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配布許可印



Nikon F5

REPAIR MANUAL

Nikon | NIKON CORPORATION
Tokyo, Japan

SPECIFICATIONS

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SPECIFICATIONS

(The following specifications and mechanical explanations are not included in other instruction manuals or brochures.)

1. AUTOFOCUS

1-1. Focus Tracking

- In Continuous Servo AF or Single Servo AF, Focus Tracking is automatically activated for moving subjects, regardless of film advance mode.
- Focus Tracking is activated regardless of the focus area set.
- With the DW-30/DW-31 attached, exposure metering is performed by the AF CCD sensor. With subjects of -10 EV or darker, the microcomputer's calculation speed for AF operation slows and Focus Tracking performance may deteriorate. When set for Focus-Priority, the shooting speed slows. When set for Shutter-Priority, Focus Tracking response time slows and autofocus may be impossible with darker subjects. All of these occur regardless focus area.
- When Focus Tracking is activated by a moving subject, you can release the shutter when you expect the subject to be in focus, even in Focus-Priority shooting.

1-2. Focus Area

1-2-1. AF area mode

- Two AF Area modes are available, Single Area AF and Dynamic AF. To select either, rotate the Main-Command Dial while pressing AF Area button.

Single Area AF mode:

User can select the desired focus area. The focused distance is calculated **exclusively** by the sensor for the selected focus area.

Dynamic AF mode:

User selects the priority focus area that best suits the **desired composition**. **If the subject moves out of the selected focus area, Dynamic AF instantly shifts to the new focus area to keep the subject in focus. Focus area indication does not change.** Using the PC software for the F5, you can limit selectable focus areas for Dynamic AF.

1-2-2. Selecting focus area

- User selects one of the five focus areas.
Selected focus area remains unchanged when the AF area mode changes.
- To select the focus area, press the focus area selector. Pressing top, bottom, left or right on the focus area selector shifts the selected focus area in a corresponding direction. Diagonal shift can also be performed (to switch to the top area from the left focus, for example, press top on the selector, without first selecting center; to switch to the bottom area, press down on the selector). With the DW-30/DW-31 attached, right and left indications are reversed.

- With the standard EC-B screen, the selected focus area is displayed in the LCD. The focus area indicator inside the viewfinder can be seen with any type of screen.
- To lock the focus area, while pressing the lock button press the focus area selector to designate the desired area. To release the lock, press the focus area selector while pressing the lock button again. Performing Two-Button Reset or turning the camera's power off will also release the lock.
- Pressing one direction on the focus area selector with focus area selector already pressed to another direction shifts focus area.

1-3. Scan-Driving—Re-Autofocusing with Large Defocus Amount

- If the amount of defocus detected in the selected area exceeds a specified value, the lens begins autofocusing again (scan-driving). At low brightness, the scan-driving speed slows. If the subject is brighter than EV 8, it performs high-speed scan-driving. If the subject brightness is EV 4 or darker, it performs low-speed scan-driving at a specified fixed speed. Between EV 8 and EV 4, scan-driving speed gradually slows at a linear rate.
- In Dynamic AF mode, if the amount of defocus detection in the selected area exceeds a specified value, scan-driving can be performed only within the selected area. If no in-focus subject is detected in any of the five areas, scan-driving is not performed. For autofocus using the focus-assist illuminator, focus detection is not performed after scan-driving. To restart autofocus, lightly press the shutter release button.
- With the Speedlight's focus-assist illuminator, focus detection is performed once. To restart autofocus, lightly press the shutter release button.

2. EXPOSURE MEASUREMENT

2-1. TTL Full-Aperture Measurement

- With AI-type Nikkor lenses (including AI-modified Nikkor lenses), TTL full-aperture measurement is performed.
- With the standard DP-30 finder, three types of exposure metering systems are available—3D Color Matrix Metering, Center-Weighted Metering and Spot Metering. With other optional finders, available metering systems are more limited.
- Metering system availability depends on the lens attached.
- Available metering systems are as follows:
 - o With the standard DP-30 finder—3D Color Matrix Metering, Center-Weighted Metering and Spot Metering can be performed with the 1,005-segment Advanced Matrix Sensor inside the DP-30 finder.
 - o With the DW-30/DW-31 finder—Spot Metering can be performed with the central CCD sensor inside the camera body.
 - o With the DA-30 finder—five-segment Matrix Metering, Center-Weighted Metering and Spot Metering can be performed with the SPD sensor (same type as for the F50) inside the finder.

- In **Center-Weighted Metering** with the DP-30 finder, 75% of the meter's sensitivity is concentrated in the 12mm-dia. circle within the viewfinder. The F5's Custom Setting function lets you change the size of the circle to 8mm, 15mm or 20mm. You can also average meter sensitivity for the entire viewfinder. Custom Settings are set on the camera body (not the viewfinder).
- With the DP-30 finder, EC-B screen and CPU lens, when Spot Metering is set, shifting the focus area shifts the Spot Metering area accordingly, regardless of AF Area mode. (See table below.)

DP-30 finder	EC-B screen		Screen other than EC-B-type
	CPU lens	Non-CPU lens	CPU lens and non-CPU lens
Spot Metering sensitivity	Concentrated on the 4mm-dia. area selected	Concentrated on only center 4mm-dia. area	Concentrated on only center 6mm-dia. area

- With the DP-30 and the EC-B screen, in Spot Metering nearly 100% of the meter's sensitivity is concentrated on the 4mm-dia. area within the selected focus area of the viewfinder.
- With the DW-30/DW-31 finder, in Spot Metering the SPD sensor inside the camera body is used and nearly 100% of meter's sensitivity is concentrated on the 3mm-dia. area (with CPU lenses only).
- With the DA-30 finder, available metering systems depend on the screen/lens combination, as shown below.

DA-30 finder	EC-B screen		Screen other than EC-B-type	
	CPU lens	Non-CPU lens	CPU lens	Non-CPU lens
Matrix	Five-segment Matrix	Center-Weighted	Five-segment Matrix	Center-Weighted
Center-Weighted	Center-Weighted	Center-Weighted	Center-Weighted	Center-Weighted
Spot	Spot with finder's sensor		Spot with body's sensor	—

- **Metering range** at ISO 100, normal temperature is:
 Matrix: EV 0 to EV 20
 Center-Weighted: EV 0 to EV 20
 Spot (with finder's sensor): EV 2 to EV 20
 Spot (with body's sensor): EV 2 to EV 17
- With the DP-30 finder, the SPD is not used for metering. In continuous shooting at low brightness and high temperatures, in order to maintain the specified shooting speed, the camera measures only the exposure for the first frame.

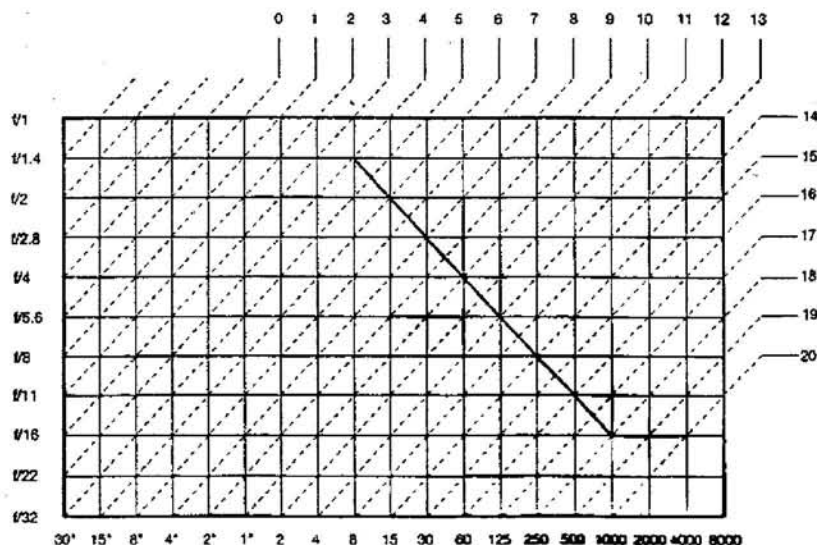
3. EXPOSURE CONTROL

3-1. Exposure Modes

- Four exposure modes are available—Programmed Auto, Shutter-Priority Auto, Aperture-Priority Auto and Manual.

3-1-1. Programmed Auto

- Can be set with CPU lenses (AF-S-Nikkor, AF-I-Nikkor, D-type AF Nikkor, non-D-type AF Nikkor and AI-P-type Nikkor) only.
- With non-CPU lens, exposure mode automatically switches to Aperture-Priority Auto.
- The Main-Command Dial is rotated for Flexible Program function.
- The Flexible Program function temporarily changes an automatically set shutter speed/aperture combination while maintaining the same exposure. The F5's Flexible Program is designed to move the program line horizontally. At the maximum or minimum lens aperture, the shutter speed/aperture combination is not be shifted. (Flexible Programs for the F5 and F50 vary in this respect.)
- Program can be shifted within ± 5 EV.
- The shutter speed/aperture combination changes in $1/3$ EV steps. Rotating the Main-Command Dial clockwise sets a slower shutter speed and wider aperture; rotating it counterclockwise sets a faster shutter speed and narrower aperture.
- While shifting programs, the Flexible Program indicator (P^*) appears in the top LCD panel.
- Flexible Program is canceled when you turn the camera's power off, switch to another exposure mode, or perform Two-Button Reset. Flexible Program remains active when you remove a CPU lens and Programmed Auto exposure mode automatically switches to Aperture-Priority Auto.
- Changes in the shutter speed/aperture combination are displayed in the top LCD panel and inside viewfinder in $1/3$ steps.
- If the lens is not set at its minimum aperture (if it is set to an aperture at least $1/3$ step wider than the minimum aperture), FE blinks (at 1 Hz) in the top LCD panel and inside the viewfinder.
- When exposure is compensated or when Auto Exposure Bracketing is performed, the program is adjusted to match the specified program line shown in the program chart.
- The following shows the F5's program chart (same as for F4):



3-1-2. Aperture-Priority Auto

- Can be set with AI-type Nikkor (including AI-modified Nikkor) or later lenses.
- With non-CPU lens, aperture setting operations are performed using the lens aperture ring.
- With a non-CPU lens, the aperture setting can be confirmed with the lens' aperture-direct-readout scale in the viewfinder window. The top LCD panel and viewfinder show F - -.
- With the CPU lens set to its minimum aperture, aperture setting operations are performed using the camera's Sub-Command Dial. (Rotating the Sub-Command Dial one click clockwise narrows the aperture by 1/3 step.) Intermediate settings between the 1/3 steps can be selected **only** when the lens is set to its maximum aperture. Intermediate settings (1/4, 1/2, etc.) other than 1/3 step can be selected **only** for the maximum aperture of the lens.
- With CPU lenses, aperture can also be set by rotating the lens aperture ring. With the aperture ring at a setting other than the minimum setting, the top LCD panel and viewfinder show F - -. The aperture can be confirmed using the lens' aperture-direct-readout scale in the viewfinder window.
- With a CPU lens, the aperture set on the camera body is indicated in the top LCD panel and inside the viewfinder. The indication changes in 1/3 steps.
- In Aperture-Priority Auto exposure mode, the shutter speed is controlled between 32 sec. and 1/8096 sec. (between 30 sec. and 1/8000 sec. in the display).
- With a non-AI-type Nikkor lens, stop-down measurement can be performed **only** in Aperture-Priority Auto exposure mode.
- When you use the Custom Setting function to disable aperture settings via the Sub-Command Dial (# 22 of the Custom Setting Menu), aperture setting operations for CPU lenses can **only** be performed with the lens aperture ring.
- Using the Sub-Command Dial, you can set any aperture between the lens' **maximum and** minimum apertures.

3-1-3. Shutter-Priority Auto

- Can be set with CPU lenses (AF-S-Nikkor, AF-I-Nikkor, D-type AF Nikkor, **non-D-type** AF Nikkor and AI-P-type Nikkor) **only**.
- With a non-CPU lens, the exposure mode automatically switches to Aperture-Priority Auto.

- **Shutter speed** is selected by rotating the **Main-Command Dial**; to select a faster shutter speed, rotate clockwise.
- The selected shutter speed is indicated in the top LCD panel and inside the viewfinder. The indication **changes** in 1/3 steps.
- “Bulb” cannot be set in Shutter-Priority Auto exposure mode. If you set “Bulb” in Manual exposure mode, then switch exposure modes to Shutter-Priority Auto, the shutter locks and **bulb** blinks (at 1 Hz) in the top LCD panel. If this happens, change the shutter speed to another setting.
- Shutter speed is set between 32 sec. and 1/8092 sec. (and displayed between 30 sec. and 1/8000 sec.). X setting (1/60 sec., 1/80 sec., 1/100 sec., 1/125 sec., 1/160 sec., 1/200 sec., 1/250 sec., or 1/300 sec.) is also available.
- If the lens is not set to its minimum aperture (if it is set to an aperture 1/3 step wider than its minimum aperture), **FE** blinks (at 1 Hz) in the top LCD panel and inside the viewfinder.
- When the selected shutter speed requires an aperture beyond the available aperture range, the shutter speed will not shift automatically.
- The prolonged shutter speeds of the Custom Setting function are not available in Shutter-Priority Auto exposure mode.
- Rotation of the Main-Command Dial is limited at its slowest end (X setting) and fastest end (1/8000 sec.).

3-1-4. Manual

- With a non-CPU lens, aperture setting operations are performed using the lens aperture ring.
- With a non-CPU lens, the aperture setting can be confirmed using the lens' **aperture-direct-readout** scale in the viewfinder window. The top LCD panel and viewfinder show **F - -**.
- With a CPU lens set to its minimum aperture, aperture setting operations are performed using the camera's Sub-Command Dial. (Rotating the Sub-Command Dial **one clockwise** click narrows the aperture by 1/3 step.) Only for the lens maximum aperture, **intermediate** settings other than 1/3 step can be selected.
- Automatic shutter speed control is not performed according to the Sub-Command Dial aperture setting.
- With a CPU lens, you can also set the aperture by rotating the lens aperture ring. (When lens aperture ring is rotated from its minimum setting to another setting, the setting on the aperture ring will be effective. If the aperture ring is re-set to its minimum aperture setting, however, it will revert to the previous aperture set on the camera body.) With the aperture ring set to a setting other than the minimum setting, the top LCD panel and viewfinder show **F - -**. Aperture can be confirmed on the lens' aperture-direct-readout scale in the viewfinder window.
- With a CPU lens, the aperture set on the camera body is indicated in the top LCD panel and inside the viewfinder. The indication changes in 1/3 steps.
- Apertures are provided on the board for the AI-ring in 1/6 step increments. The camera, however, is able to convert these to finer aperture settings.

- **Shutter speed** is selected by rotating the Main-Command Dial; to select a faster shutter speed, rotate clockwise. Shutter speed order: X setting, Bulb setting, slowest shutter speed → fastest shutter speed. This order is maintained even if the Custom Setting function is used to prolong the slowest shutter speed.
- The selected shutter speed is indicated in the top LCD panel and inside the viewfinder. The indication changes in 1/3 steps.
- The shutter speed is set between 32 sec. and 1/8092 sec. (and displayed between 30 sec. and 1/8000 sec.). X setting (1/60 sec., 1/80 sec., 1/100 sec., 1/125 sec., 1/160 sec., 1/200 sec., 1/250 sec., or 1/300 sec.) is also available.
- At 1/250 sec. and 1/300 sec., the controlled shutter speed is 1/12 EV longer than the calculated shutter speed value.
- X setting is situated at the one end of shutter speed range, 1/8000 sec. at the other end.
- The Custom Setting function allows you to prolong the shutter speed for Long Time Exposures. (See 3.6.3.1 for selectable shutter speeds.) When the shutter speed is prolonged, the electronic analog display inside the viewfinder disappears. Setting a prolonged shutter speed in Manual exposure mode then switching exposure mode to Shutter-Priority Auto sets the shutter speed to 30 sec. Switching the exposure mode back to Manual does not re-activate prolonged shutter speed.
- When the shutter speed is prolonged to 40 sec. or slower (using the Custom Setting function on the camera body or Photo Manager), Auto Exposure Bracketing can be set (on the camera body, MF-28 or with Photo Manager) but shutter speed does not vary.
- When the shutter speed is prolonged (using the Custom Setting function on the camera body or PC-Link) and the prolonged shutter speed is faster than 40 sec., you can perform Auto Exposure Bracketing (with camera body, MF-28 or Photo Manager).

3-1-5. Control of Bulb setting

- When bulb is set, depressing the shutter release button opens the shutter and lightly pressing the shutter release button closes the shutter.
- When Time setting is selected in place of Bulb setting using Photo Manager's Custom Setting function, depressing the shutter release button opens the shutter and depressing it again closes the shutter. If the self-timer is activated at the Bulb setting, the shutter opens when self-timer operation is complete and closes when the shutter is depressed.
- When Time setting is selected in place of Bulb setting using Photo Manager's Custom Setting function, the Long Time Exposure function of the MF-28 cannot be set.

3-2. Auto Exposure Bracketing

- Rotating the Main-Command Dial while pressing the BKT (Auto Exposure/Flash Exposure Bracketing) button activates Auto Exposure Bracketing/Flash Exposure Bracketing mode. When the BKT button is pressed, the rear LCD panel shows the number of shots and compensation value. When Auto Exposure Bracketing/Flash Exposure Bracketing mode is activated, the top and rear LCDs show the BKT symbol. With Auto Exposure Bracketing/Flash Exposure Bracketing mode active, the BKT symbol remains whether the BKT button is pressed or not. While the BKT button is pressed, the rear LCD panel shows only the BKT symbol.
- Rotating the Main-Command Dial while pressing the BKT button (whether Auto Exposure Bracketing/Flash Exposure Bracketing mode is activated or not) changes the number of shots/compensation value combination.

- Nine combinations of number of shots and compensation values are available as shown below:

Number of shots	Compensated EV value
(1) Two	0 and +1/3
(2) Two	0 and -1/3
(3) Two	0 and +2/3
(4) Two	0 and -2/3
(5) Two	0 and +1
(6) Two	0 and -1
(7) Three	0, -1/3 and +1/3
(8) Three	0, -2/3 and +2/3
(9) Three	0, -1 and +1

Rotating the Sub-Command Dial counterclockwise lets you select these combinations in the following order:

(1) → (3) → (5) → (2) → (4) → (6) → (7) → (8) → (9)

- Rotating the Main-Command Dial while pressing the BKT button again cancels Auto Exposure/Flash Exposure Bracketing mode.
- After canceling Auto Exposure Bracketing/Flash Exposure Bracketing mode, your selected number of shots/compensation value combination will be set.
- When Auto Exposure Bracketing is set using the MF-28 or Photo Manager, the camera body's Auto Exposure/Flash Exposure Bracketing will not function. Indications for the camera body's Auto Exposure/Flash Exposure Bracketing are displayed in the camera's LCD panel, however, and the number of frames and compensation degree can be adjusted.
- With the Custom Setting function set at 3-1 and the BKT button depressed, the top LCD panel and viewfinder LCD show the compensated shutter speed and compensated aperture value. The electronic analog display also shows the compensated value. Other indications remain unchanged. (With the Custom Setting function at 3-0, the first shot is taken without compensation, so the shutter speed and aperture indications and electronic analog display do not change.)
- When you prolong the shutter speed, Auto Exposure Bracketing can be set but the shutter speed will not vary. (See 3.1.4.)
- Custom Setting #3 can be used to change the bracketing order. At the default setting in bracketing, shots are taken in the order from no compensation to negative compensation to positive compensation. With Custom Setting function 3-1, the bracketing order is: negative compensation, no compensation then positive compensation. The default order is applied when Auto Exposure Bracketing is set with the Photo Manager. When Auto Exposure Bracketing is set with the MF-28, shot with center value is taken at first. (If number of shots is set at two, the shot with no compensation will be taken at first.)
- With Custom Setting #24, you can perform only Auto Exposure Bracketing or Flash Exposure Bracketing.
- When X setting is selected in Manual exposure mode, the shutter speed will not vary in bracketing.

3-2-2. Exposure Mode and Auto Exposure /Flash Exposure Bracketing

- In **Programmed Auto** exposure mode, the shutter speed and aperture will vary. (They may not vary at the same time.)
- In **Aperture-Priority** Auto exposure mode, the shutter speed varies.
- In **Shutter-Priority** Auto exposure mode, the aperture varies.
- In **Manual** exposure mode, the shutter speed varies. The top LCD panel and viewfinder LCD show the controlled shutter speed and indications remain as long as the exposure meter is active. (With the Custom Setting function, if the shutter speed/aperture or aperture only is selected as the shifting factor for bracketing, the controlled aperture will be displayed in the top LCD panel and inside the viewfinder.)
- In any exposure mode, the flash output level also varies.
- At bulb setting, only the flash output level varies.
- Custom Setting # 17 changes the shifting factor as follows:

Shifting factor	Shutter speed	Aperture	Flash output level
Shutter speed only	Varies at the compensation value set	-	Varies at the compensation value set
Aperture only	-	Varies at the compensation value set	Varies at the compensation value set
Shutter speed/aperture combination	Varies at half of the compensation value set	Varies at half of the compensation value set	Varies at the compensation value set
Flash output level	-	-	Varies at the compensation value set

3-2-3. Auto Exposure/Flash Exposure Bracketing operation

- With the film advance mode at CH, CL or Cs, fully depressing the shutter release button and holding it in automatically triggers the set number of shots and stops the film advance.
- With the film advance mode set at S, fully depressing the shutter release button takes one shot.
- If you reach the end of the film roll during shooting, simply replace the film with a new one then fully depress the shutter release button to resume operation.

3-2-4. Indications for Auto Exposure/Flash Exposure Bracketing

- The 4-digit, 7-segment indication in the Rear LCD panel shows the number of shots and compensation value. The bracketing bar graph also appears in the rear LCD panel.
- See 3.6.3.2 for type of indications.
- With the Auto Exposure/Flash Exposure Bracketing set, the BKT symbol is shown in the top and rear LCD panels.
- When Auto Exposure/Flash Exposure Bracketing is set, the exposure compensation symbol blinks (at 1 Hz) in the top LCD panel and inside the viewfinder.

3-2-5. Setting only Auto Exposure Bracketing or Flash Exposure Bracketing

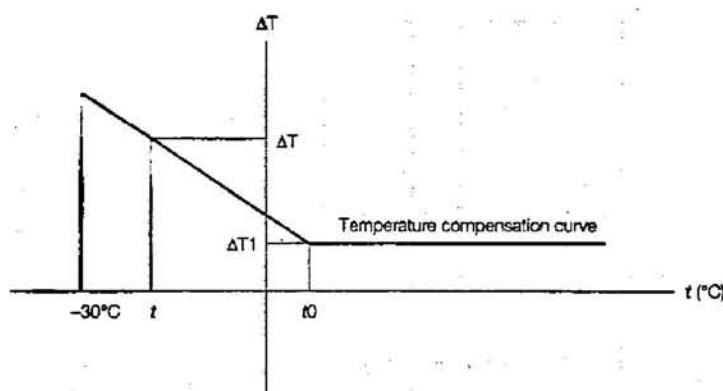
- Custom Setting #24 enables you to perform only Auto Exposure Bracketing or Flash Exposure Bracketing.

Bracketing	Exposure	Flash output level
Auto Exposure Bracketing only	Varies at the compensation value set	
Flash Exposure Bracketing only		Varies at the compensation value set
Auto Exposure/ Flash Exposure Bracketing	Varies at the compensation value set	

3-3. Self-Diagnostic Shutter System

3-3-1. Shutter speed compensation

- The final compensation value ΔT is calculated using temperature data and the temperature compensation curve stored in the camera's computer (shown below). ΔT is added to the shutter speed for the next release of the shutter.
- The diagram below shows the temperature compensation curve:

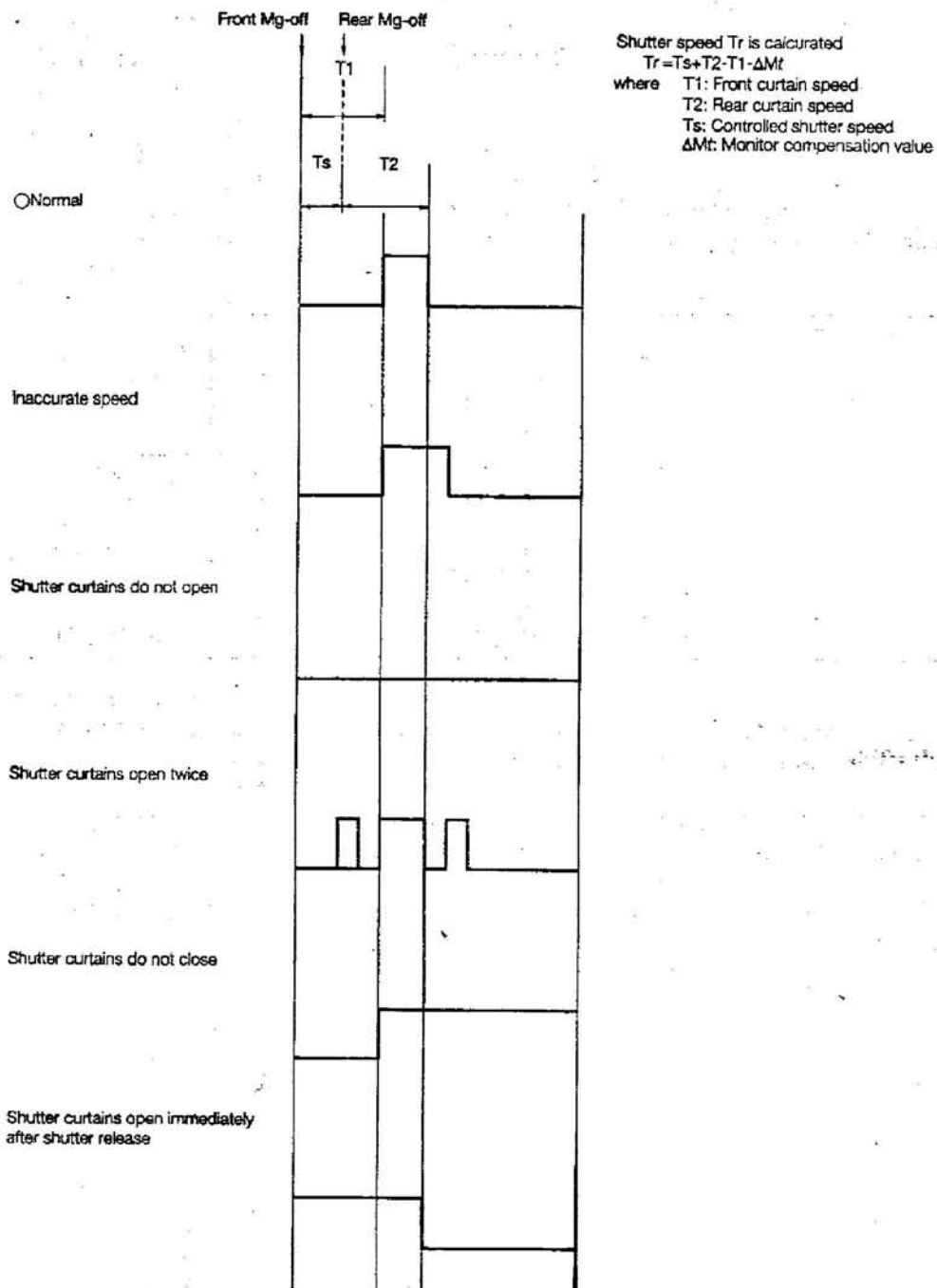


3-3-2. After shutter traveling

- Data sampling is performed for all shutter speed values.
- The front shutter curtain is monitored for 10msec. immediately before the front curtain Mg is off; the rear shutter curtain is monitored for 10msec. just before the rear curtain Mg is off.
- If shutter speed accuracy for the previous shutter release varies by more than ± 1.0 EV, the shutter blades are considered damaged and the shutter speed will not be compensated.

3-3-3. Shutter blade damage errors

- If shutter-monitor sensor output data indicates that (a) shutter speed accuracy exceeds a specified EV value, (b) the shutter curtains did not open, (c) the shutter curtains opened twice, (d) shutter curtains do not close, or (e) shutter curtains open immediately after shutter release, shutter blades are judged as damaged. Following shows output data:



3-3-4. Shutter blades damage alert and locking shutter

- If one of the previously mentioned malfunctions is detected, the shutter blades will be judged as damaged. Shutter blades damage alerts will appear and the shutter locks.
- Shutter blades damage alerts consist of:
 - Top LCD panel shows blinking **Err** (at 1 Hz) in place of the shutter speed indication.
 - Viewfinder LCD shows blinking **Err** (at 1 Hz) in place of the shutter speed indication.
 - The alert LED blinks (at 8 Hz)
- When the exposure meter automatically turns off, these alerts disappear and the shutter can be released.

3-4. Lens Compatibility

3-4-1. Compatibility of lenses, focusing, exposure modes and metering systems

- The table below shows compatibility of CPU lenses, focusing, exposure modes and metering systems:

		Focusing		Exposure mode				Metering system		
		AF	MF with electronic rangefinder	P	S	A	M	Matrix	CW	Spot
CPU lens	AF-I Nikkor	○	○	○	○	⊙ ¹	⊙ ¹	○	⊙ ²	⊙ ³
	D-type AF Nikkor	○	○	○	○	⊙ ¹	⊙ ¹	○	⊙ ²	⊙ ³
	AF Nikkor	○	○	○	○	⊙ ¹	⊙ ¹	○	⊙ ²	⊙ ³
	AI-P Nikkor	○ ⁴	○ ⁵	○	○	⊙ ¹	⊙ ¹	○	⊙ ²	⊙ ³

- 1: Aperture can be set using the Sub-Command Dial.
- 2: Size of the circle where meter sensitivity is concentrated can be changed.
- 3: With the DP-30 finder and EC-B-type screen, shifting the focus area also shifts the Spot Metering area accordingly.
- 4: Possible with TC-16A attached; maximum effective aperture is f/5.6 or faster. (With a maximum effective aperture slower than f/5.6, focus indication can be seen but is not reliable.)
- 5: Possible with a maximum aperture of f/5.6 or faster.

- The table below shows compatibility of non-CPU lenses, focusing, exposure modes and metering systems:

		Focusing		Exposure mode				Metering system		
		AF	MF with electronic rangefinder	P	S	A	M	Matrix	CW	Spot
Non-CPU lens	AI-S-type Nikkor	○ ¹	○ ²	×	×	○	○	×	○	○
	AI-type Nikkor	○ ¹	○ ²	×	×	○	○	×	○	○
	AI-modified Nikkor	×	○ ²	×	×	○	○	×	○	○
	Non-AI-type Nikkor ³	×	○ ²	×	×	○ ⁴	○ ⁵	×	○ ⁶	○ ⁶
	Medical-Nikkor 120mm f/4	×	×	×	×	×	○ ⁷	×	○ ⁶	○ ⁶
	Reflex-Nikkor	×	×	×	×	○	○	×	○ ⁸	○ ⁸
	PC-Nikkor	×	×	×	×	○ ⁹	○ ¹⁰	×	○	○
Accessory	TC-16A	○ ¹¹	×	×	×	○	○	×	○ ¹²	○ ¹²
	AI-S-type teleconverter	×	○ ¹³	×	×	○	○	×	○ ¹²	○ ¹²
	AI-type Teleconverter	×	○ ¹³	×	×	○	○	×	○ ¹²	○ ¹²
	PB-6B	×	○ ¹³	×	×	○ ¹⁴	○ ⁵	×	○ ¹⁵	○ ¹⁵
	PK Rings	×	○ ¹³	×	×	○ ¹⁶	○ ¹⁶	×	○ ¹⁵	○ ¹⁵

- 1: Possible with TC-16A attached; the maximum effective aperture is f/5.6 or faster. (With a maximum effective aperture slower than f/5.6, focus indication can be seen but is not reliable.)
 2: Possible with a maximum aperture of f/5.6 or faster.
 3: Requires AI-modification at a Nikon service facility.
 4: By stop-down metering (i.e., releasing the shutter while pressing the depth-of-field preview button)
 5: By stop-down metering.
 6: By stop-down metering. At aperture settings other than the maximum aperture, focusing screen compensation of +0.5 EV is required using Custom Setting #18.
 7: Can be used at 1/125 sec. or slower.
 8: Some lens/finder combinations require focusing screen compensation using Custom Setting #18.
 9: By stop-down metering. Exposure is determined by presetting the lens aperture before shifting. AE-L function should be used before shifting.
 10: By stop-down metering. Exposure is determined by presetting the lens aperture before shifting.
 11: With AI-type Nikkor, AI-S-type Nikkor and Series E lenses having a maximum aperture of f/5.6 or faster. With the TC-16A, however, some lenses cannot be attached.
 12: Some lens/teleconverter combinations require exposure compensation. (See teleconverter's instruction manual.)
 13: With effective aperture of f/5.6 or faster.
 14: Shutter should be released after determining exposure by stop-down metering with bellows.
 15: By stop-down metering. Focusing screen compensation of +0.5 EV is required using Custom Setting #18.
 16: Focusing screen compensation of +0.5 EV is required using Custom Setting #18.

3-4-2. Lenses/teleconverter that cannot be used with the F5

- The following lenses/teleconverter cannot be used with the F5:

Lens/teleconverter	Serial No.	Reason
Fisheye 8mm f/8	All	Cannot be attached. (Obstructed by front of camera body.)
Old-type PC 35mm f/3.5	All	Cannot be attached. (Obstructed by front of finder.)
Old-type Reflex 1000mm f/6.3	All	Cannot be attached. (Obstructed by grip position.)
AF Teleconverter TC-16	All	Cannot be attached. (Obstructed by grip position.)
80mm f/2.8 for F3AF	All	Can be attached, but too much electric current.
200mm f/3.5 for F3AF	All	Can be attached, but too much electric current.
21mm f/4	All	Cannot be attached. (Obstructed by mirror box.)

- The following lenses can be attached after modification of the meter coupling lever or AI-modification of the lens at a Nikon service facility:

Lens	Serial No.	Reason
Non-AI lens	All	Meter coupling lever obstructs. Can be attached after the lens is AI-modified (if it can be modified) or after modifying the lever.
Lens with Focusing Unit AU-1	All	Meter coupling lever obstructs. Can be attached after modifying the lever.
PC 28mm f/4	No. 180900 or below	Meter coupling lever obstructs. Can be attached after modifying the lever.
PC 35mm f/2.8	No. 851001 to 906200	Meter coupling lever obstructs. Can be attached after modifying the lever.
Reflex 1000mm f/11	No. 142361 to 143000	Meter coupling lever obstructs. Can be attached after modifying the lever.
Reflex 2000mm f/11	No. 200111 to 200310	Meter coupling lever obstructs. Can be attached after modifying the lever.
ED 180-600mm f/8	No. 174041 to 174180	Meter coupling lever obstructs. Can be attached after modifying the lever.
ED 360-1200mm f/11	No. 174031 to 174127	Meter coupling lever obstructs. Can be attached after modifying the lever.
200-600mm f/9.5	No. 280001 to 301922	Meter coupling lever obstructs. Can be attached after modifying the lever.

The following lenses/accessories can be attached under certain conditions:

Lens/accessory	Serial No.	Reason
Old-type Reflex 500mm f/8	All	Can be attached with tripod mounting collar rotated 90°.
Reprocopy Outfit PF-4	All	Requires Camera Holder Adapter PA-4.
Bellows Focusing Attachment PB-6	All	Requires attachment ring.

3-5. Available Type of TTL Auto Flash According to Camera's Exposure Mode

- Following shows type of TTL auto flash:

			With CPU lens		With non-CPU lens	
			P, S, A	M	A	M
With Data-communication Speedlights	FP High-Speed Sync Flash is set		FP High-Speed Sync Flash is set			
	TTL auto flash mode is set on Speedlight	With Monitor Pre-flashes	3D Multi-Sensor Balanced Fill-Flash/Multi-Sensor Balanced Fill-Flash (with Monitor Pre-flashes)		Center-Weighted Fill-Flash/Spot Fill-Flash	
		Without Monitor Pre-flash	3D Multi-Sensor Balanced Fill-Flash/Multi-Sensor Balanced Fill-Flash (without Monitor Pre-flash)			
	Non-TTL auto or manual flash mode is set on Speedlight/Standard TTL Flash is required		—			
With other Speedlights	TTL auto flash mode is set on Speedlight		Multi-Sensor Balanced Fill-Flash (without Monitor Pre-flash)	Standard TTL Flash	Center-Weighted Fill-Flash/Spot Fill-Flash	Standard TTL Flash
	Non-TTL auto or manual flash mode is set on Speedlight		—			
With Speedlight turned off/Without Speedlight			—			

3-6. Autofocus Using Focus-Assist Illuminator

- The focus-assist illuminator lights up when a) a Speedlight is attached to the camera's accessory shoe and turned on, b) Single Servo AF is set, c) the AF module detects that your subject is EV 5 or darker (at ISO 100)*, d) focus is not locked, e) an AF lens is used, and the center focus area is selected.

* *Once the focus-assist illuminator lights up, it remains lit as long as the subject is brighter than EV 5.*

Note 1: Focus-assist illuminator lights up regardless of AF area mode.

Note 2: Focus-assist illuminator lights up regardless of film advance mode.

Note 3: Focus-assist illuminator lights up regardless of metering system. In Spot Metering, autofocussing may be slightly inaccurate.

3-7. 1/300 TTL High-Speed Sync

- Custom Setting functions enable you to select 1/300 TTL High-Speed Sync. With 1/300 TTL High-Speed Sync, the Speedlight guide number is fixed at 12. 1/300 TTL High-Speed Sync is only available with the shutter speed set to X-setting.
- 0.3ms after the X contact is turned on, the flash automatically stops firing. The full-open time is 0.675 ± 0.391 ms.
- The flash stops firing when TTL auto flash is complete, even it takes less than 0.3ms.
- If TTL auto flash is not completed within 0.3ms, the viewfinder ready-light blinks (at 4 Hz) for four seconds. When this happens, the ready-light on the Speedlight does not blink, and the underexposure alert does not appear inside the viewfinder.
- In Programmed and Aperture-Priority Auto exposure mode, the fastest flash sync speed is 1/250 sec. and 1/300 TTL High-Speed Sync is not available. Another TTL Flash sync speed can be selected using Custom Setting #20.
- If the camera determines that TTL auto flash mode or FP High-Speed Sync is not set on the Speedlight, the flash synchronizes at 1/250 sec. without canceling 1/300 TTL High-Speed Sync.

4. FILM OPERATION

4-1. Loading Film and Advancing Film to Frame One

- When the shutter is released with the camera back open, the spool is duty-driven for a specified time to advance and wind the film (if the film leader has been pressed). (Described as blank film advance.)
- The film winding time for blank film advance depends on the temperature. Duty ratio depends on voltage.
- With the film leader positioned to the film index mark inside the spool chamber and the camera back closed, when the shutter release button is fully depressed the film advances three frames to frame one then the spool motor automatically stops. The frame counters on top of the LCD panel and inside the viewfinder, which showed E before film advance, show 1 after film advance. If "data imprinting on frame #0" is selected using the Custom Setting function via PC Link, the frame counter shows 0.
- Without film loaded, fully depressing the shutter does not advance film.
- While advancing the film to frame one, the camera performs duty-driving until the first film-advance-completion switch shifts from L to H, whereupon it then performs full-driving. It carries out this operation regardless of film advance mode.
- If three film-advance-completion signals are not input within a specified time after film advance starts, the camera judges that a film-loading error has occurred. The alert LED blinks (at 1 Hz), and **Err** blinks (at 1 Hz) in place of the shutter speed indication in the top LCD panel and inside the viewfinder.
- With no film loaded, and before advancing the film to frame one, the frame counter on the top LCD panel and inside the viewfinder shows **E**.
- The frame counter shows frame numbers up to 39. (For 39 frames and beyond, the counter continues to show "39".)

4-2. Film End Detection

- After the spool motor starts rotating, if the film-advance-completion signal is not input within 2 sec. in CS mode or within 1 sec. in other film advance modes, the spool motor stops. The alert LED lights up, and **End** blinks (at 1 Hz) in place of the shutter speed indication in the top LCD panel and inside the viewfinder. When the camera's exposure meter is turned off, the **End** indications stop blinking.
Using the auto film stop (at 35th or 36th frame) option available in Custom Setting #12, the alert LED and LCD panel/viewfinder indications are same as the indications that appear when the camera reaches the end of roll film without the auto film stop option.

4-3. Film Rewinding

- Auto film rewind is performed by a dedicated film rewind motor.
- Auto film rewind starts when both R1 and R2 knobs are set with the camera's power on.
- Auto film rewind is possible before reaching the end of the film roll.
- During auto film rewind, the alert LED blinks (at 1 Hz).
- Auto film rewind stops when the camera power is turned off or when the R2 knob is reset.
- Film can be manually rewound by setting the R1 knob then rotating the film rewind crank. Manual film rewind is possible at any time, regardless of available camera power.

- When **film rewind** is complete, frame counter shows 0 then E. For auto film rewind, frame counter shows E when timer is off after film-detect switch is on. For manual film rewind, frame counter shows E immediately after film-detect switch is on.
- 10 sec* after auto film rewind begins, film rewind automatically stops. In this case, the alert LED blinks (at 1 Hz) and Err blinks (at 1 Hz) in place of the shutter speed indication in the top LCD panel and inside the viewfinder.
* 10 sec. is fixed regardless of the type of power source.
- When auto film rewind is complete, the camera's meter turns off.

4-4. Film Advance Speed (Shooting Speed)

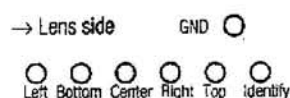
Battery	Film advance mode	Drive system	Shooting speed*
Ni-MH	CH	Parallel	(8.2 fps)
			6
	CL	Series	5
			4
			(3)
	CS	Series (PWM)	1
AA-type	CH	Parallel	(7.4 fps)
			6
	CL	Series	4.7
			4
			(3)
	CS	Series (PWM)	1

* Can be changed using Custom Setting function. Figure in bracket shows **default shooting speed**.

5. FOCUSING SCREEN

5-1. Focusing Screen Contacts

- Seven contacts are provided—five segment-drive contacts, a GND contact and an identify contact.
- Contacts are located as follows:

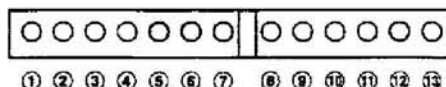


(Seen from finder box)

6. FINDER

6-1. Finder Contacts

- 13 finder contacts are provided on the front side of the finder, as follows:



- | | |
|-----------------------------|--------------------------|
| ① GND | ⑧ ILPW |
| ② Control contact | ⑨ TTL stop contact |
| ③ Control contact | ⑩ Monitor signal contact |
| ④ +12V power supply contact | ⑪ Ready signal contact |
| ⑤ +3.3V contact | ⑫ Sync contact |
| ⑥ Control contact | ⑬ SBGND contact |
| ⑦ Control contact | |

→ Film take-up side

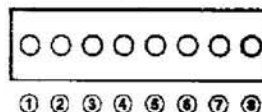
7. POWER SOURCE

- AA-type alkaline-manganese, lithium batteries can be used.
- AA-type manganese, NiCd batteries cannot be used. They can, however, be installed.
- The battery holder is designed so that power is not supplied if batteries are improperly installed (if batteries installed in the wrong direction).

8. DATA BACK CONTACTS

- Data back contacts are provided on the bottom rail below the film take-up spool chamber.

- | |
|-----------------------------------|
| ① Power supply line contact (+6V) |
| ② Meter-on/release signal contact |
| ③ Data imprint signal contact |
| ④ Input signal contact |
| ⑤ Output signal contact |
| ⑥ DCI/O signal contact |
| ⑦ Clock contact |
| ⑧ GND contact |



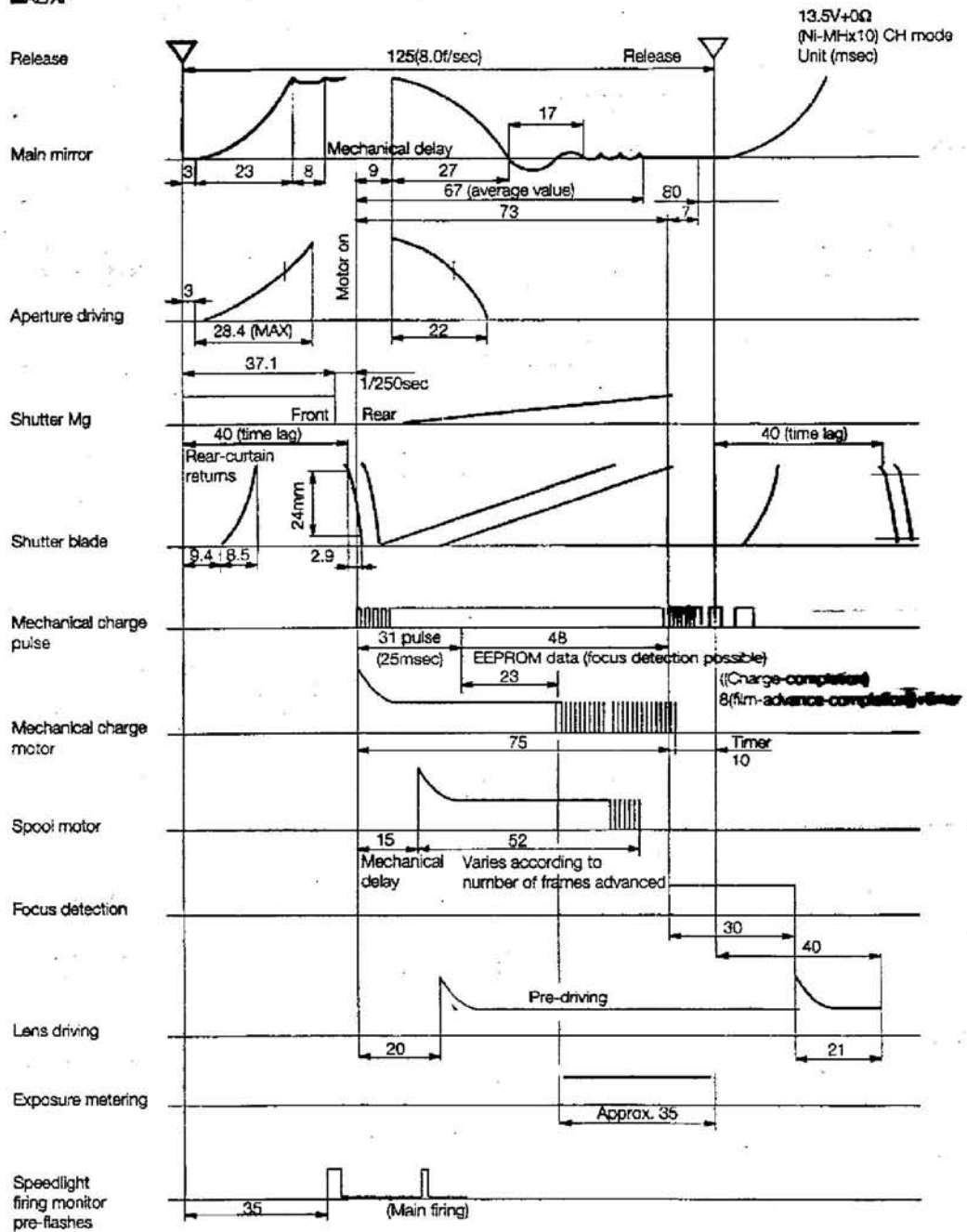
- With the standard camera back attached, contacts ④ to ⑦ (input signal contact, output signal contact, DCI/O signal contact and clock contact) are used as focus area contacts—contact ④ for top, contact ⑤ for left, contact ⑥ for bottom and contact ⑦ for right.

9. MODIFYING CAMERA

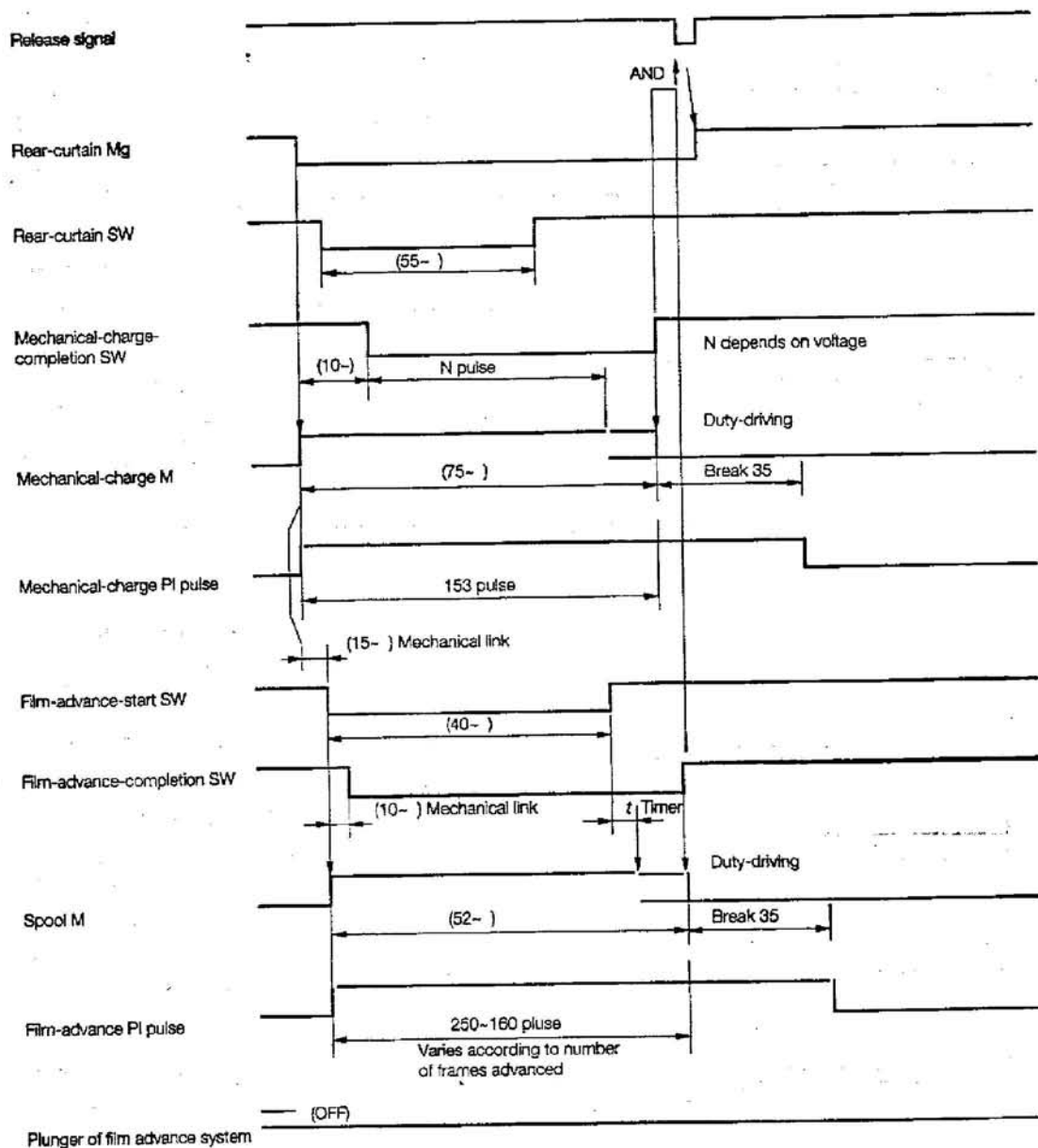
- The following modifications can be performed by service facilities.
 - a) Modification to prevent film from being completely rewound.
 - b) EPROM upgrade.
 - c) Modification of meter coupling lever, enabling it to be set to the "up" position.

10. TIME CHARTS

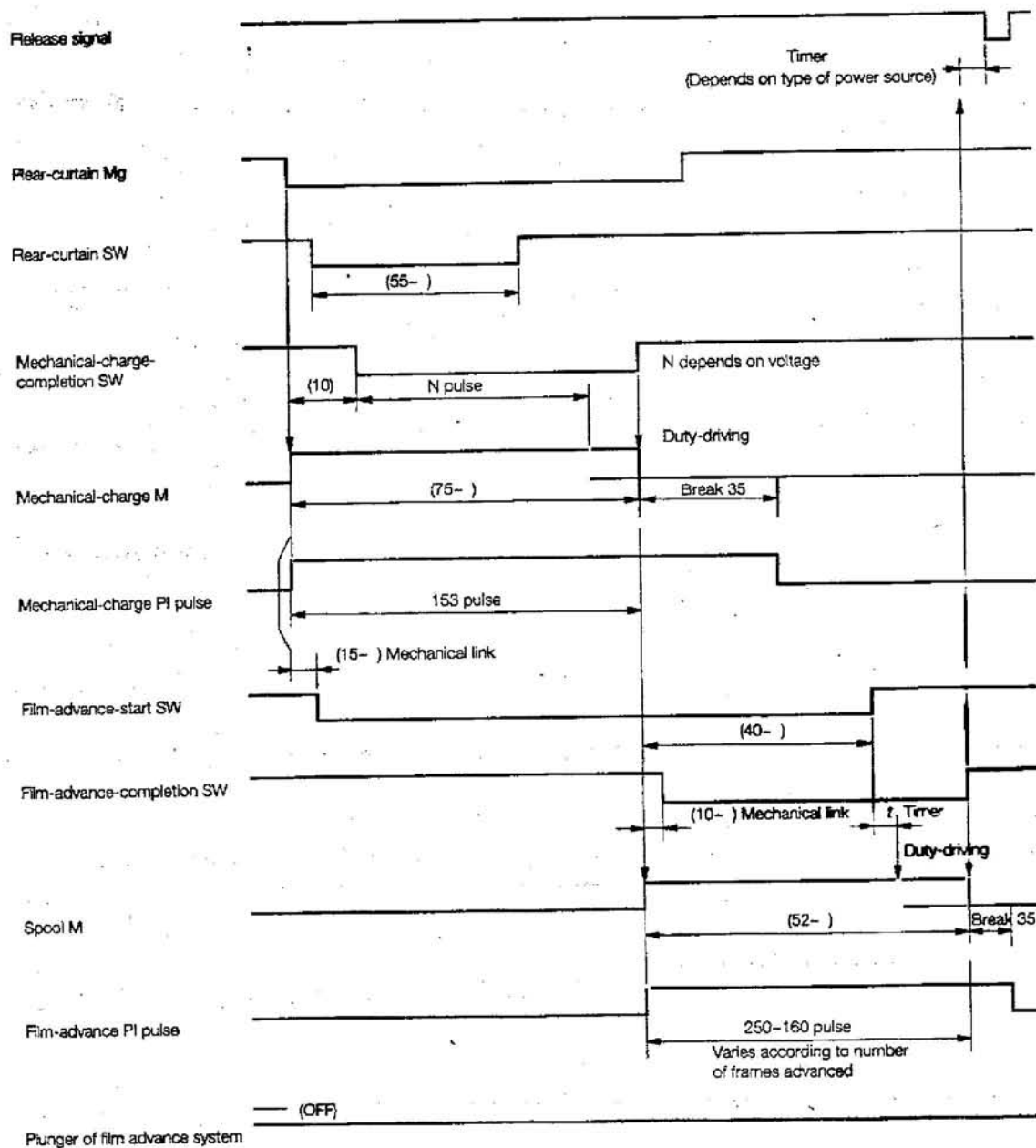
■ AE/AF



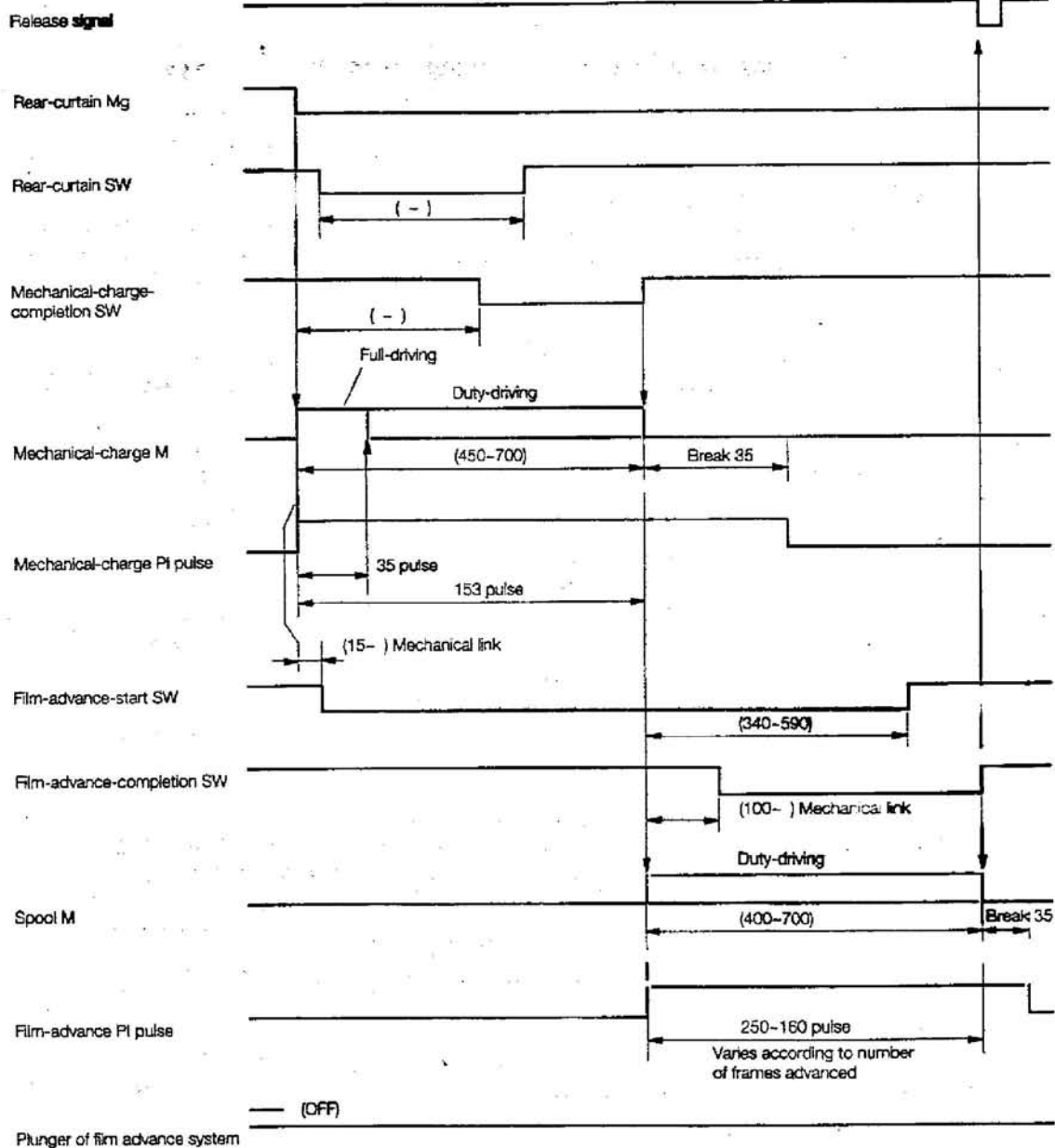
■ CH mode (with Ni-MH Battery Unit)



■ CL mode (with Ni-MH Battery Unit)



■ICS mode (with Ni-MH Battery Unit)



DISASSEMBLE

1. DISASSEMBLING REAR BODY AND FRONT BODY UNIT

RUBBER ARMORED EXTERNAL BODY	D 1
BODY GRIP	D 1
BOTTOM COVER	D 2
BATTERY CHAMBER BARRIER PLATE	D 3
TOP COVER ON FILM ADVANCE SIDE	D 4
TOP COVER ON FILM REWIND SIDE	D 4
FRONT BODY	D 5

2. DISASSEMBLING REAR BODY

CONNECTOR, REMOVING SOLDERING WIRES	D 6
MAIN BASE PLATE	D 7
DC-DC BASE PLATE	D 7
BACK DISPLAY BASE PLATE	D 8
FILM REWIND BASE PLATE	D 9
FILM REWIND SHAFT BASE PLATE	D 10
DX CONTACT FPC	D 11
CHARGE LARGE LEVER, FILM ADVANCE STOP RELEASE LEVER	D 11
R1 RELAY LEVER	D 12
SHUTTER	D 12
CHARGE BASE PLATE GROUP	D 13
FILM ADVANCE BASE PLATE, EL ROLLER	D 14
R1 SWITCH	D 14
R1 LEVER GROUP	D 15
DATA CONTACT UNIT, F DETECT SWITCH	D 15
R2 LEVER, CLUTCH LEVER	D 16
R1 BUTTON COVER BASE PLATE, AF-S SWITCH	D 16
SMALL PARTS OF REAR BODY	D 17

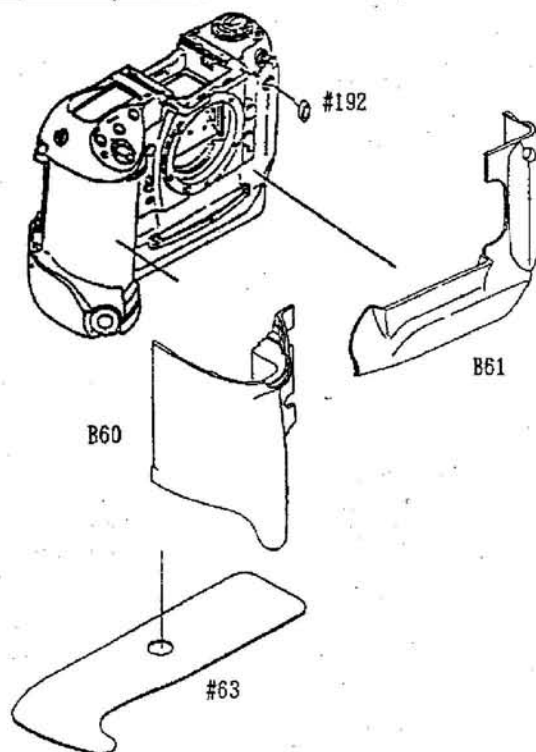
3. DISASSEMBLING FRONT BODY

REMOVING FD RAIL	D 18
REMOVING LIGHT BAFFLE PLATE AT THE REAR OF THE MAIN MIRROR	D 18
REMOVING CONNECTORS ON AAF BASE PLATE	D 18
REMOVING CORDS ON AF BASE PLATE	D 19
REMOVING AF BASE PLATE	D 20
LENS RELEASE BASE PLATE	D 20
REMOVING AP4 UNIT	D 20
REMOVING FRONT SIDE DISPLAY MOLD	D 21
FD CONTACT MOLD	D 21
SCREEN CONTACTS UNIT & SC CONTACTS	D 22
MANUAL MUP GUIDE PLATE	D 22
REMOVING LENS RELEASE SWITCH	D 23
REMOVING f-to PULLY	D 23
LENS RELEASE BUTTON COLLAR SPRING	D 24
REMOVING MIRROR BOX UNIT	D 24
REMOVING DRIVING BASE PLATE	D 25
REMOVING AF MODE SWITCHING LEVER	D 25
REMOVING EVF UNIT	D 26
AF LENS CONTACT	D 26
REMOVING 1 BASE PLATE	D 27

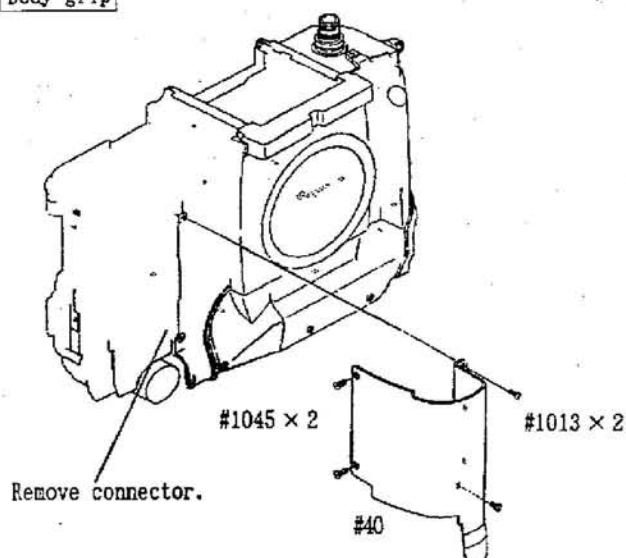
DISASSEMBLE

1. Disassembling rear body and front body units.

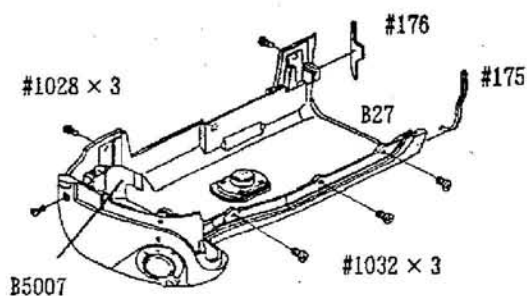
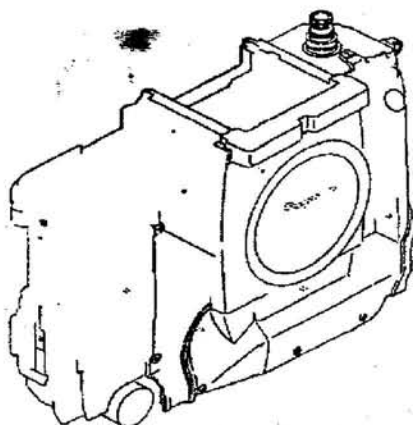
Rubber armored external body



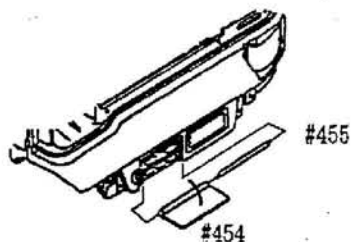
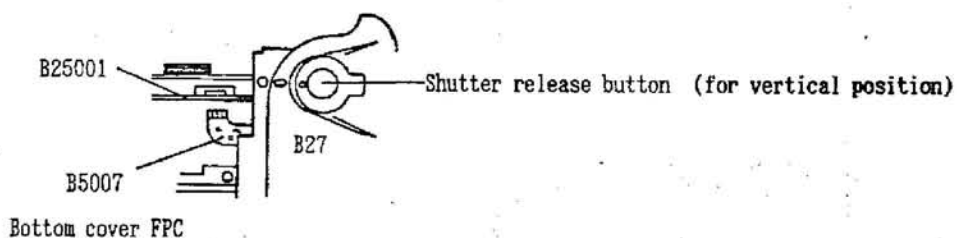
Body grip



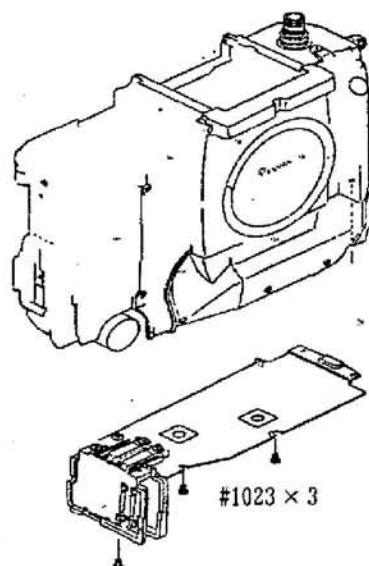
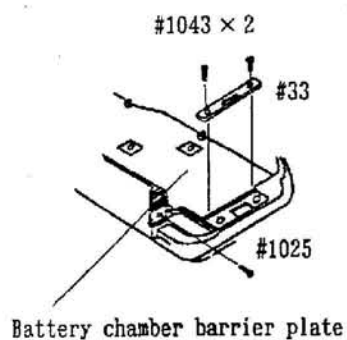
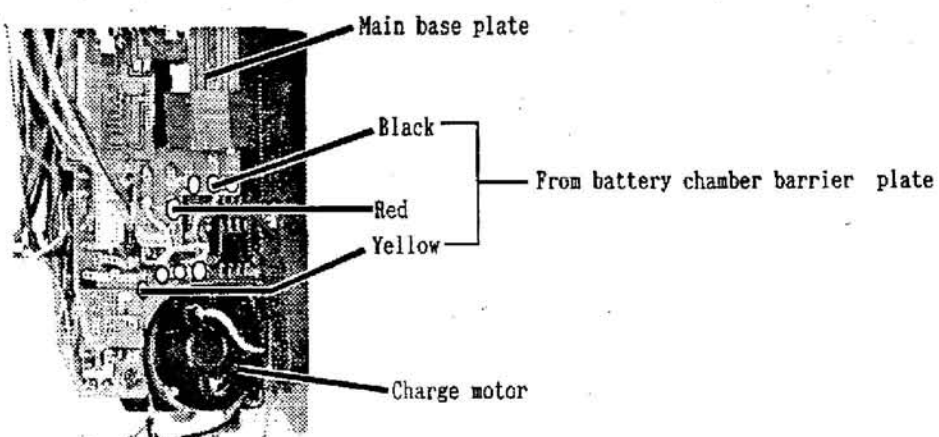
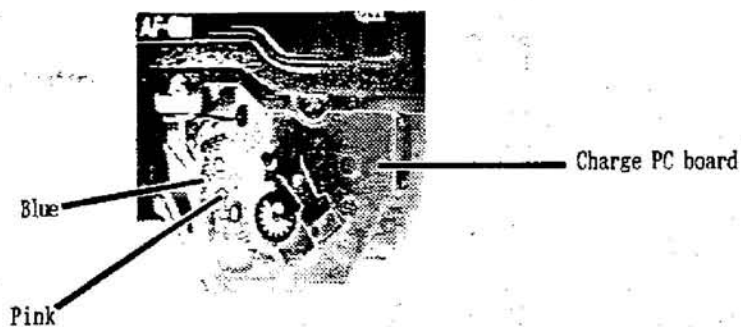
Bottom cover



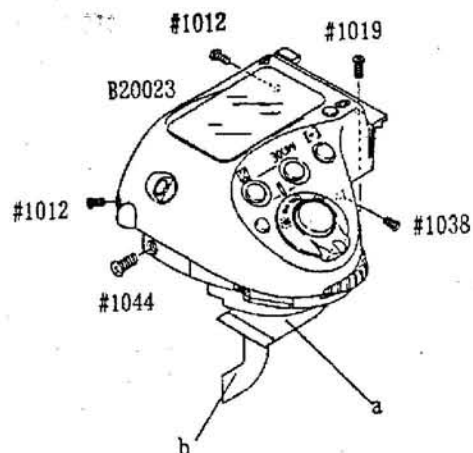
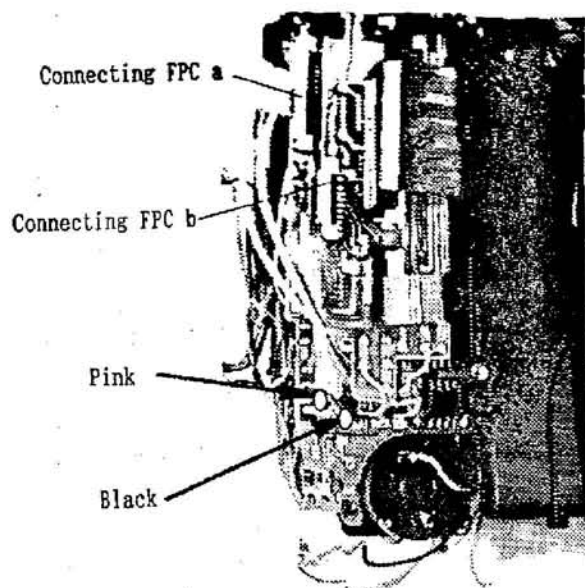
• Remove bottom cover FPC (B5007) from connector.



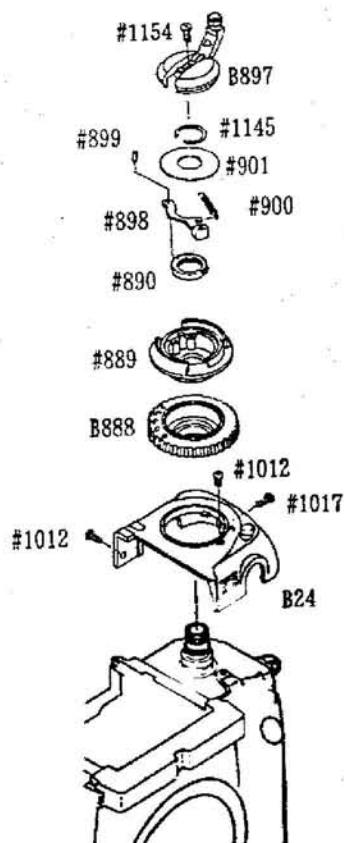
Battery chamber barrier plate



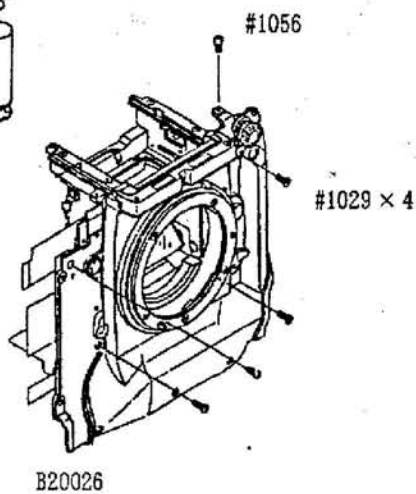
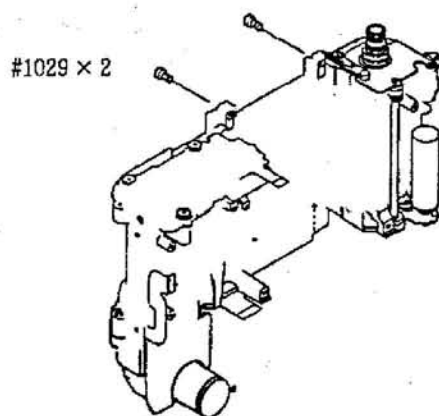
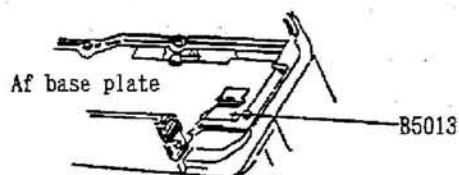
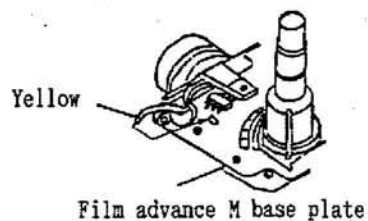
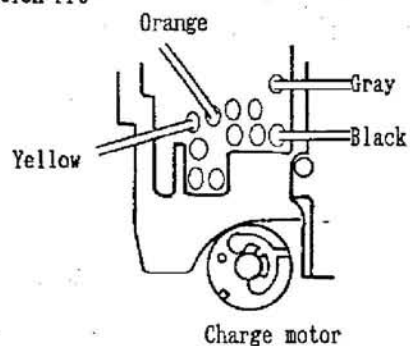
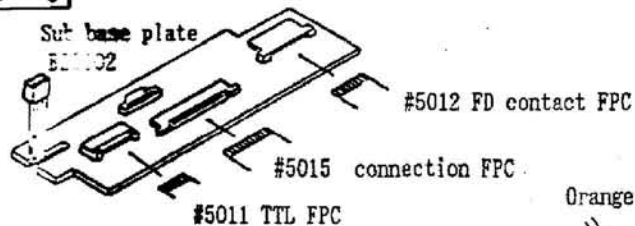
Top cover on film advance side



Top cover on film rewind side

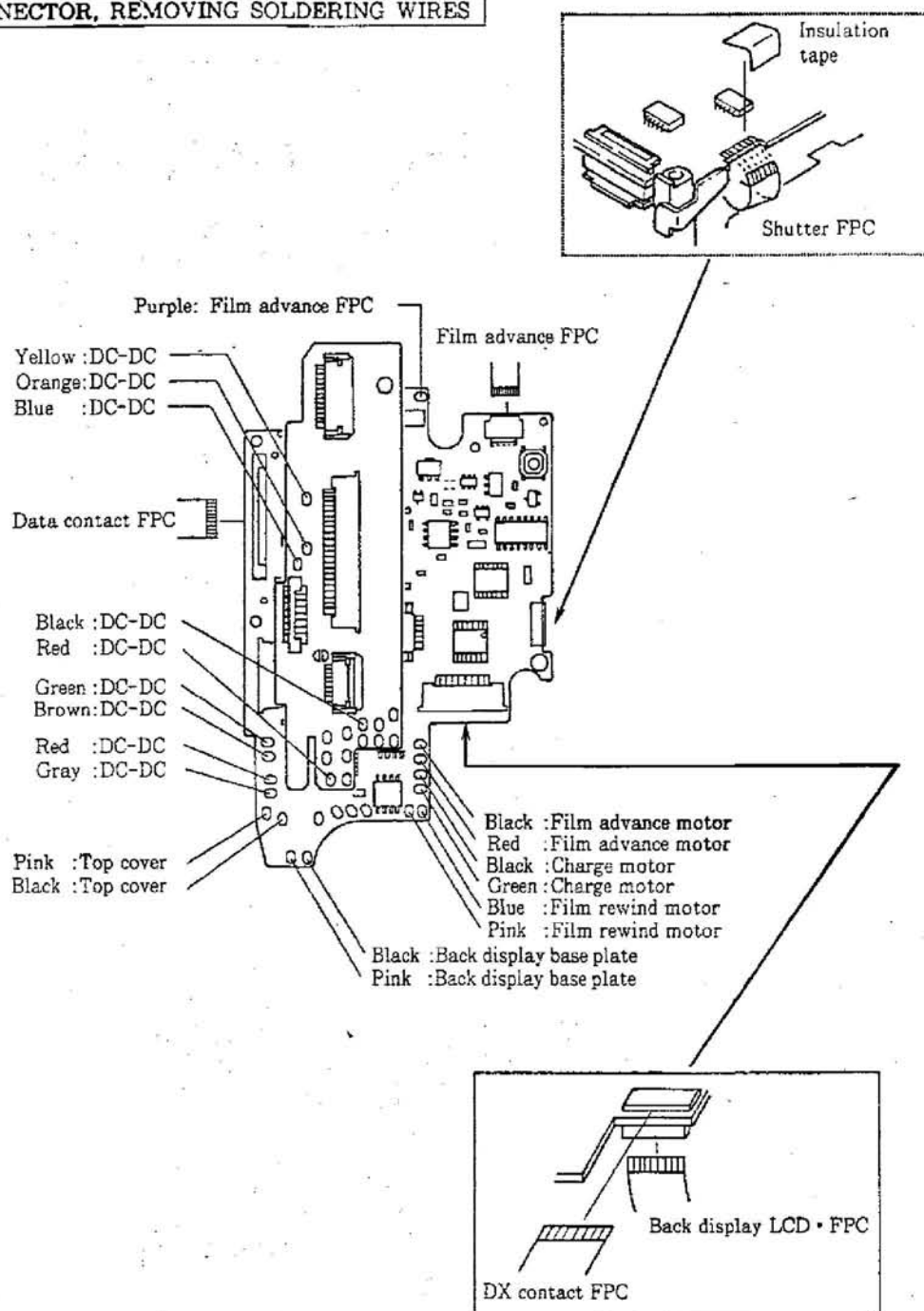


Front body

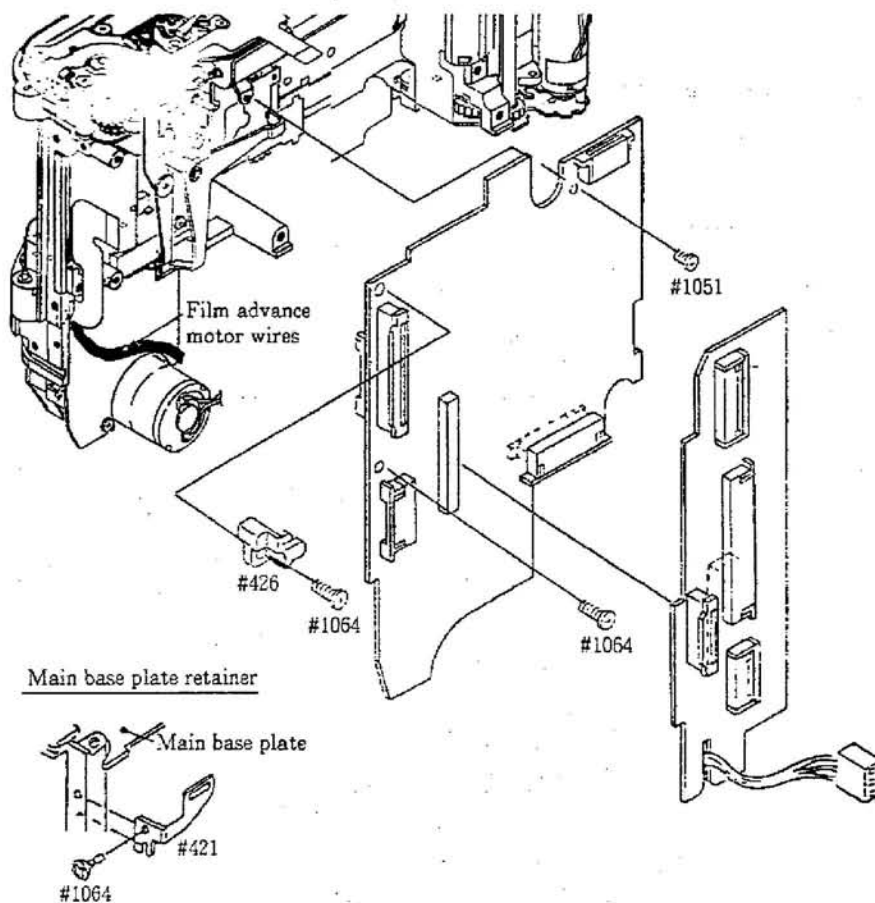


2. DISASSEMBLING REAR BODY

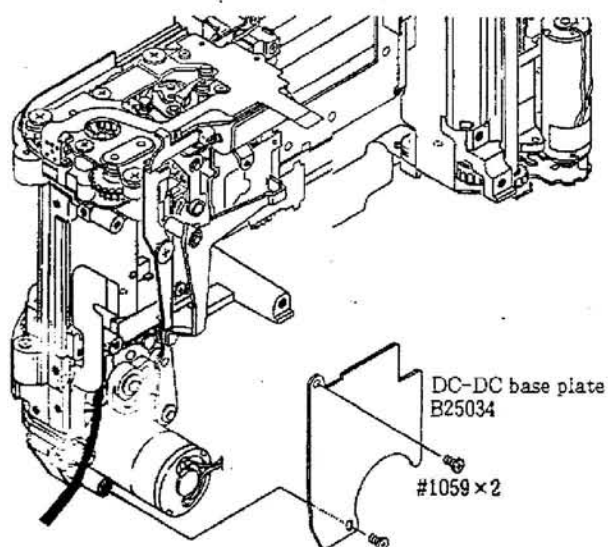
CONNECTOR, REMOVING SOLDERING WIRES



MAIN BASE PLATE

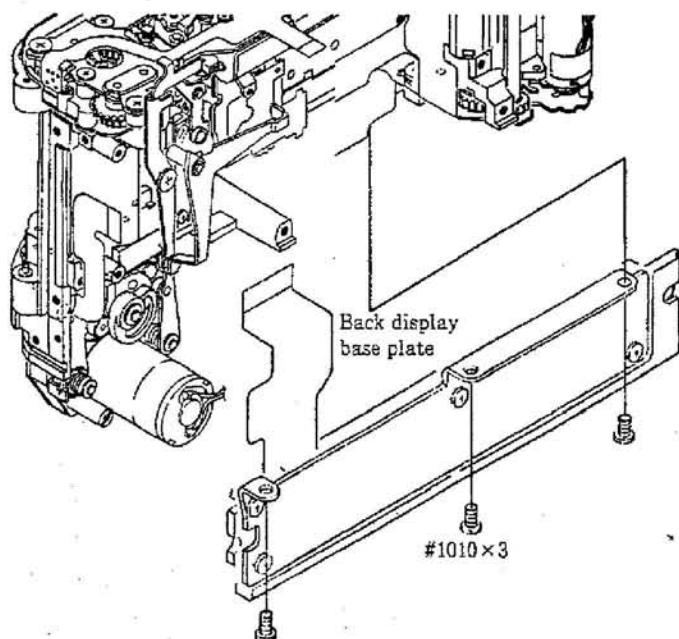
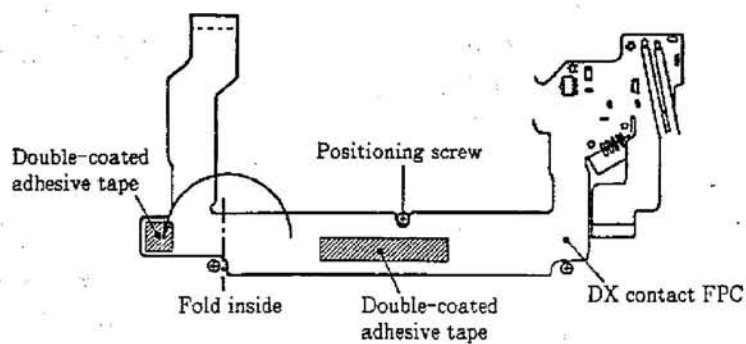


DC-DC BASE PLATE

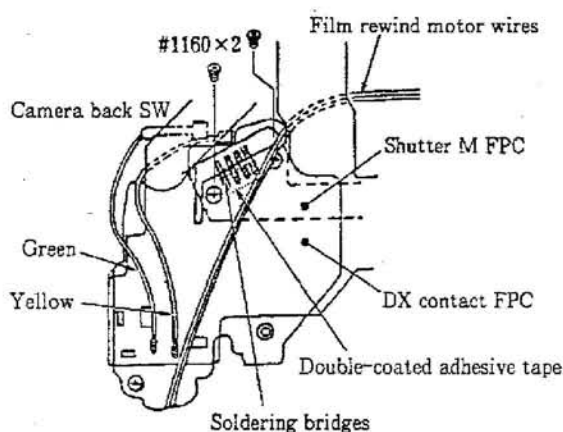
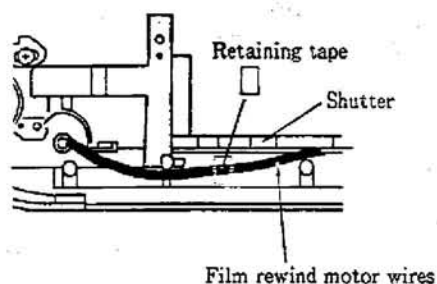


BACK DISPLAY BASE PLATE

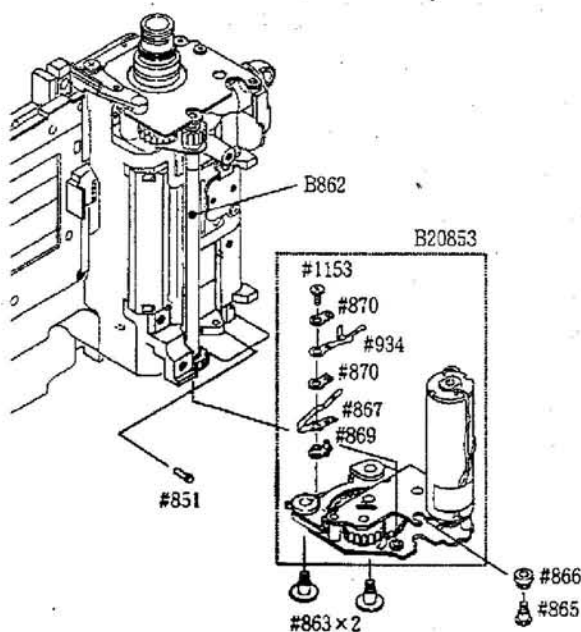
- Lift up the DX contact FPC in the direction of the arrow.



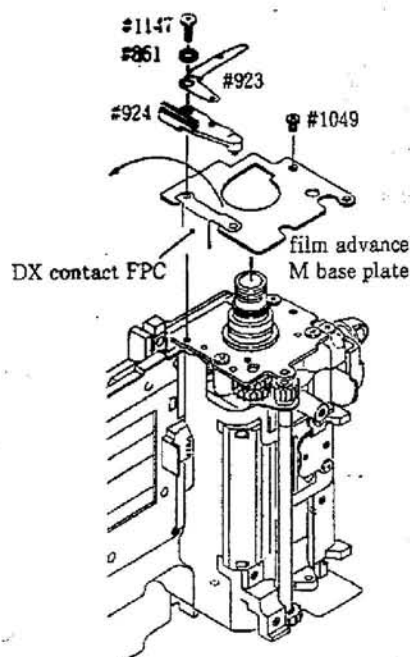
FILM REWIND BASE PLATE



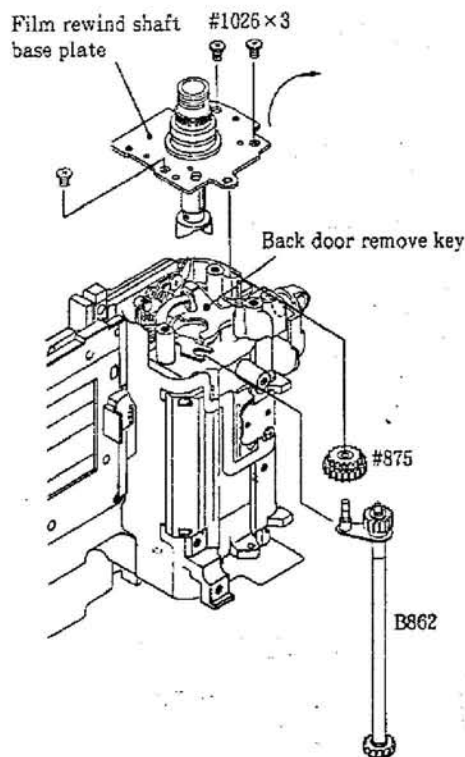
1. Remove cords-retaining tape.
2. Remove FPC retaining screws #1160x2.
3. Remove four soldered bridges.
4. Remove camera back switch cords (yellow, green).
5. Peel off shutter MFPC from the film rewind base plate.
6. When you remove the film rewind base plate by unfastening screws #865, #863x2, the film rewind vertical shaft and camera back switch pin #851 also come off at the same time.



FILM REWIND SHAFT BASE PLATE



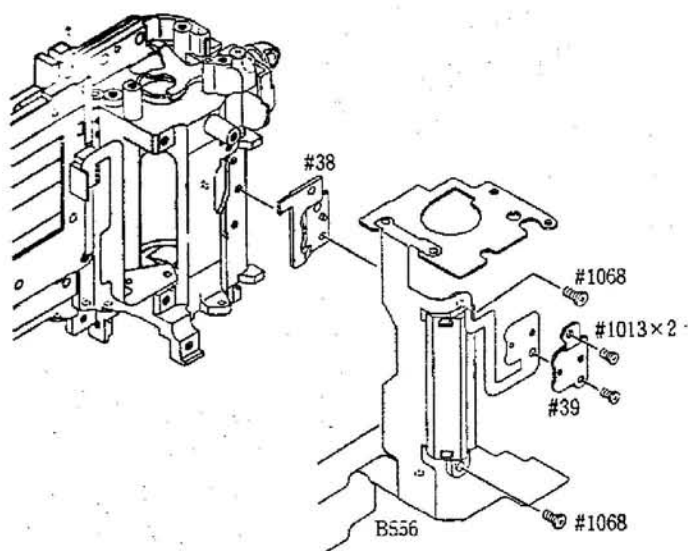
- Slide the film advance M base plate sideways in the direction of the arrow, while watching out for the soldered bridge on the DX contact FPC and the film advance M base plate.



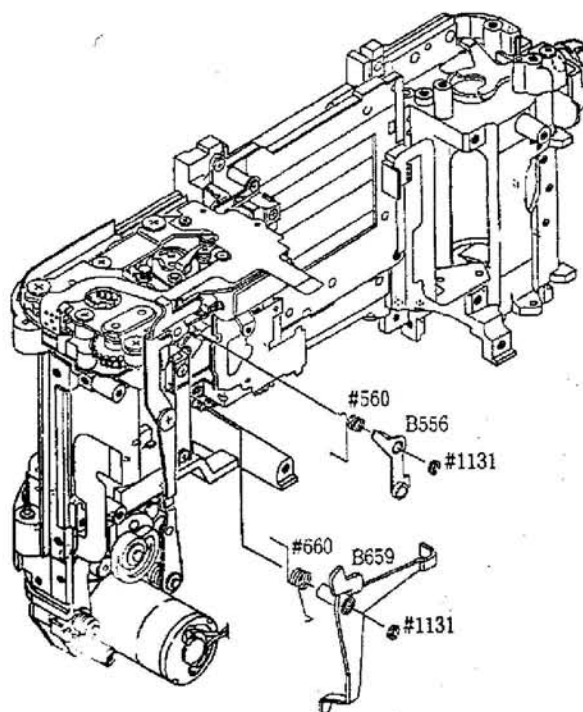
- Remove the film rewind shaft base plate by tilting it in the direction of the arrow while lifting the plate up and also sliding the camera back hooking key upward.

Note: As the film rewind vertical shaft does not come off when the film rewind shaft base plate is removed, do not try to remove it forcefully.

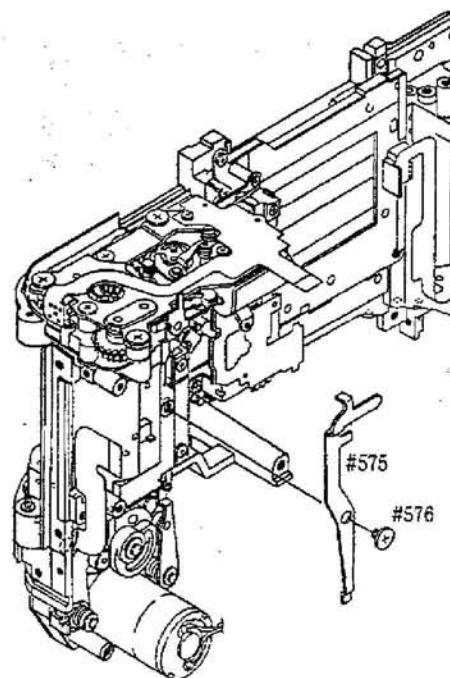
DX CONTACT FPC



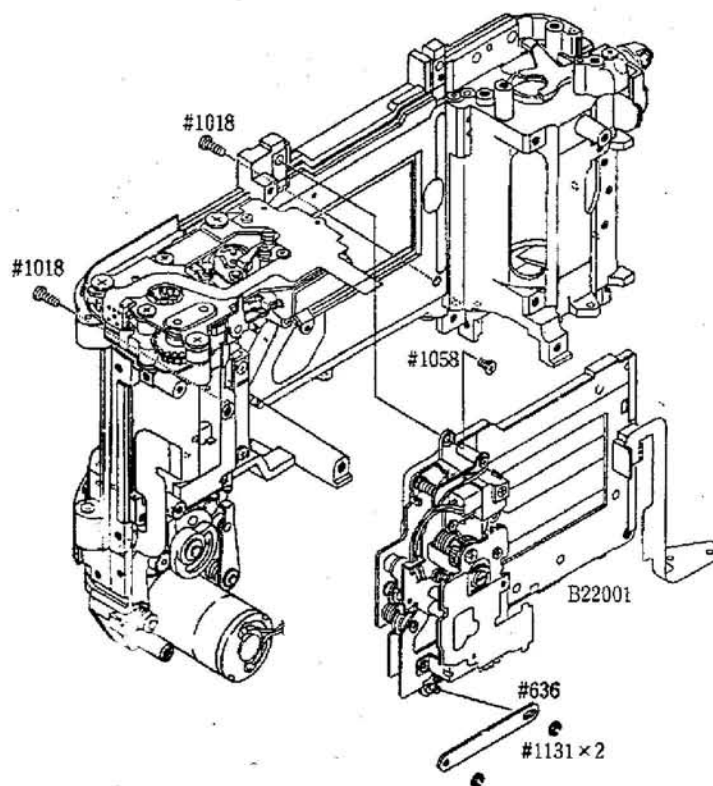
CHARGE LARGE LEVER, FILM ADVANCE RELEASE LEVER



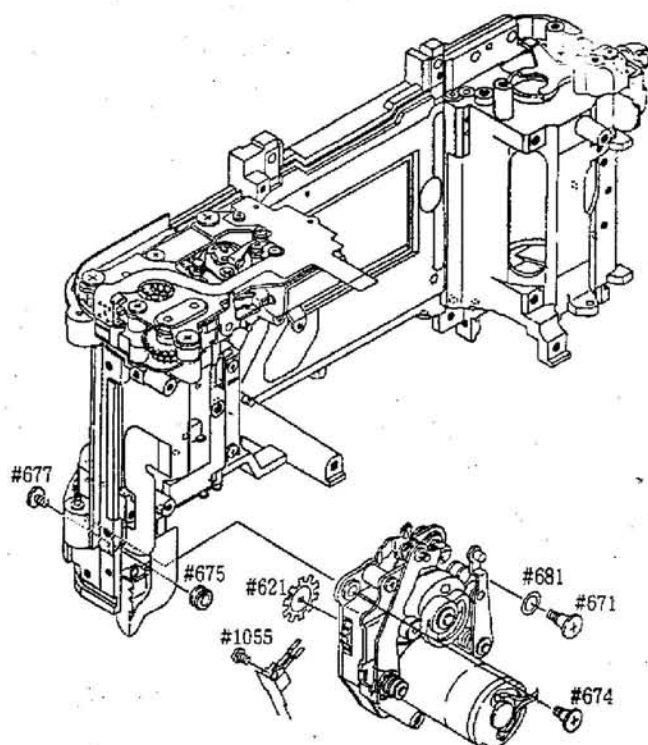
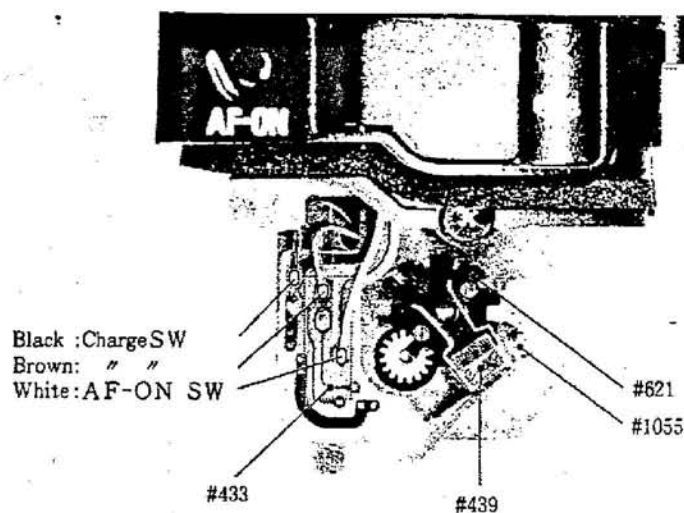
R1 RELAY LEVER



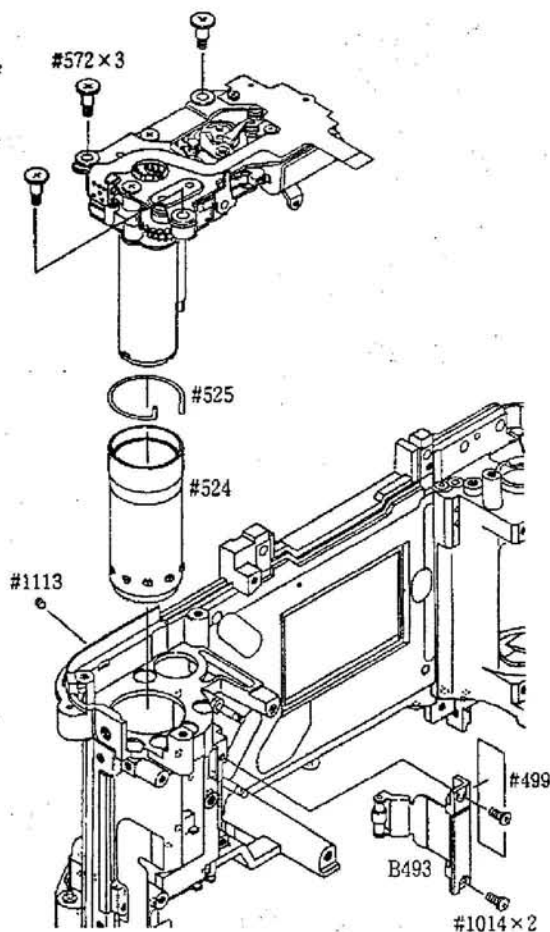
SHUTTER



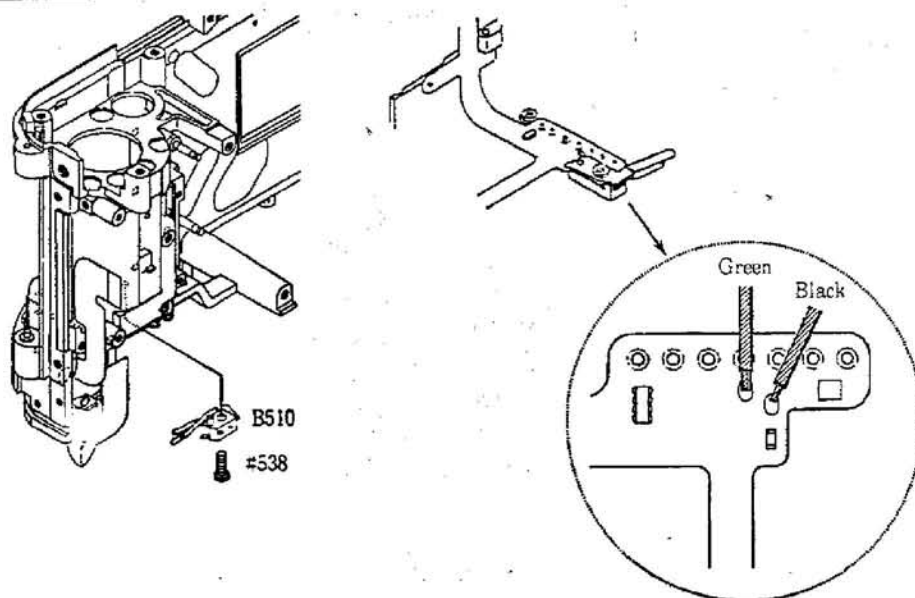
CHARGE BASE PLATE GROUP



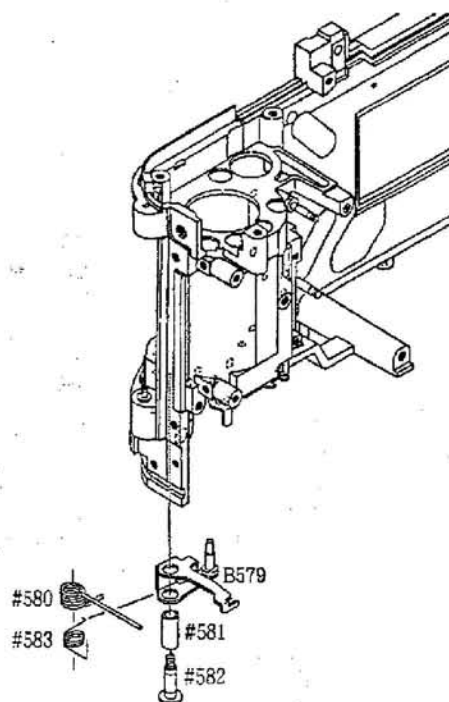
FILM ADVANCE BASE PLATE, EL ROLLER



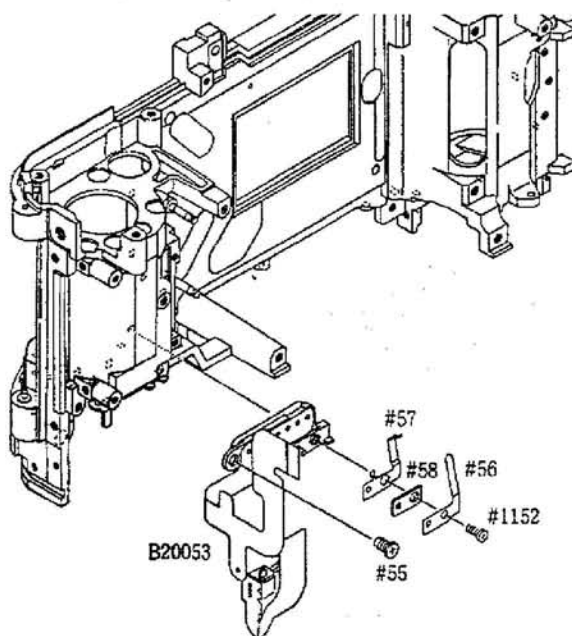
R1 SWITCH



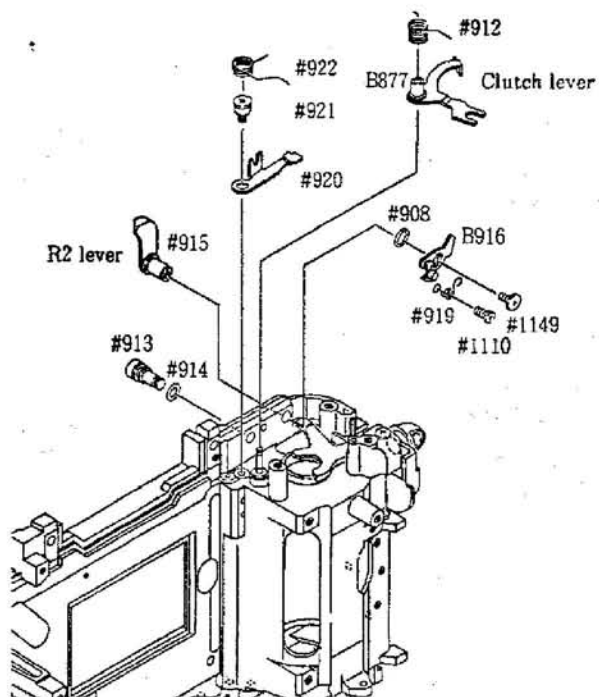
R1 LEVER GROUP



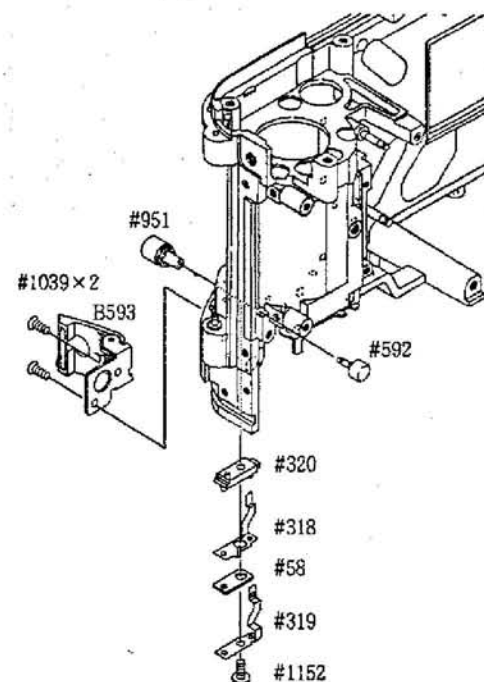
DATA CONTACT UNIT, F DETECT SWITCH



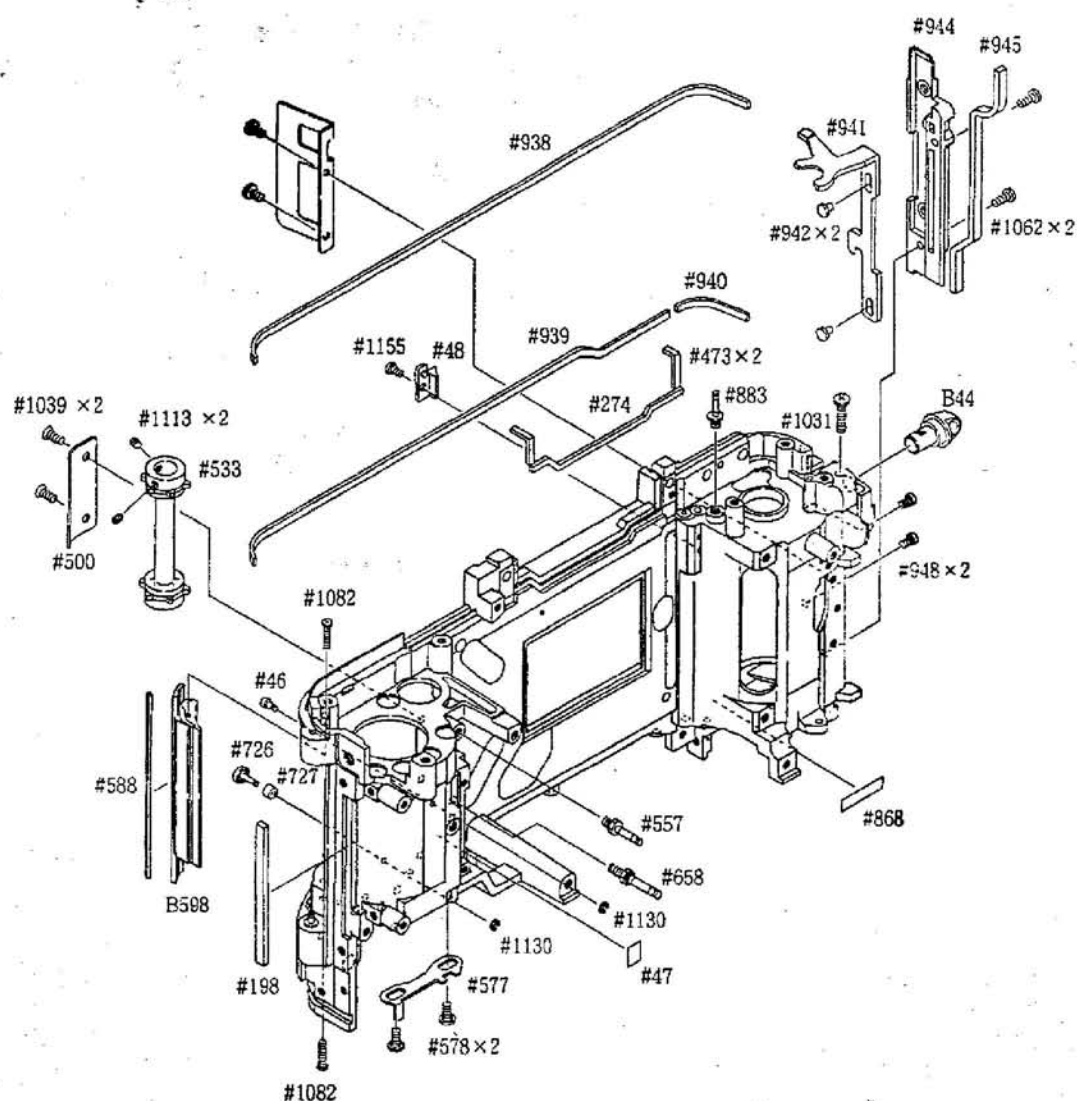
R2 LEVER, CLUTCH LEVER



R1 BUTTON COVER BASE PLATE, AF-S SWITCH

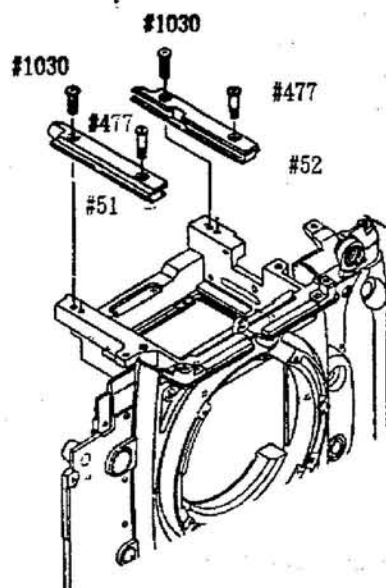


SMALL PARTS OF REAR BODY

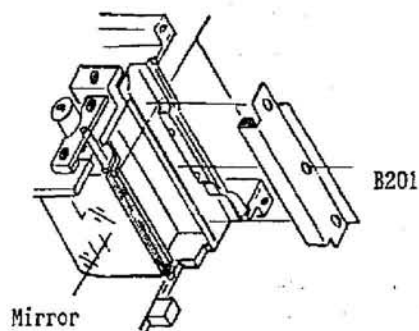


3. Disassembling front body

Removing FD rail

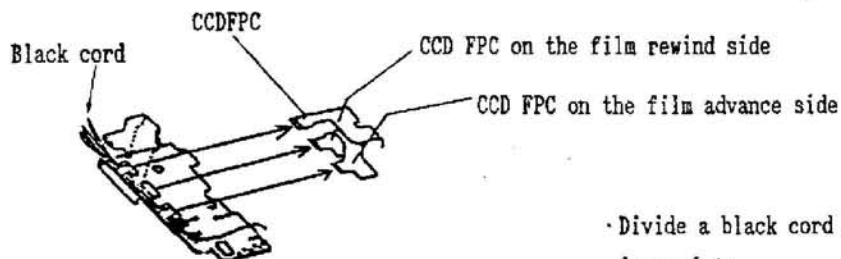


Removing light baffle plate at the rear of the main mirror.

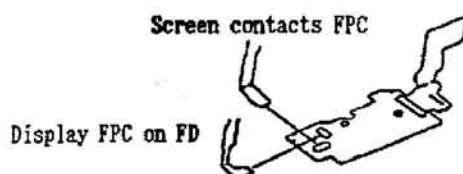


Removing connectors on AF base plate

Connectors (3 locations)



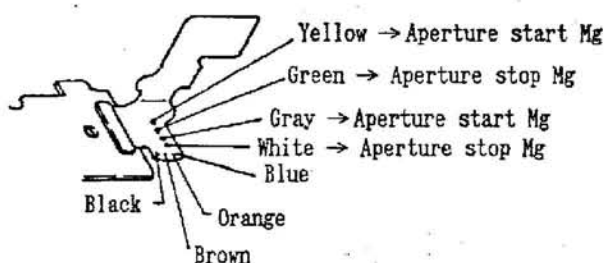
Divide a black cord from the AF base plate.



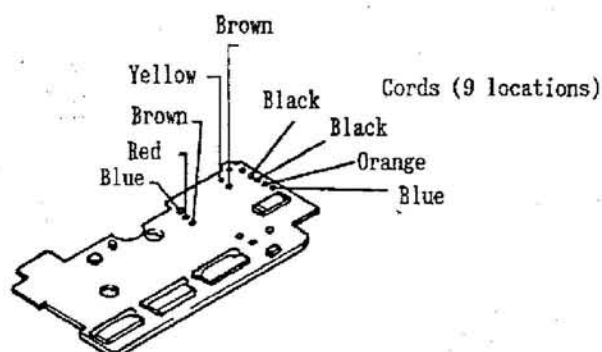
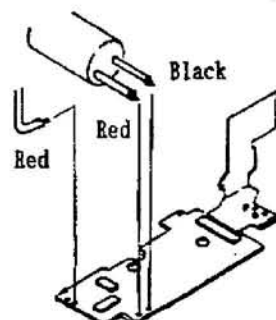
Connectors (2 locations)

Removing cords on AF base plate

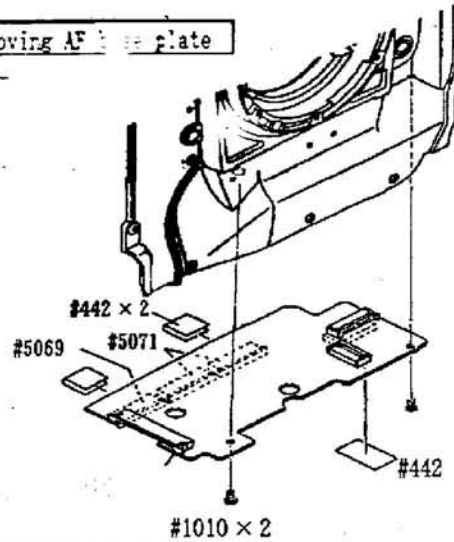
Cords (8 locations)



Cords (3 locations)

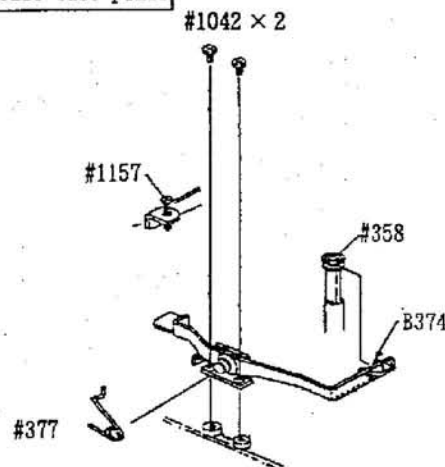


Removing AF base plate



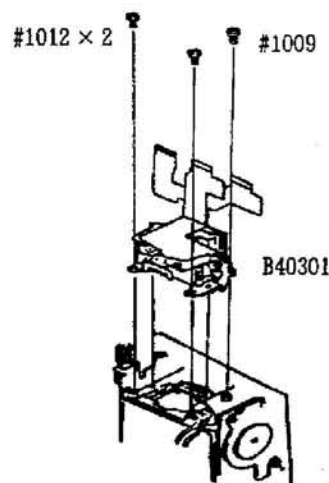
Screw : #1010 x 2

Lens release base plate



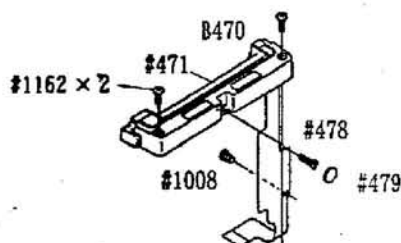
- Removing spring #377.
- Removing spring #1042 x 2

Removing AP4 unit



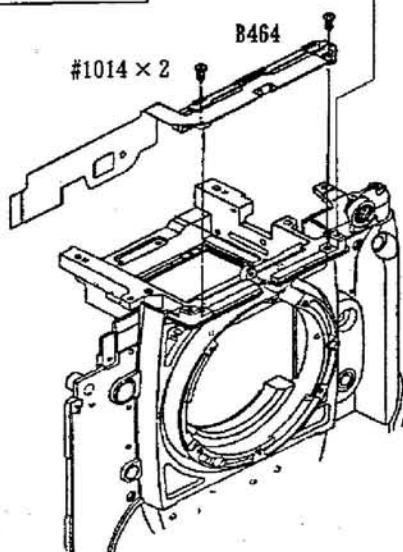
- Remove screws #1010x2, #1009x1.
- AP4 can be detached as a unit.

Removing front side display mold



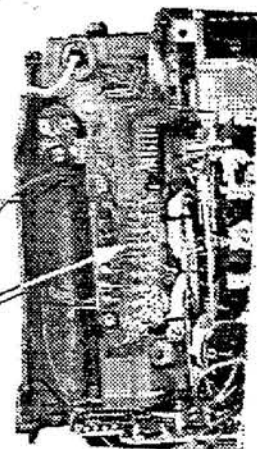
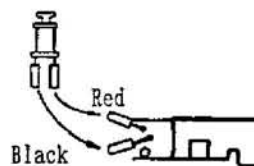
Screw x 4
Cord x 3

FD contact mold

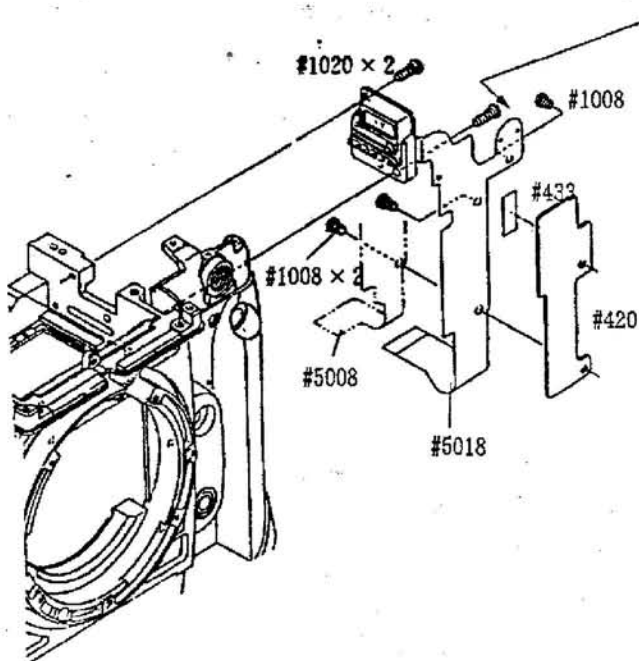


Purple
Gray
Orange

Screw x 3
Cord x 2

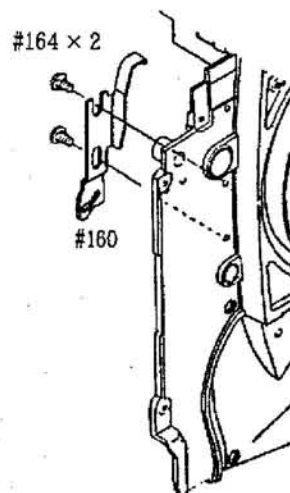


Screen contacts unit & SC contacts



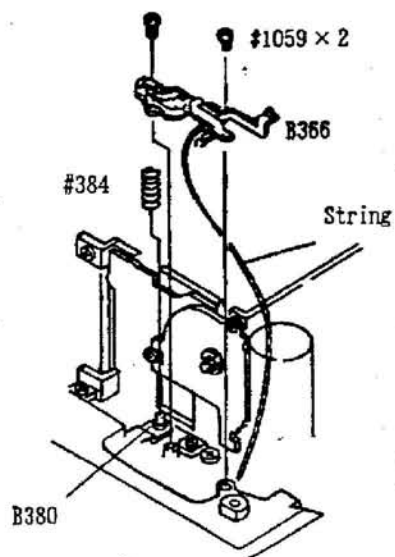
Screws (4 locations)
Soldered bridge (1 location)
Soldered portions (2 locations)

Manual MUP guide plate



Screw x 2

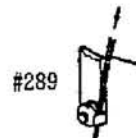
Lens release button collar spring



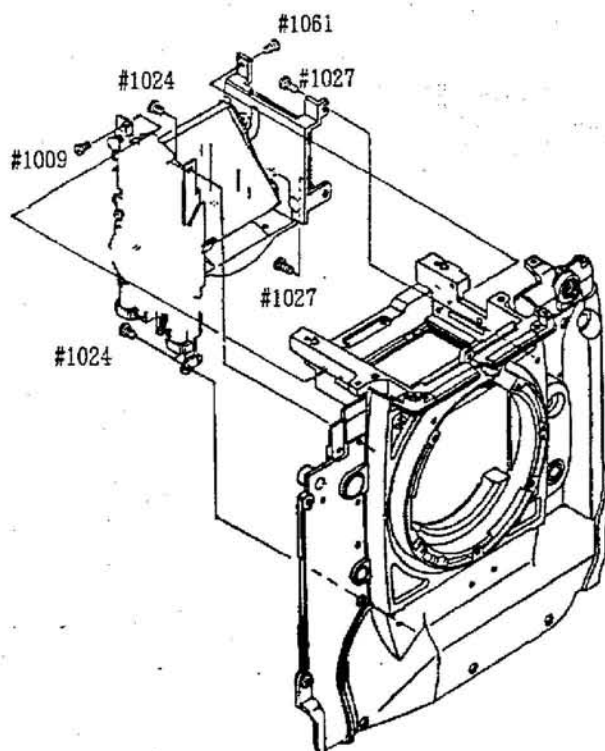
Screws x 2

Spring x 1

Divide string from part #289.

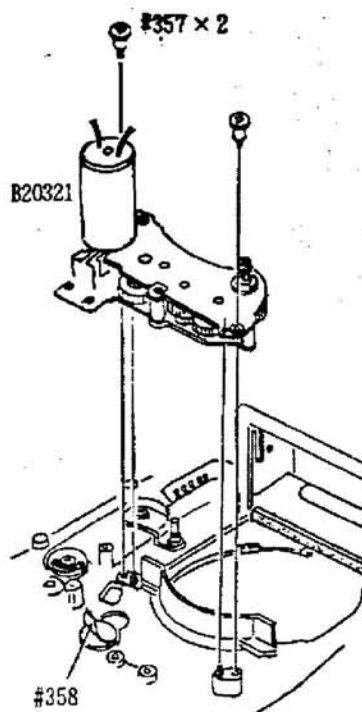


Removing mirror box unit



Screw x 6

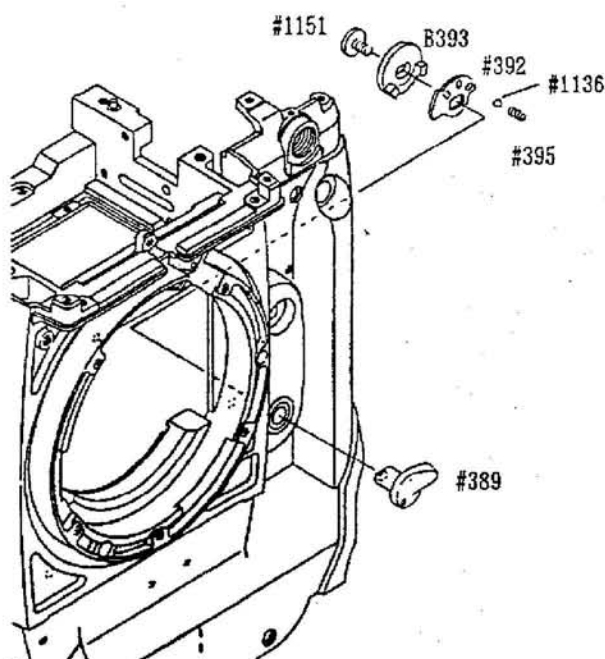
Removing AF driving base plate



Screws $\times 2$

As there is double coated adhesive tape #358 under the base plate, lift the plate up bit by bit.

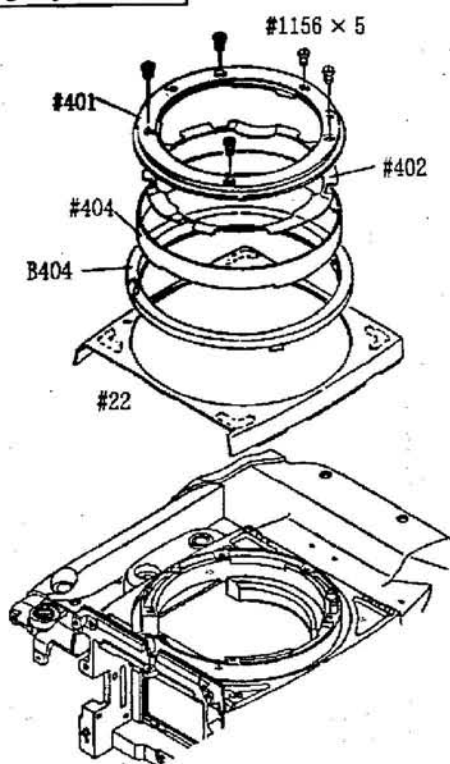
Removing AF mode switching lever



Screw $\times 1$

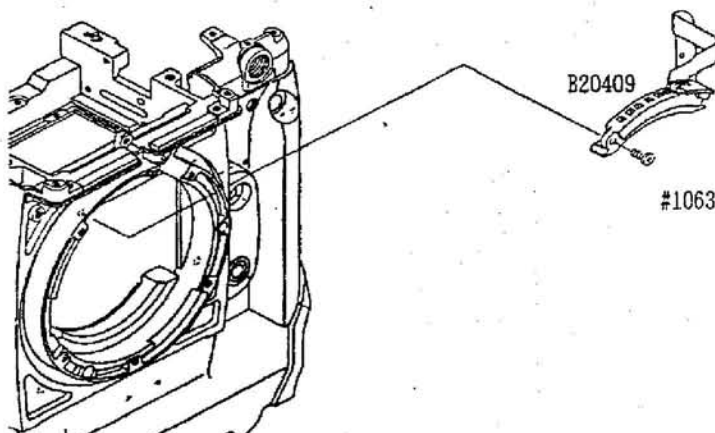
Take care that ball bearing and spring come off.

Removing bayonet unit



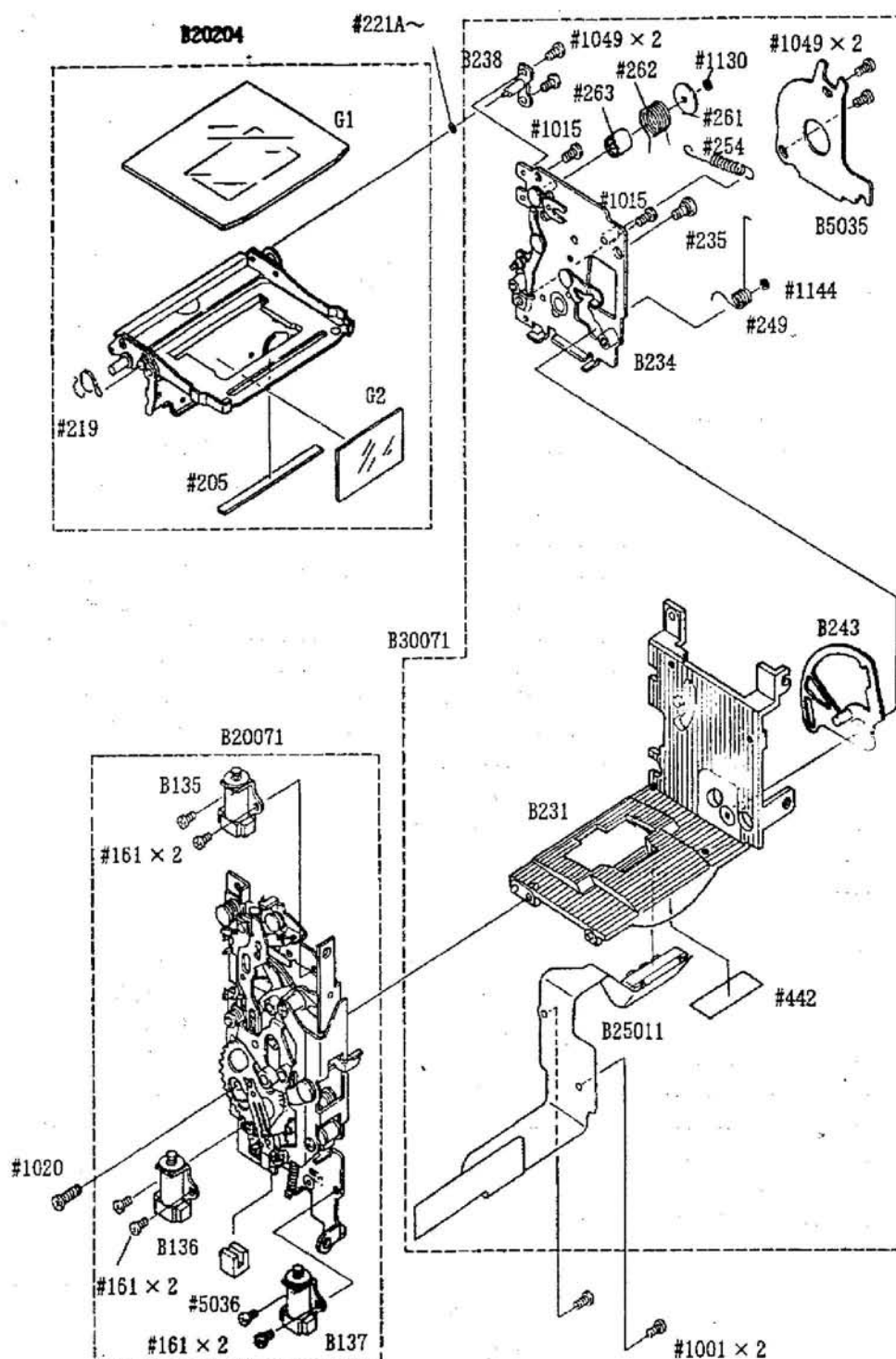
Screw x 5

AF lens contact



Screw x 1

Removing 1 base plate



ASSEMBLING/ADJUSTMENT

1. REAR BODY

SMALL PARTS OF REAR BODY	A 1
AF BUTTON COVER BASE, AF-S SWITCH	A 2
R2 LEVER, CLUTCH LEVER	A 2
AF BUTTON COVER BASE PLATE, AF-S SWITCH	A 3
R1 SWITCH	A 4
FILM ADVANCE BASE PLATE	
SPROCKET SHAFT - F GEAR	A 4
CLUTCH LEVER, FILM ADVANCE MOTOR	A 5
UNLOCK THE ADVANCE LEVER - F GEAR	A 5
PI GEAR, F GEAR	A 6
WINDING FPC - PHOTO INTERRUPTER	A 6
PI GEAR, F GEAR	A 7
FILM ADVANCE BASE PLATE, EL ROLLER	A 8
CHARGE BASE PLATE	
CHARGE SW, SET LEVER, CHARGE GEAR	A 9
CHARGE BASE PLATE 2, CHARGE LEVER	A 10
OPERATION CHECK, FLATING RUBBER	A 10
CHARGE BASE PLATE	A 11
SHUTTER	A 12
R1 RELAY LEVER	A 12
CHARGE LARGE LEVER, FILM ADVANCE RELEASE LEVER	A 13
DX CONTACT FPC	A 13
FILM REWIND SHAFT BASE PLATE	A 14
BACK DISPLAY BASE PLATE	A 16
DC-DC BASE PLATE	A 17
MAIN BASE PLATE	A 17
CONNECTOR, SOLDERING WIRES	A 18

2. FRONT BODY

APPLICATION OF THE OIL BARRIER FOR THE FRONT PLATE	A 19
SPONGE ATTACHMENT	A 19
AF LENS CONTACT	A 19
MOUNTING THE LEVERS THE LEFT FRONT PLATE	A 20
MOUNTING THE LEVER FOR THE RIGHT FRONT PLATE	A 21
BAYONET	A 22
MOUNTING THE AF DRIVE UNIT	A 23
MOUNTING THE MIRROR BOX UNIT (I BASE PLATE/L BASE PLATE ASSEMBLY)	A 23
I BASE PLATE	A 24
L BASE PLATE	A 25
MOUNTING THE LENS RELEASE BUTTON SPRING	A 26
F-FO SECTION	A 26
F-FO BASE PLATE, F-FO PULLY	A 27
ADJUSTMENT OF F-FO PULLY STOP POSITION	A 28
ADJUSTMENT OF THE F-FO BASE PLATE POSITION	A 28

MOUNTING THE LENS RELEASE SWITCH BASE PLATE	A 29
MOUNTING THE MANUAL MUP GUIDE PLATE	A 29
SCREEN CONTACT & SC CONTACT	A 30
FD CONTACT MOLD	A 30
MOUNTING THE FRONT DISPLAY MOLD	A 31
MOUNTING THE AP4 UNIT	A 32
MOUNTING THE LENS RELEASE BASE PLATE	A 32
MOUNTING THE AF BASE PLATE	A 33
AF BASE PLATE	A 33
MOUNTING THE AF BASE PLATE CONNECTOR	A 34
MOUNTING THE MAIN MIRROR REAR LIGHT Baffle PLATE	A 33
MOUNTING THE FD RAIL	A 35
ADJUSTMENT (BY 45°) OF THE MAIN/SUB MIRROR	A 36
ADJUSTMENT OF THE APERTURE LEVER HEIGHT	A 37
ADJUSTMENT OF THE AF COUPLING SHAFT HEIGHT	A 37

3. MOUNTING FRONT PLATE ON REAR BODY

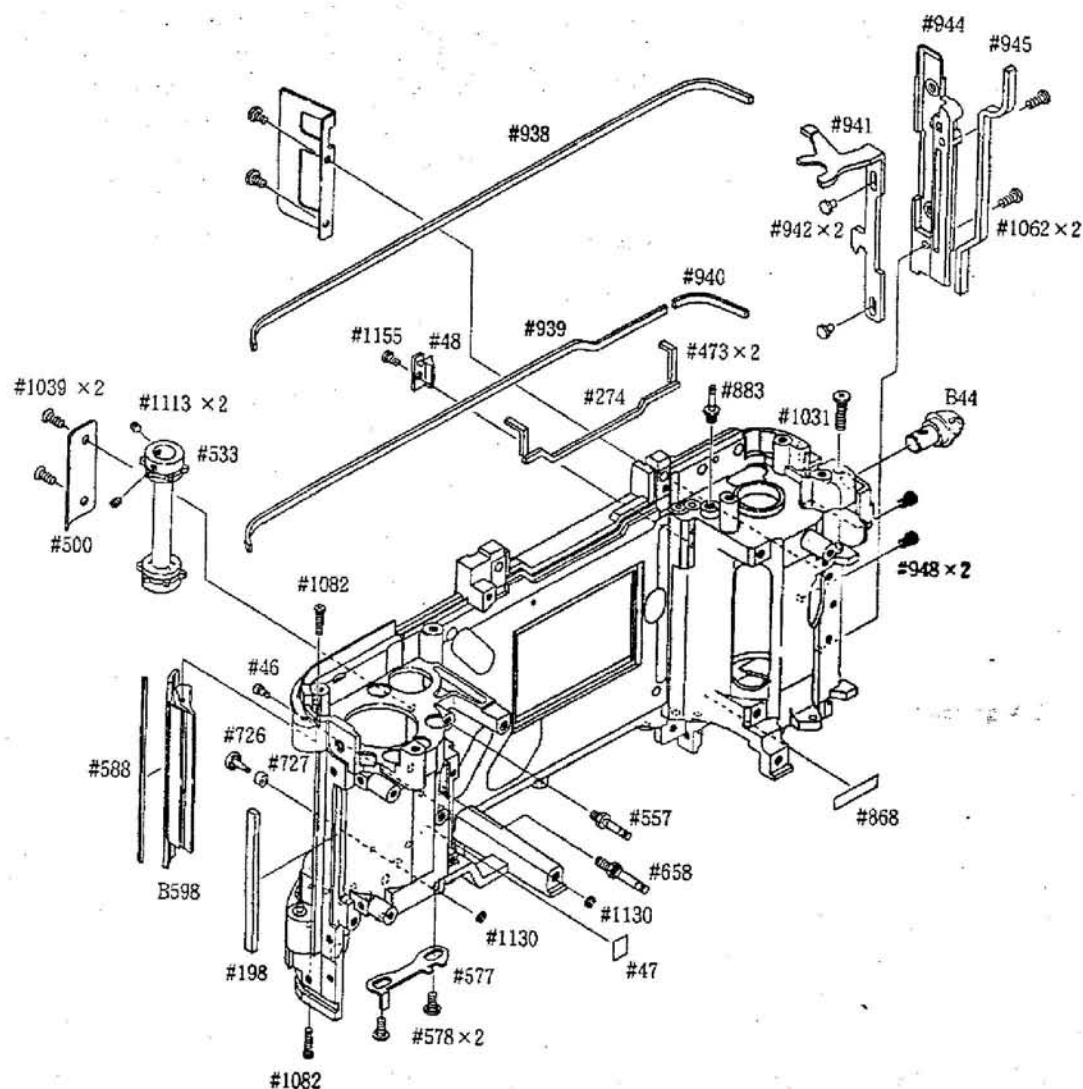
FRONT BODY	A 38
FOUNDER RAIL SPONGE	A 39
TOP COVER (REWIND SIDE) UNIT	A 39
REWIND LOCK LEVER	A 39
REWIND KNOB	A 40
RELEASE BUTTON, ON-OFF RING, EYELET	A 41
LCD GROUP	A 41
RELEASE SWITCH BASE PLATE UNIT	A 42
COMMAND DIAL UNIT	A 42
SOLDERING WIRES	A 43
FILM ADVANCE UPPER COVER	A 44
BATTERY CHAMBER PARTITION PLATE	A 44
BOTTOM COVER	A 46
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ADJUST FO FILM SPROCKET COGWHEEL POSITIONING	A 48
AE PRECISION INSPECTION AND ADJUSTMENT	A 49
AF PRECISION INSPECTION AND ADJUSTMENT	A 50
RUBBERS	A 51

ASSEMBLING / ADJUSTMENT

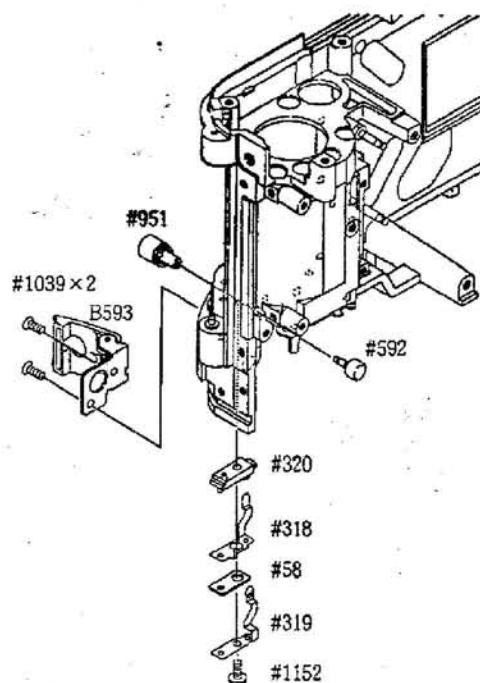
1. REAR BODY

SMALL PARTS OF REAR BODY

OEM
Project is
Called

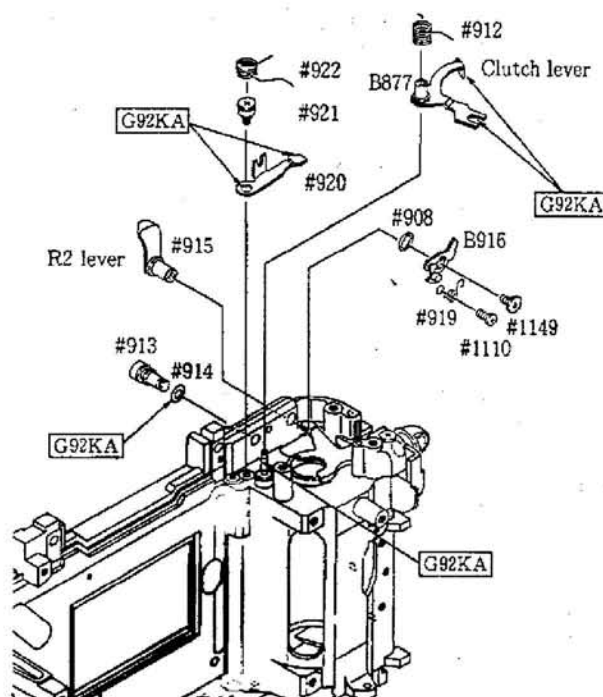


R 1 BUTTON COVER BASE PLATE, AF-S SWITCH

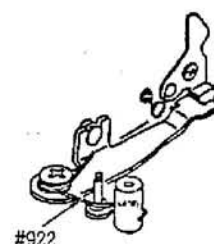


• Make sure that the AF-S switch is turned ON or OFF by pushing the AF-S button.

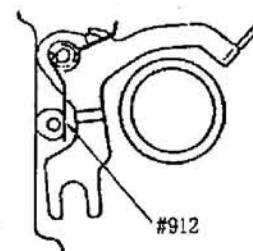
R2 LEVER, CLUTCH LEVER



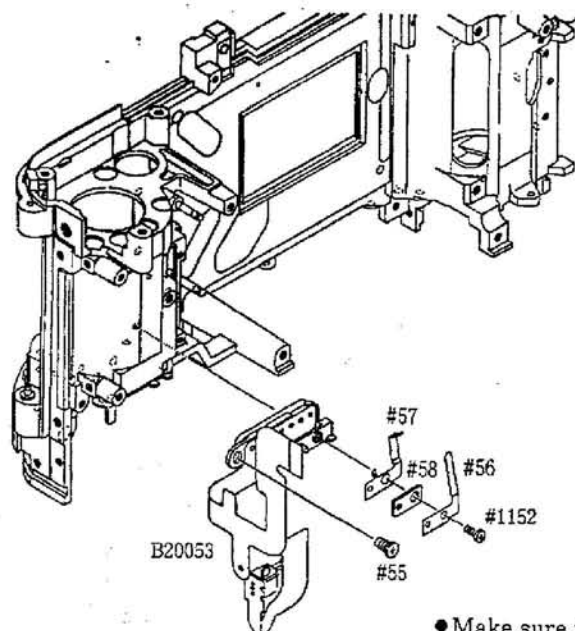
Hooking position of spring #922



Hooking position of spring #912

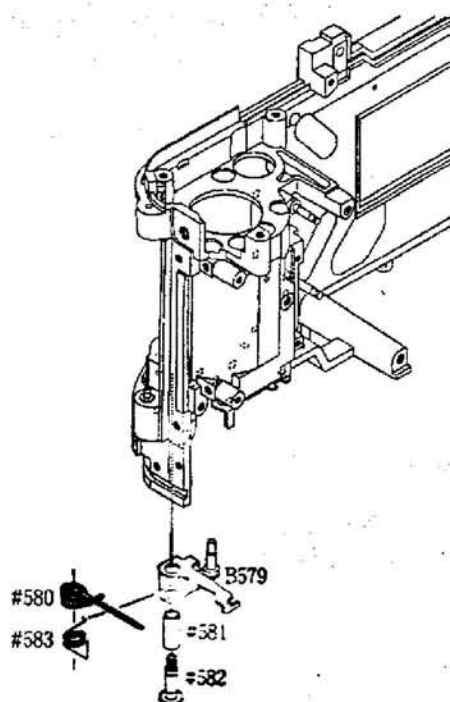


DATA CONTACT UNIT, FILM DETECT SW

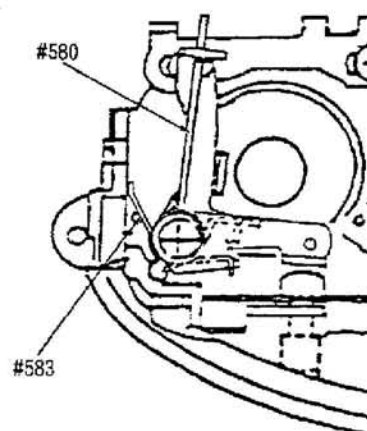


- Make sure that the F detection switch is turned ON or OFF by pushing the F detection pin.

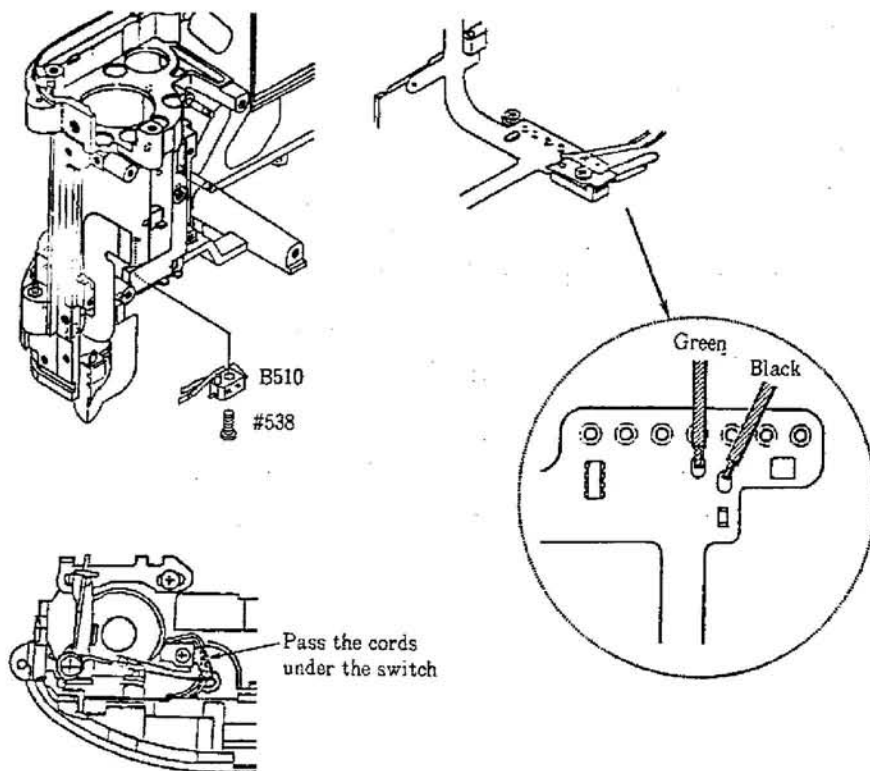
R I LEVER



Hooking position of spring #580, #583

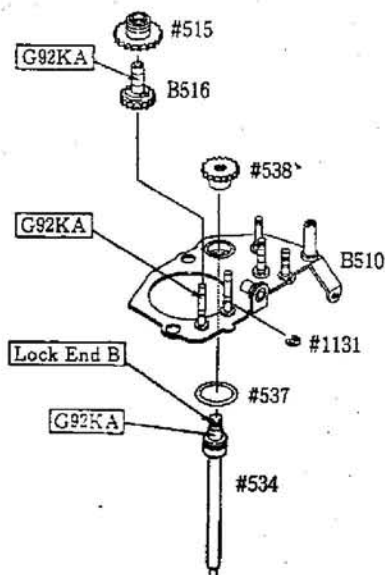


R1 SWITCH

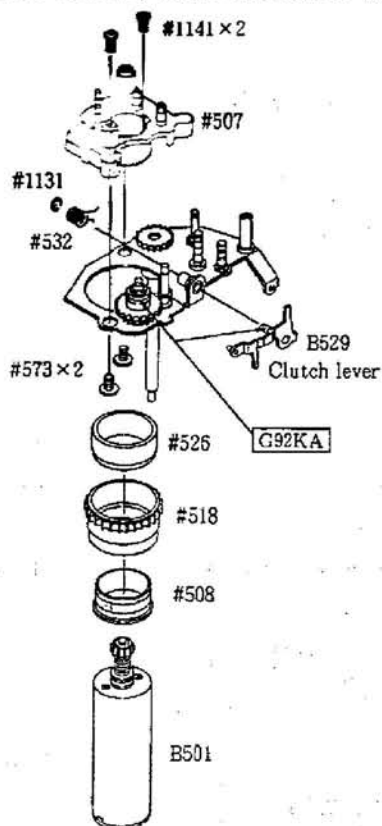


FILM ADVANCE BASE PLATE

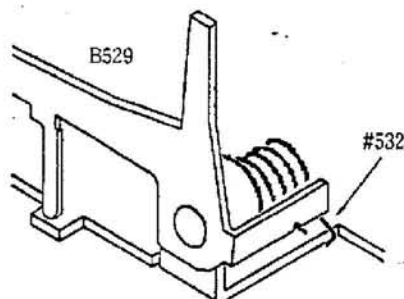
• Sprocket shaft • F gear



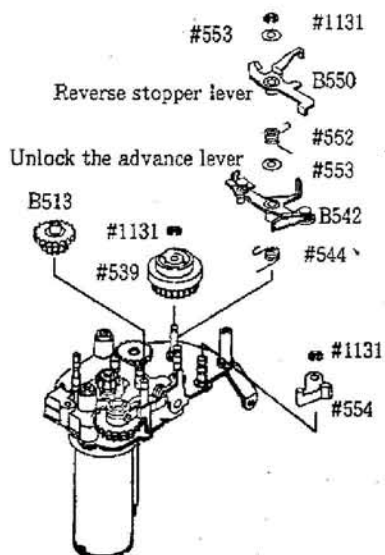
● CLUTCH LEVER, FILM ADVANCE MOTOR



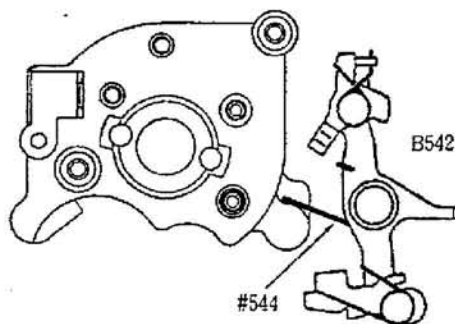
Hooking position of spring #532



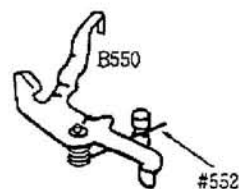
● UNLOCK THE ADVANCE LEVER • F GEAR



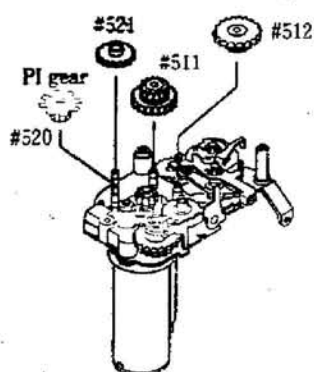
Hooking position of spring #544



Hooking position of spring #552

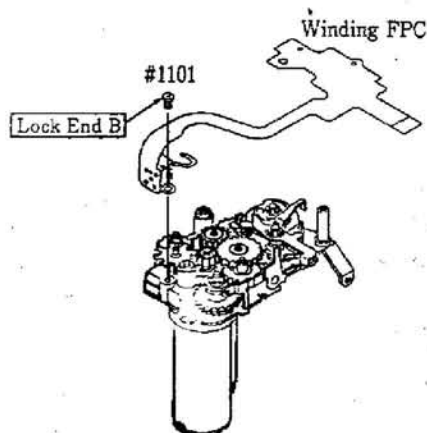
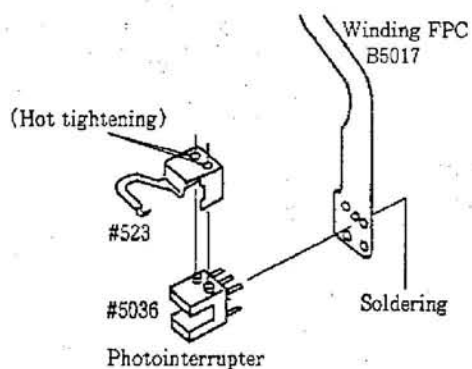
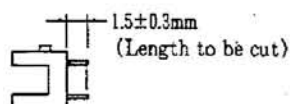


• PI GEAR, F GEAR

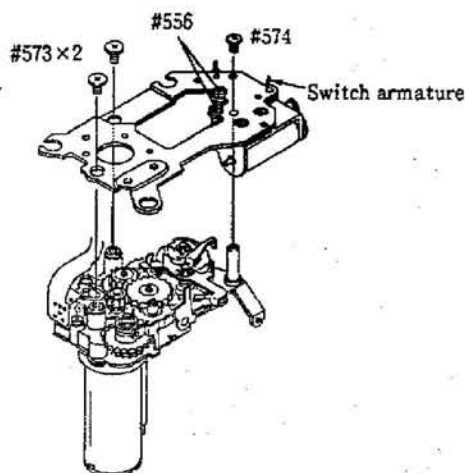


• Apply slight grease G92KA to each gear and gear shaft.

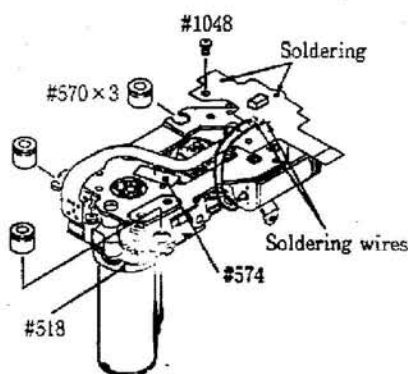
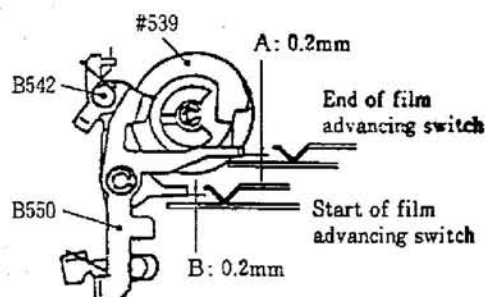
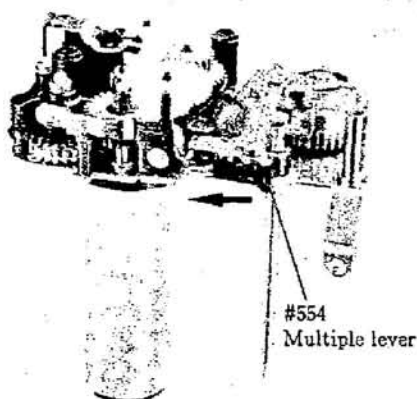
• WINDING FPC • PHOTOINTERRUPTER



• FILM ADVANCE UPPER BASE UNIT



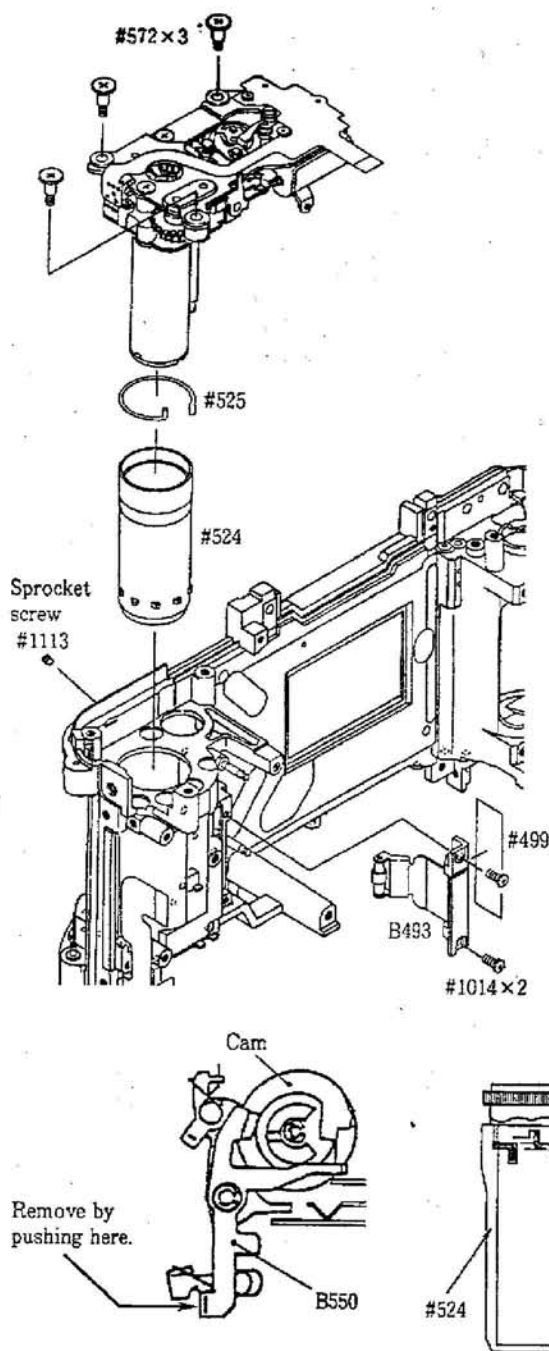
1. Unlock the film advance lever B542 and the reverse stopper lever B550 from the film advance gear #539.
2. Turn the multiple lever #554 in the arrow mark direction.
3. Mount the film advance base plate B509 with #573 (2 screws) and #574 (screw) as checking the connection of the solenoid shaft and multiple lever #554 and the switch armature positions.
4. Make sure that the clearance between the switch armatures A and B is approx. 0.2mm when the film advance gear #539 is such a position as illustrated and that the switches are turned OFF when B542 and B550 are put in the concave of the #539 cam.
- ※ Use #556 for adjusting the clearance.
5. Attach the film advance FPC as aligning it with the switch armature.



*Operation check

1. Check the operation of the spool gear #518 by turning it normally and reversely.
2. Make sure that there is no abnormal sound at the electric current 120mA or less when adding the constant-voltage power supply 12V to the motor wire.
3. Set the 3 floating rubbers #570.

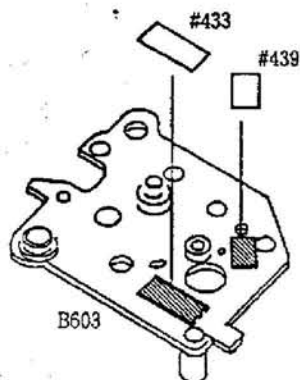
• FILM ADVANCE BASE PLATE, EL ROLLER



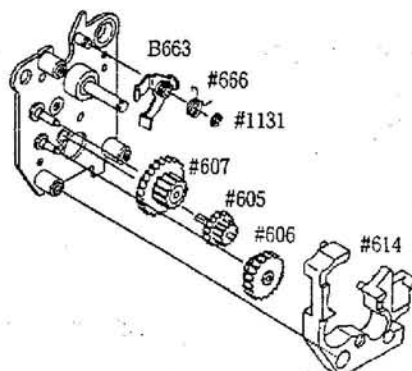
1. Straighten the motor wire by loosening two or three times.
2. Align the curve of #525 with the concave of #518 and then set them to the film advance base plate.
3. Apply G92KA to the step of the sprocket shaft.
4. Pass the motor wire through the bearing, and set the sprocket shaft to the sprocket and the spool to the bearing.
5. Make sure that each component is set securely and then tighten #572 (3 screws).
6. Tighten the sprocket screw #1113 on the sprocket shaft temporarily as removing the claw from the cam by pushing B550.

CHARGE BASE PLATE

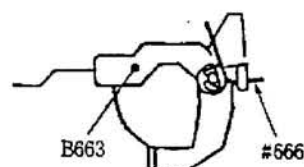
- CHARGE SW, SET LEVER, CHARGE GEAR



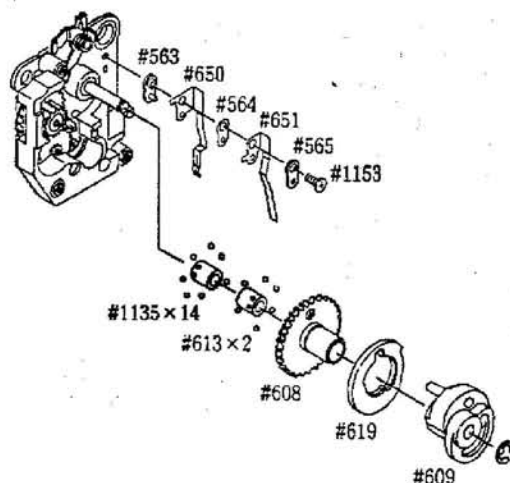
- Apply slight grease G92KA to each gear and gear shaft.



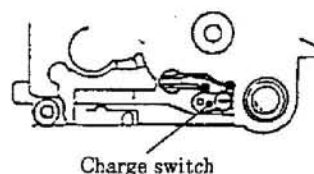
Hooking position of spring #666



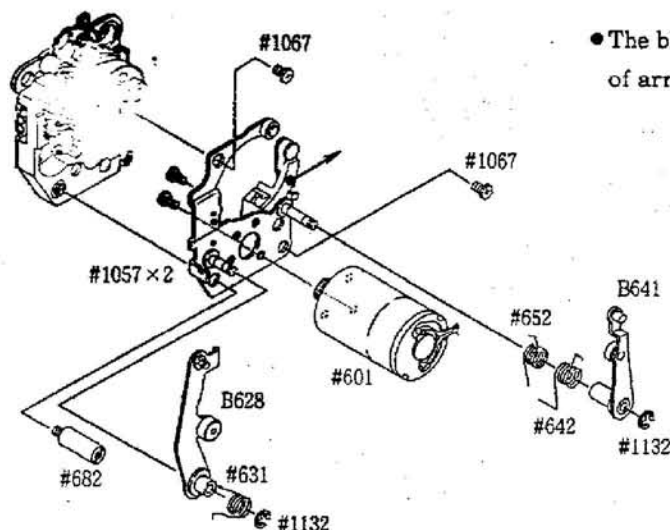
- Apply G92KA to the cam surfaces and gear teeth.



Mounting position of charge switch and arrange wires.

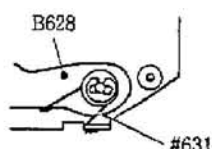


• CHARGE BASE PLATE 2, CHARGE LEVER

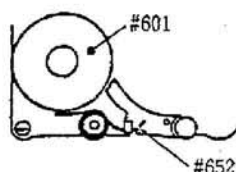


• The black dot lever in the direction of arrow when assembling.

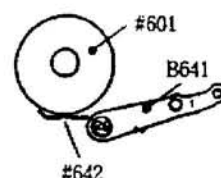
Hooking position of spring #631



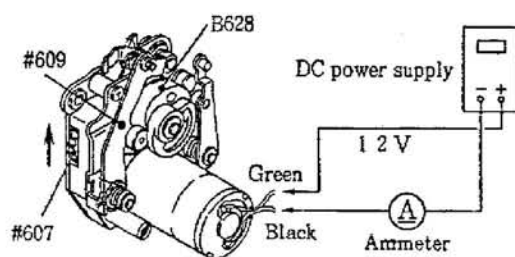
Hooking position of spring #652



Hooking position of spring #642



• OPERATION CHECK, FLOATING RUBBER



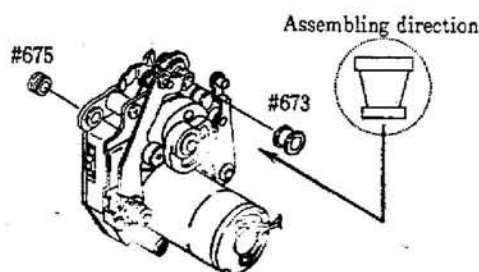
1. Check the operation of the charge gear #607 by turning it in the arrow mark direction.
2. Make sure that there is no abnormal sound at the electric current 12mA or less when adding the constant-voltage power supply 12V to the motor wire.

CAUTION: Carry out wiring as illustrated. Be careful not to reverse the polarity.

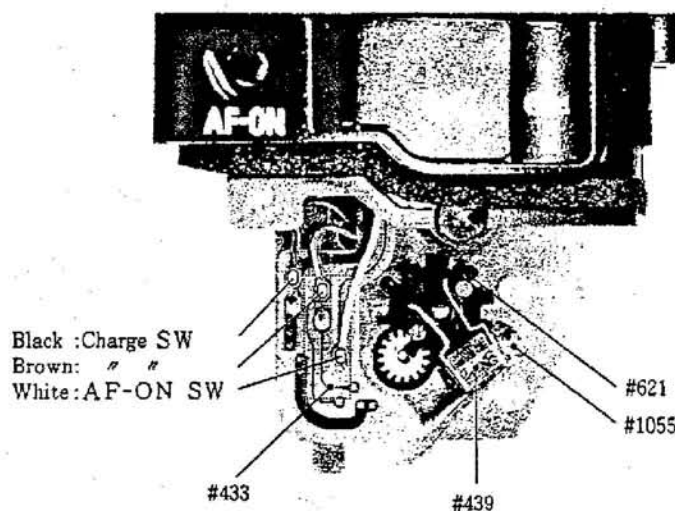
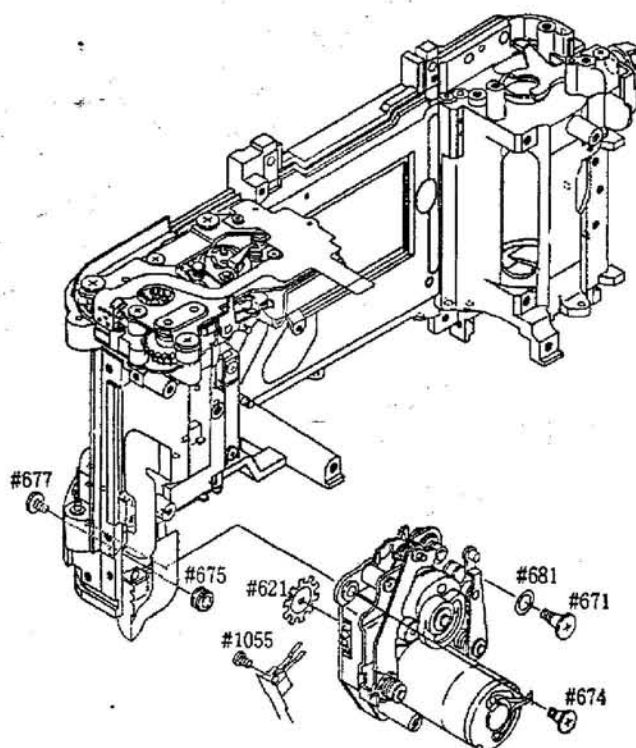
3. Check the operation of the charge switch.

※ Connect a multimeter to the brown and black wires of the charge switch. Make sure that the switch is turned OFF when the S charge lever B628 is put in the concave of the charge gear cam #609 by turning the charge gear 3 #607.

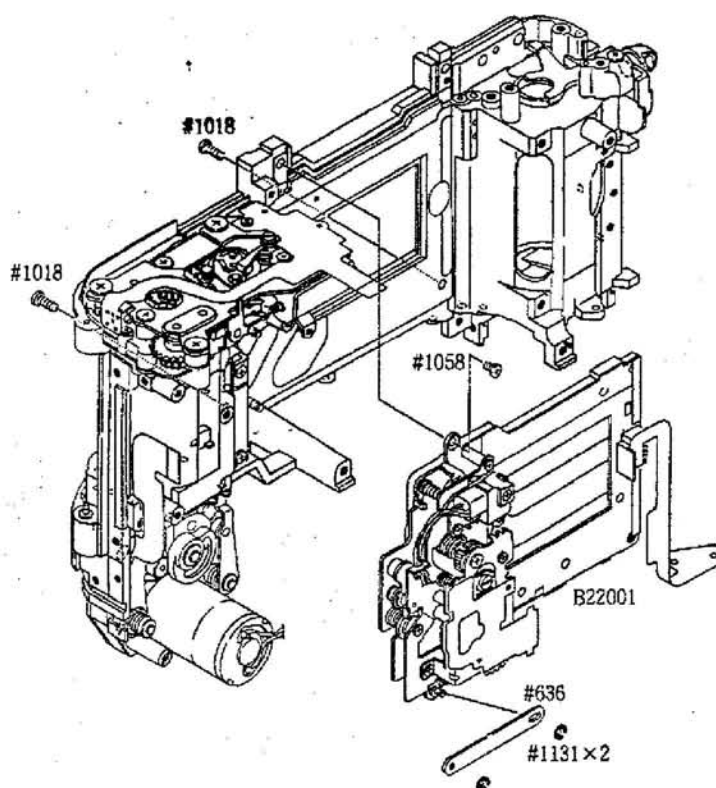
4. Set the floating rubbers #673 and #675.



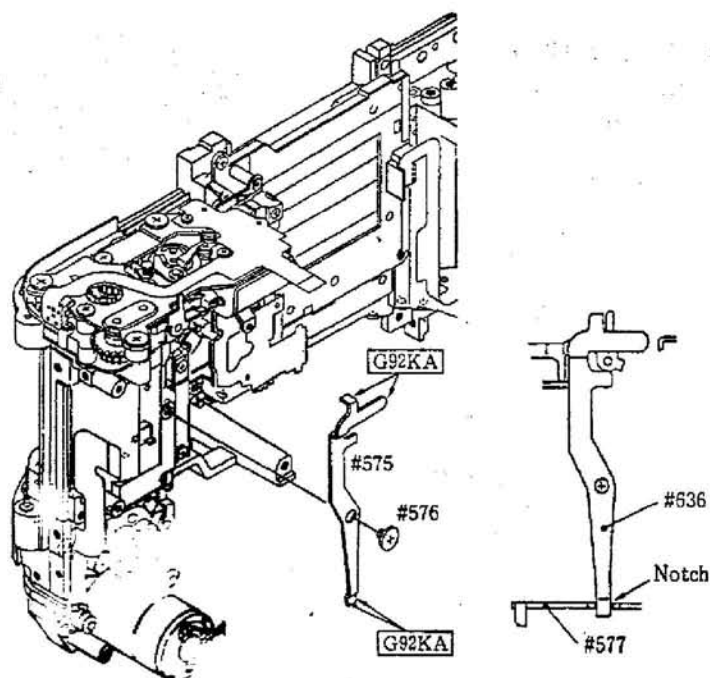
● CHARGE BASE PLATE GROUP



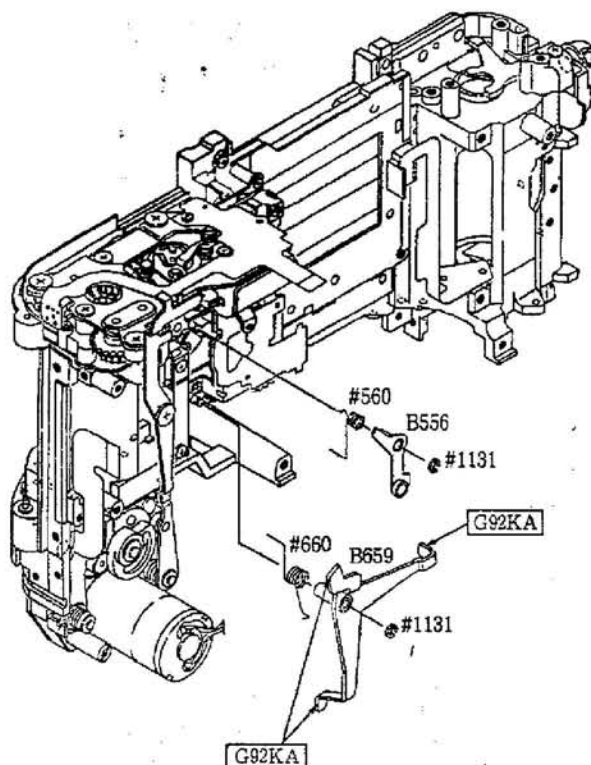
SHUTTER



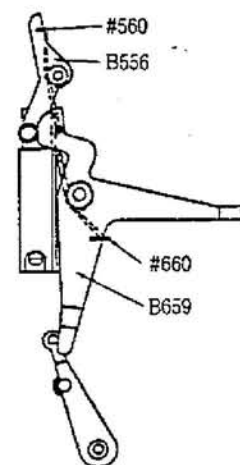
R1 RELAY LEVER



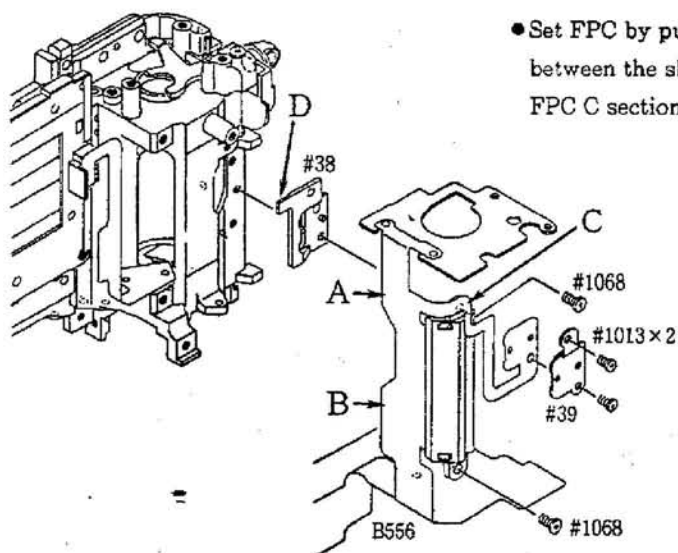
CHARGE LARGE LEVER, FILM ADVANCE RELEASE LEVER



Mounting position

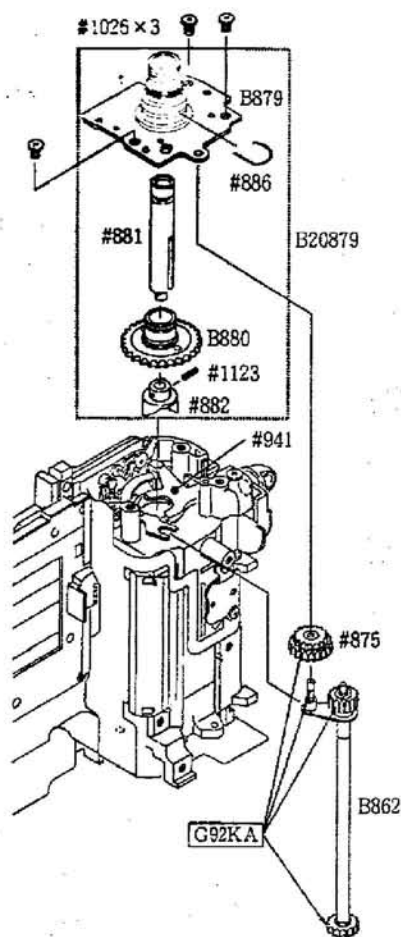


DX CONTACT FPC

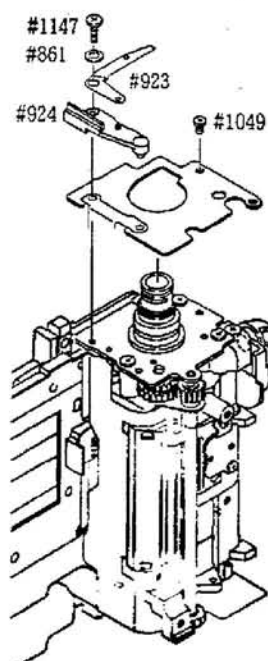


- Set FPC by putting the FPC A and B sections between the shutter and die casting and the FPC C section under the D section.

FILM REWIND SHAFT BASE PLATE



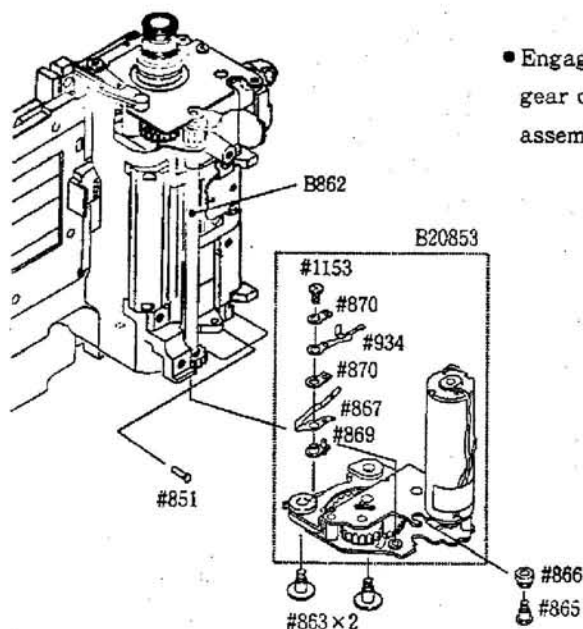
- Insert the shaft end of the film rewind shaft base plate while the back door hinge #941 is lifted and align the film rewind vertical shaft assembly B862 with the end of the clutch lever shaft #883. Set the unit in this way.



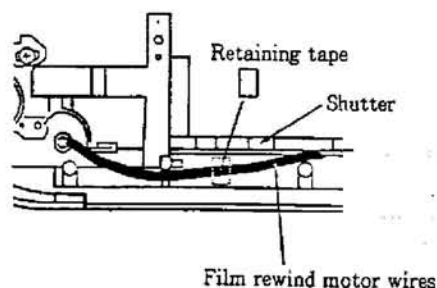
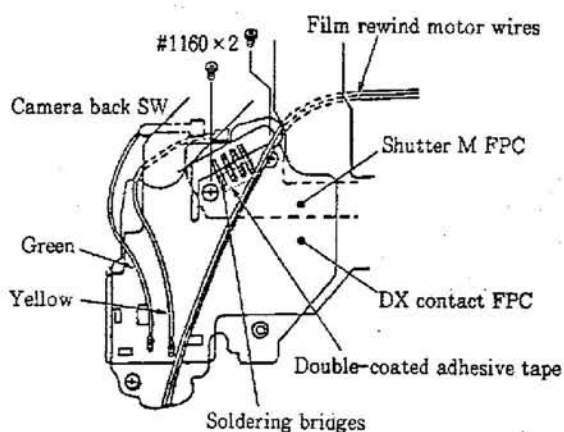
Back door key spring

#943

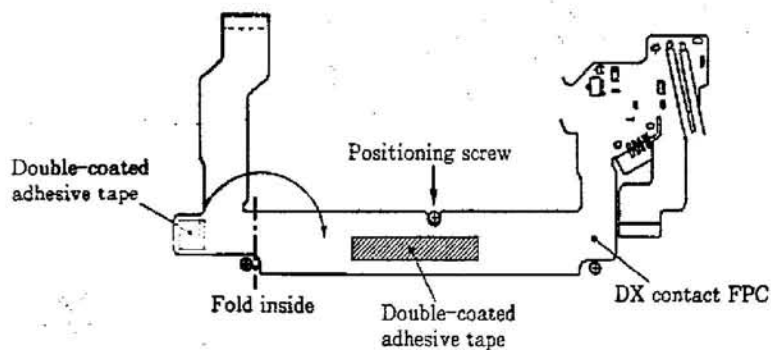
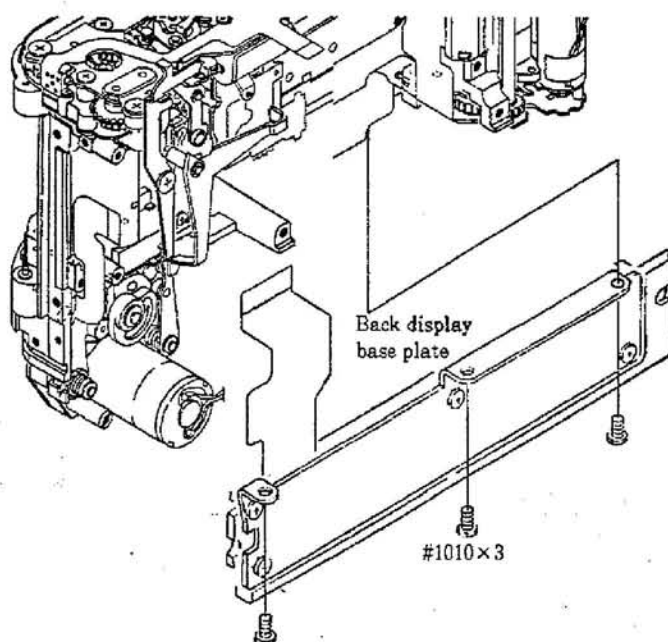
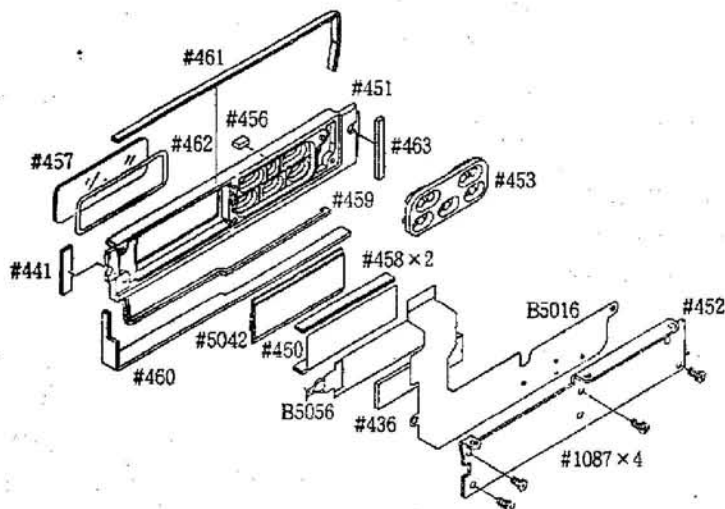
FILM REWIND BASE PLATE



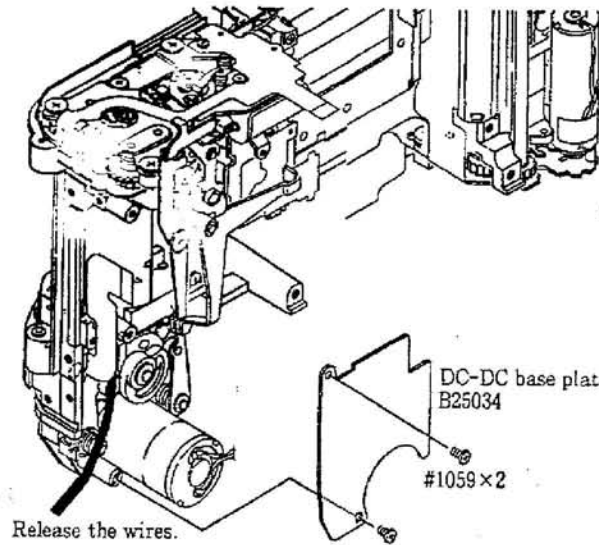
- Engage the film rewind base plate with the gear of the film rewind vertical shaft assembly. Set the unit in this way.



BACK DISPLAY BASE PLATE

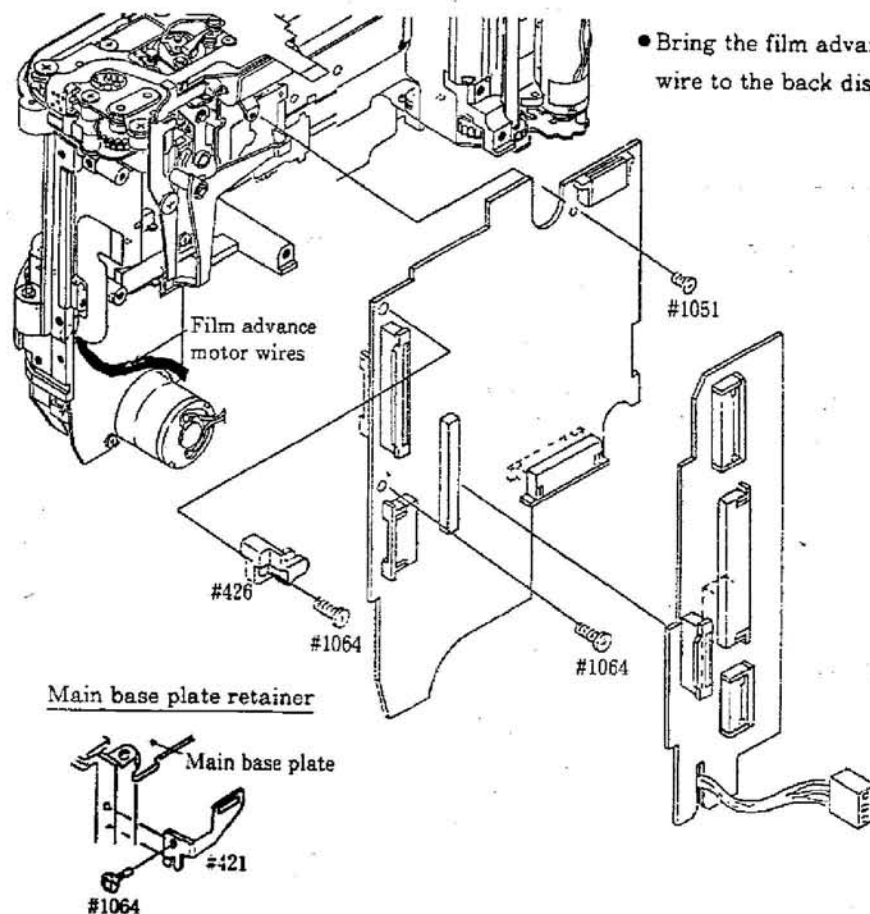


DC-DC BASE PLATE



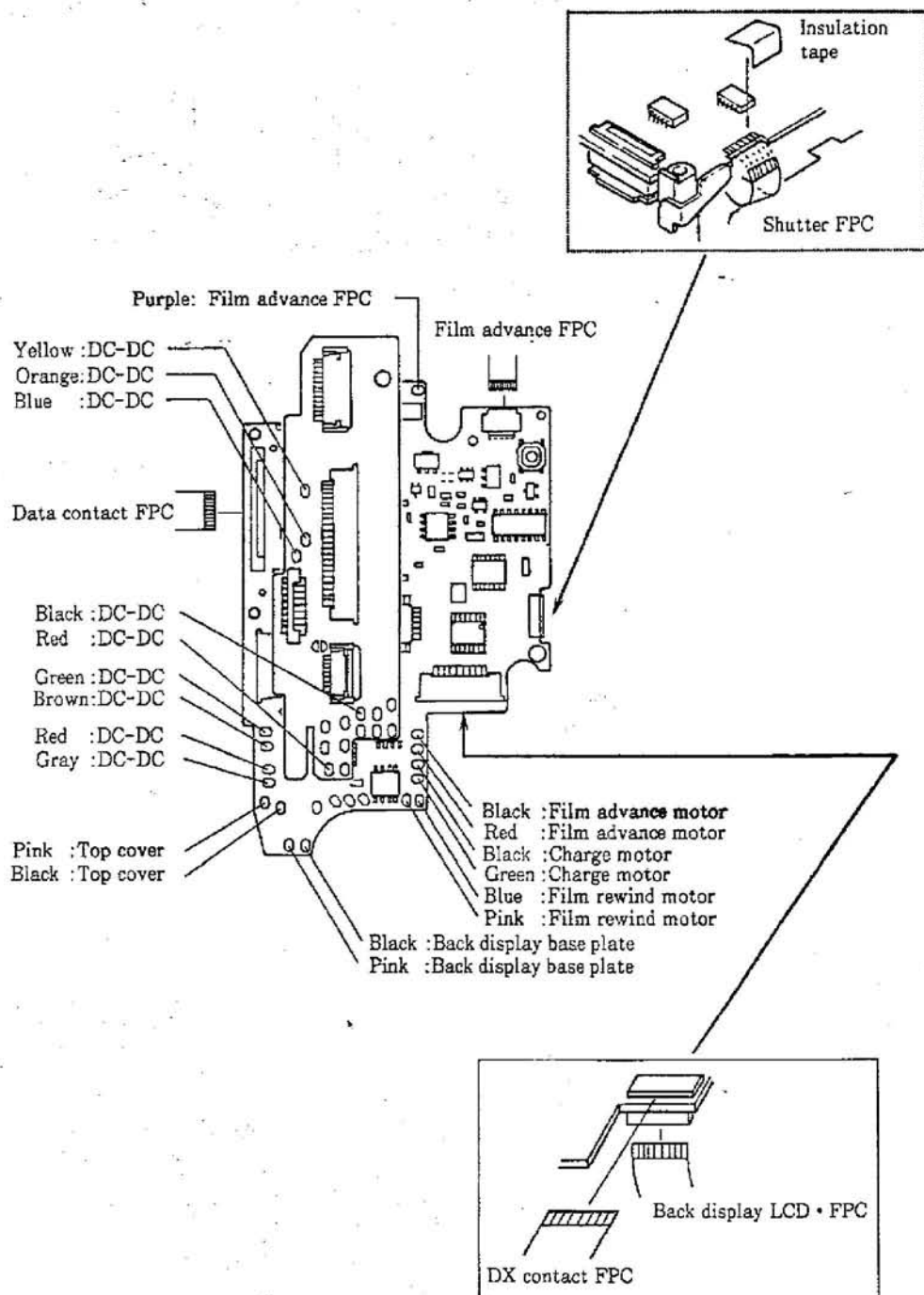
- Release the film advance motor wires outside before setting the DC-DC base plate.

MAIN BASE PLATE



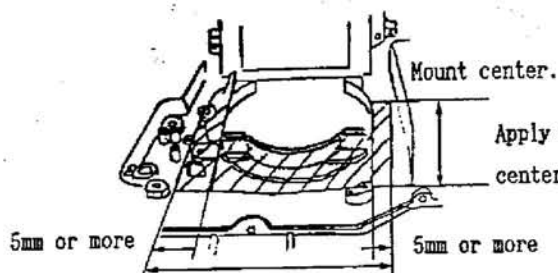
- Bring the film advance motor wire to the back display unit.

CONNECTOR, SOLDERING WIRES



2. Front body

Application of the oil barrier for the front plate.

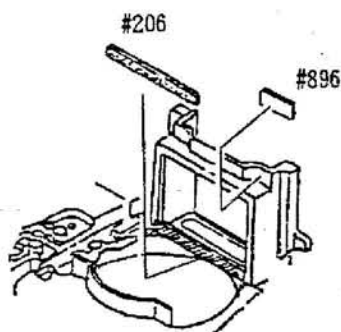


* Apply the barrier to the hatching section.

Apply the barrier from the mount center to the boss root.

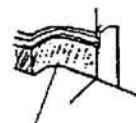
Apply the barrier without a break.

Sponge attachment



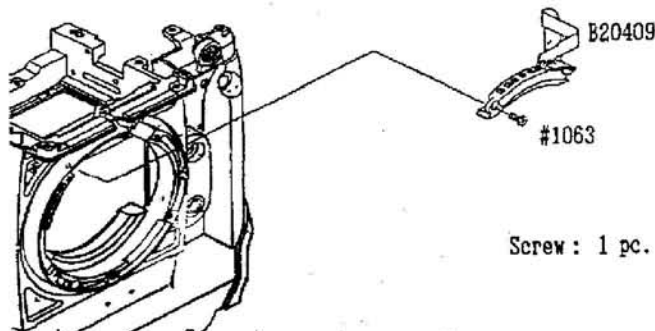
* Main mirror cushion sponge (#206)
Attach to the hatching section.

* Intervention rubber (#896)



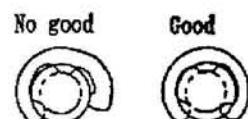
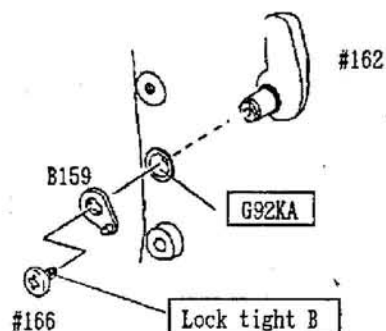
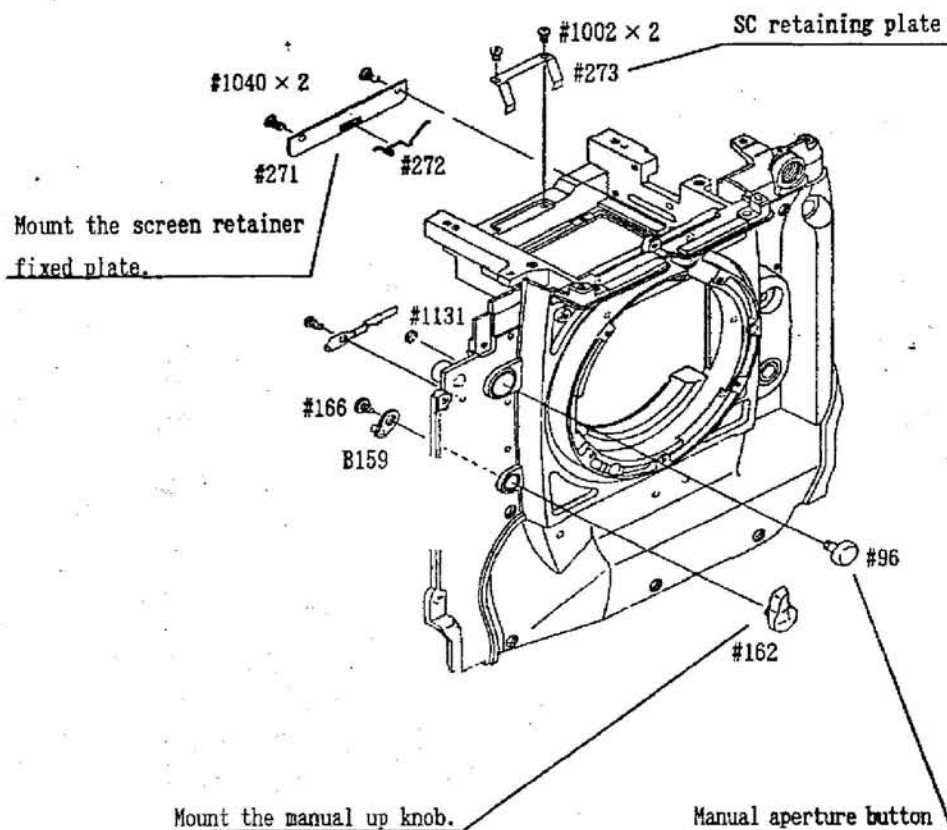
#896 attaching position
Attach to the hatching section.

AF lens contact



Screw : 1 pc. (#1063)

Mounting the levers for the left front plate

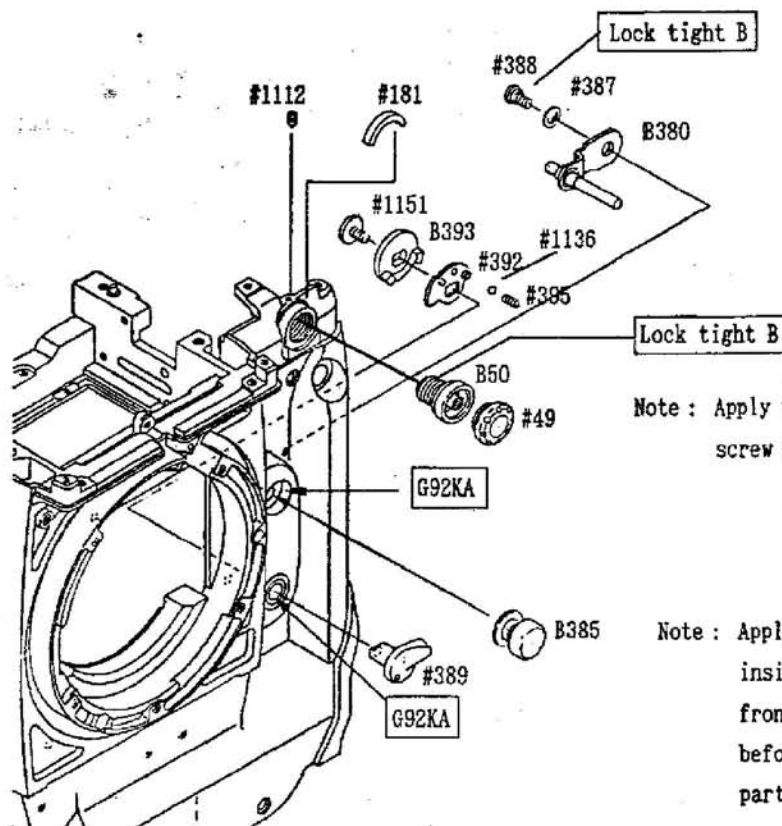


Be careful for mounting the C clip.



B159 mounting direction: As viewed from the B159 side.

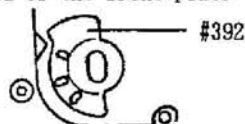
Mounting the levers for the right front plate



Mounting the AF mode change-over section (#389)

1. Insert the AF mode spring (#395) and ball (#1136) to the specified position.
2. Insert the AF mode lever (#389) to the front plate at the C position.
3. Set the AF mode rotary plate (#392) to the position as illustrated.

Back of the front plate

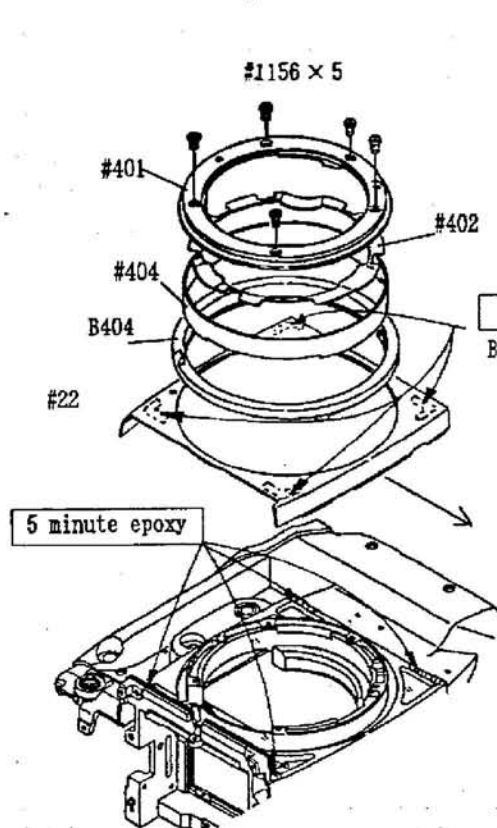


4. Set the AF mode cam (B393) as illustrated below and then fix it with a screw (#1151).

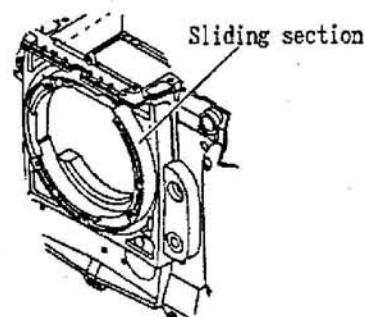
Back of the front plate



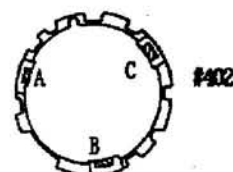
Bayonet



- Draw the apron (#22) upward as illustrated and fix it at 4 places with adhesive.
- Apply graphite (4B) to the front plate sliding section.



- Apply a little oil to the hatching section (as illustrated below) of the bayonet spring (#402).



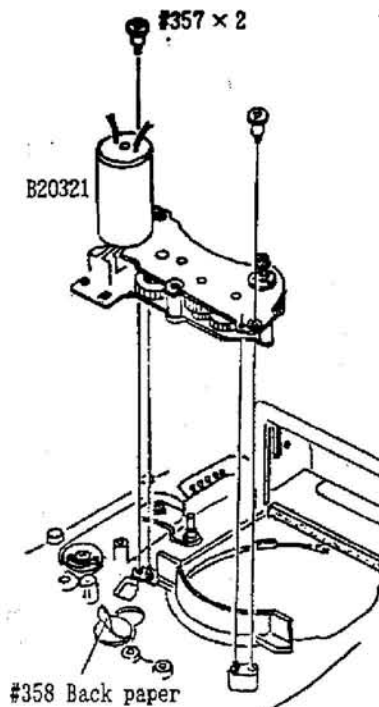
Pass the bayonet spring through the aperture coupling ring (B404) as illustrated below.



F-F0 Cord passing hole

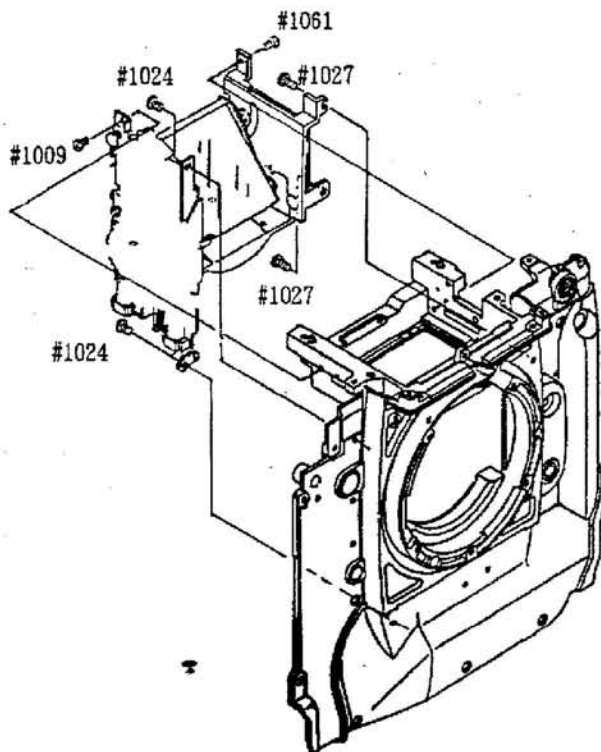
Note: After mounting the bayonet, check the operation of the aperture coupling ring (B404). (Make sure that the rotation is smooth.)

Mounting the AF drive unit



Adhere #358 (double-sided tape) and mount B20321 (AF drive base plate) with two screws.

Mounting the mirror box unit (I base plate/L base plate assembly)



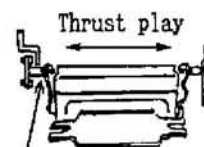
Screw : 6 pcs.

Note 1 : Draw the mirror box unit upward and remove the play.

Mirror unit

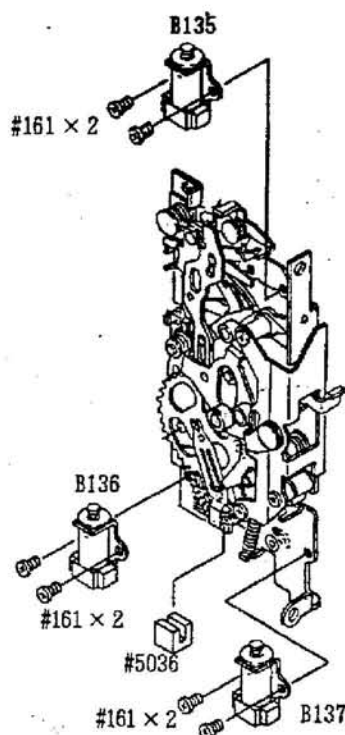
Note 2 : Check the mirror thrust play as illustrated below.

Standard : 0.05~0.15mm

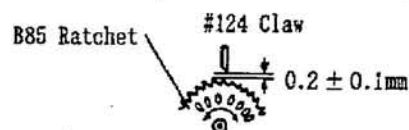


Adjust by using the washer.

I base plate

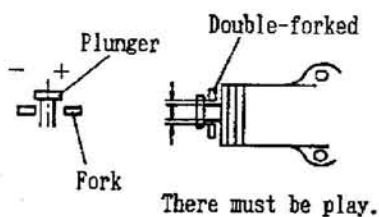


Note 1: The clearance between B85 and #124 must be $0.2 \pm 0.1\text{mm}$ for the ratchet. B85 must not contact with #124 (claw) when rotating it.

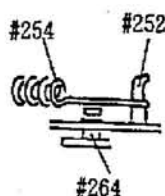
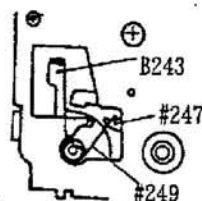
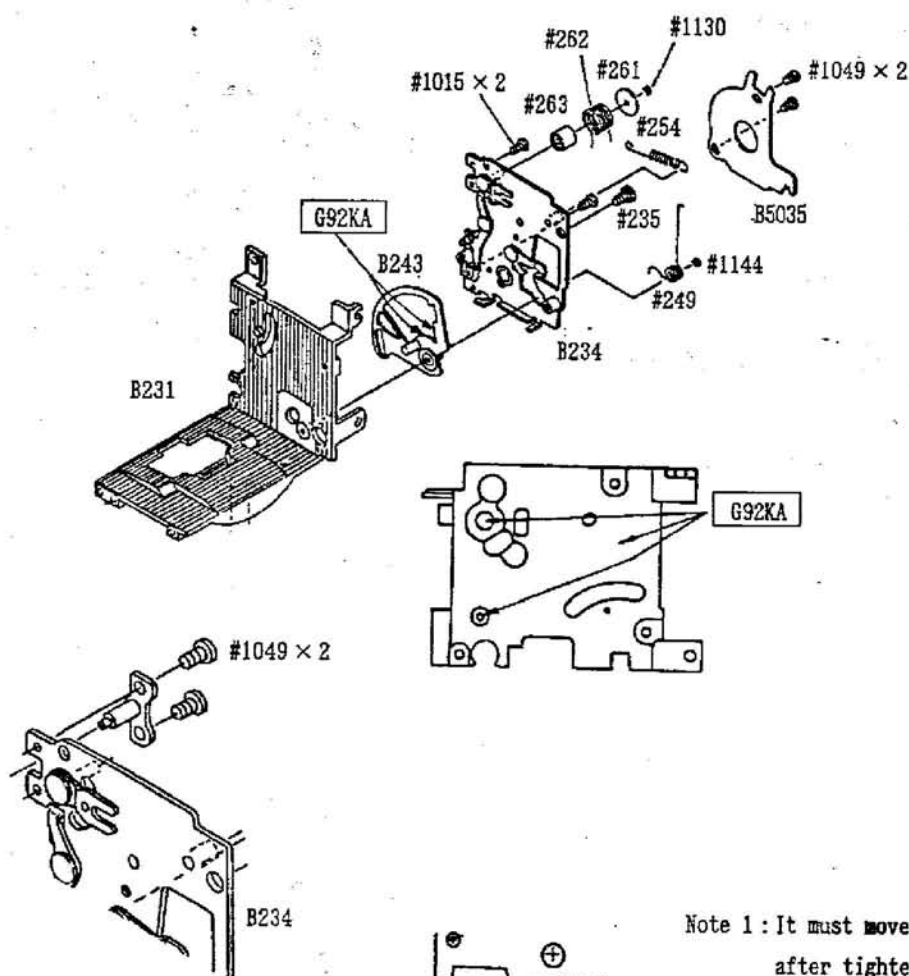


Check by inserting the gauge into the clearance between B85 and #124.

Note 3: When mounting the release/aperture stop/aperture start solenoids, there must be play as illustrated below.



L base plate



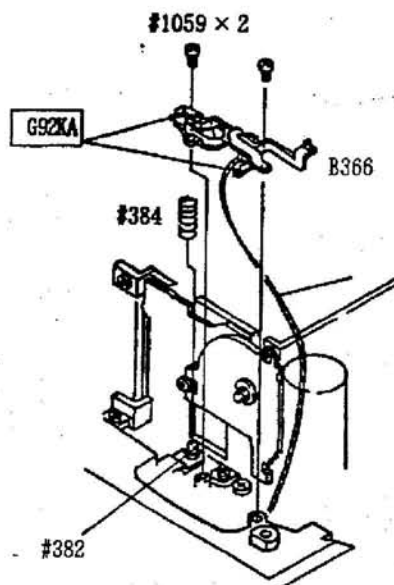
Note 1: It must move smoothly after tightening the screw.

Note 2: B243 must be moved smoothly by the spring force after applying #249 (spring).

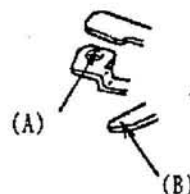
Note 3: Lower #254 to the step of #252.

Note 4: There must be no contact between #254 and #264.

Mounting the lens release button spring



1. Apply the oil to the (A) inside diameter and the (B) R section entirely.

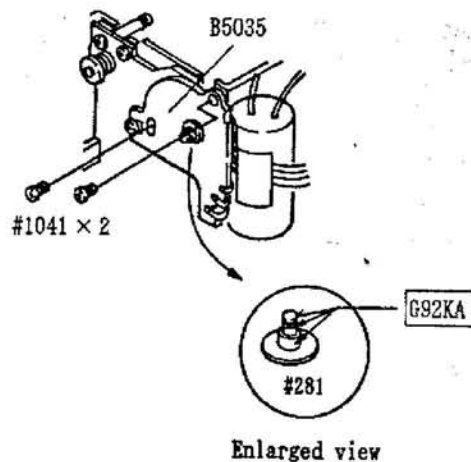


2. Pass the cord as illustrated below.



3. Insert #384 (lens release button spring) and then fix it with #1059 (screws).

f-fo section



Fix B5035 (f-fo pattern) with #1041 (2 screws).

f-fo base plate, f-fo pulley

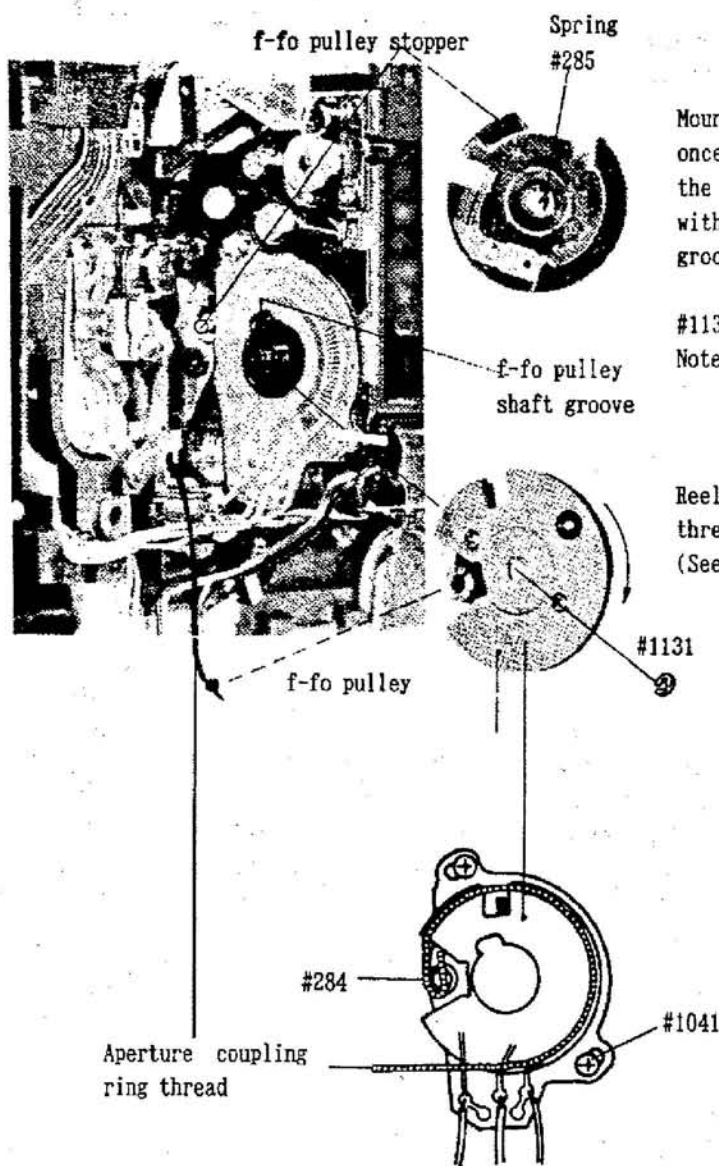


Fig. a

Mount by rotating the pulley once clockwise while aligning the f-fo pulley spring (#285) with the f-fo pulley shaft groove.



#1131

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



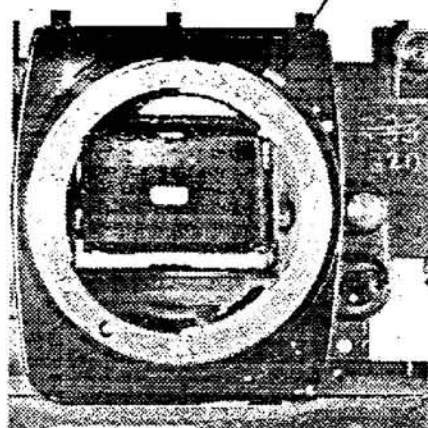
Reel aperture coupling ring thread in the #284 groove. (See figure a)

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.

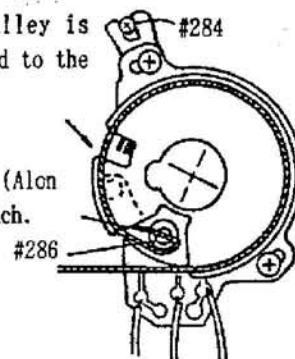
Adjustment of f-fo pulley stop position

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 #286 so that the aperture coupling ring and the f-fo pulley come into contact with the stopper simultaneously.

Adjustment of the f-fo base plate position.

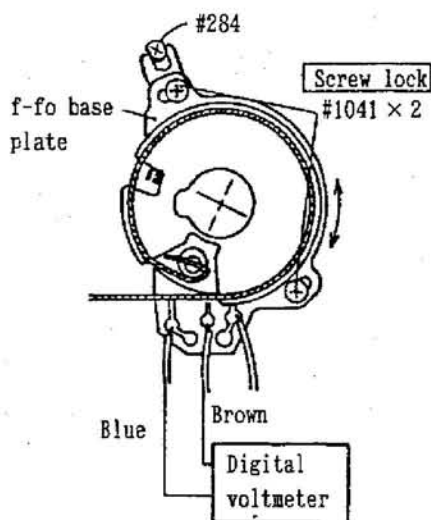


Fig. a

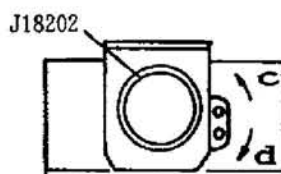


Fig. b

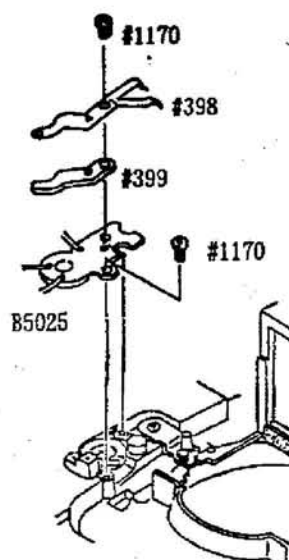
- ① Mount the f-fo tool lens (J18202) on the body.
- ② Set the digital voltmeter (at the resistance measuring range) as shown in Fig. a.
- ③ Adjust by rotating the f-fo base plate so that each resistance value can be measured when the f-fo tool lens (J18202) is moved aside as shown in Fig. b.

Resistance value is $\geq 100 \Omega$ or under when the tool lens is moved in the direction indicated by arrow c.

Resistance value is 2Ω when moved in the direction indicated by arrow d.

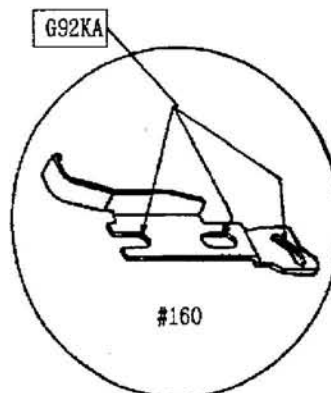
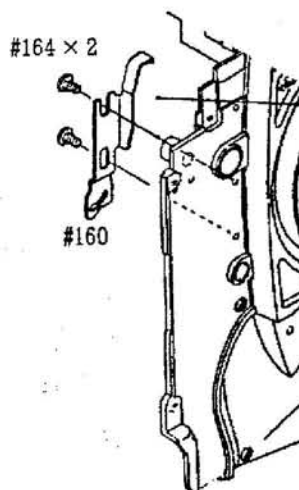
- ④ Fasten screws (#1041 x 2) and spread screw lock (#350) on them.

Mounting the lens release switch base plate

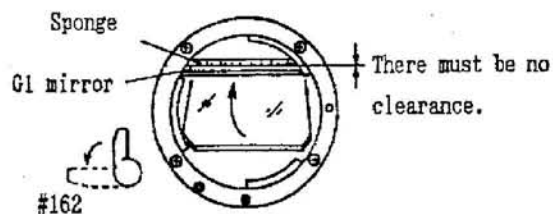


Fix B5025 (lens release switch base plate) with #1170 (screw) and then fix #399 (lens release collar) and #398 (lens release switch) with #1170 (screw).

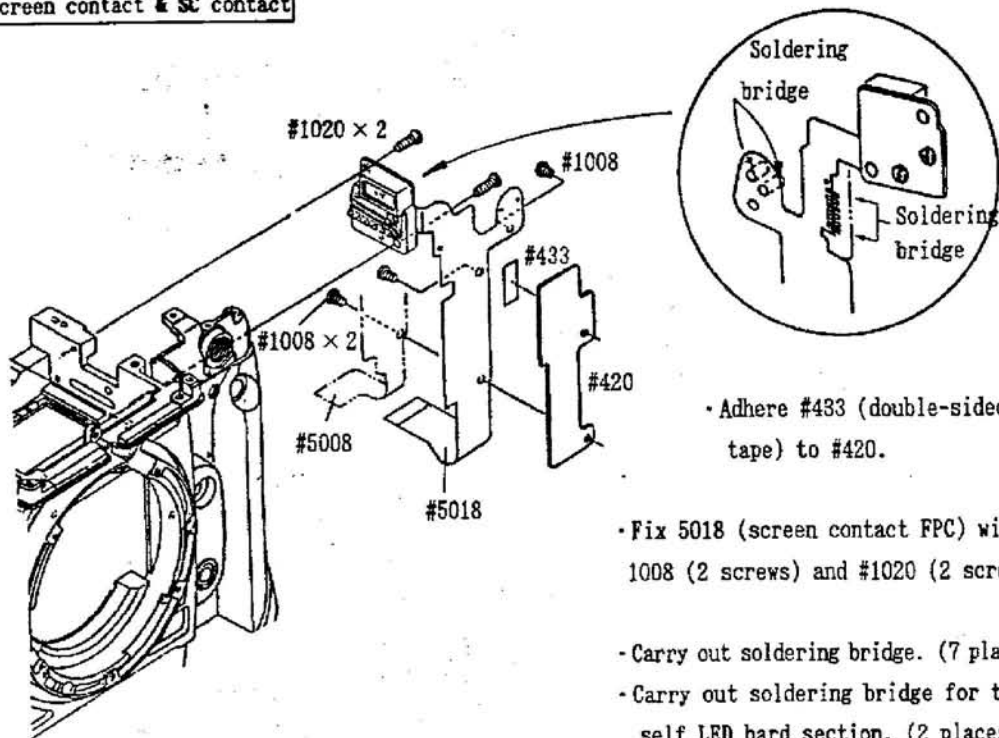
Mounting the manual MUP guide plate



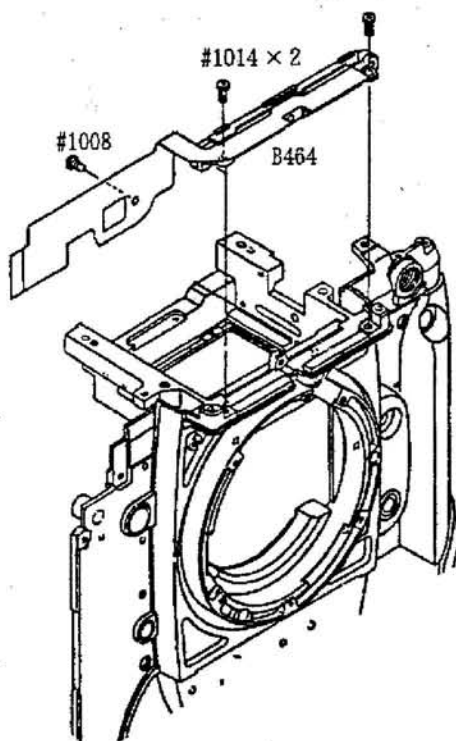
Note: After mounting, make sure that the mirror moves up by operating the #162 lever.



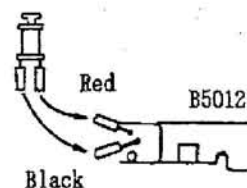
Screen contact & SC contact



FD contact mold

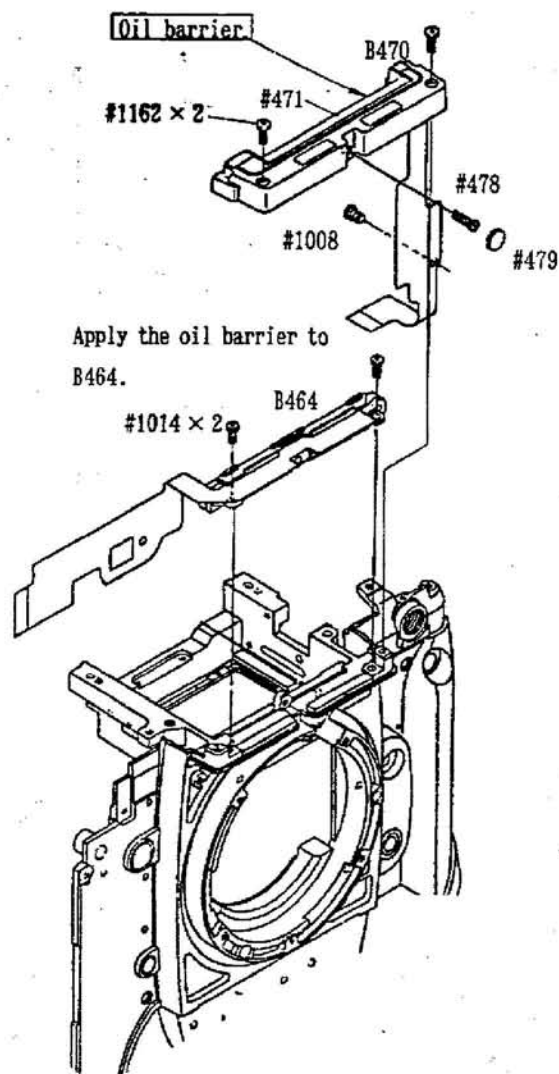


Mount B464 (FD contact mold) with #1008 (screw) and #1014 (screw) .



Carry out soldering as illustrated above.

Mounting the front display mold

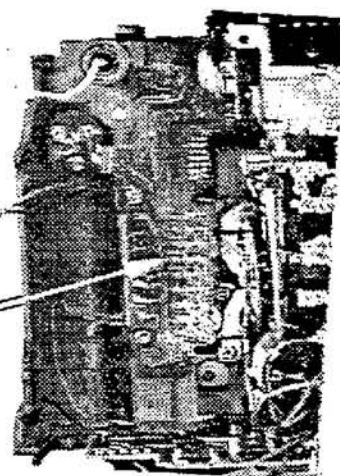
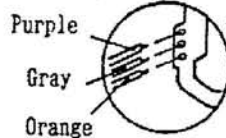


- Fix the front display mold with #1162 (2 screws) and #1008 (screw).
- Apply the oil barrier to the hatching section as illustrated below.

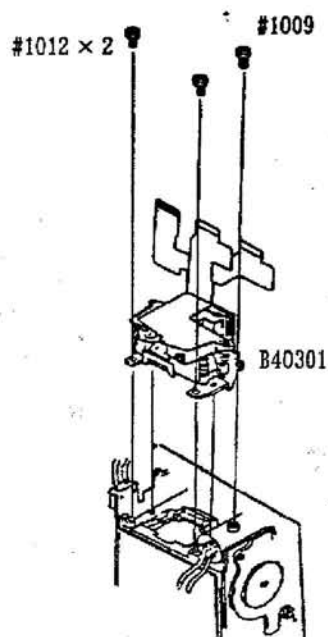


Oil barrier

- Solder the 3 wires.

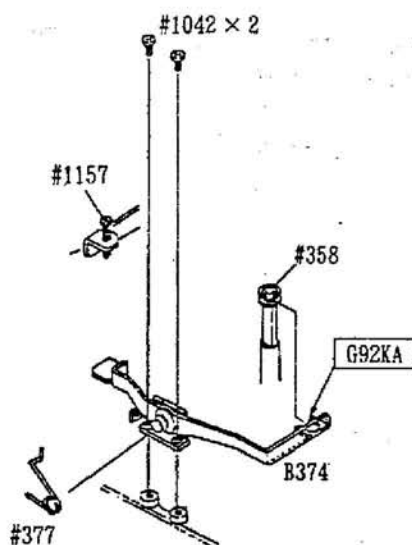


Mounting the AP4 unit

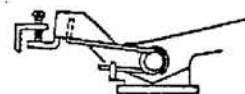


Mount the AP4 unit with #1010 (2 screws) and #1009 (screw).

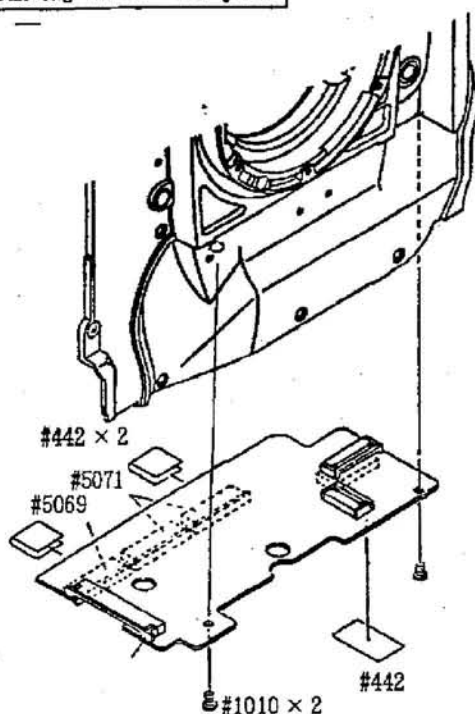
Mounting the lens release base plate



- Insert #358 into the U groove of B374 (lens release base plate) and set the base plate so that #1157 may be on the lever.
- Set the spring as illustrated below.



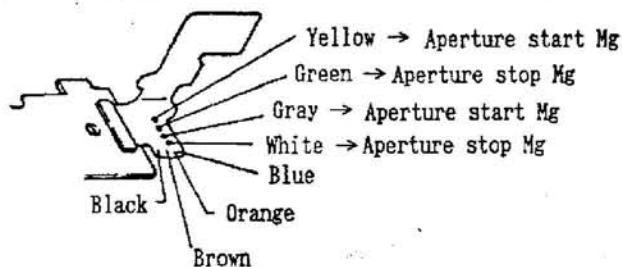
Mounting the AF base plate



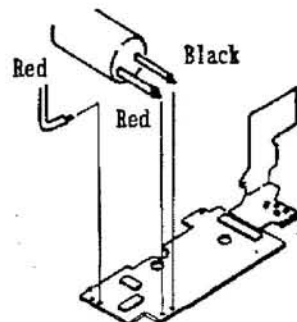
Screw: 2 pcs.

AF base plate

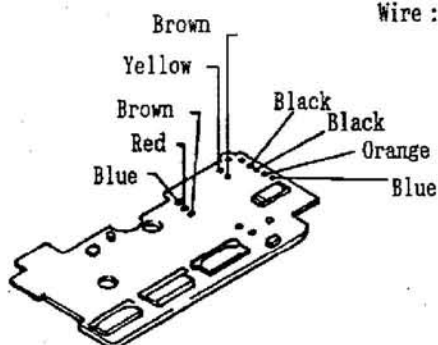
Wire: 8 places



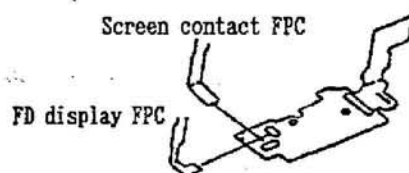
Wire: 3 places



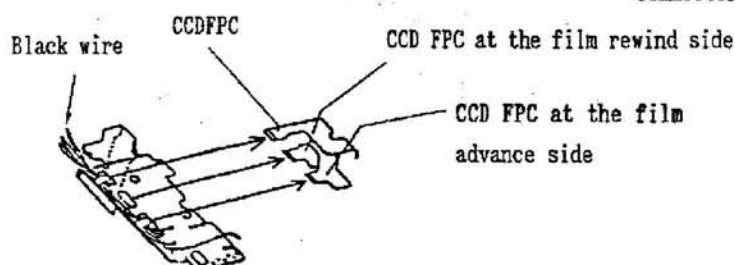
Wire: 9 places



Mounting the AF base plate connector



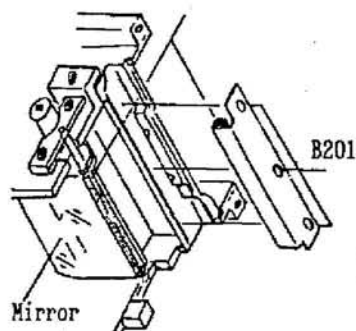
Connector : 2 places



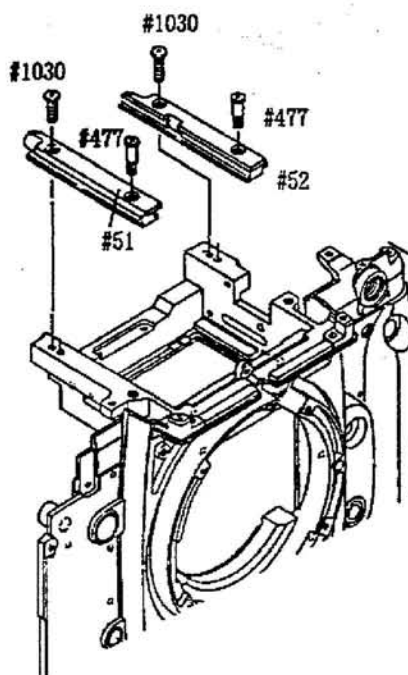
Connector : 3 places

• Separate one black wire from the AF base plate.

Mounting the main mirror rear light baffle plate



Mounting the FD rail

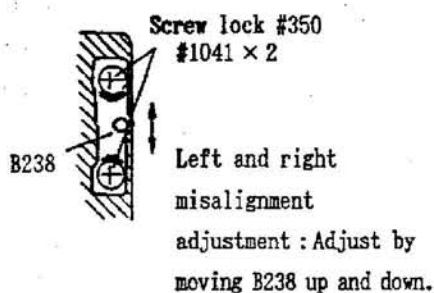


• Mount #51 with #1030 (screw) and #477 (screw) .

• Mount #52 with #1030 (screw) and #477 (screw) .

Adjustment (by 45°) of the main/sub mirrors

Adjustment (by 45°) of the main mirror

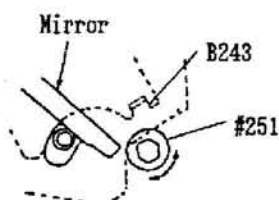


Tools)

- J18037 Optical flat
- J18038
- Vertical collimator
- Hexagonal wrench

Standard)

Left and right misalignment: $0 \pm 18'$
Up and down misalignment: $0 \pm 5'$



Up and down misalignment adjustment:
Adjust by turning #251.

Adjustment (by 45°) of the sub mirror



Tools)

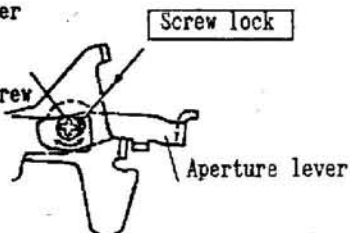
- J18268 Sub mirror 47.75° adjusting tool
- Vertical collimator

Standard)

Up and down misalignment: $5 \pm 5'$

Adjustment of the aperture lever height

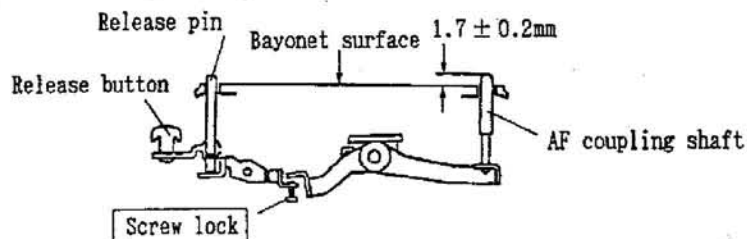
Aperture lever
adjusting
eccentric screw



Standard)
 3.4 ± 0.1
 -0.05

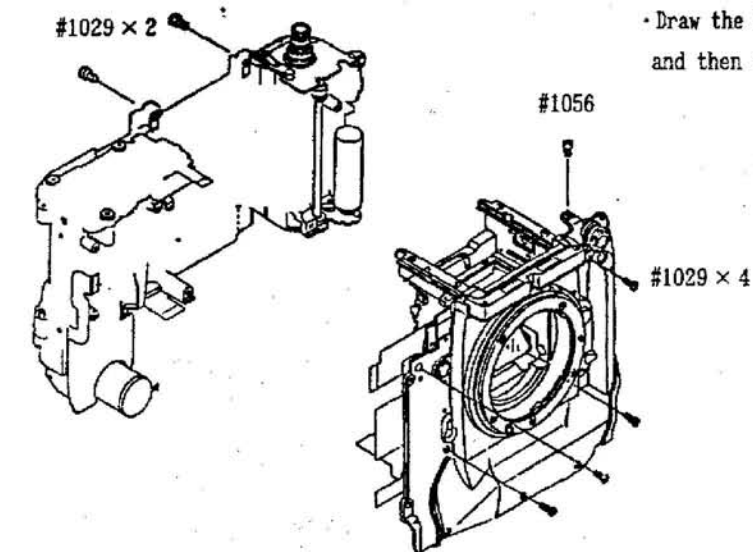
Adjustment of the AF coupling shaft height

Adjust the height with #1038 (screw) so that the AF coupling shaft may be protruded from the bayonet surface when the release button is free under AF-C or AF-S.
Standard: $1.7 \pm 0.2\text{mm}$

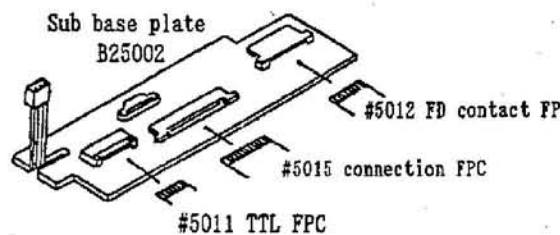
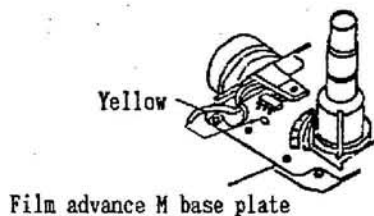
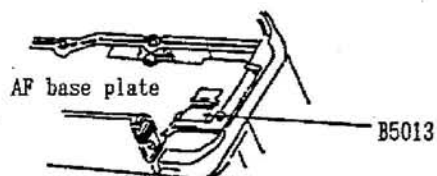
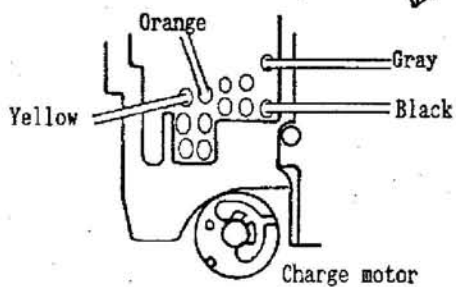


3. MOUNTING FRONT PLATE ON REAR BODY

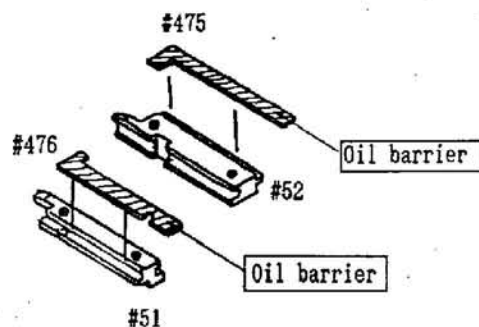
Front body



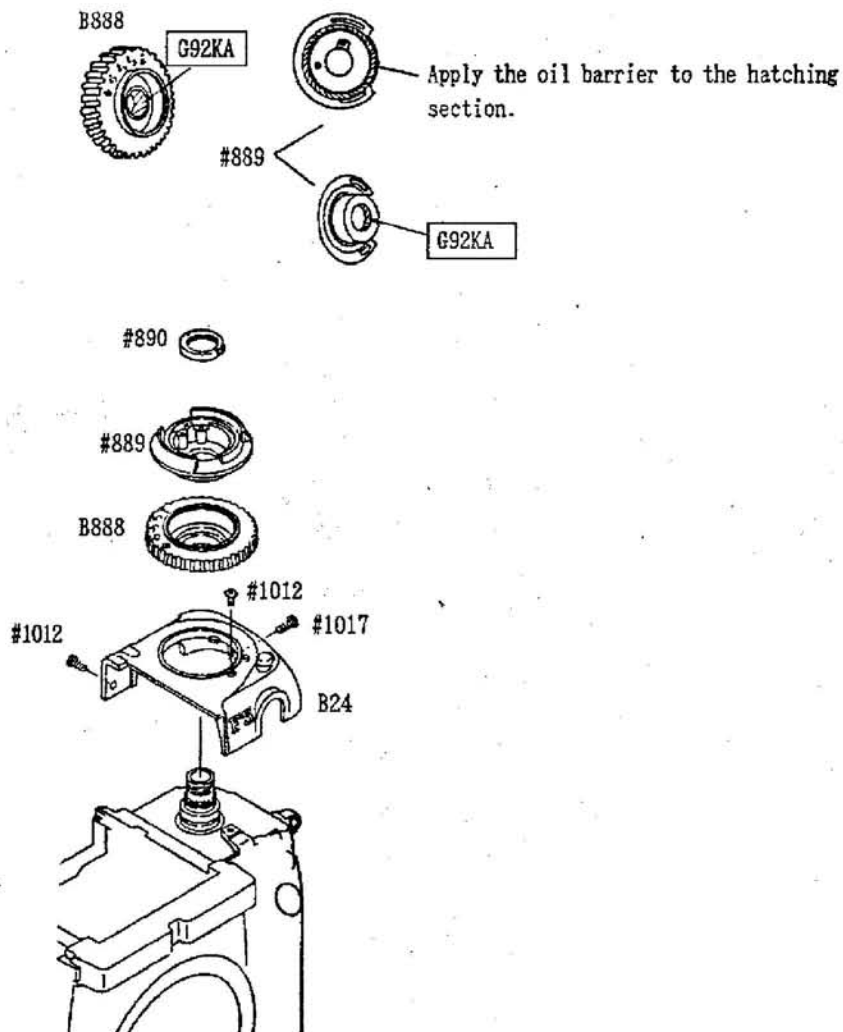
Draw the body to the film rewind side and then tighten the screws.



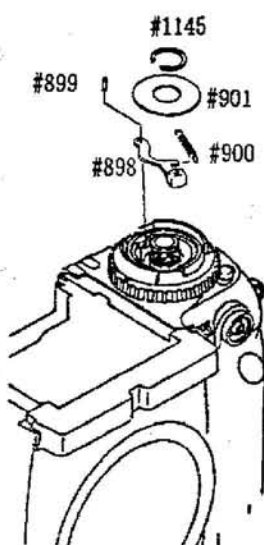
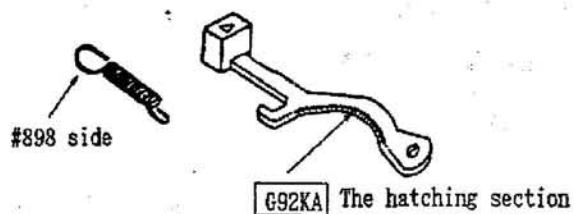
Finder rail sponge



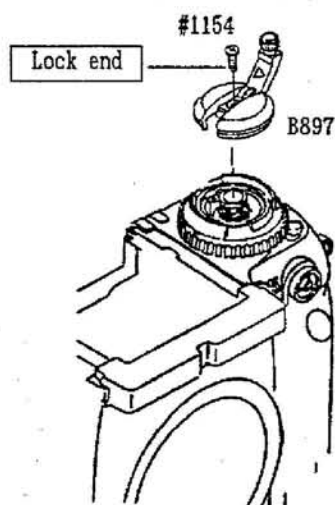
Top cover (Rewind side) unit



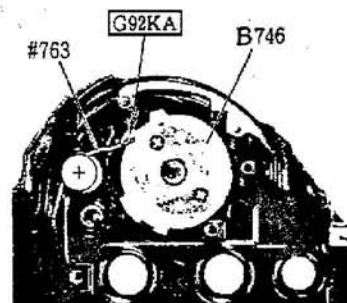
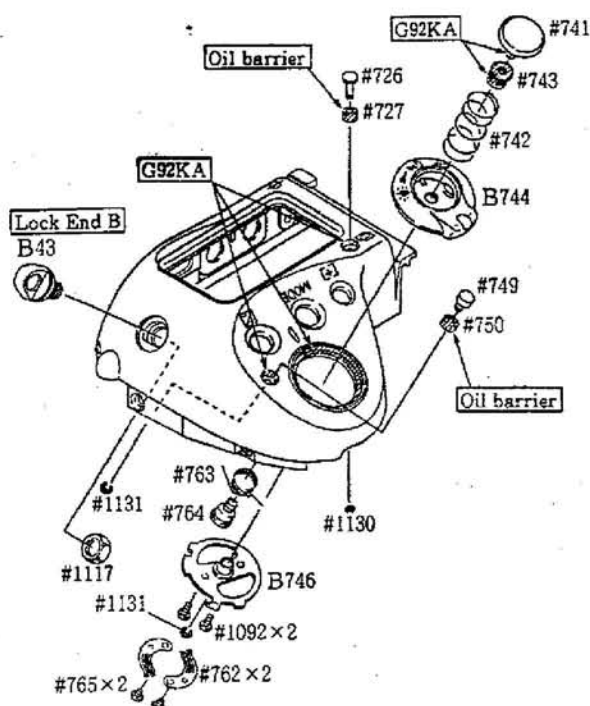
Rewind lock lever



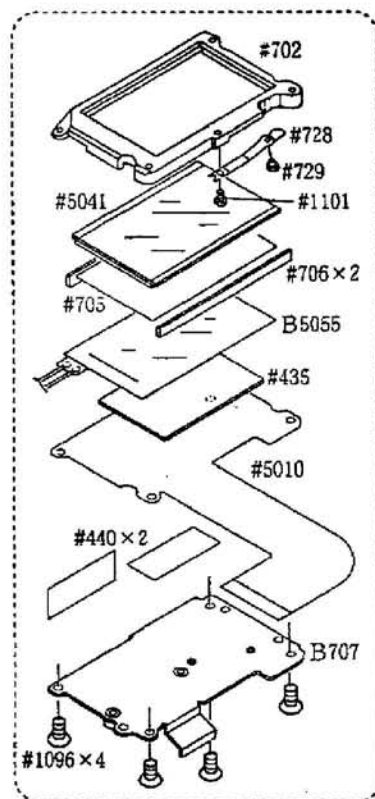
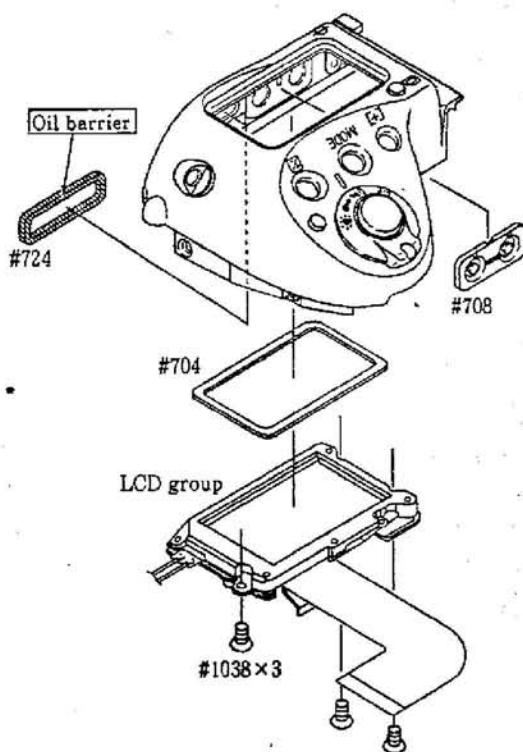
Rewind knob



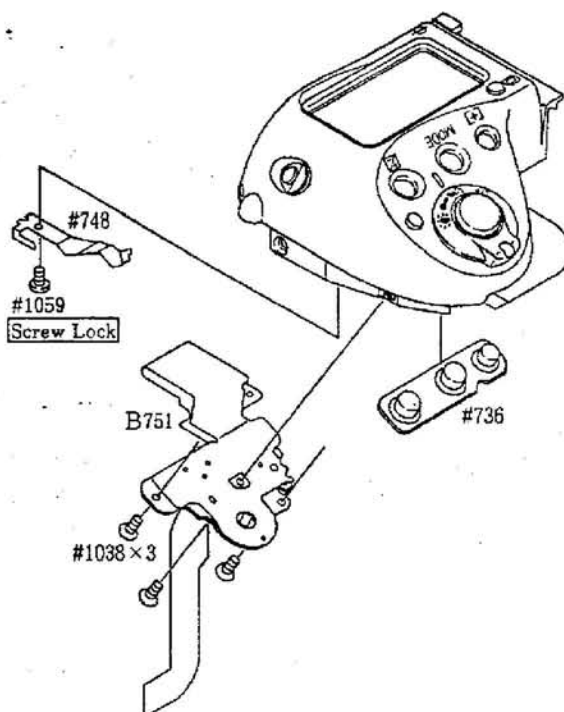
RELEASE BUTTON, ON-OFF RING, EYELET



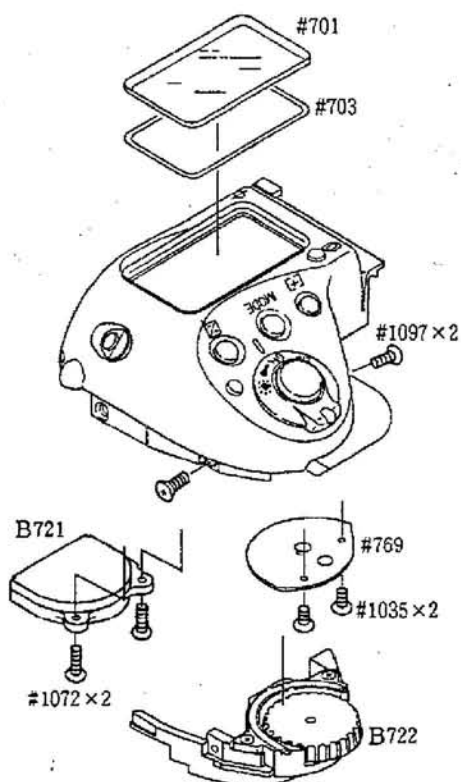
LCD GROUP



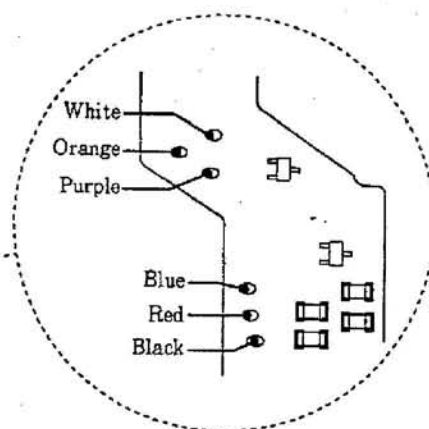
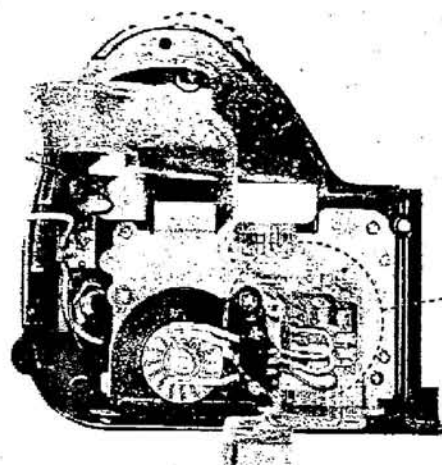
RELEASE SWITCH BASE PLATE UNIT



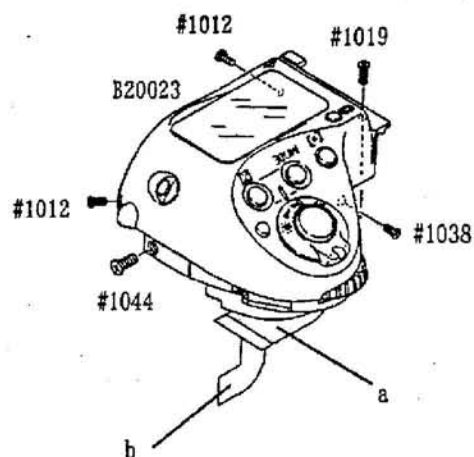
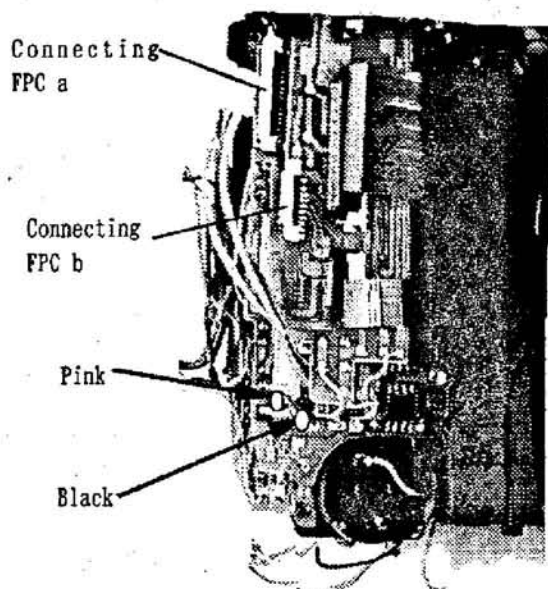
COMAND DIAL UNIT



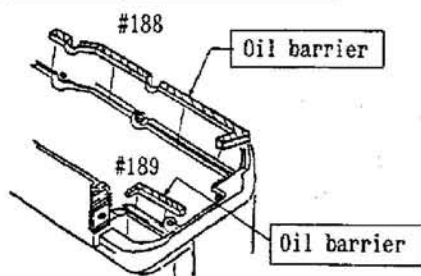
SOLDERING WIRES



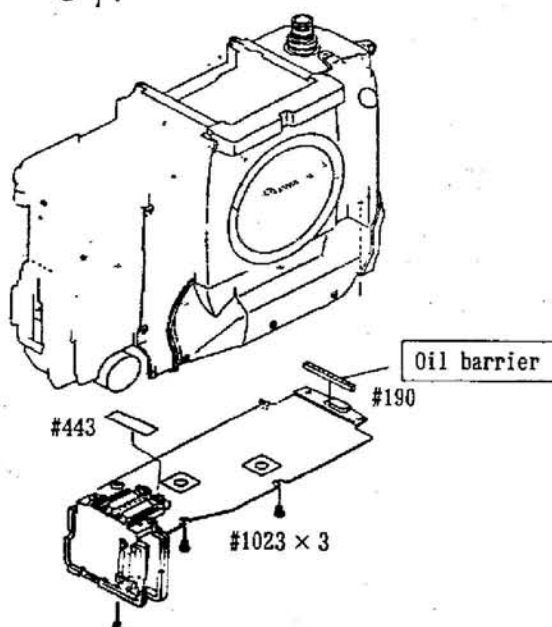
Film advance upper cover



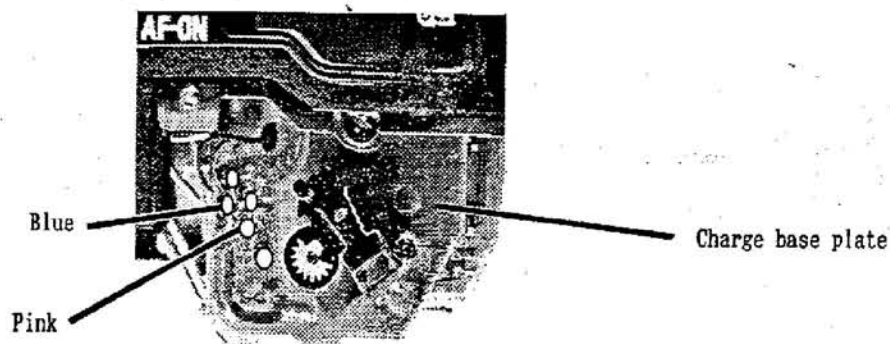
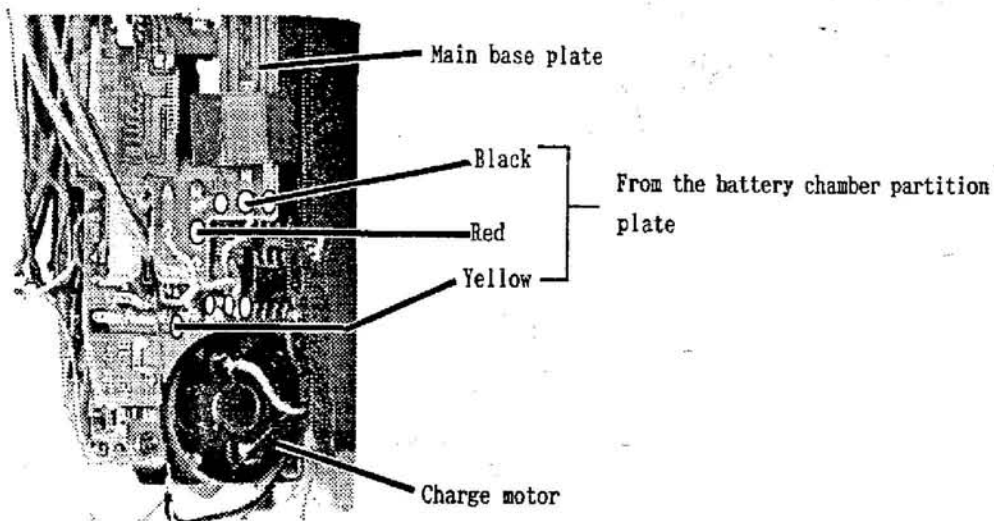
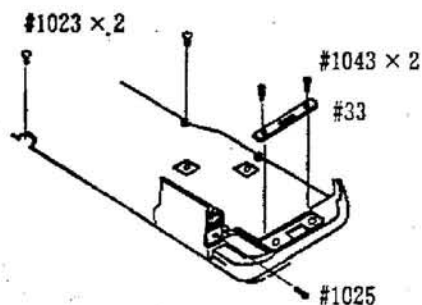
Battery chamber partition plate



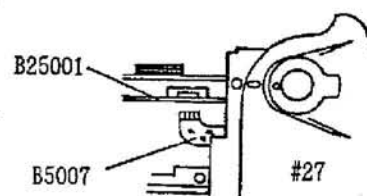
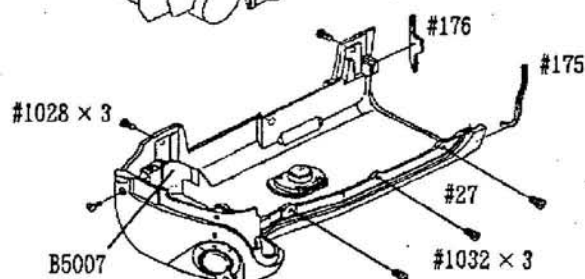
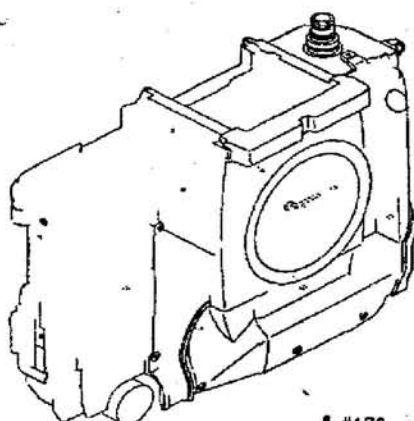
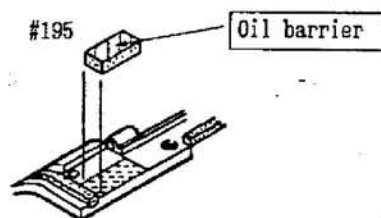
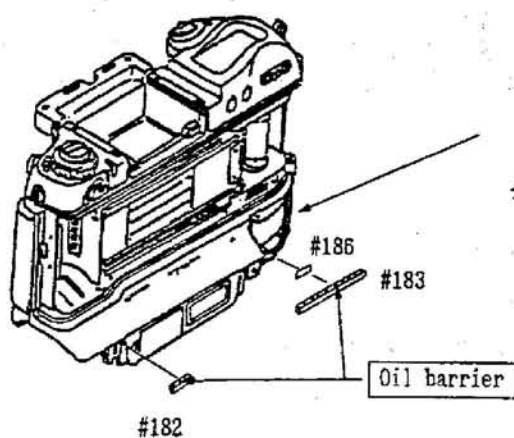
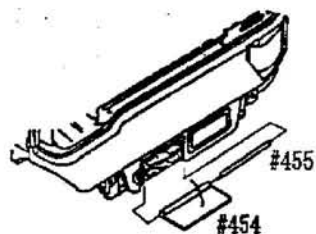
• Release the wires to the main base plate side, and draw this unit to the back side and then mount it.



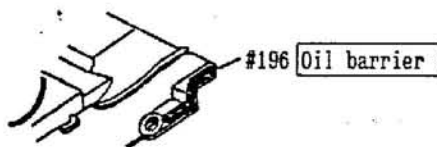
Battery chamber partition plate



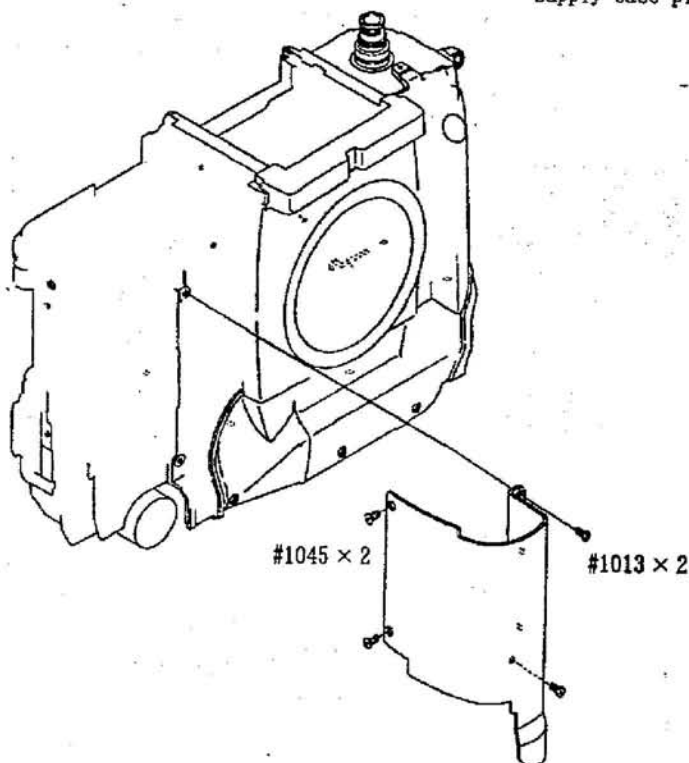
Bottom cover



Grip

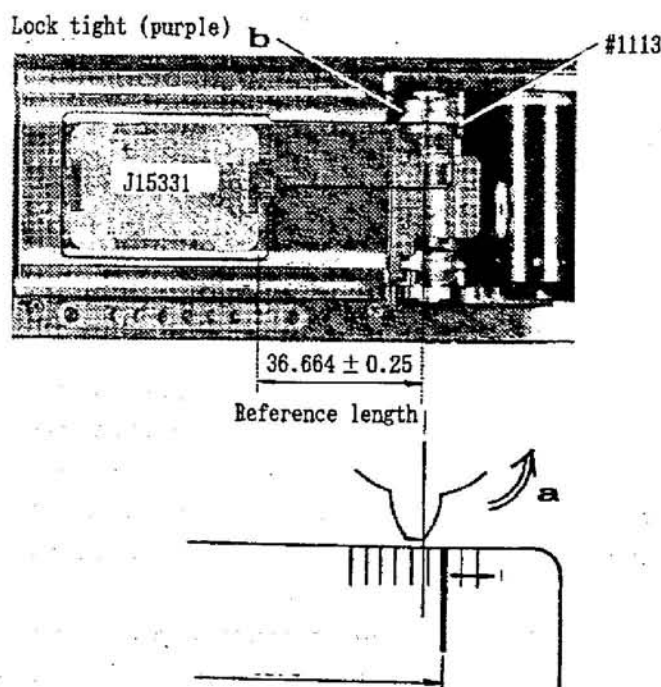


• Connect the connector to the power supply base plate.



Adjustment of film sprocket cogwheel positioning

- 1) Set the body to the film advance completion state.
- 2) Unfasten the film sprocket screw #1113 $\times 1$.
- 3) Set the film sprocket cogwheel positioning tool J15331 on the aperture surface.
- 4) Fasten the film sprocket screw #1113 temporarily after aligning the right end of the film sprocket cogwheel to the position 36.664. Adjust it further so that the right end of the film sprocket cogwheel will be within the range of 36.664 ± 0.25 when moving the film sprocket in the direction indicated by arrow "a".



- 5) Mount the film sprocket screw #1113 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.

Refer to the display of the personal computer for the details of AE/AF precision inspection and adjustment.

AE precision inspection and adjustment

Select a combination of the body and finder in the following menu for AE precision inspection and adjustment.

1. Inspection and adjustment of Multi Photomic Finder DP-30 and F5 body
2. Inspection and adjustment of Photomic Action Finder DA-30 and F5 body
3. Inspection and adjustment of only Multi Photomic Finder DP-30 (Use a tool body.)
4. Inspection and adjustment of only Photomic Action Finder DA-30 (Use a tool body.)
5. Inspection and adjustment of only the body
6. Inspection and adjustment of each unit

The following description is the outline about inspection and adjustment of each unit.

1. Positioning precision inspection and adjustment of Multi Photomic Finder DP-30
Position the AE CCD by using the AE CCD positioning tool (J15328-2) mounted on the finder.
2. Aperture metering precision inspection and adjustment of Multi Photomic Finder DP-30
Adjust the AE CCD aperture metering output.
3. Aperture metering precision inspection and adjustment of Photomic Action Finder DA-30
Adjust the aperture metering output of the AE SPD mounted on the finder.
4. Spot aperture metering (body side) precision inspection and adjustment
Adjust the aperture metering output of the AF sensor's CCD.
5. Aperture precision inspection and adjustment
Adjust the drive timing of the aperture magnet.
6. M8000 precision inspection and adjustment
Adjust the precision of the 1/8000 shutter. (The 1/4000 shutter can be adjusted by a tester.)

7. Adjust the precision of the shutter monitor sensor.

8. TTL precision inspection and adjustment

1) • Inspection and adjustment of monitor flash

Adjust the gamma ray value and level value when the monitor flashes.

2) • Main flash inspection

Adjust the gamma ray value and level value when the main flash occurs.

9. Battery check voltage adjustment

Adjust the battery check voltage

AF precision inspection and adjustment
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Check and adjust the precision of all the fourteen AF sensors.

- | |
|--|
| <ol style="list-style-type: none"> 1. AF precision adjustment 2. YAW/PITCH inspection and adjustment 3. LARK adjustment |
|--|

The following description is the outline about adjustment of each unit.

1. AF precision adjustment

Adjust all the units related to AF in turn.

2. YAW/PITCH inspection and adjustment

Position the AF sensor by using the YAW/PITCH tool (J15230) .

3. LARK adjustment

Adjust the AF precision for each AF sensor.

The following new tools are necessary.

AF distance measuring chart (J18237)

AF adjusting lens (J18266)

Rubbers

