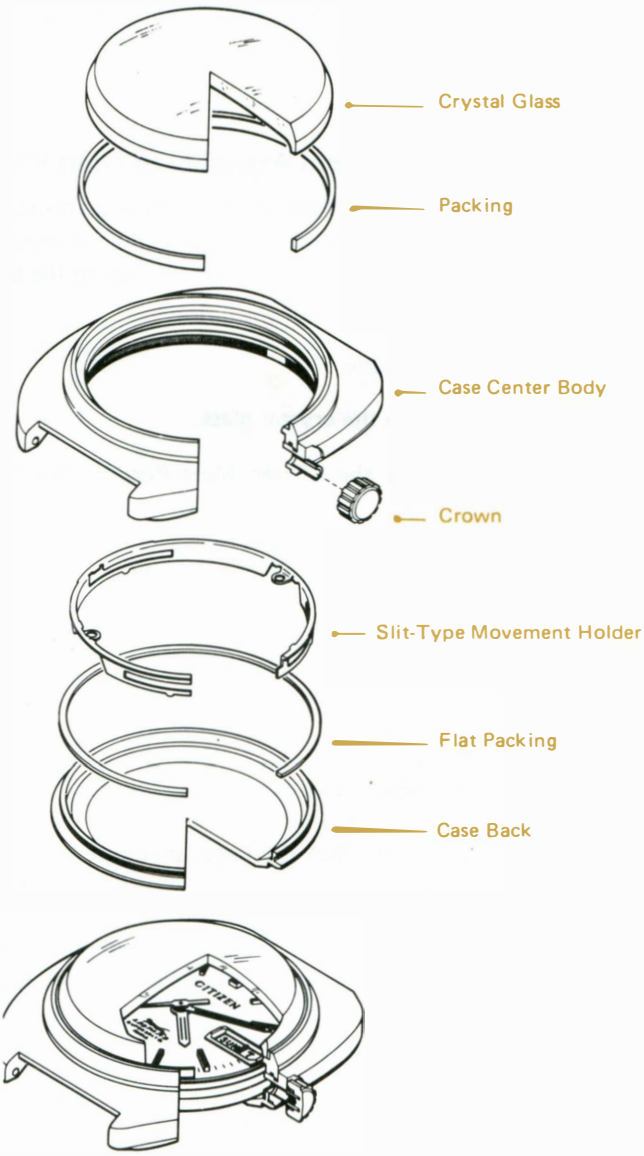
This watchcase structure is classified into 2 types according to the back cover engraving. However, the basic structure and handling are exactly the same.

a. Structure of GN-4-S (Fig. 2)
The structure of this watchcase adopts a method in which a tefron* packing is stressly compressed by the crystal glass and the case center body so air-tightness is maintained and differing from conventional crystal glass type, the bezel is not used. In addition, case center body [I] and case center body [II] is stabilized by soldering or glueing. This type does not require the use of the O-Ring Setter and the case back is a screw back type.

b. Structure of GN-4W-S (Fig. 3)
The structure of this watchcase is basically the same as that of the GN-4—S above, however, it differs in the point that it employs a tefron packing between case center body [I] and case center body [II]. Since it employs the tefron packing in 2 places (between the crystal glass and case center body [I] and between case center body [I] and case center body [III]), it has been given the name "GN-4W" (W meaning double). It does not require the use of the O-Ring Setter and the case back is a screw back type.

These two types of watchcases are functionally exactly the same.

* Tefron is the trade mark of DUPONT in U.S.A.



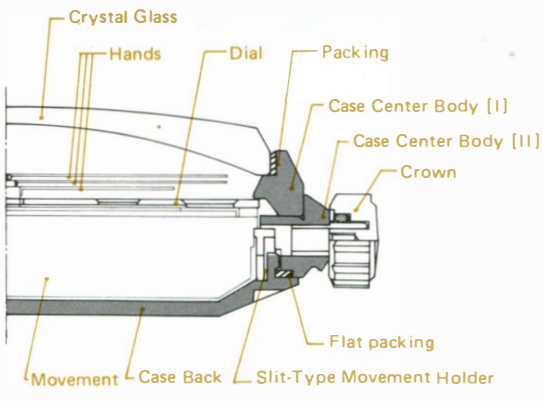


Fig. 2

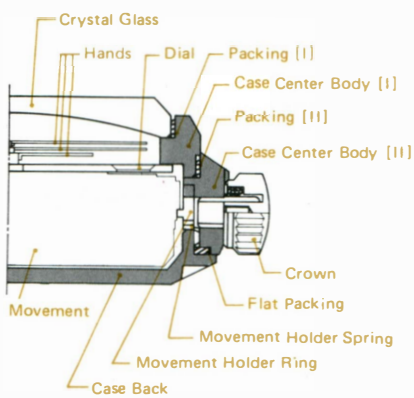


Fig. 3

2. Disassembly and Assembly

Disassembly and assembly other than glass replacement for the crystal glass type GN-4W parawater device (Taking out of movement, etc.) should be performed in the same manner as for bottom opening method of the crystal glass type GN-3 parawater device (mentioned in Index No. S12).

- In case of crystal glass replacement, follow the procedures mentioned in 3.
- When you have to assemble the case center body [I] of the GN-4W by any chance, follow the procedures mentioned in 4.

3. Disassembly and Assembly of Glass Portion

- Do not perform disassembly and assembly of the glass portion other than glass replacement.
- In this watchcase, the portion corresponding to the bezel and the case center body are in a single body and as it has no portion that corresponds to the bezel in ordinary watches, be careful not to remove it.

[1] Disassembly

(1) Remove the crystal glass.

○ Use the Citizen Multi-Purpose Watchcase Opener Set.

Remarks:
Remove the crystal glass under the same method as for replacing the plastic glass with tension ring. (Fig. 4)

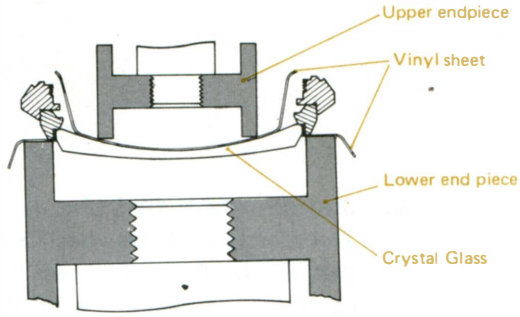


Fig. 4

In case of ladies' watches, remove the case holder for the upper endpiece on the Citizen Multi-Purpose Watchcase Opener and use the upper spindle in place and remove the crystal glass (Fig. 5).

Make sure that the lower endpiece always accepts the bezel portion.

A piece of vinyl sheet or something similar should be inserted between the watchcase and the lower endpiece and between the crystal glass and the upper endpiece to prevent damages on the watchcase.

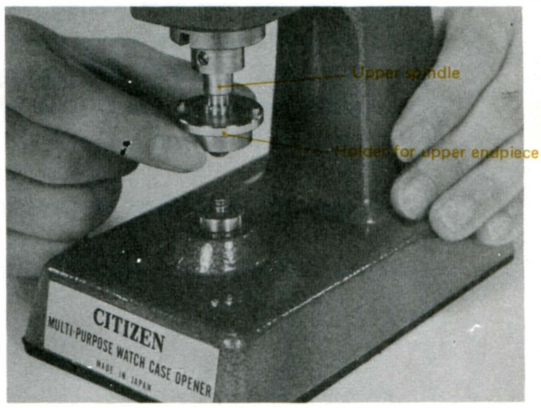


Fig. 5

(2) Remove the packing.

Remarks:
There are times when the packing is removed together with the crystal glass.

[2] Assembly

(1) Attach the packing.

(Place the chamferred portion on top.)

Remarks:
Remove the thread waste, etc., attached on the packing. Before pushing in the glass, check that the chamferred portion of the packing is on top (Fig. 6).

In order to facilitate the fixing of the glass, if the protruding portion of the packing can be pressed against the inner surface of the case body center, the packing can be easily and securely attached.

The packing can be easily attached when fixing is made by pressing down the rising of the packing with the fingers (Fig. 7)

When the packing is large and difficult to insert into the inner surface of the case center body, use it after cooling it once with cold water or in a refrigerator, etc. If the packing is not cut or damaged, it can be used as it is.

In case the packing breaks or bends, repair the broken or bent portion so as the packing diameter is not expanded and use it.

After fixing, check along its surrounding that the packing does not float.

The packing does not have to be oiled with silicon oil.

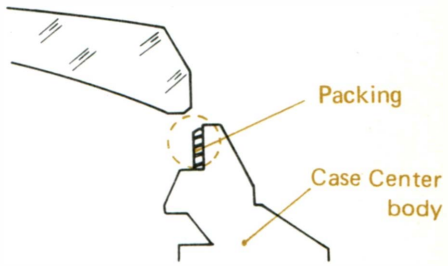


Fig. 6

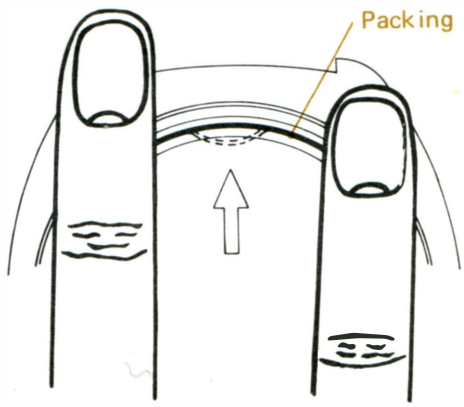


Fig. 7

(2) Set the crystal glass.

Remarks: Push the crystal glass with your fingers to the extent that it adapts to the packing.

(3) Push the crystal glass in.

○ Use the Citizen Multi-Purpose Watchcase Opener Set.

a. Set an upper endpiece and a lower endpiece of the sizes as shown in the Fig. 8.

b. A piece of vinyl sheet or something similar should be placed between the crystal glass and the upper endpiece.

c. Push in moderately until the lower surface of the crystal glass settles on the case center body.

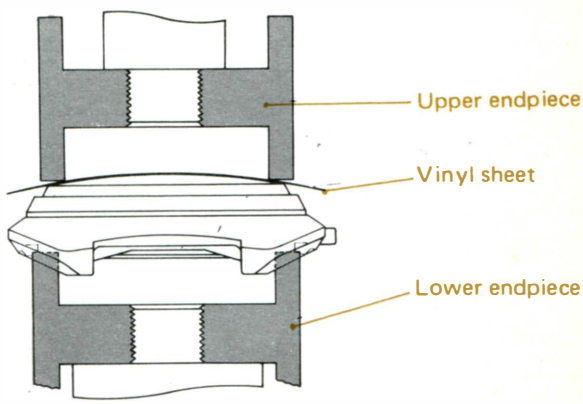


Fig. 8

Remarks:
Check the inserted condition of the crystal glass and its inclination.

Observe from the side upper surface with a damage detector or a microscope and check that the packing is not extremely pulled in partially (Fig. 9).

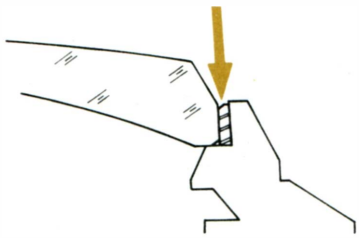


Fig. 9

When it is not pushed in normally, remove the glass once and insert at again properly (Figs. 10, 11).

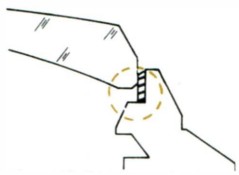


Fig. 10

Fig. 11

When it is pushed in forcibly in a condition where the crystal glass and the chamferred portion of the packing is not matched, be careful as the packing will be crushed or the crystal glass broken.

4. Assembly of Case Center Body [I]

If by any chance, the case center body [I] is removed (Portion that corresponds to the bezel), assemble under the following procedures.

(1) Attach packing.

Remarks:
Attach packing [II] between the crystal glass and case center body [I] (Portion that corresponds to the bezel) with the chamfered surface facing upwards under the same manner as for the tefron packing [I].

(2) Set the case center body [I] (Portion that corresponds to the bezel) in position.

(3) Push in case center body [I].

○ Use the Citizen Multi-Purpose Watchcase Opener and the Citizen Oval Bezel Setter.

a. Set the flat endpiece (or upper endpiece) to the upper spindle and push in the upper surface of case center body [I] (Portion that corresponds to the bezel).

- Flat endpiece . . . An endpiece from among the endpieces in the Citizen Oval Bezel Setter.
- Upper endpiece . An endpiece from among the endpieces for the Citizen Multi-Purpose Watchcase

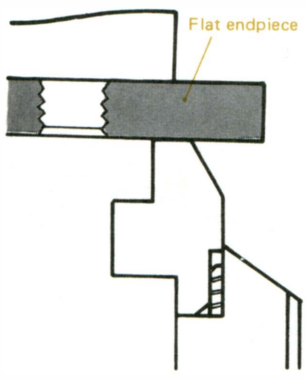


Fig. 12

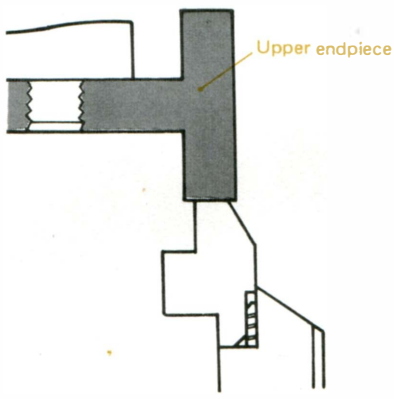


Fig. 13

b. If it is not pushed in sufficiently, it will become a cause to inferior parawater so be sure that it is pushed in securely.

c. Insert a vinyl sheet or something similar between the watchcase and the flat endpiece (or upper endpiece) as not to damage the watchcase.