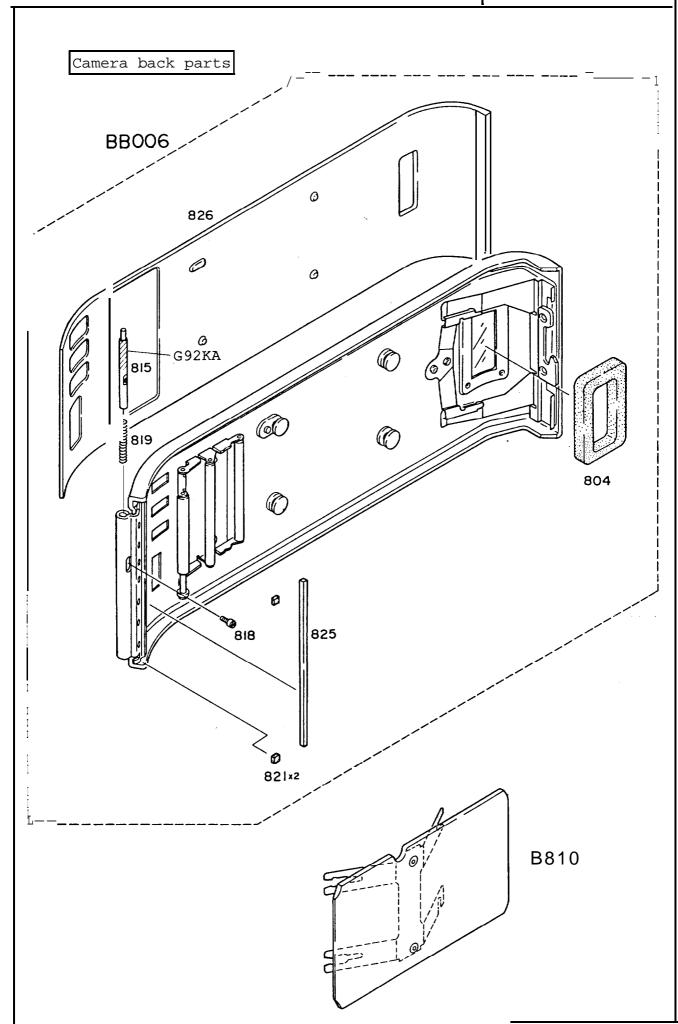
FAA23051- R. 3248. A

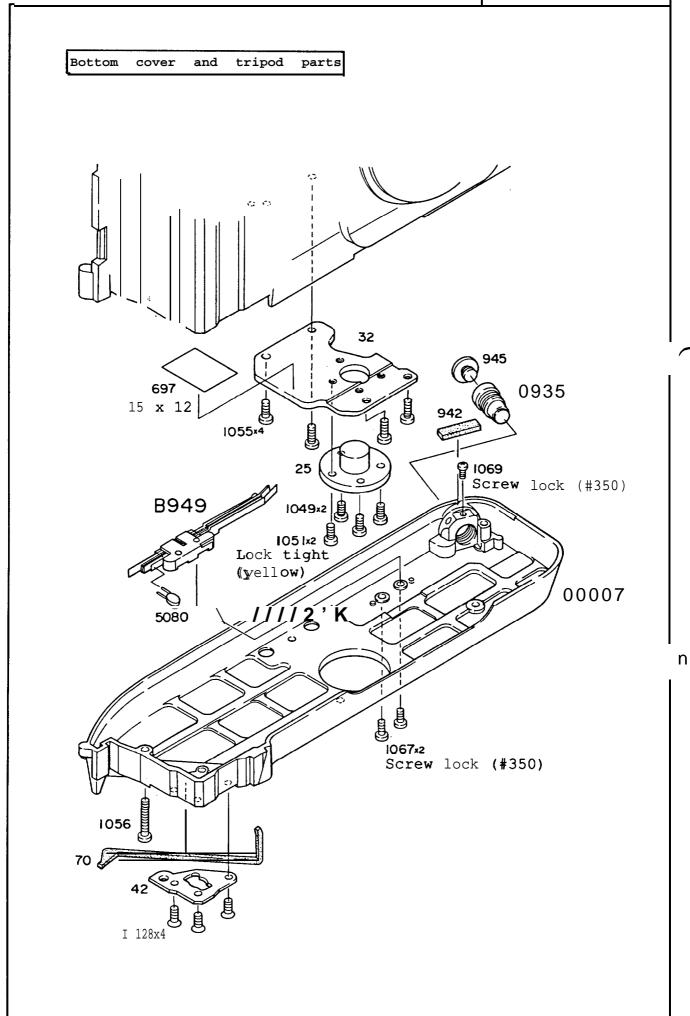
ASS13MBLING & ADJUSTMENT

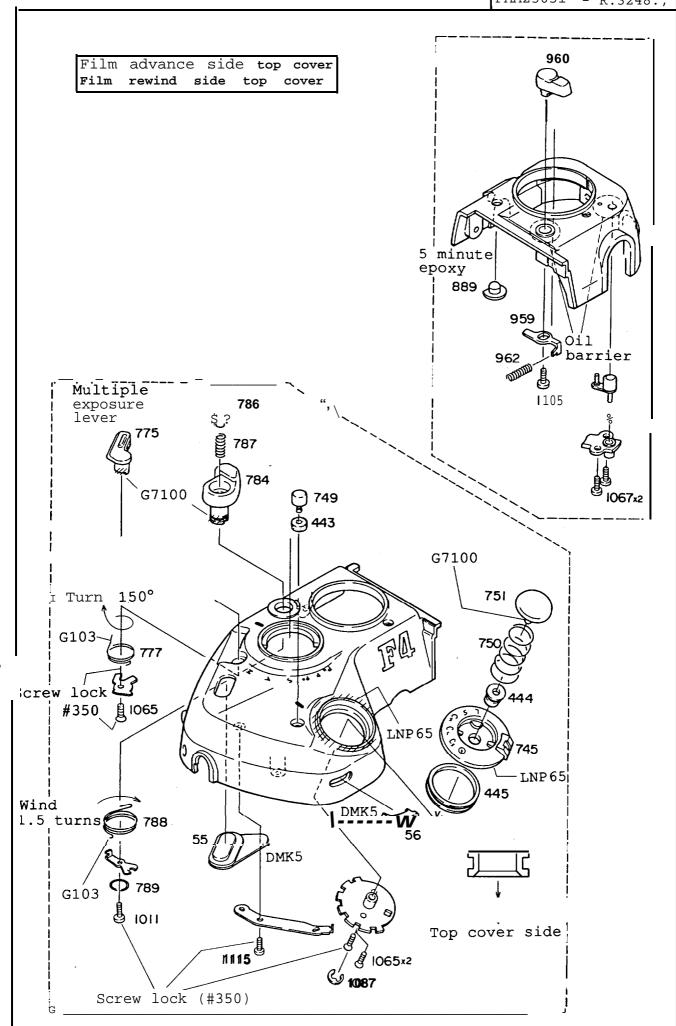
C	a	n	t	6	n	t	9
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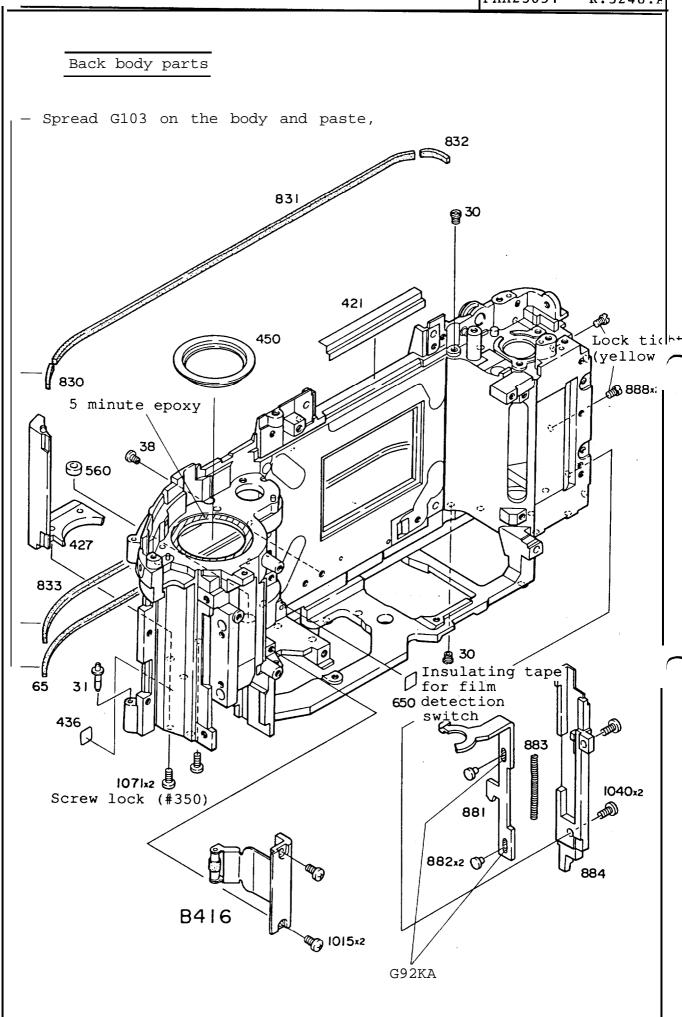
Assembl ing, back body]	
Camera back parts	·_ A1
Bottom cover and tripod parts	A2
Film advance side cover, Film rewind side top cover	A3
Back body parts	A4
Sync contact, film detection switch	A 7
FD, DBor DXFPC unit	. А8
Shutter unit	A9
Film rewind motor	_ · A9
Film rewind unit	A11
Upper film advance parts	A12
Film advance baseplate	A13
Film advance base plate unit, disassembly, assembling	A14
Mounting film advance baseplate unit	
Shutter release fig, Lever under shutter release throught shaft	
DC-DC converter base plate	
Power TrFPC unit	
Shutter speed dial base plate	A27
Mounting Main FPC	
Checking camera'back	
1 Assembling, front body]	
Front body parts	A29
AF baseplate unit, fo baseplate unit	A32
Mirror box unit parts	A33
Mirror box unit	A34
Mounting mirror unit, I baseplate, L baseplate	
Mounting mirror box, front body	· · · A36
Filter driving base plate, filter unit, TTLSPD unit	A37
Seesaw lever	
AF rnodeselect.or lever unit	
Lens release button switch	A37
Mirror operation base plate unit	A38
f-fo base plate, f-fo pulley	A38
Lock encoder FPC unit	
Cable arrangement on the lower part of the L baseplate	A41

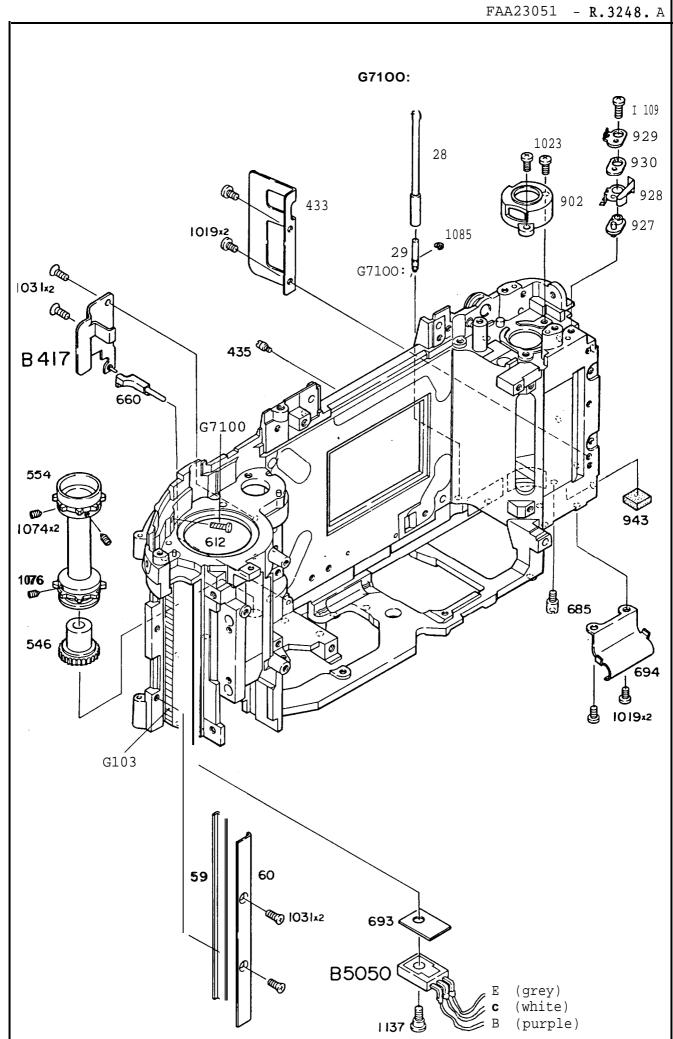
AF base plate unit	- A41
Positioning adjustment of fmm switch	A42
Height adjustment of aperture lever	-A43
Height adjustment of AF coupling ring shaft	A43
Angle adjustment (45°) of main mirror (Gl) sub-mirror (G2)	A44
Mounting of front body and back_ body] Mounting of front body and back body	A45
Adjustment of film sprocket cogwheel positioning	A48
Adjustment of body back	
Adjustment of infinity	A49
AE, AF Accuracy, inspection, and adjustment	A49



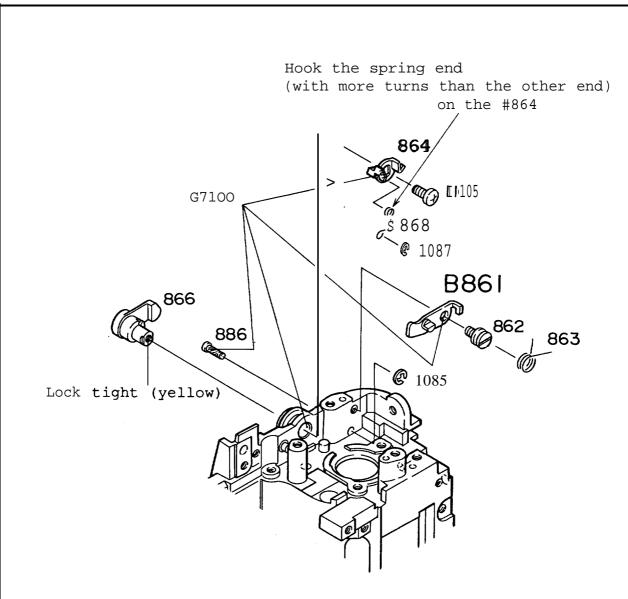








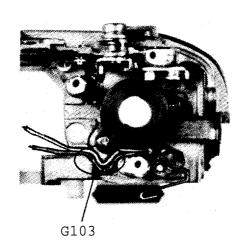
n

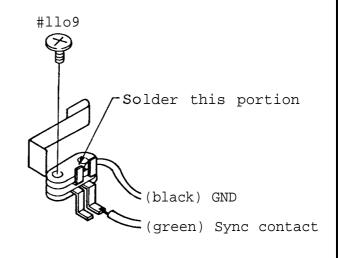




Sync contact, film detection switch

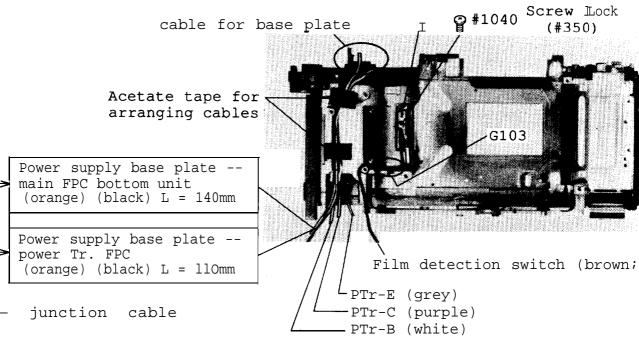
- Sync contact



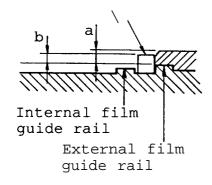


- Film detection switch

Film detection switch

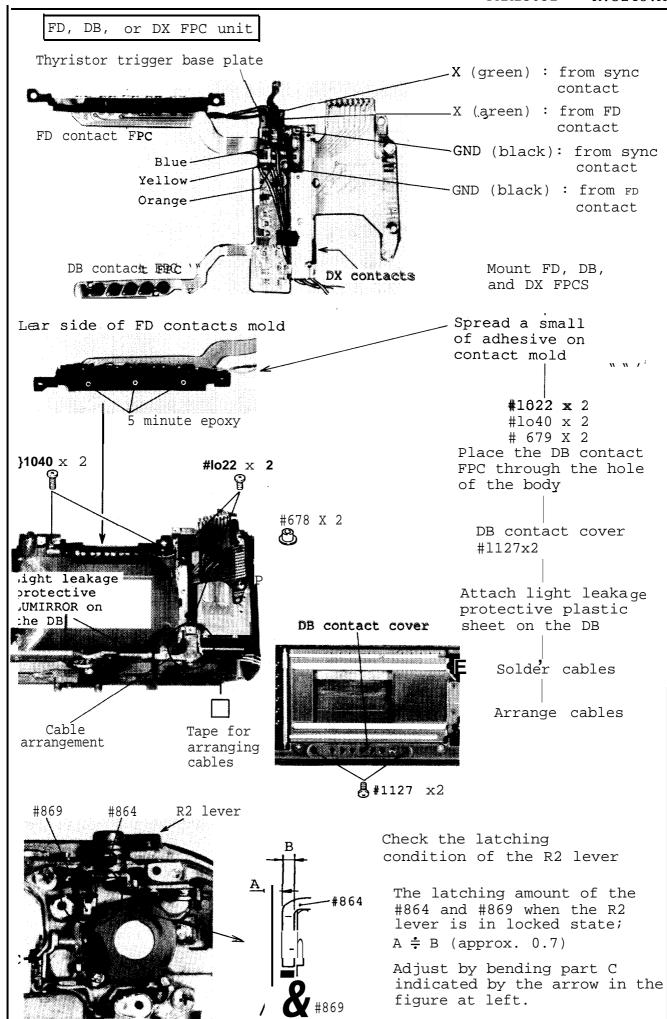


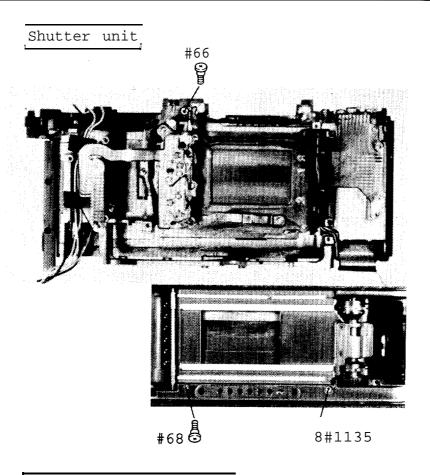
Film detection switch pin



Check the ON-OFF position of the film detection switch based on the external film guide rail:

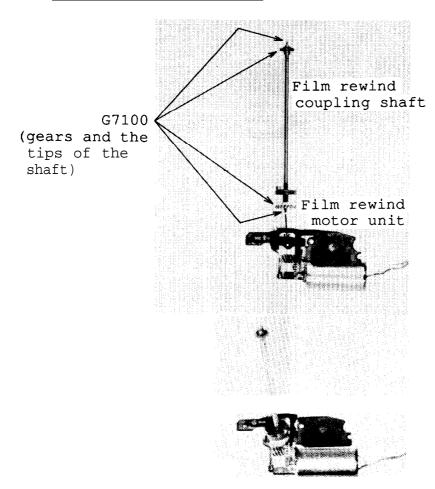
Height (or play); a = 1.13 ± 0.15 ON-OFF switching position; b = 1.00 or more Total stroke; More than 0.1 deeper from the external film guide rail.



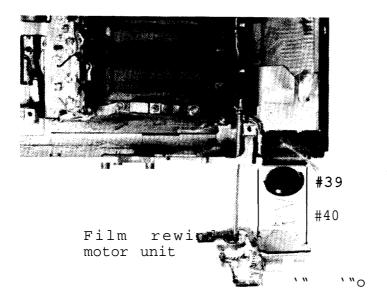


Shutter unit #66 #68 #1135

Film rewind motor unit

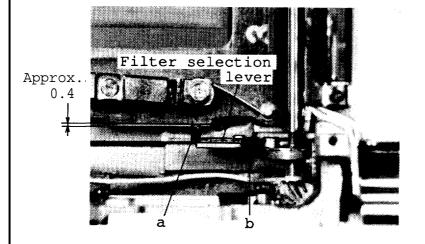


Mount a film rewind coupling shaft in the film rewind motor unit.



Mount a film rewind motor unit #39 #40 #1019 x 2

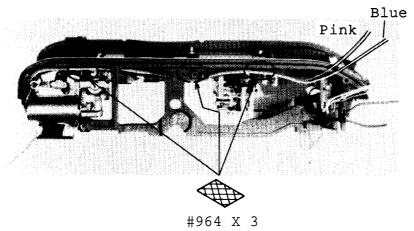
Lock tight \$\frac{1}{6}\$ #1019 x 2 (Purple)



Check the position of the filter selection lever

The tip of the filter selection lever (as shown in the figure) should be located within the range of approx. 0.4 from the lower end of the shutter.

Adjust by bending the part B as shown in the figure .



Arrange film rewind motor cables. #964 x3

Film rewind unit

Film rewind mold base plate

Camera back switch

#1113 x 3%

Film rewind base plate

G7100

Fork gear

CR , SW

G7100

1.

Check following items:

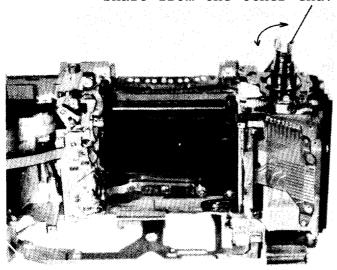
- 1. Gaps (up and down) of the
 film rewind shaft;
 0.1 0.3
- 2. ON-OFF operation of the camera back switch.
- 3. ON-OFF operation of the R2 SW.

Camera back switch pin

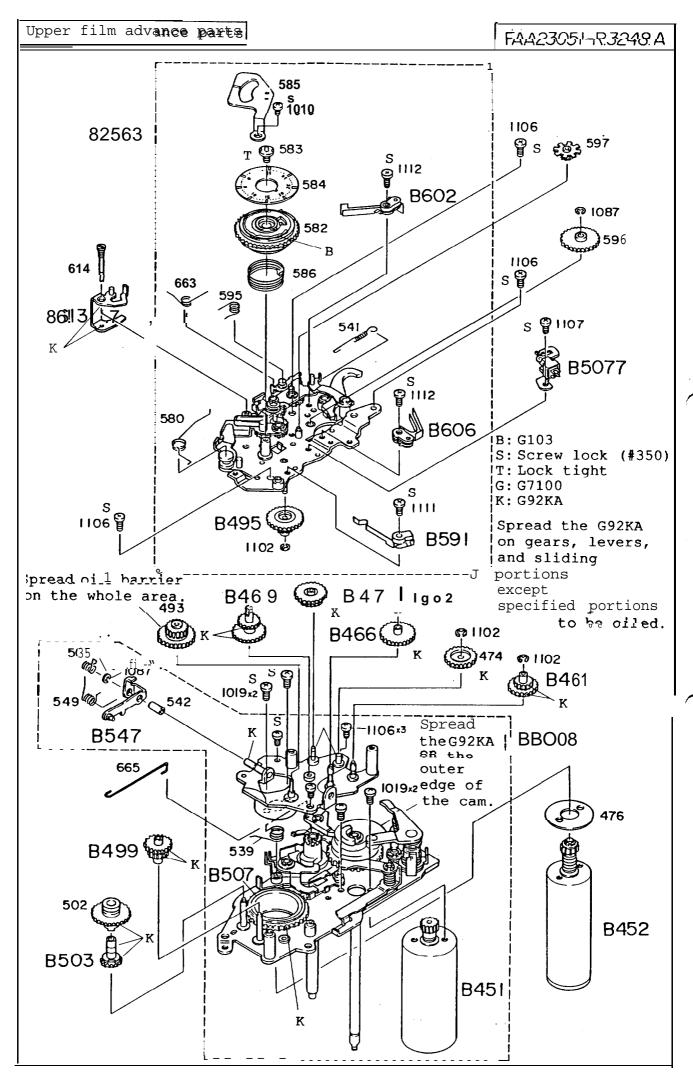
- m

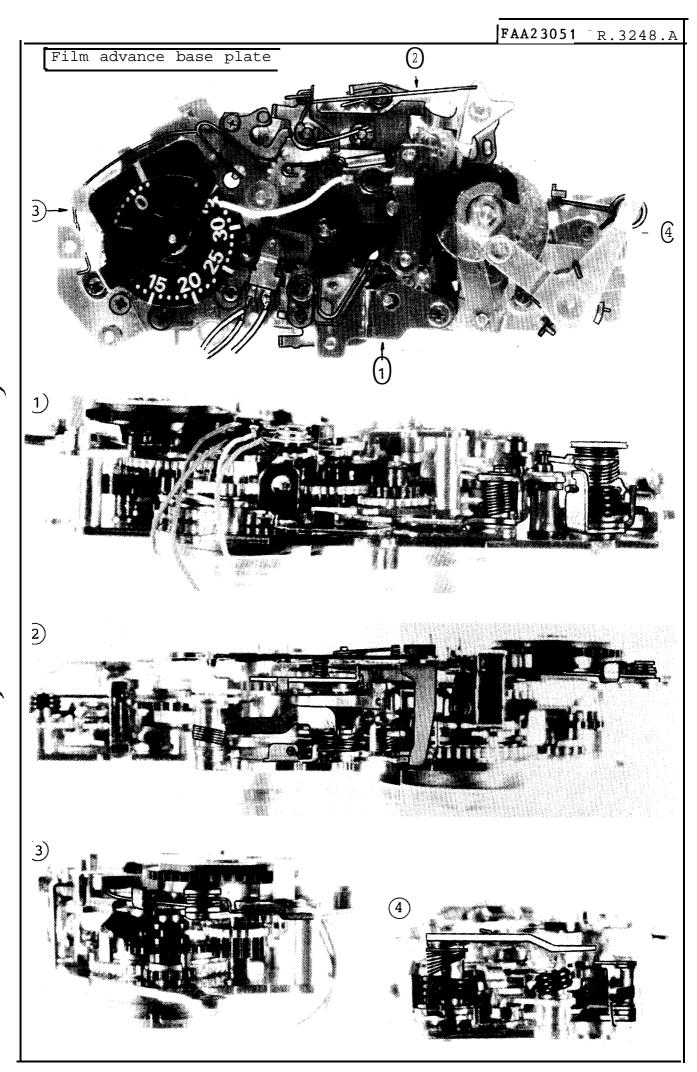
Film rewind shaft

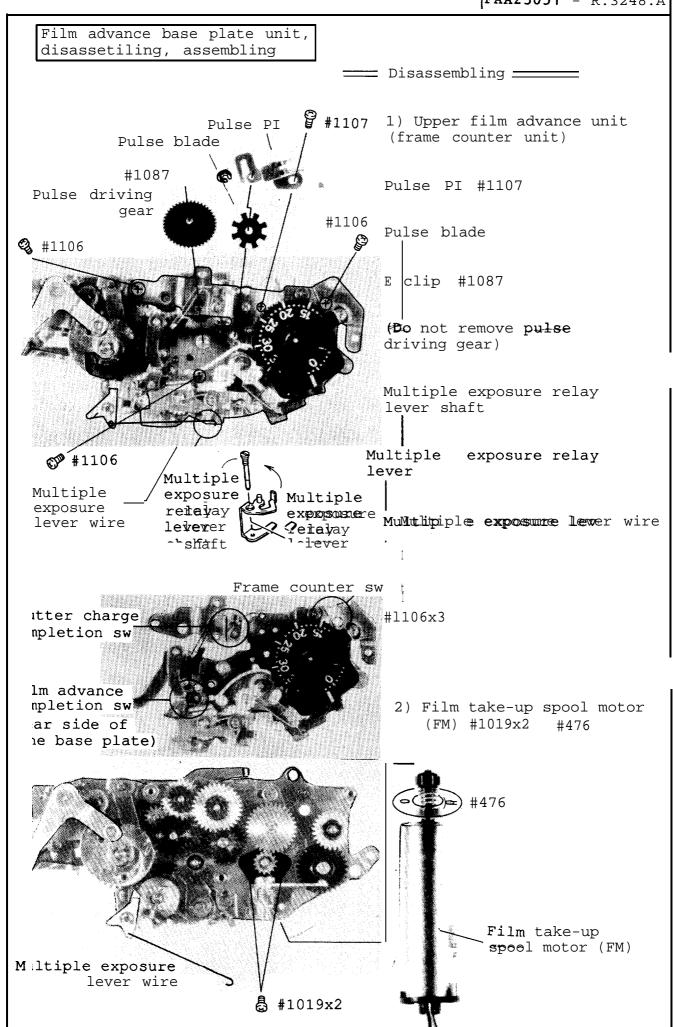
Insert the film rewind shaft from the other end.

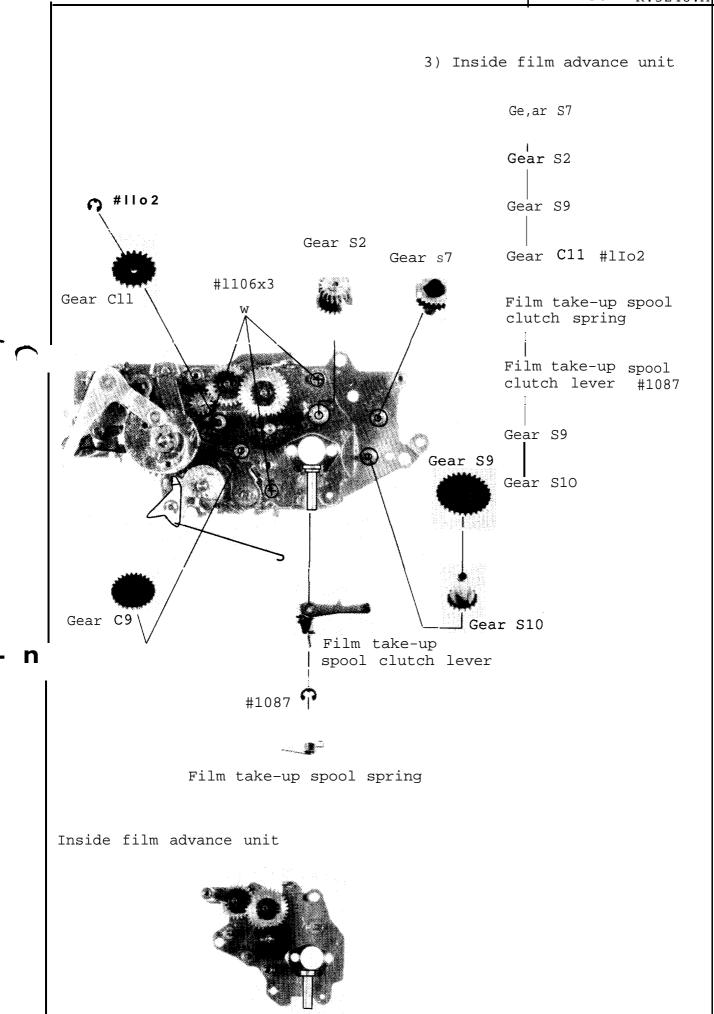


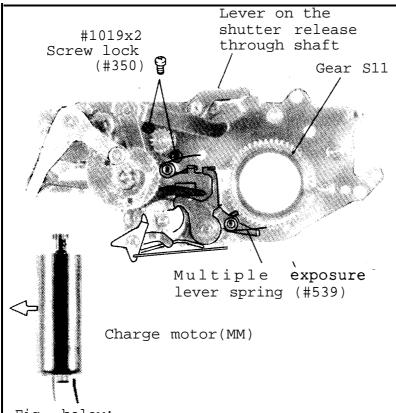
Lock the R2 lever (move the lever up). Check to see if there is irregular rotation and strange sound when rotating the film rewind shaft.











4) Shutter charge motor (MM) #1019x2

__Assembling

(See page A12 for applying oil and attaching)

1) Shutter charge motor (MM)

#1019x2

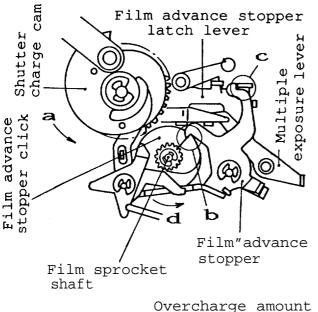
Mount the motor by moving aside in the direction indicated by arrow.

Check the condition of the Film Sprocket shaft Film advance completion.

Set the Film Sprocket shaft to the film advance completion state

- (1) Portions b and c (as shown in the figure) of the film advance stopper will be disengaged from the film advance stopper latch lever when the shutter charge cam is rotated in the direction indicated by arrow a.
- (2) Portions b and c will be engaged when the film advance stopper click moves toward the portion e by rotating the Film Sprocket shaft the direction indicated by arrow d (as shown in the figure) Check to see if the overcharged amount of the Film advance stopper latch lever and the stopper is more than 0.2 by rotating the film sprocket shaft in the direction indicated latch lever by arrow d. (See left figure)

Fig. below: Film sprocket advance completion state.



'ilm advance

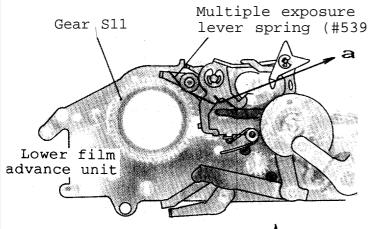
topper click

is more than 0.2. Film advance stopper

Film advance stopper

e? Film'sprocket advance completion lever

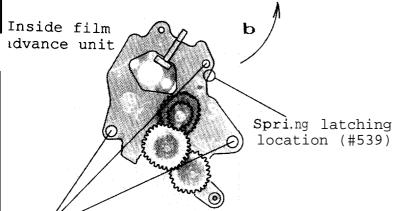
2) Inside film advance unit



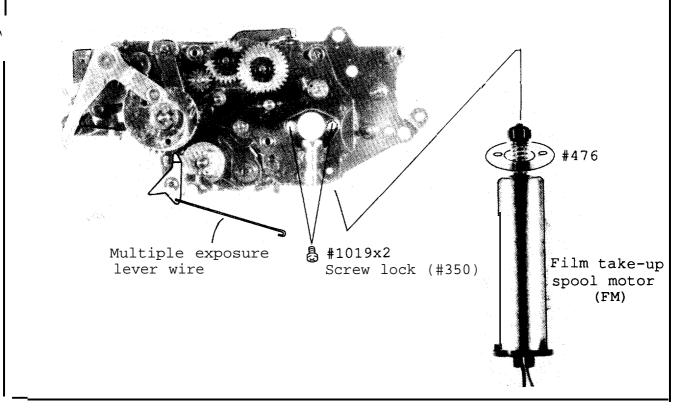
Mount this by rotating the inside film advance unit in the direction indicated .by arrow b while pulling the spring (#539) in the direction indicated by arrow a.

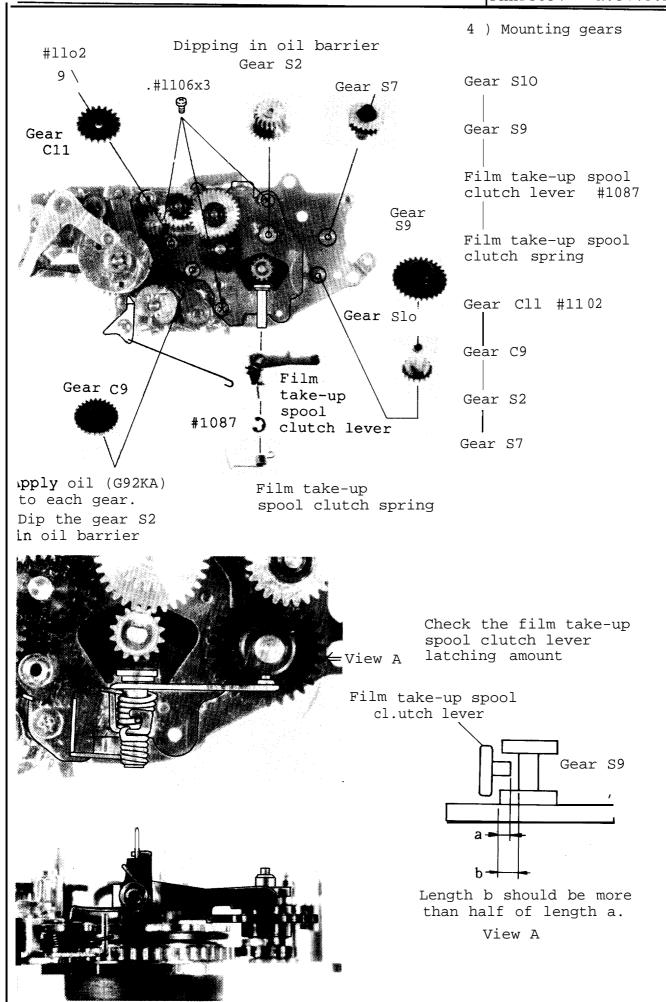
Note: Care should be taken not to pinch the spring (#539) between the lower film advance unit and the inside film advance unit.

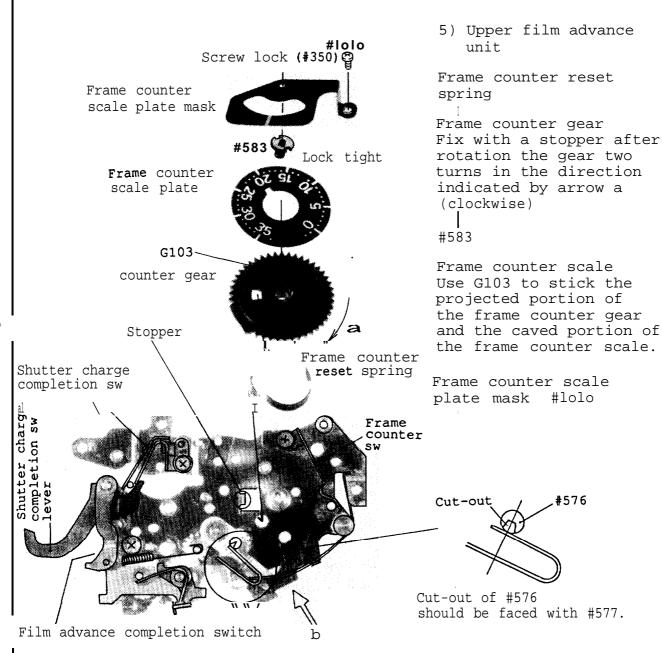




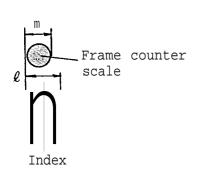
ђ x 3 Screw lock (#350) 3) Film take-up spool motor (FM) #476 #1019x2







Adhere each screw with screw lock (#350). Apply oil (G92KA' on each gear and lever.



n

Inspection (ON-OFF)

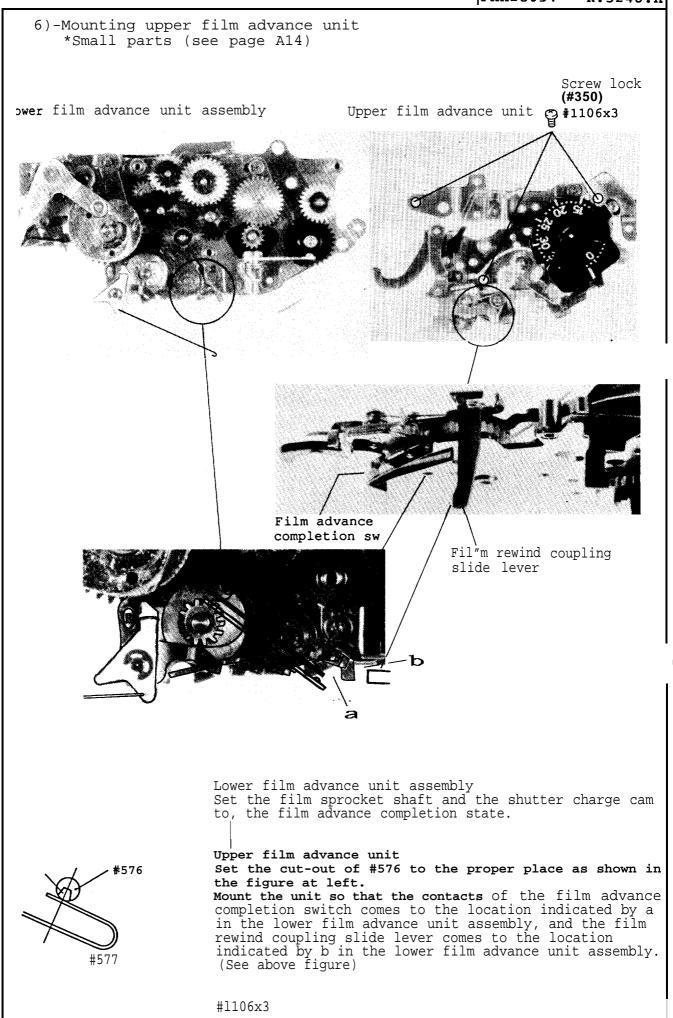
- " Shutter charge completion switch
- •Film advance completion switch
- Frame counter switch

Frame counter scale goes off between frame counter 0 and 1 when the frame counter gear is rotated clockwise.

•Check the location of the frame counter scale mask

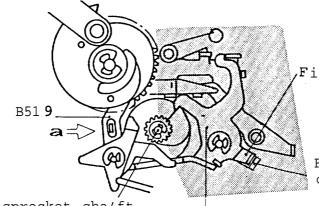
Frame counter scale is within the range of more than 2/3 of the width of the counter index (counter scale plate mask). See the figure at left.

Adjustment: Adjust by moving the frame counter scale plate mask after unfastening #lolo.



On-off inspection of film advance completion switch

Film sprocket shaft is in the film advance completion state.

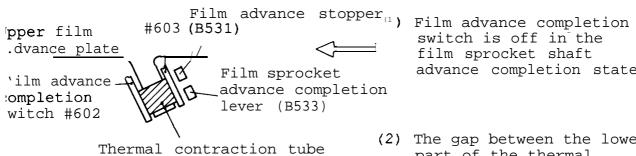


Film advance St.opper (B531)

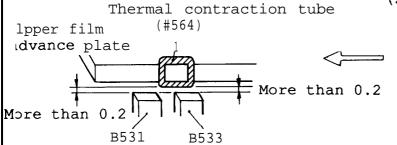
Film sprocket advance completion lever (B533)

Film sprocket sha'ft

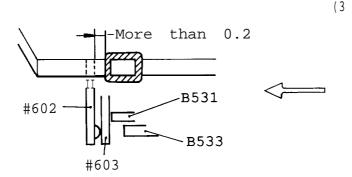
Fi'lm advance stopper



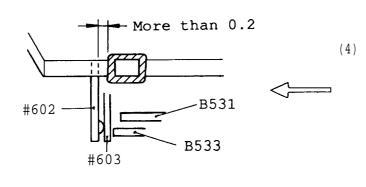
switch is off in the film sprocket shaft advance completion state.



(2) The gap between the lower part of the thermal contraction tube (#564) and the upper side of #B531 and #B533 is more than 0.2 when rotating the film sprocket shaft while depressing #B519 in the direction indicated by arrow a.



Depress #519 in the direction indicated by arrow a while film sprocket shaft is in film advance completion state. (Set to the film advance stopper release state.) Make sure that film advance completion switch goes on by #B531 and the gap between the thermal contraction tube (#564) and #602 is more than 0,2.



(4) Rotate the film sprocket shaft in the above state. Make sure that the film advance completion switch goes on by B533 instead of #531. And the gap between the thermal contraction tube (#564) and #602 is more than 0.2.

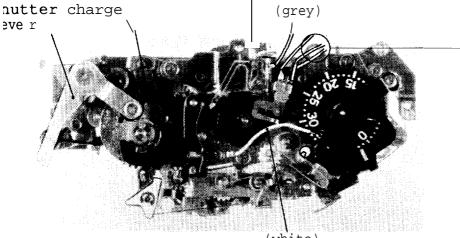
Mounting film advance base plate unit

Figure below: Film advance completion state

Lever on shutter relase through haft

Shutter charge cam

Shutter charge completion switch



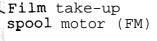
E (blue) + 3.3V (Pink) K (green)

(white) Film advance completion switch

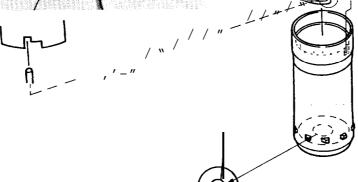
1) Mounting film take-up spool Install a film take-up spool after mounting a film take-up spool spring as shown in the figure. Gear S11 ;hutter charge

'ilm sprocket 3haft

notor (MM)







Film take-up

Film take-up spool

Z)Latched portion of film advance base plate and shutter. •: Indicating latched portion

Film advance base plate positioning pin G7100

Shutter charge lever

Shutter Mg set lever (in reset state)

Shutter release lever

Camera back opening/ Shutter :losing coupling pin T lever

#1049x2

Resetting method Reset the shutter Mg set lever by depressing the lever on the shutter release through shaft (see page A22) while setting it to the film advance completion state by rotating the shutter charge cam counterclockwise .

How to install film 3) advance base plate unit.

(1) Reset the shutter Mg set lever by depressing the lever on the shutter release through shaft after setting to the film advance completion state by rotating the shutter charge cam counterclockwise .

Set to the film sprocket shaft advance completion state by rotating the film sprocket shaft counterclockwise .

(3) Mount the film advance ba e Plate by pulling the EL roller forward.

Left side

offilm sprocket screw (#1074)

Pull the EL roller forward and mount a film take-up spool on the film advance base plate unit.

Note:

- Film advance base plate should be surely fixed in the film advance base plate positioning pin.
- •Film advance base plate and shutter are surely latched.
- Film take-up spool motor (FM) cables should not be pinched.

r

(4) (See page A21)

Mount film advance base plate mounting screws (#1049x2, #774) after resetting the film advance stopper by depressing B519 in the direction indicated by arrow a.

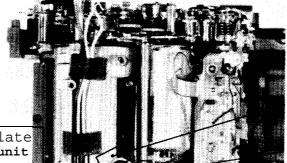
Temporarily fasten the film sprocket screw (#1074x1) (the left side sprocket screw) Inspection

- a. Shutter charge Rotate the shutter charge cam counterclockwise.
- b. Shutter release Depress the lever on the shutter release through shaft

Itiums to T (time)

Reset the T by moving the T lever in film rewind direction.

(5) Cable arrangement
 (□: Junction cables)



Adhesive tape for arranging cables



G103

Power supply base plate -- main FPC bottom unit (orange)(black) L = 140rⁿm

Power supply base plate
-- power Tr. FPC

(orange)(black)L = llOmm

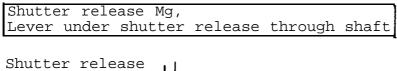
PTr-E (grey)
PTr-C (white)
PTr-B (purple)

Shutter charge motor (MM)
(yellow) (black)
Film detection switch (brown

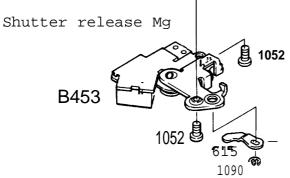
Film rewind motor (RM) (pink) (blue)

Film film-take-up-spool motor (FM) {red) (black)

PTr (3V)







lever under shutter release through shaft

#GŽKA

;ever under
shutter release
through shaft
and its bearing
(release Mg)

Shutter release Mg (red)

(black) / / / Adhesive tape

for arranging cables

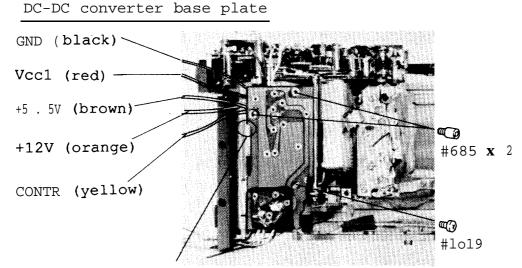
Spring latching

Inspection

- a. Thrut play of shutter
 release through shaft:
 0.1 -- 0.3
- b. charge amount of the lever under the shutter release through shaft:
 More than 0.2
 Check the charge amount by rotating the shutter charge cam
 counterclockwise.

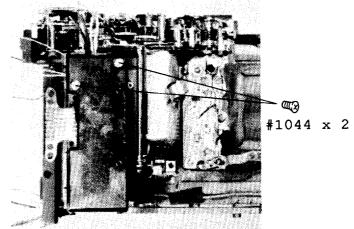


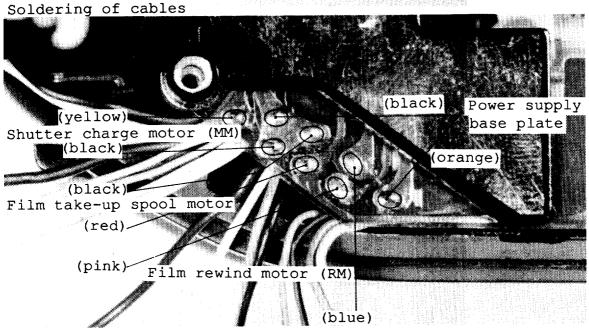
Lever under shutter release through shaft



*Be sure not to pinch cables.

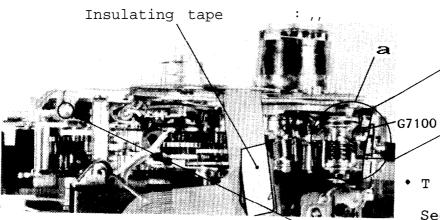
Power Tr FPC unit





Shutter speed dial base plate

1) T (time) lever
RI set lever
Latched position



🖁 #1050

9 #1106

T (time) lever Shutter speed dial base plate side

T (time) lever Shutter unit side

• T (time) lever

See the portion indicated by a in the figure.

- •RI set lever

 See the portion indicated by b in the figure.

 R1 set lever on the film advance base plate (uppe: film advance unit-) and R sw lever on the shutter speed dial base plate should be latched.
- 2) Mounting shutter speed dial base plate #1050 #1054 #1106

Solder

3) Soldering cables
Adhesive tape (frame counter switch)
for arranging cables

Shutter charge completion switch (grey)

Pulse PI (pink)

<Film advance
completion switch (white)</pre>

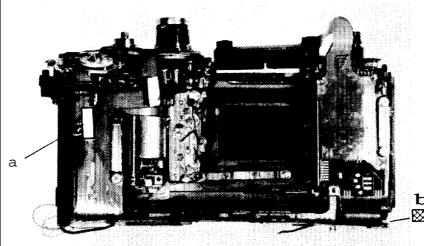
+Pulse PI (green)

'se'PI (blue)

₩1054

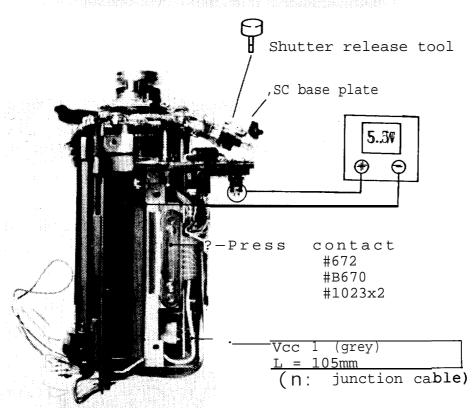
- A27-

Mounting Main FPC



Refer to pages D10 to D11 when mounting main FPC.

- a. Insulating tape
- b. Adhesive tape for arranging cables.Adhere cables on the rear side of the main FPC.



Checking camera back

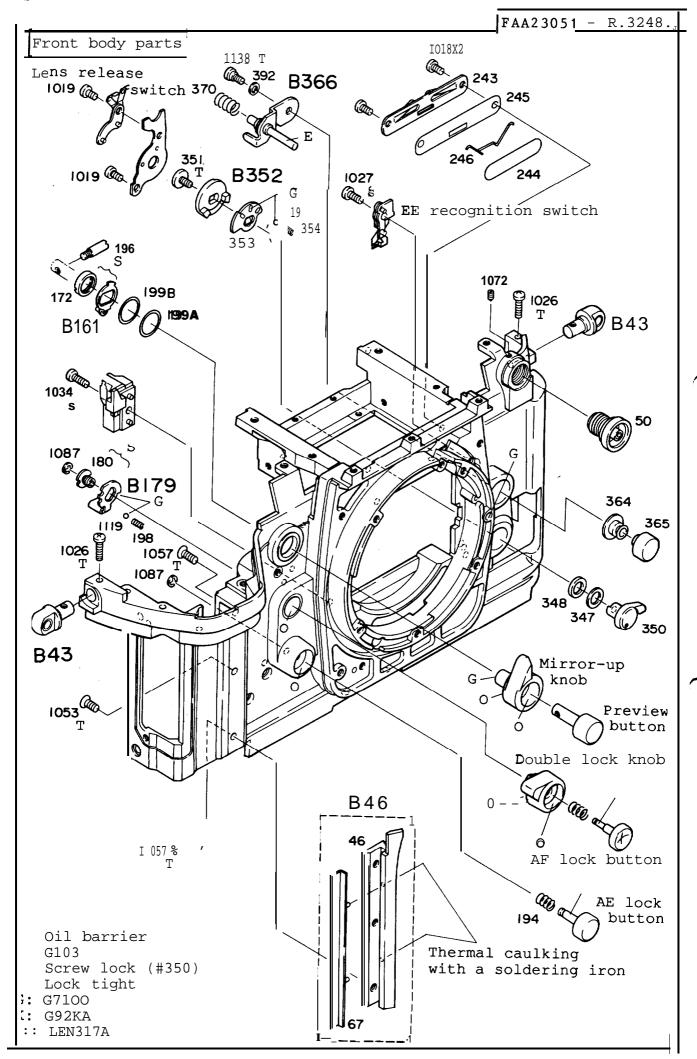
(Refer to above figures)

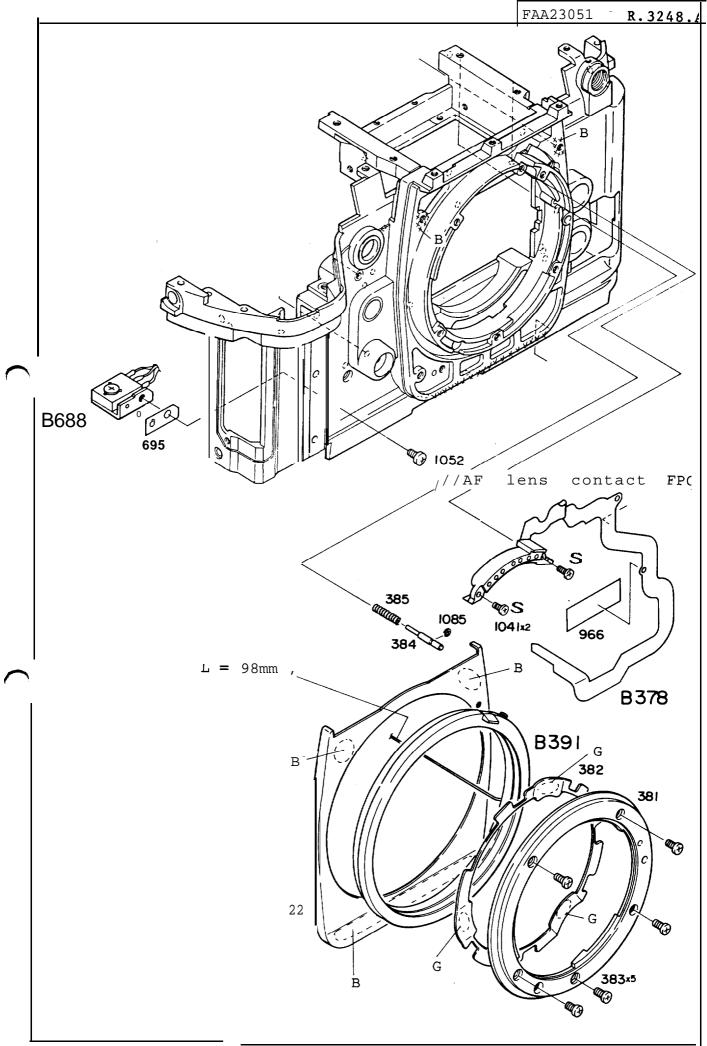
- Set the SC base plate as shown in the above figure.
- 2) Press contact the film advance side press contact.
- 3) Supply 5.5V power to the power supply base plate.
- 4) Mount a shutter release tool (self-made tool)

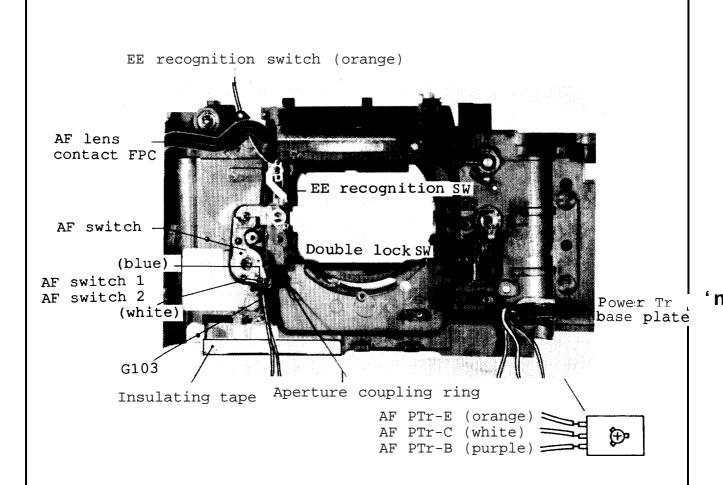
speed dial to $1/4000~{\rm sec.}$ or Note: Set the shutter adjustment is completed. slower until AE

- A. Check the back body (as shown on page A28) .
 - Set the exposure selector mode to M
 - •Turn off the camera back switch (push the camera back switch pin)
 - (1) Shutter release
 - (2) Shutter speed
 - (3) Mechanical shutter charge sequence
 - (4) S-C mode (L, S, C_H , C_L , C_S , Self-timer)
- B. Personal computer and back body inspection (Hook up personal computer and communication tool [J15279])
 - (1) Inspection of operation Film take-up spool motor Film rewind motor Shutter release Mechanical shutter charge sequence
 - (2) Inspection of switches

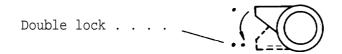
 - (3) Inspection of dials(4) Inspection of LCD display



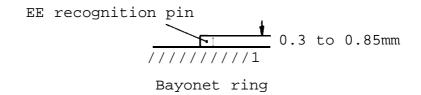




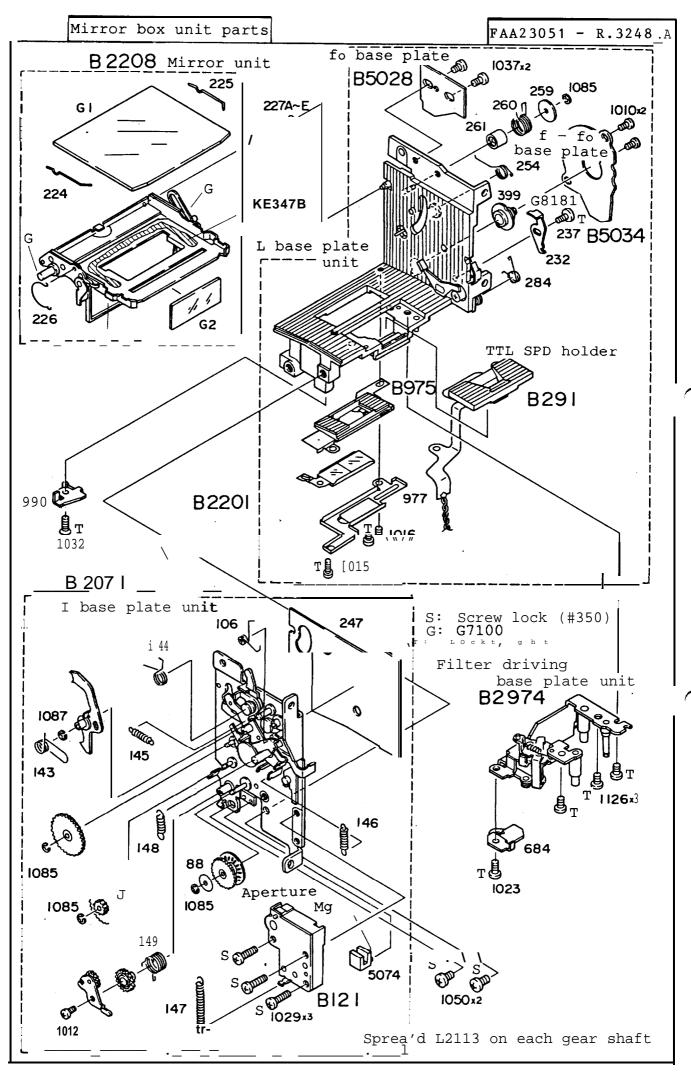
1) Checking double lock switch
The switch turns on when the double lock knob is set
to the double lock side.

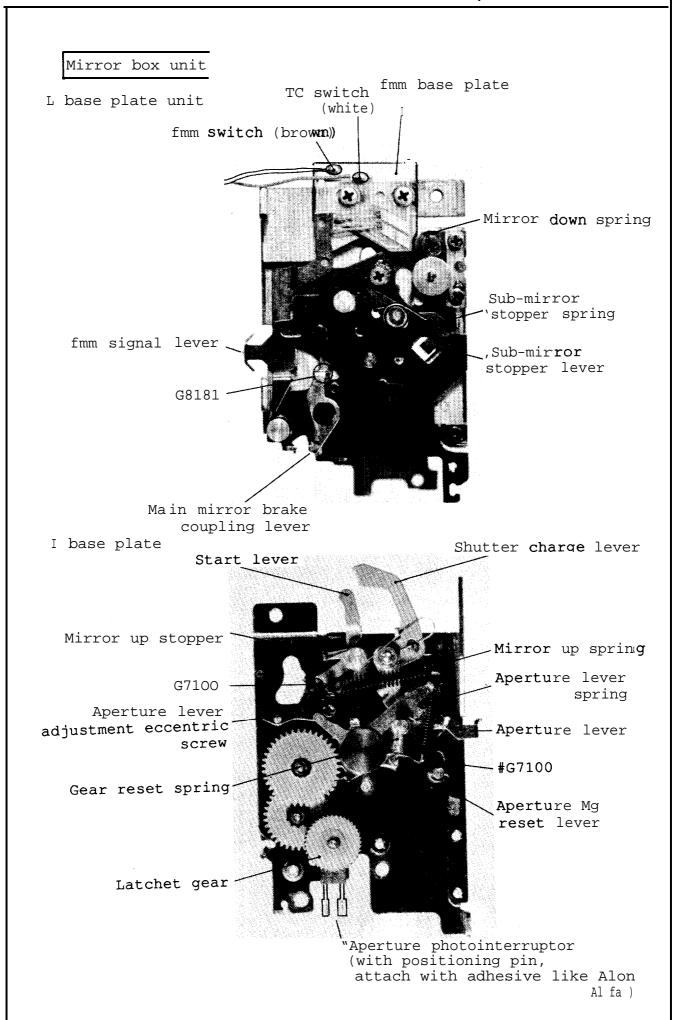


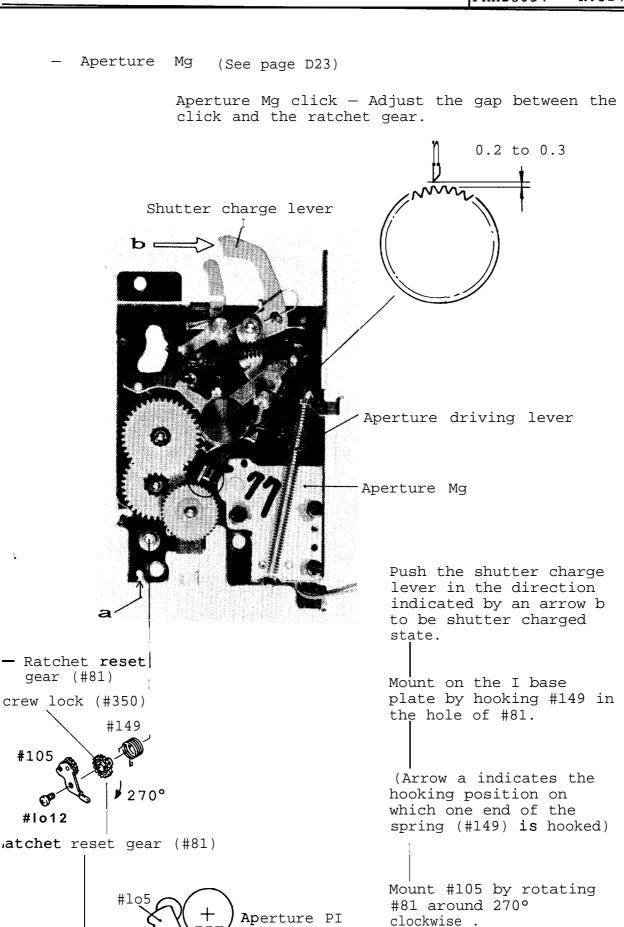
2) Checking EE recognition switch
The switch turns off at the height of 0.3 to 0.85mm
from the bayonet ring surface.



AF base plate unit, fo base plate unit AF motor B313 1048 fo base plate fo lever B5033 B408 010x2 1005x5 Spread L21 13 on each shaft . 321 B312 B315 1114 331 **B311** s: Screw lock (#350) K: G92KA **B**5075 S a' b': AF coupling ring lever hole AF.PI c': AF base plate positioning pin Mount the fo lever on the AF base plate unit, : AF coupling ring lever Mount the AF base plate unit on the front body by adjusting levers and pin indicated by : Note: Do not bend arrows in the figures: fo lever brush a - a': fo lever b-b': AF coupling lever AF base plate c - c': Checking fo base plate positioning pin brush positioning Adjustment of btush position on #1048x2 fo base plate Hook the AF lever spring (#410) on the hook. There should be a space between brush contact portion and end of fo pattern when lens is not 1.24 ± 0.2 attached.







#lo12

Spread KE347w

Mounting mirror unit, I base plate, L base plate

See page D23

Mounting mirror box, front body

See page D22

Adjust thrust play of mirror unit Rated value: 0.1 to 0.3 Adjustment washer

1K050-334	0.1
1K050-335	0.05
1K050-336	0.15
1K050-337	0.2
1K050-338	0.3

Cable arrangement

Cable, FPC, adhesive tape

for. cable arrangement

AF lens contact FPC

TC switch (white)
fmm switch (brown)
EE switch (orange)

fo (green)

FPC positioning pin

Filter driving base plate, filter unit, TTL SPD unit

See pages D20 to D21

- Filter unit

Check: Filter mirror holder moves by its own weight

when the front body is declined after

assembly.

- Filter driving base plate unit

Check: Check to see if the filters are switchable

after assembly.

Seesaw lever

See page D19.

AF mode selector lever unit

See page D19.

Lens release button switch

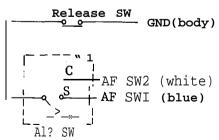
See page D18.

Check AF switch 1, AF switch 2, lens release button switch

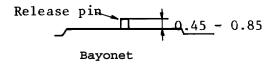
Check continuity of each switch by "connecting GND (body) and AF switch 1 (blue), and GND and AF switch 2 (white) using a tester.

(1) AF switch inspection

	AF	switch	1	(blue)	AF	switch	(white)
] mode		off				on	
3 mode		on				off	-
1 mode I		off				off	



(2) Lens release button switch inspection
AF switch 1 and AF switch 2 turn off when the lens
release pin is within the range of 0.45 to 0.85 from
the bayonet ring.



Mirror operation base plate unit

See page D17.

Check preview bottom and mirror up operations

f-fo base plate, f-fo pulley

f-fo base plate

f-fo pulley

See page D18.

Mount by rotating the pulley once clockwise while aligning the f-fo pulley spring (#402) with the f-fo pulley shaft groove .

#1087

f-fo pulley stopper Spring (#402) f-fo pulley shaft groove

f-fo pulley

#403 --

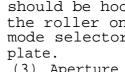
Note: Do not damage the plastic mold shaft of the f-fo pulley.

Reel aperture coupling ring thread in the #403 groove. (See figure a)

Note :

#1087

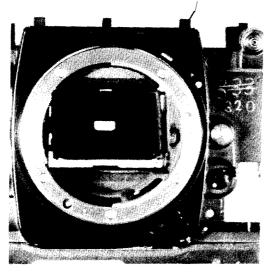
- (1) Thread knot should not be pushed out from the surface of the f-fo base plate.
- (2) Aperture coupling ring thread should be hooked in the roller on the AF mode selector base
- (3) Aperture coupling ring thread should not be bent.



Aperture coupling ring thread

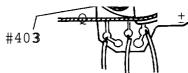
1) Adjustment of f-fo pulley stop position

Aperture coupling ring is attached to the stopper.



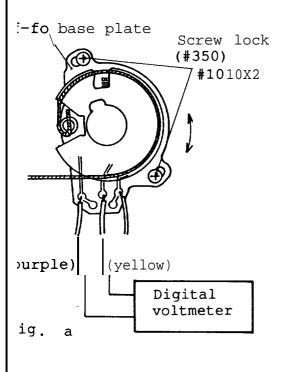
The f-fo pulley is being attached to the stopper.

Use adhesive (Alon Alfa) to attach.



Adjust by rotating #403 so that the aperture coupling ring and the f-fo pulley come into contact with the stopper simultaneously.

2) Adjustment of the f-fo base plate position.



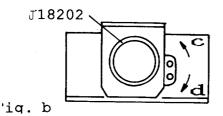
(1) Mount the f-fo tool lens (J18202) on the body.

(2) Set the digital voltmeter (at the resistance measuring range) as shown in Fig. a.

(3) Adjust by rotating the f-fo base plate so that each resistance value can be measured when the f-fo tool lens (J18202) is moved aside as shown in Fig. b.

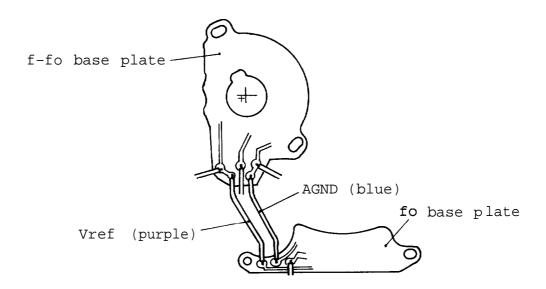
Resistance value is 624 to 936Ω when the tool lens is moved in the direction indicated by arrow c. Resistance value is 0Ω when moved in the direction indicated by arrow d.

(4) Fasten screws (#1010x2) and spread screw lock (#350) on them.



– Soldering cables

Solder AGND (blue) and Vref (purple) on the f-fo base plate.



- When f-fo pulley shaft is damaged.
 - (1) Remove the f-fo pulley and the f-fo base plate.
 - (2 Remove the damaged f-fo pulley shaft.

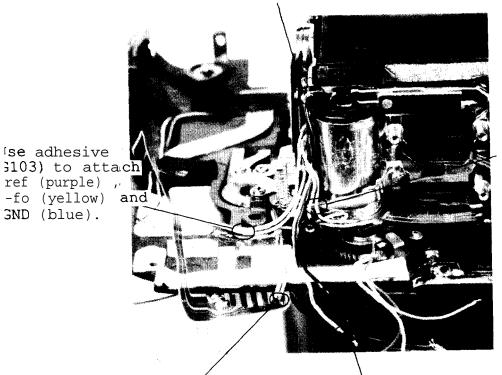
 Note:Check to see if there are any broken pieces left in the L base plate.
 - (3 Mount the f-fo pulley shaft (1K371-359) .
 - Spread adhesive (Alon Alfa) at the portion where the f-fo pulley shaft is mounted.

Lock encoder FPC unit

See page D17.

Cable arrangement on the lower part of the L base plate

Hook AF motor cables on the holder.



Vref (purple) AGND (blue)

AF switch 1 (blue) _/ AF switch 2 (white)

se adhesive

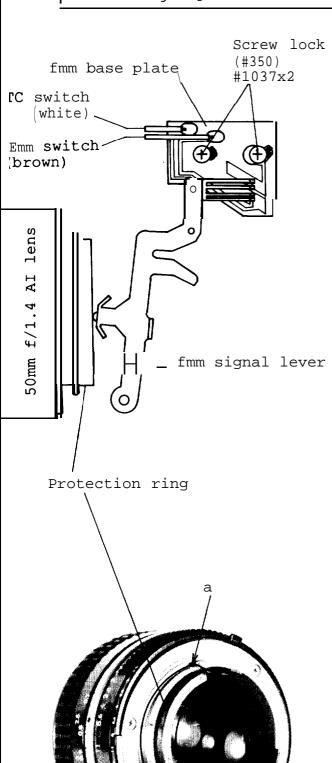
GND (blue).

AF motor (red), (black)

AF base plate unit

See pages D15 to D16.

Positioning adjustment of fmm switch

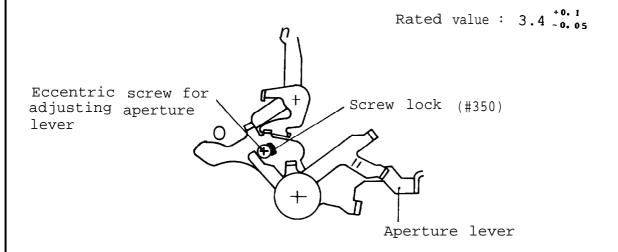


- (1) Connect a tester between the TC switch (white) and the body (GND) .
- (2) Mount the 50mm (f/1.4) AI lens on the body. Do not move any further once the protection ring of the 50mm f/1.4 AI lens (indicated by arrow a) pushes the fmm signal lever.
- (3) Fasten the fmm base plate at the point when the TC switch is changed from ON to OFF by moving the fmm base plate. Then the fmm signal lever brush should be positioned at the center of the TC switch and the fmm switch patterns.
- (4 The fmm switch should be off when the 50mm f/1.4 AI lens is removed.

Noi_e: Correct lens:
50mm f/1.4 AI

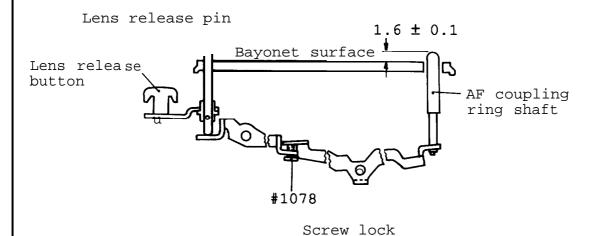
(Do not use 50mm f/1.4
AI-S and AF 50mm f/1.4.)

Height adjustment of aperture lever



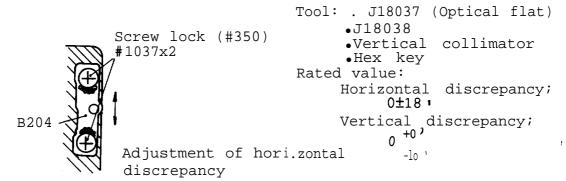
Height adjustment of AF coupling ring shaft

Adjust the height by turning the screw (#1078) so that the AF coupling shaft is higher by 1.6 \pm 0.1 than the bayonet surface when the lens release button is free in AF-C or AF-S mode .

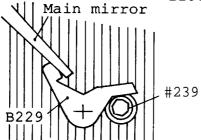


Angle adjustment (45°) of main mirror (Gl), sub-mirror

- Angle adjustment (45°) of main mirror (Gl)



Adjust by moving B204 vertically.



Adjustment of vertical discrepancy Adjust by rotating #239.

- Angle ad-justment (45°) of sub-mirror (G2)

Tool: •J18196 (determines the angle (45°) of the subrnirror) ● Vertical collimator

Rated value: Vertical discrepancy; 5*5'

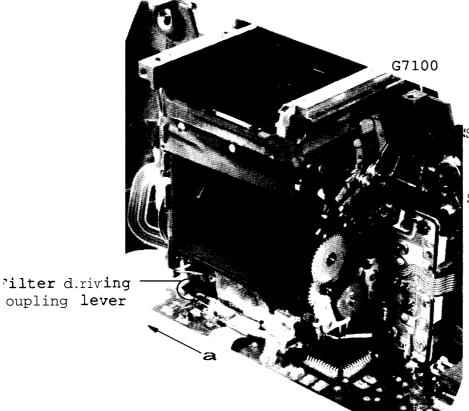
#253 Sub-mirror stopper lever Adjustment of vertical discrepancy

f-fo pupulelyey

Adjust by rotating #253.

Mounting on front body and back body

- Preparation for mounting on front body side



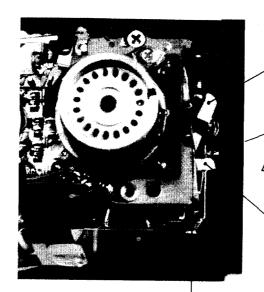
Shutter charge lever

Start lever

- - 1) Move the mirror down
 - •Move the mirror down by pressing the shutter charge lever to the bayonet ring.
 - Spread G7100 on the tip of the shutter charge lever, and start lever.
 - 2) Move aside the filter driving coupling lever to film rewind side or in the direction indicated by arrow a.

Note: Eliminate foreign matter in the filter and AF sensor units by using a blower.

- Preparation for mounting on back of body
- 1) The body should be set in the film advance completion state.



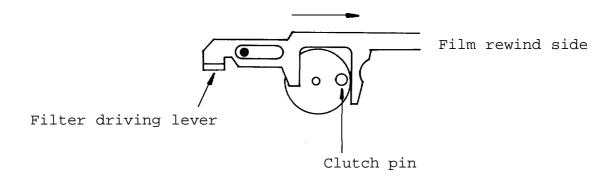
Shutter charge lever

Shutter release lever
Shutter release lever
should be set to the far back position.

'Mirror down lever

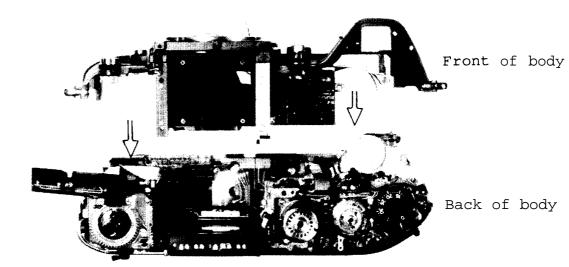
Note: Check that the T (time) lever is correctly latched. (See page A27)

- 2) Set the shutter speed dial to the T (time) position,
- 3) Move the filter driving coupling lever to the film rewind side.



* Set the clutch pin at this position and fix the filter driving coupling lever.

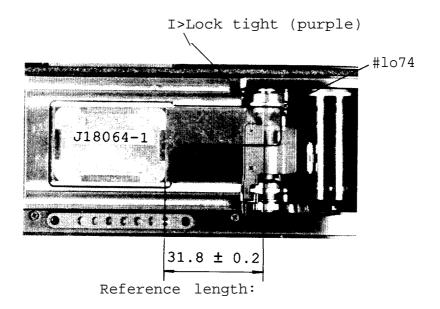
- Mounting

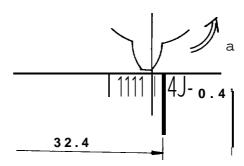


Assembling: See pages D3 to D5.

Adjustment of film sprocket cogwheel positioning

- 1) Set the body to the film advance completion state.
- 2) Unfasten the film sprocket screw (#1074xl)
- 3) Set the film sprocket cogwheel positioning tool (J18064-1) on the aperture surface.
- 4) Fasten the film sprocket screw (#1074) temporarily after aligning the right end of the film sprocket cogwheel to the position 31.8. Ad-just it further so that the right end of the film sprocket cogwheel will be within the range of 31.8 ± 0.2 when moving the film sprocket in the direction indicated by arrow a.





- Mount the film sprocket screw (#1074) with lock tight (purple) in the left film sprocket screw hole (indicated by arrow b).
- 6) Check to see the film sprocket cogwheel position by repeating film advance operation several times.

Adjustment of body back

Same as for F3 and other models.

Adjustment of infini,ty

Same as for F3 and other models.

AE, AF Accuracy, inspection, and adjustment

AE accuracy inspection and adjustment items (followina instructions by personal computer)

1. AE accuracy inspection, adjustment

Sub-menu	Inspection, adjustment items		
1. F4 + AMP.FD	Spot exposure metering ad-justment-> AMP exposure metering		
2. F4	Spot exposure metering adjustment->(1)		
3. AMP.FD	AMP exposure metering adjustment (adjust by mounting on the tool body)		
4. F4 + Action FD	Spot exposure metering -> Center-weighted exposure metering->(1)		
5. Action FD	Center-weighted exposure metering (adjust by mounting on the tool body)		
(1) -> Adjust M 1/8000 (M 1/4000) -> TTL adjustment (Adjust by mounting AMP.FD or Action FD)			

- 2) When main FPC on the F4 body or EEPROM is replaced:
 - 1) Make following adjustment (write AF compensation value into EEPROM) after the inspection of item 1.

 -> X BER P adjustment -> AZ adjustment -> Hard AGC adjustment

AF accuracy inspection, adjustment items (following instructions by personal computer)

Note :

- 1) When making adjustment of AF accuracy, remove bottom cover, tripod socket (see page D2), bottom FPC screw (#685, #1026, #1038) (see page D6), and set up the bottom FPC unit.
- 2) When making adjustment, close the viewfinder eyepiece shutter or cover the body with black cloth.
- 3) When viewfinder is not attached, adjust the Az by aligning the AF inspection chart and target zone on the focusing screen.
- 4) It is not required to attach AF sensor adjustment screws (x 3) with screw lock.

1) AF accuracy inspection (adjustment when disassembling AF sensor unit)	2) AF Sensor (when displacing)	3) Main FPC of F'4 body (when displacing main FPC or EEPROM)
X BER P inspection and adjustment	X BER P adjutment	After AE adjustment, write following compensation value into EEPROM
YAW inspection and adjustment	YAW djustment	
PITCH inspection and adjustment	PITCH adjustment	X BER P adjustment
Az inspection and adjustment	AZ adjustment	AZ adjustment
	Hard AGC adjustment	Hard AGC adjustment