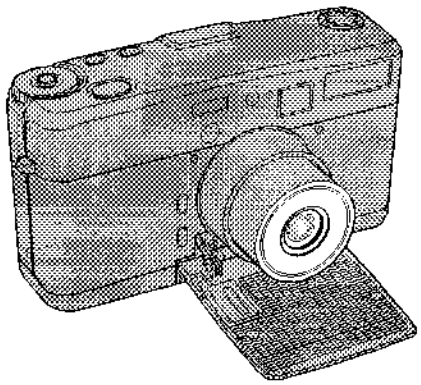
No.	419-01-41-RA3DQ01

CONTAX T VS III

Repair Manual



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KYOCERA CORPORATION
Optical Equipment Group
Service Dept. ADQ 000609

No.	419-01-41-RA3DQ01

CONTENTS

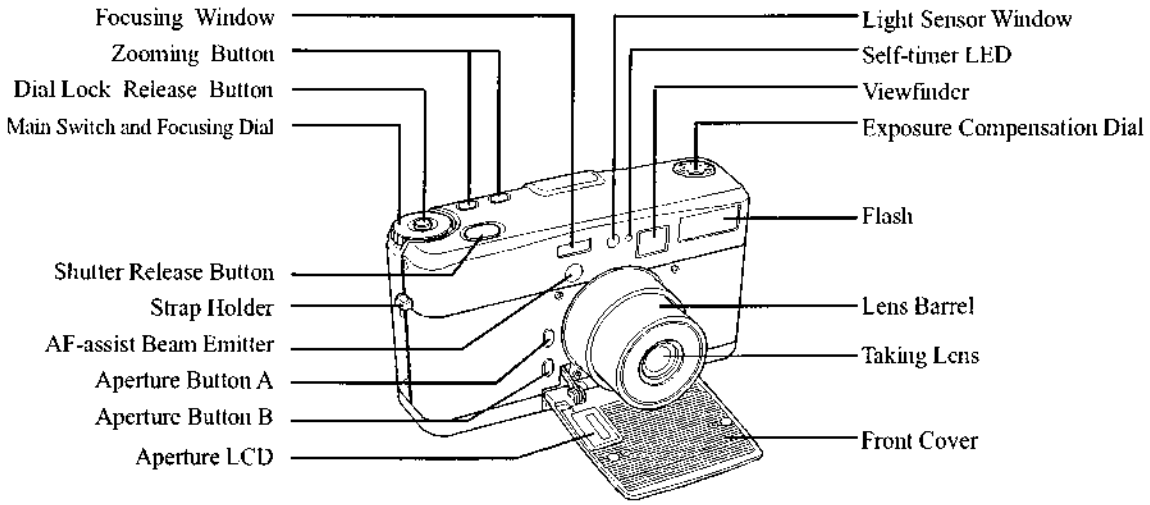
A. GENERAL & TECHNICAL INFORMATION

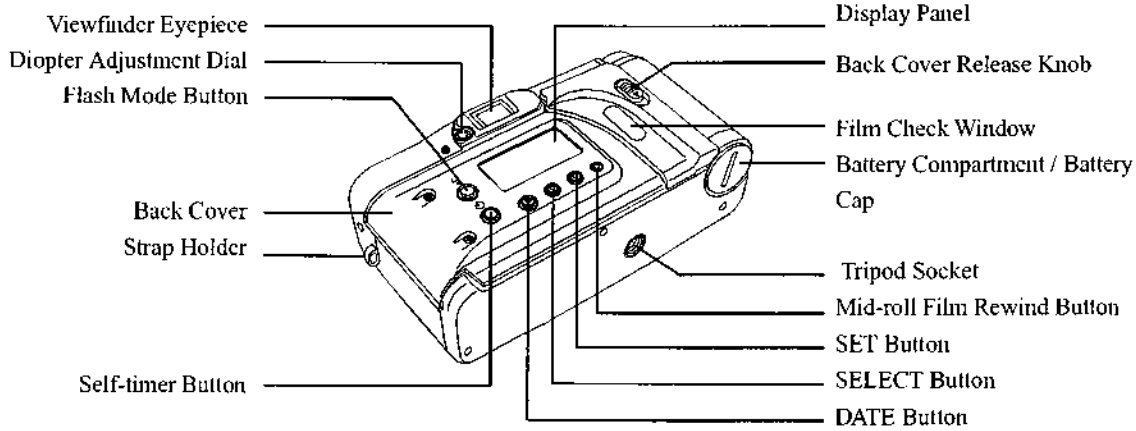
SPECIFICATIONS

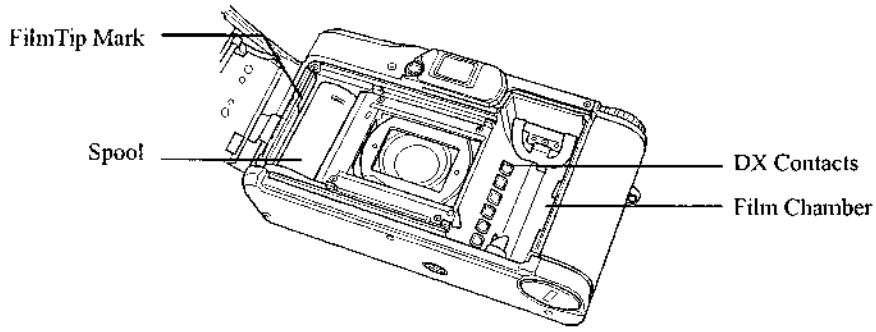
Type	: 35mm lens-shutter auto exposure camera.
Negative Size	: 24×36mm
Lens	: Carl Zeiss T*Vario Sonnar T* 30-60mm F3.7 - 6.7(6 elements in 5 groups)
Aperture	: F3.7 - 16(f=30mm)
Shooting Range	: 0.5m - ∞
Shutter	: Double Between System Lens Shutter
Shutter Speeds	: 16 sec. - 1/1000 sec.(the fastest shutter speeds: 1/500 sec at full opened aperture)
Exposure Control	: Aperture Priority Auto and Program Auto
Metering Range	: EV 0 - EV 18
Metering System	: External metering system with SPD cell
Exposure Compensation	: ± 2 EV (1/3 EV steps.), (switchable to 1/2 EV steps.)
Film Speed	: ISO 25 - 5000 for automatic settings (DX system) Film speed is automatically set to ISO 100 for non-DX-coded films.
Focusing Distance Measurement	: Automatic focusing with focusing dial, switchable to manual focusing. : External passive method, provided with AF-assist beam and focus lock.
Viewfinder	: Real-image viewfinder, 0.42 - 0.76X magnification and 83% field of view (3m).
Display in Viewfinder	: Picture Area Frame, Close-Range Parallax Correction Frame, Focusing Frame, Shutter Speeds, Exposure Compensation Marks, Focusing Distance Indicator, Flash Mark
Diopter Adjustment	: Built-in diopter adjuster, correctable range +2 ~ -3.5D
Display Panel	: Spot Auto Focus Indicators, Indicators of Remaining Battery Capacity, Self-timer Indicators (10 sec. or 2 sec.), Exposure Counter/Date and Time/Exposure Compensation Value/Set-up distance/Self-timer counter/Custom Function Display, Flash Mode(Auto Flash, Red-Eye Reduction Mode, Fill-Flash, Flash-off mode, Night-Scene Portrait Mode), Date Mark
Film Loading	: Auto loading(Film automatically advances to frame No.1).
Film Winding	: Automatic
Film Rewinding	: Auto-return/auto-stop system. Film can be rewound in the middle of a roll.
Exposure Counter	: Indicate on display panel, Automatic-resetting additive type
Self-timer	: Electronic self-timer with 10 sec. and 2 sec. delay: can be cancelled midway.
Flash	: Built-in Zoom Flash, Flashmatic, and guide number controlled. Shooting Range: See Page 146. About 6 sec. recycle time(with new battery, at ordinary temperature, as tested according to CONTAX testing standard.)
Custom Function	: Remaining film at film rewound, The timing of lens moving forward, Focusing range of auto focusing, Exposure mode when camera main power switch is on and lens moving position, Focus adjustment during manual focus, Exposure compensation range
Camera back	: Opened and closed with camera back release knob.
Battery	: 3V lithium battery (CR 123A or DL 123A). About 7 rolls of 24 exposure film can be exposed with 50% flash(with new battery, at ordinary temperature, according to CONTAX testing standard).
Printing Function	: Printing of date and time.
Dimensions	: 116.5 (W) x 64 (H) x 40 (D) mm
Weight	: 320g

*Specifications and design are subject to change without notice.

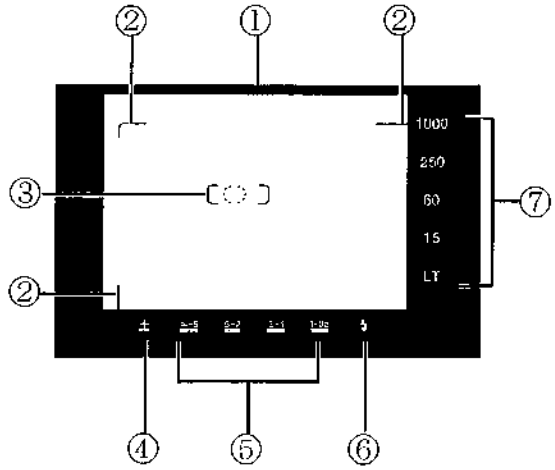
NAMES OF PARTS







DISPLAY



(Auto Focusing Display)

Display	∞-5, 5-2, 2-1 1-0.5 either one of them is lighted	1-0.5 blinking	Both ∞-5 and 1-0.5 blinking
Description	Subject within the displayed distance range is in focus.	Too close distance warning. Shutter release is locked.	Focusing impossible

①Picture Area Frame

By normal photography, the camera will take a picture you see within this frame.

②Close-range Parallax Frame

When the camera-to-subject distance is about 1.0 m to 0.5 m, position the subject within this frame.

③Focusing Frame

The standard frame for focusing on the subject.

④Exposure Compensation Mark

Lighted when exposure compensation has been set.

⑤Focusing Indicator (also works as Distance Indicator)

〈Auto focus mode〉

Lights up or blinks depending on the distance metering result.

〈Manual focus mode〉

∞-5, 5-2, 2-1 or 1-0.5 lights up depending on the set value.

⑥Flash Mark

Lighting up: Automatic flash firing

Slow blinking (2 times a second): During flash charging

Fast blinking (4 times a second): "Out of flash shooting range" warning (Overexposure will occur if the subject is too close or underexposure if the subject is too far.)

⑦Shutter Speed

The shutter speed display "1000" represents 1/1000 second. "15" represents 1/15 second and two numbers lighted simultaneously signify a shutter speed between those represented by the two numbers. "LT" when lighted, represents 1/10 to 16 seconds or, when blinking, indicates that the subject is out of the metering range and that exposure will be under. "1000" if blinking, indicates that the subject is out of the metering range andthat exposure will be over.

The display in the viewfinder will appear at one of the following operations. The display will keep on for eight seconds and then will automatically go out for power saving.

1) Setting the Main Switch to "AF"

2) Depressing the Shutter Release Button halfway with the Main Switch in the "AF" position.

In addition,operating a button or the like, during display will prolong the display for another eight seconds.

Viewfinder DisplayDisplay Panel

①Date Mark

Y.M.D (Year, Month, Day); D.H.M. (Day, Hour, Minute); M.D.Y. (Month, Day, Year); D.M.Y. (Day, Month, Year)

②Spot Focus Indicator

Displayed when focus range is spot focus.

③Indicator of Remaining Battery Capacity

④Self-timer Indicator (10 or 2 seconds)

⑤Exposure Counter / Date and Time / Exposure Compensation Value / Manual Focusing Set-up Distance / Self-timer Counter / Custom Function Display

⑥Flash Mode Mark

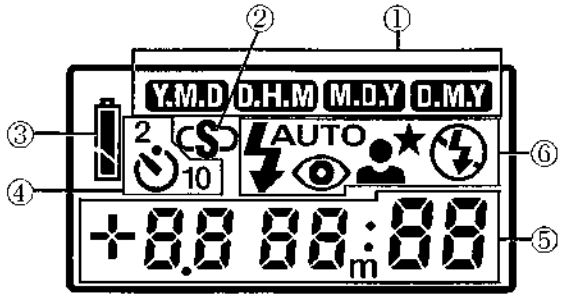
Auto-flash mode "AUTO"

Red-eye reduction auto-flash mode "AUTO"

Flash-off mode "⊘"

Fill-in flash mode "⚡"

Night-scene portrait mode "AUTO"



Aperture Display LCD

⑦ "P"

Displayed when the exposure mode has been set to "Program AE"

⑧Aperture scale

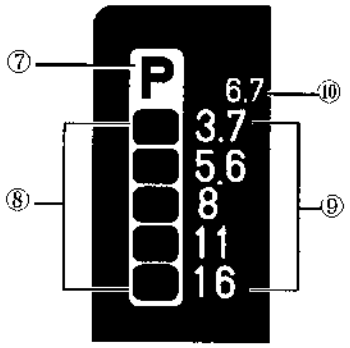
Displayed when "Aperture Priority AE" has been set.

⑨Aperture value

The display shows aperture values for 30 mm (Wide). The actual aperture values for 60 mm (Tele) are as shown in Table below.

⑩ "6.7"

"6.7" is the actual aperture value for 60 mm (Tele) corresponding to the aperture value F3.7 for 30 mm (Wide).



30mm(Wide)		60mm(Tele)
F3.7	⇔	F6.7
F5.6	⇔	F10.3
F8	⇔	F14.6
F11	⇔	F20.7
F16	⇔	F26.8

SETTING OF CUSTOM FUNCTIONS

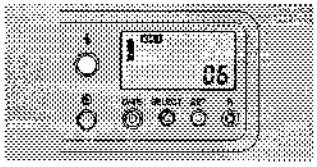
PROGRAM AE CONTROL

This camera has six kinds of custom functions. The camera comes with the standard setting of custom functions and the user can change the setting of detailed specifications for functions and operating procedures for his or her easier use.

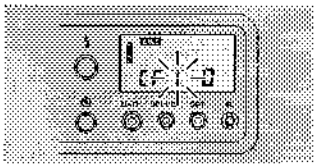
〈List of Custom Functions〉

Item No. / Function No.	Standard Setting (0)	Change Setting (1)	Change Setting (2)
CF 1: Remaining film at film rewound	Film leader rewound into the cartridge	Film leader remaining outside the cartridge.	
CF 2: Lens extension timing	Immediately before shutter operation	At depressing the Shutter Release Button halfway	
CF 3:Focusing range of auto focusing	Program AE: Multi Focus Aperture Priority AE:Multi Focus	Program AE: Spot Focus Aperture Priority AE: Spot Focus	Program AE: Multi Focus Aperture Priority AE: Spot Focus
CF 4: Exposure mode and extended lens position at power on	Exposure mode: P (Program AE) Lens position: End of wide angle side	Exposure mode: same setting as just before turning OFF the camera power Lens position: same as the zoom position used just before turning OFF the camera power	
CF 5: Focus adjustment for manual focusing	Setting by turning the Focus Dial	Setting by turning the Focus Dial while pressing the SET Button	
CF 6: Exposure compensation range	1/3 EV (Example of display : + 0.3)	1/2 EV (Example of display : + 0.5)	

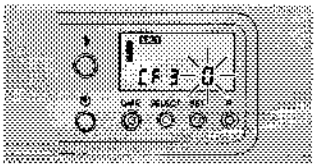
HOW TO SET CUSTOM FUNCTIONS



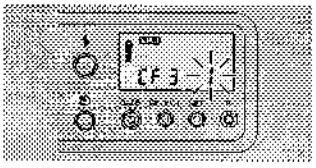
①Turn OFF the camera power and hold down the Flash Button and the SET Button together until the Custom Function Switch Mode is displayed (for more than 2 seconds).



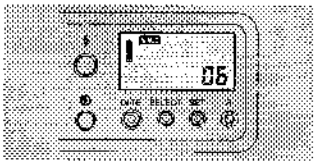
②When you see the Function Number blinking, change it to your designed number by pressing the SET Button.



③Press the SELECT Button.



④When you see the Item Number blinking, change it to your designed number by pressing the SET Button.

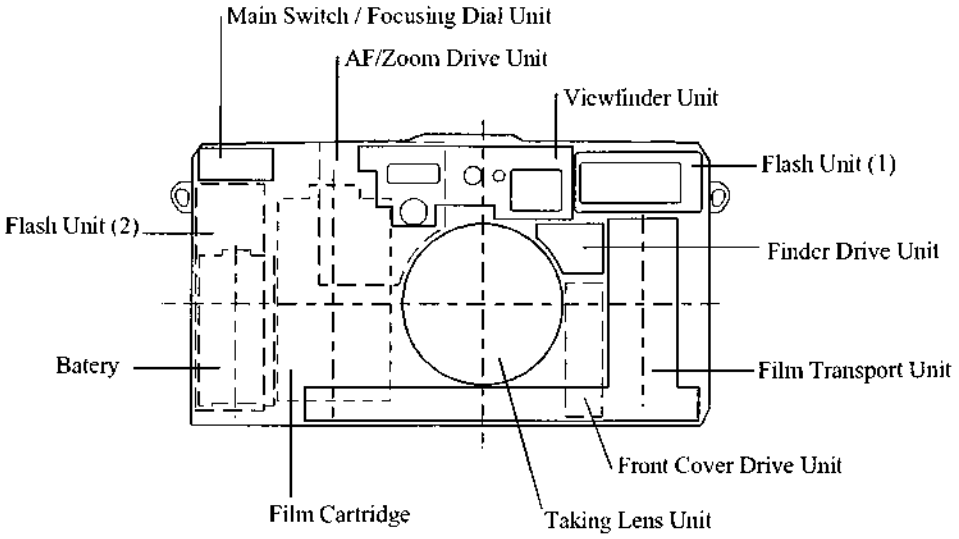


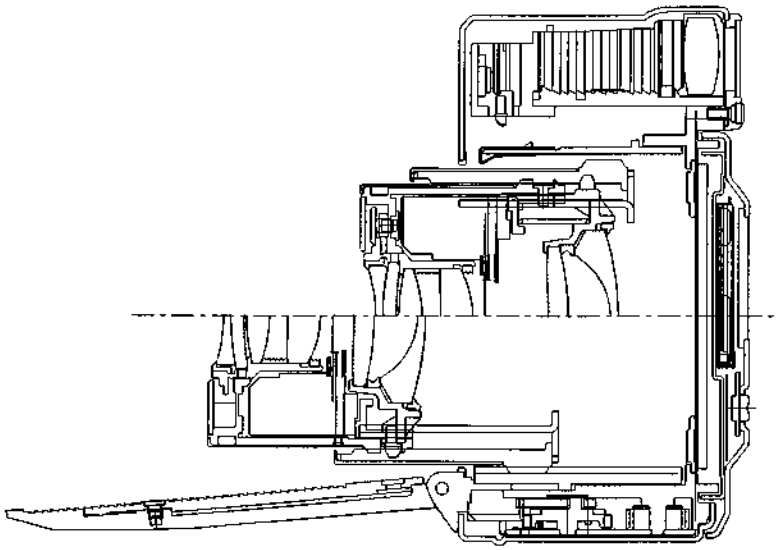
⑤Release the SET Button, and the display will change from blinking to lighting eight seconds later.

- Setting the Main Switch to "AF" during the blinking of the Item Number will also set the new custom function.
- Allowing a midway setting to stand for eight seconds will register the midway setting.

STRUCTURE OF THE CAMERA

This camera consists of the Lens Unit, located at the center of the camera, and the Viewfinder Unit, Flash, Battery Compartment, Film Transport Mechanism and Front Cover Drive Mechanism, and stiff titanium outer covers. The Front Cover protecting the Taking Lens is manufactured by the titanium MIM (metal injection mold) method. This manufacturing method is such that pure titanium powder is mixed with binder and kneaded, and injection-molded. After that, the binder is evaporated and finally the molded titanium is sintered. By this method, the product of a complicated shape is manufactured with a high stiffness.





(Sectional View of Body)

VIEWFINDER UNIT MECHANISM

This camera employs a real-image zoom viewfinder which changes the image magnification, coupled with the zooming motion of the Taking Lens.
The Viewfinder consists of (1) Viewfinder Optical System, (2) Zoom Drive Mechanism, (3) Flash, (4) Auto Focusing Unit, (5) Light Metering Unit and (6) AF-assist Beam Emitter.

(1) Viewfinder Optical System

The lens is composed of 7 elements in total — 5 elements on the objective lens side of the target frame and 2 elements on the eyepiece side.
Zooming motion is carried out by driving two of the objective lens elements by the effect of a cam plate. For diopter adjustment, one of the eyepiece elements is moved along the optical axis by the operation of a rotary cam which is coupled with the Diopter Compensation Dial. For the shutter speed indicators, exposure compensation mark, focus indicators and flash mark which are displayed in the viewfinder, the light beams are led via the half mirror on the eyepiece side from the LED light source. The light intensity of the LED is changed in three steps according to the brightness of the external light.
The picture area frame, close-range parallax frame and focusing frame (spot, multiple) are coated on the focal plane glass.

(2) Viewfinder Zooming Mechanism

For zooming of the viewfinder, the viewfinder drive cam moves the objective lens elements 2 and 3 by the energy transmitted through the reduction gear train of the Zoom Drive Unit incorporated in the camera body.

(3) Flash

With the zoom flash mechanism, the Reflector holding the xenon tube is moved by the Viewfinder Drive Cam Plate, coupled with the zooming of the viewfinder, to change the G No. distribution characteristics.

(4) Auto Focusing Unit

The AF module is incorporated on the Viewfinder Base.
For distance measurement, the camera employs an external passive 5-point multiple distance measurement method.

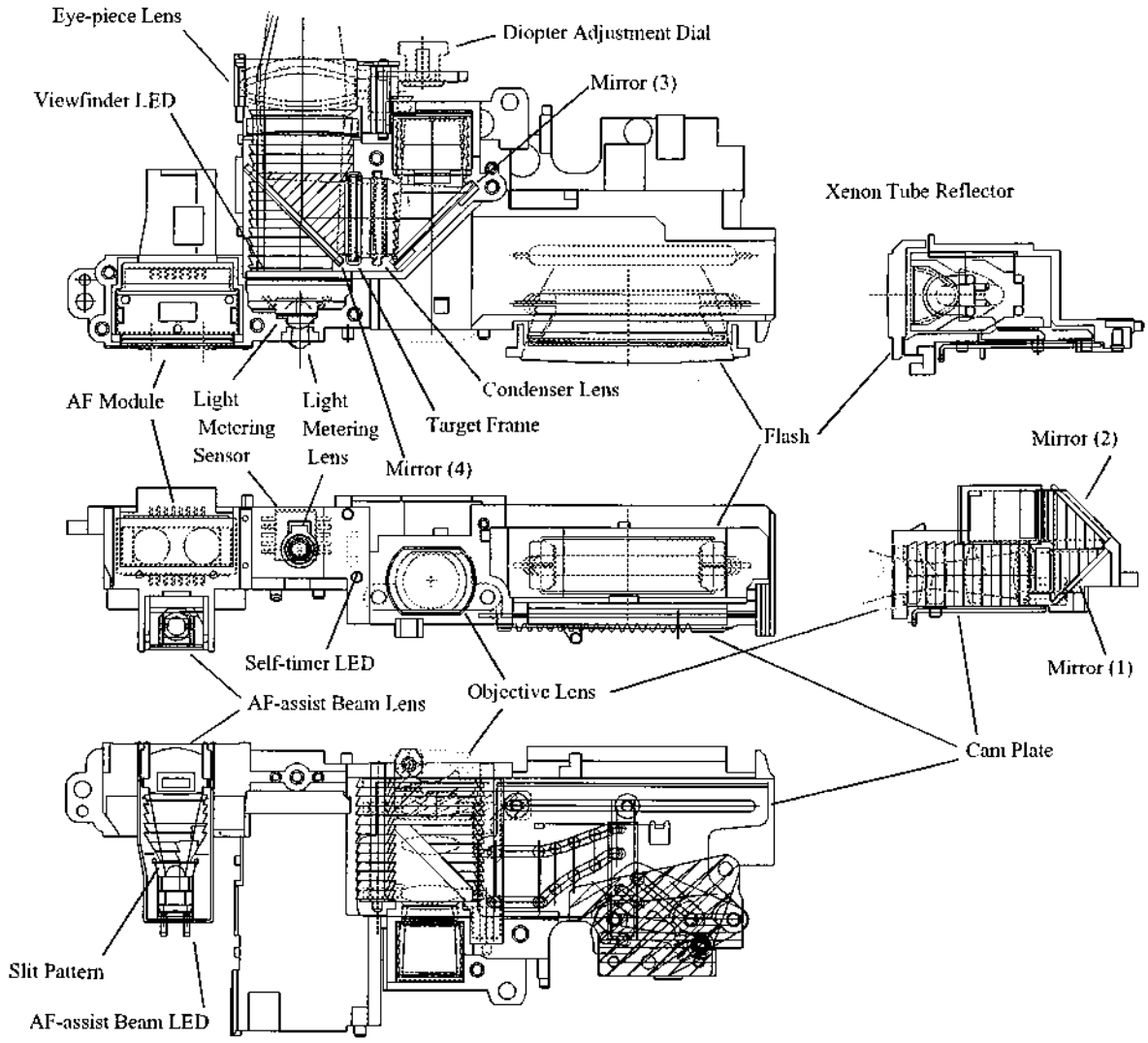
(5) Light Metering Unit

The Light Metering Unit has been inserted in the hole of the Viewfinder Base.
For light metering, the camera employs an external metering system (spot light metering / center-weighted average light metering) with a 2-divided SPD element which incorporates an IC for arithmetic processing.

(6) AF-assist Beam Emitter

In distance measurement of a low-contrast or low-brightness subject (LV 10 or below), an AF-assist beam (visible red light) is emitted, irradiating an auxiliary light pattern (vertical stripe), to enable auto focusing.

(Chart for Viewfinder Unit Structure)



LENS BARREL UNIT

The Shutter Unit incorporating both the aperture function and the shutter function in a single unit is located between the front group of lens elements and the rear group. The cell frames of the 1st group and 2nd group are moved along the optical axis for zooming motion and focusing motion.

(1) Taking Lens

The Taking Lens is composed of 6 elements in 5 groups which are so arranged that 4 elements are on the front side and 2 elements on the rear side with the Shutter Unit located in between. The 4th element is made of special low-dispersion glass and the 2nd and 5th elements are glass mode aspherical lenses.

Type : Vario-Sonnar T* (6 elements in 5 groups)

Focal length / F stop : f 30 mm / F 3.7 (Wide)
f 60 mm / F 6.7 (Tele)

Zooming method : 2-group relative moving

Shooting range : 0.5 m to infinity

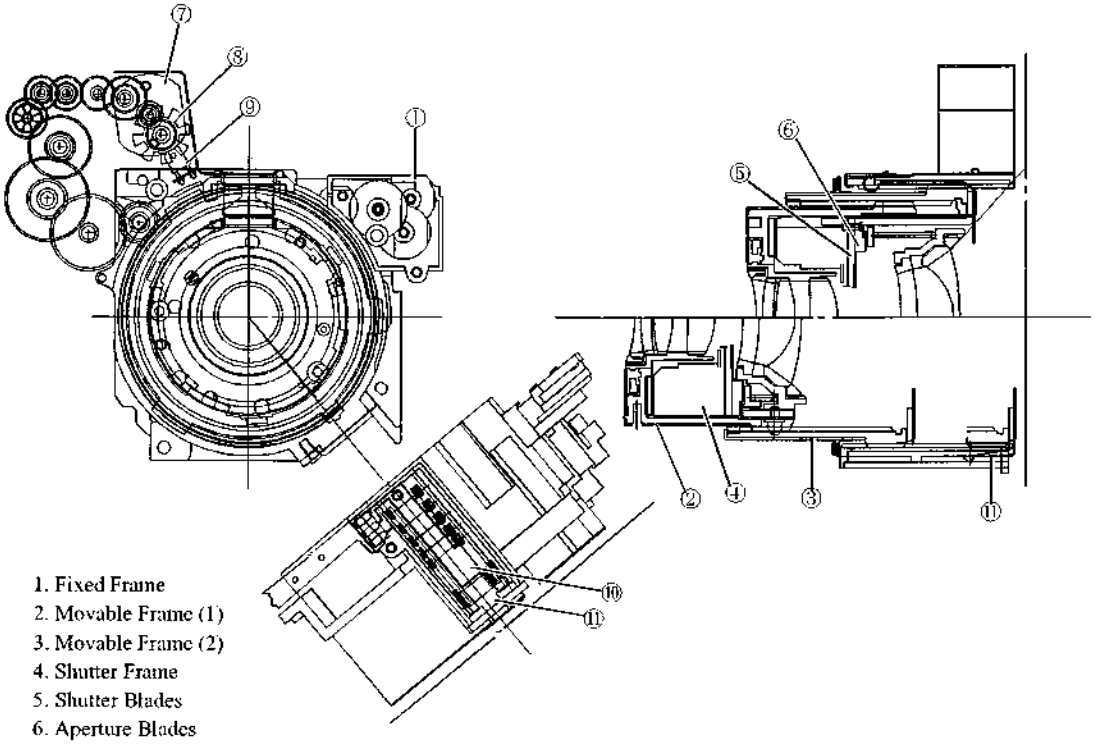
(2) Zoom and AF Drive

Only one dedicated motor moves the Lens Barrel for its zooming motion.

The revolving speed from the motor is reduced through the gear train and transmitted to the Movable Frame (2). The Movable Frame (2) is provided with helicoid threads inside, which are engaged with the Movable Frame (1) and the Fixed Frame, respectively. When the motor runs, the lens groups are moved along the optical axis for zooming motion and AF motion.

The zoom position is controlled and detected by the Zoom Code Board and Zoom Code Contacts.

The AF position is controlled and detected by the pulse produced from the Encoder.



1. Fixed Frame
2. Movable Frame (1)
3. Movable Frame (2)
4. Shutter Frame
5. Shutter Blades
6. Aperture Blades
7. Zoom Motor
8. Zoom Encoder
9. Photo-coupler
10. Zoom Code Board
11. Zoom Code Contacts

(3) Shutter Mechanism

The double between shutter employed in this camera consists of the aperture and shutter blades which constitute the shutter unit. The shutter has one set of 5 shutter blades and another set of 5 aperture blades and each set of blades is controlled independently. The aperture blades play also part of role as shutter blades. That is, at the end of exposure, the shutter blades do not close but the aperture blades close. Upon completion of shooting, the two set of blades are restored to their original positions.

The shutter motions for Program AE and Aperture Priority AE are as shown below.

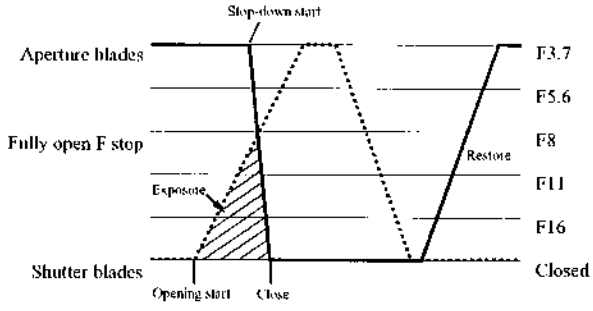
For Program AE, at the beginning, the shutter blades are in the closed position and the aperture blades in the open position. At that time, the aperture blades are fastened by the magnet. Once the Shutter Release Button is depressed all the way, the aperture blades, which have been in the open position, start closing and simultaneously the stepping motor starts running in the "open" direction and the shutter blades, coupled with the motor, start opening. At the timing determined by light metering calculation, the aperture blades are released from the magnet and closed by the force of the spring to complete exposure. That is, the light exposure is determined by the period of time during which the aperture blades and the shutter blades are both open and by the degree of overlap of the openings.

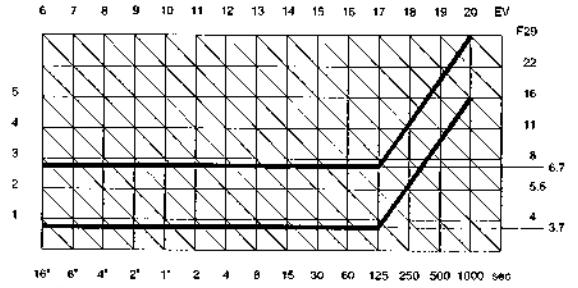
For Aperture Priority AE, the initial state is the same as that for Program AE. Once the Shutter Release Button is depressed all the way, the stepping motor starts running in the "open" direction and the aperture blades start closing and stop down the aperture to the preset aperture value. At this point, both sets of blades are fastened by the respective magnets. In this state, the aperture value is locked and the shutter blades are in the closed position. After that, once the shutter blades are released from the magnet, the shutter blades open fully so that exposure is carried out at the preset aperture value. At the timing determined by light metering calculation, the aperture blades are released from the magnet and close to complete exposure.

For both Program AE and Aperture Priority AE, after completion of exposure, the motor runs in the "close" direction so that the shutter closes first and then the aperture opens fully, that is, the shutter blades and the aperture blades are restored to the original positions.

These motion timings of the shutter blades and aperture have been adjusted for each shutter and are controlled by the data written in EEPROM.

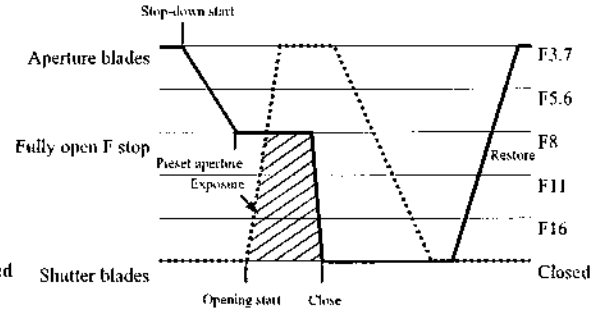
Program AE

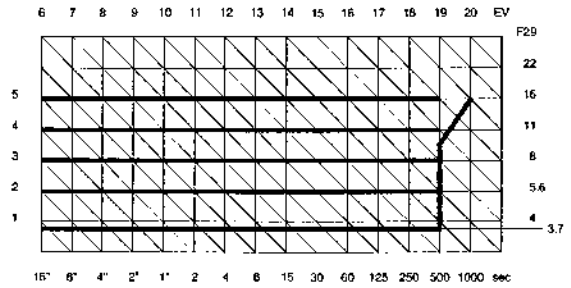




● The aperture value varies coupled with zooming.

Aperture Priority AE



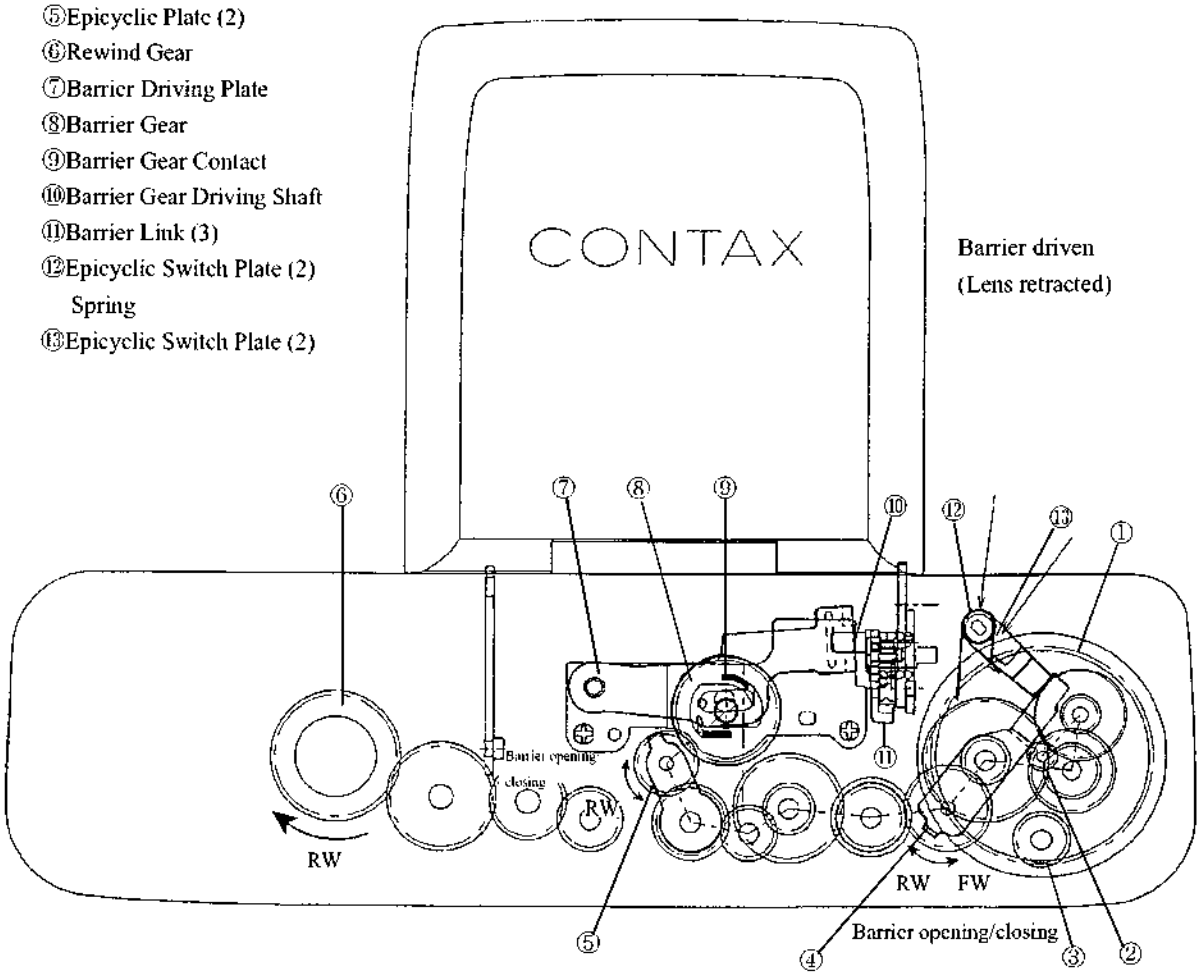


● The light metering function of the camera operates normally coupled with the change in the aperture value according to zooming.

FILM TRANSPORT & FRONT COVER DRIVE MECHANISM

Film winding/rewinding and the opening/closing of the Front Barrier are driven with one motor. Switching between these mechanisms is achieved with two sets of epicyclic clutches via the gear train located at the bottom of the camera body. The mechanisms are coupled with the Lens Barrel position when the Lens Barrel is at the power OFF position and also when it is not at the power OFF position. The coupling mechanism controls mechanically the 1st Epicyclic Plate in the Transport Gear Train via the Zoom Finder Gear Train located at the camera top and through the Epicyclic Switch Shaft which couples the camera top with the camera bottom. According to the mechanically controlled mechanism position, the camera determines whether to perform film winding or "film rewinding / Front Barrier opening or closing" and selects the appropriate one by forward run or reverse run of the Transport Motor.
At this point, if the 1st Epicyclic Plate has been connected to the "film rewinding / Front Barrier opening or closing" side, the 2nd Epicyclic Plate selects "rewinding" or "Front Barrier opening or closing" by forward or reverse run of the motor. The opening or closing of the Front Barrier is driven by the output transmitted from the Transport Gear Train via the Barrier Opening/Closing Gear, Barrier Opening/Closing Link Mechanism and Barrier Driving Spring.

①Spool Gear
②Pinion Gear
③Winding Gear
④Epicyclic Plate (1)
⑤Epicyclic Plate (2)
⑥Rewind Gear
⑦Barrier Driving Plate
⑧Barrier Gear
⑨Barrier Gear Contact
⑩Barrier Gear Driving Shaft
⑪Barrier Link (3)
⑫Epicyclic Switch Plate (2) Spring
⑬Epicyclic Switch Plate (2)



Front Barrier Opening/Closing Operation

In the state where the Front Barrier is closed (the Lens Barrel is in the OFF position), the Epicyclic Plate (1) is forcedly connected to the Rewind Gear Train by the effect of the Epicyclic Switch Plate (2).

Turning the Focus Dial as "∈" → "AF" will rotate the rotor of the Winding Motor clockwise so that the Epicyclic Plate (2) will turn in the direction of the Barrier Gear and will be engaged with it.

By this engagement, the Barrier Gear rotates and the pin on the Barrier Gear transmits the driving force to the associated links to open the Front Barrier. The opened position of the Front Barrier is determined by detecting the barrier code representing the angle of the Barrier Gear rotation, thus controlling the stop position.

After opening of the Front Barrier, the Zoom Motor drives the Lens Barrel from the "OFF" position to the "wide" position (standby state). The Lens Barrel on the way releases the Epicyclic Switch Plate (2) from the forcedly connected position so that it can move freely.

(The rotation of the Movable Frame (2) is transmitted to the cam plate of the Viewfinder and the motion of the cam plate is transmitted to the Epicyclic Switch Plate (1) and Epicyclic Switch Plate (2).)

When the Lens Barrel has reached the standby position, the Epicyclic Plate (1) is free. In this state, therefore, winding motion is performed by the clockwise rotation of the rotor of the Winding Motor, while rewinding motion is by the counterclockwise rotation. When the Front Barrier is open (the Lens Barrel is in the standby position), turning the Focus Dial as "AF" → "∈" will run the Zoom Motor so that the Lens Barrel will be retracted to the "OFF" position. While the Lens Barrel is moving from the standby position to the "OFF" position, the Epicyclic Switch Plate (2) is forcedly connected to the Rewind Gear Train.

(The rotation of the Movable Frame (2) is transmitted to the cam plate of the Viewfinder and the motion of the cam plate is transmitted to the Epicyclic Switch Plate (1) and Epicyclic Switch Plate (2).)

In this state, as the Winding Motor rotates clockwise, the Epicyclic Plate (2) turns in the direction of the Barrier Gear and is engaged with it.

By this engagement, the Barrier Gear rotates and the pin on the Barrier Gear transmits the driving force to the associated links to close the Front Barrier.

The closed position of the Front Barrier is determined by detecting the barrier code representing the angle of the Barrier Gear rotation, thus controlling the stop position.

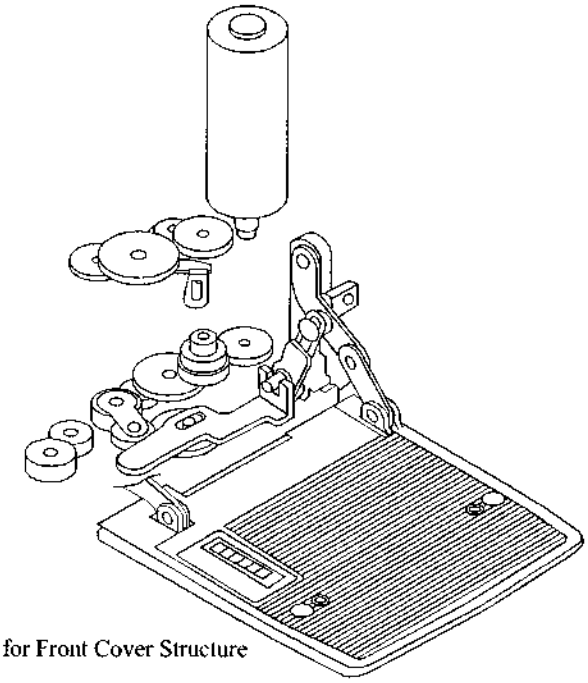
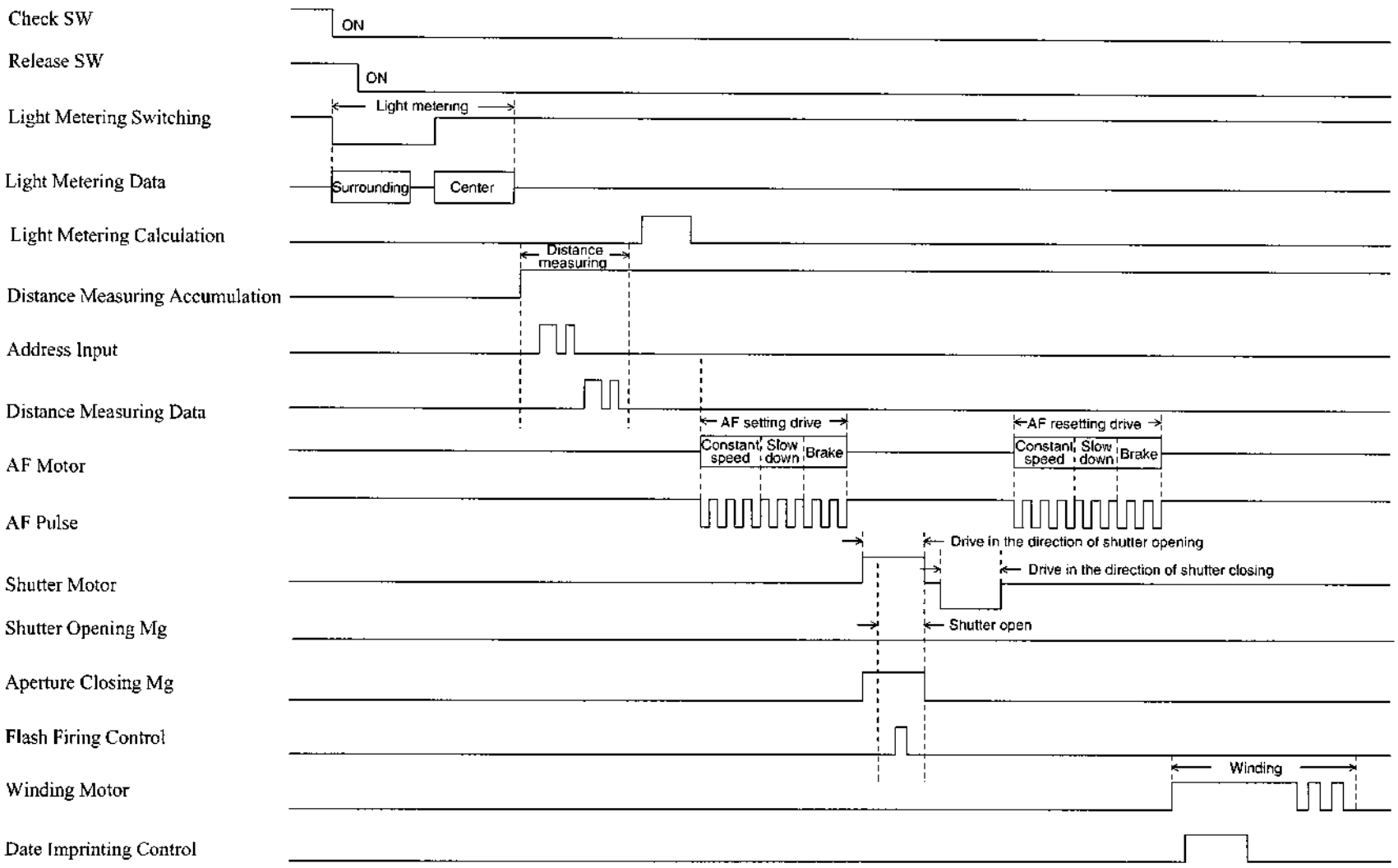


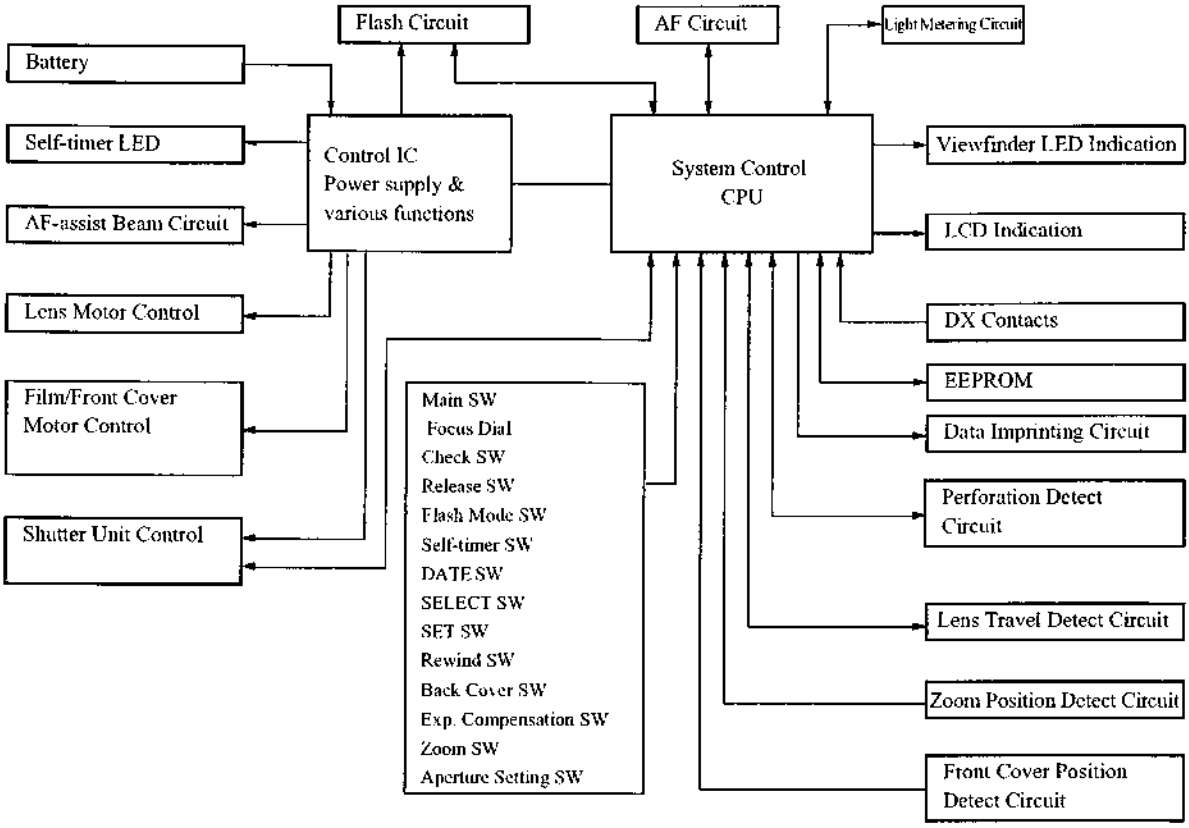
Chart for Front Cover Structure

Timing Chart



ELECTRIC CIRCUIT CONFIGURATION

The electric circuit consists of the CPU, Control IC and other elements.
The CPU, gathering all the information concerning light metering, auto focusing and settings, conducts various arithmetic operations and controls the entire camera system.
The Control IC is connected to the CPU with the 7-bit bus and according to the control signals, controls the power supply, shutter, two DC motors, flash charging and some LEDs.
For the power supply, one lithium battery CR123A is used and the CPU controls the Control IC to supply the stabilized power.
For motor driving, the 1.5 channel transistor bridge and stepping motor driver, which are incorporated in the Control IC, control the two DC motors and the stepping motor for the shutter. The two DC motors drive the Lens, transport the film and drive the Front Cover. For shutter control, two magnets are driven by two transistors.
For display, the camera is equipped with LCDs on the rear of the camera and on the inside of the Front Cover and with LEDs in the Viewfinder and on the front of the camera. The LCDs are controlled by the driver incorporated in the CPU. The LED in the Viewfinder is driven by a transistor. This LED shares the port with the LED for imprinting data on the film. Switching between the LED in the Viewfinder and the data imprinting LED is controlled by the switching signal sent from the CPU.



Electric Circuit Block Diagram

DESCRIPTION OF ELECTRIC CIRCUITS

1.Power Supply Circuit

(1) Outline

The Power Supply Circuit, under control of U-113 (Main CPU), controls output of each voltage. Also this circuit detects a battery voltage drop below the required level and upon such detection, resets U-113 by hardware.

(2) Description of Operation of Each Power Line

·VBAT : Direct power from the battery (CR123A)

This power is supplied to the Flash Circuit, Self-timer LED, Viewfinder LED, Shutter Magnet Driving Circuit, Motor Driving Circuit, AF-assist Beam Circuit and the Data Imprinting Control Circuit.

·VSU : CDD control power

The power at the voltage (5.5 V) boosted by U-101 (Control IC) is controlled by the MDE signals (MDE 0 ~ 2) transmitted from U-113 to U-101. Also as the boosting clock, 125 kHz is supplied from U-113.

·VDD : Power to CPU

At the start of the camera operation, U-113 changes the MDE signal from the standby mode (000) to (101) mode. Then U-101 becomes active and starts boosting the switching voltage. Also the boosted VSU voltage is regulated in U-113 and output as VDD (4.9 V).

In the standby state, the MDE signal is set to the standby mode so that switching operation is stopped to reduce power consumption.

Under these conditions, VDD is supplied from the battery through the line via the Coil L101 and the Schottky diode in U-101 or through the line via the externally mounted Diode D101 and thus is approximately equal to the battery voltage.·VDD2 : Power to peripheral circuits for driving system

After completion of start of voltage boosting at the start of the camera operation, U-113 turns VDD2CN "L" so that Q103 is turned ON and a voltage (4.8 V) is supplied to the VDD2 line.

In the standby state, U-113 turns VDD2CN "H" so that the VDD2 line is turned OFF.

·VL1 : Reference power for LCD driving circuit

This power is obtained by regulating the VDD voltage via U-114 (Regulated DC Voltage IC : 1.7 V) and boosting the voltage triple through the boosting circuit in U-113. It is used for the LCD driving circuit. (VL3 = 5.1 V)

This voltage is always supplied not only during camera operation but also in the standby state.

·VREF : Reference power for A/D conversion

This power is obtained by regulating the VDD voltage via U-115 (Regulated DC Voltage IC : 3.5 V). It is used as the reference voltage (3.5 V) for A/D conversion in U-113.

This voltage is always supplied to U-113 while VDD2 is being supplied.

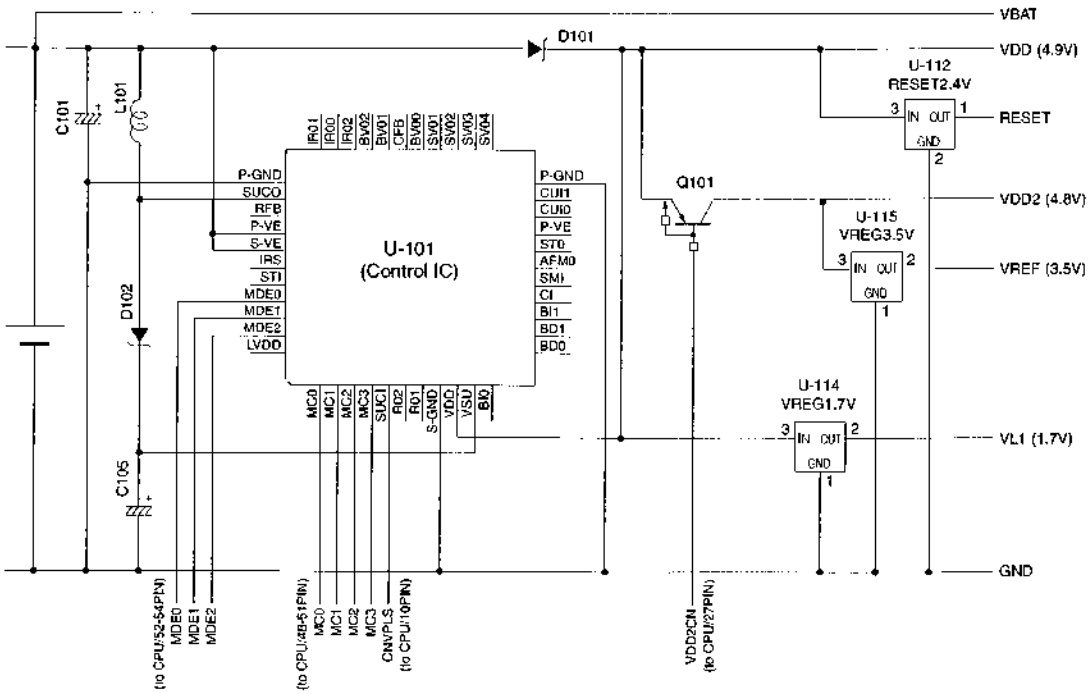
·RESET : CPU hardware reset signal

U-112 (Reset IC), upon detecting a voltage drop to 2.4 V or below in the VDD line, resets U-113 by hardware.

(3) Truth Table for MDE 0 ~ 2 Control

Mode	MDE Input			VDD	VDD2	VL	VREF
	0	1	2				
	#41	#42	#43				
Standby	L	L	L	Battery voltage	0V	1.7V	0V
Flash charging	H	H	H	4.9V	4.8V	1.7V	3.5V
Light metering	H	L	H	4.9V	4.8V	1.7V	3.5V
Distance measuring	L	H	H	4.9V	4.8V	1.7V	3.5V
Retraction drive	H	L	H	4.9V	4.8V	1.7V	3.5V
Shutter drive	H	H	L	4.9V	4.8V	1.7V	3.5V
Film transport	H	L	H	4.9V	4.8V	1.7V	3.5V

(4) Peripheral Circuit for Power Supply



2. Battery Check Circuit

The battery voltage is directly A/D converted by U-113 and judged. Voltage is read in under the no-load conditions and also under loaded conditions where the power for holding the stepper of the shutter is supplied.

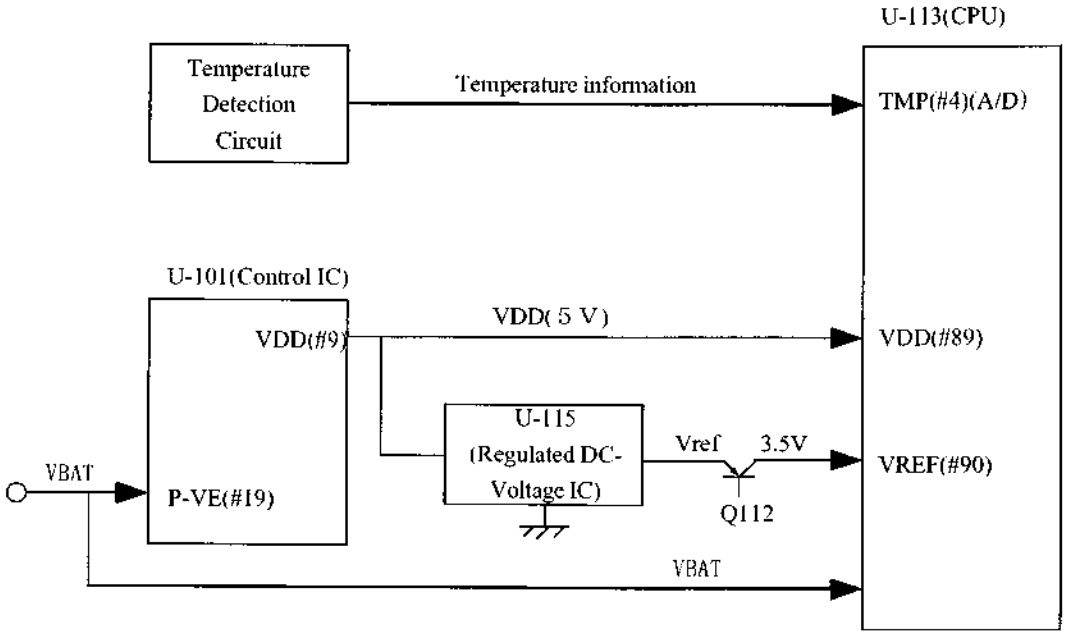
(1) Battery Check Timing

·At CPU reset start
·At power ON
·At completion of film winding

(2) Battery Mark Indications

Indication	Voltage Level	Camera Operation
Full Lighting	Full	Normal operation : normal loading indication
Half Lighting	B0 level	Half-consumed level : normal operation
Half 2 Hz blinking	B1 level	Warning level : normal operation : exposure of at least one roll of 24-frame film possible before arrival at B2 level
Empty 2 Hz blinking	B2 level	Operation inhibit level : function stop

(3) Circuit Block Diagram



3. Flash Circuit

(1) Outline

The Flash Circuit controls flash charging and firing. (Overcharge prevention circuit incorporated)

(2) Description of Circuit Operation

·Flash charge circuit

U-113 sets Pin 52 ~ Pin 54 and Pin 48 ~ Pin 51 (MDE 0 ~ 2, MC 0 ~ 3) to flash mode.
Consequently, Pin 15 (OSC) of U-101 turns "L" then the transistor Q303, connected thereto, and Q305 and Q304, coupled therewith, turn ON and the oscillation circuit consisting of T301 starts oscillation.
Following the oscillation start, the high voltage output from the secondary side of T301 is rectified by D302 and supplied through D303 to the Main Capacitor C304 for charging.

	MDE Input			MC Input				Remarks
	0 #41	1 #42	2 #43	0 #1	1 #2	2 #3	3 #4	
Charge permitted	H	H	H	H	L	L	L	U-101 flash mode
Charge inhibited	H	H	H	L	L	L	L	

·Charge voltage monitor circuit

The charge voltage during flash charging, divided by the resistors R306, R307 and R308, is compressed to a low voltage in proportion to the charge voltage and input to Pin 8 (CHGVOL : A/D conversion line) of U-113.
By A/D converting this input, U-113 monitors the charge voltage.
When the charge voltage has reached 310 V, this monitor voltage becomes about 3 V and U-113 inhibits flash charging.

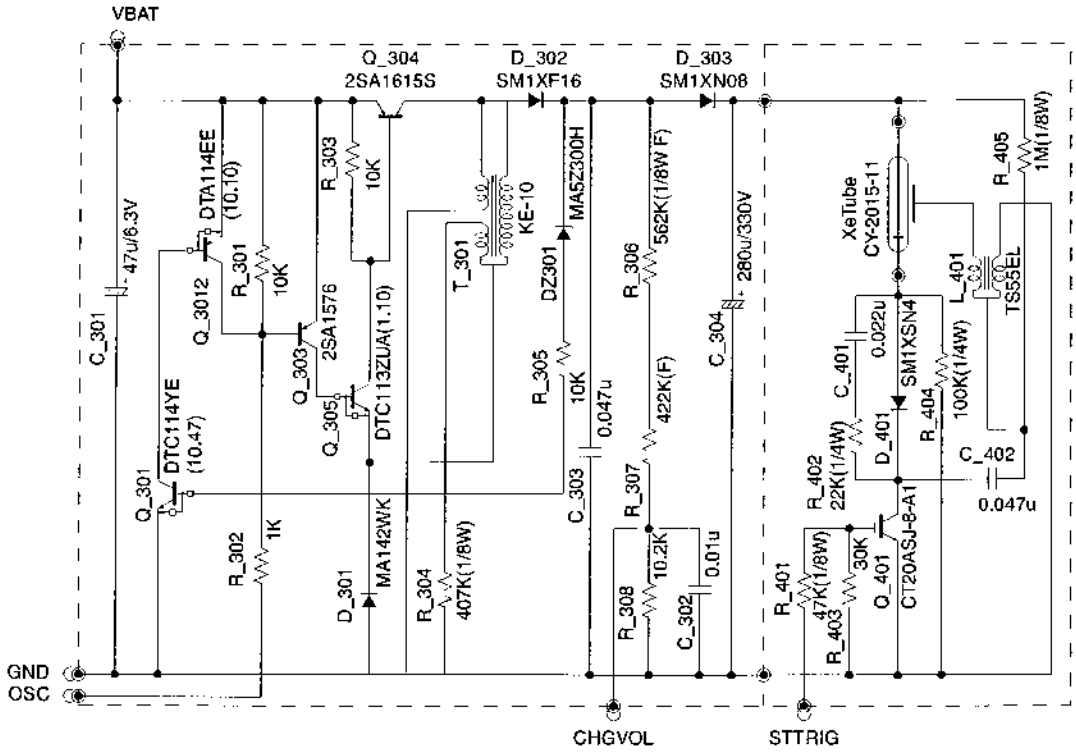
·Overcharge prevention circuit

The overcharge prevention circuit protects the Main Capacitor and Xenon Tube from damage caused by overcharge in case the charge voltage monitor circuit breaks down.
If the charge voltage exceeds about 330 V, the Zener diode DZ301 operates to turn Q301 and Q302 ON so that Q303 is forcedly turned OFF, thus stopping the flash charge circuit.

·Flash firing circuit

By turning Pin 63 (STTRIG) as "L" → "H" U-113 turns Q401 (IGBT) ON via the Buffer U-116.
Consequently, a voltage about two times the charge voltage is applied across the Xenon Tube and simultaneously the trigger voltage generated by the Trigger Coil (L401) excites the Xenon Tube to fire the flash.

(3) Circuit Diagram



VBAT	: Battery power (CR123) + line
GND	: Battery power (CR123) - line
OSC	: Flash charge control signal (active at "L")
CHGVOL	: Charge voltage monitor output (voltage output)
STTRIG	: Firing trigger & amount of flash control signal (active at "H")

4. Film Transport / Film Rewinding / Front Barrier Driving Circuit

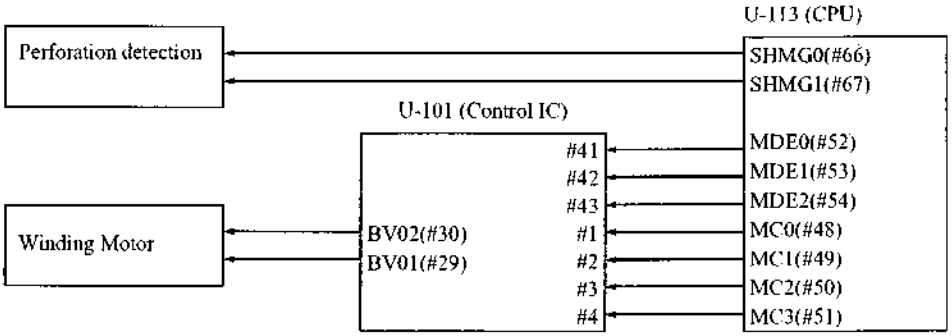
The Motor Drive Circuit constituted in U-101operates the Film Transport / Film Rewinding / Front Barrier Driving Motor. The direction of rotation and braking are transmitted by the signals MDE 0 ~ 2 and MC 0 ~ 3 from U-113 to U-101. The travel of the film is detected by reading perforations with the photo-reflector. The Front Barrier motion is controlled by reading the "open" position code, "closed" position code and in-between position codes.

< Film Transport >

(1) Outline

- After completion of AF reset driving, the film is wound by one frame (pulses equivalent to 8 perforations).
- When there is no film, winding motion is perform for 200 msec.
- When there is film, after completion of normal winding, one is added to the exposure counter display and the updated data is written in EEPROM. (When there is no film, the counter display remains as "0")
- When the film end has been detected, the status information (film end) is set and written in EEPROM.

(2) Circuit Block



(3) Motor Control

MDE Input			MC Input				BVO Output		Operation
0	1	2	0	1	2	3	1	2	
H	L	H	-	-	L	L	-	-	Free
			-	H	L	H	L	H	Forward run (winding)
			-	H	H	L	H	L	Reverse run (rewinding)
			-	H	H	H	L	L	Short brake

(4) Perforation Detection

At film winding and rewinding, film perforations are read with a photo-reflector to detect the film transport position.

(5) Film End

In winding control, when no perforation pulse has been detected for more than about 4 seconds (1st ~ 7th pulse detection), the camera judges that the film has been wound up to the end. Then 60 msec short brake is applied to the Winding Motor and the motor is reversed for 15 msec. The data is written in EEPROM and then rewinding control is started.

< Rewinding Circuit >

(1) Outline

- The film is rewound when the Film End Detect / Rewind Switch is turned ON.
- During film rewinding, the exposure counter displays counting down.

(2) Conditions for Rewinding Control Start

Irrespective of ON or OFF of the Main Switch, rewinding control is started when the following conditions are met :

① Back Cover : closed

② · Film end has been detected.
· Rewind Switch has been detected to be ON.

(3) Pulse Detection

Using the threshold level determined at blank shots advance, the exposure counter counts down by one for every 8 pulses and the updated value is written in EEPROM. (Counting down below "00" is not performed.)

< Front Barrier Driving Circuit >

The motor to drive the Front Barrier is also used for film winding and its operation varies with the Lens position. The Front Barrier is controlled by reading the "closed" position code pattern, "open" position code pattern and the code pattern for control change position detection.

(1) Operation Type Table

	Forward Run	**Reverse Run**
Lens ON	**Winding**	**Rewinding**
Lens OFF	**Front Barrier Driving**	**Rewinding**

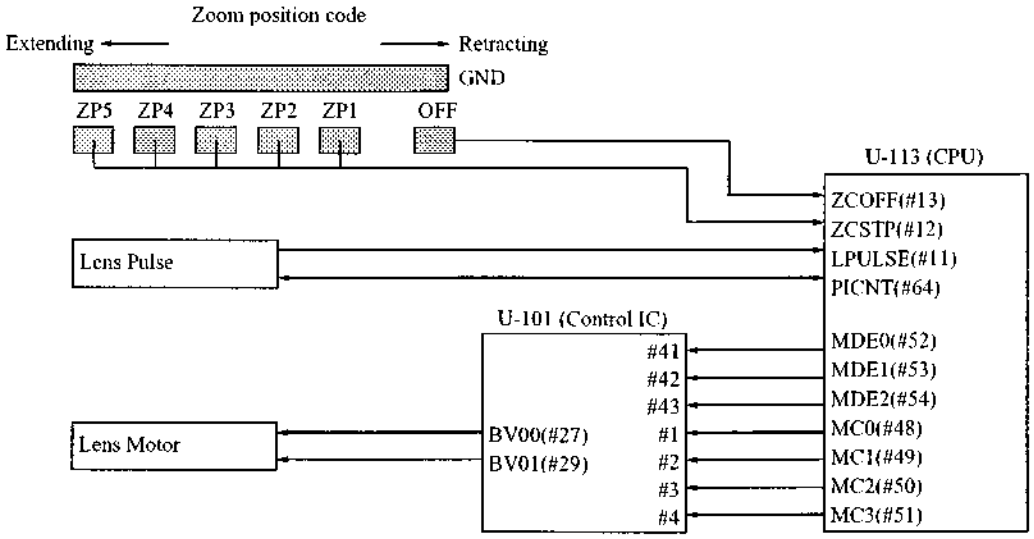
(2) Motor Control

MDE Input			MC Input				BVO Output		Operation
0	1	2	0	1	2	3	0	1	
H	L	H	-	-	L	L	-	-	Free
			-	H	L	H	L	H	Forward run (Front Barrier driving)
			-	H	H	L	H	L	Reverse run (rewinding)
			-	H	H	H	L	L	Short brake

5. Lens Driving Circuit

The Motor Driver Circuit constituted in U-101controls the Lens Motor.
The MDE 0 ~ 2 signals and MC 0 ~ 3 signals from U-113 are transmitted to U-101. The motor is selected by the MDE signal first and then the direction of rotation of the DC motor and braking are selected by the MC signals.

(1) Circuit Block



(2) Motor Control

The motor control table for lens control (DC motor) is as follows :

MDE Input			MC Input				BVO Output		Operation
0	1	2	0	1	2	3	1	2	
H	L	H	-	-	L	L	-	-	Free
			-	L	L	H	H	L	Forward run(Extending)
			-	L	H	L	L	H	Reverse run (Retracting)
			-	L	H	H	L	L	Short brake

(3) Lens Pulse

Pulses to detect the travel of the Lens are generated using an circular encoder rotating in synchronization with Lens motion and a photo-interrupter placed at the opposite position. The photo-interrupter LED is driven by two steps of PNP and NPN transistors and the logic for control is such that the circuit is active at "L". The waveform of the output from the phototransistor on the output side is regulated by one step of a transistor. A pulse is read in at both edges.

(4) Zoom Position Detection

For the zoom positions, there are zoom position codes (ZP1 ~ ZP5) representing the OFF position and the other stop positions. The Lens is moved according to the operation of the Zoom Buttons.

6. Light metering Circuit

(1) Outline

The 2-divided Light Metering IC incorporating an amplifier is directly connected to the CPU (U-113). U-113 directly A/D converts the light metering output switched between the center division and the surrounding division. For temperature compensation of light metering, U-113 receives the temperature sensor output in U-201 (AE IC) by A/D conversion and cancels it by arithmetic operation.

The photocurrent from the SPD is converted to a voltage corresponding to the EV value.

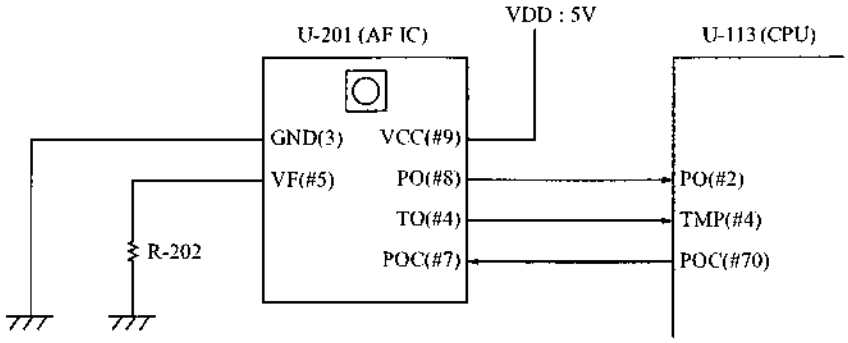
Light metering output, which is dependent on temperature, requires compensation according to the ambient temperature.

(2) Description of Circuit Operation

U-201 is a 2-divided Light Metering IC using SPDs. When U-113 turns POC (#70) "H" the light metering value of the center division is output to PO (#2) of U-113. When it turns POC (#70) "L" the light metering value of the surrounding division is output to PO (#2).

The light metering output value of the surrounding division is compared with that of the center division to determine whether the subject is in a backlight situation or not. In principle, exposure is determined by the light metering output value of the center division.

(3) Circuit Block Diagram



PO	:	Light metering output terminal
POC	:	Switching between center SPD and surrounding SPD Center : "H" ; Surrounding : "L"
VF	:	Light metering output adjustment terminal
TO	:	Temperature sensor amplifier output

(4) Exposure Control

The control data for the shutter and aperture are calculated by U-113 from the obtained light metering result by taking into account the exposure compensation and ISO value.

In addition, U-113 makes exposure compensation by temperature compensation and 1/8 EV step calculation. Moreover, a backlight situation is detected using the 2-divided SPD and backlight compensation is made by flash firing.

7. AF Circuit

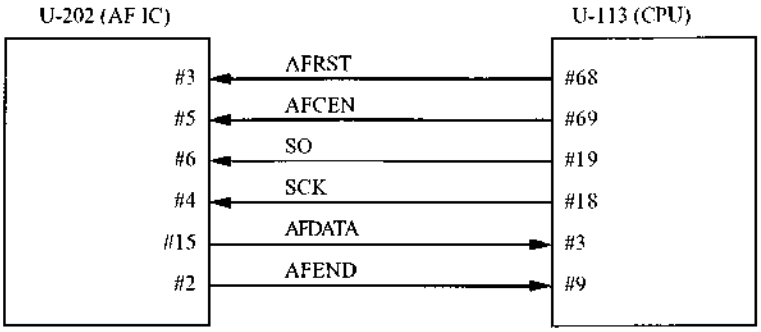
(1) Outline

The passive type AF module performs distance measuring for 5 areas to determine the camera-to-subject distance. In a low-light situation or in a situation where distance measuring for one or more measuring areas is impossible, the camera emits an AF-assist beam and performs distance measuring again to enhance auto focusing accuracy.

(2) Description of Circuit Operation

·AF IC control

U-202 (AF IC) is a passive type AF module. Of the 140 sensors on each of the right and left sides, a set of 24 sensors are assigned to each distance measuring area and the major subject is selected from a total of five distance measuring areas. The control of the AF IC consists of the setting of the sensor sensitivity, accumulation processing and the receiving processing of pixel data. The pixel data for each area is stored in RAM of U-113 and light metering calculation is performed to determine the major subject.



List of Control Signals

Signal		Description of Signal
AFRST	CPU→AF IC	AF IC is reset at "L" Integration is started at "L" → "H" edge.
AFCEM	CPU→AF IC	Active at "L" Consumed current cutting at "H"
SO	CPU→AF IC	Integration is forcedly terminated by command data and "L" signal.
SCK	CPU→AF IC	Command clock, and serial clock for transferring pixel data.
AFDATA	AF IC →CPU	Analog data of sensor. Transferred in synchronization with clock.
AFEND	AF IC→CPU	Automatic integration completion signal.

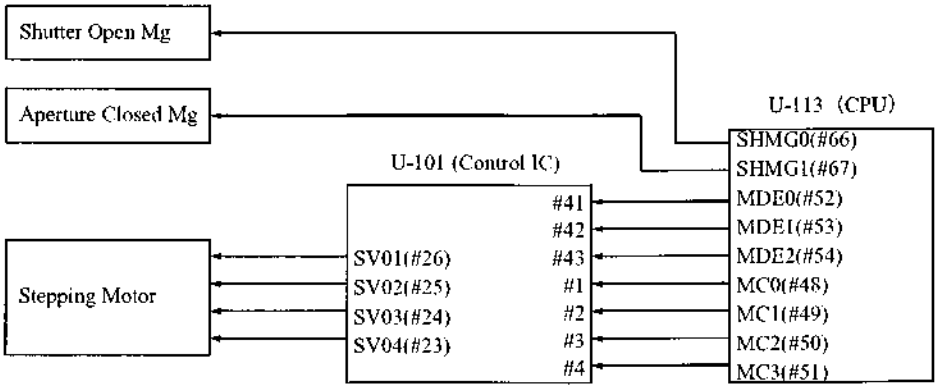
·AF-assist beam emitting control

With U-101 in the AF mode (MDE 0 = L, MDE 1 = H and MDE 2 = H), the AF-assist beam is emitted when MC 0 is turned "H" .

8. Shutter Driving Circuit

The Stepper Drive Circuit constituted in U-101 operates the Shutter Motor.
For phase switching, the MDE 0 ~ 2 and MC 0 ~ 3 signals from U-113 are transmitted to U-101. The two sets of blades are controlled with two magnets. These magnets are controlled with transistors driven by U-113.

(1) Circuit Block



(2) Motor Control

The motor control table for shutter control (Stepping Motor) is as follows :

MDE Input			MC Input				BVO Output				Excitation Pattern
0	1	2	0	1	2	3	1	2	3	4	
H	L	H	L	L	L	-	Current cut				
			H	L	L	-	L	H	L	H	3
			H	H	L	-	H	L	L	H	4
			H	L	H	-	L	H	H	L	2
			H	H	H	-	H	L	H	L	1 (Initial position)

(3) Forward/reverse run control

For forward run, the MC output is so changed that the excitation pattern will increase one by one. The excitation pattern 4 is followed by 1. For reverse run, the excitation pattern is changed as reversing the order for forward run.

(4) Magnet control

The shutter blades open magnet (SHMG 0) and the aperture blades closed magnet (SHMG 1) are driven by NPN transistors.
Both signals are active at "H".
Each blade is fastened by the magnet, when turned ON.

DESCRIPTION OF FUNCTIONS OF SWITCHES

<External Operation Switches>

1. Main Switch / Focus Dial Switch

Used for both Main Switch ON/OFF function and Manual Focus setting.
Detects the setting value voltage of the Focus Dial.
When the dial is turned as "∈" → "AF" the camera power turns ON. Then the Front Barrier opens and the Taking Lens extends to the standby position.
When the dial is returned as "AF" → "∈" the Lens retracts to the storage position and the Front Barrier closes. Then the camera power turns OFF.
When the dial is set to "∞ ~ 0.5" , Manual Focus mode is set.

2. Check Switch

When the Shutter Release Button is depressed halfway, light metering and distance measuring are locked. With a custom function, Lens moving forward.

3. Release Switch

When the Shutter Release Button is depressed all the way, the Release Switch turns ON so that the shutter operates.

4. Zoom Button "T" Switch

Zoom setting switch
When the Zoom Button "T" is pressed, the Lens extends in the "Tele" direction.
Active at "L" .

5. Zoom Button "W" Switch

Zoom setting switch
When the Zoom Button "W" is pressed, the Lens retracts in the "Wide" direction.
Active at "L" .

6. Exposure Compensation Dial Switch

When the Exposure Compensation Dial is turned, this switch detects the direction of turning and sets a compensation value.
An exposure compensation value can be set in 1/3 EV increments within the range of +2 ~ -2. In the viewfinder, "±" lights up.
With a custom function, setting in 1/2 EV increments is available.

7. Aperture Button A Switch

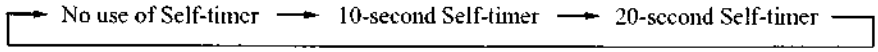
Switch to detect the aperture setting value.
At each press of the Aperture Button A, setting changes as "P" → "3.7" → "5.6" → "8" → "11" → "16"
Active at "L" .

8. Aperture Button B Switch

Switch to detect the aperture setting value.
At each press of the Aperture Button B, setting changes as "16" → "11" → "8" → "5.6" → "3.7" → "P"
Active at "L" .

9. Self-timer Button Switch

Sets self-timer operation at press of the Self-timer Button and starts self-timer at press of the Shutter Release Button.
At each press of the Self-timer Button, setting changes as follows :



Active at "L" .

10. Flash Button Switch

At each press of the Flash Button, flash firing mode changes :

→ Auto-flash mode → Red-eye reduction auto-flash mode → Flash off mode → Fill-in flash mode → Night-scene portrait mode →

When the Flash Mode Switch is kept ON for more than 2 seconds, the display blinks and the setting of firing mode home position changes.

Active at "L" .

11. DATE Button

At each press of the DATE Button, the date selection display changes :

→ None → M.D.Y → D.M.Y → Y.M.D → D.H.M →

Active at "L" .

12. SELECT Button Switch

At each press of the SELECT Button, the position at which date or time setting is to be changed is selected and the setting is completed by the final press. The number at the position selected for setting change blinks.

For M.D.Y : Month → Day → Year → Completion of setting
For D.M.Y : Day → Month → Year → Completion of setting
For Y.M.D : Year → Month → Day → Completion of setting
For D.H.M : Day → Hour →Minute → Completion of setting

13. SET Button

When the number at the position selected for change in date or time setting is blinking, the number increases by one at each press of the SET Button.

Active at "L" .

14. Mid-roll Film Rewind Button Switch

Irrespective of ON/OFF of the Main Switch, film rewinding is started at press of the Mid-roll Film Rewind Button.

Active at "L" .

<Internal Mechanism Switches>

15. Back Cover Switch

This switch to detect opening and closing of the Back Cover turns ON when the Back Cover is open. "L" : open "H" : closed

16. Shutter Home Switch

A switch incorporated in the Shutter Unit.

This switch judges whether the Stepping Motor which controls the shutter has stopped at the correct position. In the normal operation, the switch turns OFF (H) at the position where the motor has been reversed by four phases (at the home position).

17. Zoom Switch

This switch is incorporated under the Lens Barrel Unit.

Detects the zoom position by voltage.

18. Barrier Gear Contacts

This switch, coupled with the Barrier Gear, detects the angle of turning of the Barrier Gear to control the Front Barrier.

19. DX Switch

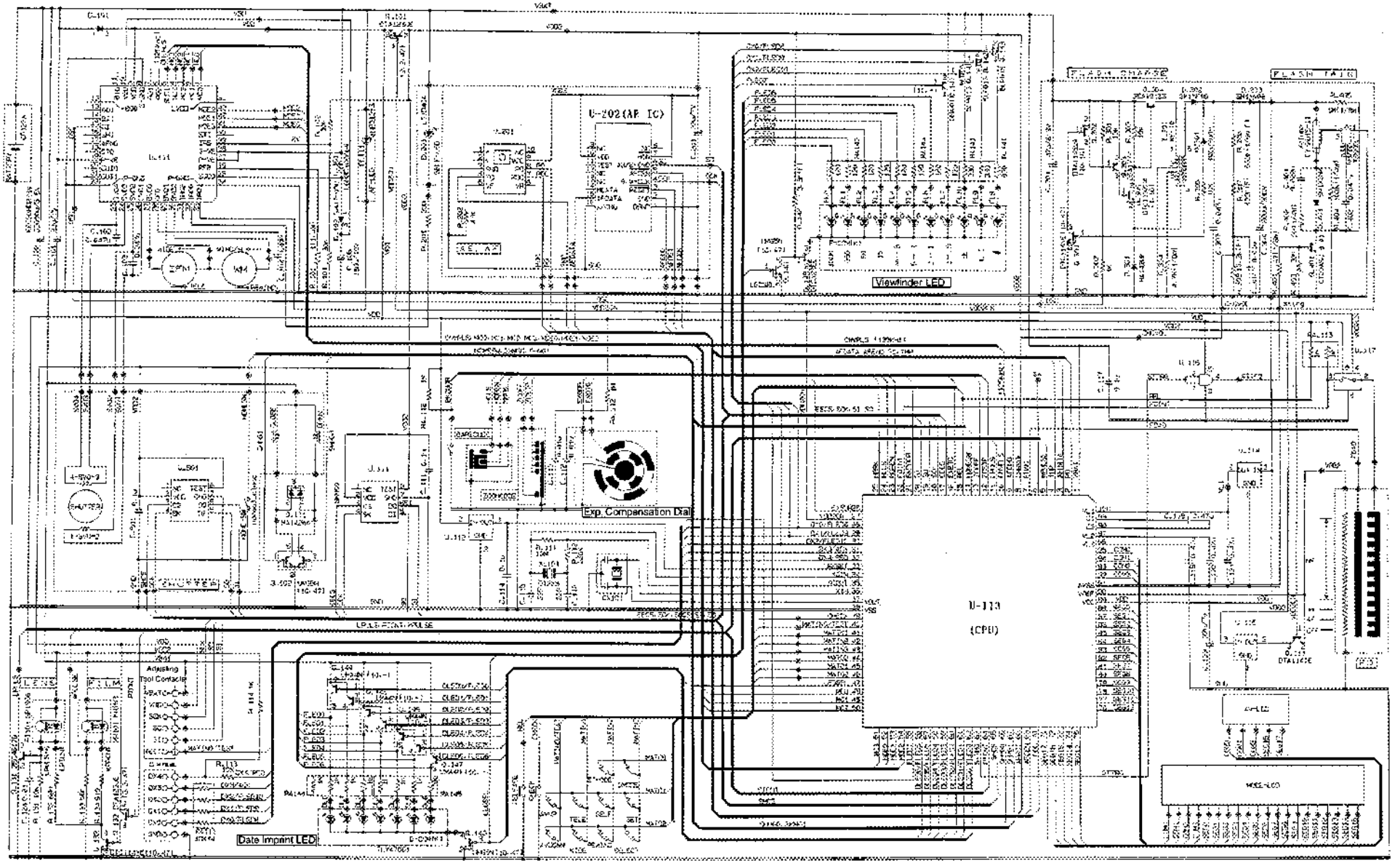
DX code reading terminal. 5 DX code signals.

Detects the DX code at the start of blank shots advance.

Setting range : ISO 25 ~ 5000 (1/3 step)

SCHEMATIC DIAGRAM

(Refer to Cirkit.pdf)



SCHEMATIC DIAGRAM

B. DISASSEMBLY & REASSEMBLY PROCEDURES

NOTES ON REPAIR

a) Never disassemble the Viewfinder Ass'y ; otherwise, auto foc using accuracy can be impaired.
b) Never disassemble the Lens Barrel Ass'y ; otherwise, the Lens drive accuracy can be impaired.

B-1. REMOVAL OF EXTERIOR PARTS

[Chart for Removal of Exterior Parts]

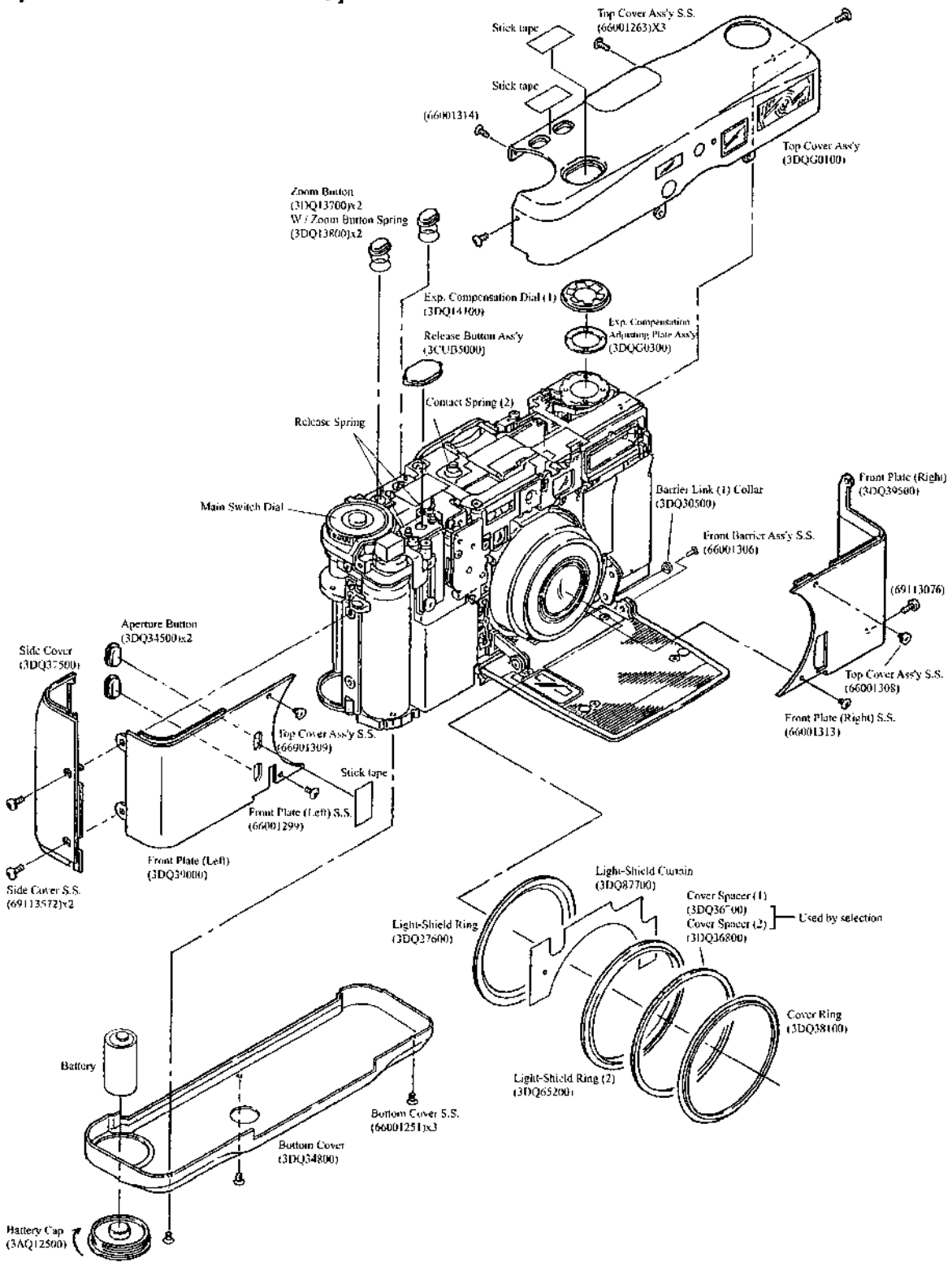


Fig.1

* This camera is produced in two models, namely, silver model and black model.
  The parts numbers referred to in this Repair Manual are those for the silver model.

B-1-1. Removal of Bottom Cover

(See **Fig. 1**)

1) Turn the Main Switch Dial as "⋐" → "AF" to open the Front Barrier.
2) Remove the Battery Cap (3AQ12500) by turning it in the direction of the arrow and take out the battery.
3) Remove the Bottom Cover Setscrews (66001251) x3 and take off the Bottom Cover (3DQ34800).

B-1-2. Removal of Top Cover Ass'y

(See **Fig. 1**)

1) Remove the Top Cover Ass'y Setscrews (66001309), (66001308), (66001314) and (66001263) x3 and take off the Top Cover Ass'y (3DQG0100).
2) Remove the Release Button Ass'y (3CUB5000), Zoom Button (3DQ13700) x2 W/ Zoom Button Springs (3DQ13800) x2.

* Before removing the Top Cover Ass'y, you are advised to fix the Release Button Ass'y and Zoom Button to the Top Cover Ass'y with stick tape. Then you can remove the Release Button Ass'y and Zoom Button W/ Zoom Button Spring together with the Top Cover Ass'y. Also you can easily reinstall the Top Cover Ass'y.

Note :

- When the Top Cover Ass'y has been removed, take care not to deform the Contact Spring (2) (3DQ21600) or the Release Spring.
- Take care not to leave your fingerprints on or flaw the window glasses of the Top Cover Ass'y, or the lenses of the viewfinder.

3) Remove the Exposure Compensation Dial (1) (3DQ14100) and Exp. Compensation Adjusting Plate Ass'y (3DQG0300).

B-1-3. Removal of Front Plates

(See **Fig. 1**)

1) Remove the Side Cover Setscrews (69113572) × 2 and take off the Side Cover (3DQ37500).
2) Remove the Front Plate (Left) Setscrew (66001299) and take off the Front Plate (Left) (3DQ39000) and Aperture Buttons (3DQ34500) × 2.

* Before removing the Front Plate (Left), you are advised to fix the Aperture Button to the Front Plate (Left) with stick tape. Then you can remove the Aperture Button together with the Front Plate (Left). Also you can easily reinstall the Front Plate (Left).

3) Remove the Front Barrier Ass'y Setscrew (66001306) and take off the Barrier Link (1) Collar (3DQ30500).
4) Remove the Front Plate (Right) Setscrews (66001313), (69113076) and take off the Front Plate (Right) (3DQ39500).
5) Remove the Cover Ring (3DQ38100), and Cover Spacer(1) (3DQ36700) or Cover Spacer (2) (3DQ36800), and Light-Shield Ring (2) (3DQ65200).

Note :

- The Cover Spacer(s) (1) or Cover Spacer (2) is used by selection depending on the thickness of the B.F. Adjustment Washer. (See the table on page B-6)

6) Peel off the Light-Shield Curtain (3DQ87700) and take off the Light-Shield Ring (3DQ27600).

Note :

- Once the Light-Shield Curtain is peeled off, it will be deformed. Never reuse the Light-Shield Curtain peeled off once.

[Chart for Removal of Front Barrier Ass'y and Back Cover Ass'y]

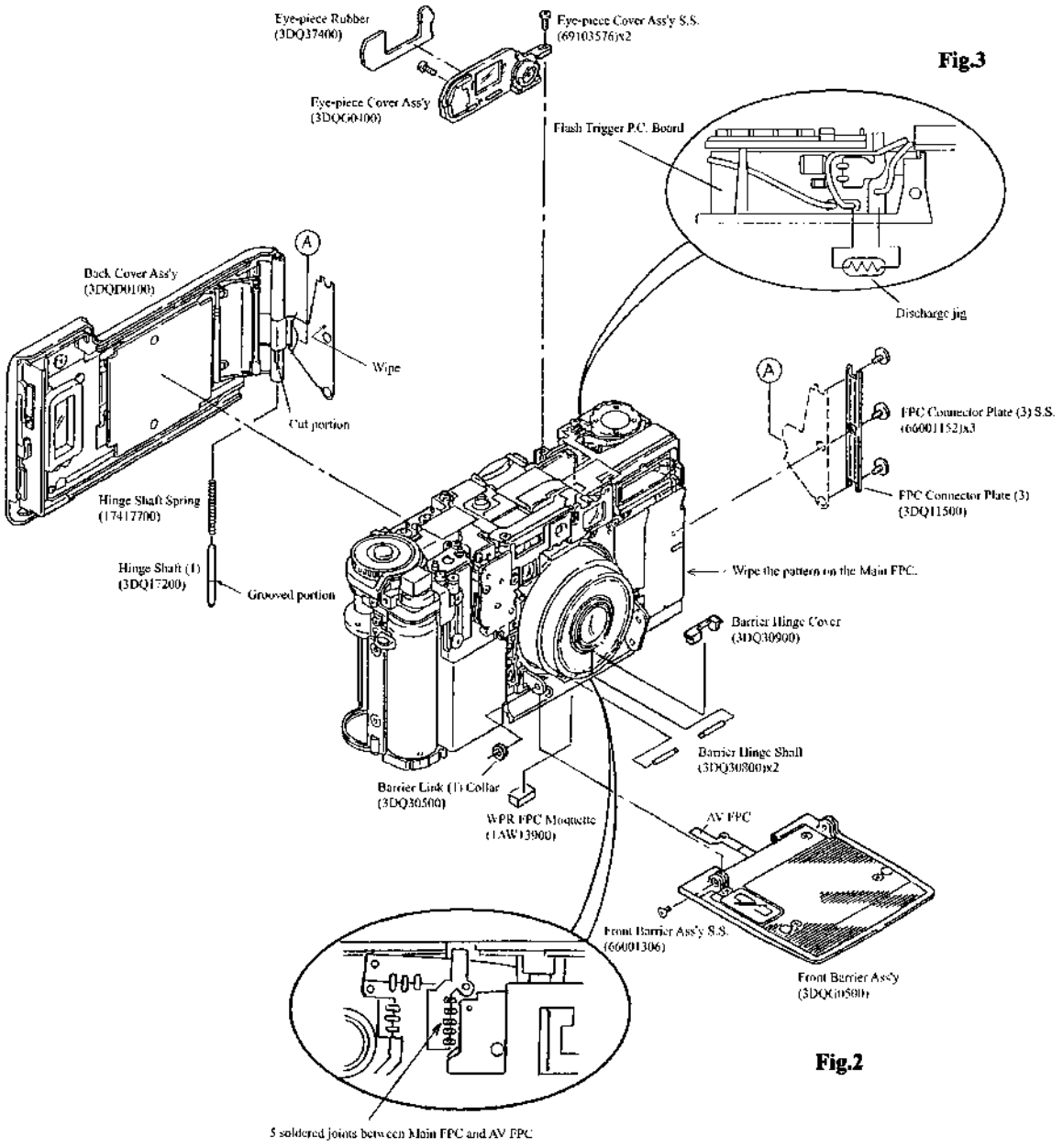


Fig.3

Fig.2

B-1-4. Removal of Front Barrier Ass'y

(See **Fig. 2**)

1) Peel off the WPR FPC Moquette (1AW13900).
2) Unsolder the 5 soldered joints between the Main FPC and the AV FPC.
3) Remove the Barrier Hinge Cover (3DQ30900).

Note :

- The Barrier Hinge Cover removed once is deformed and , if used again, can be come off at receiving an impact. Never reuse the Barrier Hinge Cover removed once.

4) Remove the Front Barrier Ass'y Setscrew (66001306) and take off the Barrier Link (1) Collar (3DQ30500).
5) Remove the Barrier Hinge Shafts (3DQ30800) × 2 and take off the Front Barrier Ass'y (3DQG0500).

B-1-5. Removal of Back Cover Ass'y

(See **Fig. 2**)

1) Remove the FPC Connector Plate (3) Setscrews (66001152) × 3 and take off the FPC Connector Plate (3) (3DQ11500).
2) Open the Back Cover Ass'y. Insert tweezers through the cut portion of the Back Cover, hold the grooved portion of the Hinge Shaft (1) (3DQ17200) with the tweezers and lift it until the end of the Hinge Shaft (1) comes off the hole in the hinge plate. Then remove the Back Cover Ass'y (3DQD0100).
3) Remove the Hinge Shaft (1) (3DQ17200) and Hinge Shaft Spring (17417700).

B-1-6. Removal of Eye-piece Cover Ass'y

(See **Fig. 2**)

1) Peel off the Eye-piece Rubber (3DQ37400).

Note :

- Once the Eye-piece Rubber has been peeled off, the adhesive strength of the Eye-piece Rubber weakens or the stick tape is torn. Never reuse the Eye-piece Rubber peeled off once.

2) Remove the Eye-piece Cover Ass'y Setscrews (69103576) × 2 and take off the Eye-piece Cover Ass'y (3DQG0400).

Note :

- When the Eye-piece Cover Ass'y has been removed, take care not to leave your fingerprints on or flaw the Eye-piece Lens.

[WARNING]

a) The Main Capacitor in the Flash Circuit is kept at a high voltage even after removal of the Top Cover Ass'y. Before starting your work, be sure to discharge the Main Capacitor by connecting the discharge jig to the pattern on the Flash Trigger P.C. Board as shown in **Fig. 3**.

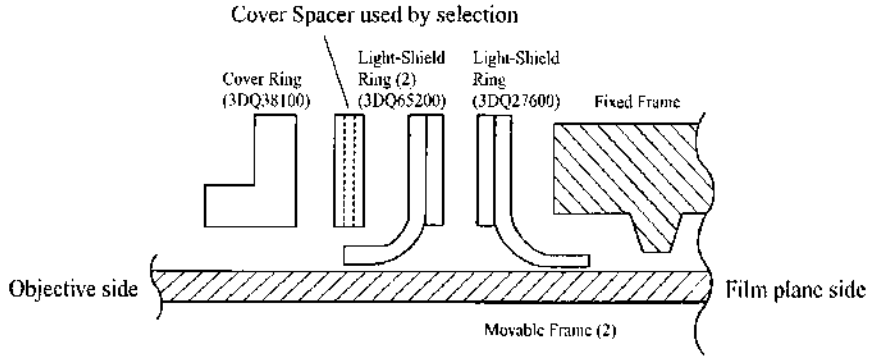
[Note on Installation of Back Cover Ass'y]

a) Before installing the Back Cover Ass'y, wipe the connecting patterns on the Back Cover FPC and Main FPC with lens cleaning paper with ether alcohol. (See **Fig. 2**)

[Note on Cover Spacer Selection for Installation]

a) To ensure light shielding, select and use the Cover Spacer (1) or Cover Spacer (2) depending on the thickness of the B.F. Adjusting Washer for the Lens Barrel Ass'y. (See the table on page B-6)

Thickness of B.F. Adjusting Washer	Value of Lens Barrel Unit	Cover Spacer (1) (3DQ36700) t : 0.1	Cover Spacer (2) (3DQ36800) t : 0.3
0	0 ~ 4	2 pcs.	1 pc.
0.1 mm	5 ~ 1 4	1 pc.	1 pc.
0.2 mm	1 5 ~ 2 4	------	1 pc.
0.3 mm	2 5 ~ 3 4	2 pcs.	------
0.4 mm	3 5 ~ 4 4	1 pc.	------
0.5 mm	4 5 ~ 6 0	------	------



(Sectional View of Lens Barrel Ass'y)

Fig.4

[Installation Procedure for Barrier Hinge Cover]

1) Push the Barrier Hinge Shafts (3DQ30800) × 2 up to the right and left ends, respectively.
2) Install the left end of the Barrier Hinge Cover (3DQ30900) and push the Barrier Hinge Cover to the left.
3) Slowly press in the right end of the Barrier Hinge Cover.
4) Push the Barrier Hinge Cover to the right (in the direction of →) until the right Barrier Hinge Shaft is fit in the concave portion of the Barrier Hinge Cover. Then make certain that the Barrier Hinge Cover can move by the thrust play.

(Front View of Mount Base)

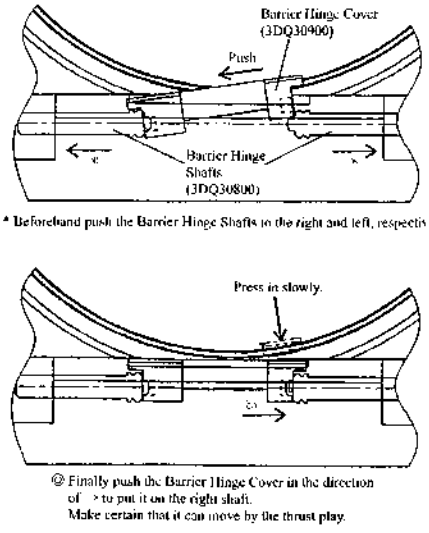


Fig.5

B-2. REMOVAL OF MAIN FPC ASS'y

[Chart for Removal of Main FPC Ass'y]

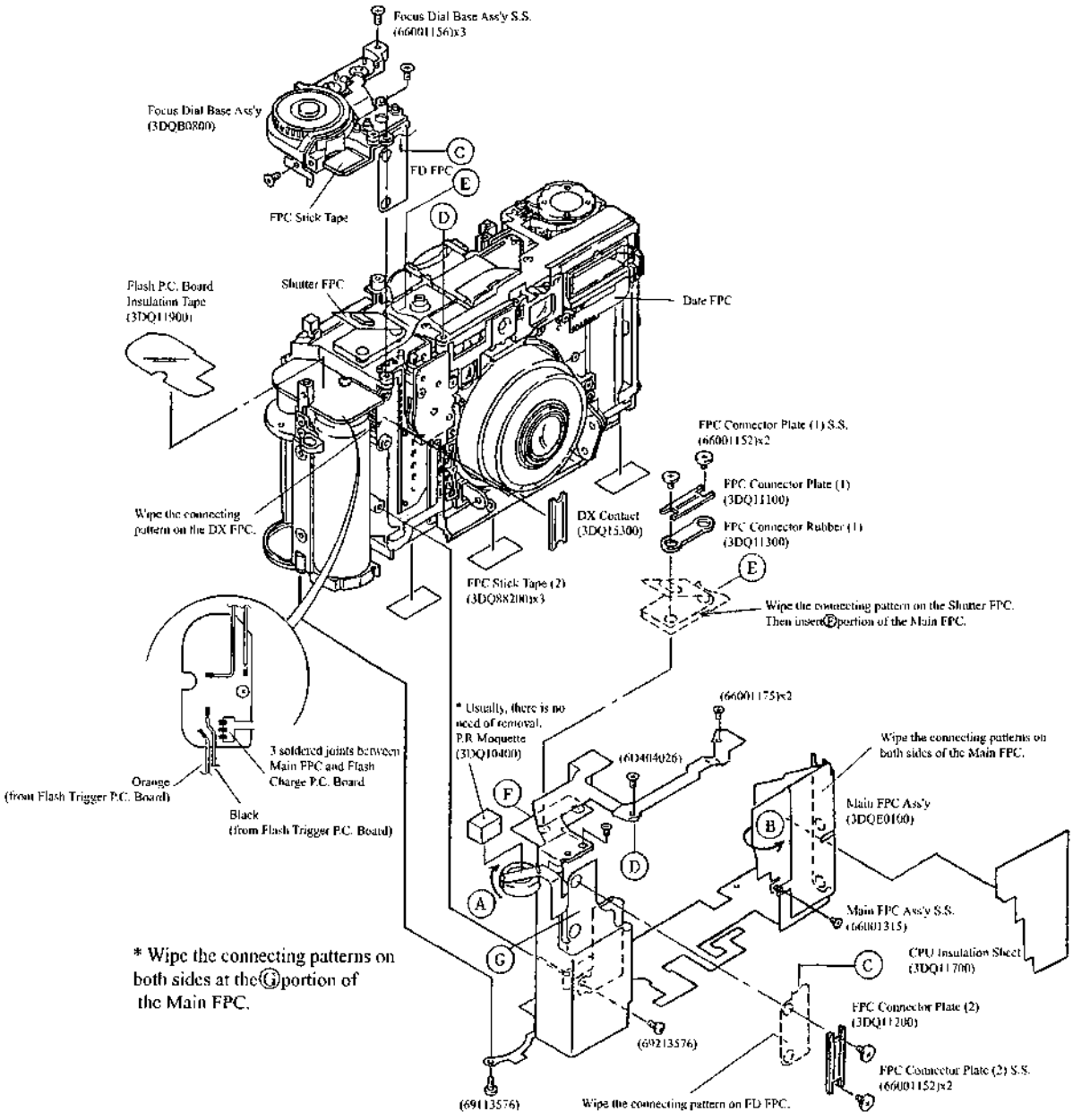


Fig.6

B-2-1. Removal of Focus Dial Base Ass'y

(See **Fig. 6**)

1) Remove the FPC Connector Plate (2) Setscrews (66001152) × 2 and take off the FPC Connector Plate (2) (3DQ11200).
2) Raise the A portion of the Main FPC.

Note :

- The A portion of the Main FPC is fixed to the Focus Dial Base with the FPC Stick Tape.

3) Remove the Focus Dial Base Ass'y Setscrews (66001156) × 3 and take off the Focus Dial Base Ass'y (3DQB0800).
4) Peel off the Flash P.C. Board Insulation Tape (3DQ11900).

B-2-2. Removal of Main FPC Ass'y

(See **Figs. 6 and 7**) (Top of Body)

1) Unsolder the Red and Green lead wires (from AF LED).
2) Unsolder the 3 soldered joints between the Lens P.I. FPC and the Main FPC.
3) Unsolder the Orange and Black lead wires (from Flash Trigger P.C. Board) on the Flash Charge P.C. Board.
4) Unsolder the 3 soldered joints between the Flash Charge P.C. Board and the Main FPC.
5) Unsolder the Sky-blue and Yellow lead wires (from Winding Motor).
6) Unsolder the 2 soldered joints between the Self-timer LED FPC and the Main FPC.

(Rear of Body)

7) Unsolder the 2 soldered joints between the AF Motor and the Main FPC.

(Bottom of Body)

8) Unsolder the 3 soldered joints between the Zoom Relay Board and the Main FPC.
9) Unsolder the 3 soldered joints between the WPR FPC and the Main FPC.
10) Unsolder the 4 soldered joints between the Barrier Code FPC and the Main FPC.
11) Main FPC Ass'y Setscrew (66001315).
12) Raise the Main FPC in the direction of the arrow B and peel off the CPU Insulation Tape (3DQ11700).
13) Unsolder the 8 soldered joints between the Date FPC and the Main FPC.
14) Remove the Main FPC Ass'y Setscrews (6D404026), (66001175) × 2.
15) Remove the FPC Connector Plate (1) Setscrews (66001152) × 2 and take off the FPC Connector Plate (1) and FPC Connector Rubber (1) (3DQ11300).
16) Remove the Main FPC Ass'y Setscrews (69113576), (69213576) and take off the Main FPC Ass'y (3DQE0100) and DX contact (3DQ15300).

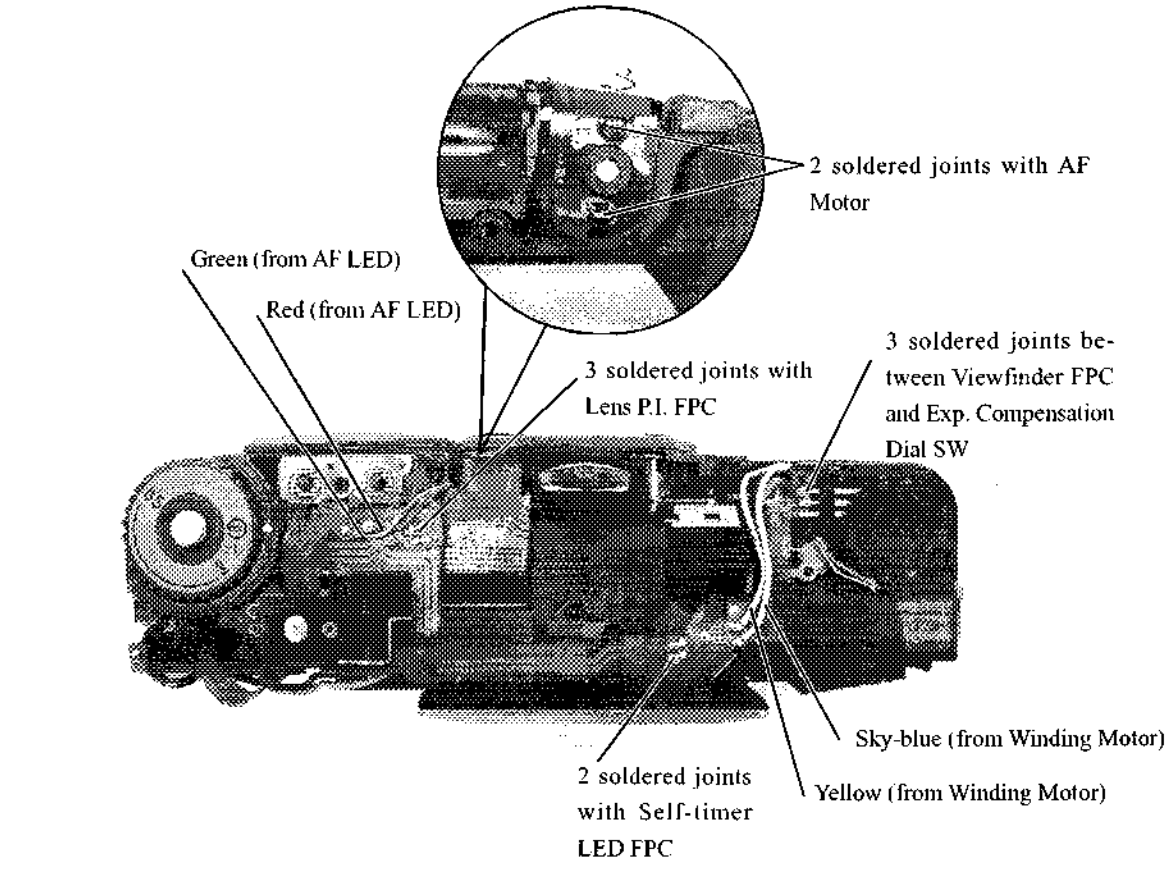
Note :

- The Main FPC Ass'y is fixed to the Winding Base Plate with the FPC Stick Tape (2) (3DQ88200) × 3 at the bottom of Body.

[Notes on Installation of Main FPC Ass'y]

a) Do not touch with your bare hand any connecting pattern of the Main FPC Ass'y, FD FPC, Shutter FPC, Viewfinder FPC or DX FPC.
b) Wipe the connecting pattern on each FPC with lens cleaning paper with ether alcohol. (See **Fig. 6**)
c) When installing the Main FPC Ass'y, take care not to mistake the connecting order of the connecting patterns of the FPCs.
d) When installing the FPC Connector Plate (1) (3DQ11100) and FPC Connector Plate (2) (3DQ11200), position the convex side of their connector on the FPC side.

[Chart for Unsoldering of Soldered Joints and Lead Wires on Main FPC Ass'y]



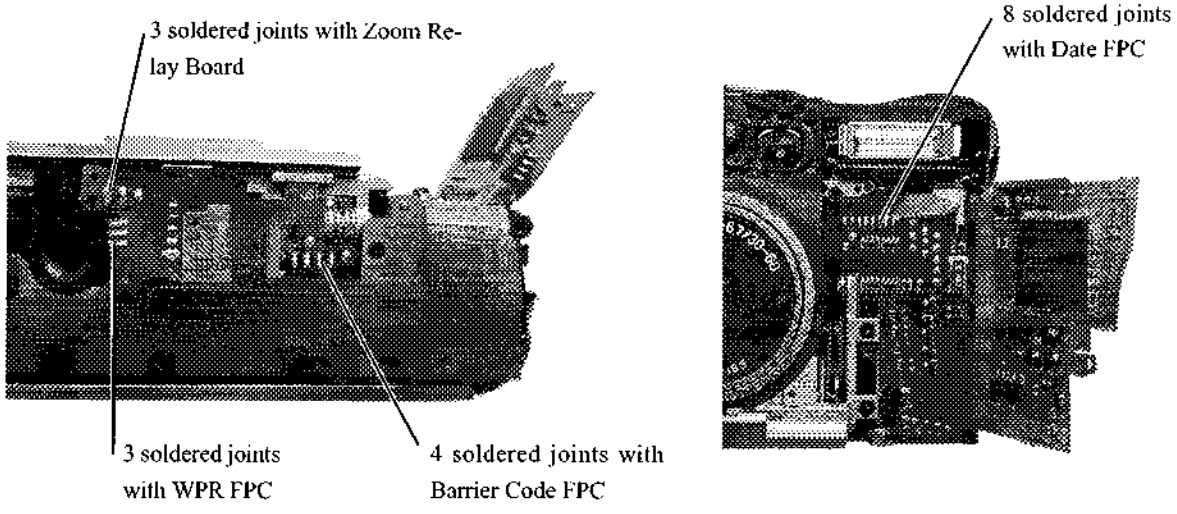


Fig.7

B-3. REMOVAL OF VIEWFINDER BASE ASS'y

[Chart for Removal of Viewfinder Base Ass'y]

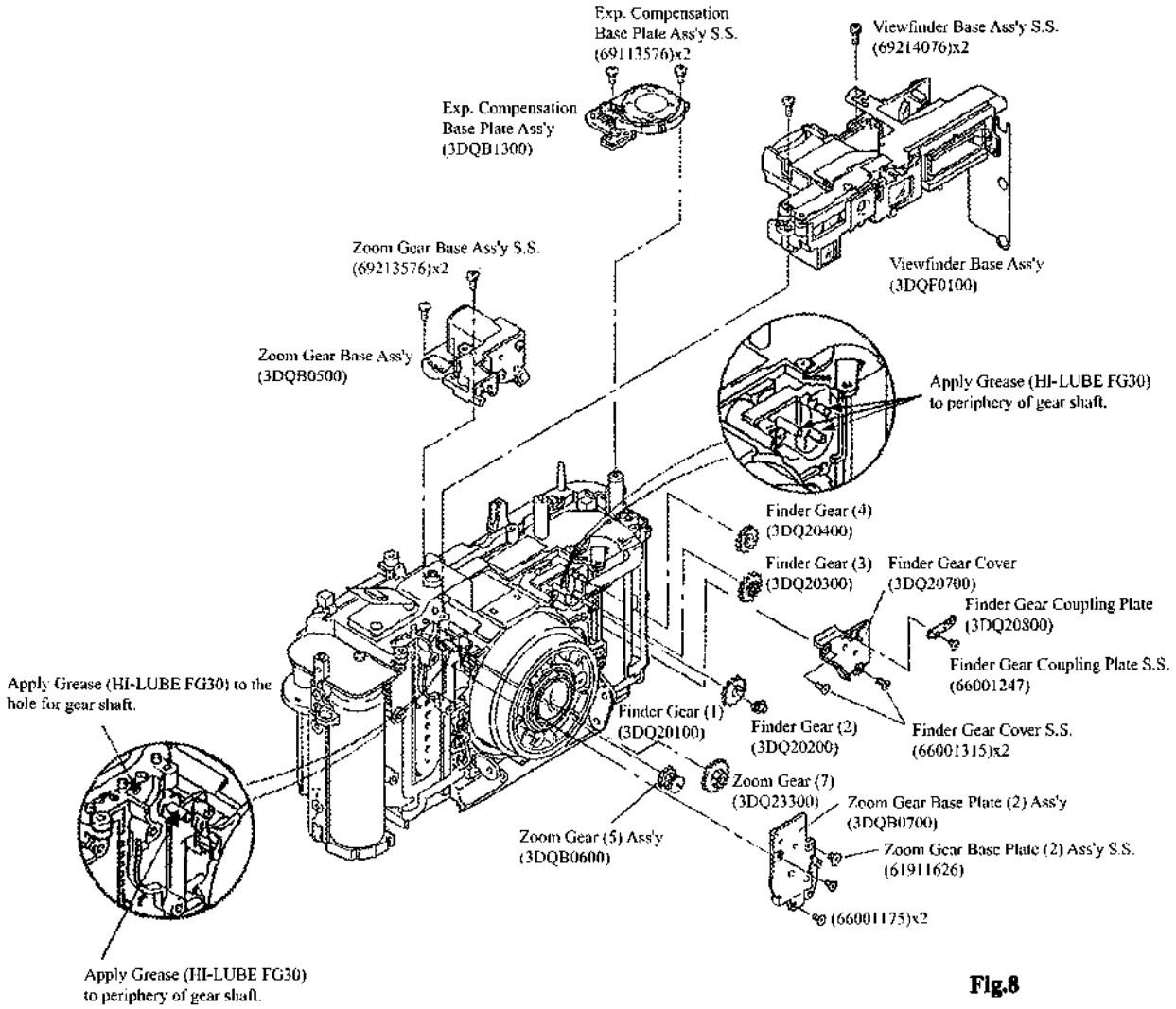


Fig.8

B-3-1. Removal of Finder Gears

(See **Fig. 8**)

1) Remove the Finder Gear Coupling Plate Setscrew (66001247) and take off the Finder Gear Coupling Plate (3DQ20800).
2) Remove the Finder Gear Cover Setscrews (66001315) × 2 and take off the Finder Gear Cover (3DQ20700).
3) Remove the Finder Gear (4) (3DQ20400), Finder Gear (3) (3DQ20300), Finder Gear (2) (3DQ20200) and Finder Gear (1) (3DQ20100).

B-3-2. Removal of Zoom Gear Base Ass'y

(See **Fig. 8**)

1) Remove the Zoom Gear Base Plate (2) Ass'y Setscrews (61911626), (66001175) × 2 and take off the Zoom Gear Base Plate (2) Ass'y (3DQB0700).
2) Remove the Zoom Gear (7) (3DQ23300) and Zoom Gear (5) Ass'y (3DQB0600).
3) Remove the Zoom Gear Base Ass'y Setscrews (69213576) × 2 and take off the Zoom Gear Base Ass'y (3DQB0500).

B-3-3. Removal of Viewfinder Base Ass'y

(See **Fig. 8**)

1) Unsolder the 3 soldered joints between the Viewfinder FPC and the Exposure Compensation Dial Switch. (See **Fig. 7**)
2) Remove the Exp. Compensation Base Plate Ass'y Setscrews (69113576) × 2 and take off the Exp. Compensation Base Plate Ass'y (3DQB1300).
3) Unsolder the Orange and Black lead wires (from Flash Charge P.C. Board) on the Flash Trigger P.C. Board. (See **Fig. 6**)
4) Remove the Viewfinder Base Ass'y Setscrews (69214076) × 2 and take off the Viewfinder Base Ass'y (3DQF0100).

Note :

- Usually, there is no need to unsolder the soldered joints with the Viewfinder FPC on the Flash Trigger P.C. Board.

[Notes on Soldering of Orange and Black Lead Wires]

a) Usually, there is no need to unsolder the Orange and Black lead wires on the Flash Trigger P.C. Board of the Viewfinder Base Ass'y.
b) When the Viewfinder Base Ass'y has been replaced with a new one, dress the Orange and Black lead wires under the Viewfinder FPC and fix them with the bond (Cemedine 551). (See **Fig. 9**)
c) Since the soldering space on the Flash Trigger P.C. Board is small, the soldered joint of the Orange lead wire may come in contact with a terminal of the Trigger Coil and throw sparks, depending on the soldering direction of the Orange lead wire. To avoid such a trouble, pay attention to the soldering direction by referring to **Fig. 9**.

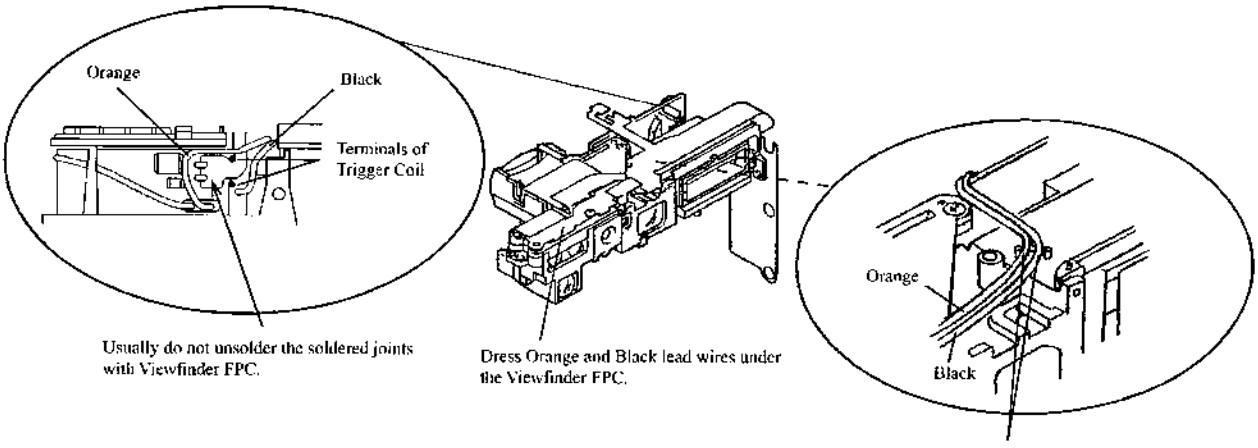


Fig.9

[Installation Procedure for Viewfinder Base Ass'y]

Notes :

- In installing the Finder Gears, their phase positions must be adjusted.
- Apply Grease (HI-LUBE FG30) to the periphery of the gear shafts of the Fixed Frame.
- Before installation work, make certain that the Lens of the Lens Barrel Ass'y has been retracted completely.

1) Make certain that the Epicyclic Switch Shaft Ass'y (3DQB0300) and Epicyclic Switch Plate (A) (3DQ63200) are positioned in the direction of the arrowⒶ.
2) Move the Cam Plate of the Viewfinder Base Ass'y (3DQF0100) in the direction of the arrowⒷ(Tele side).
3) Install the Viewfinder Base Ass'y and tighten the Viewfinder Base Ass'y Setscrews (69214076) × 2.
4) Install the Finder Gear (1) (3DQ20100) so that its rib is positioned as shown in **Fig. 10**.
5) Install the Finder Gear (2) (3DQ20200) and turn it counterclockwise until it is stopped.
6) Install the Finder Gear (3) (3DQ20300) with its mark down.

Note :

- When installing the Finder Gear (3), take care that the Finder Gear (2) does not move.

7) Move the Cam Plate of the Viewfinder Base Ass'y in the direction of the arrowⒸ(Wide side) until it is stopped.
8) Install the Finder Gear (4) (3DQ20400).

Note :

- Take care not to confuse the front and back of the Finder Gear (4).

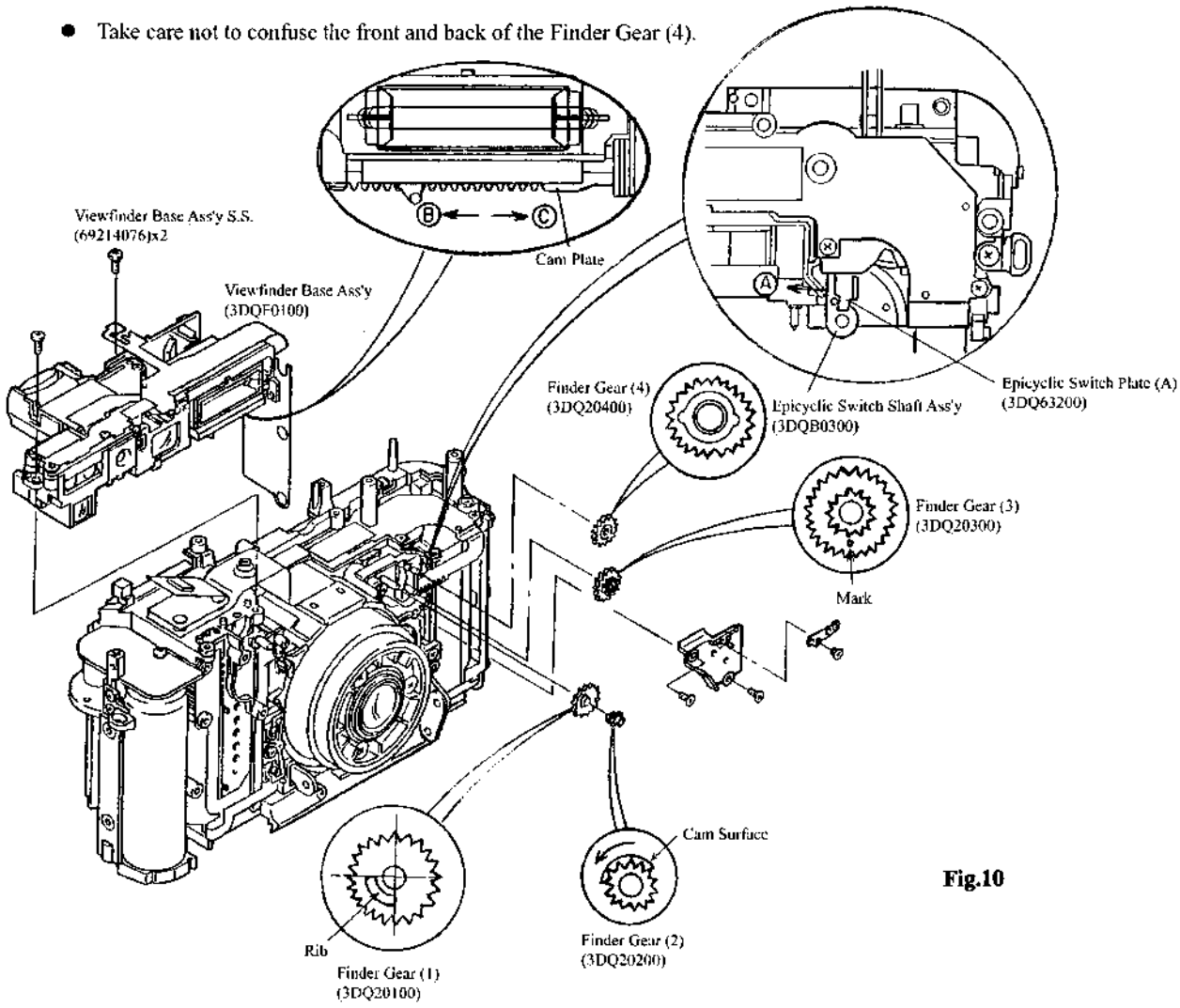


Fig.10

B-4. REMOVAL OF LENS BARREL ASS'y

[Chart for Removal of Lens Barrel Ass'y]

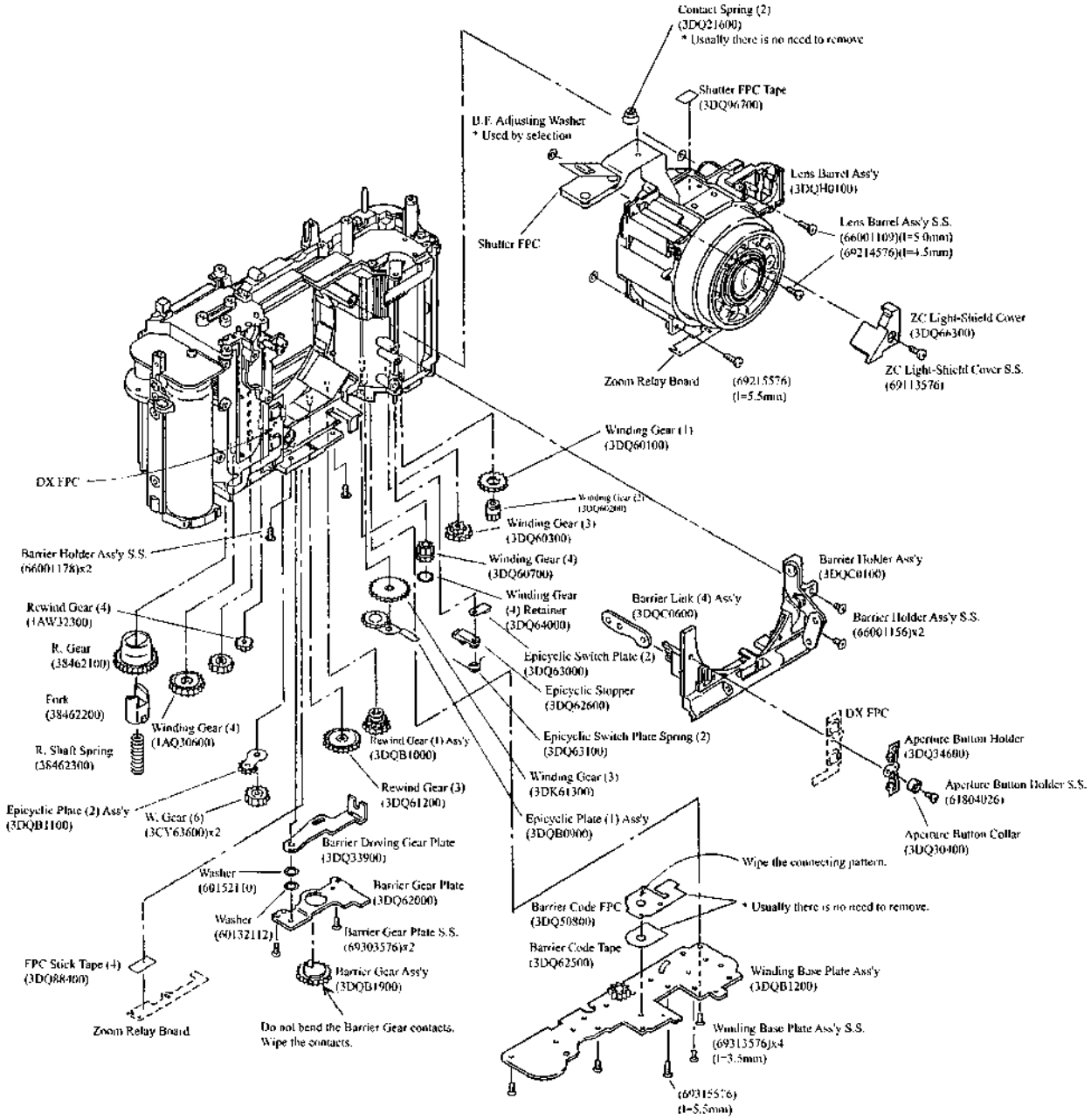


Fig.11

B-4-1. Removal of Barrier Holder Ass'y

(See **Fig. 11**)

1) Remove the Aperture Button Holder Setscrew (61804026) and take off the Aperture Button Collar (3DQ30400) and Aperture Button Holder (3DQ34600).
2) Remove the Winding Base Plate Ass'y Setscrews (69315576), (69313576) × 4 and take off the Winding Base Plate Ass'y (3DQB1200).
3) Remove the Winding Gear (4) Retainer (3DQ64000).
4) Remove the Barrier Gear Ass'y (3DQB1900).

Note :

- Take care not to bend the Barrier Gear contacts mounted on the Barrier Gear Ass'y.

5) Remove the Epicyclic Switch Plate Spring (2) (3DQ63100), Epicyclic Stopper (3DQ62600) and Epicyclic Switch Plate (2) (3DQ63000).
6) Remove the R. Shaft Spring (38462300), Fork (38462200) and R. Gear (38462100).
7) Remove the Winding Gear (4) (1AQ30600), Rewind Gear (4) (1AW32300), W. Gears (6) (3CY63600) × 2 and Epicyclic Plate (2) Ass'y (3DQB1100).
8) Remove the Rewind Gear (3) (3DQ61200), Epicyclic Plate (1) Ass'y (3DQB0900), Winding Gear (3) (3DK61300) and Rewind Gear (1) Ass'y (3DQB1000).
9) Remove the Winding Gear (4) (3DQ60700), Winding Gear (3) (3DQ60300), Winding Gear (2) (3DQ60200) and Winding Gear (1) (3DQ60100).
10) Remove the Barrier Gear Plate Setscrews (69303576) × 2 and take off the Barrier Gear Plate (3DQ62000), Washers (60152110), (60132112) and Barrier Driving Gear Plate (3DQ33900).
11) Peel off the Zoom Relay Board.

Note :

- The Zoom Relay Board is fixed to the Body with FPC Stick Tape (3DQ88400).

12) Remove the Barrier Holder Ass'y Setscrews (66001178) × 2, (66001156) × 2 and take off the Barrier Holder Ass'y (3DQC0100) and Barrier Link (4) Ass'y (3DQC0600).

B-4-2. Removal of Lens Barrel Ass'y

(See **Fig. 11**)

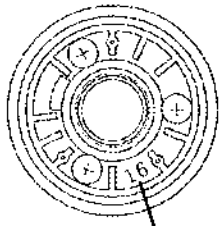
1) Remove the ZC Light-Shield Cover Setscrew (69113576) and take off the ZC Light-Shield Cover (3DQ66300).
2) Remove the Lens Barrel Ass'y Setscrews (69215576), (69214576), (66001109) and take off the Lens Barrel Ass'y (3DQH0100).

Value	Thickness (t)	F.B. Adjustment Washer Parts Number
0 ~ 4	0	------
5 ~ 14	0.1 mm	60111810
15 ~ 24	0.2 mm	60121812
25 ~ 34	0.3 mm	60131810
35 ~ 44	0.4 mm	60141810
45 ~ 60	0.5 mm	60151810

Notes :

- In the course of production, the shapes of Body and the Fixed Frame incorporated in the Lens Barrel Ass'y will be changed to improve operation efficiency and to ensure light shielding. The Lens Barrel Ass'y has been produced in two types, namely, the old type and the new type. Remember that there is no interchangeability between them. For details, see PARTS MODIFICATION LIST.
- Never disassemble the Lens Barrel Ass'y.
- Take care not to lose any of the three F.B. Adjustment Washers which are mounted between the Lens Barrel Ass'y and the Body.
- When the Lens Barrel Ass'y has been replaced with a new one, fix the Shutter FPC to the Fixed Frame with the Shutter FPC Tape (3DQ96700). Then replace the F.B. Adjustment Washers with appropriate ones according to the value written on the front of the Lens Barrel Ass'y. (See table above)

Front View of Lens Barrel Ass'y



Value for Washer is written here.

[Notes on Installation of Winding Gears]

a) Adjustment of gear phase positions is not required.

b) Apply Grease (HI-LUBE FG30) to the periphery of the gear shafts of the Body and to the specified positions. (See **Fig. 13**)

c) Take care not to confuse the top and bottom of each gear. (See **Fig. 14**)

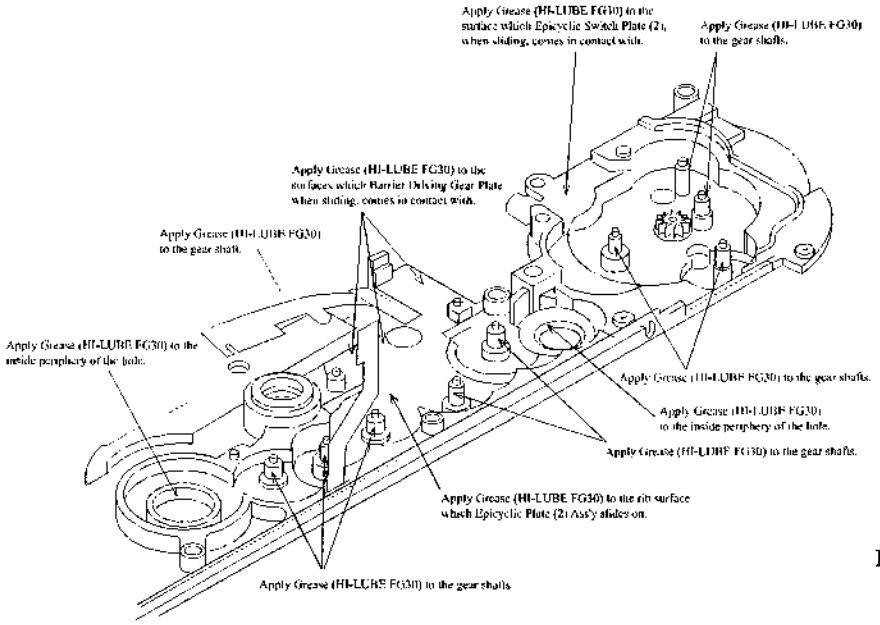


Fig.13

(Chart for Installation of Gears)

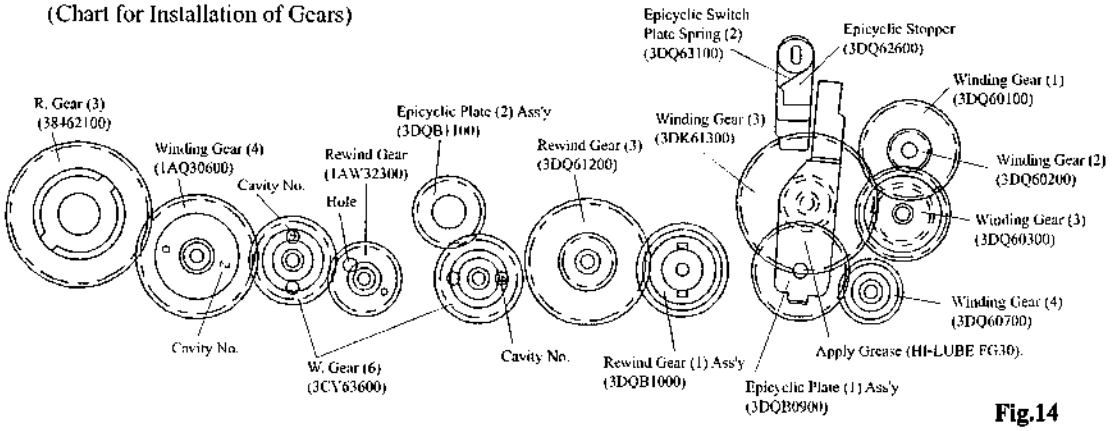


Fig.14

(Chart for Greasing Points)

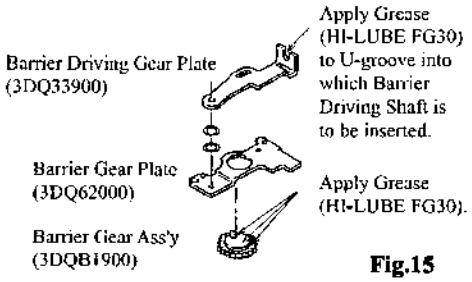


Fig.15

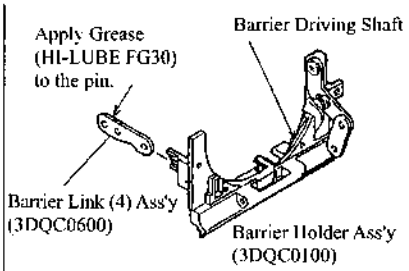


Fig.16

B-5. REMOVAL OF OTHER PARTS

[Chart for Removal of Other Parts]

Usually there is no need to remove the parts marked with *.

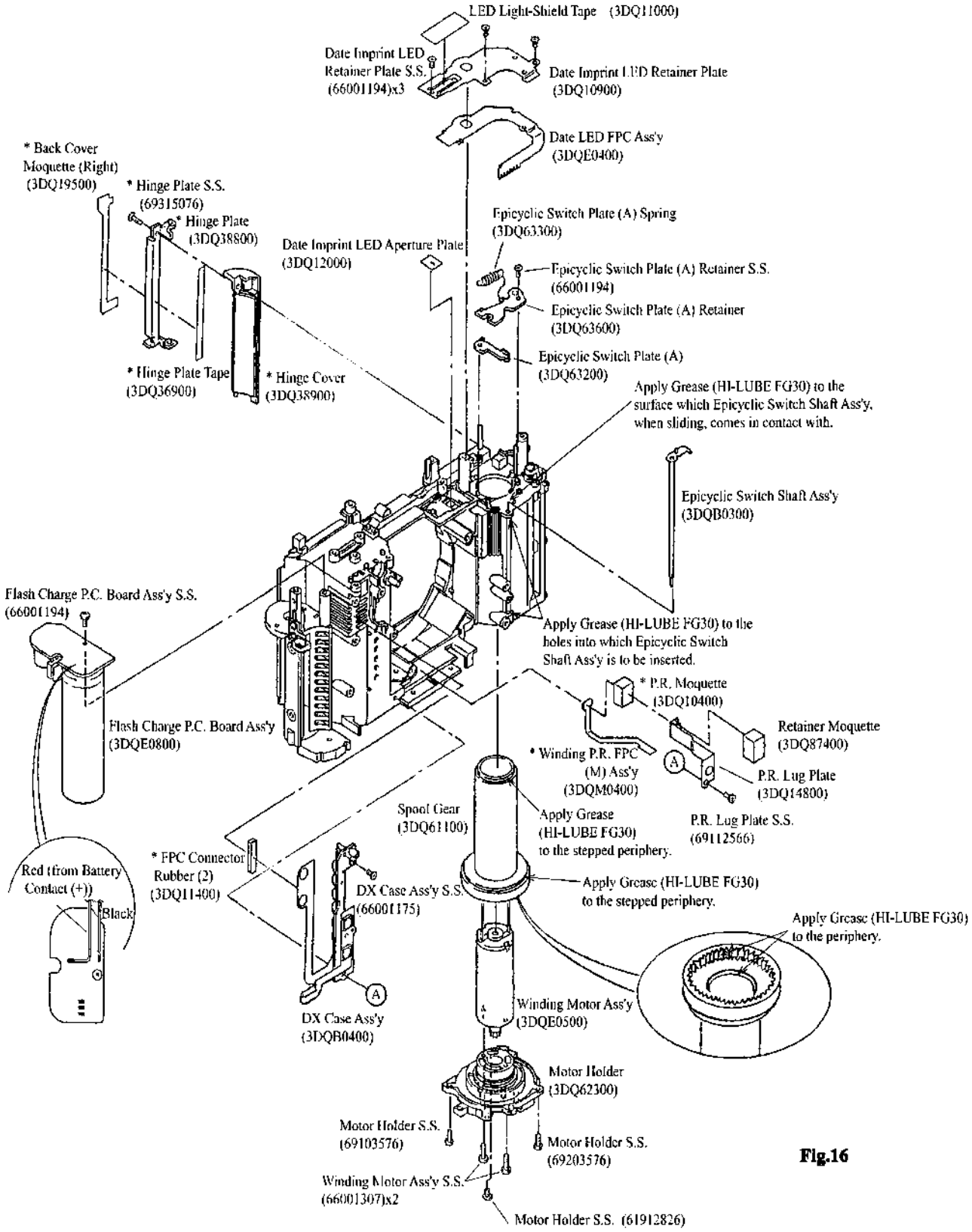


Fig.16

B-5-1. Removal of Flash Charge P.C. Board Ass'y

(See **Fig. 17**)

1) Unsolder the Red lead wire (from Battery Contact (+)) on the Flash Charge P.C. Board Ass'y.
2) Remove the Flash Charge P.C. Board Ass'y Setscrew (66001194) and take off the Flash Charge P.C. Board Ass'y (3DQE0800).

B-5-2. Removal of Date LED FPC Ass'y

(See **Fig. 17**)

1) Peel off the LED Light-Shield Tape (3DQ11000).
2) Remove the Date Imprint LED Retainer Plate Setscrews (66001194) × 3 and take off the Date Imprint LED Retainer Plate (3DQ10900) and Date LED FPC Ass'y (3DQE0400).
3) Remove the Date Imprint LED Aperture Plate (3DQ12000).

Note :

- Take care not to confuse the mounting orientation of the Date Imprint LED Aperture Plate.

B-5-3. Removal of Epicyclic Switch Shaft Ass'y

(See **Fig. 17**)

1) Remove the Epicyclic Switch Plate (A) Retainer Setscrew (66001194) and take off the Epicyclic Switch Plate (A) Retainer (3DQ63600) and Epicyclic Switch Plate (A) Spring (3DQ63300).
2) Remove the Epicyclic Switch Plate (A) (3DQ63200).
3) Remove the Epicyclic Switch Shaft Ass'y (3DQB0300).

B-5-4. Removal of Spool Gear

(See **Fig. 17**)

1) Remove the Motor Holder Setscrews (69103576), (61912826), (69203576) and take off the Motor Holder W/ Winding Motor.
2) Remove the Spool Gear (3BP61100).
3) Remove the Winding Motor Ass'y Setscrews (66001307) × 2 and remove the Winding Motor Ass'y (3DQE0500) from the Motor Holder (3DQ62300).

B-5-5. Removal of DX Case Ass'y

(See **Fig. 17**)

1) Peel off the Retainer Moquette (3DQ87400).
2) Remove the P.R. Lug Plate Setscrew (69112566) and take off the P.R. Lug Plate (3DQ14800).
3) Peel off the P.R. Moquette (3DQ10400) and remove the Winding P.R. FPC (M) Ass'y (3DQM0400).
4) Remove the DX Case Ass'y Setscrew (66001175) and take off the DX Case Ass'y (3DQB0400).

B-5-6. Removal of Hinge Cover

(See **Fig. 17**)

1) Peel off the Back Cover Moquette (Right) (3DQ19500).
2) Remove the Hinge Plate Setscrews (69315076) × 2 and take off the Hinge Plate (3DQ38800) and Hinge Cover (3DQ38900).

Notes :

- In the course of production, the Hinge Plate (3DQ38800) and Back Cover Moquette (Right) (3DQ19500) were modified to improve operation efficiency and to ensure light shielding. Subsequently, the Body was also modified. Remember that there is no interchangeability between the old type and the new type. For details, see PARTS MODIFICATION LIST.
- Do not remove unnecessarily the Hinge Plate or Hinge Cover from the old type Body. Removal of the Hinge Plate and/or Hinge Cover from the old type Body can result in light leakage.

[Note on Installation of Spool Gear]

(See **Fig. 18**)

a) When installing the Spool Gear (3BP61100), take care not to catch the Film Guide Sheet (3DQ15400).

[Dressing of Lead Wires of Winding Motor Ass'y]

(See **Fig. 19**)

1) Apply the bond (Cemedine 551) between the pins of the Body and fix the Sky-blue and Yellow lead wires.
2) Dress the Sky-blue and Yellow lead wires in the cut portion of the Body.

[Hooking of Epicyclic Switch Plate (A) Spring]

(See **Fig. 19**)

1) Hook one end of the Epicyclic Switch Plate (A) Spring (3DQ63300) on the hook of the Epicyclic Switch Plate (A) Retainer (3DQ63600).
2) Hook the other end of the Epicyclic Switch Plate (A) Spring on the hook of the Epicyclic Switch Plate (A) (3DQ63200).
3) Move the Epicyclic Switch Shaft Ass'y (3DQB0300) in the direction of the arrow Ⓐ and check that the Epicyclic Switch Shaft Ass'y and Epicyclic Switch Plate (A) return smoothly.

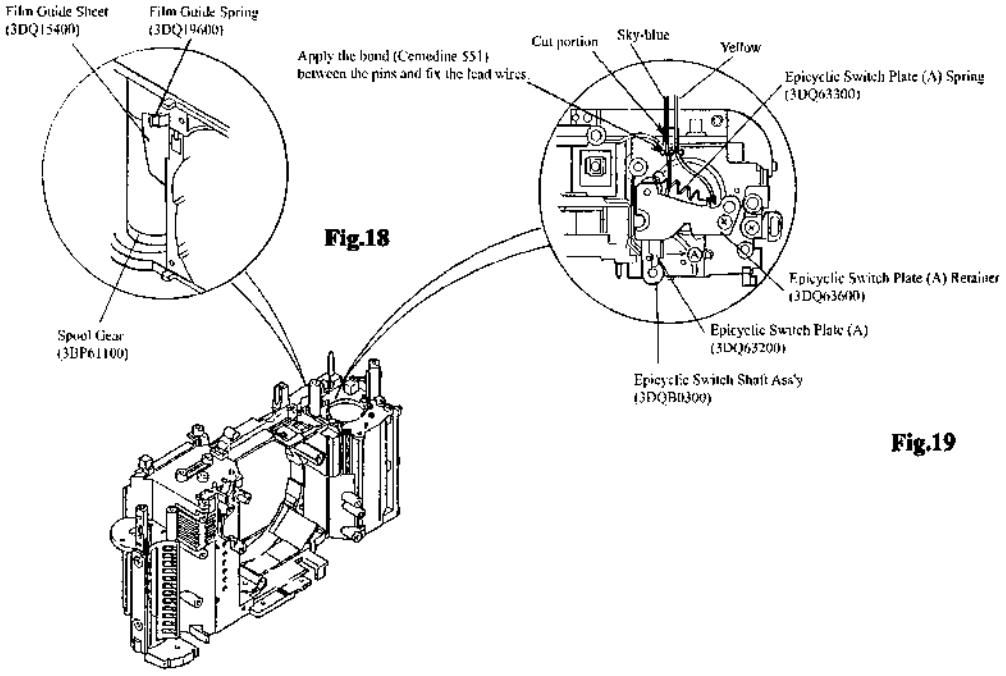


Fig.18

Fig.19

B-5-7. Removal of Other Parts

* Usually there is no need to remove any of the parts shown below.

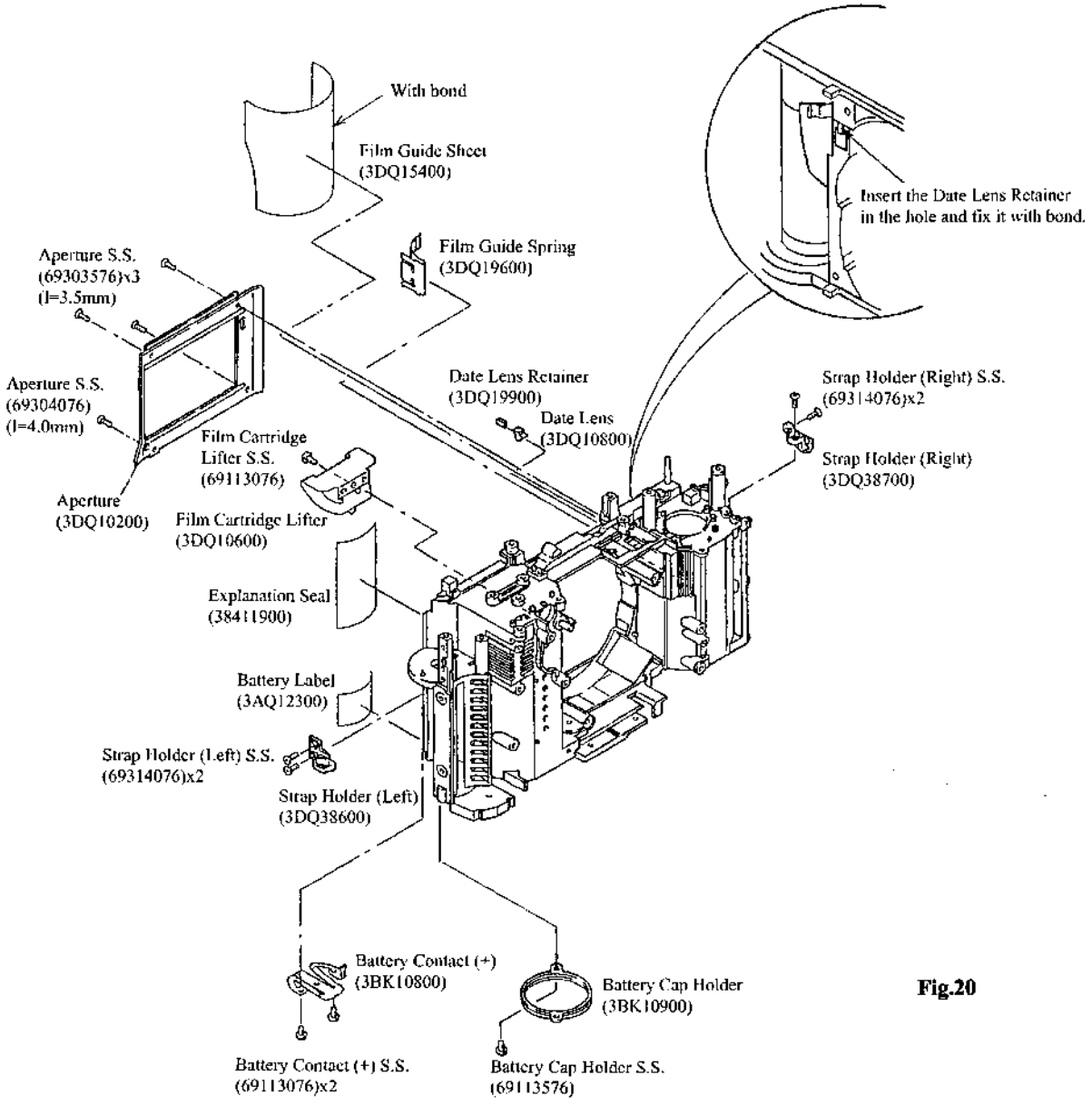
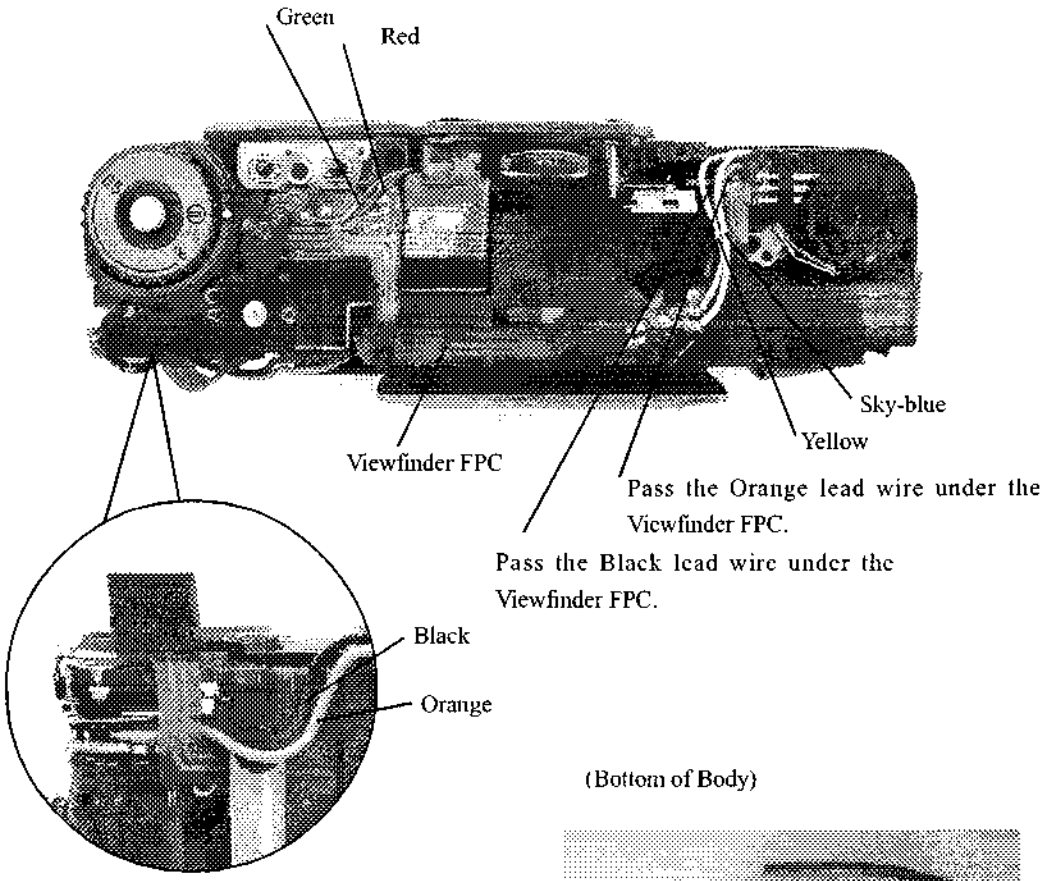


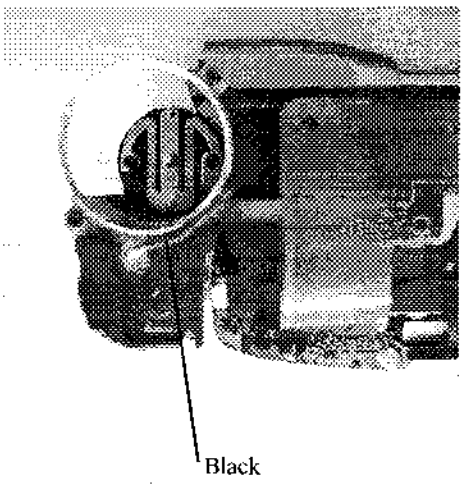
Fig.20

B-6. DRESSING OF LEAD WIRES

(Top of Body)



(Bottom of Body)



B-7. DISASSEMBLY OF BACK COVER ASS'y

B-7-1. Disassembly of Back Cover Ass'y

1) Disassemble the Back Cover Ass'y in the numerical order as shown below.

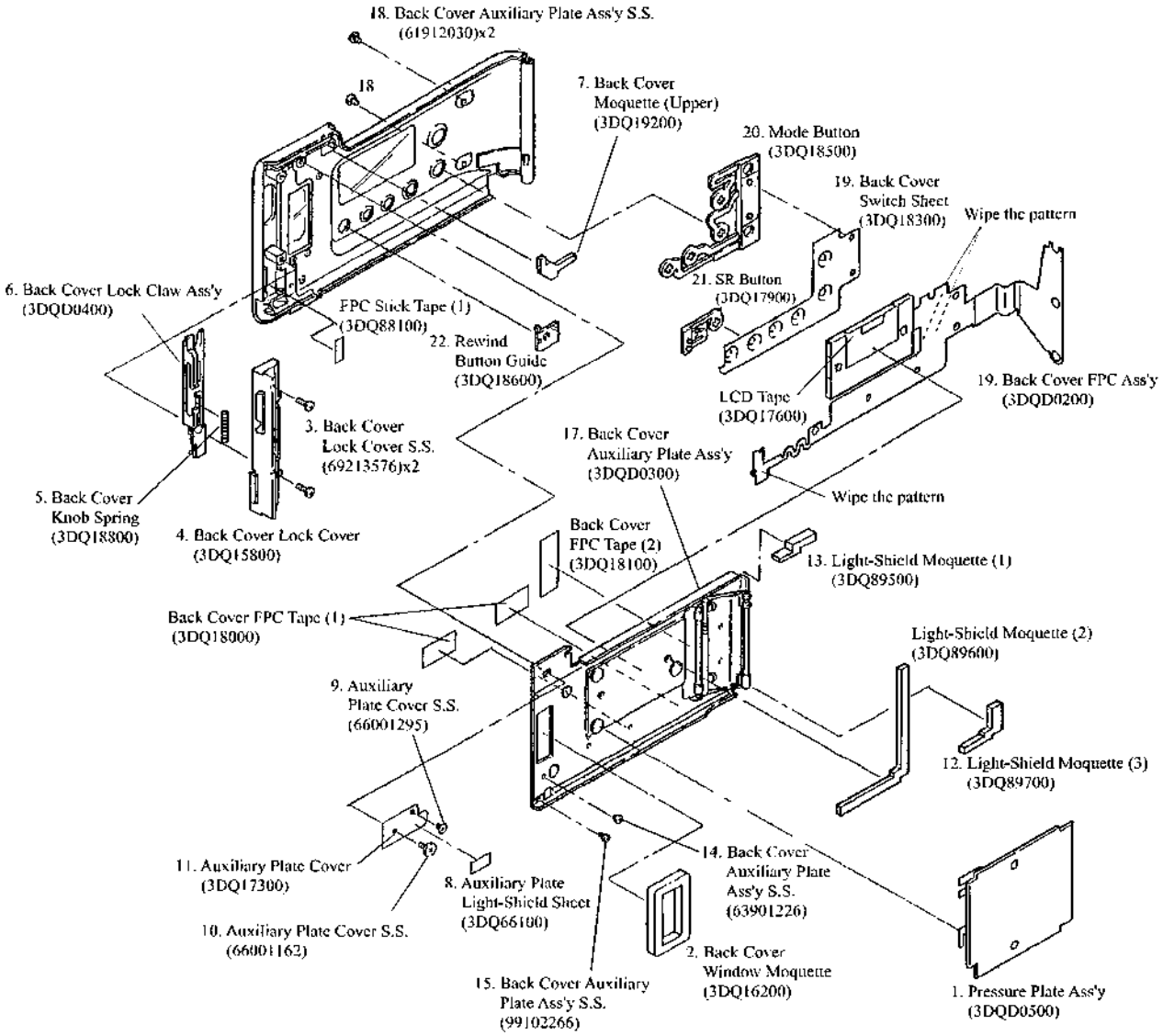


Fig.21

Notes :

- In the course of production, the shape of the Back Cover Ass'y (3DQD0100) was changed to improve operation efficiency and to ensure light shielding. Remember that the Back Cover Ass'y has been produced in two types, namely, the old type and the new type.
- The old type Back Cover Ass'y which has been disassembled once can cause light leakage. Replace it with the new type Back Cover Ass'y. No parts for the old type Back Cover Ass'y will be supplied.
- After disassembly and repair of the new type Back Cover Ass'y, conduct the light leakage test and make certain that there is no light leakage.
- Replace the Light-Shield Moquette and Light-Shield Tape which have been peeled off once with new ones.
- When removing the Back Cover FPC Ass'y (3DQD0200), the end of the Back Cover FPC Ass'y is fixed to the Back Cover with the FPC Stick Tape (1) (3DQ88100).
  The Back Cover FPC is fixed to the Back Cover Auxiliary Plate with the Back Cover FPC Tape (1) (3DQ18000) × 2 and Back Cover FPC Tape (2) (3DQ18100).
  The LCD portion is fixed to the Back Cover Auxiliary Plate with the LCD Tape (3DQ17600).

[Distinction between the Old Type and the New Type / Notes on Sticking of Light-Shield Moquette]

a) The new type Back Cover Ass'y (3DQD0100) has the Back Cover Auxiliary Plate Ass'y Setscrew (69102266) added.

b) Stick the Light-Shield Moquette (1) (3DQ89500) by pressing it against the bent portions of the Back Cover Auxiliary Plate.

c) Stick the Light-Shield Moquette (2) (3DQ89600) first and then stick the Light-Shield Moquette (3) (3DQ89700) over the Light-Shield Moquette (2).

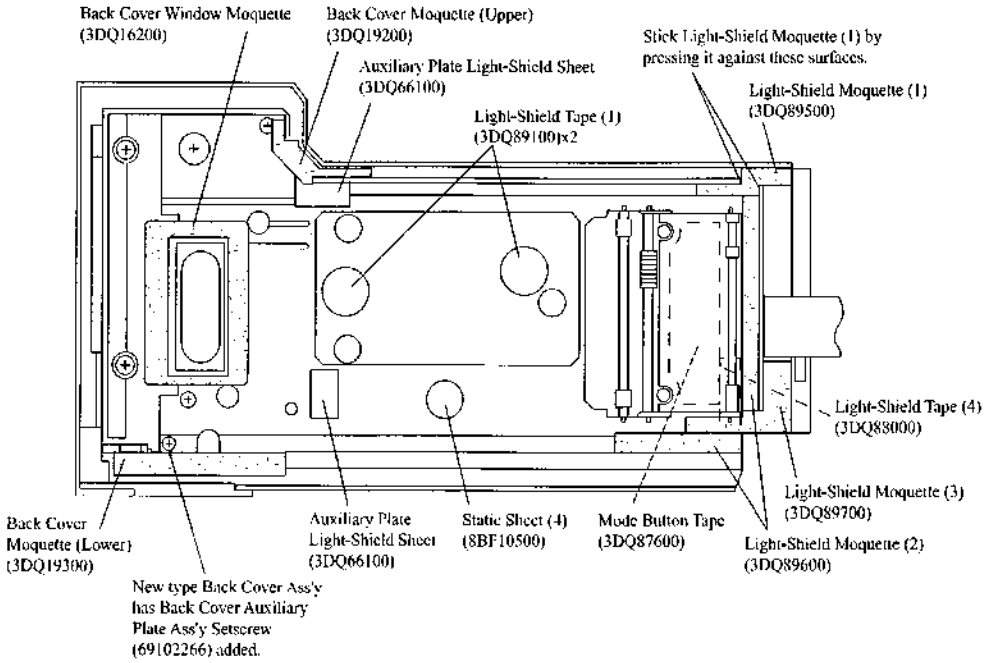


Fig.22

■ PARTS MODIFICATION LIST

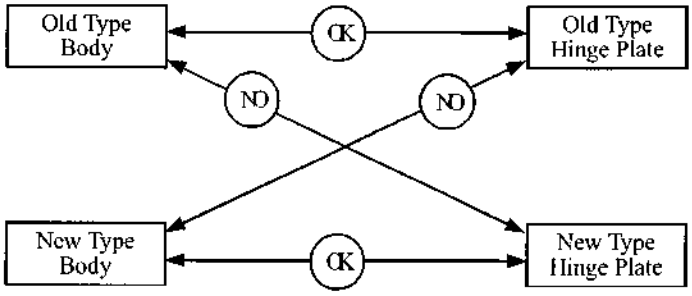
[1] Modification of Hinge Plate

<Description>

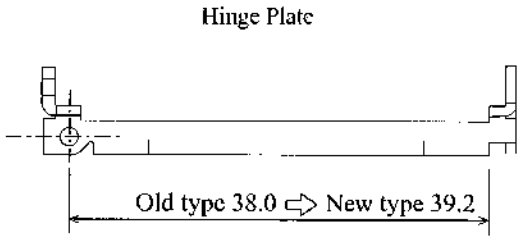
The Body, Hinge Plate (3DQ38800) and Back Cover Moquette (Right) (3DQ19500) were modified in shape to improve operation efficiency and to ensure light shielding. Subsequently, the Hinge Light-Shield Tape (Upper) (3DQ37000), Hinge Light-Shield Tape (Lower) (3DQ37100) and Light-Shield Tape (2) (3DQ89200), which were incorporated in the old type Body, are now disused.

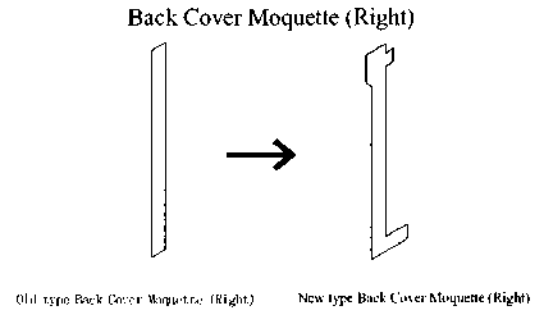
<Interchangeability>

a) No interchangeability.



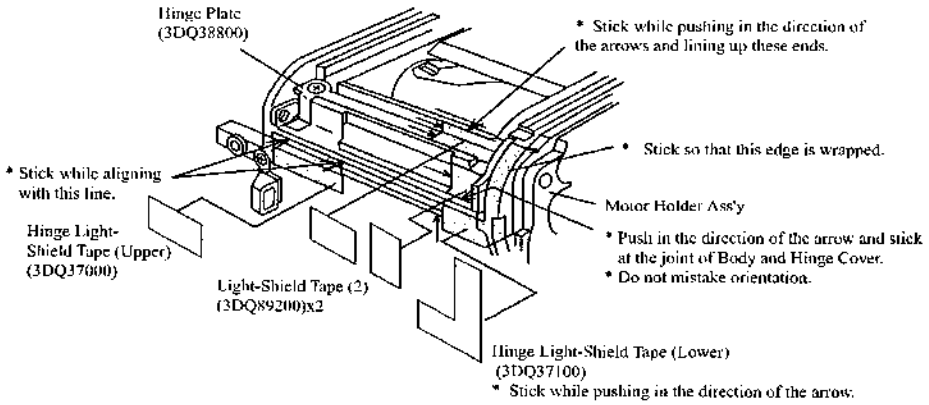
<Distinction between Old Type Parts and New Type Parts>



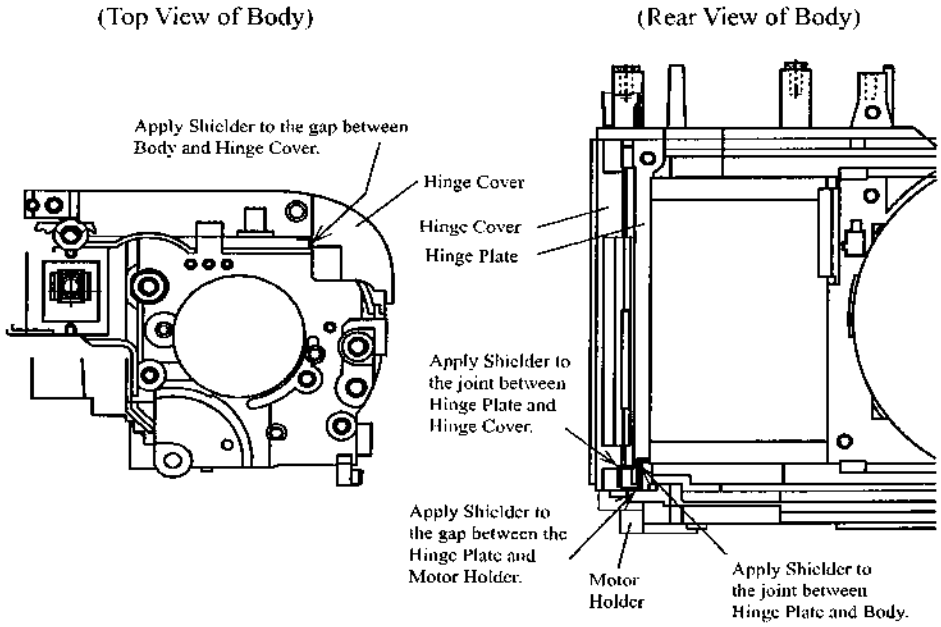


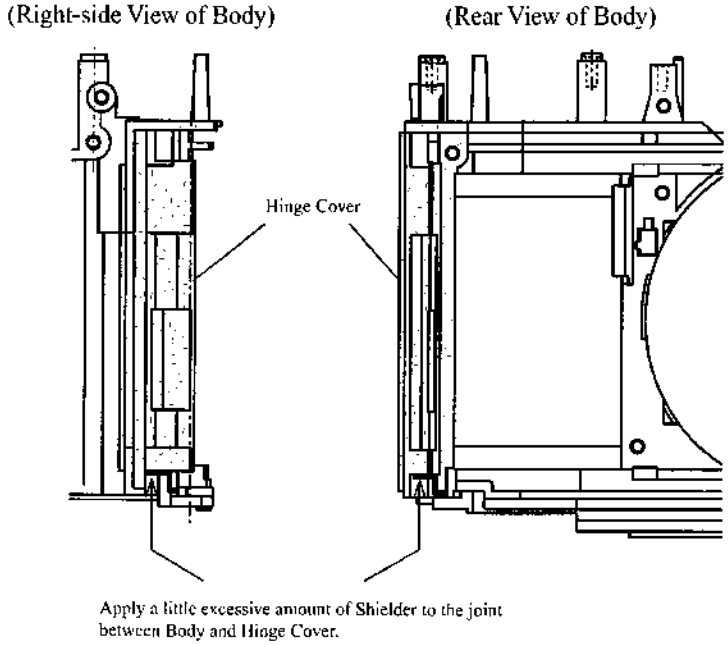
<Notes on Repair>

- The old type Body has Light-Shield Tapes stuck on as shown below. In addition, Shielder has been applied between the Body and the Hinge Plate. (See page B-24)
- Do not remove unnecessarily the Hinge Plate or Hinge Cover from the old type Body. Removal of the Hinge Plate and/or Hinge Cover from the old type Body can result in light leakage.



[Chart for Shielder Application on Old Type Body]





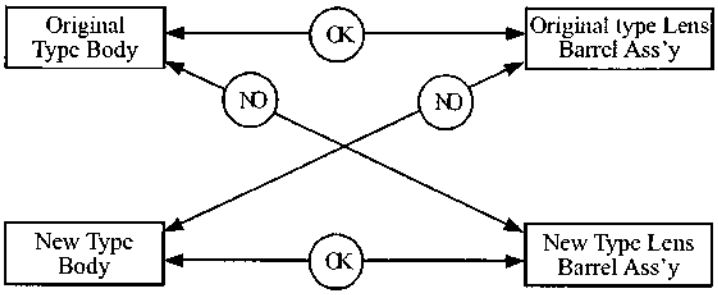
[2] Modification of Fixed Frame

<Description>

To improve operation efficiency and to ensure light shielding, the Fixed Frame of the Lens Barrel will be modified in shape and subsequently the Body will be also modified. Consequently, the Fixed Frame Light-Shield Plate (3DQ65300), Light-Shield Moquette (7) (3DQ65100) and Light-Shield Moquette (8), which are incorporated in the original type Body, will be disused.

<Interchangeability>

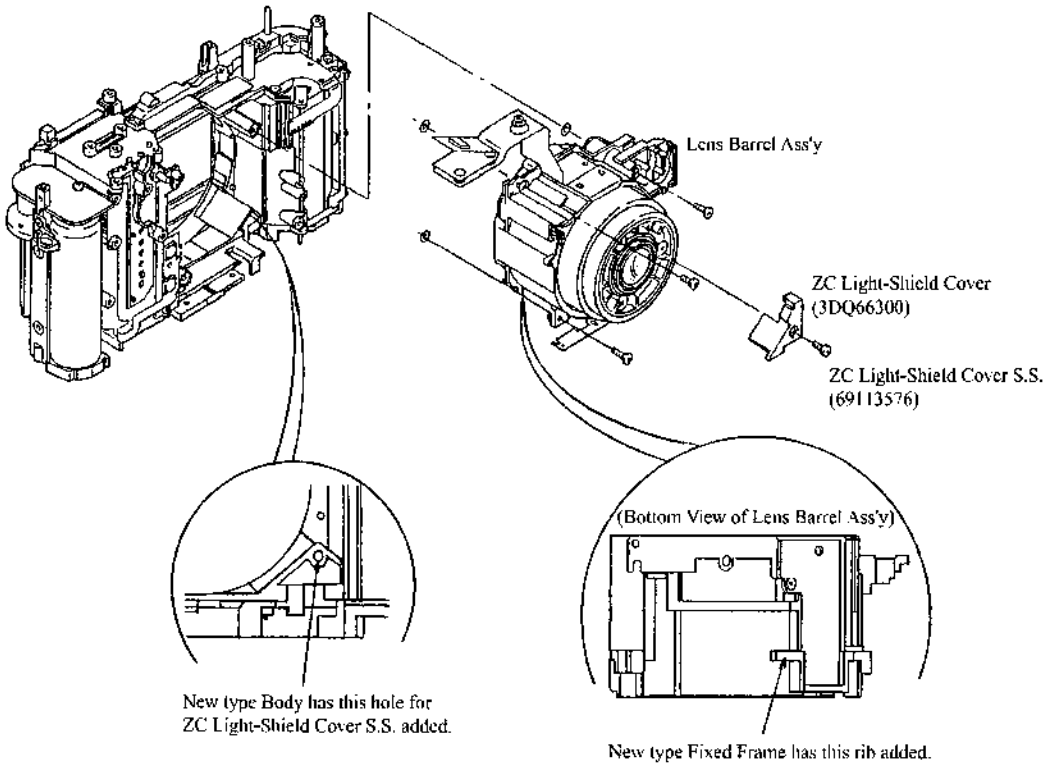
a) No interchangeability.



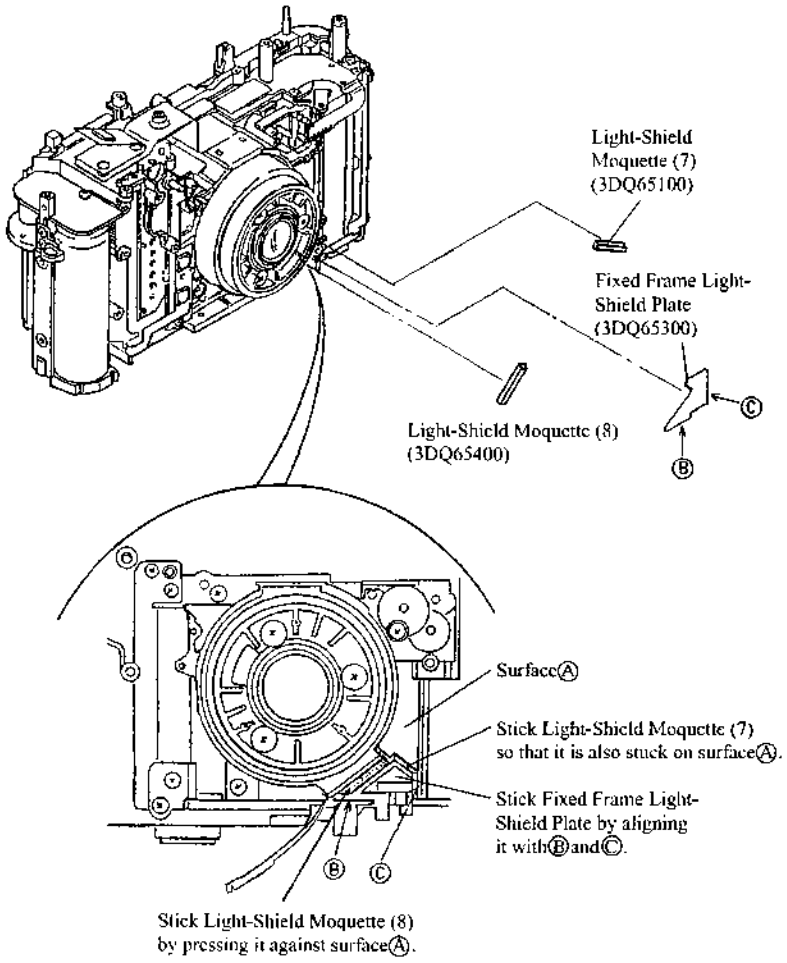
<Distinction between Original Type Parts and New Type Parts>

a) The new type Fixed Frame has a rib added.

b) The new type Body has the hole for the ZC Light-Shield Cover Setscrew added.



[Sticking of Light-Shield Moquette on Original Type Body]



[3] Modification of Main CPU

<Description>

In the course of production, the software for the Main CPU was modified to improve the performance.

<Note on Repair>

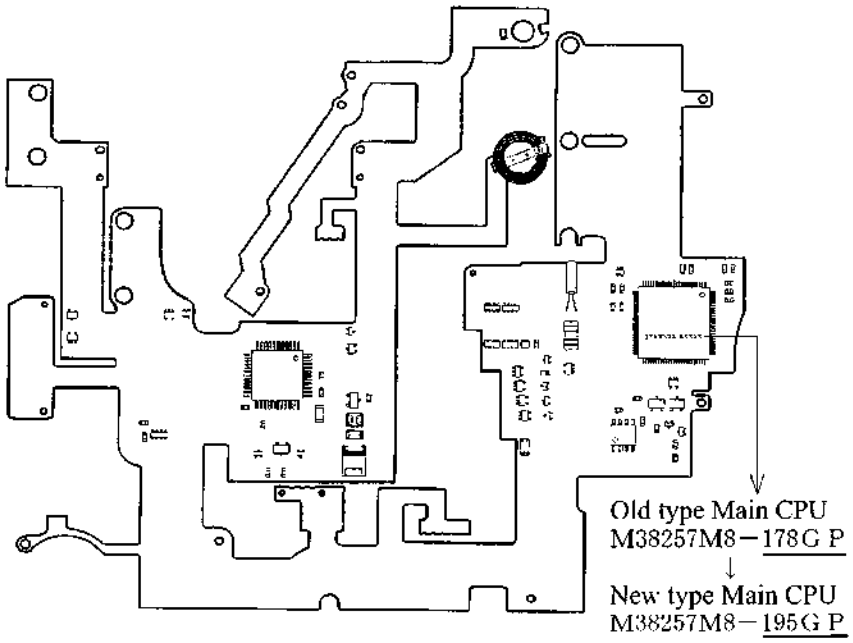
a) There is interchangeability between the old type Main FPC and the new type Main FPC, but they are a little different in the specific data in EEPROM and the adjustment method. (See Manual Adjustment Method.)

<Interchangeability>

a) There is interchangeability.

<Distinction between Old Type Main CPU and New Type Main CPU>

(Main FPC Ass'y)



[4] Use of Barrier Hinge Shaft by Selection

<Description>

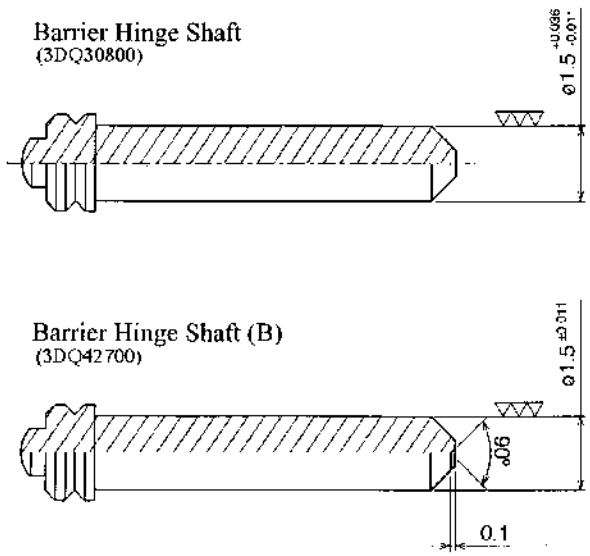
For the Black Model, there may be a case where the Barrier Hinge Shaft (3DQ30800) can not be inserted smoothly. In such a case, use the Barrier Hinge Shaft (B) (3DQ42700) instead of the Barrier Hinge Shaft (3DQ30800).

<Note on Repair>

a) For the Silver Model, do not use the Barrier Hinge Shaft (B) (3DQ42700).

	Silver Model	Black Model
Barrier Hinge Shaft (3DQ30800)	Use	Use by selection
Barrier Hinge Shaft(B) (3DQ42700)	Do not use	Use by selection

<Distinction between Barrier Hinge Shaft and Barrier Hinge Shaft (B) >



[5] Modification of Insulation Tape(2)

<Description>

In the early stage of production, the Insulation Tape (2) and Insulation Tape (3) were used. To improve operation efficiency, however, the Insulation Tape (3) was disused and the Insulation Tape (2) (3DQ88800) was changed in shape.

<Sticking Position of Insulation Tapes>

a) In the Body at the early stage of production, the Insulation Tape (2) and Insulation Tape (3) have been stuck on the soldered joints of the Main FPC on the Body.

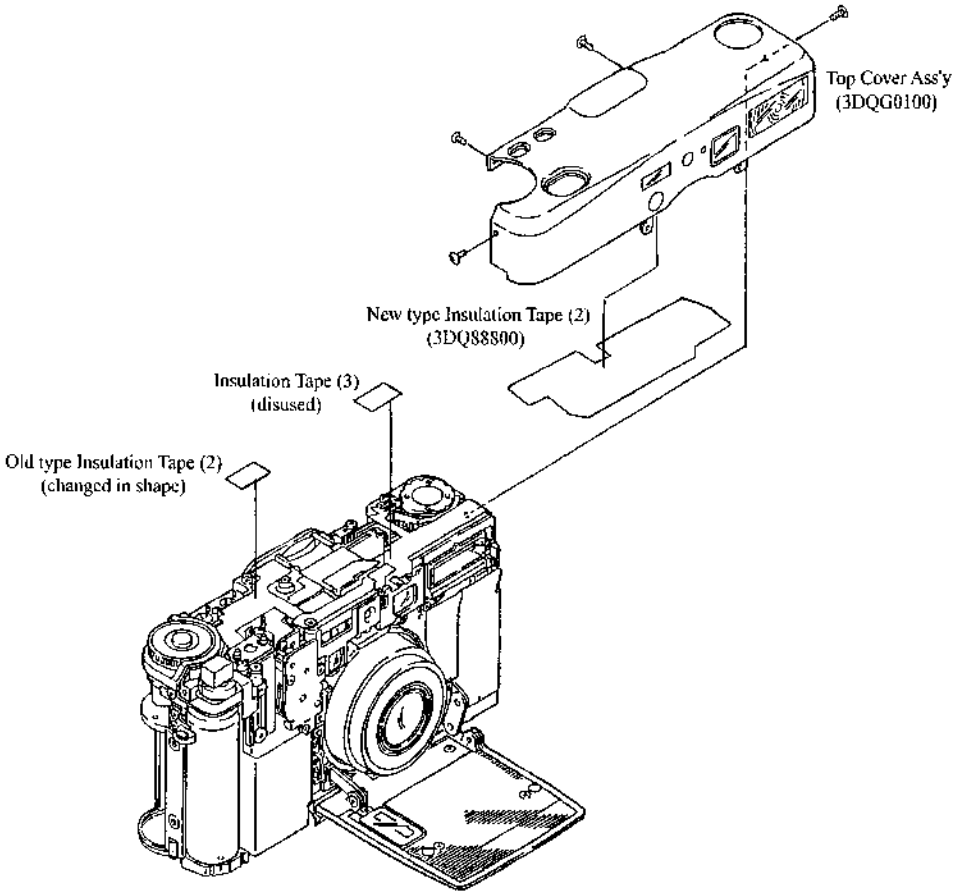
b) The new type Insulation Tape (2) (3DQ88800) has been stuck in the Top Cover Ass'y (3DQG0100).

<Interchangeability>

a) There is interchangeability.

<Note on Repair>

a) Neither the old type Insulation Tape (2) nor Insulation Tape (3) will be supplied as service parts. Instead, therefore, stick the new type Insulation Tape (2) (3DQ88800) in the Top Cover Ass'y (3DQG0100).



[6] Temporary Use of Washer

<Description>

As a temporary measure, the Washer (60121510) (t : 0.2) has been attached with the bond (Cemedine 551) to compensate for the height of the Barrier Holder to mount the Front Plate (Left).

<Notes on Repair>

a) During repair, take care not to lose the washer.

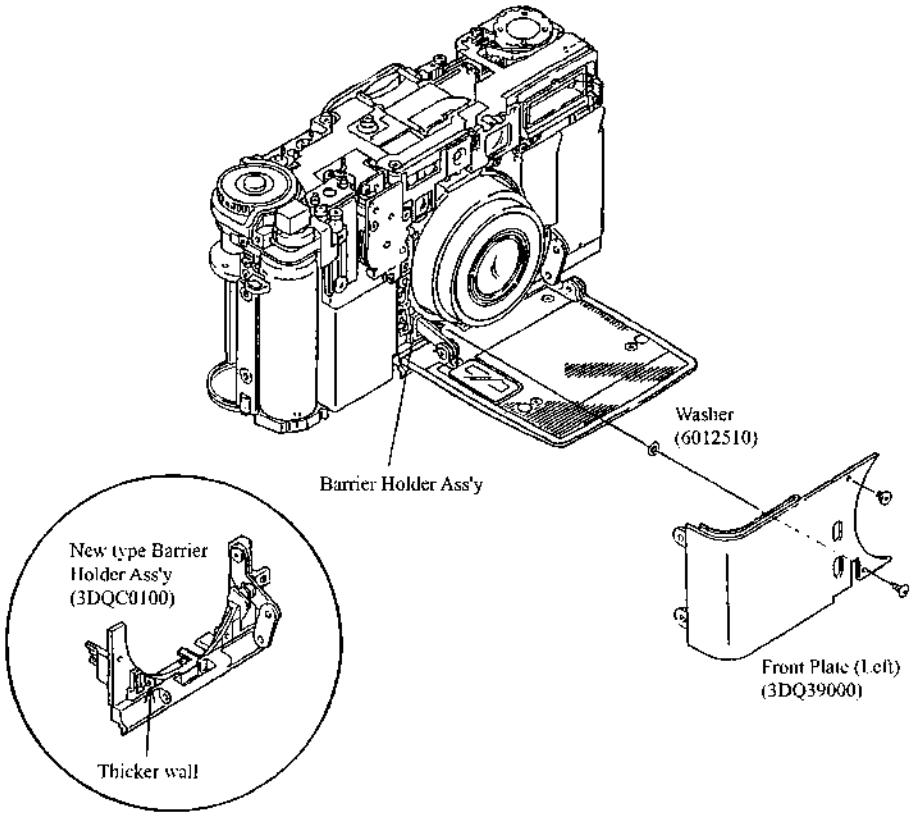
b) With the new type Barrier Holder Ass'y, do not use the Washer.

<Interchangeability>

a) There is interchangeability.

<Distinction between Old Type Barrier Holder Ass'y and New Type Barrier Holder Ass'y>

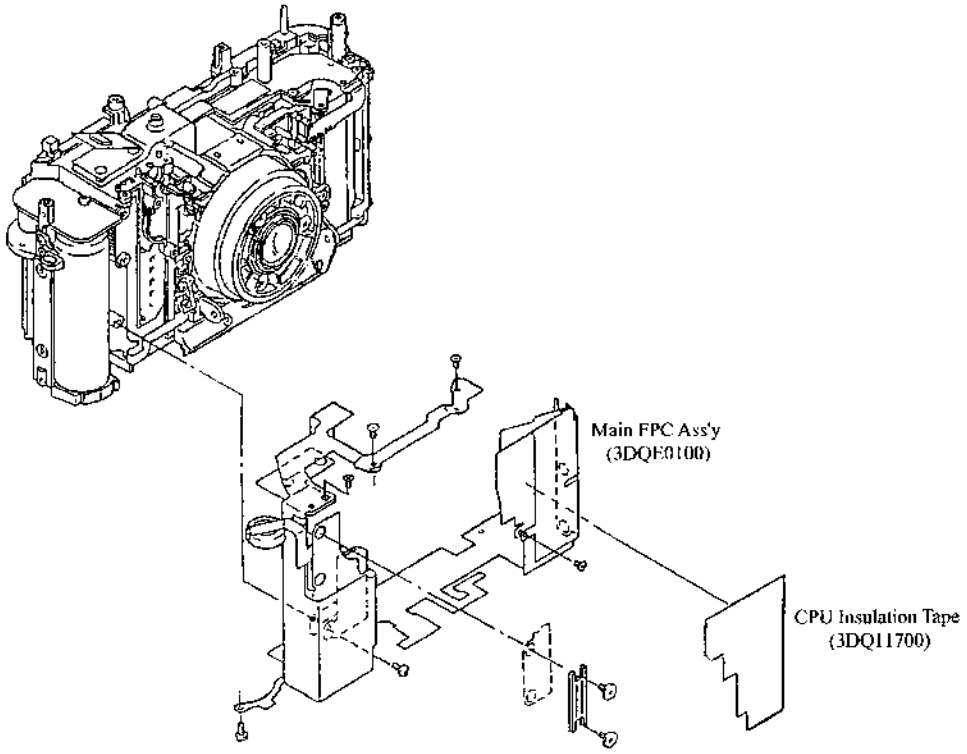
The new type Barrier Holder Ass'y has a thicker wall at the position where the Front Plate (Left) is to be mounted.



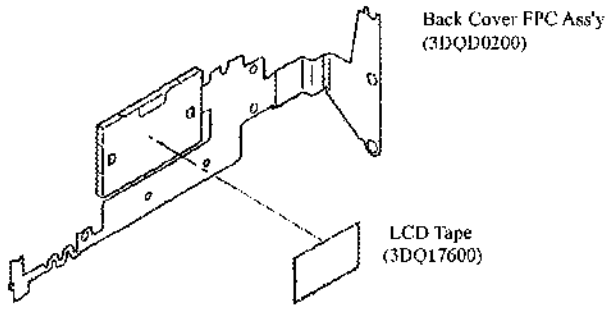
[7] Correction of Assembling Chart

<Description>

a) The CPU Insulation Tape (3DQ11700) is missed out of the Assembling Chart. Please enter it in the Assembling Chart.



b) The LCD Tape (3DQ17600) is missed out of the Assembling Chart. Please enter it on page No.5 of the Assembling Chart.



C. ADJUSTMENT PROCEDURES, ETC.

C-1. ADJUSTMENTS OF COMPENSATION VALUES (MANUAL ADJUSTMENTS)

* This camera permits the adjustments of compensation values (adjusted values) by its manual operation only. Therefore, adjustments can be made only with the camera and measuring instruments, without communication with any special adjusting tools.

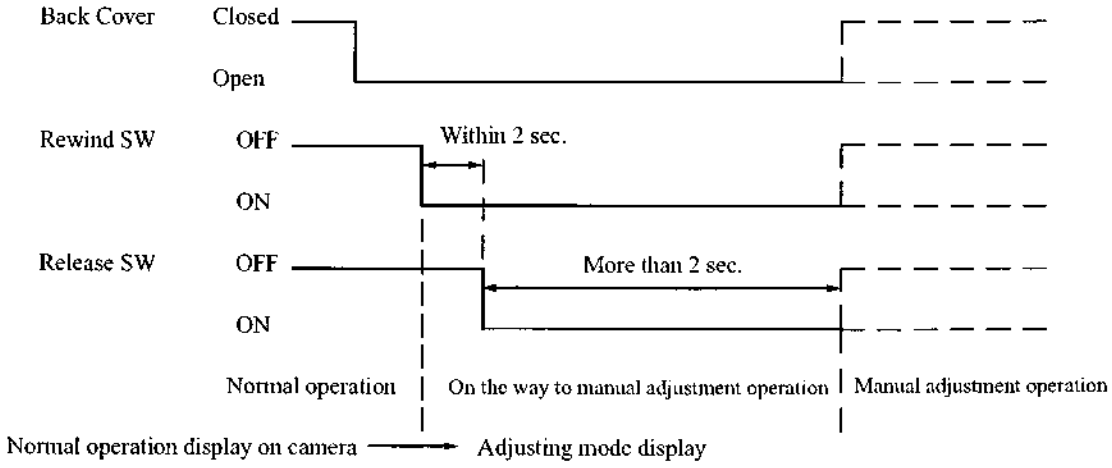
C-1-1. Explanation of Manual Adjusting Mode

[Transition to Manual Adjusting Mode]

* Transition to the Manual Adjusting Mode is achieved irrespective of ON/OFF of the Main Switch. However, be sure to turn the Main Switch "ON" before setting the Manual Adjusting Mode.
* After transition to the Manual Adjusting Mode, the normal camera operations associated with the Back Cover, Rewind Switch, Release Switch, etc. are not accepted.

<Procedure>

1) Turn the Main Switch "ON".
2) Open the Back Cover.
3) Press the Rewind Button. (Rewind Switch turns ON.)
4) While keeping the state 3) and within 2 seconds, depress the Shutter Release Button all the way (turn the Release Switch "ON") and hold it down for more than 2 seconds until transition to the Manual Adjusting Mode is achieved.



[Selection of Adjusting Mode]

The Adjusting Mode Display changes by one, in the order as shown in the List of Adjusting Modes (see page C-3), at each press of the DATE Button (turning the DATE Switch "ON").

When the DATE Button is pressed during execution of an Adjusting Mode, the value before completion of the adjustment will be written in EEPROM and the next Adjusting Mode will be set.

[Adjustment Execution Mode]

When the SET Button is pressed at the display for Adjusting Mode selection, the display of the selected Adjusting Mode becomes the Adjustment Execution Mode.

[Change of Adjusted Value (Change to Data)]

In the Adjustment Execution Mode, change the adjusted value by pressing the Zoom Button "T"/"W". However, the adjusted value can not always be changed by the following method in all the Adjusting Modes.

○ Incrementing of adjusted value : The adjusted value is incremented by one at each press of the Zoom Button "T".
○ Decrementing of adjusted value : The adjusted value is decremented by one at each press of the Zoom Button "W".

[Selection within Each Adjusting Mode]

Press the SELECT Button to select an operation within each Adjusting Mode.
However, an operation can not always be selected in every Adjusting Mode. See sections explaining the details of Adjusting Mode.

[List of Adjusting Modes]

Mode Display	Mode Name	Outline of Operation
A F A	AF adjustment	The camera automatically performs distance measuring, calculates adjusted value and write it in EEPROM.
A F b	— — — —	* Not used on service side. Never change the adjusted value.
t P	Temperature output adjustment	Adjust the output from the temperature sensor.
A E 1	Light metering adjustment	Perform light metering, calculate adjusted value and write it in EEPROM.
A E 2	Light exposure adjustment	While changing the adjusted value, adjust the light exposure.
F b	Flange back distance adjustment	While changing the adjusted value, adjust the flange back distance.
A d	A/D value display	Display the conversion result of each A/D port. (Confirmation)
b C	Battery check adjustment	The voltage is A/D converted, the adjusted value is calculated and written in EEPROM. * 1
E 2	Writing in EEPROM	Display and correct the data in EEPROM. (Confirmation)
F d	Focus Dial adjustment	A/D converts the voltage, calculate the adjusted value and write it in EEPROM. * 2
C t	Shots count display	Display the shots count.
A t	— — — —	* Not used on service side.
A F F	— — — —	* Not used on service side.
L E d	DLED lighting confirmation mode	Let the Date Imprint LEDs light up one by one.
L C d	LCD & viewfinder display lighting confirmation mode	Let the LCD and all the indicators in viewfinder Light up together and alternately.
A F d	— — — —	* Not used on service side.
A F 5	— — — —	* Not used on service side.
Lt	— — — —	* Not used on service side.
U E r	Version display mode	Display the CPU version. * 3

Turn the DATE Button Switch "ON" by pressing the DATE Button.

* 1 :The battery check adjustment has been completed at the factory. On service side, therefore, the battery check adjustment is not required even when the Main FPC Ass'y has been replaced with a new one. Never change the adjusted value.
* 2 :With CPU version 2, the Focus Dial adjustment must be made when "∞" and "0.5" of the Focus Dial are not displayed correctly.
With CPU version 1, fix the adjustment : 0 and replace the Main FPC Ass'y with a new one, if there is any problem.
* 3 :The version display mode is not displayed with CPU version 1.
With CPU version 2, "02" is displayed by pressing the SET Button.

[Completion of Manual Adjustment Operation]

In any condition during Manual Adjustment Operation, pressing the Rewind Button (turning the Rewind Switch "ON") will discontinue the operation, write the current backup data in EEPROM and complete the Adjusting Mode.

C-1-2. Adjustment Procedure

1. AF Adjustment "AF A"

※Make adjustments for 0.5 m and 2.0 m. Press the SET Button.

Tools for Adjustment : Bar Code AF charts
(for 0.5 m and 2.0m) Tripod

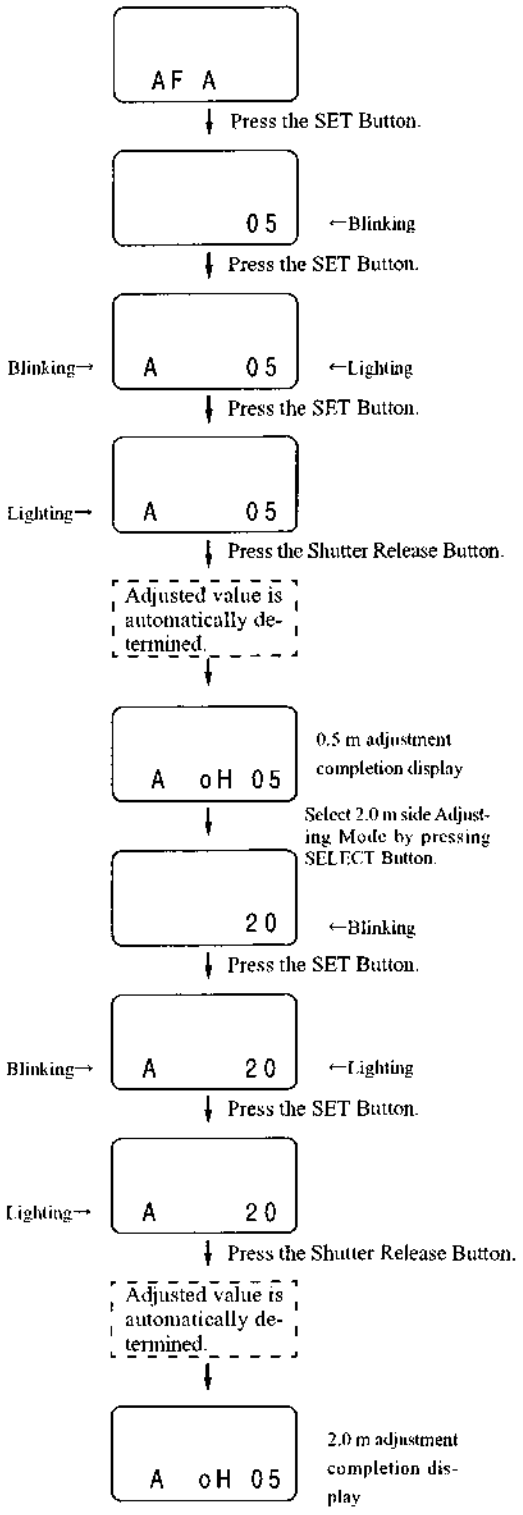
1) Fix the AF chart for 0.5 m.
2) Once the Adjusting Mode has been set, the AF Adjustment Mode "AF A" is displayed.
3) Pressing the SET Button will show the Distance Selection Stage. "05" is displayed blinking. (0.5 m side Adjustment Execution Mode)
4) Pressing the SET Button again will change "05" from blinking to lighting. "A" appears blinking.
5) Another press of the SET Button will change "A" from blinking to lighting.
6) Mount the camera on the tripod.
7) Place the camera at 0.5 m from the AF chart.
8) Depress the Shutter Release Button all the way (turn the Release Switch "ON").
   The camera will perform distance measuring for all the areas 1 to 5 and automatically determine the adjusted value so that the standard design value (C5) is obtained. After adjustment, the camera will display "oH" (OK).
9) Fix the AF chart for 2.0 m.
   Pressing the SET Button will show the Distance Selection Stage again.
10) By pressing the SELECT Button, select the 2.0 m side Adjusting Mode. Then "20" will be displayed blinking.
11) Pressing the SET Button will change "20" from blinking to lighting. "A" appears blinking.
12) Another press of the SET Button will change "A" from blinking to lighting.
13) Place the camera at 2.0 m from the AF chart.

Notes :

- Place the camera so that the focusing frame in the viewfinder of the camera is positioned at the center of the AF chart.
- Place the camera so that its optical axis is perpendicular to the AF chart.
- The AF adjustment distance (0.5 m and 2.0 m) must be the distance from the AF chart to the film plane.
- Make the AF adjustment in a well-lighted room.

15) Pressing the DATE Button will automatically write the adjusted values in EEPROM and complete the AF adjustment.

AF Adjustment Mode Display

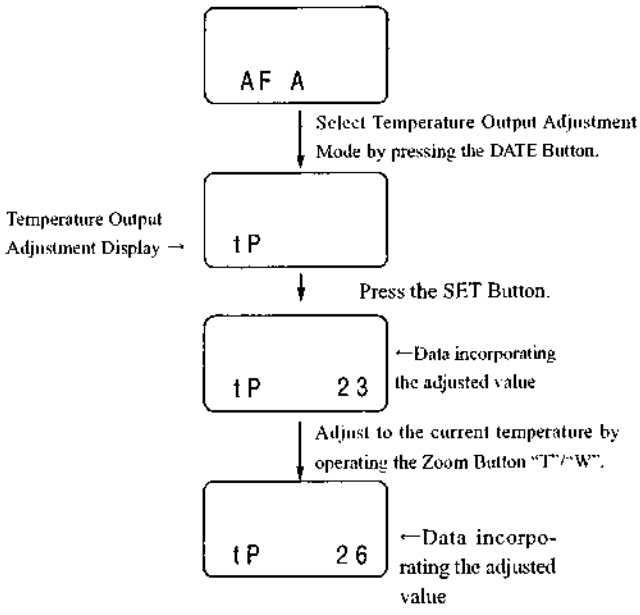


2. Temperature Output Adjustment "tP"

※Make the temperature output adjustment of the light metering sensor.
Tools for Adjustment : Thermometer

1) Select the Temperature Output Adjustment Mode "tP" by pressing the DATE Button.
2) Pressing the SET Button will set the Adjustment Execution Mode where the temperature data (decimal number) incorporating the adjusted value is displayed blinking.
3) Adjust the displayed number to the current temperature by operating the Zoom Button "T"/"W".
4) Pressing the DATE Button will automatically write the current data in EEPROM and complete the temperature output adjustment.

Temperature Output Adjustment Mode Display



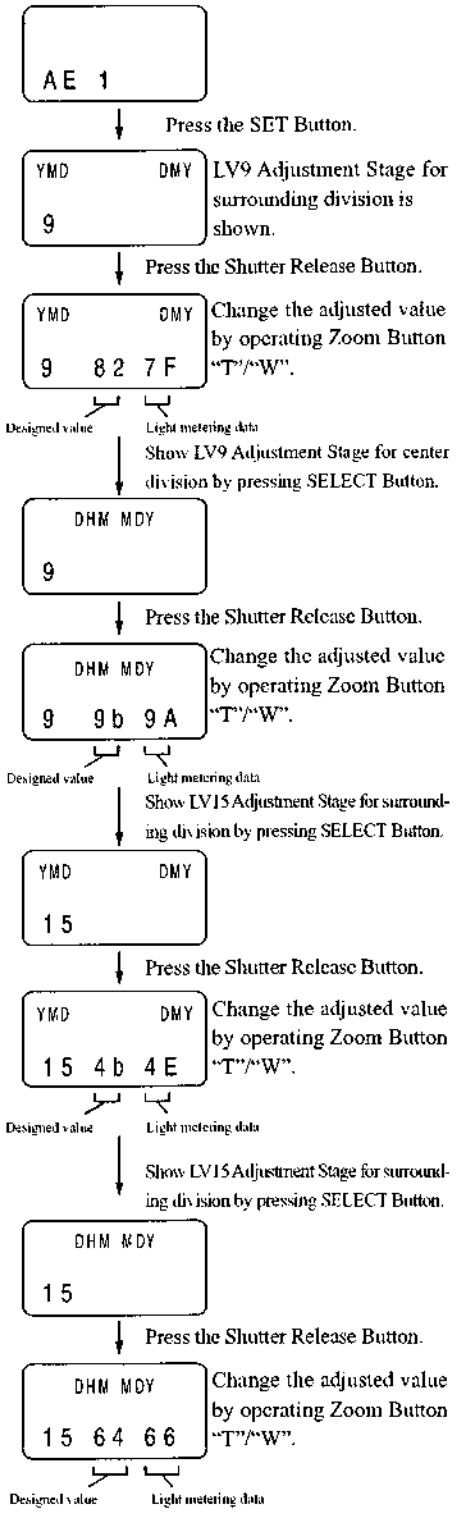
3. Light Metering Adjustment "AE1"

* Make the adjustments for the center division and the surrounding division.
* The temperature output adjustment must have already been completed.
* Cover the camera on the AE camera tester with a black cloth to prevent the entrance of external light.

Tools for Adjustment : AE camera tester (EF-5000, EF-8000)

1) Select the Light Metering Adjustment Mode "AE1" by pressing the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button.
3) Show the LV9 Adjustment Stage for surrounding division by pressing the SELECT Button.
   *However, immediately after entering the Light Metering Adjustment Mode, the LV9 Adjustment Stage for surrounding division is automatically is shown.
   At this point, "YMD", "DMY" and "9" (7 segments, 2 dgits at left) light up.
4) Set the brightness of the light source of the AE camera tester to LV 9.
5) Set the camera at the light source of the AE camera tester.
6) Depress the Shutter Release Button all the way (turn the Release Switch "ON").
   At this point, the designed value (2 digits in the middle, lighting) and the light metering data incorporating the adjusted value (2 digits at right, blinking) are displayed. Then adjust the light metering data to the designed value "82" by operating the Zoom Button "T"/"W".
7) Show the LV9 Adjustment Stage for center division by pressing the SELECT Button.
   At this point, "DHM", "MDY" and "9" (7 segments, 2 dgits at left) light up.
8) Set the camera at the light source of the AE camera tester.
9) Depress the Shutter Release Button all the way (turn the Release Switch "ON").
   At this point, the designed value (2 digits in the middle, lighting) and the light metering data incorporating the adjusted value (2 digits at right, blinking) are displayed. Then adjust the light metering data to the designed value "9b" by operating the Zoom Button "T"/"W".
10) Show the LV15 Adjustment Stage for surrounding division by pressing the SELECT Button.
    At this point, "YMD", "DMY" and "15" (7 segments, 2 digits at left) light up.
11) Set the brightness of the light source of the AE camera tester to LV 15.
12) Set the camera at the light source of the AE camera tester.
13) Depress the Shutter Release Button all the way (turn the Release Switch "ON").
    At this point, the designed value (2 digits in the middle, lighting) and the light metering data incorporating the adjusted value (2 digits at right, blinking) are displayed. Then adjust the light metering data to the designed value "4b" by operating the Zoom Button "T"/"W".
14) Show the LV15 Adjustment Stage for center division by pressing the SELECT Button.
    At this point, "DHM", "MDY" and "15" (7 segments, 2 digits at left) light up.
15) Set the camera at the light source of the AE camera tester.
16) Depress the Shutter Release Button all the way (turn the Release Switch "ON").
    At this point, the designed value (2 digits in the middle, lighting) and the light metering data incorporating the adjusted value (2 digits at right, blinking) are displayed. Then adjust the light metering data to the designed value "64" by operating the Zoom Button "T"/"W".
17) Pressing the DATE Button will automatically write the adjusted values in EEPROM and complete the Light Metering Adjustment Mode.

Light Metering Adjustment Mode



4. Light Exposure Adjustment "AE 2"

* The Light Metering Adjustment must have been completed.
* Make the adjustment to eliminate the difference between the zoom positions.
* Cover the camera on the AE camera tester with a black cloth to prevent the entrance of external light.

Tools for Adjustment : AE camera tester (EF-5000, EF-8000)

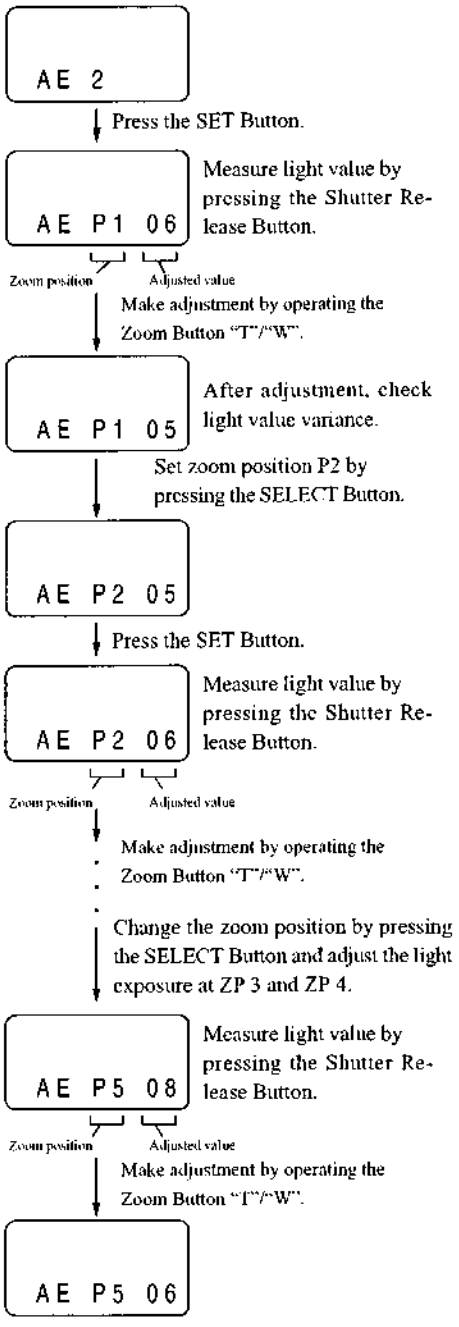
1) Select the Light Exposure Adjustment Mode "AE 2" by operating the DATE Button.
   *When the Light Exposure Adjustment Mode "AE 2" is selected, the camera automatically make the following settings :
   ISO 100, flash-off, no exposure compensation, Lens in the infinity posi tion
2) Set the Adjustment Execution Mode by pressing the SET Button. Then the Aperture Display LCD lights the exposure mode "P" and the Display Panel displays the zoom position "P1" (2 digits in the middle, lighting) and the adjusted value (2 digits at right, blinking) by a hexadecimal number.
3) Set the brightness of the light source of the AE camera tester to LV 12.
4) Set the camera at the light source of the AE camera tester.
5) Press the Shutter Release Button all the way (turning the Release Switch "ON"), and the shutter will operate with the current adjusted value. At this point, check the light value variance DEV indicated on the AE camera tester. If the adjusted value is plus, decrement the value by pressing the Zoom Button "W", while if it is minus, increment by pressing the Zoom Button "T" until the variance becomes nearly 0 EV.

<Selection of Zoom Position>

Set the zoom position by operating the SELECT Button.
The zoom position is displayed by the 2 digits in the middle.
If the current zoom position is deviated from the set position, the flash-off mode mark lights up and shutter release is disabled. Press the SET Button, and the Lens will operate zooming to the set position, the flash-off mode mark will go out and shutter release operation will be allowed.

6) Make the Light Exposure adjustment at each of the zoom positions (ZP 1 ~ ZP 5).
7) Pressing the DATE Button will automatically write the adjusted values in EEPROM and complete the Light Exposure Adjustment Mode.

Light Exposure Adjustment Mode



Display	P 1	P 2	P 3	P 4	P 5
Zoom Position	Z P 1 (WIDE)	Z P 2	Z P 3	Z P 4	Z P 5 (TELE)

5. Flange Back Distance Adjustment "Fb"

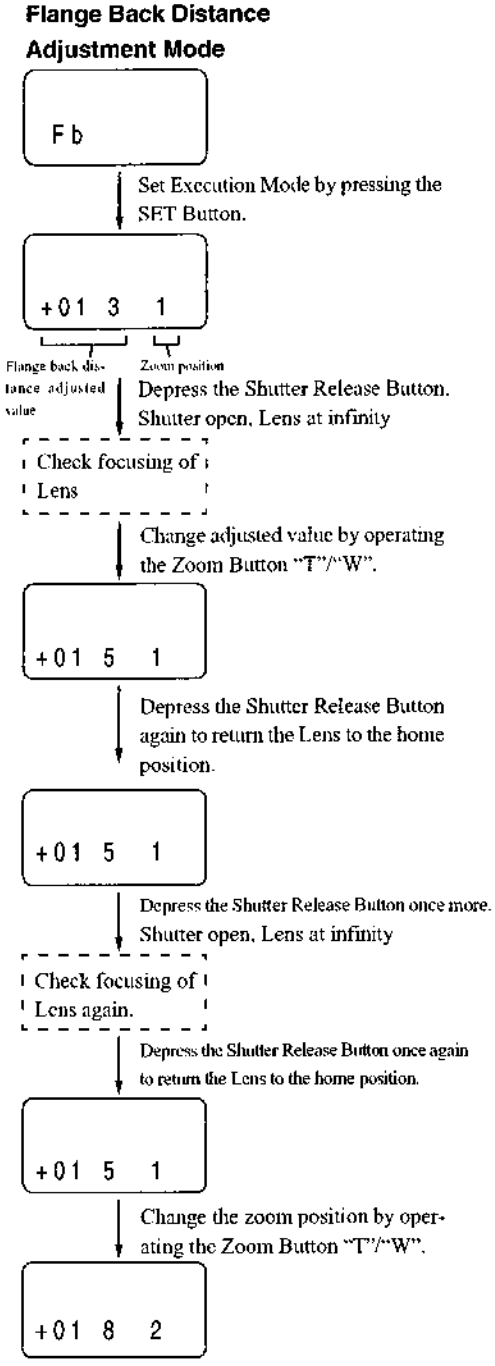
✻ Adjust the optical infinity position of the Lens extension for zooming.
Tools for Adjustment : Collimator (f = 193.5 : 24LT-2DTS)
Standard mirror stand

Note :

- This camera has been produced with two CPU versions. Remember that the adjustment procedure varies with the CPU version.
  You can check the CPU version by the Version Display Mode "UEr".
  (See page C-15)

[Adjustment Procedure for Camera with CPU Version 2]

1) Select the Flange Back Distance Adjustment Mode "Fb" by operating the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button.
3) Set the standard mirror stand on the table of the collimator and make the diopter adjustment by turning the eyepiece ring of the collimator.
4) Set the camera on the standard mirror stand.
5) Depress the Shutter Release Button all the way, and the Lens of the camera will extend to the infinity position and the shutter will open and be held.
6) In this state, find the best focus position by turning the helicoid of the collimator.
7) At this point, read the scale (D mm) of the collimator.
8) Change the adjusted value by operating the Zoom Button "T"/"W".
   In the case of rear focus (when variance of focal length of objective lens of collimator is +) : Adjusted value must be +.
   In the case of front focus (when variance of focal length of objective lens of collimator is −) : Adjusted value must be −.
   *Irrespective of the zoom positions 1 ~ 5, if variance of focal length of objective lens of collimator is +0.5 mm :
   Adjusted value must be about +1.
9) Depressing the Shutter Release Button all the way again will close the shutter and return the Lens to the home position.
10) Depress the Shutter Release Button all the way once more and check the focusing at the infinity position of the Lens again.
11) Depress the Shutter Release Button all the way once again to return the Lens to the home position.
12) Change the zoom position by operating the Zoom Button "T"/"W".
13) Make the flange back distance adjustment at each of the zoom positions (ZP 1 ~ ZP 5).
14) Pressing the DATE Button will automatically write the adjusted values in EEPROM and complete the Film Plane Exposure Adjustment Mode.

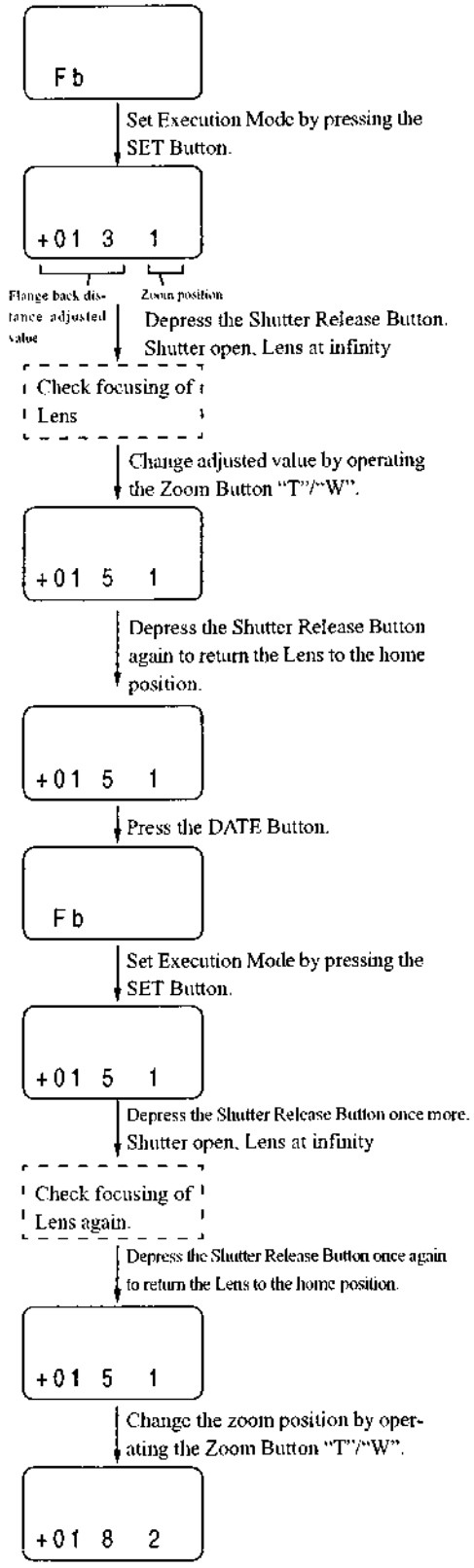


Display	1	2	3	4	5
Zoom Position	ZP1	ZP2	ZP3	ZP4	ZP5
Focal Length	30mm	38mm	45mm	51mm	60mm
Standard Value Range	-4.0~+5.0mm	-2.0~+3.0mm	-2.0~+2.0mm	-2.0~+2.0mm	-2.0~+2.0mm

[Adjustment Procedure for Camera with CPU Version 1]

1) Select the Flange Back Distance Adjustment Mode "Fb" by operating the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button.
3) Set the standard mirror stand on the table of the collimator and make the diopter adjustment by turning the eyepiece ring of the collimator.
4) Set the camera on the standard mirror stand.
5) Depress the Shutter Release Button all the way, and the Lens of the camera will extend to the infinity position and the shutter will open and be held.
6) In this state, find the best focus position by turning the helicoid of the collimator.
7) At this point, read the scale (D mm) of the collimator.
8) Change the adjusted value by operating the Zoom Button "T"/"W".
   In the case of rear focus (when variance of focal length of objective lens of collimator is +) : Adjusted value must be +.
   In the case of front focus (when variance of focal length of objective lens of collimator is −) : Adjusted value must be −.
   *Irrespective of the zoom positions 1 ~ 5, if variance of focal length of objective lens of collimator is +0.5 mm :
   Adjusted value must be about +1.
   *For the standard value range, see the table on page C-8.
9) Depressing the Shutter Release Button all the way again will close the shutter and return the Lens to the home position.
   *After that, you can not follow the same procedure as for the camera with CPU version 2 to extend the Lens, check focusing and return the Lens to the home position.
   Instead, press the DATE Button once to display "Fb" again and press the SET Button to restore the state where you are allowed to extend the Lens by depressing the Shutter Release Button. At this point, however, note that the zoom position is "1".
   Then depress the Shutter Release Button all the way to extend the Lens to the infinity position and open the shutter. And check the defocus value.
   If the standard value range is exceeded, repeat steps 5) to 9) above.
10) After returning to step 9), change the zoom position by operating the Zoom Button "T"/"W" and make the flange back distance adjustment at each of the zoom positions (ZP 1 ~ ZP 5)
11) Pressing the DATE Button will automatically write the adjusted values in EEPROM and complete the Flange back distance Adjustment Mode.

Flange Back Distance Adjustment Mode



6. A/D Value Display "Ad"

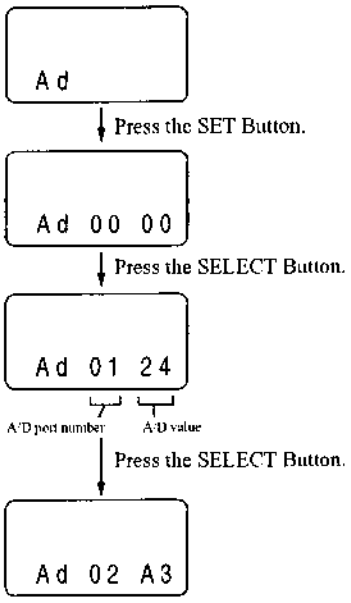
* Display the A/D conversion result at the A/D conversion port of the CPU.

Check the state.

1) Select the A/D Value Mode "Ad" by operating the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button. Press the SET Button, and the read-in A/D value (hexadecimal) will be displayed.
3) Change the A/D value display port number by pressing the SELECT Button.
4) Press the DATE Button to complete the A/D Value Mode.

07 :	Battery check voltage
06 :	Light metering output
05 :	AF data
04 :	Temperature data
03 :	Film transport pulse
02 :	Free
01 :	Focus Dial
00 :	Charge voltage

A/D Value Display

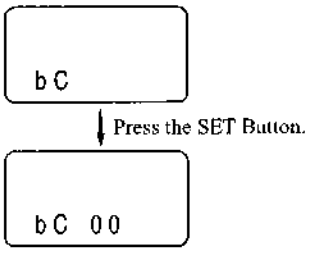


7. Battery Check Adjustment "bc"

* Do not adjust the battery check adjusted value, which is fixed.

* Never change the adjusted value.

Battery Check Adjustment



8. Writing in EEPROM "E 2"

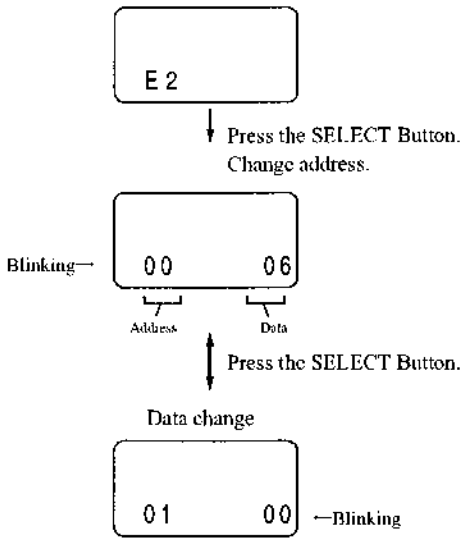
* You can display and change any data in EEPROM.
If there is data which has been changed for some reason, check the written data for correctness and correct it, if necessary.

* The data is a little different between the CPU version 1 and the CPU version 2. (See pages C-11 and C-12)
Select the EEPROM Read/Write Mode by pressing the DATE Button.

- The inferior-order 2 digits of the address is indicated by the 2 digits at left of the 7-segment display and the data is indicated by the 2 digits at right.
- You can change the number which is blinking.
- Pressing the SELECT Button will change the position at which the number is blinking.
  Press the Zoom Button "T" to increment the value.
  Press the Zoom Button "W" to decrement the value.

* For the address, only the inferior-order 2 digits are displayed. (See tables on following pages.)

Writing in EEPROM



[Fixed Value Data in EEPROM of CPU Version 1]

(- - : adjusted value)

Address	Data	Address	Data	Address	Data	Address	Data
110	- -	130	00	150	00	170	00
111	- -	131	00	151	00	171	00
112	- -	132	00	152	28	172	00
113	- -	133	- -	153	00	173	00
114	- -	134	- -	154	- -	174	00
115	- -	135	- -	155	- -	175	00
116	- -	136	- -	156	- -	176	- -
117	- -	137	- -	157	00	177	DF
118	- -	138	00	158	00	178	00
119	- -	139	7F	159	00	179	00
11A	FE	13A	00	15A	00	17A	00
11B	04	13B	0E	15B	00	17B	- -
11C	00	13C	80	15C	00	17C	00
11D	00	13D	F5	15D	00	17D	00
11E	00	13E	05	15E	F4	17E	00
11F	00	13F	00	15F	F7	17F	00
120	00	140	FF	160	F9		
121	00	141	00	161	FC		
122	20	142	00	162	FD		
123	00	143	2C	163	FE		
124	00	144	00	164	FF		
125	- -	145	E8	165	00		
126	- -	146	00	166	- -		
127	- -	147	00	167	- -		
128	- -	148	00	168	00		
129	- -	149	00	169	00		
12A	- -	14A	00	16A	00		
12B	- -	14B	00	16B	- -		
12C	- -	14C	F8	16C	03		
12D	- -	14D	00	16D	00		
12E	- -	14E	00	16E	00		
12F	00	14F	00	16F	F4		

[Fixed Value Data in EEPROM of CPU Version 2]

(-- : adjusted valuc)

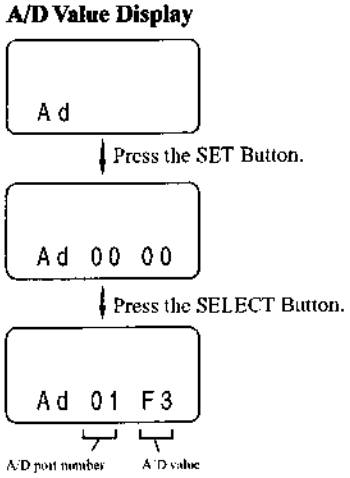
Address	Data	Address	Data	Address	Data	Address	Data
110	--	130	00	150	00	170	00
111	--	131	00	151	00	171	00
112	--	132	00	152	28	172	00
113	--	133	--	153	00	173	00
114	--	134	--	154	--	174	00
115	--	135	--	155	--	175	00
116	--	136	--	156	--	176	--
117	--	137	--	157	00	177	00
118	--	138	00	158	00	178	00
119	--	139	7F	159	00	179	00
11A	FE	13A	1C	15A	00	17A	00
11B	04	13B	00	15B	00	17B	--
11C	00	13C	00	15C	00	17C	**
11D	00	13D	00	15D	00	17D	**
11E	00	13E	00	15E	--	17E	**
11F	00	13F	00	15F	--	17F	**
120	00	140	FF	160	--		
121	00	141	00	161	--		
122	20	142	00	162	--		
123	00	143	00	163	--		
124	00	144	00	164	--		
125	--	145	00	165	--		
126	--	146	00	166	--		
127	--	147	00	167	--		
128	--	148	00	168	00		
129	--	149	00	169	00		
12A	--	14A	00	16A	00		
12B	--	14B	00	16B	--		
12C	--	14C	F8	16C	00		
12D	--	14D	00	16D	00		
12E	--	14E	00	16E	00		
12F	00	14F	00	16F	00		

9. Focus Dial Adjustment "Fd"

※Note that the adjustment procedure varies with the CPU version.

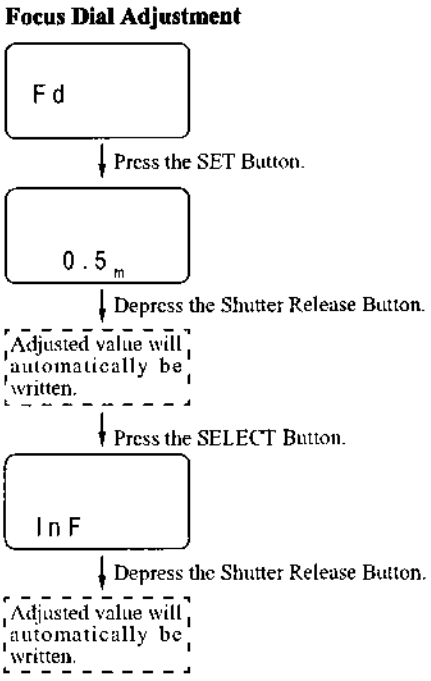
[Adjustment of Camera with CPU Version 1]

1) Select the A/D Value Display Mode "Ad" by pressing the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button.
   Press the SET Button, and the read-in A/D value (hexadecimal) will be displayed.
3) Select the A/D value display port number "01" by pressing the SELECT Button.
4) Set the Focus Dial to the "0.5 m" position and read the A/D value.
5) Set the Focus Dial to the "∞" position and read the A/D value.
   Make certain that the A/D value for "∞" falls within the range specified below.
   If it is not within this range, do not use the CPU version 1 (replace the Main FPC Ass'y with a new one).
   0.5 m : F3 (hex.) or more
   Infinity : 33 (hex.) ~ 42 (hex.)



[Adjustment of Camera with CPU Version 2]

1) Select the Focus Dial Adjustment Mode "Fd" by pressing the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button.
3) Select "0.5 m" by pressing the SELECT Button.
4) Set the Focus Dial to the "0.5 m" position.
5) Depress the Shutter Release Button all the way. Then the adjusted value will automatically be written.
6) Select "InF" by pressing the SELECT Button.
7) Set the Focus Dial to the "∞" position.
8) Depress the Shutter Release Button all the way. Then the adjusted value will automatically be written.
9) Press the DATE Button to complete the Focus Dial Adjustment Mode.

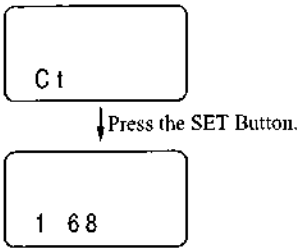


10. Shots Count Display "Ct"

* The total shots count is displayed by a decimal number.
  Every shutter operation, the camera adds one to the shots count in EEPROM.

1) Select the Shots Count Display Mode "Ct" by pressing the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button.
3) Press the DATE Button to complete this mode.

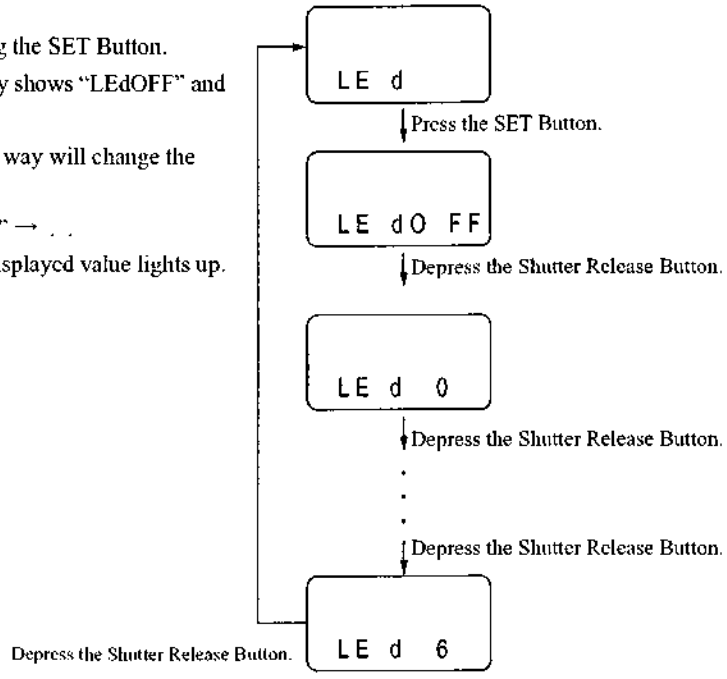
Shots Count Display



11. Date Imprint LED Confirmation Mode "LEd"

1) Select the Date Imprint LED Confirmation Mode "LEd" by pressing the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button.
   Immediately after entering this mode, the display shows "LEdOFF" and all the LEDs are out.
3) Each press of the Shutter Release Button all the way will change the display in the following sequence :
   "OFF" → "0" → "1" → . . → "6" → "OFF" → . .
   At each display, the LED corresponding to the displayed value lights up.
4) Press the DATE Button to complete this mode.

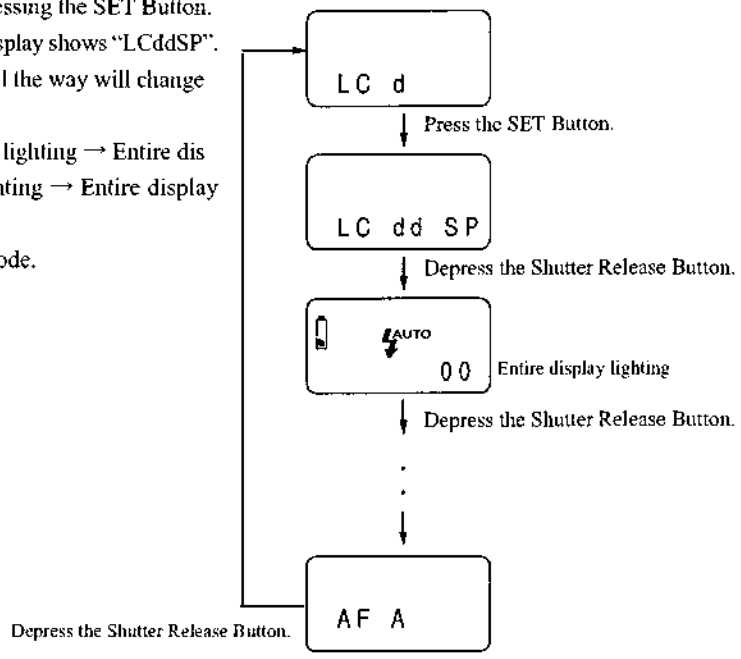
Date Imprint LED Confirmation Mode



12. LCD and Viewfinder Display Confirmation Mode "LCd"

1) Select the LCD and Viewfinder Display Confirmation Mode "LCd".
2) Set the Adjustment Execution Mode by pressing the SET Button. Immediately after entering this mode, the display shows "LCddSP".
3) Each press of the Shutter Release Button all the way will change the display in the following sequence :
   Entire display lighting → One half display lighting → Entire dis play lighting → Another half display lighting → Entire display lighting → Entire display out
4) Press the DATE Button to complete this mode.

LCD and Viewfinder display Confirmation Mode

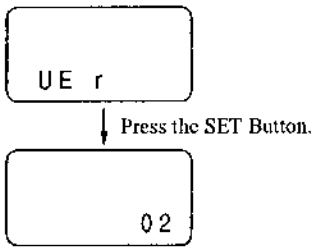


13. Version Display Mode "UEr"

1) Select the Version Display Mode "UEr" by operating the DATE Button.
2) Set the Adjustment Execution Mode by pressing the SET Button. On entering this mode, the display shows "02".

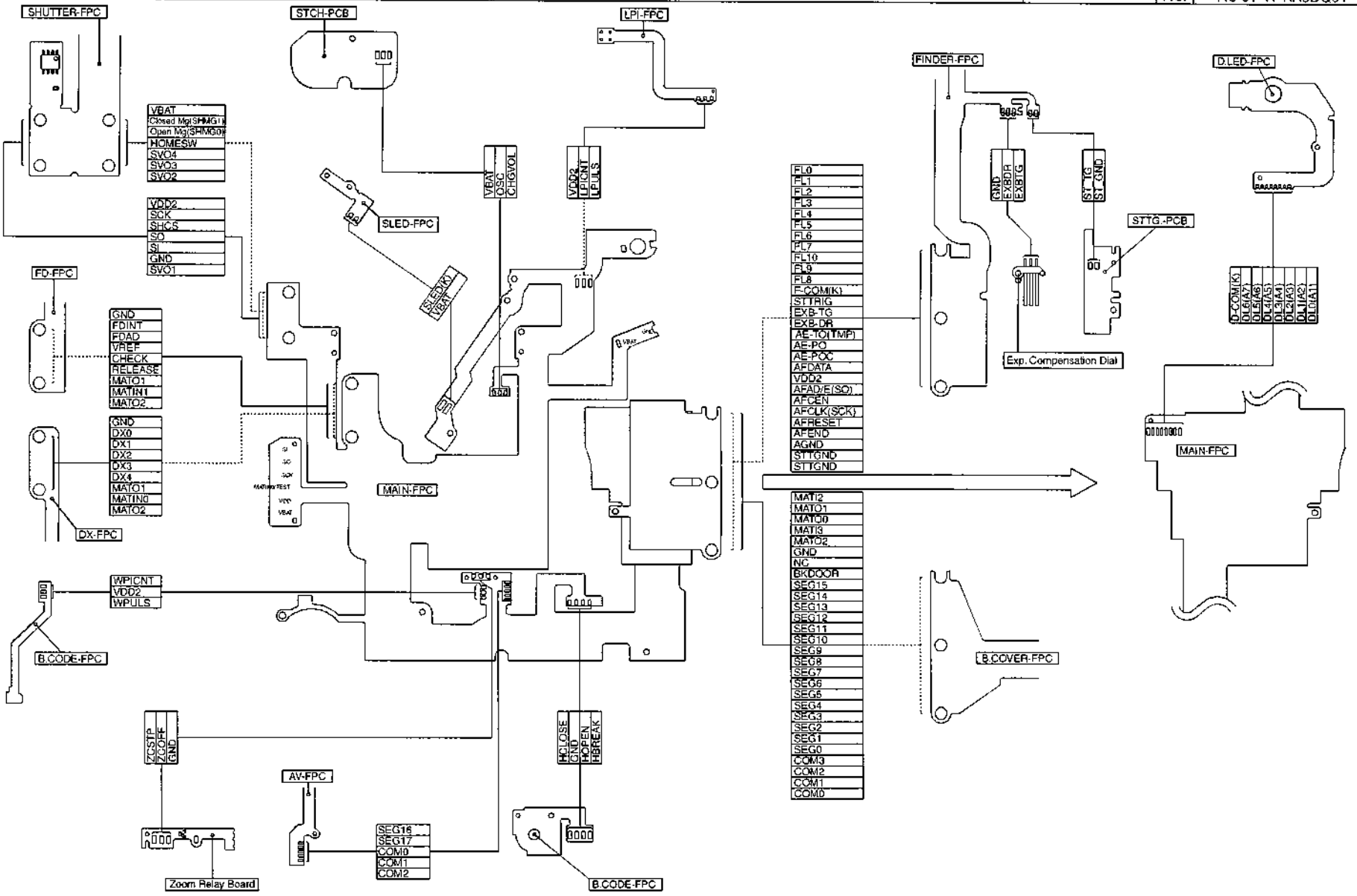
*This display will not appear on the camera with the CPU version 1.

Version Display Mode



Terminal Connection Diagram

See Connection.pdf

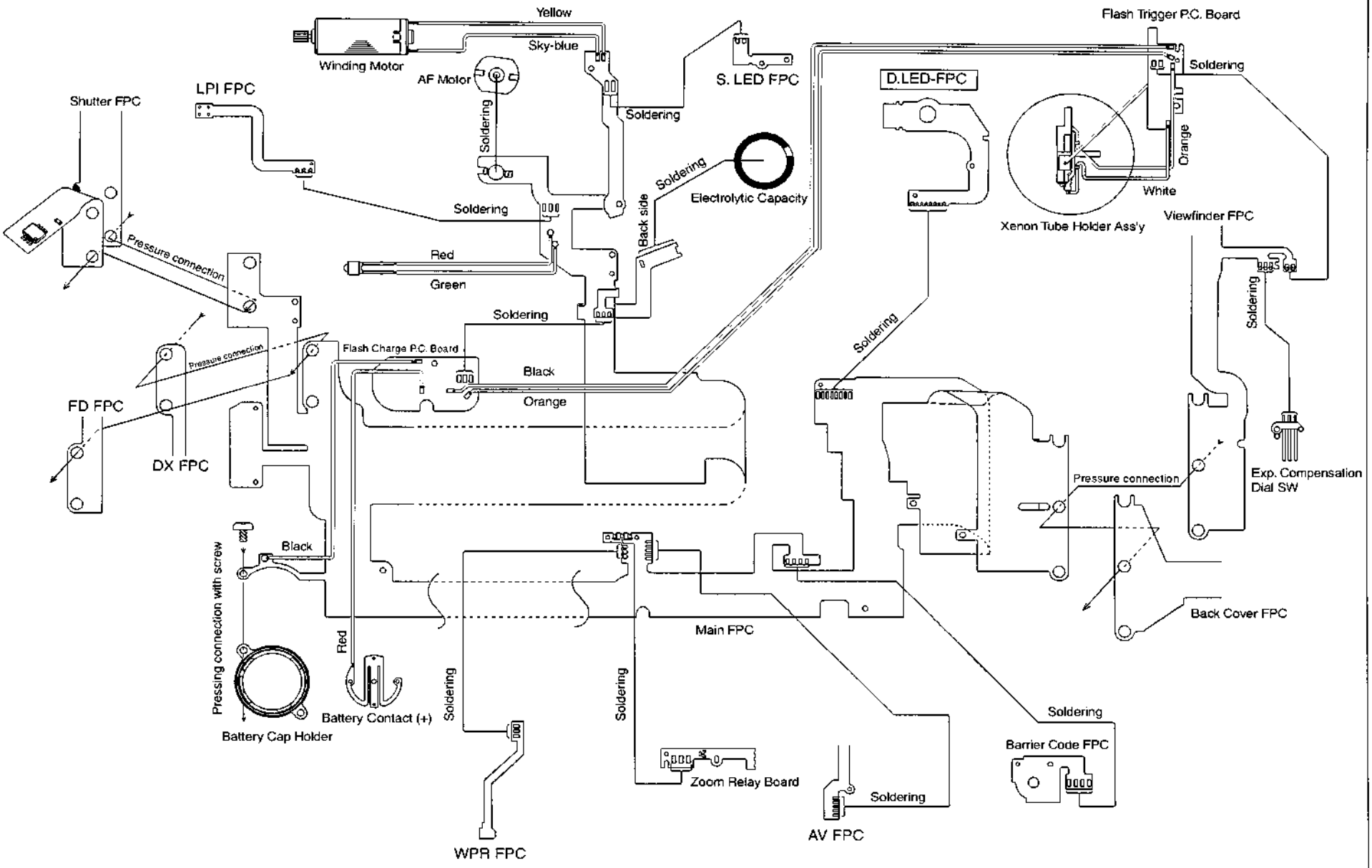


Legend :
—— Land surface (front)
------ Land surface (back)

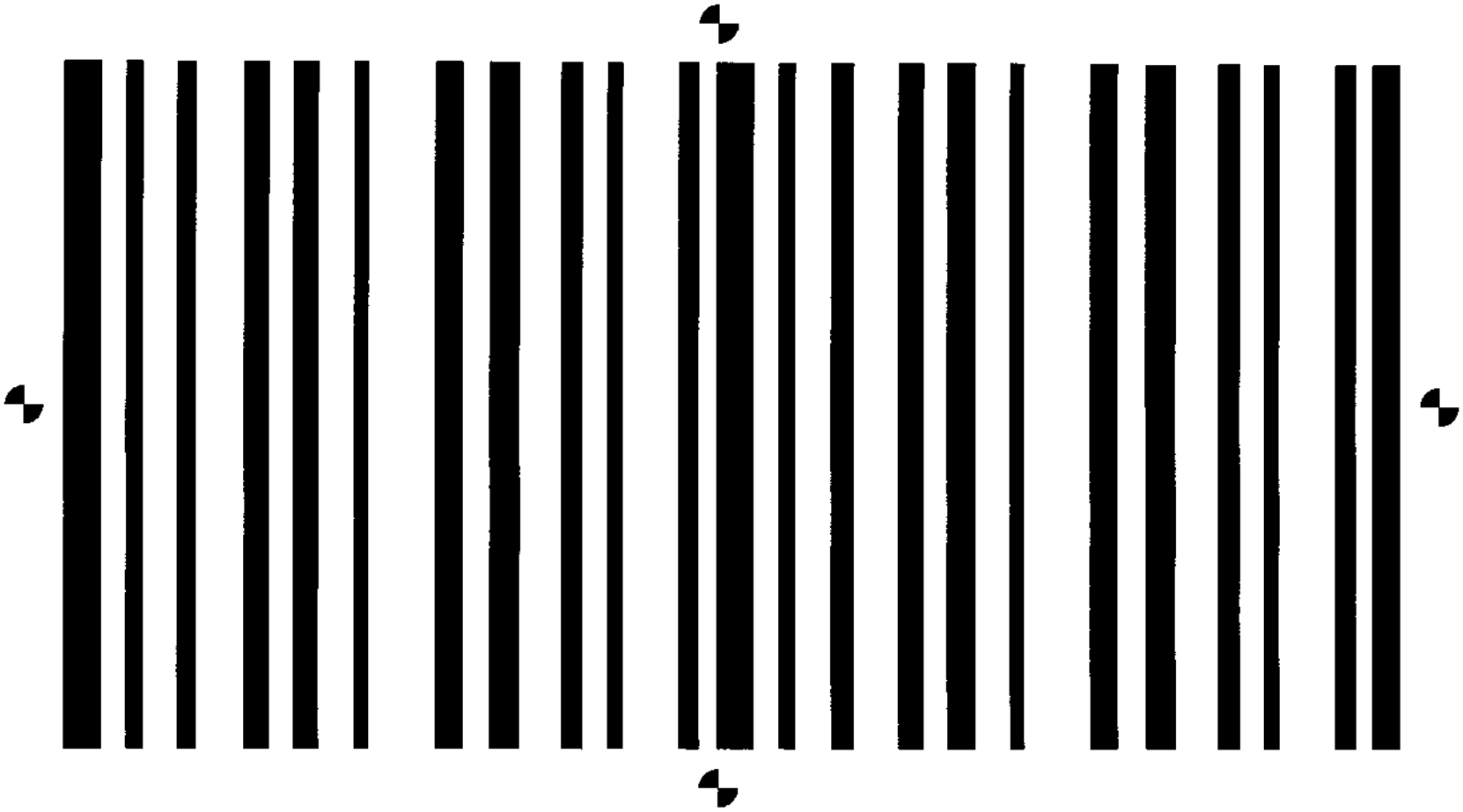
TERMINAL CONNECTION DIAGRAM

Wiring Diagram

See Connection.pdf



WIRING DIAGRAM

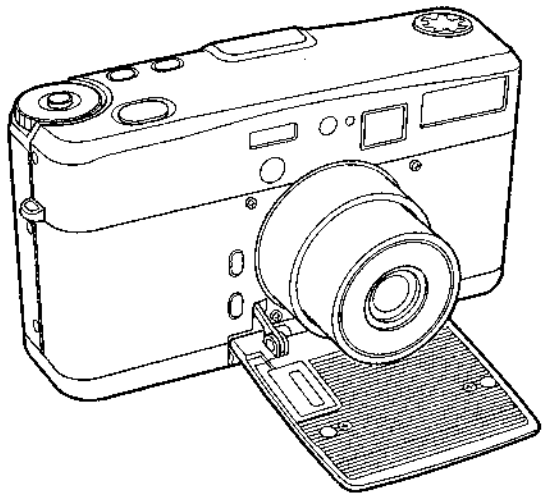


AF Chart for 2.0m

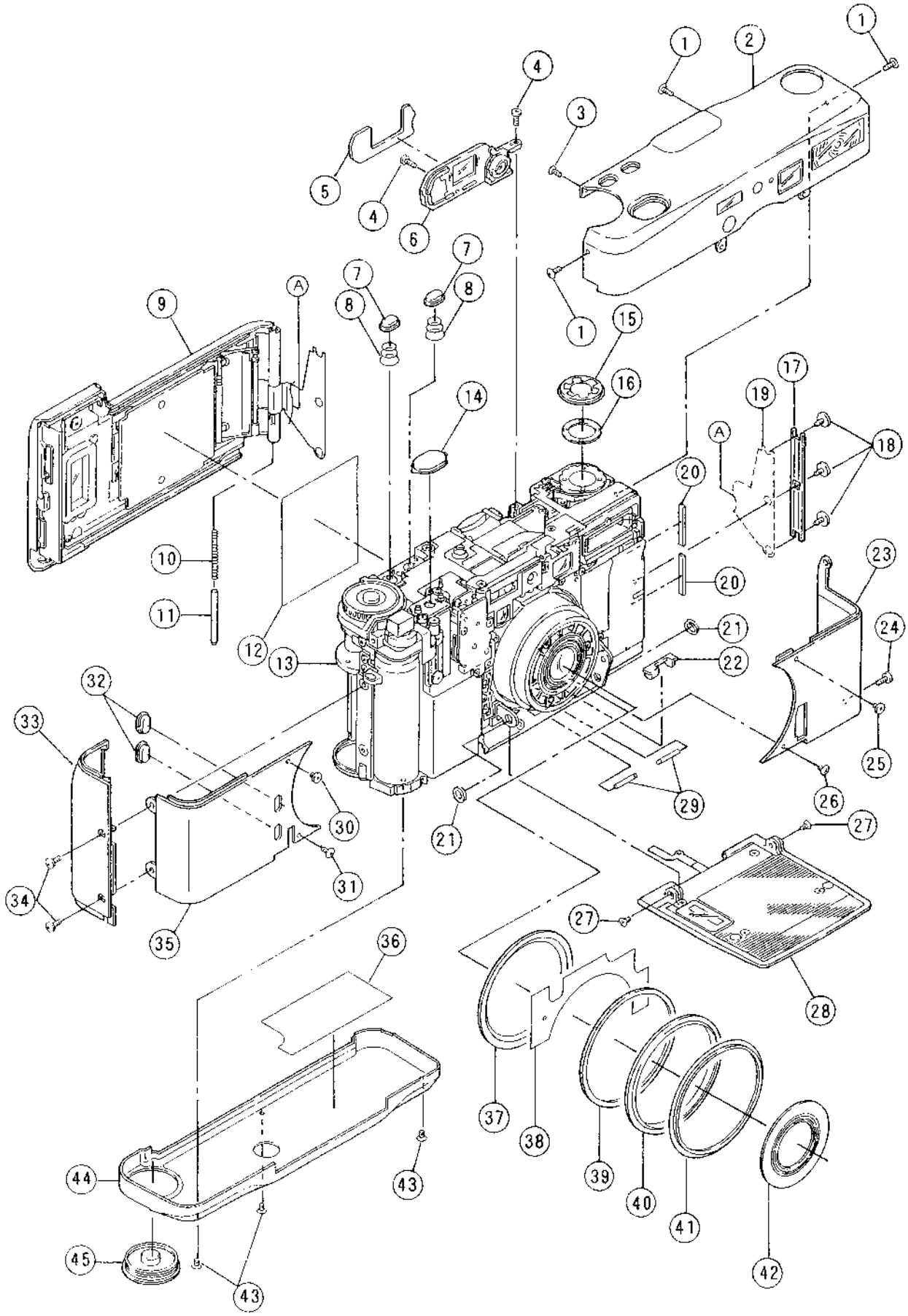
KYOCERA

CONTAX T VS III

ASSEMBLING CHART



KYOCERA CORPORATION
Optical Equipment Group
Service Dept. 3DQ 991215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	PARTS NO.	DESCRIPTION		QTY
1	66001263	TOP COVER ASS'Y S.S	(Silver model)	3
	66001272	TOP COVER (B) ASS'Y S.S	(Black model)	3
2	3DQG0100	TOP COVER ASS'Y	(Silver model)	1
	3DQG010B	TOP COVER (B) ASS'Y	(Black model)	1
3	66001314	TOP COVER ASS'Y S.S	(Silver model)	1
	66001328	TOP COVER (B) ASS'Y S.S	(Black model)	1
4	69103576	EYE-PIECE COVER ASS'Y S.S		2
5	3DQ37400	EYE-PIECE RUBBER	(Silver model)	1
	3DQ41800	EYE-PIECE RUBBER (B)	(Black model)	1
6	3DQG0400	EYE-PIECE COVER ASS'Y	(Silver model)	1
	3DQG040B	EYE-PIECE COVER (B) ASS'Y	(Black model)	1
7	3DQ13700	ZOOM BUTTON	(Silver model)	2
	3DQ41300	ZOOM BUTTON (B)	(Black model)	2
8	3DQ13800	ZOOM BUTTON SPRING		2
9	3DQD0100	BACK COVER ASS'Y	(Silver model)	1
	3DQD010B	BACK COVER (B) ASS'Y	(Black model)	1
10	17417700	HINGE SHAFT SPRING		1
11	3DQ17200	HINGE SHAFT (1)		1
12	3AQ14200	PRESSURE PLATE SHEET		1
13	*	BODY		1
14	3CUB5000	RELEASE BUTTON ASS'Y		1
15	3DQ14100	EXP. COMPENSATION DIAL (1)	(Silver model)	1
	3DQ41400	EXP. COMPENSATION DIAL (1)(B)	(Black model)	1
16	3DQG0300	EXP. COMPENSATION ADJUSTING PLATE ASS'Y		1
17	3DQ11500	FPC CONNECTOR PLATE (3)		1
18	66001152	FPC CONNECTOR PLATE (3) S.S		3
19	*	BACK COVER FPC		1
20	3DQ11600	FPC CONNECTOR RUBBER (3)		2
21	3DQ30510	BARRIER LINK (1) COLLAR		2
22	3DQ30900	BARRIER HINGE COVER		1
23	3DQ39500	FRONT PLATE (RIGHT)	(Silver model)	1
	3DQ40300	FRONT PLATE (RIGHT)(B)	(Black model)	1
24	69113076	FRONT PLATE (RIGHT) S.S		1
25	66001308	TOP COVER ASS'Y S.S	(Silver model)	1
	66001325	TOP COVER (B) ASS'Y S.S	(Black model)	1
26	66001313	FRONT PLATE (RIGHT) S.S	(Silver model)	1
	66001327	FRONT PLATE (RIGHT)(B) S.S	(Black model)	1
27	66001306	FRONT BARRIER ASS'Y S.S		2
28	3DQG0500	FRONT BARRIER ASS'Y	(Silver model)	1
	3DQG050B	FRONT BARRIER (B) ASS'Y	(Black model)	1
29	3DQ30800	BARRIER HINGE SHAFT		2
30	66001309	TOP COVER ASS'Y S.S	(Silver model)	1
	66001326	TOP COVER (B) ASS'Y S.S	(Black model)	1
31	66001299	FRONT PLATE (LEFT) S.S	(Silver model)	1
	66001329	FRONT PLATE (LEFT) (B) S.S	(Black model)	1
32	3DQ34500	APERTURE BUTTON	(Silver model)	2
	3DQ41500	APERTURE BUTTON (B)	(Black model)	2
33	3DQ37500	SIDE COVER	(Silver model)	1
	3DQ40900	SIDE COVER (B)	(Black model)	1
34	69113572	SIDE COVER S.S	(Silver model)	2
	69113579	SIDE COVER (B) S.S	(Black model)	2
35	3DQ39000	FRONT PLATE (LEFT)	(Silver model)	1
	3DQ40200	FRONT PLATE (LEFT)(B)	(Black model)	1
36	3DQ34900	BOTTOM COVER INSULATION TAPE		1
37	3DQ27600	LIGHT-SHIELD RING		1
38	3DQ87700	LIGHT-SHIELD CURTAIN		1
39	3DQ36700	COVER SPACER (1)		1
	3DQ36800	COVER SPACER (2)		1
40	3DQ65200	LIGHT-SHIELD RING (2)		1
41	3DQ38100	COVER RING		1
42	3DQ27700	LENS NAME RING		1
43	66001251	BOTTOM COVER S.S	(Silver model)	3
	66001271	BOTTOM COVER (B) S.S	(Black model)	3
44	3DQ34800	BOTTOM COVER	(Silver model)	1
	3DQ40400	BOTTOM COVER (B)	(Black model)	1
45	3AQ12500	BATTERY CAP	(Silver model)	1
	3AQ96600	BATTERY CAP	(Black model)	1

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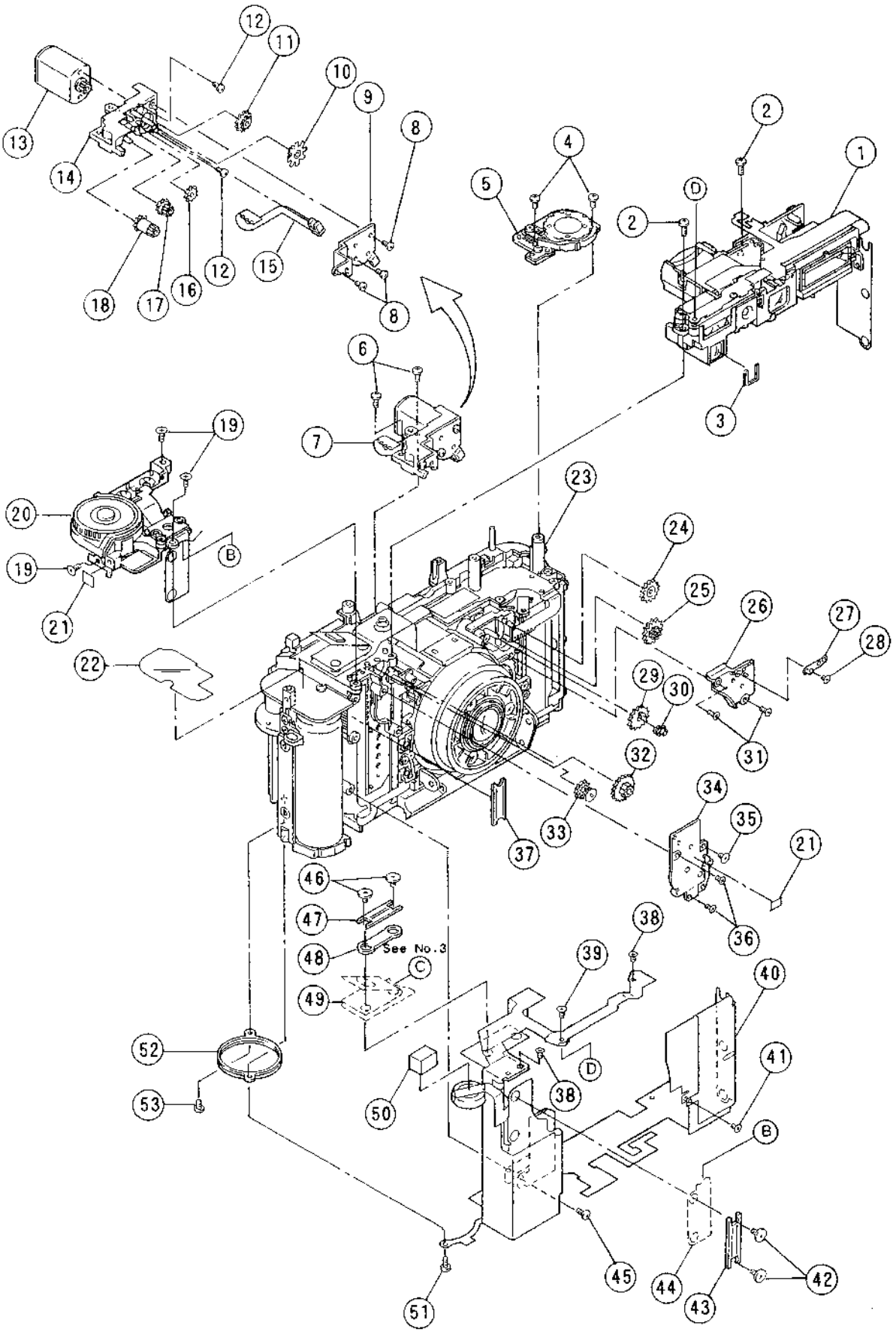
See No.3

	PARTS NO.	DESCRIPTION		QTY
1	3DQF0100	VIEWFINDER BASE ASS'Y		1
2	69214076	VIEWFINDER BASE ASS'Y S.S		2
3	3DQ65900	AF-ASSIST BEAM EMITTER WINDOW MOQUETTE		1
4	69113576	EXP. COMPENSATION BASE PLATE ASS'Y S.S		2
5	3DQB1300	EXP. COMPENSATION BASE PLATE ASS'Y		1
6	69213576	ZOOM GEAR BASE ASS'Y S.S		2
7	3DQB0500	ZOOM GEAR BASE ASS'Y		1
8	69102576	ZOOM GEAR BASE PLATE (1) S.S		3
9	3DQ22200	ZOOM GEAR BASE PLATE (1)		1
10	3DQ24900	ZOOM ENCODER		1
11	3DQ22700	ZOOM GEAR (1)		1
12	61901826	AF MOTOR ASS'Y S.S		2
13	3DQE0600	AF MOTOR ASS'Y		1
14	3DQ22100	ZOOM GEAR BASE		1
15	3DQE0300	LENS P.I FPC ASS'Y		1
16	3DQ22800	ZOOM GEAR (2)		1
17	3DQ22900	ZOOM GEAR (3)		1
18	3DQ23000	ZOOM GEAR (4)		1
19	66001156	FOCUS DIAL BASE ASS'Y S.S		3
20	3DQB0800	FOCUS DIAL BASE ASS'Y	(Silver model)	1
	3DQB080B	FOCUS DAIL BASE (B) ASS'Y	(Black model)	1
21	3DQ42500	STRAP HOLDER LIGHT-SHIELD SHEET	(Black model)	2
22	3DQ11900	FLASH P.C BOARD INSULATION TAPE		1
23	*	BODY		1
24	3DQ20400	FINDER GEAR (4)		1
25	3DQ20300	FINDER GEAR (3)		1
26	3DQ20700	FINDER GEAR COVER		1
27	3DQ20800	FINDER GEAR COUPLING PLATE		1
28	66001247	FINDER GEAR COUPLING PLATE S.S		1
29	3DQ20100	FINDER GEAR (1)		1
30	3DQ20200	FINDER GEAR (2)		1
31	66001315	FINDER GEAR COVER S.S		2
32	3DQ23300	ZOOM GEAR (7)		1
33	3DQB0600	ZOOM GEAR (5) ASS'Y		1
34	3DQB0700	ZOOM GEAR BASE PLATE (2) ASS'Y		1
35	61911626	ZOOM GEAR BASE PLATE (2) ASS'Y S.S		1
36	66001175	ZOOM GEAR BASE PLATE (2) ASS'Y S.S		2
37	3DQ15300	DX CONTACT		1
38	66001175	MAIN FPC ASS'Y S.S		2
39	6D404026	MAIN FPC ASS'Y S.S		1
40	3DQE0100	MAIN FPC ASS'Y		1
41	66001315	MAIN FPC ASS'Y S.S		1
42	66001152	FPC CONNECTOR PLATE S.S		2
43	3DQ11200	FPC CONNECTOR PLATE		1
44	*	FOCUS DIAL FPC		1
45	69213576	MAIN FPC ASS'Y S.S		1
46	66001152	FPC CONNECTOR PLATE (1) S.S		2
47	3DQ11100	FPC CONNECTOR PLATE (1)		1
48	3DQ11300	FPC CONNECTOR RUBBER (1)		1
49	*	SHUTTER FPC		1
50	3DQ10400	P.R MOQUETTE		1
51	69113576	MAIN FPC ASS'Y S.S		1
52	3BK10900	BATTERY CAP HOLDER		1
53	69113576	BATTERY CAP HOLDER S.S		1

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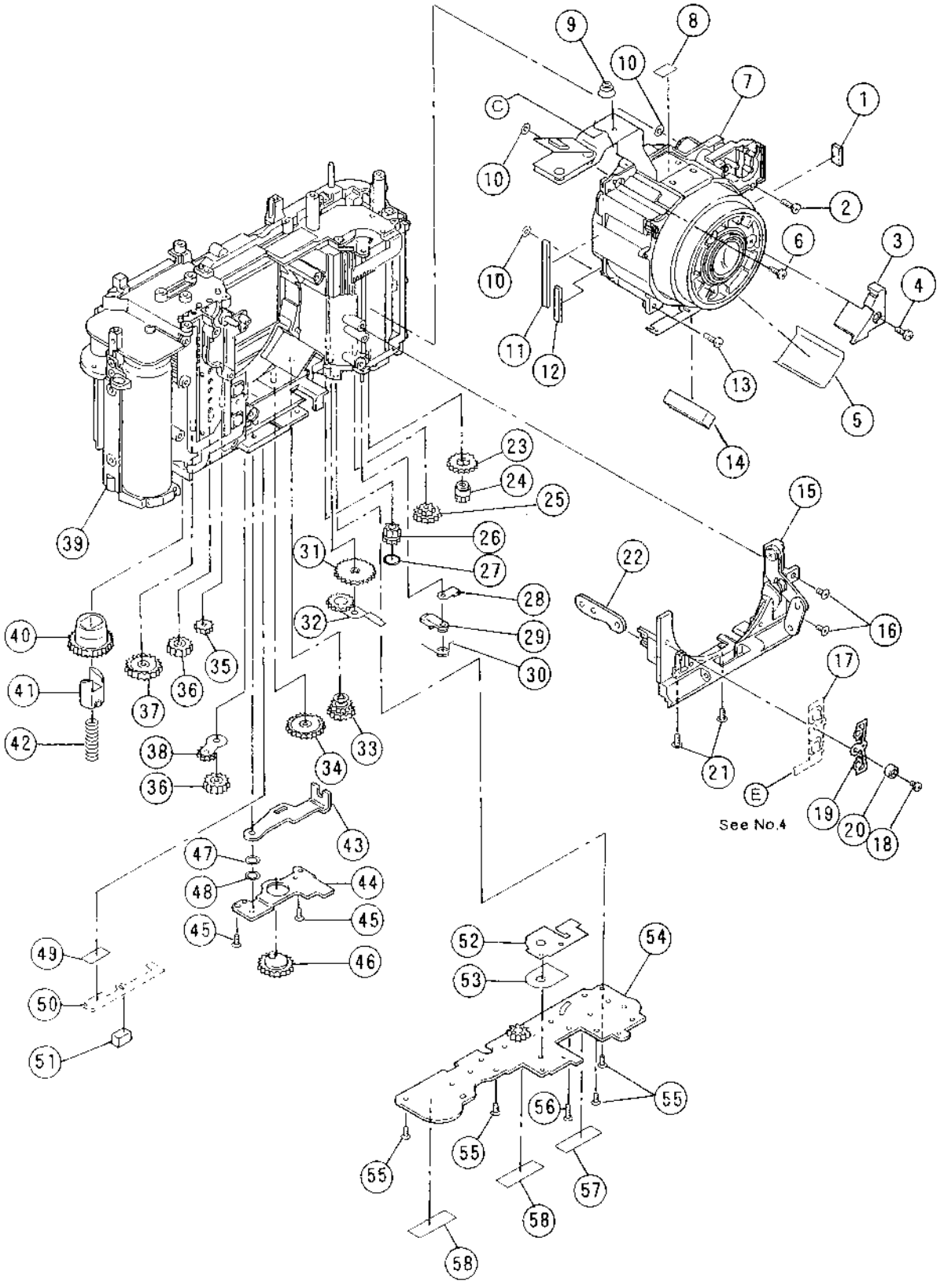
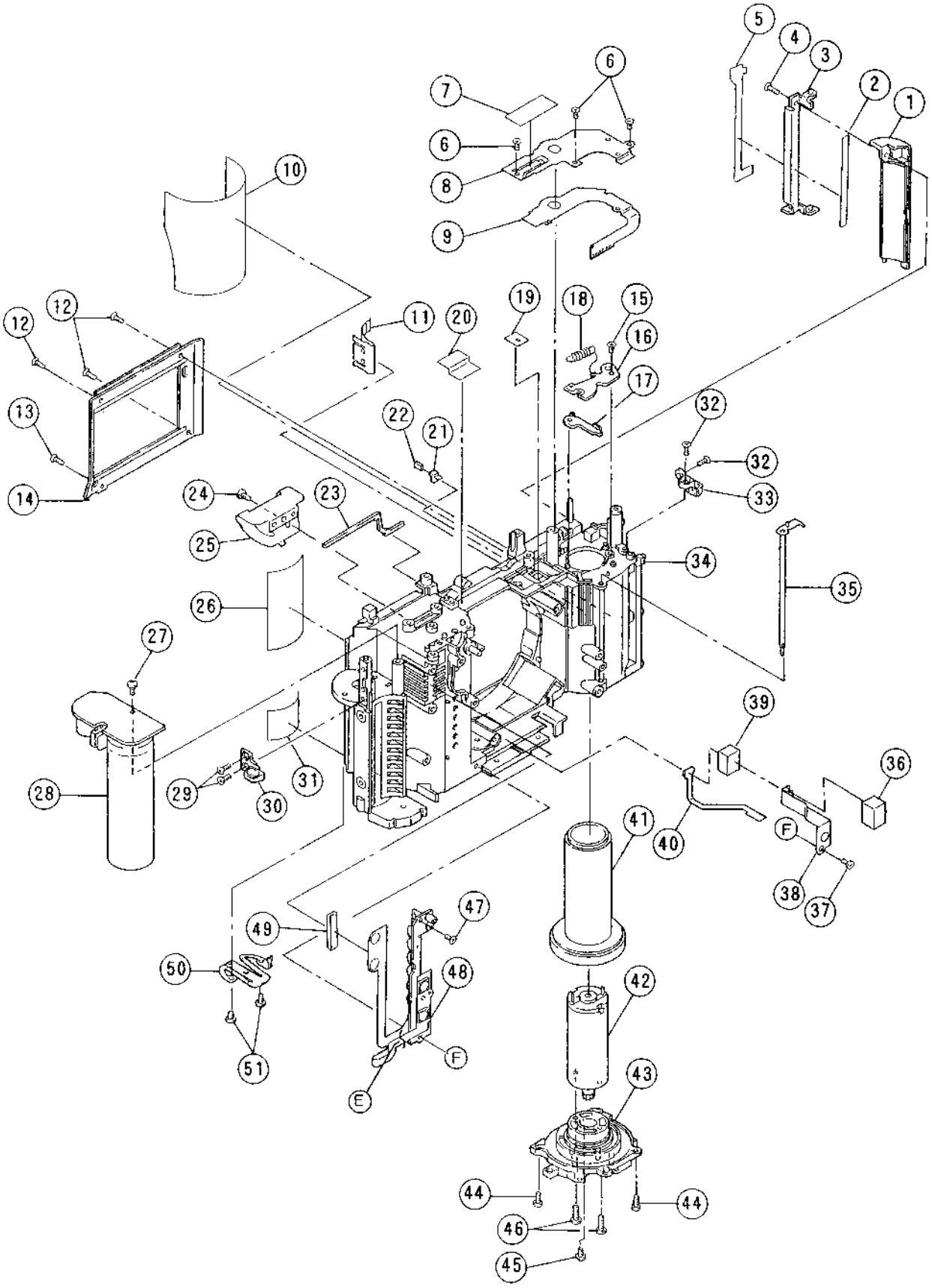

See No.4

	PARTS NO.	DESCRIPTION		QTY
1	3DQ96300	SHUTTER FPC MOQUETTE		1
2	66001109	LENS BARREL UNIT S.S		1
3		ZC LIGHT-SHIELD COVER		1
4	69113576	ZC LIGHT-SHIELD COVER S.S		1
5	3DQ89300	LIGHT-SHIELD TAPE (3)		1
6	69214576	LENS BARREL UNIT S.S		1
7	*	LENS BARREL UNIT		1
8	3DQ96700	SHUTTER FPC TAPE		1
9	3DQ21600	CONTACT SPRING (2)		1
10	60111810	B.F ADJUSTMENT WASHER (t:0.1)		3
	60121812	B.F ADJUSTMENT WASHER (t:0.2)		3
	60131810	B.F ADJUSTMENT WASHER (t:0.3)		3
	60141810	B.F ADJUSTMENT WASHER (t:0.4)		3
	60151810	B.F ADJUSTMENT WASHER (t:0.5)		3
	60161812	B.F ADJUSTMENT WASHER (t:0.6)		3
11	3DQ87900	LIGHT-SHIELD MOQUETTE (6)		1
12	3DQ89800	LIGHT-SHIELD MOQUETTE (4)		1
13	69215576	LENS BARREL UNIT S.S		1
14	3DQ65500	LIGHT-SHIELD MOQUETTE (9)		1
15	3DQC0100	BARRIER HOLDER ASS'Y	(Silver model)	1
	3DQC010B	BARRIER HOLDER (B) ASS'Y	(Black model)	1
16	66001156	BARRIER HOLDER ASS'Y S.S		2
17	*	DX FPC		1
18	61804026	APERTURE BUTTON HOLDER S.S		1
19	3DQ30400	APERTURE BUTTON COLLAR		1
20	3DQ34600	APERTURE BUTTON HOLDER		1
21	66001178	BARRIER HOLDER ASS'Y S.S		2
22	3DQC0600	BARRIER LINK (4) ASS'Y		1
23	3DQ60100	WINDING GEAR (1)		1
24	3DQ60200	WINDING GEAR (2)		1
25	3DQ60300	WINDING GEAR (3)		1
26	3DQ60700	WINDING GEAR (4)		1
27	3DQ64000	WINDING GEAR (4) RETAINER		1
28	3DQ63000	EPICYCLIC SWITCH PLATE (2)		1
29	3DQ62600	EPICYCLIC STOPPER		1
30	3DQ63100	EPICYCLIC SWITCH PLATE SPRING (2)		1
31	3DK61300	WINDING GEAR (3)		1
32	3DQB0900	EPICYCLIC PLATE (1) ASS'Y		1
33	3DQB1000	REWIND GEAR (1) ASS'Y		1
34	3DQ61200	REWIND GEAR (3)		1
35	1AW32300	REWIND GEAR (4)		1
36	3CY63600	W. GEAR (6)		2
37	1AQ30600	WINDING GEAR (4)		1
38	3DQB1100	EPICYCLIC PLATE (2) ASS'Y		1
39	*	BODY		1
40	38462100	R. GEAR		1
41	38462200	FORK		1
42	38462300	R. SHAFT SPRING		1
43	3DQ33900	BARRIER DRIVING GEAR PLATE		1
44	3DQ62000	BARRIER GEAR PLATE		1
45	69303576	BARRIER GEAR PLATE S.S		2
46	3DQB1900	BARRIER GEAR ASS'Y		1
47	60152110	WASHER		1
48	60132112	WASHER		1
49	3DQ88400	FPC STICK TAPE (4)		1
50	*	ZOOM RELAY BOARD		1
51	1AW13900	WPR FPC MOQUETTE		1
52	3DQ50800	BARRIER CODE FPC		1
53	3DQ62500	BARRIER CODE TAPE		1
54	*	WINDING BASE PLATE		1
55	69313576	WINDING BASE PLATE ASS'Y S.S		4
56	69315576	WINDING BASE PLATE ASS'Y S.S		1
57	3DQ88200	FPC STICK TAPE (2)		3

1, 5, 7, 11, 12, 14	3DQH0100	LENS BARREL UNIT ASS'Y	(Silver model)	1
	3DQH010B	LENS BARREL UNIT (B) ASS'Y	(Black model)	1
52-54, 57	3DQB1200	WINDING BASE PLATE ASS'Y		1

The parts names with * mark are not supplied as a repair parts.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	PARTS NO.	DESCRIPTION	QTY
1	3DQ38900	HINGE COVER	1
2	3DQ36900	HINGE PLATE TAPE	1
3	3DQ38800	HINGE PLATE	1
4	69315076	HINGE PLATE S.S	1
5	3DQ19500	BACK COVER MOQUETTE (RIGHT)	1
6	66001194	DATE IMPRINT LED RETAINER PLATE S.S	3
7	3DQ11000	LED LIGHT-SHIELD TAPE	1
8	3DQ10900	DATE IMPRINT LED RETAINER PLATE	1
9	3DQE0400	DATE LED FPC ASS'Y	1
10	3DQ15400	FILM GUIDE SHEET	1
11	3DQ19600	FILM GUIDE SPRING	1
12	69303576	APERTURE S.S	3
13	69304076	APERTURE S.S	1
14	3DQ10200	APERTURE	1
15	66001194	EPICYCLIC SWITCH PLATE (A) RETAINER S.S	1
16	3DQ63600	EPICYCLIC SWITCH PLATE (A) RETAINER	1
17	3DQ63200	EPICYCLIC SWITCH PLATE (A)	1
18	3DQ63300	EPICYCLIC SWITCH PLATE (A) SPRING	1
19	3DQ12000	DATE IMPRINT LED APERTURE PLATE	1
20	3DQ88000	LIGHT-SHIELD TAPE (4)	1
21	3DQ10800	DATE LENS	1
22	3DQ19900	DATE LENS RETAINER	1
23	3DQ19100	FILM CARTRIDGE MOQUETTE	1
24	69113076	FILM CARTRIDGE LIFTER S.S	1
25	3DQ10600	FILM CARTRIDGE LIFTER	1
26	38411900	EXPLANATION SEAL	1
27	66001194	FLASH CHARGE P.C BOARD ASS'Y S.S	1
28	3DQE0800	FLASH CHARGE P.C BOARD ASS'Y	1
29	69314076	STRAP HOLDER (LEFT) S.S	2
30	3DQ38600	STRAP HOLDER (LEFT)	1
31	3AQ12300	BATTERY LABEL	1
32	69314076	STRAP HOLDER (RIGHT) S.S	2
33	3DQ38700	STRAP HOLDER (RIGHT)	1
34	*	BODY	1
35	3DQB0300	EPICYCLIC SWITCH SHAFT ASS'Y	1
36	3DQ87400	RETAINER MOQUETTE	1
37	69112566	P.R LUG PLATE S.S	1
38	3DQ14800	P.R LUG PLATE	1
39	3DQ10400	P.R MOQUETTE	1
40	3DQM0400	WINDING P.R FPC (M) ASS'Y	1
41	3BP61100	SPOOL GEAR	1
42	3DQE0500	WINDING MOTOR ASS'Y	1
43	3DQ62300	MOTOR HOLDER	1
44	69103576	MOTOR HOLDER S.S	2
45	61912826	MOTOR HOLDER S.S	1
46	66001307	WINDING MOTOR ASS'Y S.S	2
47	66001175	DX CASE ASS'Y S.S	1
48	3DQB0400	DX CASE ASS'Y	1
49	3DQ11400	FPC CONNECTOR RUBBER (2)	1
50	3BK10800	BATTERY CONTACT(+)	1
51	69113076	BATTERY CONTACT(+) S.S	2

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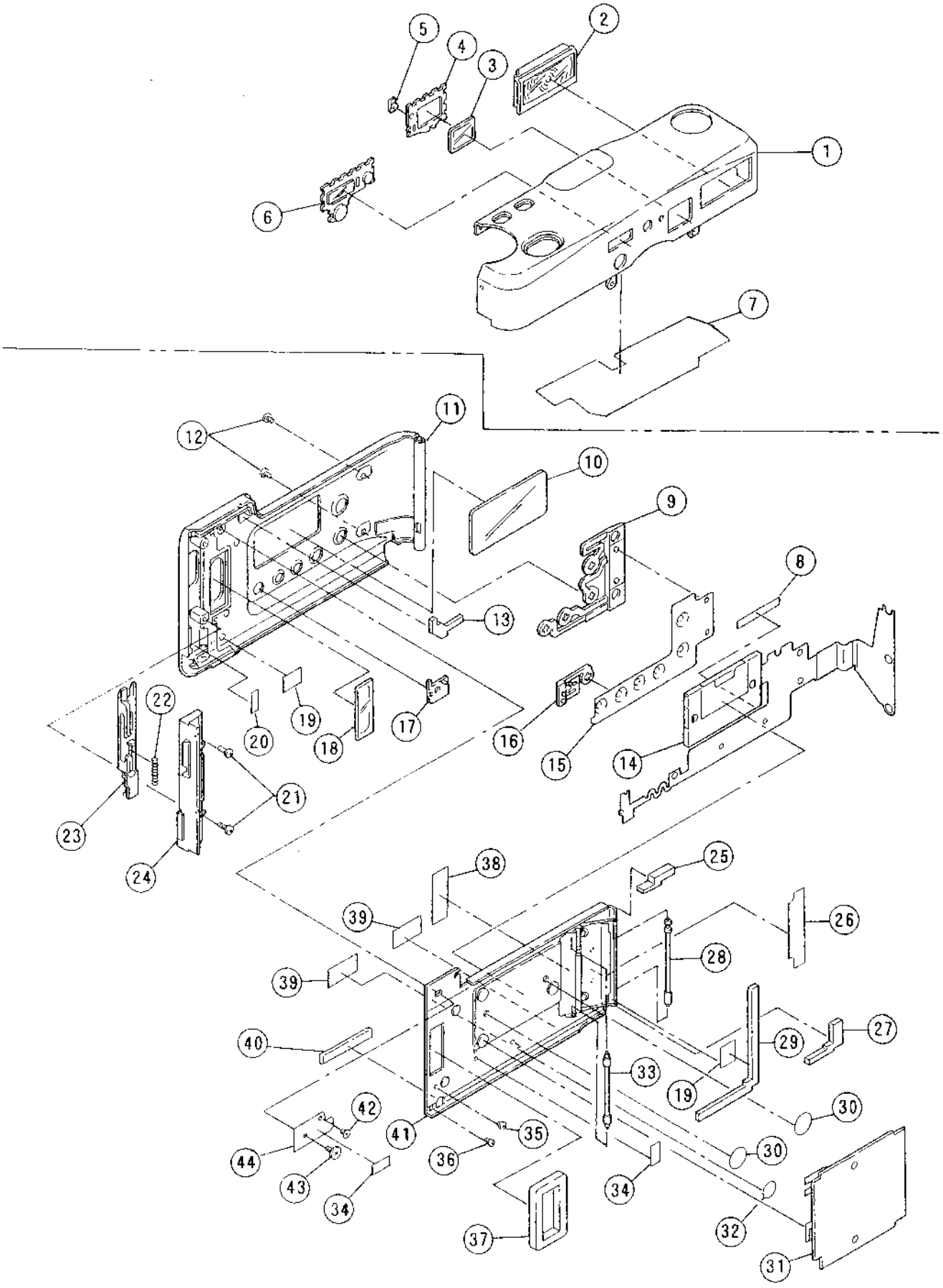
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	PARTS NO.	DESCRIPTION		QTY
1	*	TOP COVER		1
2	3DQ36100	DIFFUSER		1
3	3DQ35800	FINDER WINDOW		1
4	3DQ35300	FINDER WINDOW FRAME		1
5	3AQ34000	ST. LED WINDOW		1
6	3DQ35400	AF WINDOW		1
7	3DQ88800	INSULATION TAPE (2)		1
8	3DQ87100	INSULATION TAPE (7)		1
9	3DQ18500	MODE BUTTON	(Silver model)	1
	3DQ42000	MODE BUTTON (B)	(Black model)	1
10	3DQ18400	BACK COVER PANEL		1
11	*	BACK COVER		1
12	61912030	BACK COVER S.S	(Silver model)	2
	61912029	BACK COVER S.S	(Black model)	2
13	3DQ19200	BACK COVER MOQUETTE (UPPER)		1
14	3DQD0200	BACK COVER FPC ASS'Y		1
15	3DQ18300	BACK COVER SWITCH SHEET		1
16	3DQ17900	SR BUTTON	(Silver model)	1
	3DQ41900	SR BUTTON (B)	(Black model)	1
17	3DQ18600	REWIND BUTTON GUIDE	(Silver model)	1
	3DQ42100	REWIND BUTTON GUIDE (B)	(Black model)	1
18	3AQ15400	FILM CHECK WINDOW		1
19	3DQ88000	LIGHT-SHIELD TAPE (4)		2
20	3DQ88100	FPC STICK TAPE (1)		1
21	69213576	BACK COVER LOCK COVER S.S		2
22	3DQ18800	BACK COVER KNOB SPRING		1
23	3DQD0400	BACK COVER LOCK CLAW ASS'Y		1
24	3DQ15800	BACK COVER LOCK COVER		1
25	3DQ89500	LIGHT-SHIELD MOQUETTE (1)		1
26	3DQ87600	MODE BUTTON TAPE		1
27	3DQ89700	LIGHT-SHIELD MOQUETTE (3)		1
28	3DQ16400	FILM ROLLER		1
29	3DQ89600	LIGHT-SHIELD MOQUETTE (2)		1
30	3DQ89100	LIGHT-SHIELD TAPE (1)		2
31	3DQD0500	PRESSURE PLATE ASS'Y		1
32	8BF10500	STATIC SHEET (4)		1
33	3DQ17000	GUIDE ROLLER		1
34	3DQ66100	AUXILIARY PLATE LIGHT-SHIELD SHEET		2
35	63901226	BACK COVER AUXILIARY PLATE ASS'Y S.S		1
36	69102266	BACK COVER AUXILIARY PLATE ASS'Y S.S		1
37	3DQ16200	BACK COVER WINDOW MOQUETTE		1
38	3DQ18100	BACK COVER FPC TAPE (2)		1
39	3DQ18000	BACK COVER FPC TAPE (1)		2
40	3DQ19300	BACK COVER MOQUETTE (LOWER)		1
41	*	BACK COVER AUXILIARY PLATE		1
42	66001295	AUXILIARY PLATE COVER S.S		1
43	66001162	AUXILIARY PLATE COVER S.S		1
44	3DQ17300	AUXILIARY PLATE COVER		1

1-7	3DQG0100	TOP COVER ASS'Y	(Silver model) 1
	3DQG010B	TOP COVER (B) ASS'Y	(Black model) 1
28, 33, 38, 39, 41	3DQD0300	BACK COVER AUXILIARY PLATE ASS'Y	1
8-44	3DQD0100	BACK COVER ASS'Y	(Silver model) 1
	3DQD010B	BACK COVER (B) ASS'Y	(Black model) 1

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