



# REPAIR MANUAL

# TOOL·PARTS LIST

BRONICA CO., LTD.

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## 1. Detachment of the Right Side Cover

### How to Detach

- 1) Strip off two crank base covers (A257040) which are fixed to the surface of the crank base casting (A753325) with bonding agent and then loosen four fixing screws (B813605). Finally, detach the parts up to the crank ring set (A753340).
- 2) Strip off the leatherette on the multi-exposure lever (A256091), loosen the fixing screw and then detach the multi-exposure lever.
- 3) Strip the leatherette from around four screws or two B813357 and two B813287, loosen these four exposed screws and, finally, detach the right side cover (A755405).

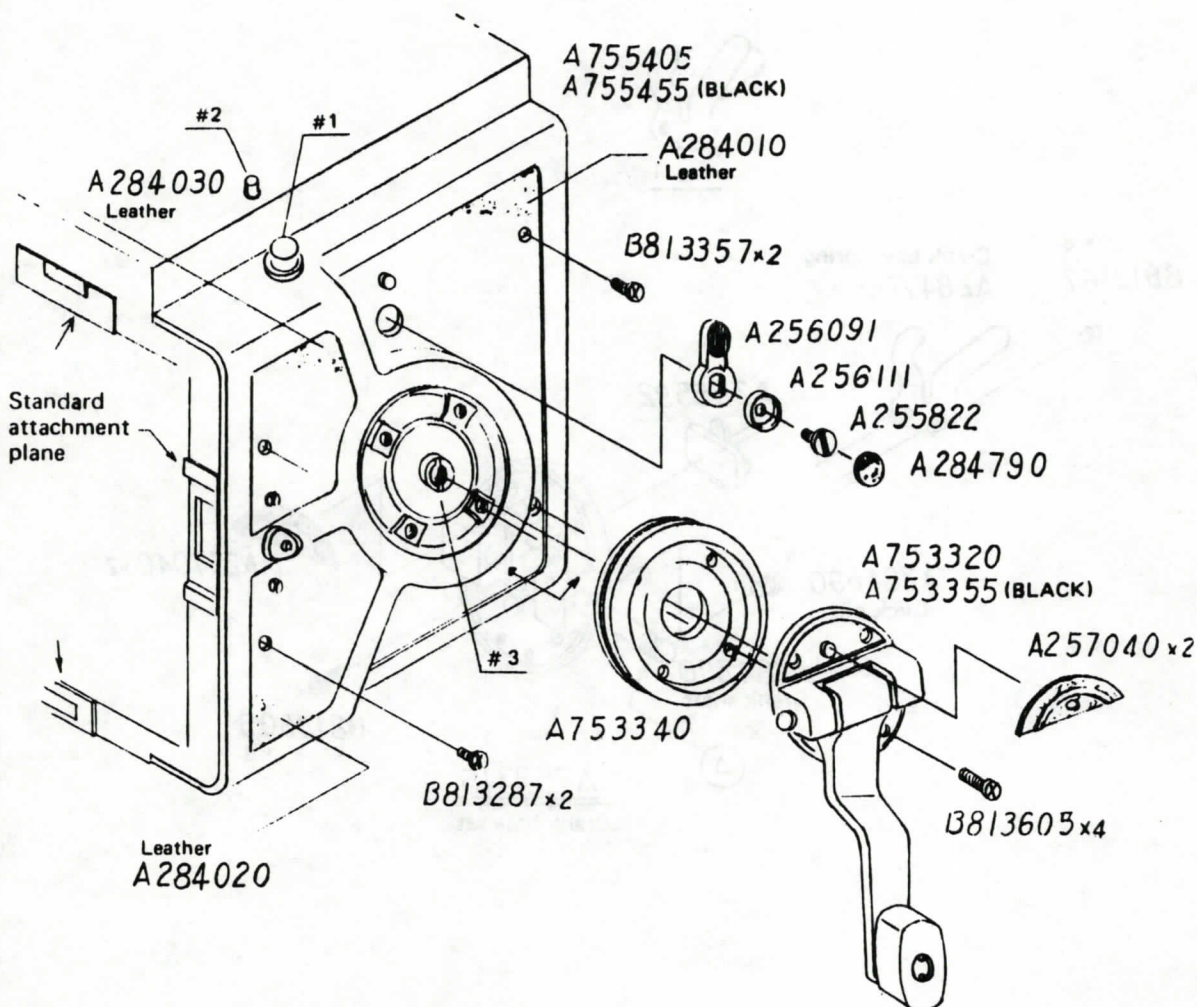
### CAUTION:

The crank base covers are deformed rather easily and, therefore, it is recommended that spares always be held on hand for exchanging.

### How to Attach

Attachment is in the reverse order of the above, but keep the following points in mind, when doing so:—

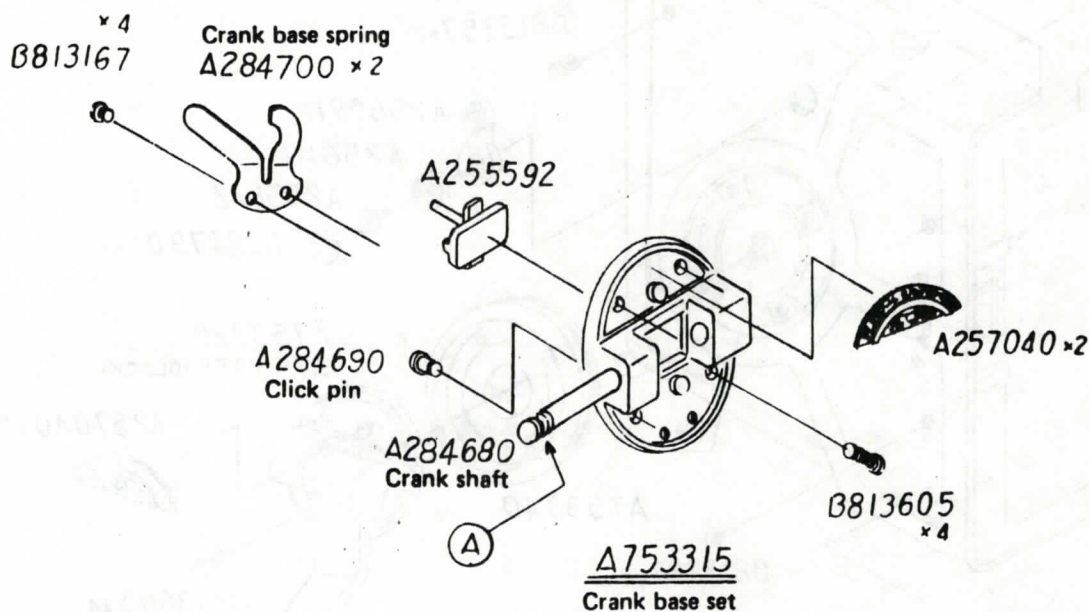
- 1) The right side cover should be located while depressing the finder locking pin (#2) in order that the pin can be located for coupling with the finder release button (#1).
- 2) The crank ring set must be positioned concentrically with the crank base casting, or with equal spacing all around it, in order to prevent contact with the right side cover which should, in turn, not protrude beyond the base surface (attachment of the film back will help in determining the location at this time and the winding crank should also be revolved to confirm positioning).



## 2. Film Winding Cranks Comes Off: Crank Shaft Slips Out Easily

The crank shaft (A284680) is securely fixed in position only when the click pin (A284690) is inserted fully in the groove (A) on the crank shaft.

- 1) Strip off the two crank base covers (A257040), loosen four fixing screws (B813605) and detach the crank base set (A753315).  
Next, bend the crank base spring (A284700) so that it exerts more pressure on the click pin.



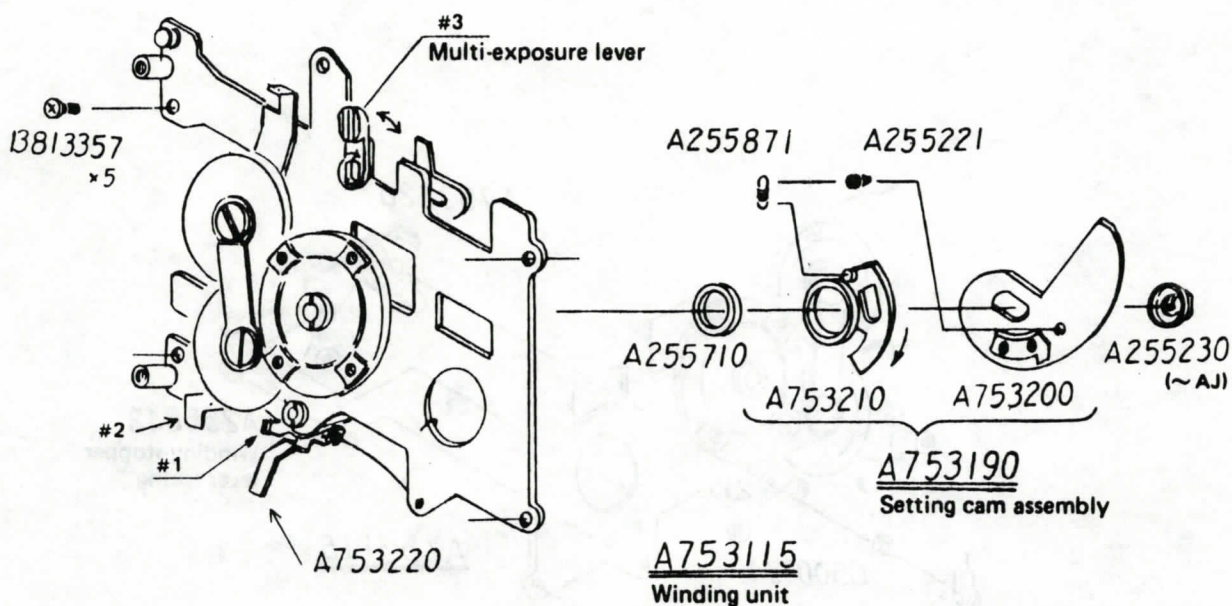
### 3. Multiple Exposure is not Possible

The multiple exposure mechanism is activated by setting the multi-exposure lever (#3) or rotating it in the clockwise direction, which disconnects gears on the body side from those on the film back side, so that the film is no longer advanced with film winding crank action. At the same time, although the film is no longer being advanced, the multiple exposure mechanism stops the film winding and shutter charging action and permits shutter release when operations are completed on the body side only.

If multiple exposure is not possible, when set in the above manner, but becomes possible when the multi-exposure lever (#3) is reversed once (to normal single exposure operation) and then re-set for multiple exposure, the movement of the winding auxiliary plate (A753210) is defective. Winding is not possible, in the first instance because the winding claw (#1) engage the setting cam (A753200) even after the shutter is released.

Repair in the following manner:—

- 1) Detach the right side cover, loosen five B813357 screws and take out the winding unit (A753110).
- 2) Detach the cam holding nut (A255230) and then detach the setting cam assembly (A753190). Finally, replace with a new setting cam assembly.
- 3) When reattaching the winding unit in the body, see that the winding stopper lever (A753220) and #2 engage with the F. (film) release unit. (See Exchanging the Film Release Unit on page 8.)

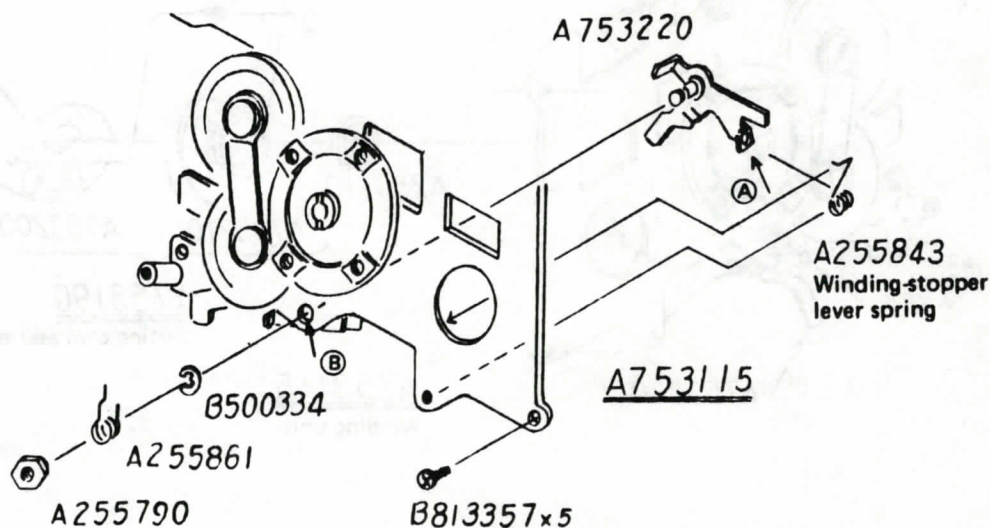




#### 4. Winding Action does not Stop: Winding Stopper Lever Spring is Unhooked

Load a test roll film in the film back and manipulate the winding crank (and advance the film and charge the shutter) for taking the first frame. Then, detach the film back and check whether the F. (film) release pin (A260990) is protruding up to the front end of the F. release cylinder A (A260952) (see page 33). If the pin is not protruding correctly, correct according to "Film Back — 6. Winding Action does not Stop".

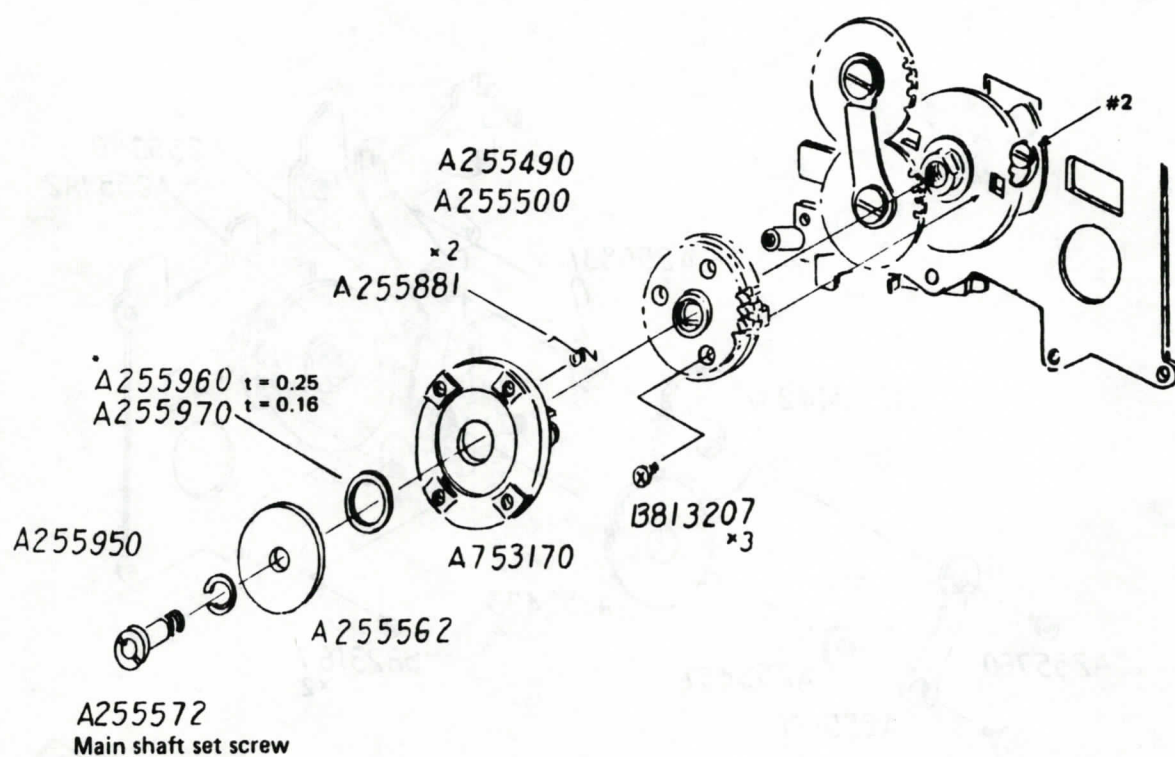
- 1) Detach the right side cover. If the winding stopper lever spring is unhooked, it will be quite all right to hook it up once more but since it is liable to get unhooked again, it is recommended that the following repair be undertaken.
- 2) Loosen five B813357 screws and detach the winding unit (A753110).
- 3) Loosen the winding stopper claw spring holder (A255790) with the special screwdriver (A255790-AJ), take off the snap ring "type E" (B500334) and, then, detach the winding stopper lever (A753220).
- 4) Obtain a new winding stopper lever replacement part (which has a round opening in the place indicated by the (A) arrow) and assemble it into the body. When using the new replacement part, however, enlarge the opening on the winding base plate assembly, as indicated by (B) arrow, to 2 mm diameter.
- 5) Refer to page 8 for reattachment of the winding unit.



## 5. Winding Crank is very Loose: Main Shaft Setscrew is Loose

Strip off the crank base covers (A257040) and check whether the B813605 screws are loose or not. (See page 1.)

- 1) If looseness in the winding wheel (A753170) can be corrected by tightening the main shaft setscrews (A255572), detach the setscrew, apply Loc-Tite to the threads and re-tighten the main shaft setscrew securely once more.





## 6. Winding Action is not Possible: Transmission Gear is Cracked

If the cracked transmission gear (A255433) is a white-colored plastic one, exchange it for a metal replacement part.

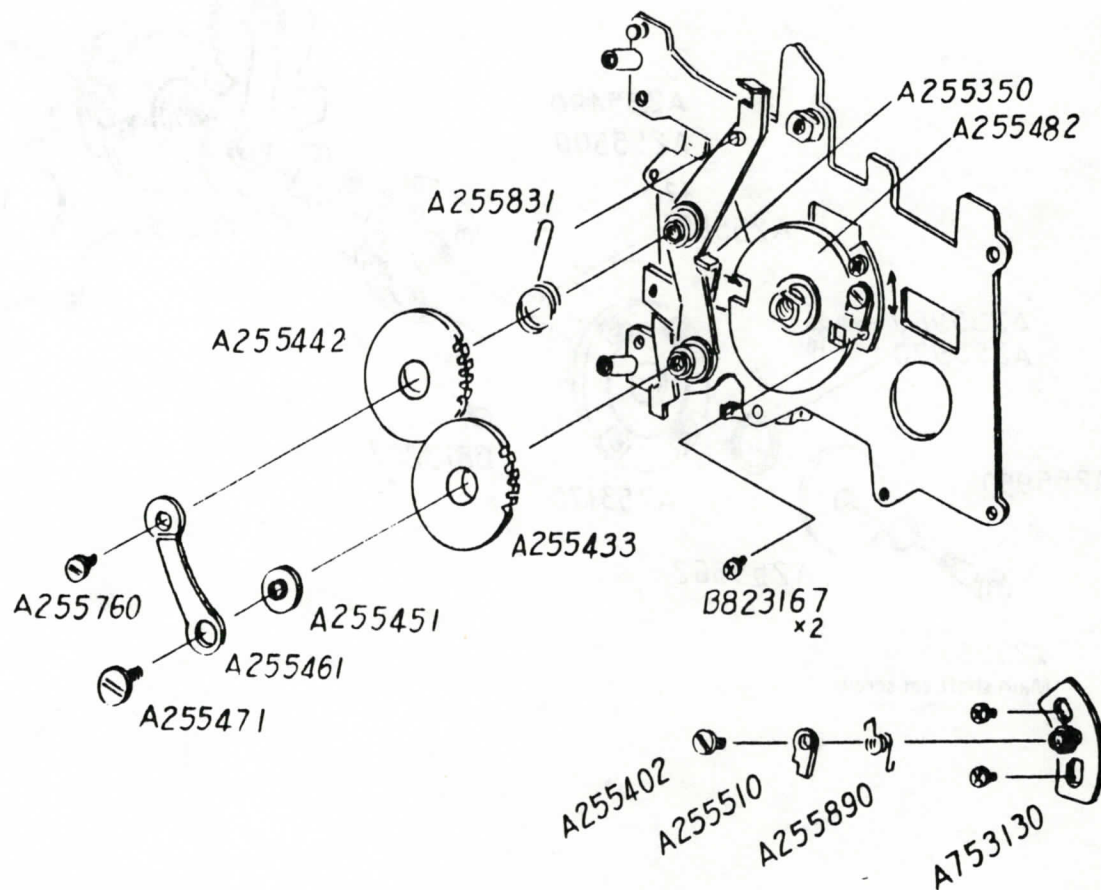
- 1) Loosen the connecting gear screw (A255760) and left hand gear arm screw (A255471), detach the upper connecting gear arm (A255461) and exchange the transmission gear.

## 7. Shutter Release Button cannot be Depressed: Reverse Stopping Claw is Positioned Incorrectly

When the shutter release button is depressed, after completion of the film winding crank action, the upper release safety lever (A255350) should fall into the notched section on the release safety cam (A255482) which will release the shutter. In other words, if the lever is not in the notched section but positioned elsewhere, the shutter cannot be released when the shutter release button is depressed.

- 1) Loosen the B823167 screws and adjust the reverse stopping claw mount (A753130) so that the upper release safety lever falls into the notched section on the release safety cam.

Confirm that the same action also takes place when the winding crank is rotated in the reverse direction, too.

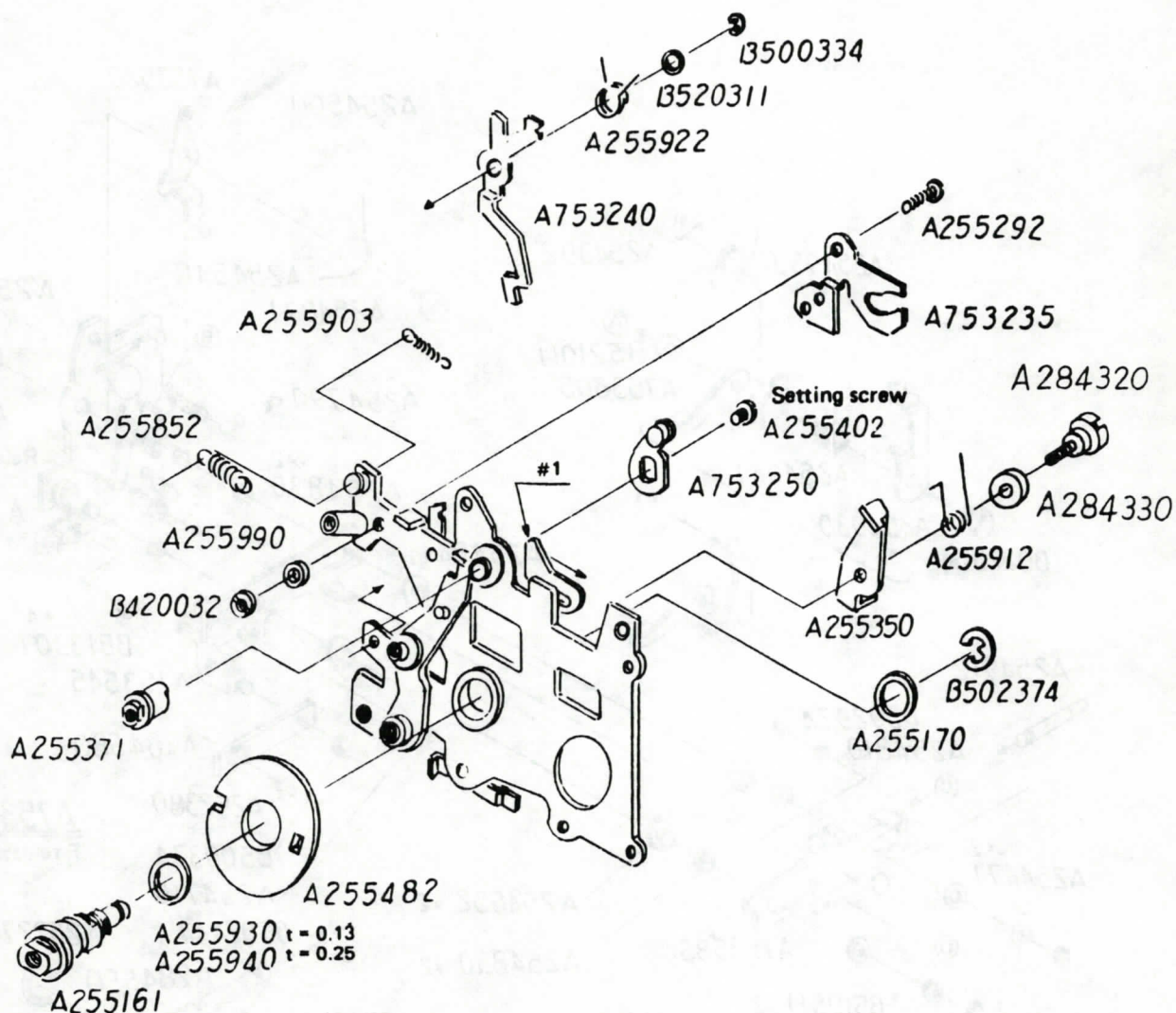


## 8. Multiple Exposure is not Possible: Setting Screw is Loose

The multi-exposure lever (see page 1) rotates the multi-set lever (A753250) via the multi-lever axle (A255371) and, thereby, pushes the multi-exposure link (#1) forward or in the direction of the lens.

1) The setting screw (A255401) should be fixed securely with Loc-Tite.

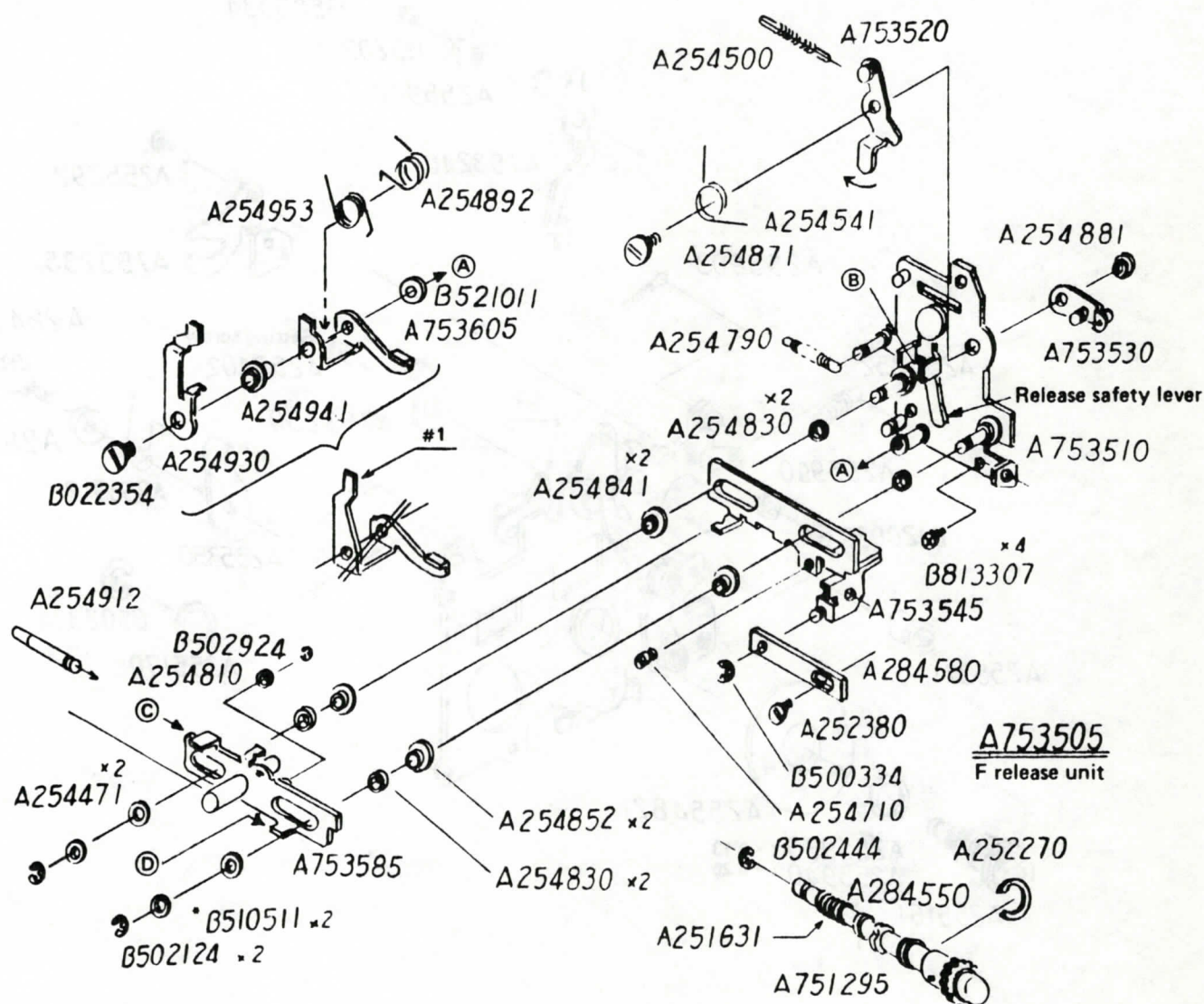
2) Exchange the multi-operating lever spring (A255922) when it is unhooked, if its hooking section is deformed.



## 9. Exchange of the Film Release Unit

F. release unit with an old type winding safety lever (#1) attached should be exchanged completely for a new type one, in order to prevent deformation of the wind stopper pawl (A261391).

- 1) First, detach the winding base plate assembly, then detach the shutter button stopper ring (A252270, B502444) of the shutter release button set (A751290) and the snap ring (B500334) of the shutter release link (A284580), loosen four B813307 screws and, finally, detach the F. release unit (A753500).
- 2) Keep the following points in mind when attaching the winding base plate assembly, after attachment of the replacement F. release unit.
  - 3) The upper release safety lever (A255350, see page 7) must fit into (B).
  - 4) The multi-operating lever (A753240, see page 7) must engage (C).
  - 5) The winding stopper lever (A753520, see page 4) must engage (D).
  - 6) The holding claw (A753570) engages the F. release roller (A254810) while the shutter release button is being depressed and prevents the return of the upper F. release plate (A753590) so that there is time for the F. release action to take place. If the holding claw does not engage the F. release roller, then bend the upper F. release lever (A753520) in the arrow-indicated direction.





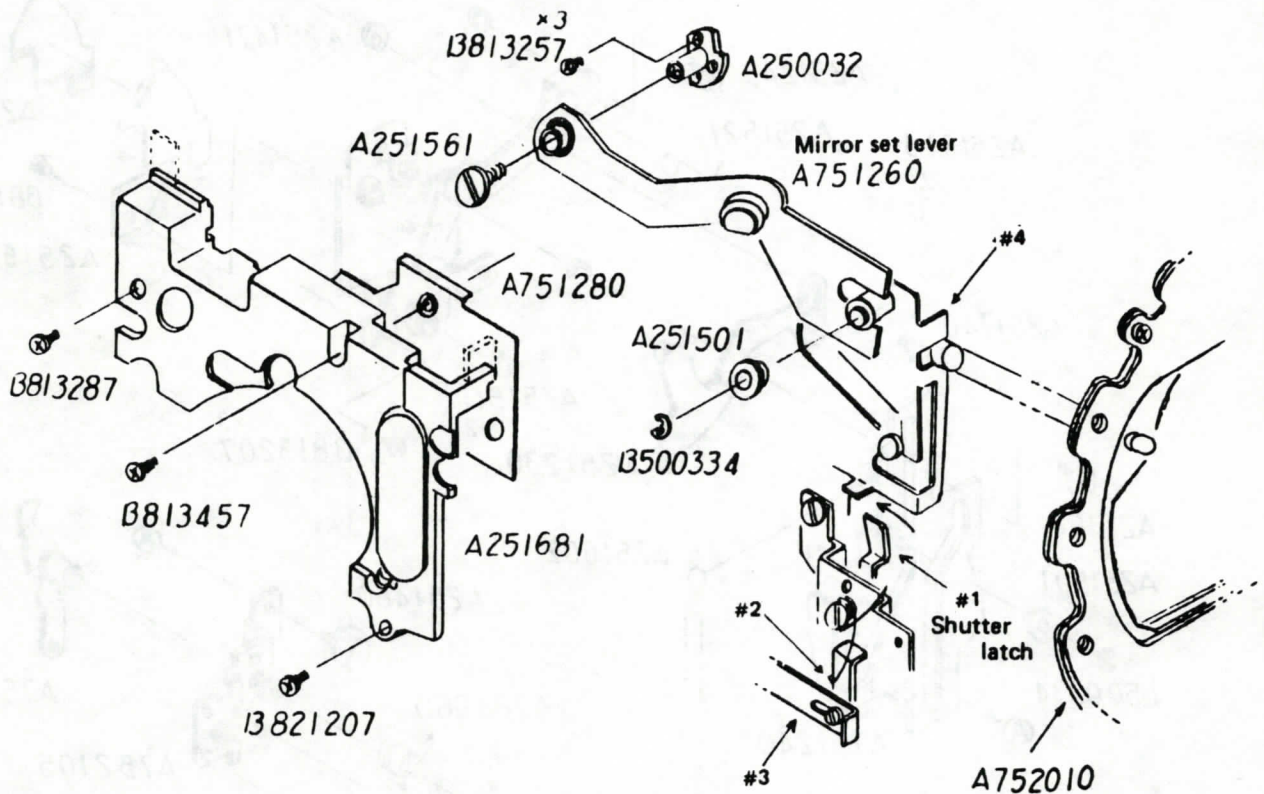
## 10. Mirror is not Charged: Bent Mirror Set Lever and/or Faulty Action of the Shutter Latch

Reflex mirror swings back up immediately upon completing the film winding crank action.

- 1) Check action of the shutter latch (#1).
- 2) Next, loosen screws B813287, B813457 and B821207 and then detach the light baffle cover (A251681). (The old type light baffle cover also has a protrusion, as indicated by the broken-line part, and, therefore, it will be necessary to loosen the top frame (A755200), also, in this case. Refer to page 19.)
- 3) Detach the set lever screw (A251561, which has a left hand thread) and take off the snap ring (B500334) and operating plate set roller (A251501). Finally, exchange the mirror set lever (A751260).
- 4) When exchanging the set lever shaft (A250032) use a part matching the height of the set lever.

### CAUTION:

A bent set lever is caused by mistakes made during the insertion of the lens. If the film winding crank action is heavy, when assembling the set lever, therefore, do not force the action. (Refer to page 15 "Lens Cannot be Detached".)



### 11. Shutter Blades do not Open (I)

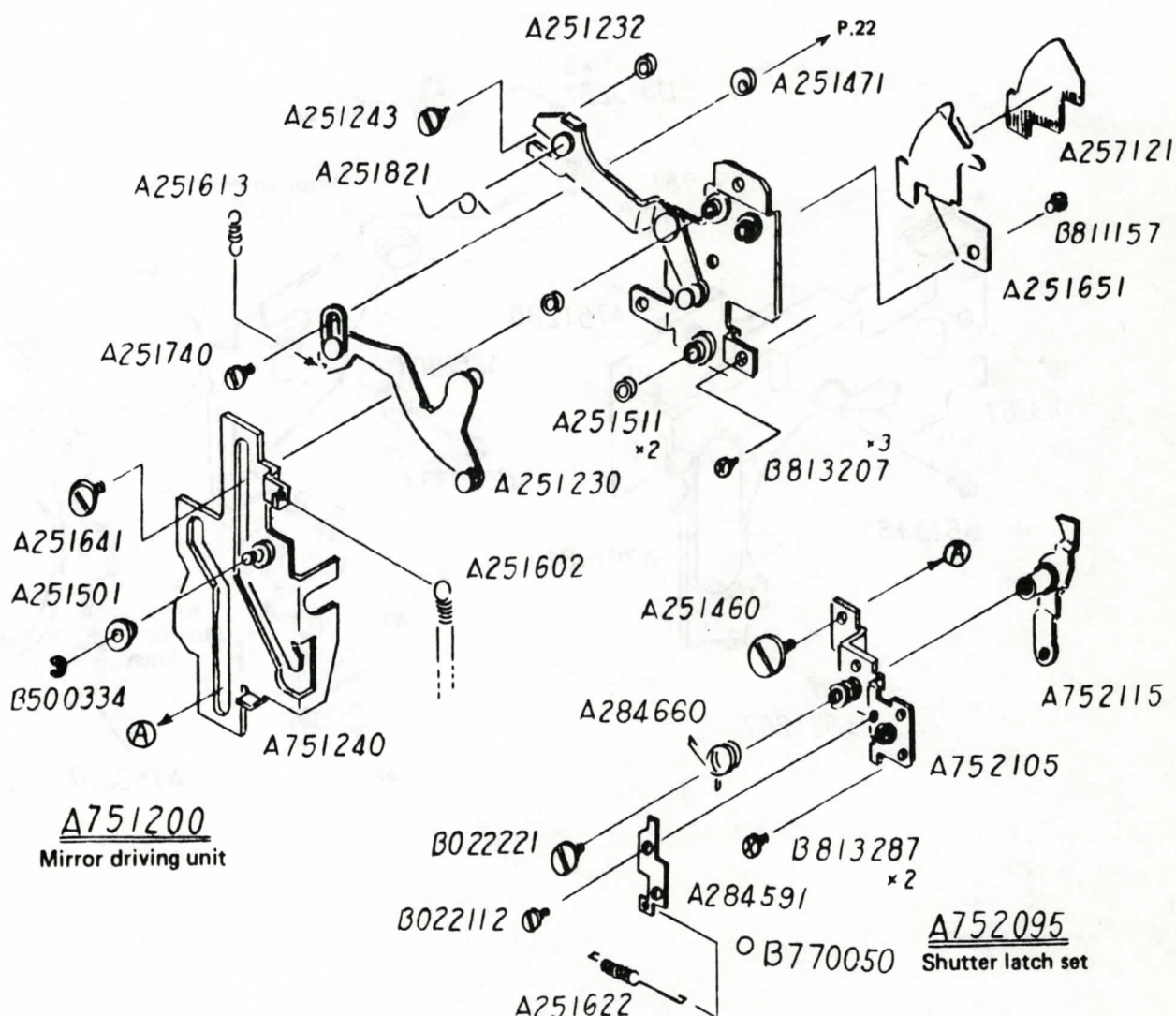
The shutter blades close down completely when the shutter release button is depressed, while, at the same time, the reflex mirror swings up. Then, the light-tight plate (A751100) also swings up, followed by the shutter blades reopening and, after the required amount of time, closing completely once more. Should the shutter blades not reopen after the light-tight plate swings up, resulting in an unexposed frame, it should be repaired in the following manner.

- 1) Exchange the right operating-ring spring (A251601) since it has been strengthened by increasing its wire diameter to 0.26 mm.
- 2) Exchange the shutter operating ring unit (A752010) (see page 11).

## 12. Adjustment of the Mirror Arm Adjusting Cam (A251471)

When making the repair noted in "11. Shutter Blades do not Open (I)", position the M. (mirror) arm adjusting cam so that the M. operating plate (#1) moves up and down smoothly.

At the same time, the M. arm adjusting cam should not come in contact with the M. driving lever (#2) when the mirror swings up.





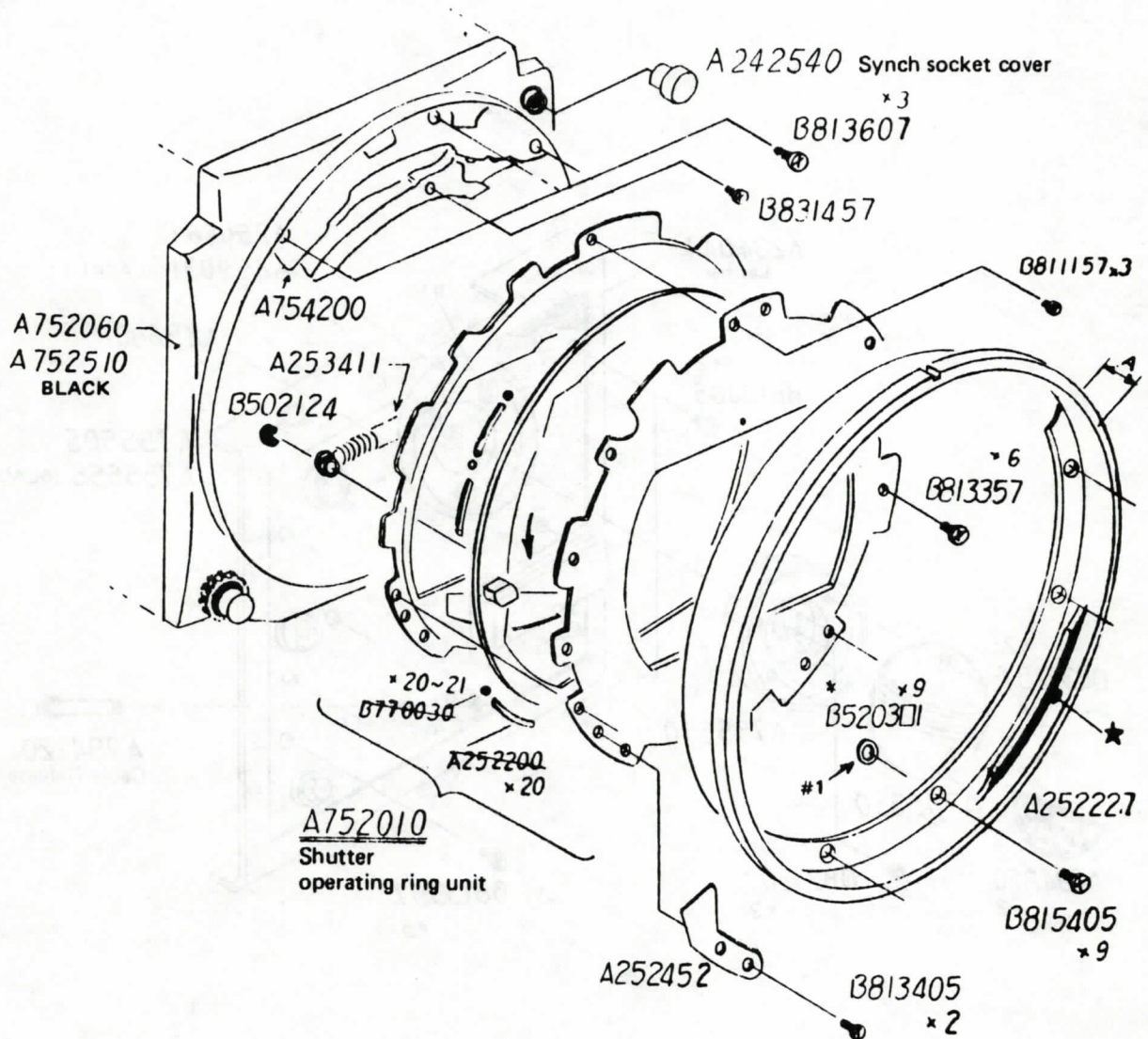
### 13. Shutter Blades do not Open (II): Rotation of the Shutter Operating Ring Unit is Heavy

With lens detached, check rotation of the S. (shutter) operating ring unit (A752010) in the arrow-indicated direction while maintaining pressure on the shutter release button. If the rotation is not smooth but feels tight or seems to be catching, it should be repaired in the following manner:—

- 1) Loosen nine B815405 screws and detach the lens mount (A252227). Since the focus adjustment washers (#1) differ in thickness, they must be properly identified so that they can be returned to their original positions when reassembling.
- 2) Loosen two B813405 screws, three B813607 screws, one B831457 screw and six B813357 screws.
- 3) Detach the left side cover (see page 12), unhook the operating-ring spring (A253411) and exchange the S. operating ring unit. Use a spring with 55 turns.

Adjust distance from standard attachment plane (surface) to the star-indicated (\*) position on the lens mount to 79 mm  $\pm 0.03$ . (Use tooling jigs CT-301, 302 and 303.)

Use care when making the exchange, as there are two types of lens mounts with thickness of 9.6 mm and 9.65 mm at point "A",



#### 14. Detachment of the Left Side Cover Add Shutter Speed Dial Stopper

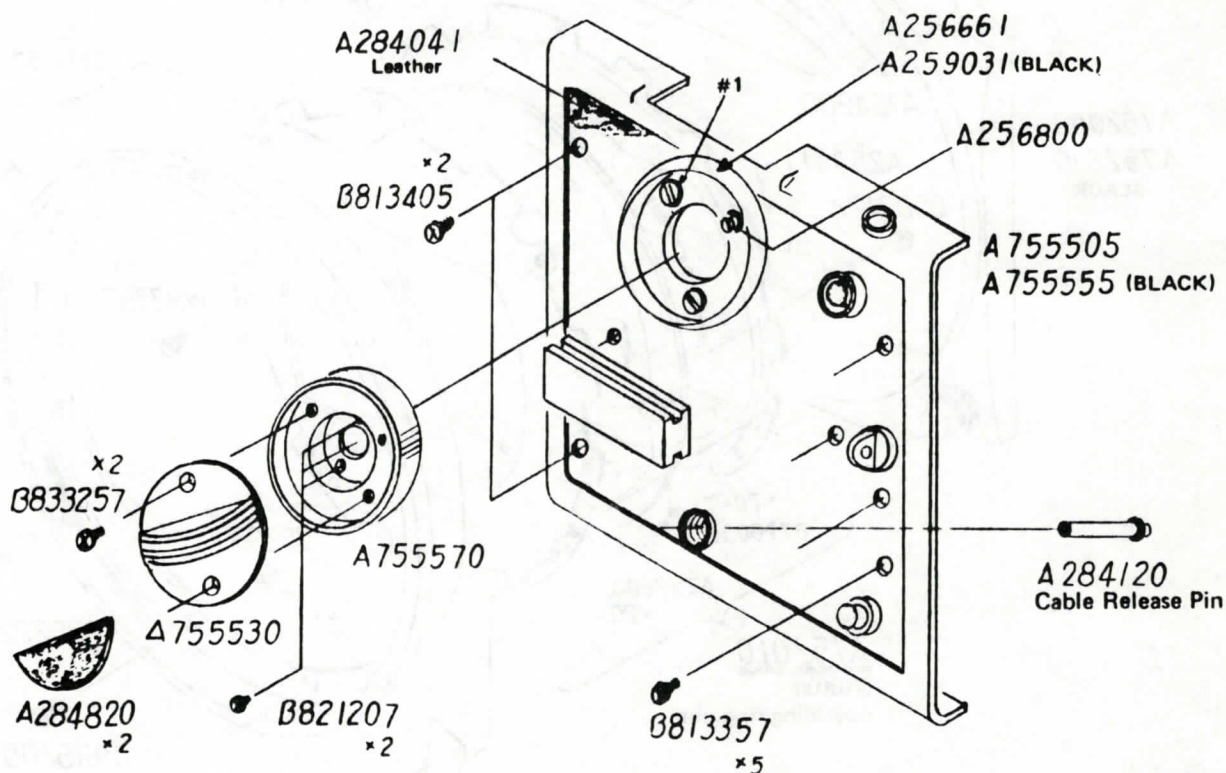
- 1) Strip the shutter dial cap leatherette (A284000) and loosen two B833257 screws. Then, detach the shutter dial cap (A755530) and loosen two more screws (B821207). Finally, detach the shutter dial knob (A755570).
- 2) Strip off enough of the left cover leatherette (A284040) to expose the screws, loosen two B813405 screws and five B813357 screws and, then, detach the left side cover.
- 3) Place the cable release pin (A284120) aside for safekeeping since it will become loose when the left side cover is detached.

##### Add shutter dial stopper

- 1) Change one of the setscrews (#1) of the shutter dial cover (A256661) to the shutter dial stopper (A256800) and change the shutter dial knob to part A755570 (which has a stopper pin riveted to it).

##### Pointers on Assembling

- 1) Do not forget the cable release pin.
- 2) The circuit is grounded (earthed) at two points at the front end and, therefore, the left side cover must be fixed with two chromium-plated screws (B813405).
- 3) As with the right side cover, the left side cover should also not protrude beyond the standard attachment plane (surface).
- 4) Do not cause short-circuits by pinching the wires.





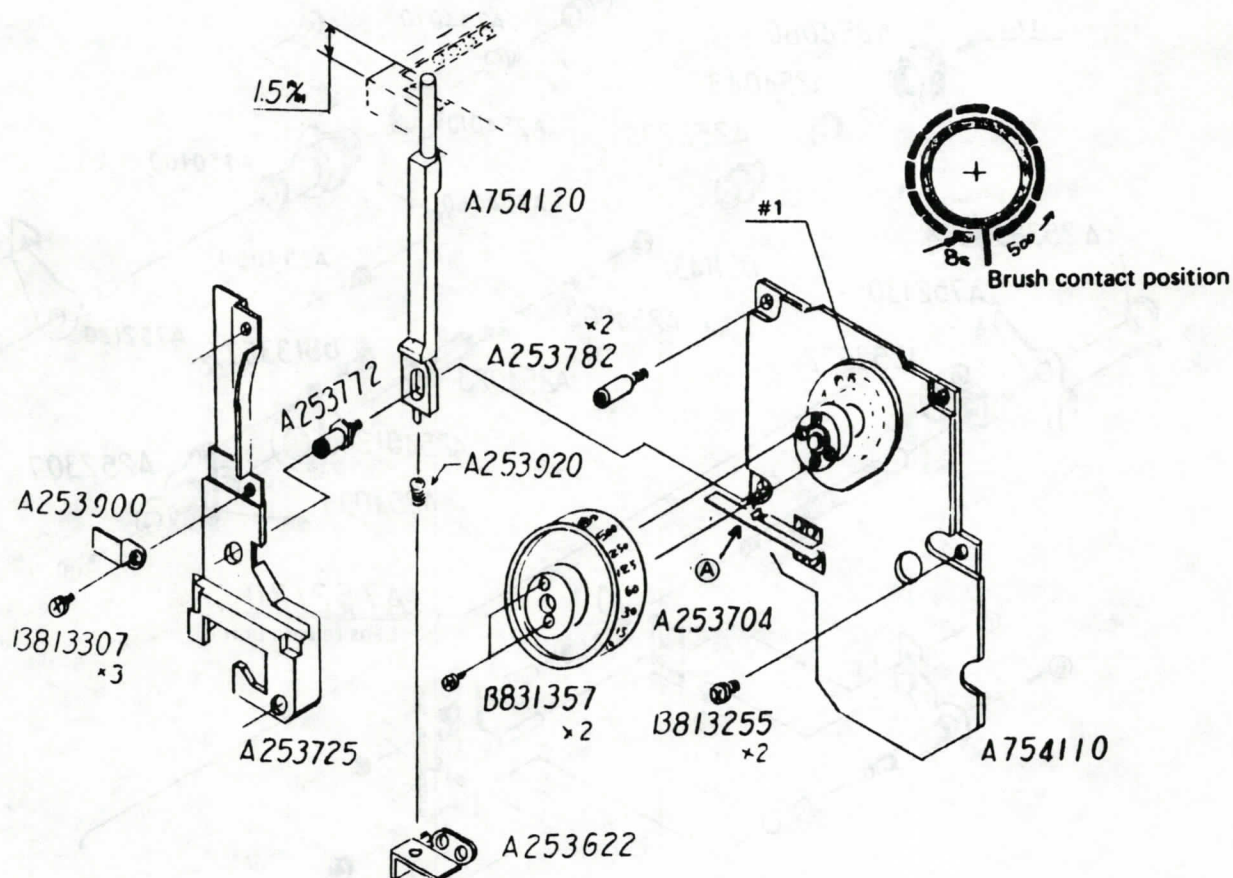
### 15. Shutter Speed Becomes 1/500 Second

The switch of the shutter circuit (A754100) is ON because the AE changeover rod (A754120) is pressed up by the strength of the AE changeover rod spring (A253920). However, when the AE Finder is attached, the AE changeover rod is pressed down and the switch is turned OFF, with the shutter circuit then becoming inoperational.

- 1) Is the AE changeover rod protruding 1.5 mm above the top frame?  
If not, rehook the spring (A253920) to adjust.
- 2) Is it possible that the switch of the shutter circuit is OFF?  
Confirm ON/OFF operations of the switch by pushing the tip of the AE changeover rod. If OFF, bend the contact plate (A) to make the necessary adjustment.
- 3) Check for defect in the wiring circuit. See page 26.

### 16. Relation of the Shutter Speed Dial and Shutter Speed Setting

- 1) Rotate the shutter dial click plate #1 and coincide its brush contact to the 8 second position (see drawing of pattern). Then, attach the shutter speed dial (A253704) with its 8 second setting at the top position.



## 17. Detachment of the Lens

Detachment of the lens differs with the cameras or, in other words, there are two systems, or 17-1 and 17-2 illustrated below. The two systems are easily differentiated by whether the lens release button has a leatherette covering or not.

17-1 Lens release button has leatherette covering.

Turn the film winding crank fully and charge the shutter. Rotate the lens release button locking ring (A254010) and depress the lens release button (A252293) while keeping the ring rotated. Finally, rotate the lens and detach.

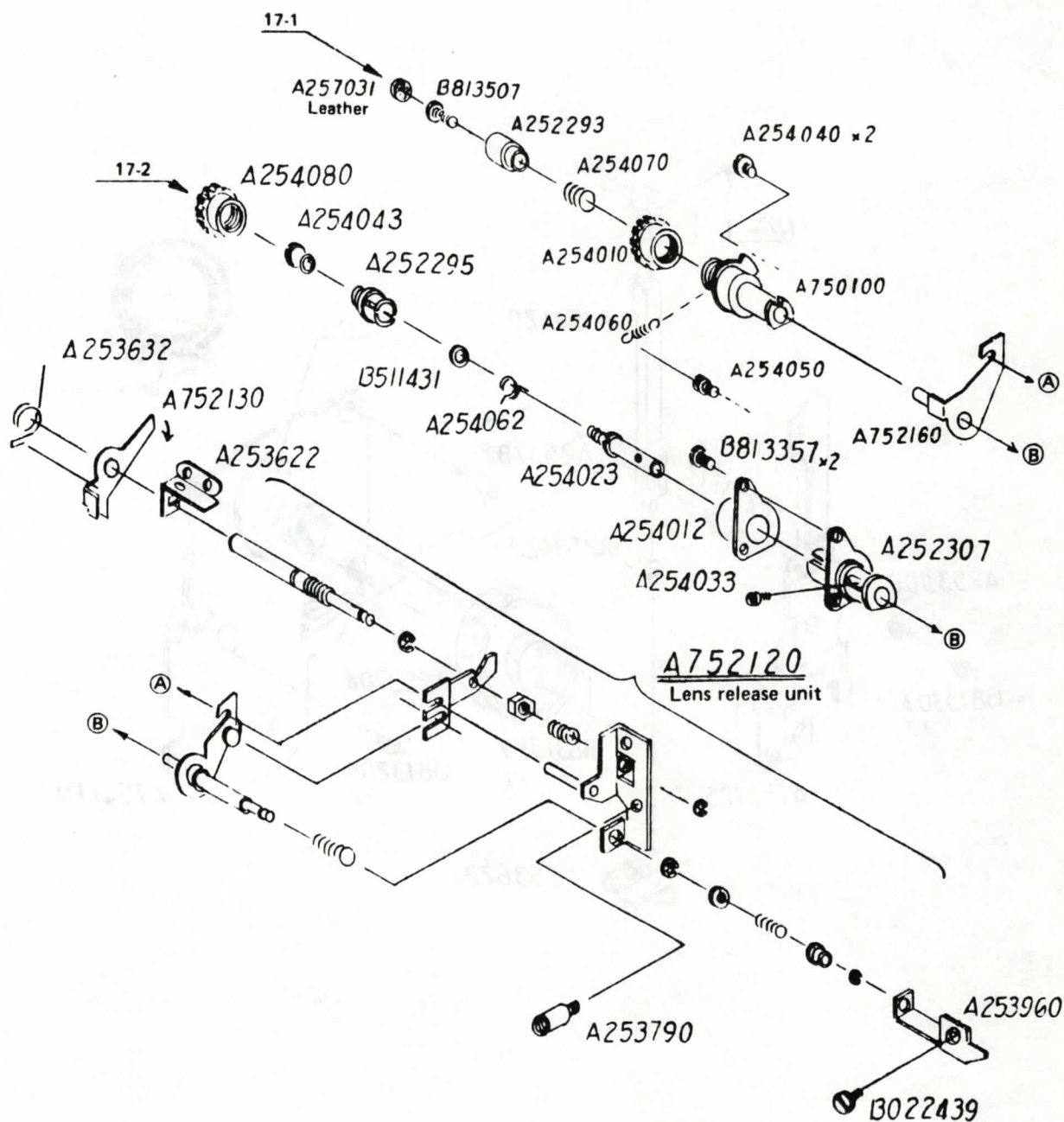
17-2 Lens release button is not covered.

Turn the film winding crank fully and charge the shutter. Rotate and depress the lens release button (A254080). Detach the lens.

### CAUTION:

To repair defects in the 17-1 system, change completely to the new 17-2 system.

When the film winding and shutter charging operation is completed, the lens safety lock (A752130) is pushed by the S. operating ring unit (A752010), with the result that its hook section is then slipped off the lens button latch (#1), thus making it possible to depress the lens release button. When it is not possible to complete the film winding and shutter charging operation in the normal manner, push the lens safety lock with your finger which will make it possible to detach the lens.

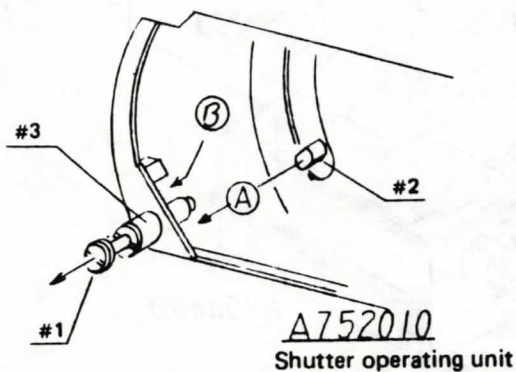


## 18. Lens cannot be Detached

When it is not possible to depress the lens release button, the trouble is due to deformation of the mirror set lever originating from rotation of the film winding crank when the #2 pin is not in the (B) section in the normal manner. The #2 pin will be located in (A) section, at such times.

In order to remove the lens, in this case detach the focusing screen and undertake the following operations from the top of the body.

- 1) Pull the setscrew (#1) in the arrow-indicated direction. Confirm that the #2 pin returns due to spring tension and enters (B) section.
- 2) Rotate the film winding crank fully, until it stops.
- 3) Then, remove the lens according to either 17-1 or 17-2, as explained on the previous page.
- 4) If the lens cannot be removed in the above case, use a screwdriver and push #3, while repeating the operations noted above.
- 5) If the mirror set lever is bent because of the above trouble, repair as explained on page 9. Or, if movement of the #1 pin is not proper, when checked, exchange the S. operating ring unit (A752010), as explained on page 11.



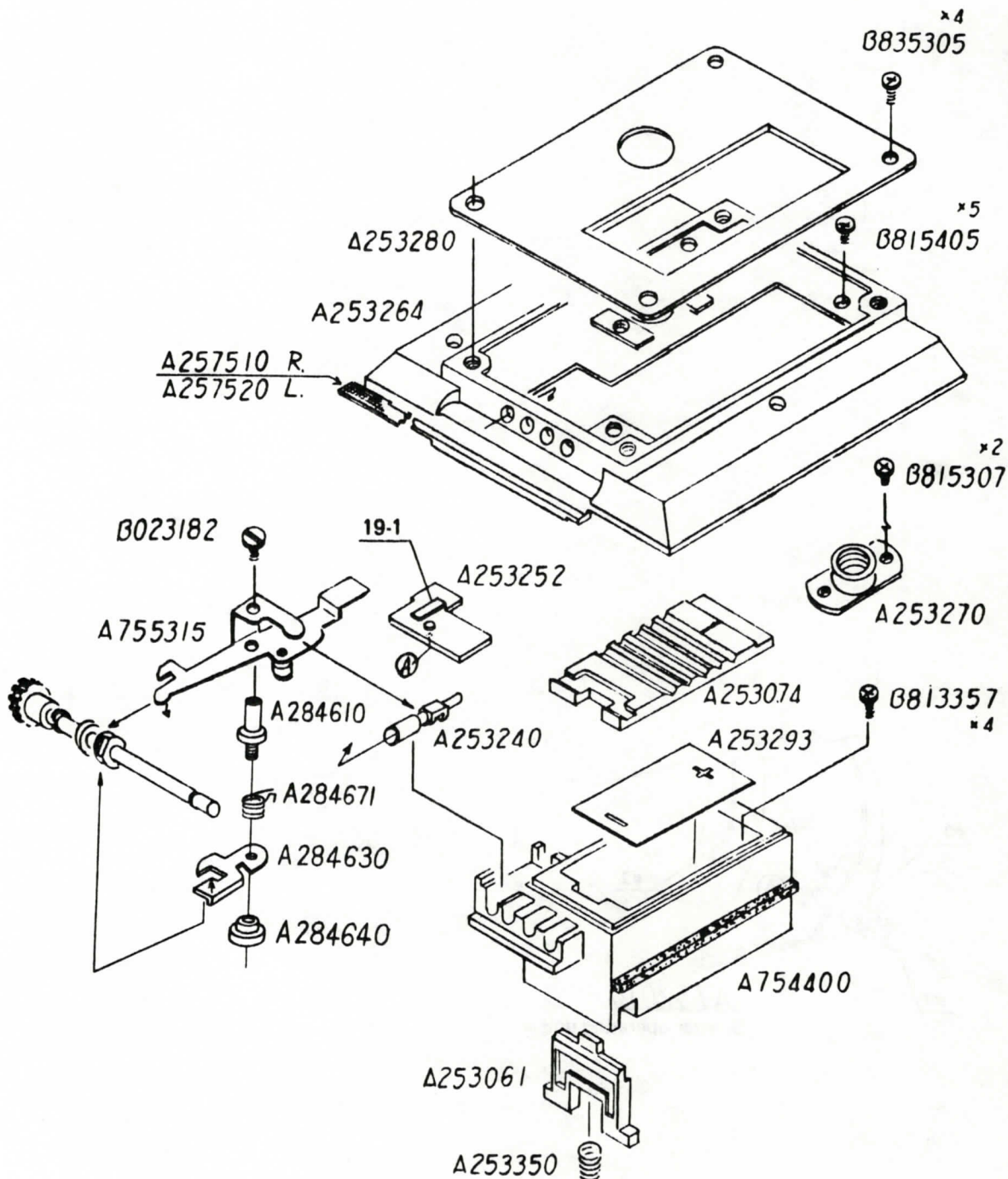


## 19. Shutter Release Button does not Return

- 1) The speed-grip shutter release rod (A253240) is jammed in the hole on the bottom cover (A253264).
- 2) The release lever (A755315) is on top of the release rod (A751290) and disengaged.
- 3) The lower F. (film) release plate (A753550) is on top of the release safety lever (see page 8) and, therefore, disengaged.

### Repair

- 1) Exchange the MD (motor drive) connector cover (A253252) for a new part in which a protrusion has been added at the section indicated as (A) in the drawing. When making the exchange, however, attach liners with bonding agent, eliminate looseness in the speed-grip shutter release rod and, at the same time, align the rod properly to the hole on the bottom cover.
- 2) Bend the tip of the release lever downwards so that it does not become detached from the grooved section in the release rod.
- 3) Turn the tip of the release safety lever (see page 8) upwards.
- 4) Bend the edge of Shutter Button Lock Claw (1-284630) to upright direction if Shutter Button Lock Claw comes out position in the groove of Release Button Set (1-751295).



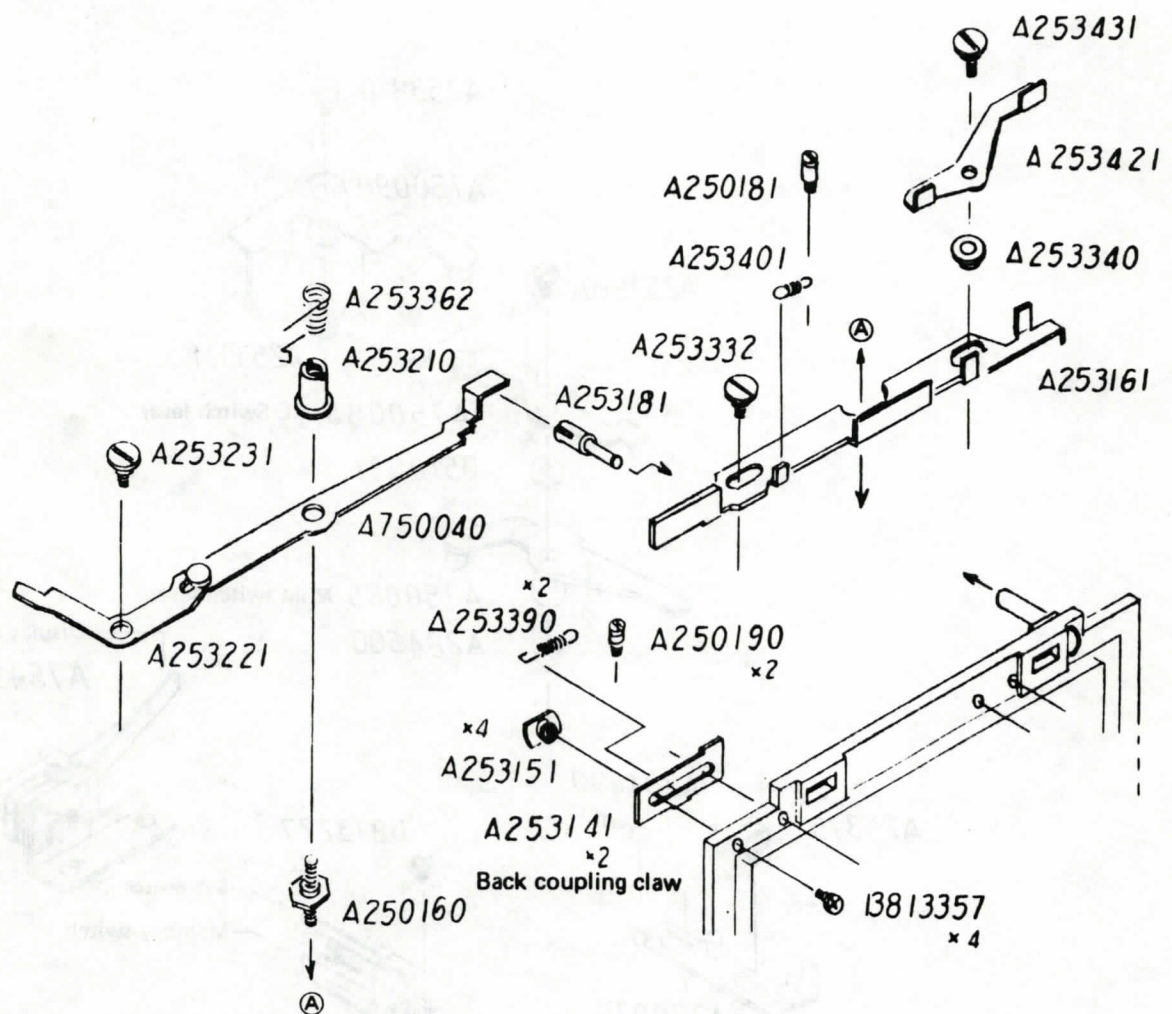
## 20. Film Back cannot be Connected: Back Coupling Claw is Bent

Back coupling claw (A253141) does not slide laterally and, therefore, becomes bent when pressed by the back coupling link on the film back side.

1) Exchange the back coupling claw the coupling claw guide (A253151). Apply Loc-Tite to the B813357 screw and fix securely.

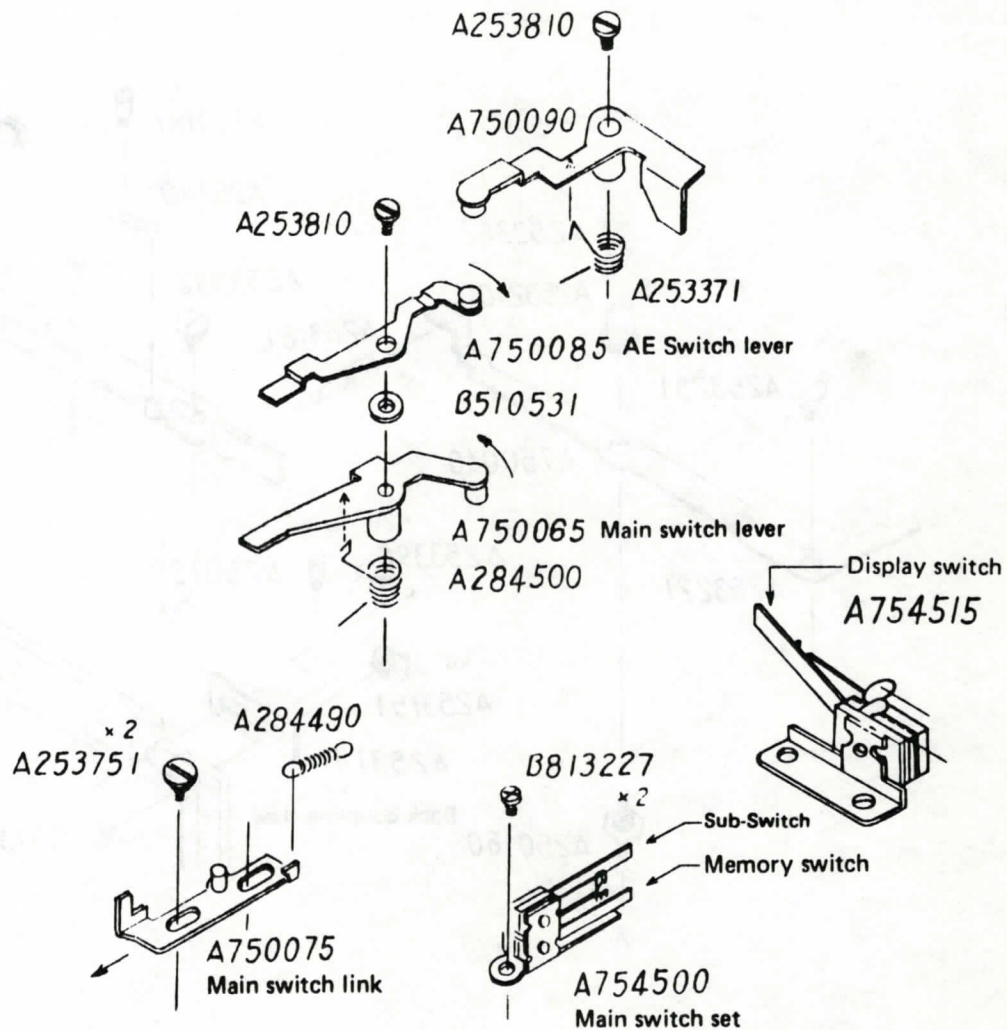
### CAUTION:

When the dark slide is inserted fully into the film back, the dark slide connecting pin (A253181) is pressed by the dark slide, which results in the dark slide safety latch (A253221) pushing the lower F. release plate (A753550) and preventing depression of the shutter release button.



## 21. Action of the Main Switch Set

- 1) When the film winding and shutter changing operation is completed, the main switch link (A750075) is pushed in the arrow-indicated direction while the main switch lever (A750065) is also moved in its arrow-indicated direction, by the action of the S. operating ring (A752010), as noted on page 11. This results in the memory and display switch becoming ON (the sub-switch remains OFF).
- 2) When the shutter release button is depressed, the AE switch lever (A750080) is pushed in the arrow-indicated direction, through the medium of the release lever (A755310), as noted on page 16, which results in the sub-switch becoming ON. At the same time, the main switch lever is returned to its original position, with the result that the memory and display switch becomes OFF.
- 3) Locate the main switch set (A754500) or bend the contact plates so that the above-mentioned actions are completed in about one-half of the stroke between the time of depressing the shutter release button and the start of the reflex mirror action. (Testig tool A754505-PT)



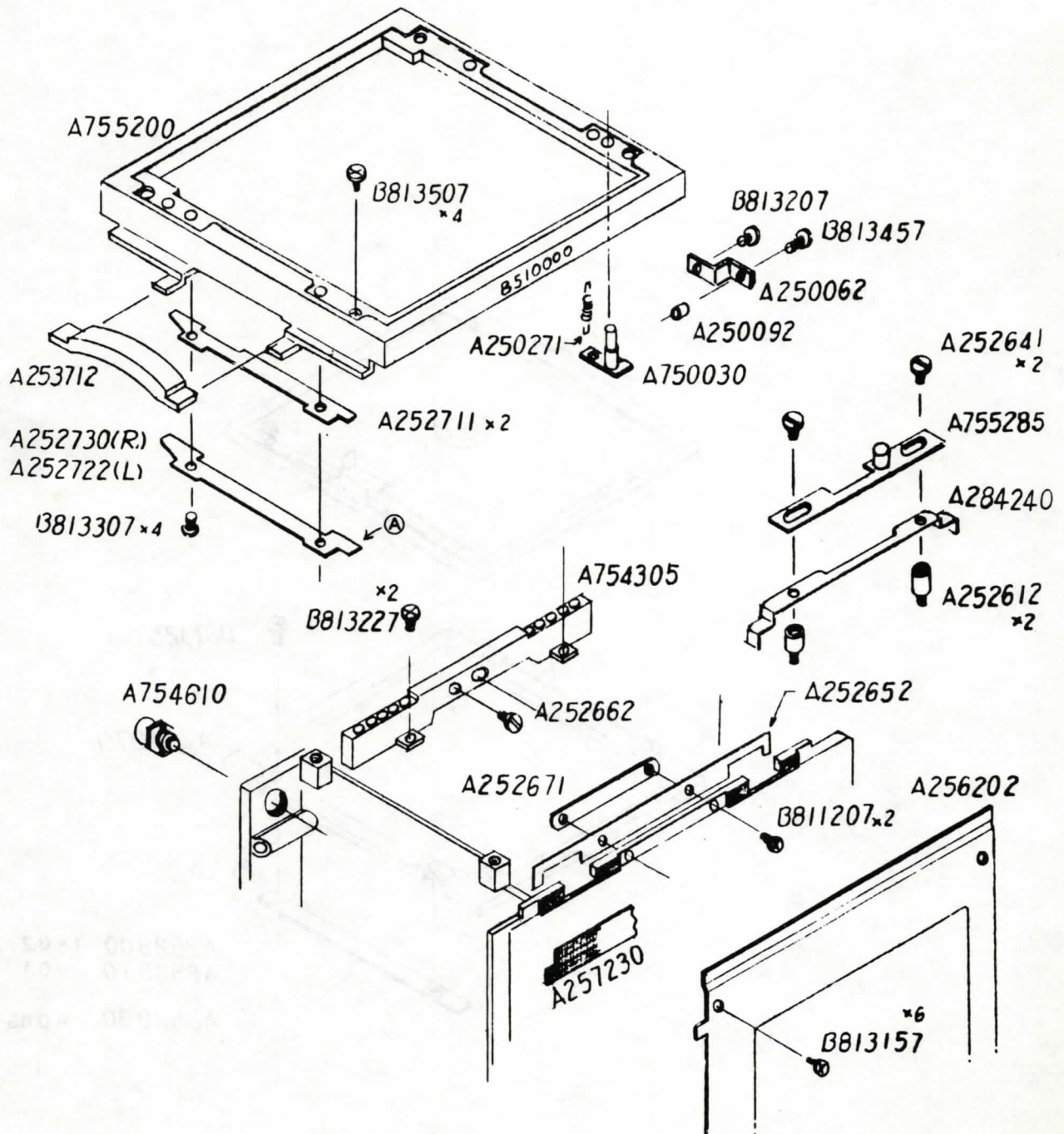


## 22. Waist-Level Finder cannot be Attached: Mount Springs are Bent

- 1) The finder cannot be attached because the finder mount spring (A252722) is deformed at point A.  
Loosen the left and right side covers, detach the top frame (A755200) and exchange the finder mount springs.

### CAUTION:

The part of the top frame with numbers engraved on it should not protrude above the standard attachment plane (surface).  
Align the finder lock pin (A750030), AE changeover rod (A754120) and hole.

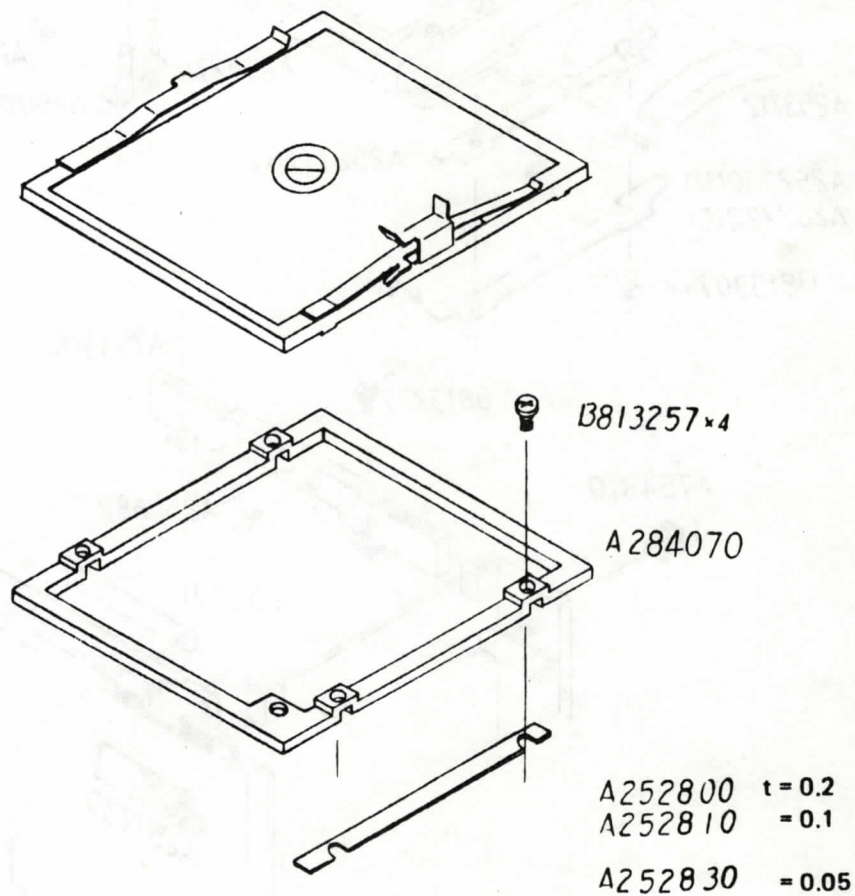


### 23. Adjusting the Focus of the Focusing Screen

- 1) Coincide the reflex mirror to the 45° position (see page 23).
- 2) Adjust the height of the frame gate by increasing or decreasing the adjusting liners inserted below the frame
- 3) Loosen four screws and adjust the height of the frame gate (A252522) by increasing or decreasing the number of adjusting liners inserted under the frame gate.

#### CAUTION:

The 45° position of the reflex mirror and the adjusting liners inserted under the frame gate have already been precisely adjusted in the factory and, therefore, should not require adjustments. Confirm that they are really out of alignment before making the above adjustments.

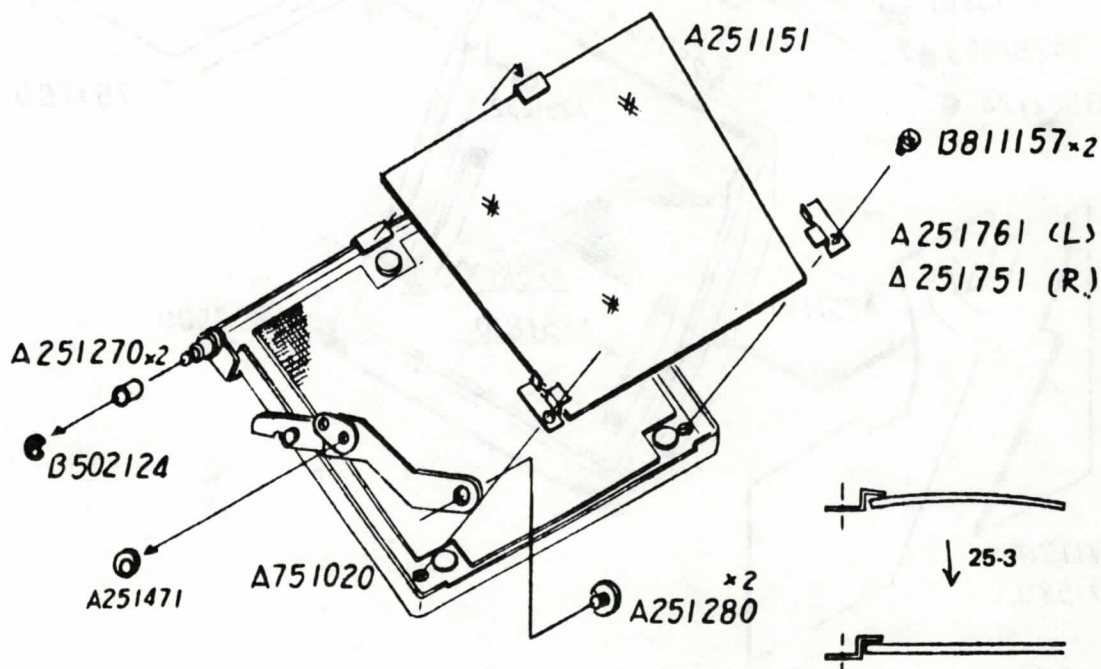






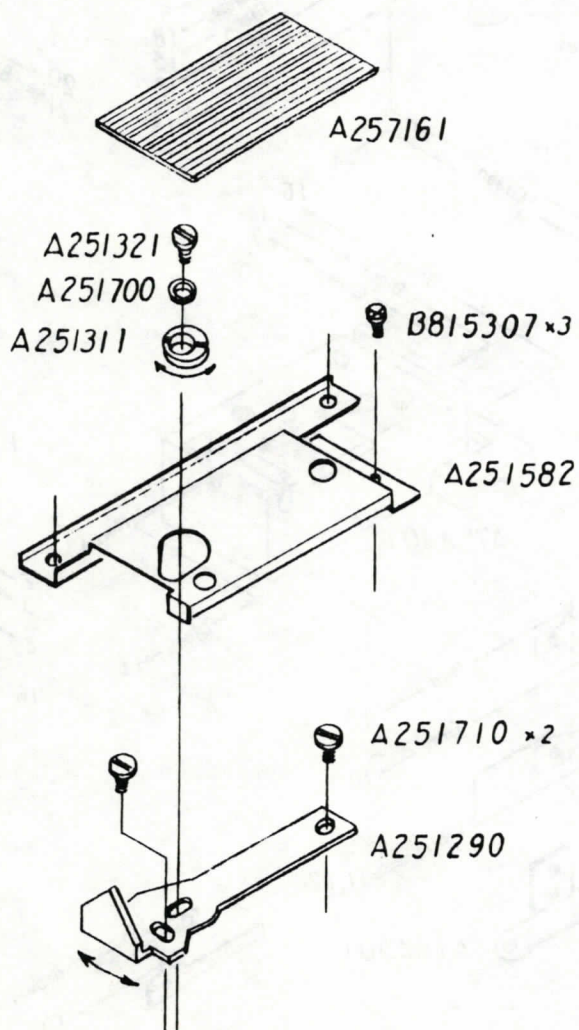
## 25. Exchange of the Reflex Mirror

- 1) Loosen two B811157 screws of the mirror holders (A251751 and A251761) and detach the mirror. (Support the mirror frame by its rear surface in order to prevent warping.)
- 2) Place the mirror holders against the side surfaces of the mirror and tighten the screws so that lateral looseness or movement in the mirror is completely eliminated. When tightening the screws, however, support the mirror frame (A751020) by its rear surface, with your free hand, in order to prevent warping.
- 3) The bent sections of the mirror holders may also be adjusted, i.e., bent more or bent less, as illustrated, to prevent warping of the mirror. (Since there will be differences in the focus and the sharpness of the finder image, depending on how much the screw is tightened or loosened, both these points should be confirmed before making it final.)



## 26. Adjustment of the Mirror Frame to 45°

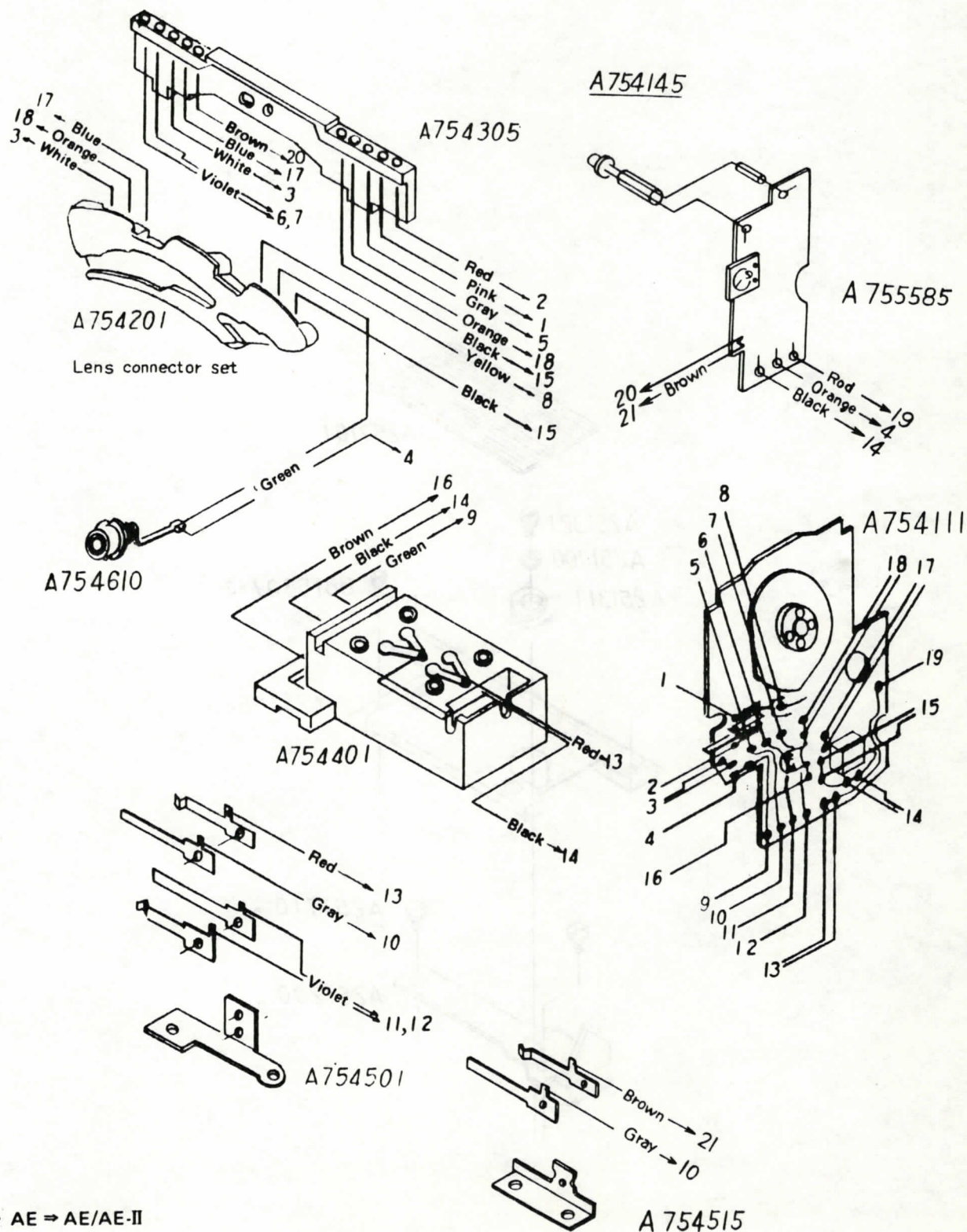
- 1) The stopping location of the mirror frame can be changed variably, by rotating the mirror adjusting collar (A251311) which will have the effect of moving the mirror stopper (A251290). The mirror stopper screws (A251710 x 2) should be tightened when the mirror is properly located at the 45° position. (Do not loosen the mirror adjusting axle A251321.)
- 2) Since the camera is already precisely adjusted, the screws should not be tightened or loosened without good reasons.





## 27. Wiring Diagram (III)

When one red-colored lead wire is connected to the checker contact case (A754131), the numbered wires should be connected to same numbers in the shutter circuit (A754111).



※ AE ⇒ AE/AE-II

ETRS

Parts

ETRS




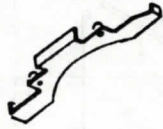


parts


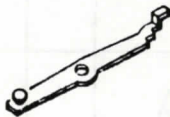


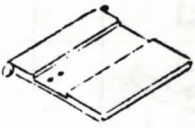
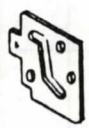






## ZENZA BRONICA

ETRS

Camera body (Ass'y)




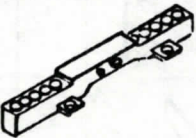
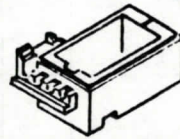
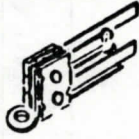
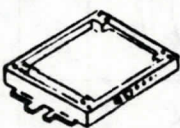
Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-755530	S dial cap Sダイヤル蓋						
5570	S dial knob Sダイヤルノブ						
1-751280	R. light-tight plate 右遮光板						
2070	Front cover connecting plate (right) 前カバー取付板(右)						
2080	Front cover connecting plate (left) 前カバー取付板(左)						
2169	Lens button lock レンズボタンロック						
5330	Bottom cover set 底蓋セット						

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-750030	Finder lock pin ファインダー解除ピン						
0040	Dark slide safety lever 引蓋安全中継レバー						
0090	Release relay lever リリース中継レバー						
1010	Mirror frame set ミラー枠						
1100	Light tight frame set 遮光板セット						
1170	M guide plate(right) M作動溝板(右)						
1180	M guide plate(left) M作動溝板(左)						
1200	M driving unit ミラー駆動ユニット						
1230	M driving lever ミラー駆動レバー						
1250	M operating plate set ミラー作動板セット						



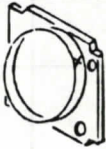
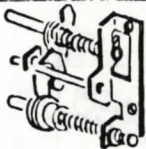


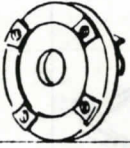


## ZENZA BRONICA




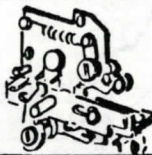


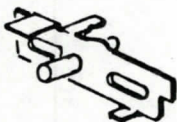

ETRS



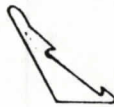

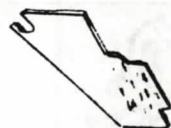
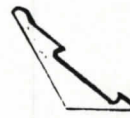


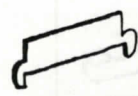
## Camera body (Ass'y)

Parts No. 部品番号	Name 名称	Shape 形状	Posper Unit 価数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-754111	Shutter circuit シャッター回路ユニット						
4120	AE changeover rod AE切換桿						
4201	Lens connector set レンズコネクタセット						
4305	AE connector set AEコネクタセット						
4401	Battery chamber 電池ボックスセット						
4500	M switch set Mスイッチセット						
5200	Top frame 上枠						



Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-751260	Set lever セツレバ-カシメ						
2010	Shutter operating ring unit シャッター作動リングユニット						
2060 2510	Front cover (V) " (B) 前カバー (白) (黒)						
2120	Lens release unit レンズ巻戻ユニット						
2130	Lens safety lock レンズ安全ロックカシメ						
3130	Reverse stop claw mount set 逆転止爪取付板セット						
3170	Winding wheel set 巻上輪セット						
3190	Setting cam unit セットカムユニット						
3220	Winding stopper lever 巻止レバ-カシメ						

Parts No. 部品番号	Name 名 称	Shape 形 状	Pcs per Unit 個 数	Page 頁	Ass'y No. 組立番号	Price 単 価	Remarks 備 考
1-753240	Multi operating lever マルチ作動レバー カシメ						
3250	Multi-set lever マルチセツトレバー カシメ						
3340	Crank ring set クランクリングセツト						
3500	F release unit F 解除ユニット						
3520	F release lever (upper) F 解除レバー (上) カシメ						
3530	F release lever (lower) F 解除レバー (下) カシメ						
3590	F release plate (upper) F 解除板 (上) カシメ						
3600	Winding safety lever F 捲上安全レバー (F) カシメ						

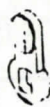




Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-257240	Crank base cover クランク座化粧板		2				
7102	Light baffle paper (right-front) 遮光紙(右前)						
7114	Light baffle paper (right-rear) 遮光紙(右後)						
7122	Light baffle paper (right-center) 遮光紙(右中)				1-751200		
7141	Light baffle paper (left-front) 遮光紙(左前)						
7154	Light baffle paper (left-rear) 遮光紙(左後)						
7161	Bottom light baffle (front) 底面遮光紙(前)						
7171	Bottom light baffle (rear) 底面遮光紙(後)						
7231	Rear light baffle 後面遮光紙						












ZENZA BRONICA

BIRS

Camera body










Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-25-091	Multi exposure lever マルチレバー						
6111	Multi lever ring マルチレバーリング						
6202	Rear limit tight plate リアリミット板						
6661 9190	1. dial cover (v) " (g)				1-25-091		
901	2. dial stopper				1-25-091		

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-255890	Reverse stop claw spring 逆動止爪バネ				1-753100		
5903	Multi link spring マルチリンクバネ				"		
5912	Safety lever (upper) spring 安全レバー(上)バネ				"		
5922	Multi-operating lever spring マルチ作動レバーバネ				"		
5930	Main shaft thrust washer A 主軸スラストワッシャーA				"		
5940	Main shaft thrust washer B 主軸スラストワッシャーB				"		
5950	Spring washer 主軸止バネ座金				"		
5960 5970	Main shaft washer A Main shaft washer B 主軸押止座金 A B				"		
5990	Connecting gear stopper 連結ギヤーストッパー				"		






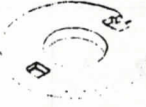
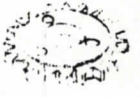




## ZENZA BRONICA

STRS

Camera body

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-255710	Set sun liner セツサンライナー				1-753100		
5760	Connecting gear screw 連結ギヤー止ネジ				"		
5790	Winding stopper claw spring holder 捲止爪ボネ押え				1-753100		
5822	Multi lever set screw マルチレバー止メネジ		2		"		
5831	Gear friction spring ギヤーフリクションボネ				"		
5843	Winding stopper lever spring 捲止レバーボネ				"		
5852	Gear arm spring 連結ギヤーアームボネ				"		
5861	Winding stopper claw spring 捲止爪ボネ				"		
5872	Auxiliary plate spring 捲止補助板ボネ				1-753100 1-753100		
5881	Wind stopper claw spring 捲止爪ボネ		2				

















Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (Y) 単価	Remarks 備考
1-255433	Transmission gear 中間歯車				1-753100		
5442	Connecting gear 連結歯車				"		
5451	Gear arm collar ギヤアームカラー				"		
5462	Connecting gear arm (upper) 連結ギヤアーム(上)				"		
5471	Gear arm screw ギヤアーム止ネジ				"		
5482	Release safety cam リリース安全カム				"		
5492	Winding main gear 捲上主歯車				"		
5500	Winding ratchet 捲上爪車				"		
5510	Reverse stopping claw 逆転止爪				"		
5562	Main shaft cap 主軸押えリット				"		
5572	Main shaft set screw 主軸止ネジ				"		

ZENZA BRONICA

ETRS

Camera body

Parts No. 部品番号	Name 名 称	Shape 形 状	Pcs per Unit 個 数	Page 頁	Ass'y No. 組立番号	Price (¥) 価 単 価	Remarks 備 考
1-255051	Right cover setting stud 右カバー取付け止ネジ						
5162	Winding main shaft 捲上主軸				1-753100		
5170	Winding cam washer 捲上カム座金				"		
5221	Cam spring holder カムバネホル				1-753100 1-753100		
5231	Cam holding nut カム押えナット				1-753100		
5292	Multi-relay lever screw マルチレバースクリュー				"		
5350	Release safety lever (upper) リリース安全レバー(上)				1-753100		
5371	Multi lever axle マルチレバースhaft				"		
5402	Setting screw マルチレバースクリュー				"	8	











Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-254892	Winding safety lever spring F 捲上安全レバーバネ				1-753500		
4912	F. release pin F 解除ピン						
4930	Winding safety lever (upper) F 捲上安全レバー(上)				1-753500		
4941	Safety lever collar F 捲上安全レバーカラー				"		
4953	Safety lever upper spring F 捲上安全レバー上バネ				"		














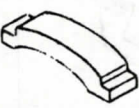
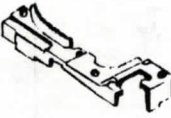





## ZENZA BRONICA

EHS




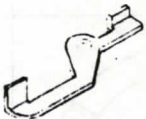

Camera body

Parts No. 部品番号	Name 名 称	Shape 形 状	Pos. per Unit 個 数	Page 頁	Ass'y No. 組立番号	Price 単 価	Remarks 備 考
1-254471	F. release plate collar (upper) F解除板(上)カー		2		1-754500		
4500	F. lever under spring F解除レバー下バネ				"		
4541	F. lever lower spring F解除レバー下バネ				"		
4771	Stopper screw ストッパネジ				"		
4790	Upper plate spring F解除板上バネ				"		
4830	Release plate roller 解除板コロ		4		"		
4841	F. release plate collar (lower) 解除板カー(下)		2		"		
4852	F. release plate collar (upper) 解除板カー(上)		2		"		
4871	F. release lever axle (upper) F解除レバー軸(上)				"		
4881	F. release lever axle (lower) F解除レバー軸(下)				"		

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-253901	Wire holder 配線押え		2				
3920	AE changeover rod spring AE切換棒バネ						
3951	Lens safety link guide レンズ安全リンクガイド						
3960	L. button safety link レンズボタン安全リンク						
4012	Lens button ring レンズボタンリング						
4043	Lens button sleeve 着脱ボタン押え						
4062	Button lock spring レンズボタンロックバネ						
4080	Lens release button レンズ解除ボタン						

Parts No. 部品番号	Name 名 称	Shape 形 状	Pcs per Unit 個 数	Page 頁	Ass'y No. 組立番号	Price 単 価	Remarks 備 考
1-273623	Safety lock plate 安全ロック受板						
3632	Safety lock spring ロック安全ロックバネ						
3705	Shutter speed dial シャッター目盛環						
3713	S. dial lens Sダイヤル窓						
3725	AE switch cover AEスイッチカバー						
3752	M. switch link guide Mスイッチリンクガイド		2				
3773	AE changeover rod guide AE切替棒ガイド						
3783	Switch cover stud A スイッチカバー柱 A		2				
3791	Switch cover stud B スイッチカバー柱 B						
3810	Switch lever axle AEスイッチレバー軸						


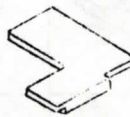

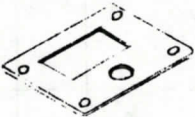
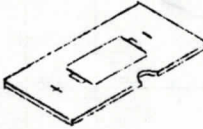



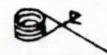




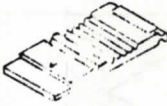







Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-253390	Back coupling claw spring バック結合爪バネ		2				
3401	Back coupling link spring バック連結リンクバネ						
3411	Operating ring spring 作動リングバネ				1-752010		
3421	Lens button safety lever レンズ錠安全レバー						
3431	Safety lever axle レンズ錠安全レバー軸						

## ZENZA BRONICA

ETRS

Camera body

Parts No. 部品番号	Name 名称	Shape 形状	Posper Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-243240	Speed-erin shutter release rod 速リリーズ棒						
3252	MD connector cover MD コネクター 蓋						
3270	Tripod socket (1/4" screw) 三脚ネジ				1-755330		
3281	Tripod mounting shoe 三脚シュー						
3293	Battery chamber bottom plate 電池ボックス底板						
3332	Back coupling link guide バック巻脱リンクガイド						
3340	Link collar バック巻脱リンクカラー						
3350	Battery chamber button spring 電池蓋バネ						
3362	Dark slide safety lever spring 引蓋安全レバーバネ						
3371	Release relay lever spring リリース中継レバーバネ						

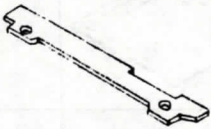

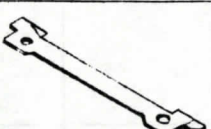
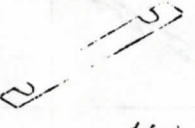
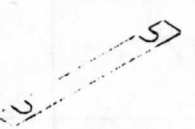
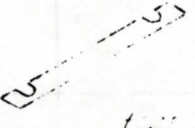

Parts No. 部品番号	Name 名 称	Shape 形 状	Pcs.per Unit 個 数	Page 頁	Ass'y No. 組立番号	Price (¥) 単 価	Remarks 備 考
1-253061	Battery chamber button フリックボタ						
3074	Battery chamber cover 電池蓋						
3141	Back coupling claw バック結合爪		2				
3161	Coupling claw guide バック結合爪ガイド		4				
3161	Back coupling link バック結合脱り爪						
3181	Dark slide connecting pin 引蓋連結ピン						
3212	Safety lever holder 引蓋中継レバー持え						
3221	Dark slide safety latch 引蓋安全掛金						
3231	Safety latch axle 引蓋安全掛金軸						

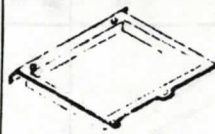
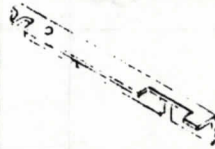


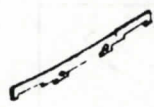




## ZENZA BRONICA

ETRS

Camera body





Parts No. 部品番号	Name 名称	Shape 形状	Pcs. per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 価 単価	Remarks 備考
1-252711	Finder mounting claw ファインダー結合爪		2		1-755200		
2722	Finder mount spring (left) ファインダー結合バネ(左)				"		
2730	Finder mounting spring (right) ファインダー結合バネ(右)				"		
2800	Adjusted liner ピストン調整ライナー						
2810	"						
2830	"						
2850	Socket ring ソケットリンク						

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-252515	Light-baffle frame 画面遮光板						
2603	Top frame light baffle 上枠遮光板		2				
2612	Focusing screen slide stud 聚焦板サレ柱		2				
2642	Screen holder guide 聚焦板押えサレ		2				
2652	Back coupling spring バック結合バネ						
2662	A3 connector set screw AEコネクター止ネジ						
2671	Back coupling spring retainer バック結合バネ取付板						



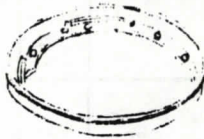




## ZENZA BRONICA

ETRS

Camera body

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-252295	Lens release button レンズ巻戻ボタン						
2307	Lens button ring レンズボタンリング						
2391	Release link set screw リリースリンク止メネジ						
2452	Operating ring stopper 作動リングストッパー						


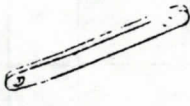













Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-252132	Pin set screw S作動ボ-止ネジ				1-752010		
2142	Spring collar 作動ボ-スカラー				"		
2228	Lens mount レンズマウント						
2241	Operating spring holder (right) 作動ボ-スホルダ(右)						
2251	Operating spring holder (left) 作動ボ-スホルダ(左)						
2270	S button stopper ring Sボタ-止りリング						
2281	S button ring B シャッターボタ-リングB						

## ZENZA BRONICA

WTR 5

Camera body

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-251800	Frame metal (left) 後面遮光壁座(左)						
1810	Frame metal (right) 後面遮光壁座(右)						
1840	Light baffle arm roller D 遮光板アームロラーD	 23.5					adj. 1-251231
1850	Light baffle arm roller E 遮光板アームロラーE	 23.3					adj. 1-251231







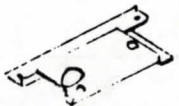
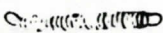

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-251631	Release relay spring リリース継ぎバネ						
1641	Set screw 作動板取付ネジ				1-751200		
1682	Light baffle cover 遮光カバー						
1693	Light baffle cover screw 遮光カバー取付ネジ						
1700	M adjust O-ring ミラー調節O-リング						
1710	M stopper screw ミラーストッパー止ネジ		2				
1740	Adjust cam set screw 調節カム止ネジ						
1751	Mirror holder (right) ミラー持ちえ板(右)						
1761	Mirror holder (left) ミラー持ちえ板(左)						


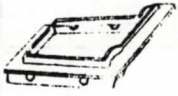










## ZENZA BRONICA

SPRS

Camera body











Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-251460	M arm screw (right) ミラーアーム上ネジ(右)		2				
1471	M arm adjusting cam ミラーアーム調整カム						
1501	Operating plate set roller 作動板セットコロ						
1511	Operating plate roller 作動板コロ		2		1-751200		
1561	Set lever screw セットレバー上ネジ						
1571	Operating plate stud 作動板受台						
1581	Bottom light-tight plate 底面遮光板						
1602	Operating ring spring (right) 作動リングバネ(右)						
1613	M driving lever spring ミラー駆動レバーバネ						

Parts No. 部品番号	Name 名 称	Shape 形 状	Pos.per Unit 個 数	Page 頁	Ass'y No. 組立番号	Price (¥) 単 価	Remarks 備 考
1-251152	Mirror 反射ミラー						
1164	Rear light-tight frame 後面遮光壁						
1210	Light-tight plate axle 遮光板軸		2		1-751100		
1221	Light-tight plate arm 遮光板アーム						
1243	Roller axle 遮光板アームコロ軸						
1270	M guide roller ミラーガイドコロ		2				
1280	M arm screw (left) ミラーアーム止ネジ(左)						
1290	M stopper ミラーストッパ						
1312	M adjusting collar ミラー調整カラー						
1321	M adjusting axle ミラー調整軸						







## ZENZA BRONICA

ETRS

Camera body

Parts No. 部品番号	Name 名 称	Shape 形 状	Pcs.per Unit 個 数	Page 頁	Ass'y No. 組立番号	Price (¥) 単 価	Remarks 備 考
1-250161	Dark slide relay lever axle 31 蓋 中 3 段 レバ - 軸						
0182	Release link spring holder 巻 脱 リンク ボネ 持 ト						
0192	Connecting key spring holder バネ 結合 キー ボネ 持 ト		2				
0204	Dark slide pin sleeve 31 蓋 中 3 段 針 ビン スリーブ						
0213	M switch lever axle M スイッチ レバ - 軸						
0222	M switch lever spring holder M スイッチ レバ - ボネ 持 ト						
0231	M switch link spring holder M スイッチ リンク ボネ 持 ト						
0251	Mirror arm axle (left) ミラー アーム 軸 (左)						
0271	Finder lock spring ファインダー ロック ボネ						
0280	Sleeve set screw スリーブ セット スcrew		2				


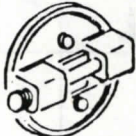
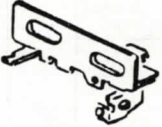

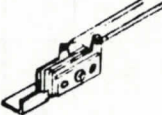

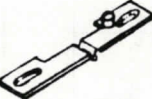
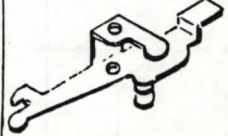


Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price (¥) 単価	Remarks 備考
1-250033	Set lever shaft セトリバ軸						
0054	F-release pin sleeve F解放ピンスリーブ						
0064	Finder lock bearing ファインダーロック軸受け						
0092	Finder lock stud ファインダーロック軸受柱						
0113	Bottom cover stud 底蓋取付柱		3				
0131	Release relay lever axle リリースリレー軸						

ETRS

Camera body (Ass'y)

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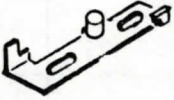

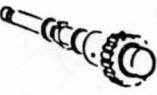
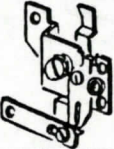
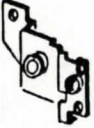

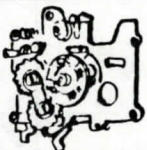
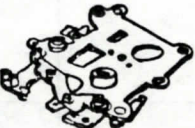

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-75 3235	Multi-relay lever マルチリレーレバーカシメ						
3315	Crank base casting set クランク座セット						
3545	F. release plate (lower) F解除板下カシメ						
4145	Checker lamp set チェッカーランプセット						
4515	Display switch set 表示スイッチセット						
4610	Synch socket シンクソケット						
5285	Focusing screen holder 焦点板押カシメ						
5315	Release lever リリースレバーカシメ						



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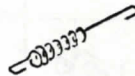




ETRS

Camera body (Ass'y)

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-75 0065	M. switch lever Mスイッチレバーカシメ						
0075	M. switch link Mスイッチリンクカシメ						
0085	AE switch lever AEスイッチレバーカシメ						
1295	Release button set シャッターボタンリングセット						
2095	S. latch set S掛金受板セット						
2105	S. latch base S掛金受板カシメ						
2115	S. latch S掛金カシメ						
3115	Winding unit 捲上地板ユニット						
3125	捲上地板カシメ						
3145	連結ギヤ-アーム下カシメ						

## ETRS



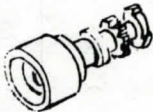



Camera body

Parts No. 部品番号	Name 名称	Shape 形状	Posper Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-284 640	Release lever collar リリースレバー軸カラー						
650	Release return spring リリース戻シバネ						
660	S. latch spring S掛金バネ						
671	Lock claw spring ロック爪バネ						
680	Crank axle クランク軸						
5-770 050	Steel ball スチールボール						

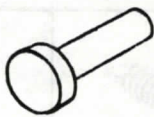
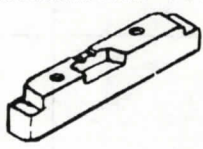


ZENZA BRONICA

ETRS

Camera body

Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-284 490	M. switch link spring Mスイッチリンクバネ						
500	M. switch lever spring Mスイッチレバーバネ						
512	Shutter button ring シャッターボタンリング				1-75 1295		
580	S. release link Sリリースリンク				2095		
590	Click spring クリックバネ						
630	S. button lock claw Sボタンロック爪						


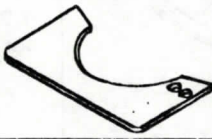


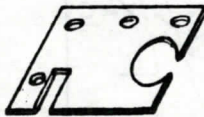
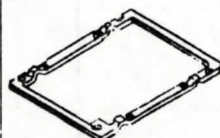



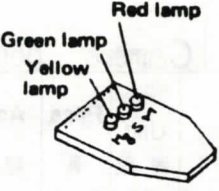
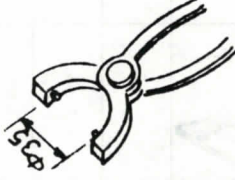
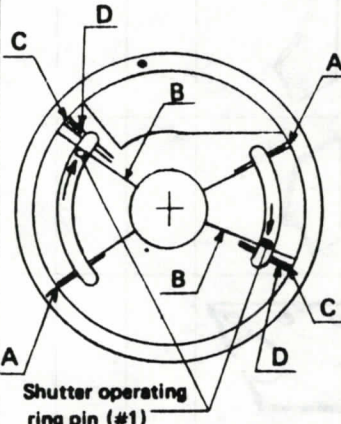
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1-284 120	Cable release pin ケーブルリリースピン						Usable to ETH
240	Focusing screen guide 焦点板ガイド						
281	BC switch spring BCスイッチバネ						
292	Mirror shaft cover ミラー軸カバー						

ZENZA BRONICA

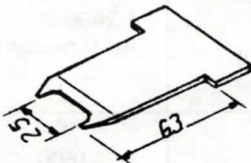
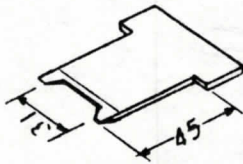
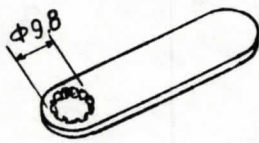
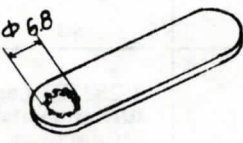
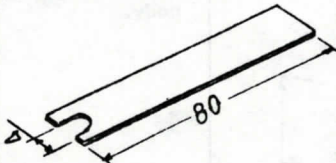
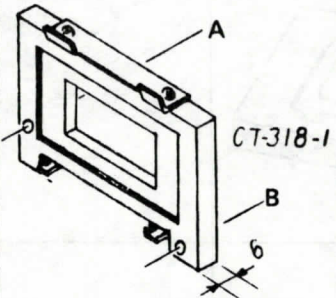
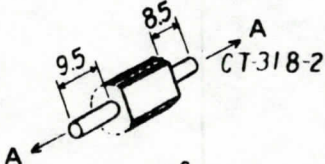
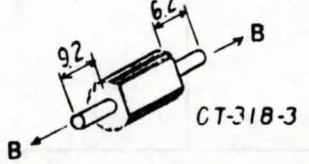
ETRS

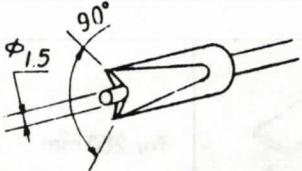
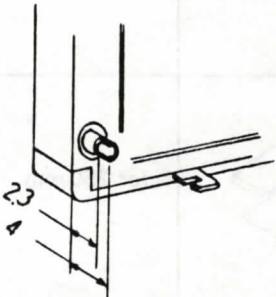
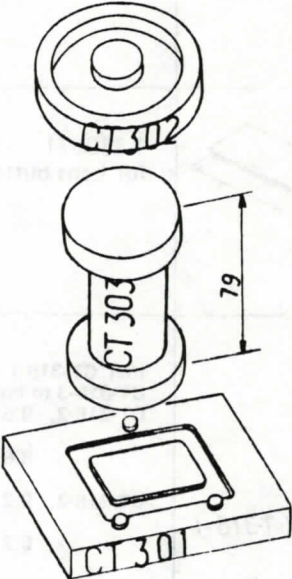
Camera body

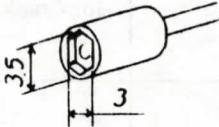
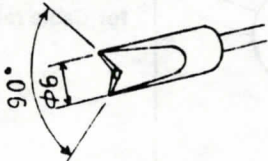
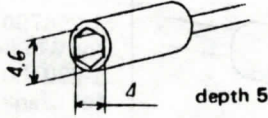
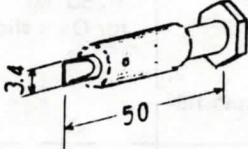
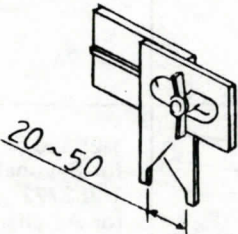
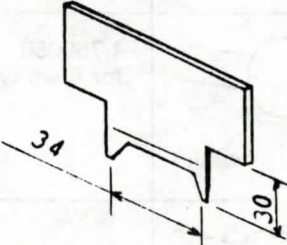
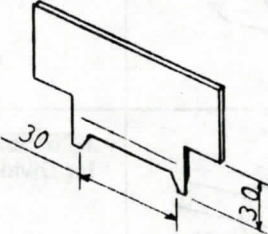
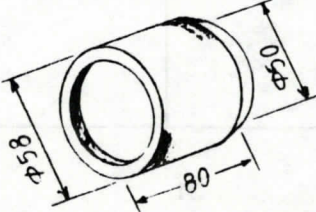
Parts No. 部品番号	Name 名称	Shape 形状	Pcs per Unit 個数	Page 頁	Ass'y No. 組立番号	Price 単価	Remarks 備考
1-284 820	Leatherette (S. dial cap) ダイヤル蓋革		2				Usable to ETR
010	Leatherette (right-front) 右カバー革(前)						
020	Leatherette (right-lower) 右カバー革(後下)						Usable to ETR
030	Leatherette (right-upper) 右カバー革(後上)						Usable to ETR
041	Leatherette (left cover) 左カバー革						
070	Frame gate 画面枠						
080	Frame gate (Adj. II) 画面枠(調整用II)						
090	Frame gate (Adj. I) 画面枠(調整用I)						
103	Name plate ETRS銘板						

<p>1-754500-PT M switch set adjusting tool</p>		<p>1-754500 for M switch set M switch set is adjusted following manner. (Set to camera body with battery.) When winding is charged, the red lamp is ON, and half depressing of release button, the red lamp is OFF, next the green lamp is ON, the yellow lamp is ON during the shutter is open.</p>
<p>1-210150-AJ-2 Wrench</p>		<p>1-210150 for shutter unit fixing ring.</p>
<p>CT-321 Winding stroke inspecting tool</p>		<p>(Set CT-321 to camera body without lens) 1) When mirror is upper position, the pin (#1) situates intervals A. 2) When winding is starting, the pin is reached line B simultaneously. 3) When winding is stop, the pin situates intervals C. 4) The pin is not over run line D under any conditions.</p>

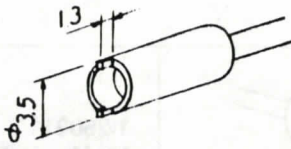
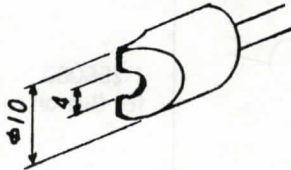
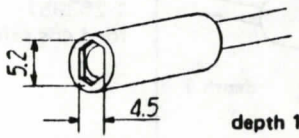
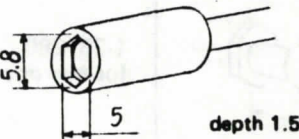
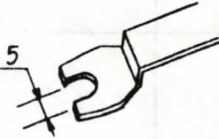
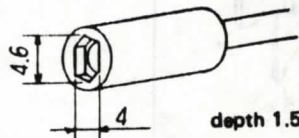
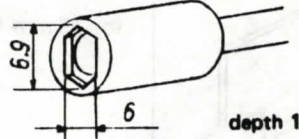
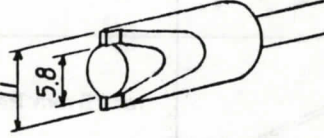
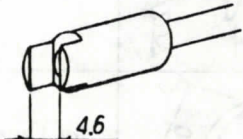


1148-AJ-1 Wrench		for 250 mm
1148-AJ-2 Wrench		for 250 mm
1-252280-AJ Wrench		1-252280 for Shutter button ring. 1-254010 for Lens button ring.
1-254080-AJ Wrench		1-254080 for Lens release button.
1-253571 Wrench		1-253571 for Lens button shaft
CT-318-1 -2 -3 Back relay action testing tool	  	<p>(Set CT-318-1 to camera body, and insert CT-318-2 and CT-318-3 to hole A or B.)</p> <p>CT-318-2, 9.5 mm Winding is stop, also release button is depressed. 8.5 mm Winding is not stop, also release button is not depressed.</p> <p>CT-318-3, 9.2 mm Back release button is depressed, also release button is not depressed. 6.2 mm Back release button is not depressed, also release button is depressed.</p>

<p>1-260961-AJ Screw driver</p>		<p>1-260961 for F release cylinder B.</p>
<p>1-261611-CT Stroke adjusting tool</p>		<p>1-261600 for F release shaft A.</p>
<p>CT-301 -302 -303 Camera length standard</p>		<p>1-252227 Lens mount (Use with surface plate and dial gauge) Set dial gauge "0" with total length of 3 tools, then put camera body on the CT-301, and put CT-302 on the lens mount (1-252227) of the body, CT-303 is taken out. See dial gauge meter and adjust the length of the camera body.</p>

1-250211-AJ Socket driver		1-250211 for M switch lever axle.
1-256060-AJ Screw driver		1-256060 for Button ring nut.
1-253951-AJ Socket driver		1-253951 for Lens safety link guide.
1-251280-AJ Screw driver		1-251280 for Mirror arm setting screw.
1144-AJ Free size wrench		
1-210180-AJ-3 Wrench		for 75 mm Front lens ring nut.
1-210180-AJ-4 Wrench		for 75 mm Rear lens ring nut.
1-210482-AJ Rubber barrel		for Lens name ring.



1-255670-AJ Screw driver		1-255670 for Crank catch setting screw.
1-256593-AJ Screw driver		1-256593 for Cable release socket.
1-255790-AJ Socket driver		1-255790 for Winding stopper claw spring holder. 1-230700 for Crank axle B (Speed grip).
1-250160-AJ Socket driver		1-250160 for Dark slide relay lever axle.
1-255230-AJ Wrench		1-255230 for Cam holding nut.
1-250130-AJ Socket driver		1-253561 for Bayonet pin spring holder 1-253772 for AE changeover rod guide.
1-252391-AJ Socket driver		1-750050 for Flash synchro socket (old type).
1-252394-AJ Screw driver		for Flash synchro socket (new type).
1-261550-AJ Screw driver		1-261552 for Dividing plate axle.

### 30. Battery Checker Lamp won't Light-on or Keep Light-on

Proceed as follows:

- 1) Check whether the lamp itself is normal or not.  
On Fig. 1, apply regular tester with its minimum resistance measuring range (under 1 ohm), "A" to "-" side and "B" to "+" side respectively. On this condition, the lamp should light-on. If not, replace A284250.
- 2) If the lamp functioning properly, check electric conductivity between BC switch spring (A284281) and riveting portion ("C" on Fig. 1) of BC board (A755585) using regular tester.  
If current is not passing, loosen screw (B813255) and adjust the position of switch spring so that they are in good conductivity. If they are keep in contact, the lamp stay ON.
- 3) Place imitation battery into the battery chamber of the camera body, using voltage regulator, make sure the lamp lights-on at 5V and lights-off at 4.7V. If the lamp does not light-on at 5V, adjust VR1 in Fig. 1. If beyond control of VR1, replace BC board.
- 4) After replacement of BC board, re-check above procedures.  
If the lamp still does not function properly, check wiring referring to page 26.
- 5) If the lamp stays light-on, since most conceivable cause of problem would be short-circuit due to broken board or short-circuit between wires, check the procedure (2) to (4).

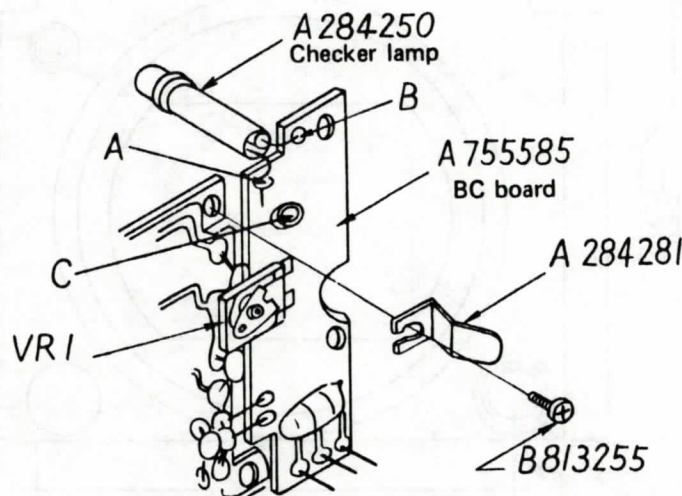
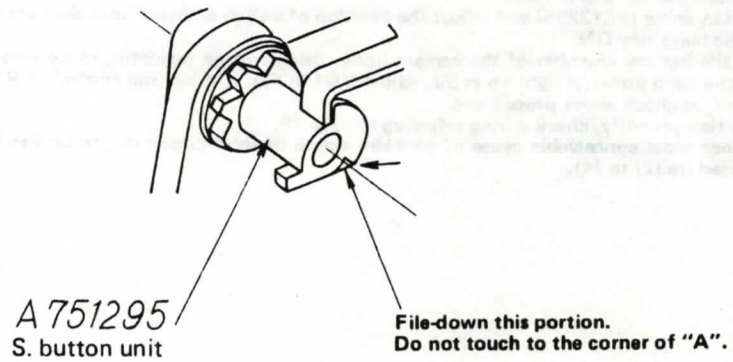
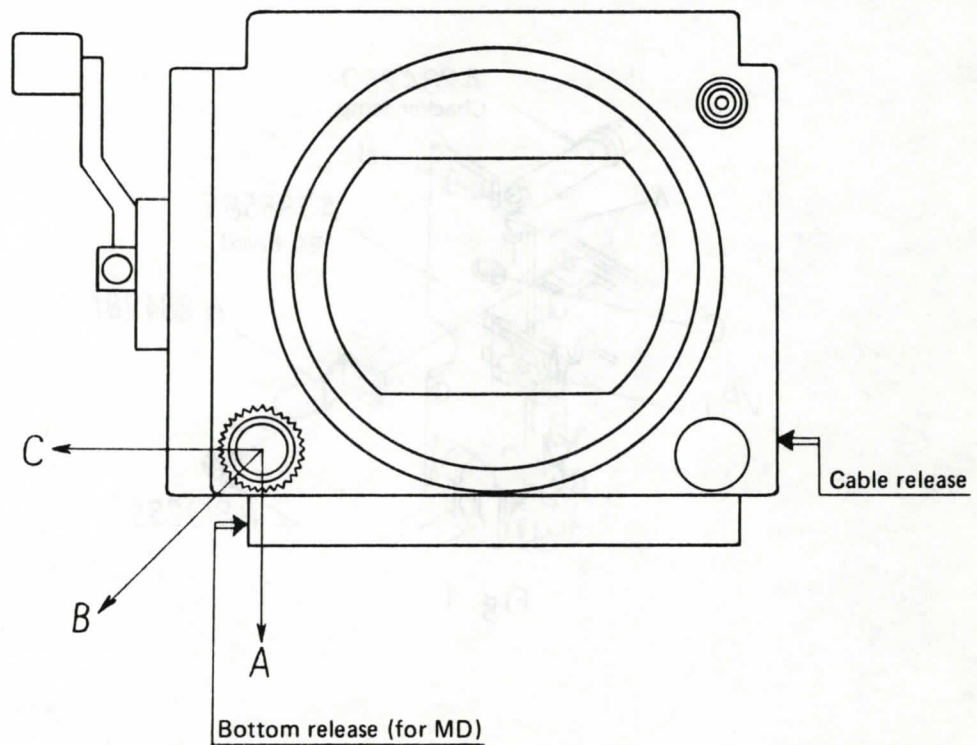


Fig. 1



**Fig. 2**



**Fig. 3**



## 29. Click Position and Operation of Shutter Button Ring (Fig. 3)

Shutter release button should operate in the following table in accordance with click positions of shutter button ring.

Position	Operation
A	Shutter release button, cable release & bottom release function
B	Shutter release button lock, and rest function
C	All lock

If above operations do not function properly, check following points;

- 1) Movement of click spring (A284591) and ball (B770050).
- 2) Movement of release lever (A755315) and S. button lock claw (A284630).

If one of above check points do not function properly, proceed as follows;

- 1) Is ball (B770050) in certain position?  
Make sure that the ball moving smoothly when right side cover removed. If the ball and cover being in contact when put the ball in higher position, give slight space between ball and cover.
- 2) Check the movement of release lever (A284620). Then check the movement of S. button release shaft (A284550). Using cable release, depress until it stops, then return it gently. At this time, if release shaft is sticky and won't return, lift up release shaft slightly. If this makes release shaft (A284550) return, replace it with longer one (A284551).

If above will not work, place a washer between camera body and S. button unit (A751295). In other words, restrict the play between camera body and S. button unit. Be careful not to take the play away completely so that the click movement of button ring will not become too stiff. (Fig. 1)

- 3) If the edge of S. button lock claw (A284630) is in contact with the grooved portion of shutter button ring unit (A751295), file down the grooved portion. When file down, turn button ring towards "B" click slightly. (Fig. 2)

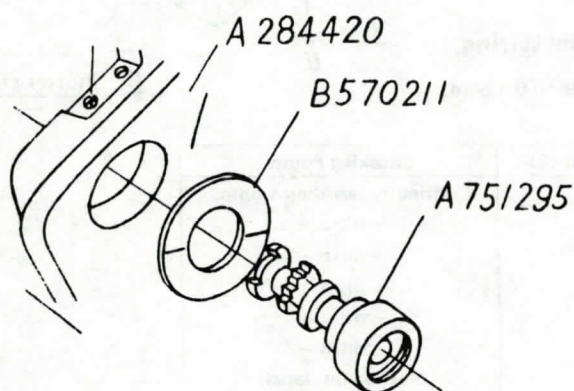
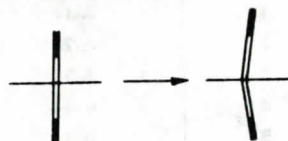
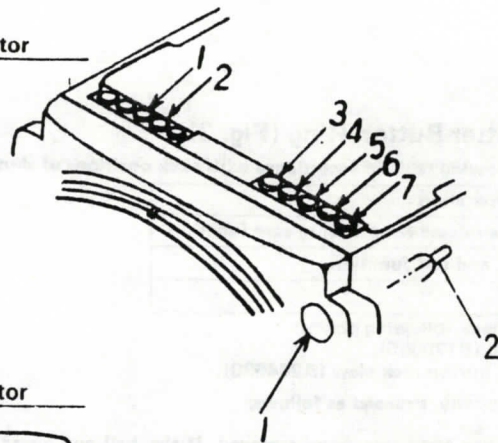


Fig. 1

Note: At Fig. 1, bent washer (B570211) as illustrated when insert.

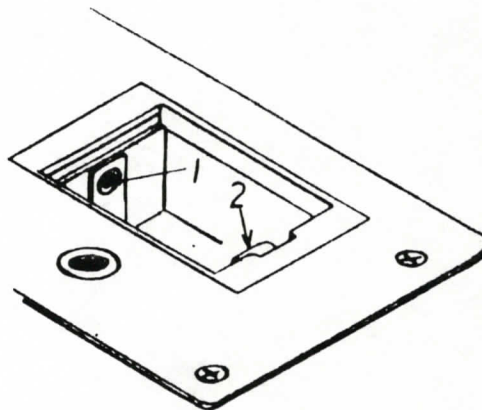
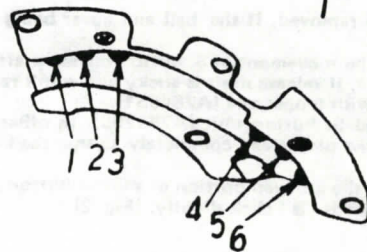


**B** AE Connector

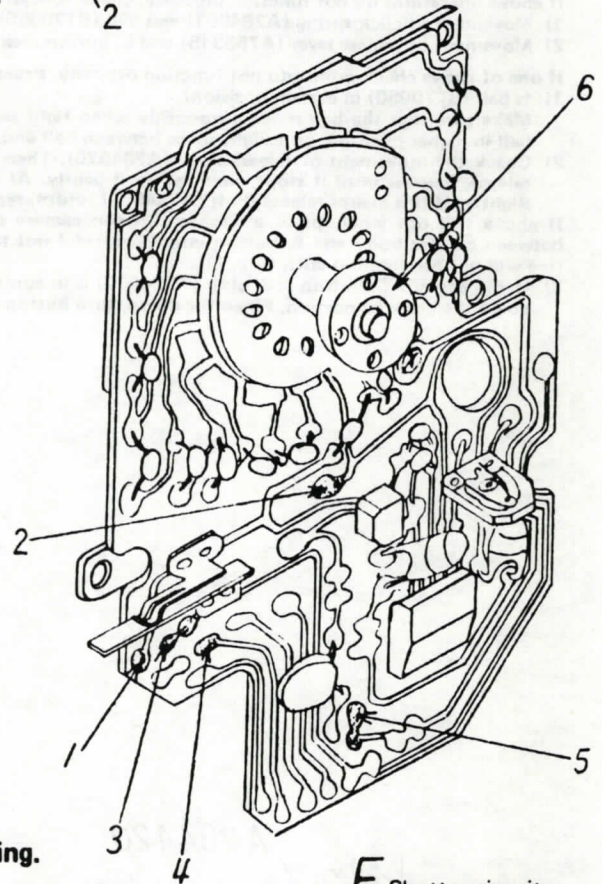


**C** Shutter circuit

**A** Lens connector



**D** Battery chamber



**E** Shutter circuit

### Checking Continuity and Insulation in the Wiring.

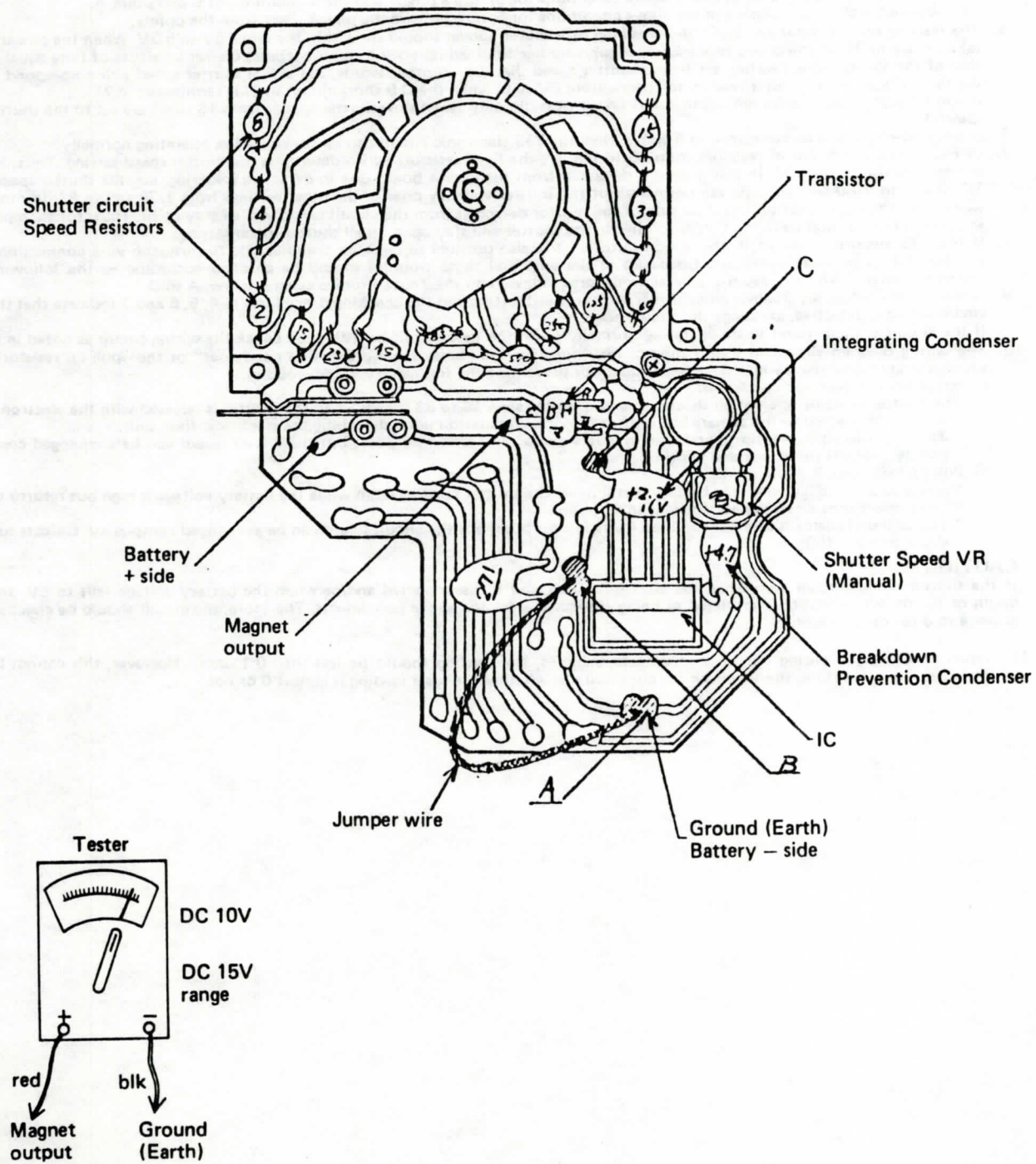
Step 1 – Use a digital multi-tester that can measure up to 0.1 ohm.  
Step 2 – Test in the following sequence.

Sequence	Test Point (1)	Test Point (2)	Checking Points
1	A-1	B-1	Continuity less than 1 ohm.
2	A-2	B-4	– ditto –
3	A-3	B-2	– ditto –
4	A-4	E-4	– ditto –
5	A-5	C-2	– ditto –
6	A-6	B-3	– ditto –
7	A-6	C-1	Must be insulated.
8	A-6	E-6	Continuity less than 1 ohm.
9	B-5	E-5	– ditto –
10	B-6	E-3	– ditto –
11	B-7	E-2	– ditto –
12	D-1	D-2	Must be insulated
13	D-1	E-2, E-3	Continuity less than 1 ohm.
14	D-2	E-6	– ditto –

Using regular Tester, check insulating condition between 1/8 and 1/15 on shutter dial. Apply each output terminals of the tester to E2 and E6.  
Then turn the shutter dial 2 or 3 times to both directions from 1/8 and 1/15 position and make sure insulating condition.  
Continuity in all instances is less than 1 ohm. If more than 1 ohm, check very carefully for poor soldering connection or for a break in the wire.



## Electronic Control Circuit





## 28. ETRS Electronic Control Circuit Repair Manual

1. When the electronic control circuit is defective, it is possible to consider the following troubles:—
    - a) Shutter stays open,
    - b) Shutter operates at 1/500 sec. at all shutter speed setting and
    - c) Shutter stays open or operates at 1/500 sec. on some of the shutter speed settings only.
  2. If the shutter speed settings are not accurate, they can be adjusted with the "shutter speed VR (variable resistor)" in the illustration but a "shutter speed tester" will be required for this purpose.  
Approximate adjustments are, however, possible in the slow shutter speed settings of 1S, 2S and 4S, without such equipment.
  3. First, use a tester and check whether the electronic control circuit is working normally or not. If the tester indicates normal operation, there is no reason for exchanging the electronic circuit 733.
  4. The actual checking procedure of the electronic control circuit, in the above case, is as follows:—
    - 1) Take off the left side cover and remove the lens from the lens mount.
    - 2) Connect point A with point B, with a jumper wire, as shown in Fig. 1.
    - 3) Insert the battery into the battery chamber without mistaking the polarity.
    - 4) Set the range of the tester for DC 10V to DC 15V. (Voltage used is 0 to 6V.)
    - 5) Place the red lead on the Mg (magnet output) terminal and the black lead on the ground (earth) terminal, as shown in Fig. 1.
    - 6) Without making any change in the above conditions for 5), use a pincer and short-circuit point C and point B.
    - 7) Without making any change in the above conditions for 5), now remove the pincer away from the points.
  5. The reading on the tester for 6), in the checking procedures above, should be within the range 5V to 6.3V. When the pincer is taken away in 7), in the above procedures, check whether the reading on the tester becomes 0 after an elapse of time equal to that of the shutter speed setting set to the shutter speed dial. Or, in other words, the actual shutter speed will correspond to the time it takes for the tester reading to change from 6V to 0, when the C-B short-circuit in 6) is terminated in 7).  
It can be seen, from the foregoing, that this test is possible only when slow shutter speeds from 1S to 4S are set to the shutter speed dial.
  6. If the time-elapse can be confirmed in 5 above, then the 733 electronic circuit can be considered as operating normally.
  7. In Fig. 1, the top group of resistors from 8S to 500 are the fixed resistors which determine the shutter speed setting. Thus, for example, if the resistor 30, in this group, is detached from the circuit board due to defective soldering, etc. the shutter speeds 1/500 sec. to 1/60 sec. will operate normally but the shutter will stay open at the other settings from 1/30 sec. to 8S. In other words, the shutter speeds on the slow side of the resistor detached from the circuit board will all stay open. Thus, for example, should the resistor 500 be in the OPEN condition, the shutter will stay open on all shutter speed settings.
  8. If the 733 electronic circuit is operating normally, it is also possible to consider troubles due to mistaken wire connections, short-circuiting between wires and breakages in the wire and these troubles should be checked according to the following "Attached Sheet" which is also the general procedures followed on the Zenza Bronica assembly line. A to D
  9. If the tester reading for 5 shows an incorrect shutter speed setting and the checking procedures in 4, 5, 6 and 7 indicate that the circuit board is defective, exchange the circuit board.  
If the circuit is then found to be operating normally (with the new circuit board), then check the wiring circuit as noted in 8.
  10. The wiring diagram shown in Fig. 1 may or may not have the "breakdown prevention condenser" or the "pull-up resistor", which are additional parts which have been added for preventing the following specific troubles.
    - a) Breakdown prevention condenser:  
The shutter remains open at all shutter speeds or at the slow 1S to 8S speeds when the shutter is released with the electronic flash unit connected to the camera but returns to normal operation upon detaching the electronic flash unit.  
\* The breakdown prevention condenser is not supplied for repair purposes but the circuit board can be exchanged completely. Defects run about one per thousand.
    - b) Pull-up resistance 8.2 kilo ohms:  
Voltage is about 6.3V when the battery is still new. The shutter remains open while the battery voltage is high but returns to normal operations when the voltage falls to 5V.  
\* The pull-up resistor is also not supplied for repair purposes but the circuit board can be exchanged completely. Defects run about one per 150.
- CAUTION:**  
If the shutter remains open even when the electronic flash unit is disconnected and/or when the battery voltage falls to 5V, the origin of the defect cannot be considered as being the same as for the above two defects. Therefore, the circuit should be checked as per 4 to 8 for other reasons.
11. When checking the wiring circuit according to page 28, the reading should be less than 0.1 ohm. However, this cannot be measured and, therefore, simply check for continuity or whether the scale reading is almost 0 or not.

ETRS

# Technical Bulletins

ETRS

Technical  
Bulletins



LENZA  
BRONICA

652 Bijogji, Toda-shi, Saitama-Pref. 335, Japan  
Telephone (0484) 22-0003  
Telex Call No. 02962733 BRONIC J  
FAX: (0484) 21-2413  
Cable Address: "BRONICA WARABI"

HINDAPHOTO/GMI PHOTOGRAPHIC, INC.  
1776 NEW HIGHWAY  
FARMINGDALE, N.Y. 11735

Date: October 1985

TO ALL AUTHORIZED BRONICA WARRANTY STATIONS

REF: B.T.N. - 005/85  
\*\*\*\*\*

Gentlemen:

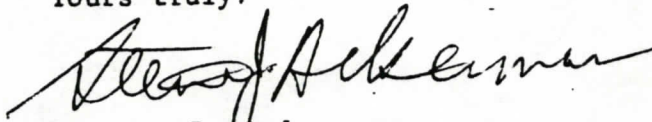
We are sending you herewith following Repair Instructions:

Repair Instruction for:

1. Shutter Operating Ring (August 28, 1985) + (1-20-87)
2. Changing of M. switch link set screws (August 28, 1985)
3. Change of washer for set lever (August 28, 1985)
4. Adding a Set Screw on the Right Cover 02010133 (August 27, 1985)  
Change of fixing method of Film Back Coupling Claw
5. Change of Left Cover set 02910231 (August 26, 1985)

Thank you for your attention to the above, we remain,

Yours truly.



Steven J. Ackerman

GMI Service Manager

Encls.

July, 1987

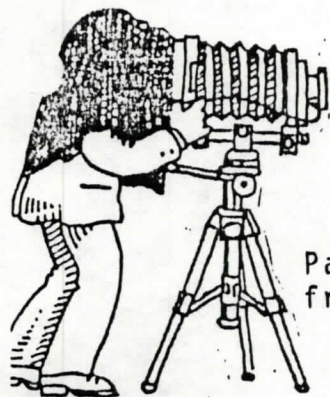
TECHNICAL INFORMATION BULLETIN

#1

(1) SUBJECT: SHUTTER CIRCUIT BOARD PART # 02-912000

The earlier three models of shutter circuit boards for the Bronica ETRS and SQ, Part Numbers 1-754100, 1-754111, and 10-912500 have now been replaced by Part Number 02-912000 for the ETRS and SQ Camera Bodies.

In addition, you are also required to replace the following parts when replacing the older body shutter circuit boards with the new part described above.



<u>PART #</u>	<u>DESCRIPTION</u>
02-010830	BC Relay Board
01-284282	BC Switch Spring

Part Number 1-755585, BC Circuit Board, should be removed from your parts listing. It is no longer available.

IMPORTANT The new type Part #02-912000 CANNOT be used in the model ETR Camera Body. Any ETR Bronica Body requiring shutter circuit replacements should be sent to us in New York for an estimate and service.

(2) SUBJECT: SIGNAL CYLINDER PART # 10-020040

This part fits into the new Part Number 02-020801, connecting plate. This simplifies repairs to magazines with broken pin sockets. The older and still available connecting plate, #02-020010, has the cylinder built in as shown in the assembly chart in our red service manual.

(3) The Society of Photo-Technologists in Denver, Colorado recently published a Journal and Service Note Book on the Bronica ETRS System. It is the January/February 1987 Issue. Those of you that are not members may contact SPT at (800) 525-9710. Ask for Elsa or Larry.

If you have any questions regarding any of this information or if you are interested in technician training here in Farmingdale please be sure to contact me.



SENZA  
**BRONICA**

**BRONICA CO., LTD.**

652 Bijogi, Toda-shi, Saitama-Pref. 335, Japan  
Telephone (0484) 22-0003  
Telex Call No. 02962733 BRONC J  
FAX (0484) 21-2413  
Cable Address "BRONICA WARABI"

Date: October 16, 1986

Ref. B.T.N. - 001/86

Gentlemen:

Ref: Request to change parts numbers on your parts list  
=====

Because of our internal re-arrangement of parts number coding,  
the following changes have been made recently. Therefore, please  
kindly revise your parts list accordingly.

<u>New Parts No.</u>	<u>Old Parts No.</u>	<u>Description (Model)</u>
01226180	01222720	Leatherette (Upper)
01226150	01222730	" (Rear)
01284010	01257002	" (Right Front)
01284030	01257010	" (Right Rear)
01284020	01257020	" (Rear Lower)
01284040	01257050	" (Left Cover)
01290181	01257060	" (S. Dial Cap)
01284760	01261062	Release Button Leatherette
01284780	01261970	Film Winder Leatherette
01260818	02020700	Connecting Metal
01226000	01222211	AE Finder Base Plate

Since above change of parts numbers preserve the inter-  
changeability of parts itself, please place your spare parts  
order by the new parts numbers from your next order.

While we regret for any inconveniences caused, we request your  
kind understanding and cooperation.



Date: October 16, 1986

REPAIR INSTRUCTION

=====

Ref. B.T.N. - 002/86

Page: 1/2

Model: GS-1 Camera Main Body

Phenomena: No shutter cocking/film transport possible

Although it is very rare case, we have experienced the above trouble in domestic market. The cause of trouble lay delicate timing between components parts inter-related.

In order to avoid such delicate timing, we have effected following changes;

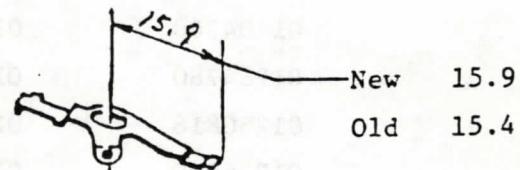
1-1. Nature of trouble:

Consecutive winding is not possible when shutter is released just before wind-stop position.

1-2. Remedy:

In order to avoid 20918730 winding claw become wind-stop condition at its wrong timing, the stroke of 20014462 winding lever has been increased by 0.5mm.

20014462 Winding Lever (New)



2-1. Nature of trouble:

Consecutive winding is not possible after shutter is released with the combination of shutter cocked body (shutter being cocked at multi-exposure lever set horizontally and returned to vertical position) and film-transported filmback.

2-2. Remedy:

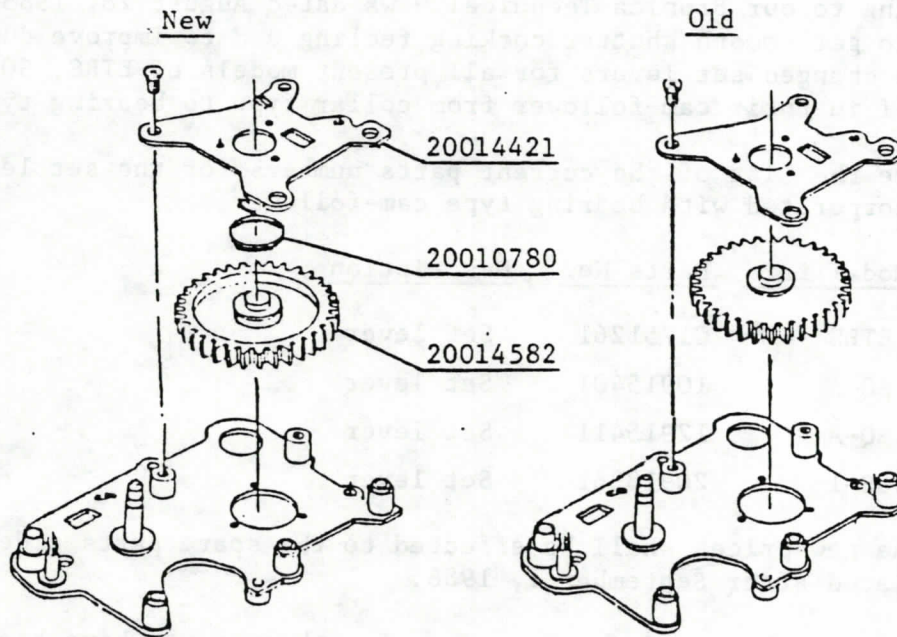
For secure function of back-lash after wind-stop, application position of friction spring as well as its relative parts have been changed as illustrated.

Revised Parts:

Page: 2/2

<u>Parts No.</u>	<u>Description</u>	<u>Remarks</u>
20010780	Friction spring	Newly added
20014421	Winding holder	Groove for spring hook installed
20014582	G2 gear	Appearance change

In relation with this revision, 20010770 friction spring shall not be used any more.



**BRONICA CO., LTD.****BRONICA**

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Telex Call No. 02962733 BRONC J  
FAX: (0484) 21-2413  
Cable Address "BRONICA WARABI"

Date: October 16, 1986Ref. B.T.N. - 003/86  
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Gentlemen:

Ref: Set Levers

=====

Referring to our Bronica Technical News dated August 28, 1985, in order to get smooth shutter cocking feeling and to improve durability, we have changed set levers for all present models of ETRS, SQ-A, SQ-Am and GS-1 in their cam-follower from collar type to bearing type.

Here are the list of the current parts numbers for the set levers, which are incorporated with bearing type cam-follower;

<u>Model for</u>	<u>Parts No.</u>	<u>Description</u>
ETRS	01751261	Set lever
SQ-A	10915401	Set lever
SQ-Am	12915411	Set lever
GS-1	20918361	Set lever

(\*): The new prices shall be effected to the spare parts orders to be placed after September 1, 1986.

As indicated above, since the prices for those parts have been also revised, please pen and ink your parts price list accordingly.

Further, please note that the old set levers of collar type have been discontinued in their production. Therefore, we will supply you with the current set levers, which are interchangeable with the old ones, even your spare parts orders are placed by old parts numbers. In this connection, for those orders reaching us until the end of August 1986 including all those already placed with us shall be supplied with old prices.



ZENZA  
BRONICA

662 Bijogi, Toda-shi, Saitama-Pref. 335, Japan  
Telephone (0484) 22-0003  
Telex Call No 02962733 BRONC J  
FAX (0484) 21-2413  
Cable Address "BRONICA WARABI"

Date: October 16, 1986

Ref. B.T.N. - 004/86  
-----

Gentlemen :

Subject : Modified Parts for SQ-J 120/220 Film Backs

Nature of trouble : Frame skipping / slipping may occur when  
SQ-J 120/220 Film Backs are used with  
SQ-Am camera body

To avoid such a trouble, we have modified "Dividing Plate Set"  
for SQ-J 120/220 Film Backs respectively.

When you encounter such a kind of trouble, you are advised to  
replace with new (modified) Dividing Plate Set. In addition,  
when you order for Dividing Plate Set for SQ-J 120/220 Film Backs  
as repair parts, new parts number should be referred from the  
next time since old parts are no longer available.

<u>Description</u>	<u>New Parts #</u>	<u>Old Parts #</u>
Dividing Plate Set (120J)	1092958 <u>1</u>	1092958 <u>0</u>
Dividing Plate Set (220J)	1092973 <u>1</u>	1092973 <u>0</u>

Please change Parts Numbers on your parts list accordingly.

Thank you for your attention to this matter.

Date: October 16, 1986

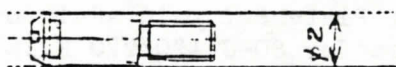
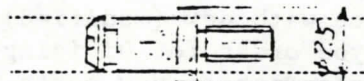
Ref. B.T.N. - 005/86

Gentlemen :

We wish to advise that we have had change of parts as follows :

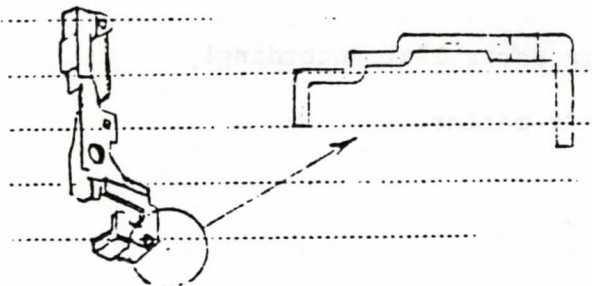
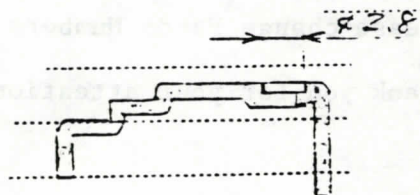
1. Re : Part # 20010401 Coupling Claw Spring Holder for  
GS-1 Main Camera Body

<u>Description</u>	<u>New Part #</u>	<u>Old Part #</u>
Coupling Claw Spring Holder	20010402	20010401

NEWOLD

2. Re : Part # 01253726 AE Switch Cover for ETRS Main Camera Body

<u>Description</u>	<u>New Part #</u>	<u>Old Part #</u>
AE Switch Cover	01253727	01253726

NEWOLD

Depth = 0.7

Please change Parts Numbers on your parts list accordingly.

Thank you for your attention.

Date: November 7, 1986

Ref. B.T.N. - 006/86

## REPAIR INSTRUCTION

=====

### PROCEDURE OF REPLACING SPROCKET CHAMBER (PART #10027444) FOR E-135 FILM BACKS

Model : 135 Film Back (Normal & Wide) for ETRS

Phenomena : unstable film winding ( overlapping )

#### Part 1. Disassembling

Firstly, take-out the Film Holder from the 135 Film Back.

Then, please refer to the attached sketch and disassemble the back as follows :

- 1) Take out total 9 pieces of screws ① & ② .
- 2) Remove Back Front Plate Set ③ .
- 3) Separate Outer Shell Set ④ from Connecting Plate Set ⑤ by taking out a screw ⑥ and 5 pieces of screw ⑦ .

Next, take off the Sprocket Chamber by disassembling right side of outer shell set as follows :

- 4) Take out Leatherette ⑧ , screw ⑨ (counter clockwise type) and Manual Film Winder ⑩ .
- 5) Take off Leatherette ⑪ , 3 pieces of screw ⑫ , a screw ⑬ and M. Right Side Cover Set ⑭ .
- 6) Remove 4 pieces of screw ⑮ and Light Tight Plate Right (Upper) ⑯ .
- 7) By taking off 2 pieces of screw ⑰ , you can separate ⑱ , ⑲ and ⑳ respectively.
- 8) Turn the Film Counter ㉑ slightly to counter clockwise direction, then you may see Stopper Angle ㉒ .  
Stopper Angle ㉒ can be disassembled by taking out a screw ㉓ .
- 9) Remove 2 pieces of screw ㉔ , Film Counter Stopper ㉕ , Film Counter Spring ㉖ and Film Counter ㉗ .
- 10) Remove E Ring ㉘ and Wind Stopper Claw ㉙ .
- 11) Remove Spring ㉚ and F. Release Lever ㉛ .
- 12) Remove Spring ㉜ (from the side of Right Side Cover Pillar B Spring ㉝), and the screw ㉞ .
- 13) Take off the screws ㉟ , ㊱ and Right Side Cover ㊲ .
- 14) Take off Screws ㊳ and Starting Lever ㊴ .

In this case, please pay attention not to lose Guide Collar B ㊵ since this part may be removed together with the Screw ㊶ or Starting Lever ㊷ .

Cont'd.....



- 15) Remove screws (38) & (39), so as to enable you to take off the Sprocket Chamber (40). Then you can replace old Sprocket Chamber with new one (Part #10027444).

Note : Since light tight plates have been stuck around the Sprocket Chamber (40), please carefully stick those light tight plates again on the exact same place after you replaced the old Sprocket Chamber with new one.

## Part 2. Re-assembling

After you changed the Sprocket Chamber, you may re-assemble the Outer Shell of 135 Film Backs in accordance with the opposite manner of disassembling as mentioned above.

However, we wish you to pay attention to the following points :

- 1) Please make sure if the new Sprocket Chamber (40) and Light Tight Plates have been fitted to the correct position surely.
- 2) Please check the functions of levers, springs, counter, etc. soon after reassembled such kind of part.
- 3) Stopper Angle (20) should be reassembled when the Film Counter Spring (24) has been rolled up about a half (1/2) turn.
- 4) To meet the position of both a mark on Light Tight Plate Right and Numbers/Dot Marks on Counter Plate, you may adjust the edge of Film Counter Stopper (23), (the side where a long hole locates), and fix the position by screw (22).
- 5) Please make sure if the screws have been tightly fixed.

## Remarks :

This repair instruction is for 135 Film Backs for ETRS, however the process / procedure itself is the same as those for 135 Film Backs for SQ even though some parts name/numbers are slightly different from those for ETRS.

# I M P O R T A N T      N O T I C E =====

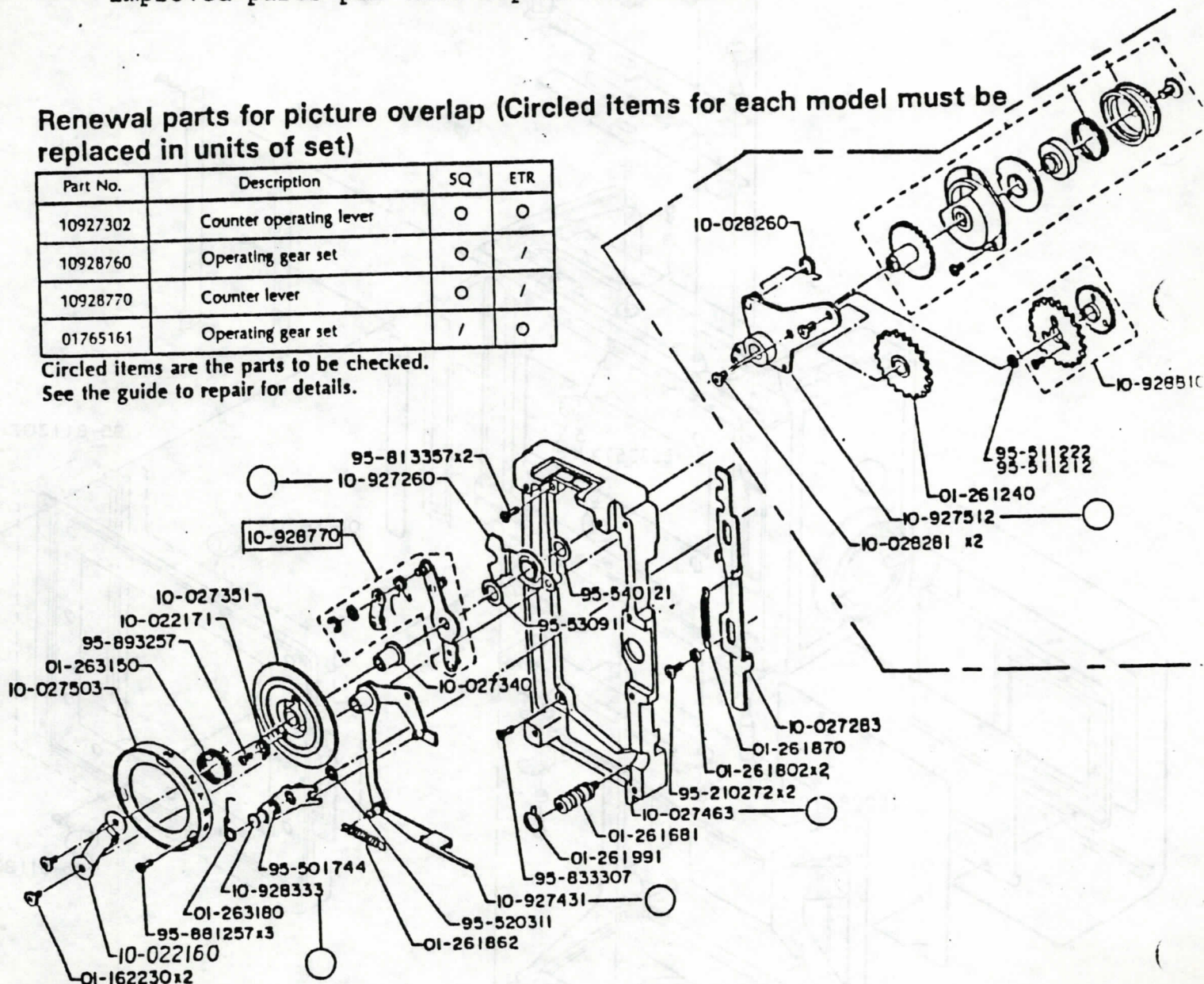
You must check carefully in advance if the 135 Film Backs on your hand have been already modified as per the item No. 1. " Renewal and checking parts for picture overlap, repair for film with flaw " mentioned in " 135 BACK REPAIR INSTRUCTION " which is being filed in the " ZENZA BRONICA SERVICE " (Cover colored with gray).

If the modification (See chart shown hereunder) has still not yet been done, winding problem may still happen if you replaced old Sprocket Chamber and Film Holder with newly improved parts per this repair instruction.

**Renewal parts for picture overlap (Circled items for each model must be replaced in units of set)**

Part No.	Description	SQ	ETR
10927302	Counter operating lever	○	○
10928760	Operating gear set	○	/
10928770	Counter lever	○	/
01765161	Operating gear set	/	○

Circled items are the parts to be checked.  
See the guide to repair for details.



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Date: November 7, 1986

Ref. B.T.N. - 007/86

Gentlemen :

Ref : Change of Motor for SQ-Am Camera Body

Due to discontinuation of current Motor (Part #01232300), the motor has been changed into new motor (Part #01232800).

Although outer shape of the New Motor is quite same as current one, new motor is colored with black for your easy distinction.

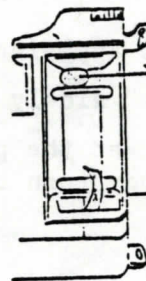
<u>Item</u>	<u>New Part #</u>	<u>Old Part #</u>
Motor	01232800	01232300

The price of the Motor remains unchanged.

In this connection, the identification mark on SQ-Am camera body which carries new motor has also been changed as follows :

<u>New Mark</u>	<u>Old Mark</u>
Numerical 1 (black stamp)	Numerical 0

Location of the Mark :



Mark

Battery Chamber on SQ-Am main body

Note : When the current motor is replaced with new motor, volume adjustment on the circuit board is needed. Therefore, please refer to the Technical News Ref. B.T.N. - 008/86 dated November 7, 1986.



Date: November 7, 1986

Ref. B.T.N. - 008/86

Gentlemen :

Ref : Adjustment of the Volume (VR-2) on Circuit Board for  
SQ-Am main Camera Body.

Further to our Technical News Ref. B.T.N. 007/86 dated November 7, 1986, Volume (VR-2) on the circuit board for SQ-Am main body to be adjusted as follows when old motor (Part #01232300) has been replaced with new motor (Part #01232800).

Level of " VR-2 "

New Motor	_____	DC +4.5V
Old Motor	_____	DC +4.0V

Procedure for adjusting the Volume " VR-2 "

- 1) Insert the 6V Alkaline Battery into SQ-Am camera body
- 2) Set the level of Power Stabilizer at DC +4.5V and input the terminal into External Power Terminal for DC 9V on SQ-Am camera body.
- 3) Start the motor without applying any load.
- 4) Turn the Volume " VR-2 " slowly while the motor is running.
- 5) Fix the Volume " VR-2 " at the point that the overload warning LED on SQ-Am body turn on and the motor suddenly stop.

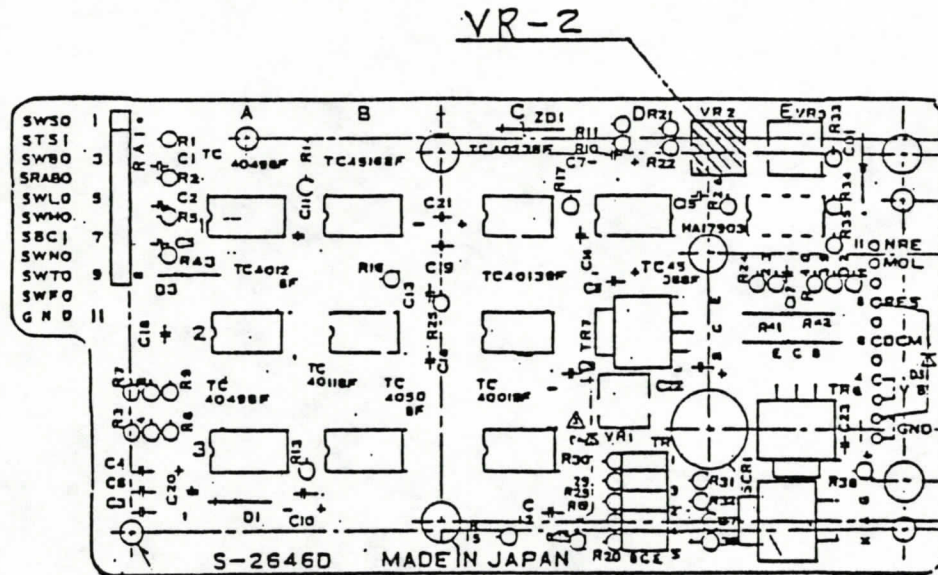
Note :

- a) Combination of Old motor and New level of " VR-2 " is not acceptable.
- b) Recommend to mark " 4.5 " on the circuit board for SQ-Am main body after adjusting the level of " VR-2 " at DC +4.5V.



Location of the Volume " VR-2 "

SQ-Am Circuit Board



Gentlemen :

Ref : Change of Motor for Motor Drive E for ETRS

Due to discontinuation of current Motor (Part #01232300), the Motor has been changed into New Motor (Part #01232800).

Although outer shape of the New Motor is quite same as current one, new motor is colored with black for your easy distinction.

<u>Item</u>	<u>New Part #</u>	<u>Old Part #</u>
Motor	01232 <u>8</u> 00	01232 <u>3</u> 00

The Price of the motor remains unchanged.

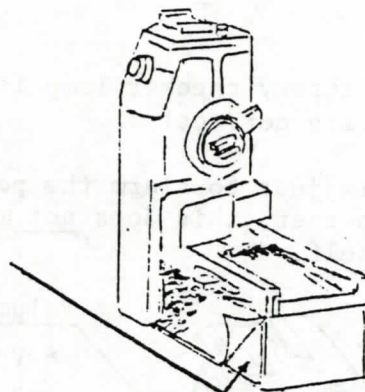
In this connection, we newly put the identification mark on Motor Drive E which carries new motor as follows :

New Mark

OM

Location of the Mark

Mark



Motor Drive E

Note :

Regardless of using current Motor (Part #01232300) or New Motor (Part #01232800), you must re-adjust the level of battery checker on Motor Drive E as per our Technical News Ref. B.T.N. 010/86 dated November 7, 1986.

Date: November 7, 1986

Ref. B.T.N. - 010/86

Gentlemen :

Ref : Change of " ON - OFF " turning point of Battery Checker on Motor Drive E

To avoid unstable function ( i.e. whether there is backlash or not while winding stops ) when the battery power is going down, we changed the " ON - OFF " turning point of battery checker on Motor Drive E for ETRS as follows :

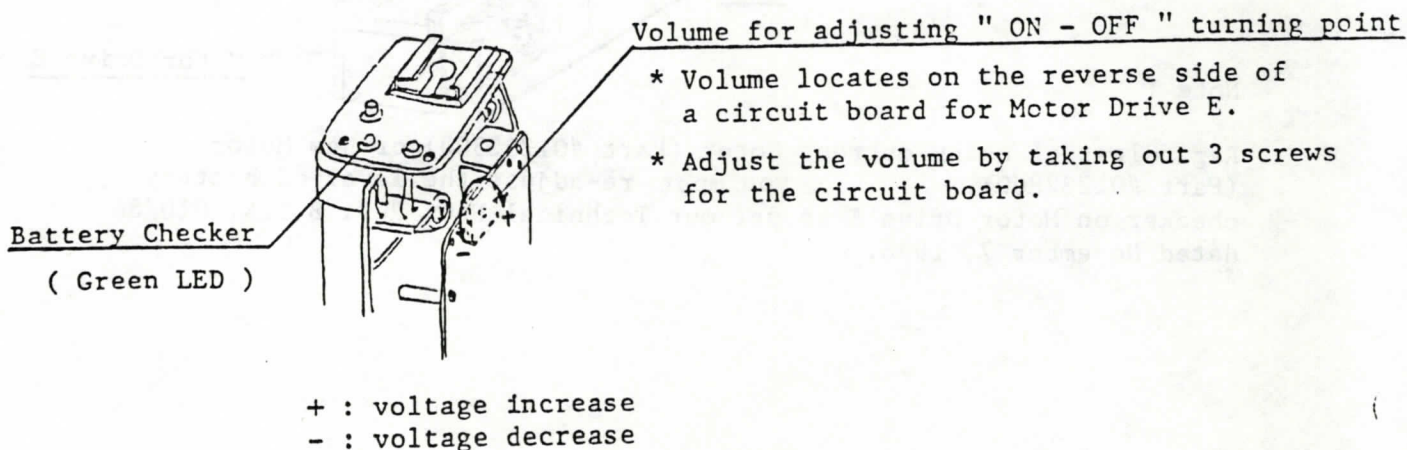
New " ON - OFF " turning point of battery checker : DC + 8.5V  
===

Old " ON - OFF " turning point of battery checker : DC + 7V = OFF  
DC + 8V = ON

<u>Condition</u>	<u>Voltage</u>	<u>Green LED Checker Lamp</u>
Circuit only	8.3V $\pm$ 0.1	OFF
	8.7V $\pm$ 0.1	ON
Complete Motor Drive E	8.1V $\pm$ 0.1	OFF
	8.9V $\pm$ 0.1	ON

Even though the battery checker lamp is not " ON ", winding and release function may operate correctly.

This changement is just to alarm the power down of battery a little earlier than before. However, this does not mean the lowering of capacity of Motor Drive E itself.





Date: November 7, 1986

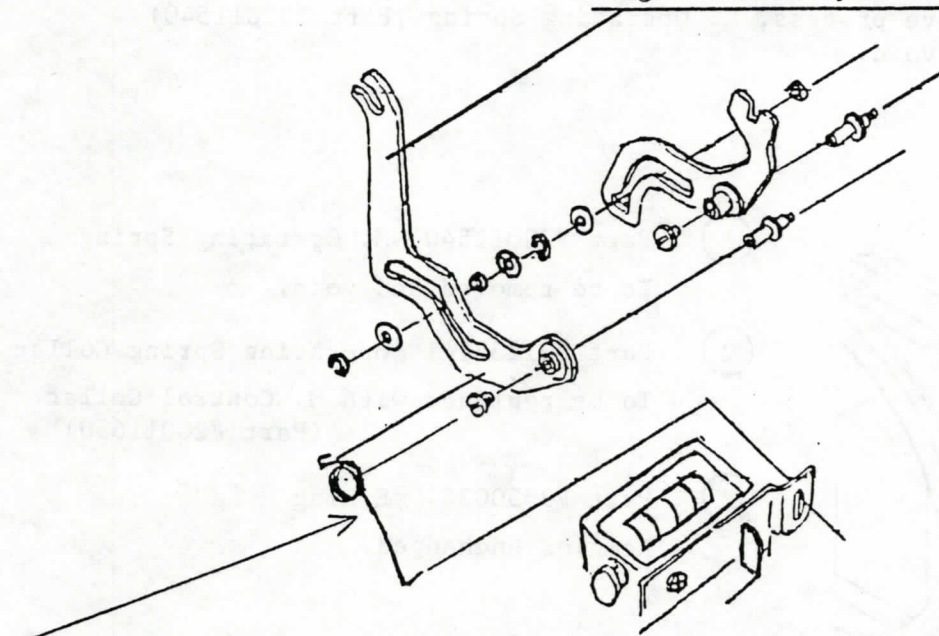
Ref. B.T.N. - 011/86

Gentlemen :

Ref : Additional Part for GS-1 Main Camera Body

To make the function of shutter release more smoothly while the mirror locked-up, we newly added a spring ( Light Shield Operating Lever Spring, Part #20011660) to the Light Shield Operating Lever (Part #20918190) for GS-1 Main Camera Body.

<u>Description of New Part</u>	<u>Part #</u>
Light Shield Operating Lever Spring	20011660

Light Shield Operating Lever (Part #20918190)

Light Shield Operating  
Lever Spring  
(Part #20011660)

Date: November 7, 1986

Ref. B.T.N. - C12/S6

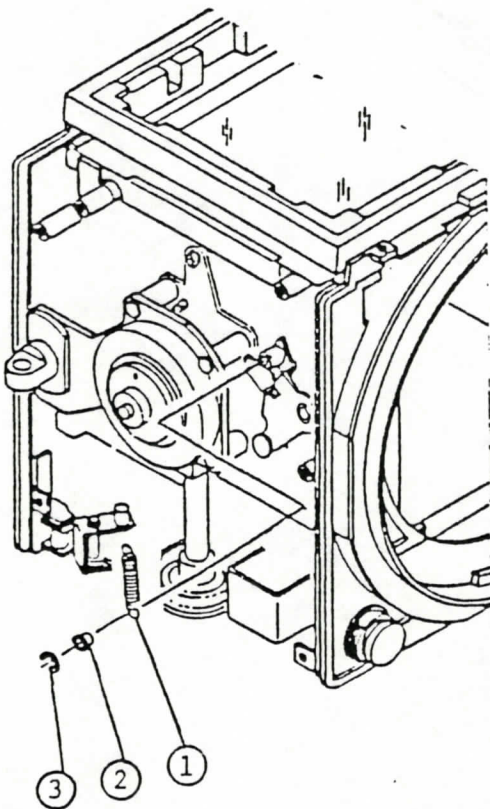
Gentlemen :

Ref : Decrease of Mirror-Shock on GS-1 Main Camera Body

To decrease mirror-shock on GS-1 body, we have modified and/or newly added following parts for GS-1 Main Body.

<u>Item Description</u>	<u>New Part #</u>	<u>Old Part #</u>
Winding Chamber Unit	20915103	20915102
M. Control Collar	20011650	-----

When the old Winding Chamber Unit (Part #20915102) will be replaced with New one (Part #20915103), Operating Spring Collar (Part #01252141) should also be replaced with M. Control Collar (Part #20011650). In addition to the above process, M. Operating Spring (Part #20011540) should be removed and void.



- ① . Part #20011540 M. Operating Spring  
To be removed and void.
- ② . Part #01252141 Operating Spring Collar  
To be replaced with M. Control Collar.  
(Part #20011650)
- ③ . Part #95500334 E Ring  
Remains unchanged.



Gentlemen :

Ref : Change of S. Operating Unit for ETRS Main Camera Body

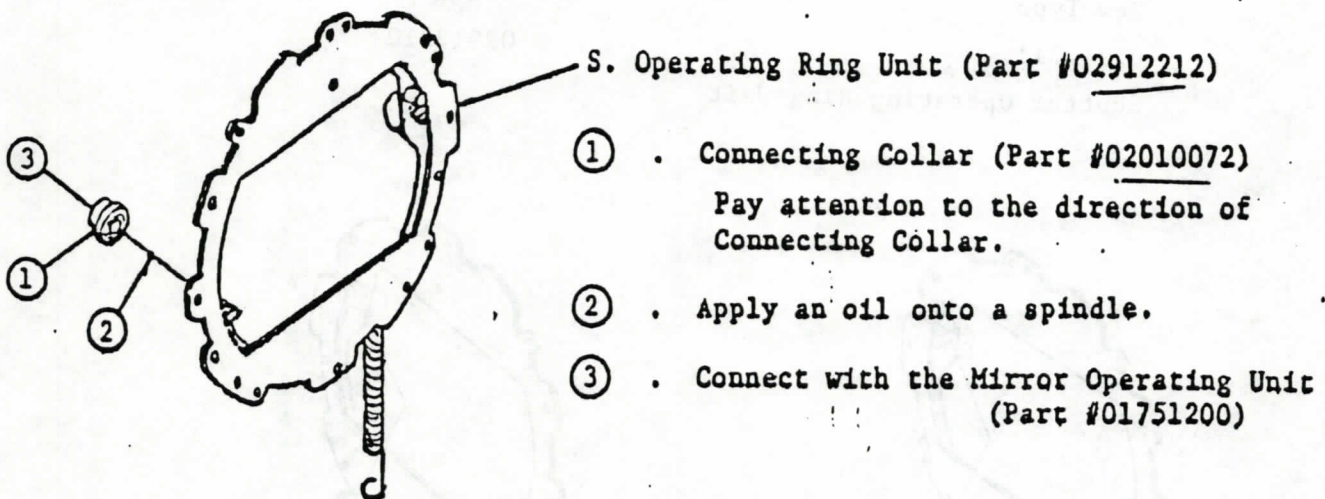
We have made modification on the captioned part and this part has been separated into two (2) parts as follows :

<u>Item description</u>	<u>Unit Price</u>	<u>New Part #</u>	<u>Old Part #</u>
S. Operating Ring Unit	¥1,350.-	02912212	02912211
Connecting Collar	¥50.-	02010072	_____

IMPORTANT :

New S. Operating Ring Unit (Part #02912212) must be used together with Connecting Collar (Part #02010072) and therefore, you must place order for above mentioned two (2) parts at one time, as otherwise you can not repair ETRS cameras on your hand.

Above mentioned two (2) parts can also be accepted by all types of ETR camera bodies, i.e. ETR, ETRC and ETRS (both of Metallic type and Plastic type).



Yours truly,

Steve Ackerman  
GMI Service Manager



ZENSA  
BRONICA

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Telex Call No. 02962733 BRONC J  
FAX: (0484) 21-2413  
Cable Address: "BRONICA WARABI"

Date: August 28, 1985

## REPAIR INSTRUCTION

Model : ETRS Body

Subject : Shutter Operating Ring

In order to reduce the torque when winding the crank and also to improve the durability, a change has been made to a system so as to set the lens by 2 pins on right and left. A new lens set pin has been added also on the right side in addition to the present left side lens set pin.

New shutter operating ring unit and the old shutter operating unit are interchangeable.

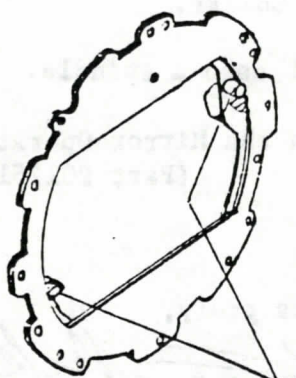
New Type

02912211

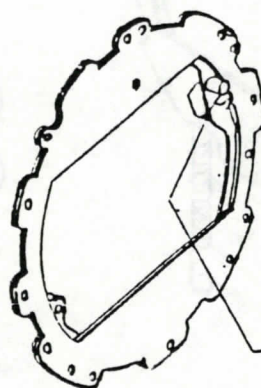
Shutter Operating Ring Unit

Old Type

02912210



Lens Set Pins



Lens Set Pin

Date: August 28, 1985

REPAIR INSTRUCTION  
=====

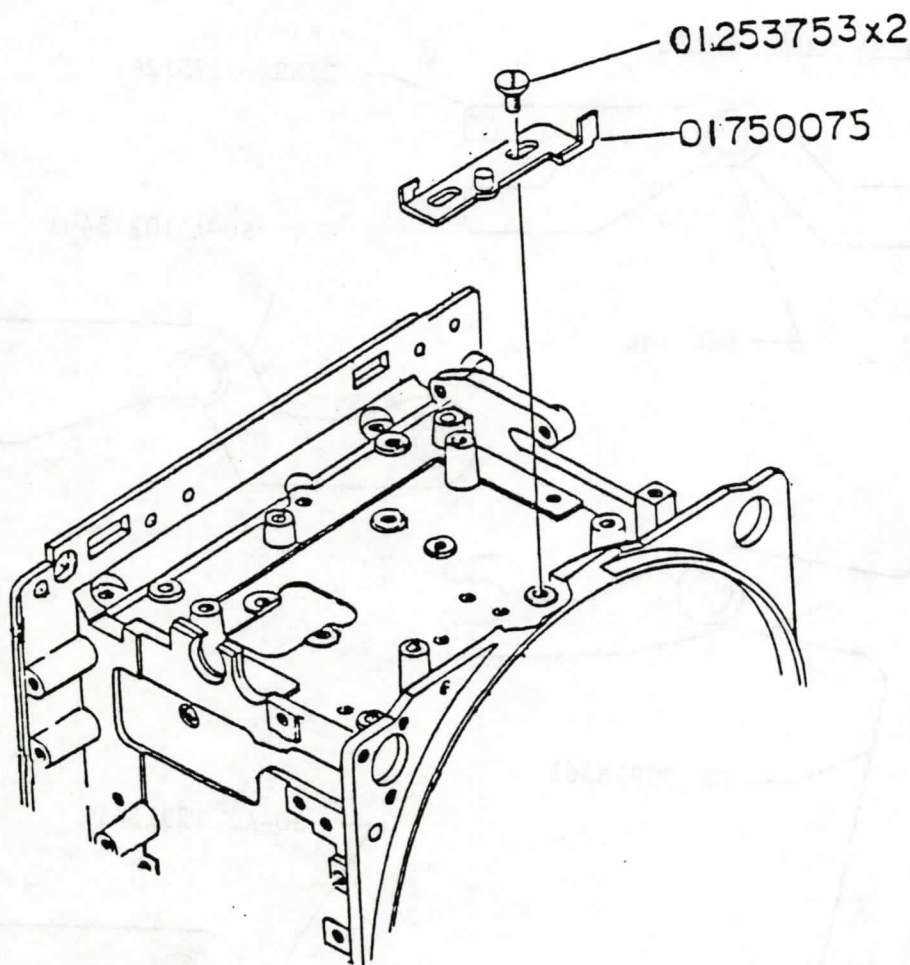
Model : ETRS Body

Subject : Changing of M. switch link set screws

As the set screws which are M. switch link guides (01253753x2) for the M. switch link 01750075 wears out, the material of the set screws has been changed from brass to steel.

New Parts Number : 01253753

Old Parts Number : 01253752



Date: August 28, 1985

# REPAIR INSTRUCTION

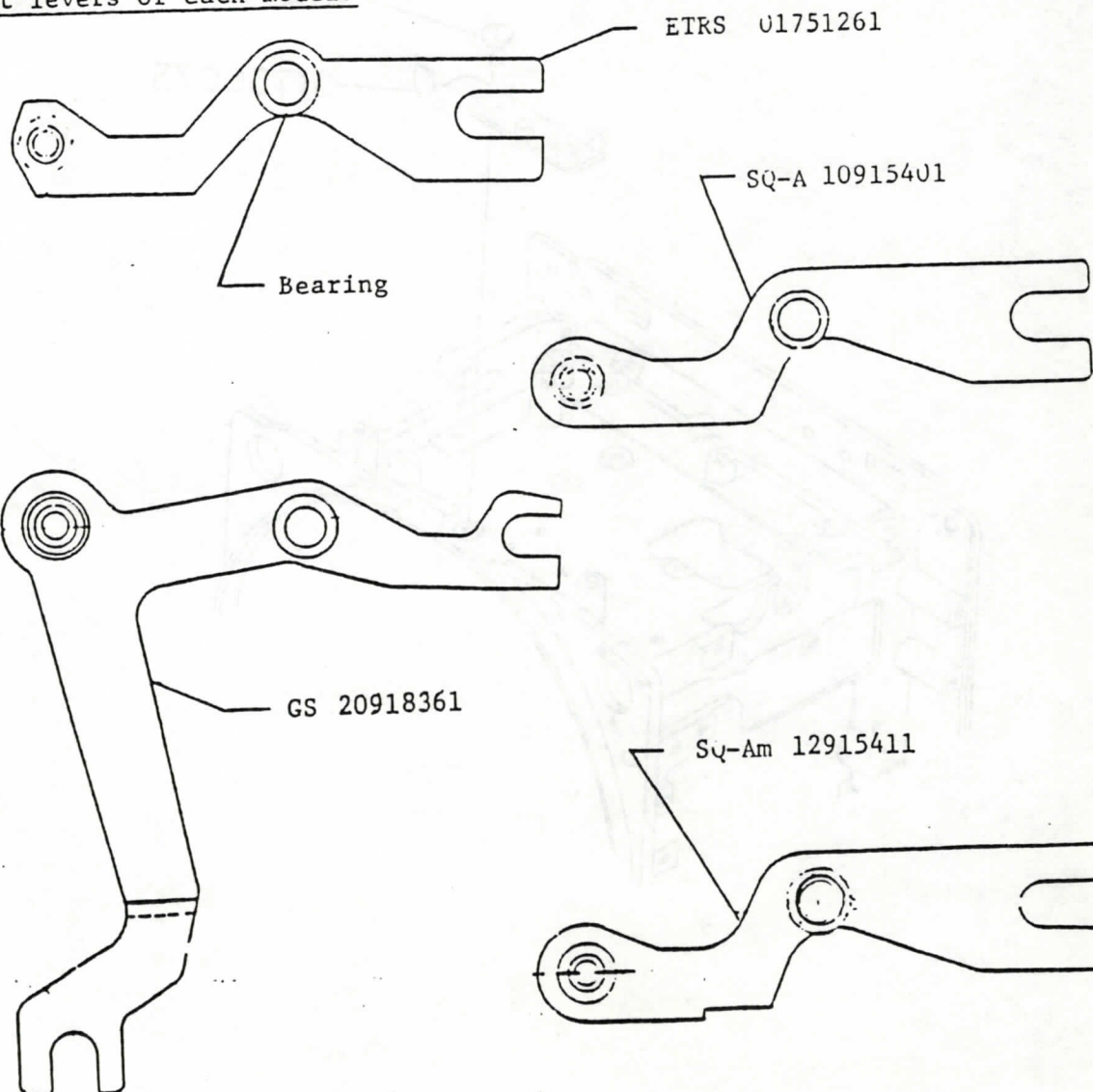
Model : ETRS, SQ, SQ-Am &amp; GS

Subject : Change of washer for set lever

The washers which has been calked onto set levers of those models mentioned above has been changed to ball bearing in order to give smooth feeling when winding the crank and to improve the durability.

Since there is no change on the dimension, the new parts and the old parts are interchangeable.

## Set levers of each models





## REPAIR INSTRUCTION

Model : ETRS Body

Subject : Change of Left Cover set 02910231

1. To tighten the space between the left cover and the back of the camera and also to prevent the bending of the left cover, the shape of the strap ring base plate B has been changed and a set screw has been added to the upper right portion of the left cover.

Supply of the parts will be made with the new type of parts but when the strap ring base plate B is an old type then it is not always necessary to set a screw into the screw hole on the upper right portion of the left cover. However, when trying to tighten the space and to prevent the bending, change the strap ring base plate B with the new type 02910211.

2. To reinforce around the cable release socket, the thickness around the socket has been increased and a hole for a screw has been newly added here too.

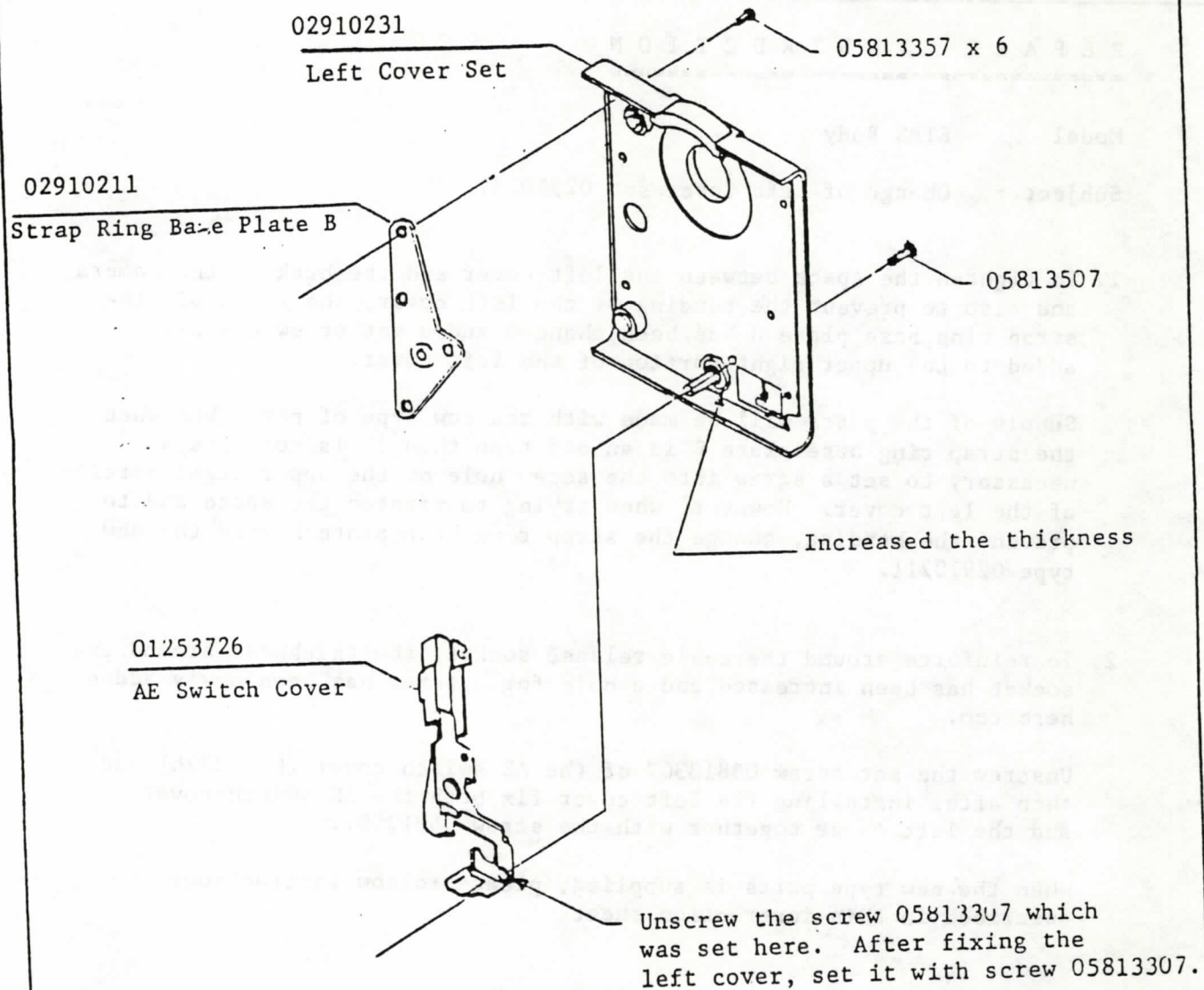
Unscrew the set screw 05813307 of the AE switch cover (01253726) and then after installing the left cover fix both the AE switch cover and the left cover together with the screw 05813507.

When the new type parts is supplied, please follow instructions described in this instruction sheet.

Detail Sketch of the Changed Parts attached.

Change Illustration 6/6 attached.

August 26, 1985



Detail Sketch of the Change

Model : ETRS Body

Subject : 02910231 Left Cover Set

## REPAIR INSTRUCTION

Model : ETRS Body

Subject : Adding a Set Screw on the Right Cover 02010133  
Change of fixing method of Film Back Coupling Claw

To tighten the space between the right cover and the back of the camera body and to prevent the bending of the right cover, a hole for screw has been added on the right bottom of the right cover.

As the shape of the oval shaped turning parts (01253151) has been changed to rectangular shaped flat plates (01253152), the method of fixing the film back coupling claws on both right and left has been changed.

Regarding the method of how to fix, refer attached illustration.

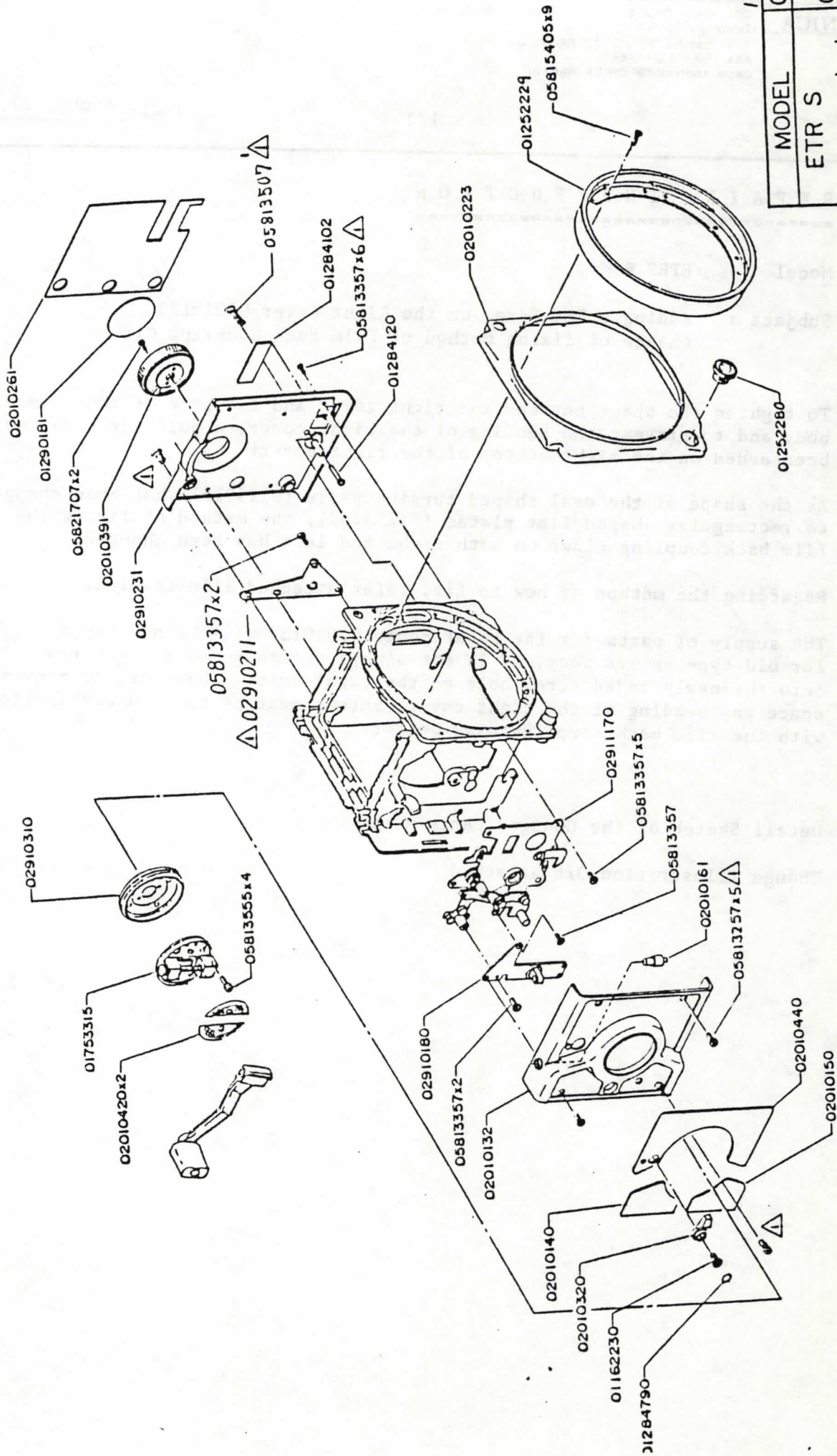
The supply of parts for the right cover 02010133 will be new types. For old type camera body, it is not always necessary to set a screw into the newly added screw hole on the right cover. However, to prevent space and bending of the right cover, screws must be used in combination with the film back coupling claw holder.

Detail Sketch of the Changed Parts attached

Change Illustration 3/6 attached



⚠ Changed 1985.08



MODEL	CODICE
ETR S Camera body	020
BRONICA CO., LTD.	

Detail Sketch of Changed Parts

Model : ETRS Body

Subject : Adding a Set Screw on the Right Cover  
Change of fixing method of Film Back Coupling Claw

