> FAA23051- R. 3248. A

## ASSI3MBLING \& ADJUSTMENT

## Contents

Assembl ing, back body ]

Bottom cover and tripod parts -------- .- .-. ------ . . . . . . . . _.. _ _ -. _ --- A2
Film advance side cover, Film rewind side top cover A3

Sync contact, film detection switch --------- A?
FD, DBor DXFPC unit --------------------------------------------------- A8
Shutter unit -- ----.--. --- ........---. -- ....... . -. ...-. -. A9
Film rewind motor -- --- - ---- ---- ---- -- ---- __ . __ . _ .._ . -_ . . A9
Film rewind unit - -----------------------------------------------------------111

Film advance baseplate --------------------------- --------------- ${ }^{----}$
Film advance base plate unit, disassembly, assembling ----- ---- A14
Mounting film advance baseplate unit ----------------------------- A22
Shutter release fig, Lever under shutter release throught shaft ------- A25
DC-DC converter base plate ---- ----- ------ ----- _-------------- A 26
Power TrFPC unit --------------------------------------------------------------126
Shutter speed dial base plate --------- ----- ------ -- ------ ----- ----- --- A27


1 Assembling, front body]
Front body parts ------- - ---- ---- . -- -- ------- ---- - . . ---- ---- ---- ---- --- A29
AF baseplate unit, fo baseplate uñ̄it ------------------------- A32
Mirror box unit parts .------------------------ A33
Mirror box unit --------------- --- ----- ..- - . . .- - -- -- .------------------ A34
Mounting mirror unit, I baseplate, L baseplate ----------------------- A36
Mounting mirror box, front body ------ ------- -. --------------- ..-. . . A36
Filter driving base plate, filter unit, TTLSPD unit -------- ---------- A37
Seesaw lever ------ ---- ---- ---- ----- ---- ----- ---- ---- ---- ---- ---- --.. - A37
AF rnodeselect.or lever unit ----------------------------------------------- A37
Lens release button switch - ---- --- -- . ---- . -. ------- ..- --- .. . - . ...... A37
Mirror operation base plate unit ---- . ---- ---- ------ ----- ----- A38
f-fo base plate, f-fo pulley ..... ---- ---- ---- --------- ----- ---- ---- . A38

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 ( $45^{\circ}$ ) of main mirror ( Gl ) sub-mirror ( G 2 ) ..... 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 ..... A49
Adjustment of infinity ..... A49
AE, AF Accuracy, inspection, and adjustment ..... A49


```
Bottom cover and tripod parts
```





## G7100:





```
Sync contact, film detection switch
```

- Sync contact

- Film detection switch


## Film detection switch



Film detection
switch pin


External film guide rail

Check the ON-OFF position of the film detection switch based on the external film guide rail:
Height (or play); $a=1.13 \pm 0.15$
ON-OFF switching position; b $=1.00$ or more Total stroke; More than 0.1 deeper from the external film guide rail.
FD, DB, or DX FPC unit

Thyristor trigger base plate

 protective UMMIRROR on :he DB .
 arrangement


DB contact cover


Tape for arranging cables

Spread a small of adhesive on contact mold
\#1022 x 2 \#lo40 x 2 \# 679 X 2
Place the DB contact FPC through the hole of the body

DB contact cover \#1127x2

Attach light leakage protective plastic sheet on the DB

Soldér cables

Arrange cables


## Check the latching condition of the R2 lever

The latching amount of the \#864 and \#869 when the R2 lever is in locked state; $A \doteqdot B$ (approx. 0.7)

Adjust by bending part C indicated by the arrow in the figure at left.


Shutter unit
\# 66
\#68
\#1135

Film rewind motor unit


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


Lock tight \& \# $\# 019 \times 2$ (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 x 3

Film rewind mold base plate

Camera back switch


SW
\#1113

Film rewind base plate


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
Film rewind shaft
switch pin

Insert the film rewind shaft from the other end.
4. 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.



3) Inside film advance unit

Ge, ar S7

Gear S2
Gear s7
Gear S2
$-$


> Film take-up spool clutch spring
 clutch lever \#1087

Gear S9

- n



2) Inside film advance unit


Inside film idvance unit


$b$

Spri.ng latching location (\#539)

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.
\# 140xa
3) Film take-up spool
motor (FM)
\#476
\#1019x2





Index

Inspection (ON-OFF)
" Shutter charge completion switch
-Film advance completion switch

- Frame counter switch

Frame counter scale goes off between frame counter $O$ 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.
6)-Mounting upper film advance unit
*Small parts (see page A14)


Lower film advance unit assembly
Set the film sprocket shaft and the shutter charge cam to, the film advance completion state.

Upper film advance unit
Set the cut-out of \#576 to the proper place as shown in the figure at left.
Mount the unit so that the contacts of the film advance completion switch comes to the location indicated by a in the lower film advance unit assembly, and the film rewind coupling slide lever comes to the location
indicated by b in the lower film advance unit assembly. (See above figure)

On-off inspection of film advance completion switch

Film sprocket shaft is in the film advance completion state.

ilm advance St.opper (B531)

Film sprocket advance completion lever (B533)

Film sprocket sha'ft
Fi'lm advance stopper
'pper film
.dvance plate `ilm advance :ompletion witch \#602


Film sprocket advance completion lever (B533)

More
More than
Thermal contraction tube
lpper film (\#564)
ıdvance plate

(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.
(3 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 .

Figure below: Film advance completion state,

Lever on shutter relase through haft

Shutter charge cam
autter charge
2ver


1) Mounting film take-up

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

Film advance base plate
positioning pin


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 .
(2) 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.


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.


Shutter release Mg,
Lever under shutter release through shaft
Shutter release throuqh shaft


## 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.

Spring latching

shaft

|Power Tr FPC unit|


Soldering of cables



See the portion indi.catec by a in the figure.


## -RI set lever

See the portion indicatec 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 bє latched.
2) Mounting shutter speed dial base plate
\#lo50
\#lo54
\#1106


(Refer to above figures)

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

Note : Set the shutter speed dial to $1 / 4000$ sec. or slower until AE adjustment is completed.
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, $\left.S, C_{H}, C_{L}, C_{S}, ~ S e l f-t i m e r\right)$
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.

Double lock . . . .

2) Checking EE recognition switch

The switch turns off at the height of 0.3 to 0.85 mm from the bayonet ring surface.

EE recognition pin


AF base plate unit, fo base plate unit


Spread L21 13 on each shaft.


Checking fo base plate brush positioning

Adjustment of btush position on 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 attached.



Aperture Mg click - Adjust the gap between the click and the ratchet gear.

\#lo12

```
Mounting mirror unit, I base plate, L base plate|
```

See page D23
Mounting mirror box, front body

See page D22

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

Cable arrangement

こable, 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 |
| j 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.


Bayonet

```
Mirror operation base plate unit
```

See page D17.
Check preview bottom and mirror up operations


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


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

Note :
(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 plate.
(3) Aperture
coupling ring thread should not be bent.

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.
 (Alon Alfa) to- ${ }^{\text {w }}$
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 $936 \Omega$ when the tool lens is moved in the direction indicated by arrow c. Resistance value is $0 \Omega$ 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).
(4 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


AF base plate unit

See pages D15 to D16.



```
Height adjustment of aperture lever
```

Eccentric screw for adjusting aperture lever

Rated value : $3.4_{-0.05}^{+0.1}$



[^0]
## Lens release pin



Angle adjustment (45 ) of main mirror (Gl), sub-mirror (G2)

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


Mounting on front body and back body

- Preparation for mounting on front body side


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.

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


- Mounting


Assembling: See pages D3 to D5.


5) 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 $F 3$ 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 $\longrightarrow>$ (1) |
| 2. F4 | \|Spot exposure metering adjustment->(l) |
| 3. AMP.FD | IAMP exposure metering adjustment (adjust by mounting on the tool body) |
| 4. F4 + <br> Action FD | iSpot exposure metering -> <br> \|Center-weighted exposure metering->(1) |
| 5. <br> Action FD | :Center-weighted exposure metering <br> ! (adjust by mounting on the tool body) |
| (1) $\rightarrow$ Adjust M 1 | 000 (M 1/4000) $\rightarrow$ TTL adjustment <br> (Adjust by mounting <br> AMP.FD or <br> Action <br> FD ) |

2) When main FPC on the F 4 body or EEPROM is replaced:
3) Make following adjustment (write AF compensation value into EEPROM) after the inspection of item 1. $\rightarrow X$ BER $P$ adjustment $\rightarrow$ AZ adjustment $\rightarrow$ 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 $A F$ sensor adjustment screws (x 3) with screw lock.

| 1) AF accuracy inspection <br> (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 <br> YAW inspection and adjustment <br> PITCH inspection and adjustment <br> Az inspection and adjustment |  | After AE adjustment, write following compensation value into EEPROM <br> X BER P adjustment <br> AZ adjustment <br> Hard AGC adjustment |


[^0]:    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 .

