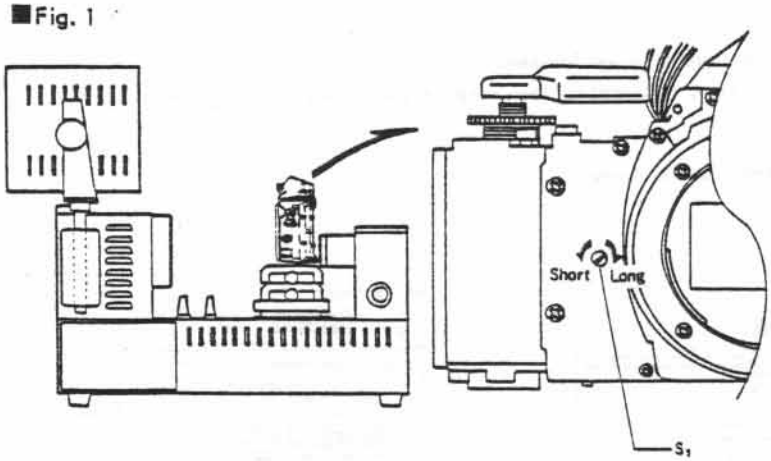
3 Adjustment of manual SS

■Measuring instruments : Shutter tester (Model S-2101, FS-1DMN4)

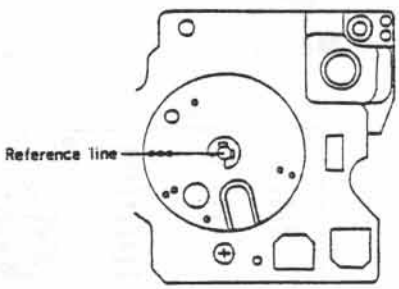
■Adjustment procedure

- Determine position of TV brush, referring to Fig. 2, or looking at shutter speed LED.

■Fig. 1



■Fig. 2 Relation between TV brush holder position and manual SS



1. Shutter speed adjustment and check (see the table below)

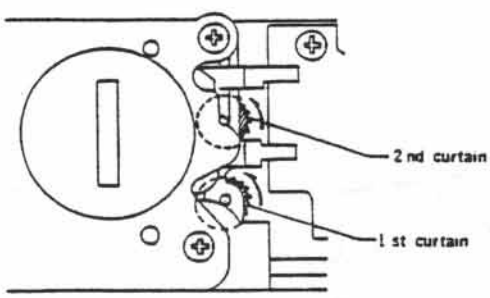
Step	Item	Part adjusted	Adjustment (check)	Remarks
①	1/1000 curtain speed check	—	(Both 1 st & 2 nd curtains are within 13 ms.)	If it is more than 13 ms or less than 10 ms, adjust the 2 nd curtain speed.
②	1/1000 adjustment	S_1 eccentric pin	0.98 ms	—
③	1/60 check	—	(16~18.5 ms)	
④	X time lag	—	(Range A : 0.4 ms or more) (Range B : 2.4 ms or more)	Check it with SS 1/60 and if is defective, perform the adjustment on P. 8.

- When the exposure unevenness at steps ②~③ is over 0.3 EV in both B-A and B-C ranges, and over 0.4 EV in the A-C range, adjust the curtain speed as follows.
- For the shutter speed standard, refer to the inspection standard.

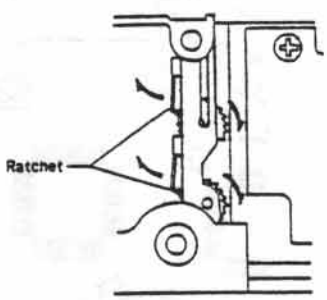
2. Curtain speed adjustment

Adjust by turning the ratchet so that the 1 st and 2 nd curtain speeds are 11±0.3 ms at 1/1000.

■Fig. 3 (Increasing the curtain speed)



■Fig. 4 (decreasing the curtain speed)



- Remove the battery case base plate while pushing ratchet to release the ratchet claw and the rachet return.
  (Do not return it completely.)
- Return it sufficiently and adjust by slowly increasing the curtain speed.

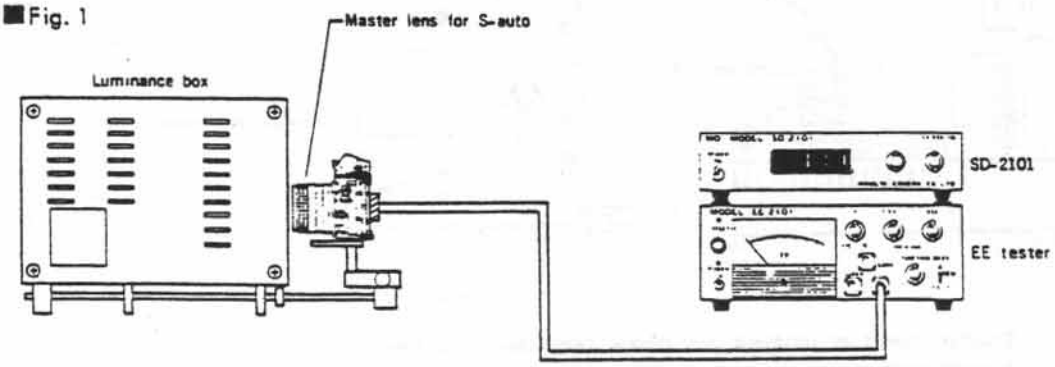
4 Adjustment of A-auto level, check of LED indication

■ Measuring instruments : Luminance box (Model L-2101, L-222, L-223)
: EE tester (Model EE-2101, EE-2111)
: SS adaptor for EE tester (Model SD-2101)
: Master lens for S-auto (2005-0001-75)

■ Adjustment procedure

1. Set the camera and measuring instruments as follows.
   - After setting the master lens, turn it counterclockwise to put aside the looseness to one side.

■ Fig. 1



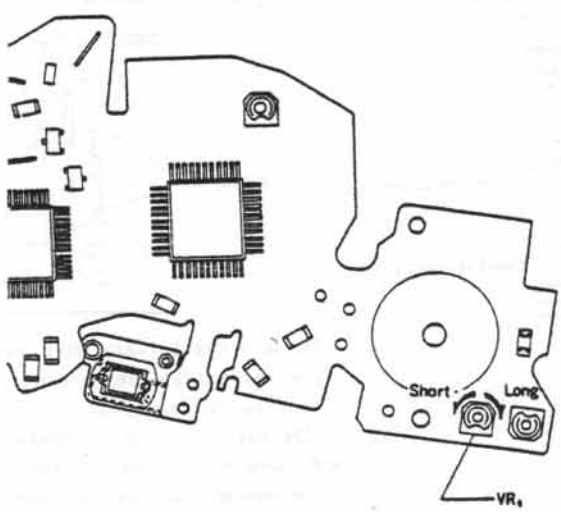
- Luminance box
  K value : 1.2
  ※ Luminance : EV 10, 15
- Camera
  Shutter dial : A
  ASA : 100
- Master lens
  Aperture : F 5.6
  Distance : ∞
- EE tester
  K value dial : 1.2
  ASA dial : 100
- SD-2101
  Aperture switch : F 5.6
  Luminance switch : Same as luminance box.

※ When using luminance box (L-222 or L-223), set it at EV 11, and use a ND filter (MINOLTA ND 50% FOR ADJUSTMENT).

2. Adjust and check as follows:

Step	Luminance	Shutter speed adjustment	EE level allowable range	Part adjusted	Indication allowable range (±0.5EV)			
1	EV 10	34 ms	—	VR_4 (Fig. 2)	1/60	▭	■	■
					1/30	▭	▭	▭
					1/15	■	■	▭
2	EV 15	—	±0.4EV	(Check only)				

■ Fig. 2



■ Check and adjustment of release lock voltage and LED blink voltage

■Check

[1]Release lock voltage	Standard	2.46±0.1V
[2]LED blink voltage	Standard	2.56±0.1V

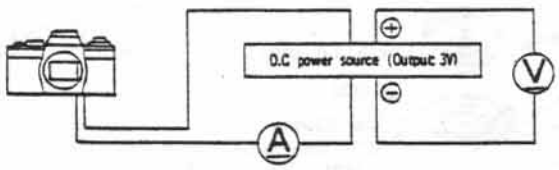
• In case of out of standard above, adjust those as following procedure.

■Measuring instruments : Constant voltage D.C power source (MODEL 524B, E-1, E-2)
: Digital multimeter (Type 2508, 3476, 2507)
: Direct current tester

■Checking procadure

1. Check the current consumption at B setting (incl'd * indication) using measuring instruments as follows.

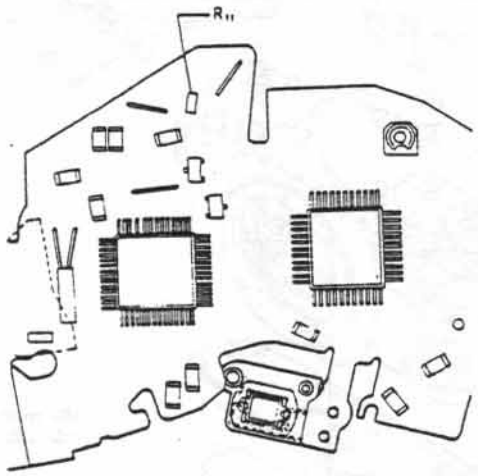
■Fig. 1



• Camera
Shutter dial : B
Touch SW : ON
Connection of power source : ⊕…Battery case contact
⊖…Batter case base plate

2. Measure the release lock voltage while reducing slowly the voltage of D.C power source from 3V.
3. In case of out of standard, replace R_{11} (68-390KΩ).

■Fig. 2



■ Checking high and low shutter speed limits

■Measuring instrument : Shutter tester (Model S-2101, FS-1DMN4)

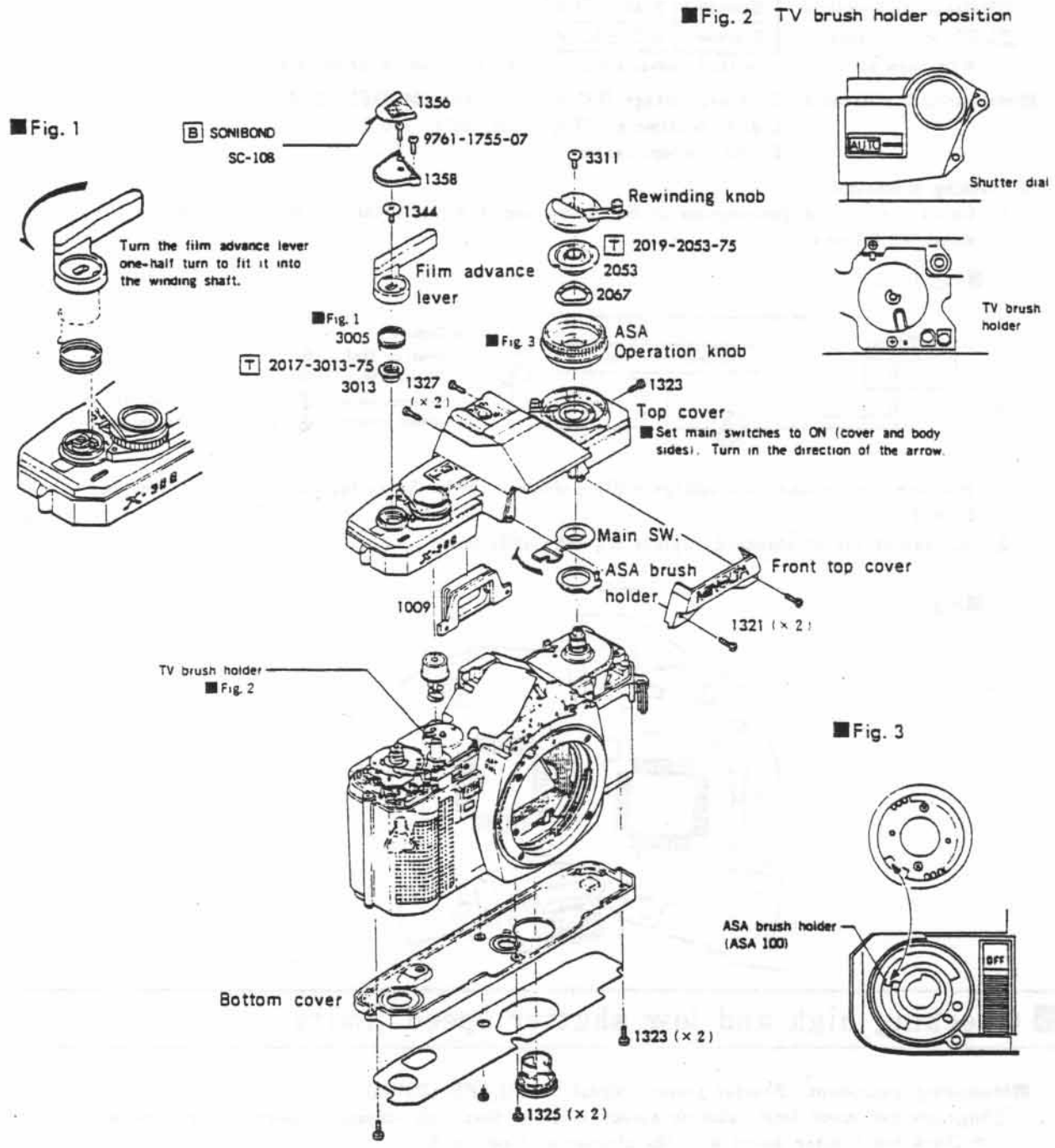
[1]High shutter speed limit (shutter speeds in other than high luminance operation in A mode.)
• Check the shutter speed with the shutter dial set to A.

Standard	0.69~1.38ms

[2]Low shutter speed limit (shutter speeds in other than low luminance operation in A mode.)
• Set the shutter dial to A, and then check the exposure time with light to the receiver interrupted.

Standard	Within 5 sec.

External parts (completion)



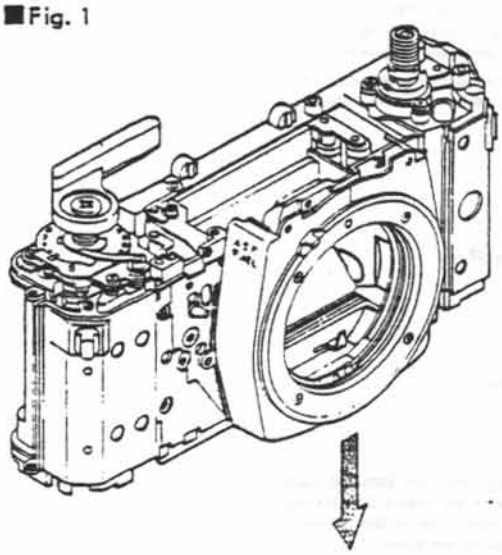
■ Shutter block adjustment

■ Measuring instruments : Camera standard tester (Model ST-5101)
: Shutter tester (Model S-2101, FS-1DMN4)

■ Preparations

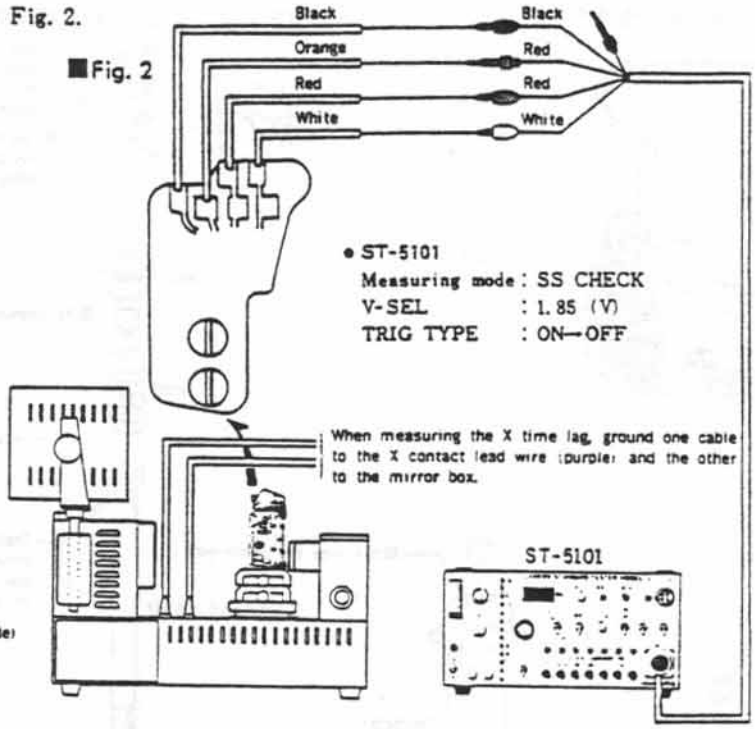
1. Mount the shutter onto the front base plate block and install it onto the body (as shown in Fig. 1).
2. Connect the tester as shown in Fig. 2.

■ Fig. 1



Operate the shutter as described on P. 15. (2024 Repair Guide)

■ Fig. 2



■ Adjustment procedure

[1] Curtain speed adjustment

1. Set the SS-SEL of ST-5101 to 1000 and adjust by turning the curtain spring cylinder shaft so that both curtain speeds are **11±0.3ms**. (Fig. 3)
   • When the curtain is not open, shift SS-SEL to 60 and make a rough adjustment beforehand so that both curtain speeds are about 12 ms, and then adjust again with the SS-SEL set to 1000.

[2] Shutter speed adjustment

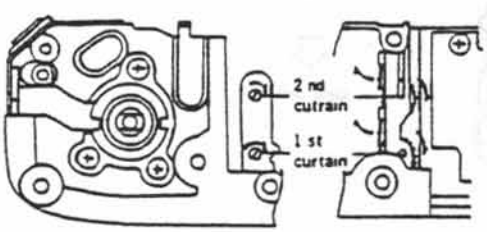
1. With the SS-SEL set to 1000, release the shutter and adjust by turning the S_3 eccentric pin so that the shutter tester indicates **0.98ms**. (Fig. 4)

[3] X time lag adjustment

1. Connect the synchro cord of the shutter tester to the camera. (Fig. 2)
2. With the SS-SEL set to 60, release the shutter and check to be sure that the speed is **0.4ms or more in range A and 2.4ms or more in range B**.

To make the adjustment, bend the end of the X contact.

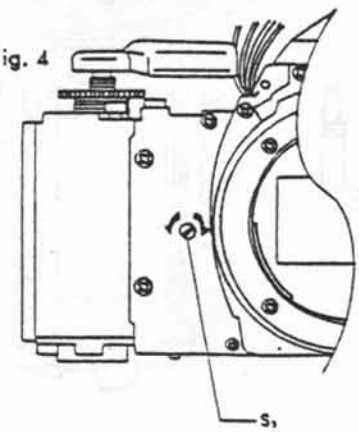
■ Fig. 3



• Increasing the curtain speed

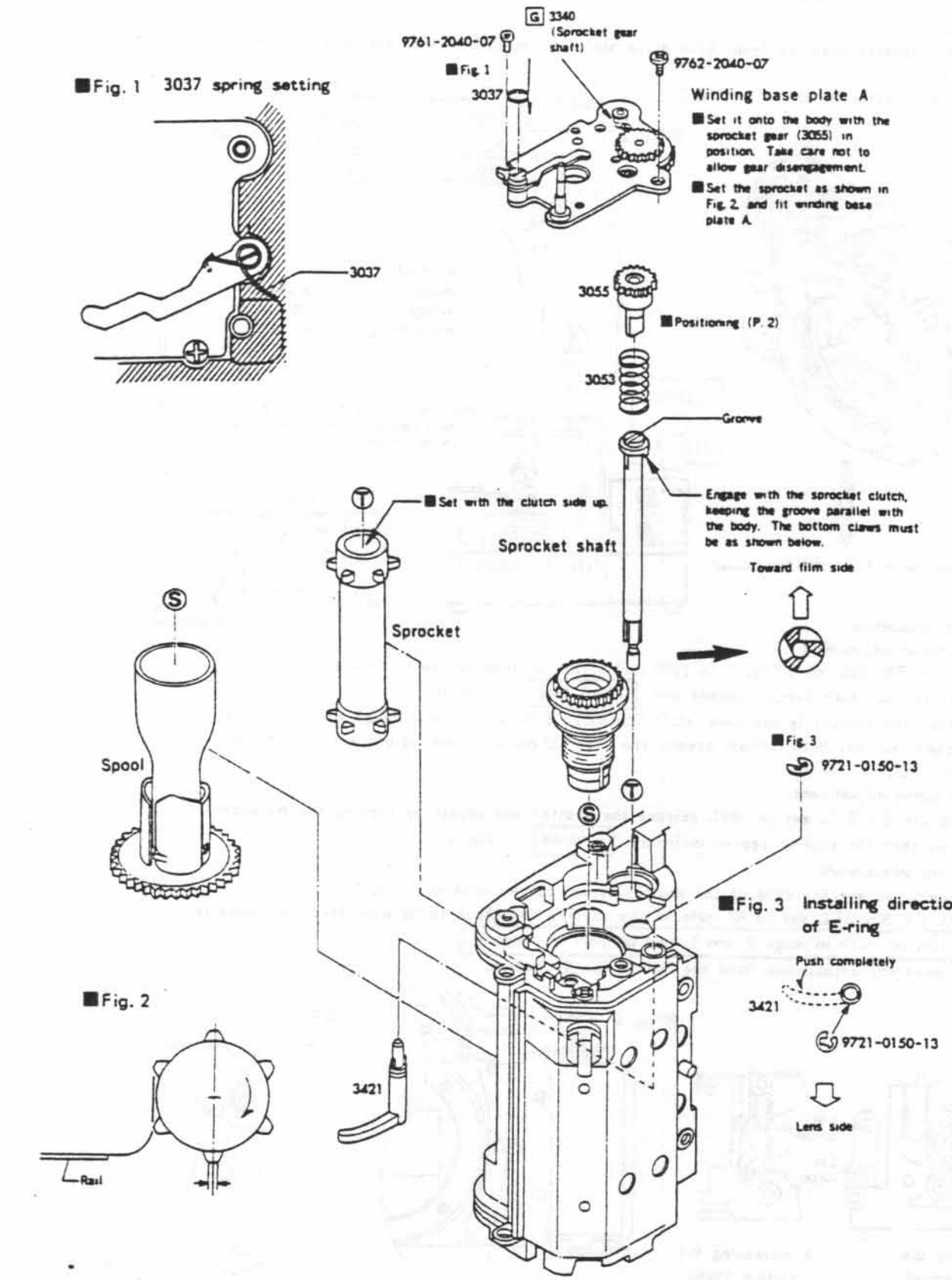
• Decreasing the curtain speed

■ Fig. 4



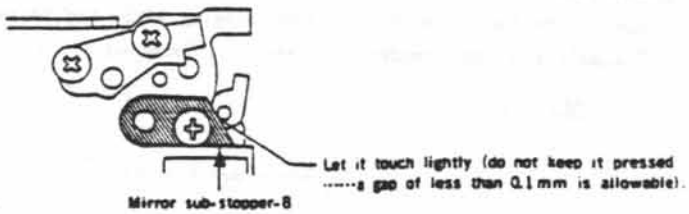
■ Fig. 5

1 Spool, sprocket, winding base plate A



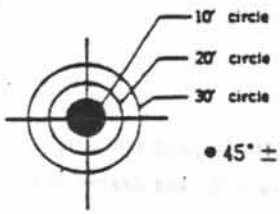
3. Push up the mirror sub-stopper-B until its end lightly touches the mirror operation lever pin, and then tighten the setscrew.

■Fig. 8



4. Operate the mirror several and make sure that the chart image is within the standard 45° ± 10′

■Fig. 9



• 45° ± 10′ ··· 10′ circle must be in touch with the cross (vertically and horizontally).

• If it is not within the standard 45° ± 10′, perform adjustments 1–3 again.

5. After completing the adjustment, apply screw-lock (3-BOND 1401B) to the screw head of mirror adjusting plates A, B, and the mirror sub-stopper, and adhere the flare prevention sheet B (5030··· P. 37)

■ Sub materials

■Grease
- ≒3340
- ≒335
- ≒704

■Oil
- ≒012

■Anti-diffusion agent
- FC-721
  (Dilute with solvent FC-77 by 1 : 10)

■Adhesives
- 3-BOND 1401B
- PLIOBOND
- SILICON-BOND KE-441RTV
- ALTECO CN2
- LOCKTITE 242
- SONIBOND SC-108
- EVERGRIP

■Cleaner
- FLONSOLVE

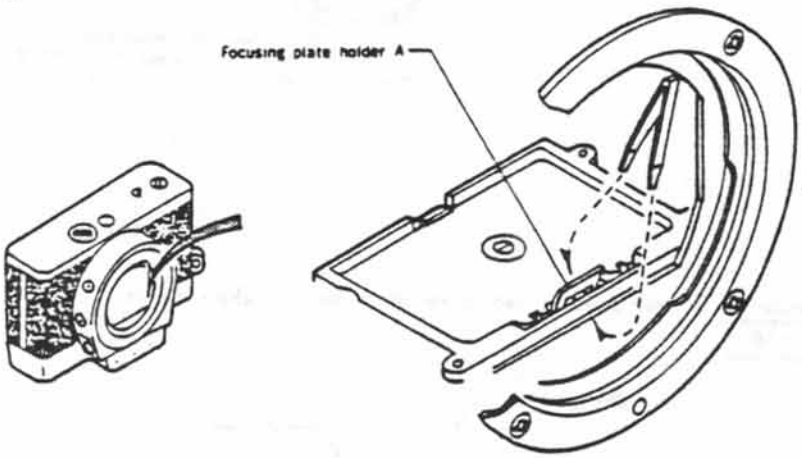
■ Focusing plate replacement procedure

■For view finder cleaning without camera disassembly or focusing plate replacement follow the procedure given below.

■Removal

Insert the tweezers between the focusing plate and focusing plate holder A.
Slightly tilt the tweezers to raise the focusing plate for removal.

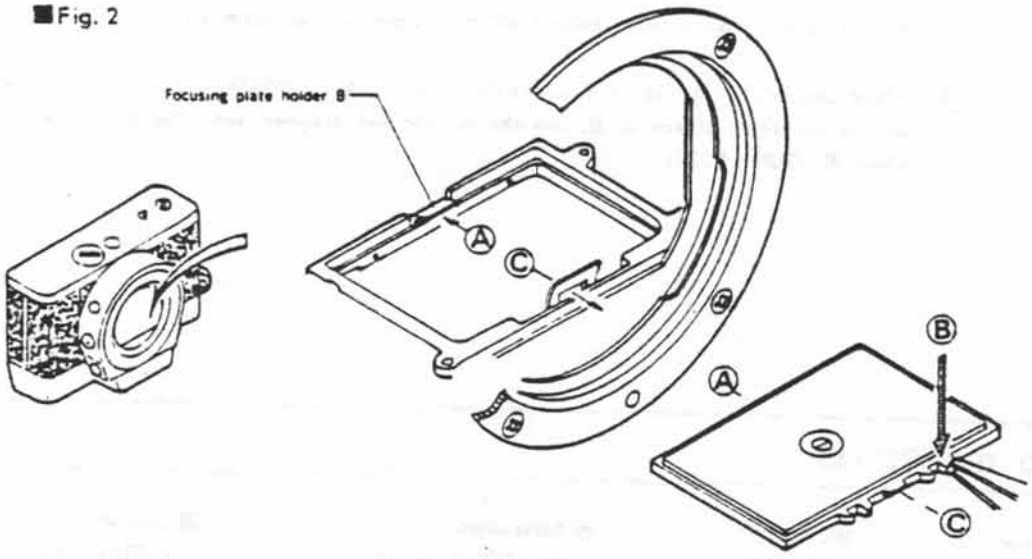
■Fig. 1



■Mounting

Hold the focusing plate as illustrated: fit part Ⓐ onto the bend of focusing plate holder B; press down arrow-marked part Ⓑ; and insert projection Ⓒ into the hold of focusing plate holder A.

■Fig. 2



■Mounting check

After mounting the focusing plate, check that the view finder back and EE level are correctly positioned.

TROUBLE-SHOOTING

1. Use of Trouble-shooting

1. This trouble-shooting chart describes symptoms and causes of troubles found on the camera side.
2. Even when trouble is found on the camera side, its cause is not always attributable to the malfunction of the camera in relation to the exchangeable lens, winder, motor drive and exclusive flash. Therefore, use this trouble-shooting chart upon confirmation of trouble on the camera after checking combined performance with the accessories according to claim contents.

2. Description

1. Trouble described here is due to a single case only. Trouble due to a plurality of causes should be checked collectively on the basis of the causes listed in this chart.
2. This trouble-shooting deals mainly with electrical causes, as well as covering part of mechanical causes.

3. Servicing Precautions

1. Type 2507 digital multimeter is basically used for measurement. Any other kind of measuring instrument, however, may be used, if its minimum input impedance is more than 10MΩ.
2. Use this tester for voltage checks and a tester of less than 3 V for measuring conduction.
3. Trouble is most unlikely to occur in electronic parts, such as ICs, diodes, transistors, resistors, and capacitors. Therefore, check the cause of trouble, with the focus on the defective soldering of lead wires and electrical parts, and switching contacts.
4. When checking soldered or plated parts, avoid pressing the parts or pulling lead wires unnecessarily.
5. Since voltage measuring parts are narrow, mount a pin or something similar at the tip of an alligator clip for measurement.
6. When measuring switching patterns, special care should be taken so that the patterns outside switch operation are free from flaws. For switch contacts, measure their base, which is not directly affected by contact pressure.
7. Be sure to turn off the power switch before removing electrical parts (when a constant-voltage regulated power supply is used).
8. The ideal temperature range for the soldering iron tip is 290°C to 340°C. If the temperature is higher, however, perform soldering quickly. Also, be sure to clean the chip when soldering.

4. Description on Trouble-shooting Table and Trouble-shooting Chart

4-1. Trouble-shooting Table

1. From symtom, trouble cause can be found.
2. The Trouble-shooting Table combines the "INDEX" and summary of details of "Trouble-shooting Chart.
   Accordingly, use those properly as the needs of the case demand.

4-2. Trouble-shooting Chart

1. The chart presents the checkpoints to be followed from the symptom to finding the cause of trouble.
2. The voltage for each checkpoint is the value when SW_0 or SW_1 is ON upon completion of film winding (before releasing). It is a potential difference from ⊣ of power supply.
3. For all trouble symptoms other than "Electromagnetic release does not operate," check their cause, assuming that the electromagnetic release operates properly.
4. The chart shows the check in the ⬚ is done by operation and in the ▭ by measurement.