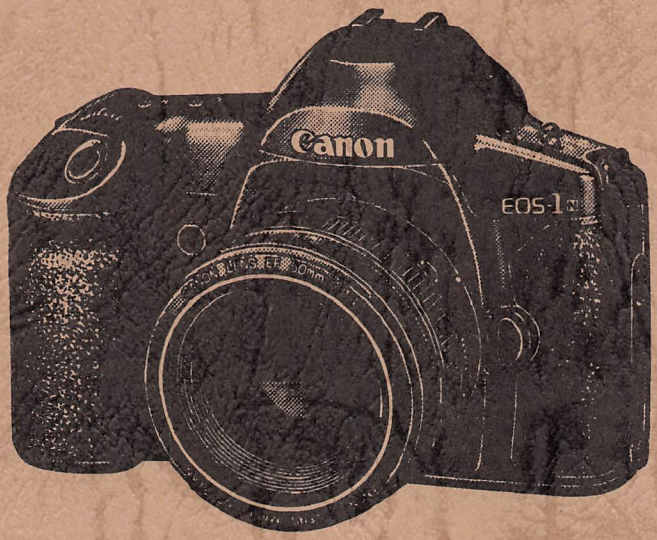
Canon

Service Manual

ENGLISH EDITION

EOS 1N C12-8301



CY8-1200-119

Canon

EOS-1N

SERVICE MANUAL

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual could include typographical errors or technical inaccuracies due to improvements or changes in the products. When changes occur in applicable products or in the content of this manual, Canon will release service manual report as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon may issue new editions of this manual.

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PREFACE

SERVICE MANUAL COMPOSITION

This manual contains information on servicing the product. It has the following sections.

Part 1 General Information

Provides the basic information needed to understand the product.
(Operating instructions are not included. Refer to the product's instruction book if necessary.)

Part 2 Technical Information

Provides technical information about the mechanism and electronics of the product.

Part 3 Repair Information

Provides information for disassembly, reassembly, and adjustment of the product, about the tools required, and about the adhesives and lubricants required, and their application.

Part 4 Parts Catalog

Part 5 Electrical Diagrams

Appendix

CONTENTS

Part 1. General Information

Part 2. Technical Information

Part 3. Repair Information

Part 1

General Information

1. FEATURES

1.1 PURPOSE OF DEVELOPMENT

The EOS-1, marketed in the autumn of 1989 targeting professionals and advanced amateurs, has been accepted by many, attracted by the increased choices of EF lenses. However, after five years on the market, it is an undeniable fact that its appeal as the top grade model in our camera lineup is not as high as it used to be from the viewpoints of quieter operation and the functional improvement of Canon's multi-point AF technology.

The **EOS-1N** is a new model which has been planned and developed as the flagship of the EOS system fleet, satisfying the needs of the coming age and enhancing our comprehensive merchandise lineup and contributing to increasing share in the professional and advanced amateur market.

1.2 DEVELOPMENT CONCEPT OF THE EOS-1N

- To incorporate the basic specifications of the EOS-1.
- To improve comprehensive operational reliability.
- To improve shutter durability.
- To expand the photographic range of the EOS-1 on the basis of our accumulated engineering accomplishments.
- To insure quiet operation, wide-field multipoint AF, and compatibility with different power sources and system accessories.
- To make improvements reflecting functional requests from EOS-1 users.

1.3 FEATURES

★ Items changed from the original EOS1.

ENHANCED AUTOFOCUS

★ • Wide-field five-point focusing AF
  * Five point automatic focusing and wide-field focusing using the II+II type high precision multi BASIS.
  * Real-time selection of the focusing point (by a single operation of the quick control dial as per CF-No.11-2).
  * Manual or automatic selection among five focusing points by operating the focusing point selection button + main electronic dial.
- Quick AF
  * As fast with five sensors as the EOS-1 was with two.
  * Continuous AF exposures at about 4.7 frames per second is possible.
- Low working luminance of EV 0 enables use in low-light conditions.

★ * The Speedlite 540EZ is equipped with an AF auxiliary light compatible with 5-point AF and wide-field focusing.

- Even higher performance
  - * The cross–type BASIS enables AF detection not only for vertical lines, but also for horizontal lines.
  - * Fewer hard-to-focus objects.
- Even higher precision
  - * Compatible with large diameter lenses and automatic changeover to higher precision. (Same as the EOS–1)
- Superb moving object tracking.
  - * Moving object focus prediction (better than the EOS–1)
  - * AF tracking until just before exposure when a USM lens is used. (Simultaneous driving of the body and lens.)
  - * Automatic changeover between servo AF and AI servo AF control (automatic changeover matching the object speed).
- ★ * Improved object tracking performance by the wide-field five–point focusing system.

IMPROVED BASIC FUNCTIONS

- Bright viewfinder with 100% vertical and horizontal coverage.
- Optimized viewfinder information display.
- Built–in viewfinder diopter adjustment function. (–1 ± 2 dpt)
- Shorter viewfinder image blackout time (max. 140ms: same as with the EOS–1 and about 20% shorter than the New F–1).
- ★ • Built–in eyepiece shutter.
- ★ • Equipped with sixteen-zone metering sensor (SPC) corresponding to the number of focusing points (same as the EOS 5).
- ★ • Six metering methods (evaluative, partial, fine spot, focusing point linked spot, off-the-film flash metering and center-weighted average metering).
  - ★ * Focusing-point-linked spot metering can be selected by CF–No.13–1 and center-weighted average metering can be selected by CF–No.8–1.
- Three-zone flash metering linked to the focusing points (same as with the EOS5).
- Six AE exposure control modes (TV–AE, AV–AE, P, DEP, A–TTL and TTL flash).
- Easy to operate manual exposure and independent setting of the shutter speed and aperture.
  - * Shutter speed can be controlled by the main electronic dial.
  - * Aperture can be controlled by the quick control dial.
  - * The exposure level is displayed to the right of the viewfinder viewing area in 1/3-stop analog indications.
  - ★ * Can be modified to 1/2-stop analog indications using CF–No.6–2.
- Equipped with an ultra–high–speed, high-precision shutter mechanism, with speeds from 1/8000 of a second to 30 seconds, and X synchronization to 1/250 second.
  - ★ * By reducing the weight and load of the shutter blades, shutter durability has been improved.

★ • Precision shutter speed (TV) and aperture (AV) input in ⅓-stop increments (1-stop input can be selected by CF–No. 6–1, and ½-stop input may be selected by CF–No.6–2.

• Release time lag is short and consistent (constant 55ms time lag with all lenses from maximum aperture to 3 stops closed down).

• Repeat automatic bracketing (AEB) exposures (in ⅓-stop in increments, ± 3 stops/3 frame exposure AEB).

★ * AEB in ½-stop increments is also available by CF–No. 6–2.

★ * Bracketing order of the 3 frames can be selected using CF–No. 9.
(CF–No.9–1: Under, Standard, Over; +
CF–No.9–2, –3: Standard, Under, Over)

• Preset multiple exposures.

• Motor drive winding speed of approximately. 3.0 frames per second by a built-in twin motor system. ½

★ • Quiet rewinding by the floating suspension of the rewinding unit and pulse control of the motors. (about ½ the noise level of the EOS–1)

• By attaching the power drive booster E1 (PDB–E1), the camera is automatically changed to triple motor system.

★ * The motor drive function can be upgraded to approximately. 6 frames per second.

★ • By attaching the BP–E1 "AA" (LR6) battery pack, wider power supply selection becomes available.

• Threaded PC terminal.

GREAT HANDLING AND CONVENIENCE - AUTO OR MANUAL

• Comfortable feeling grip .

* Comfortable and stable grip thanks to the optimum shape, rubber parts and synthetic leather lamination.

★ * The palm door is coating is leather textured molded rubber.

• With the PDB–E1, basic one-handed operation is possible in both the horizontal and vertical camera positions.

• Fully automatic film transport. (Functions not related to picture making have been fully and thoroughly automated.)

• Single-point AF operation / manual AF locking (by CF–No.4–1)

* To operate the AF only — The AF operates while the button is pressed ON. When the button is released, the AF is locked.

* Independent determination of exposure control settings — The exposure can be freely determined independent of AF operation by pressing the shutter button halfway.

* Locking the AF — The AF operates when the shutter button is pressed halfway. The AF can be locked by pressing this button ON (CF–No.4–2).

• Automatic changeover between AF and manual focusing

* After focusing with one-shot AF using a USM lens, manual focusing is possible immediately after the AF operation.

- Real–time AE exposure compensation
  - * While looking into the viewfinder with your finger on the shutter button, one–touch exposure compensation is possible using the quick control dial.

★ * ⅓-stop steps, ± 3 stops (½-stop steps ± 3 stops is available using CF–No. 6–2).

★ • Equipped with a flash exposure compensation function
  - * In ⅓-stop steps, ± 3 stops (½-stop steps, ± 3 stops is available using CF–No. 6–2.)
- Easy and prompt operations are possible with the main electronic dial and the quick control dial.
  - * Basic operations can be freely made with these dials while looking into the viewfinder with your finger on the shutter button.
- The flash can be locked to the accessory shoe by use of a lock pin (applicable to 540EZ and 430EZ).

★ • Standard eye cup with a newly developed locking mechanism.
- Operation buttons housed in the palm wing improve the camera's functionality.
- Fine adjustment of the shutter release stroke is possible. (At Canon service centers: time required for the adjustment is about 15 minutes.)
  - * Adjustment of the normal (OFF) position (standard setting +1mm/ –0.5mm) and adjustment of the stroke of the SW–1 ON operation (standard setting: 0.6mm from the surround, adjustable from 0.1mm – 1.1mm.

CUSTOM FLEXIBILITY WITH CUSTOM FUNCTIONS

★ • Equipped with 14 types of custom functions. (For details, refer to the specifications section. The number of custom functions available with the EOS–1 is 8.)
  - * Tune the camera to your own shooting style using the custom functions.
- Function exchange or function selection of operation parts are possible.
  - * Manual aperture setting is possible using the main electronic dial. (CF–No.5–1). No need for an assistant for exposure compensation ' Most suitable for exposure compensation during studio photography or flash photography.

PROFESSIONAL RELIABILITY

- Environmental water resistance to the same level of the New F–1.
  - * Drip–proofing performance has been enhanced by adoption of a sealed cover construction and elimination of external slide switches.
- Upgraded cover strength: as rigid as metal covers. (It does not make a creaking noise or dent even when pressed forcefully.)
- Improved reliability by double contacts at the key electrical contact positions.
- Shutter blades are coated with water repellent lubricant. (Safe from possible adherence of water drops.)
- Guaranteed operating temperature / humidity range: –20°C to + 45°C/85%.

2. SPECIFICATIONS

★ : Items changed from the EOS1.

1. Type

1–1	Type:	35mm focal plane shutter (vertical travel) single–lens reflex camera with built-in motor drive.
1–2	Format:	24mm × 36mm
1–3	Usable Lenses:	Canon EF lenses (for use with full-aperture metering but not stop-down metering.)
★ 1–4	Standard Lens:	EF 50mm f/1.4
1–5	Lens Mount:	Canon EF mount

2. AF

2–1 Type: TTL–CT–SIR system (TTL cross–type secondary image formation phase difference detection type usable to f/2.8 on the central vertical line)

★ 2–2 Focusing Points: | | + | | (Center: cross, lateral spacing 4.5 & 7.5 [mm])

2–3 Focusing Point Selection:

(1) Manual selection of focusing points
The photographer can select one of the five focusing points and lock in the selected point.

(2) Automatic selection of focusing points
In one–shot AF mode: The subject information from the five focusing points is used to select the optimum focusing point, and focusing is carried out at that point.
Predictive focus and AI servo AF mode: Although the central section is used at the start of focusing, AI servo AF operation continues even if the subject moves aside from the center sensor to a side sensor.

2–4 Focusing Modes ★ The following 3 modes are selectable

(1) One–shot AF Mode : Once focused, AF operation stops and AF is locked .

Priority is given to autofocus The shutter will not release until AF is completed.

When using evaluative metering, the AF and AE settings are locked, at the same time. (During partial or spot metering, metering is carried out in real–time until the shutter is released.

CF–No.7–0: When using certain USM lenses, manual focusing using the electronic ring is possible immediately after completion of auto focusing (after focusing is finished or when focusing is not possible).

CF–No. 7–1: Cancels the function of the above 7–0.

(2) Prediction AI Servo AF mode:
The AF system keeps tracking the moving object until exposure is actually made.

Initial frame after holding SW–1 ON in stand by mode: Priority is given to shutter release and exposure can be made anytime regardless if AF is completed or not.

Initial frame after jabbing the release (SW–1 and SW-2 ON almost simultaneously) Exposure is made after AF control is completed once.

The second frame and after during continuous shooting: The lens is driven (maximum driving time 250ms) in conformity with the necessity for object tracking before releasing the shutter.

The in-focus mark does not light when the subject is focused, but blinks at 8Hz when focusing is impossible.

(3) Manual

AFD lens: Changeover from AF to Manual is made using the switch on the lens.

USM lens: Same as above (when CF–No. 7–1 is selected) or automatic changeover (when CF–No.7–0 is selected).

When focusing is completed, the in-focus mark (a green LED) and superimposing lamp light. No indication is given when the subject is not focused.

Manual focusing using the electronic focusing ring is not possible during continuous shooting.

2–5 AF Operation

CF–No. 4–0: Activated when the shutter button is depressed to the first step.

CF–No. 4–1: Activated when the AE lock button is pressed ON.(When CF–No. 4–1 is set, AE lock s at SW–1 ON.)

2–6 AF Operating Speed — High speed (same as the EOS–1)

2–7 AF Completion Indication — By LCD indication in the viewfinder and by an electronic beeper sound. The beeper can be turned on or off by the main switch.

★ CF–No.10–0: With superimposing display.
CF–No.10–1: Without superimposing display.

2–8 AF Working Range — EV 0–18 (ISO 100) using Canon's standard test conditions.

2–9 AF Auxiliary Light — Provided when used together with an EOS flash unit (integrating an AF auxiliary light function). When a flash is used, near-infrared rays (peak wave length:

700nm) are automatically emitted from the flash whenever necessary.

★ 540EZ: Auxiliary light corresponds to all five focusing points

Other EOS flash units: Auxiliary light corresponds only to the central focusing point.

An AF auxiliary light source is not built into the camera.

★ 2–10 Focusing Point Selection

CF–No.11–0: Focusing point select button + main electronic dial.

CF–No.11–1: Exposure compensation button + main electronic dial.

CF–No.11–2: Exposure compensation button + main electronic dial.

Or by operating the quick control dial (valid during metering, during metering timer operation or during continuous shooting operation only. Automatic selection is not valid.)

★ 2–11 Focusing Point Indication — Indicated by viewfinder superimposed display, and by the 7-segment indicator on the external LCD.

3. Viewfinder

3–1 Type — Fixed eye–level pentaprism, single lens reflex viewfinder with condenser lens.

3–2 Focusing Screen — Interchangeable. ★ CII standard full-surface laser–matte screen with fine spot metering area mark.Replaced through the mount. (Interchangeable screens for the EOS–1 can be installed, but see Precautions).

3–3 Viewfinder Power — –1 ± 2 dpt dioptric adjustment (eyepoint: 20mm); Adjustment knob rotates 360°with clicks every 18°.

3–4 Viewfinder Coverage — Virtually 100% horizontally and vertically. (99% ± 1%)

3–5 Magnification — 0.72 × (–1 dpt, 50mm lens at ∞)

3–6 Viewfinder Information

(1) Central section of the viewing area

1) AF frames (displayed by the SI screen, not by the focusing screen).

2) Fine spot metering area mark (in the central section only)

(2) Bottom of viewfinder

LCD (yellow-green LED back–light) indications of values, patterns and letters.

3) Shutter speed (Out-of-coupling-range warning: Blinks at 2 Hz)

4) Aperture (Out-of-coupling-range warning: Blinks at 2Hz)

* Regarding 3) and 4) above:

CF–No.6–0: Digital indication in ⅓-stops.

CF–No.6–1: Digital indication in full-stops.

★ CF–No.6–2: Digital indication in ½-stops.

5) Depth-of-field AE mode (*dep 1, dep 2*)

Focusing point: The central focusing point in case of automatic selection and the manually selected focusing point in case of the manual selection.

6) ✳: AE lock (During AEB shooting: Blinks at 2Hz)

7) M: Manual

8) ϟ: Flash charging completed.

9) +/–: Exposure compensation

(Also lights during flash exposure compensation using the 540EZ or 430EZ.and ★ during camera flash exposure compensation.)

10) ●: Autofocusing completed (NG: Blinks at 8Hz)

(3) Outside the visual field, to the right

★ LCD (yellow-green LED backlit) indications of scales, dots and symbols.

11) 1/3-stop scale (± 3 stops)

12) Dot bars (19 ▬ symbols and ▲▼)

12)–1 AE mode: Exposure compensation amount

12)–2 AE lock: Real–time metering deviations

12)–3 Manual exposure level

12)–4 AEB step amount (3 points)

12)–5 Background exposure during flash photography as metered by internal metering program.

13) Remaining frame display. (Digital indication using "*F*" plus figures *1 – 9*.)

These indications cannot be canceled. With built–in illumination for the LCD information window (Green LED backlight).

3–7 Mirror

Quick–return full-surface beamsplitter (Reflection: Transmission = 63:37)
Viewfinder blackout time: 140ms or less at shutter speeds of 1/60 sec. or faster)

★ CF–No.12–1: Enables mirror to be locked up After metering and ranging, the mirror goes up when SW–2 goes ON. Releasing and then pressing the shutter release again (SW–1 OFF , SW-1 and SW–2 ON) releases the shutter. (The mirror-up timer keeps the mirror up for a maximum of 30 seconds. After 30 seconds, if the shutter release has not been pressed,the mirror returns without an exposure being made.)

3–8 Mirror Cut-off ★ None with lenses up to the 1200mm @ f/5.6.

3–9 Depth-of-Field Check Possible (one–touch activation of the dedicated button stops the lens down to the calculated aperture valve).

★ 3–10 Eyepiece Shutter Provided.

3–12 Other ★ Exclusive Eye–cup Ec–II with locking feature is provided as standard equipment (removable). An angle finder, magnifier or diopter compensation lens E can be attachable to the eyepiece.

4. Exposure Control

4–1 Metering ★ TTL full-aperture metering using a sixteen-zone SPC and BASIS. Selectable from the following three methods:

1) CF–No.8–0: Evaluative metering
CF–No.8–1: Center-weighted average metering.
2) Partial metering (Metering range: Central A0, A1, A2 and B5, corresponding to about 9.0% of the viewfinder area).
3) Fine spot metering (about 2.3% of viewfinder area).
★ CF–No.13–1: Spot metering linked with the focusing points. (Using A0 – A4, about 3.5% of the viewfinder area. A0 is used in automatic focusing point selection mode.)

*3) The first frame when making continuous exposures: Real–time metering. The second frame and after: AE locked at the first frame.

4–2 AE Modes Selectable from the following six AE modes or manual.

(1) Shutter-priority AE (without the safety shift function).
(2) Aperture-priority AE (same as above).
(3) Depth-of-Field AE (shifting not possible: the depth is measured with the central focusing point in automatic focusing point selection mode, and the manually-selected focusing point in manual focusing point selection mode).
(4) Intelligent program AE (shifting possible)
(5) A–TTL program flash AE (★ 3–point flash exposure metering)
(6) TTL program flash AE (★ 3–point flash exposure metering)
(7) Manual (bar dot display, metered manual)

CF–No.5–0: Tv set: Electronic dial.
AV set: Quick control dial.

CF–No.5–1: Tv set: Electronic dial.
Av set: Quick control dial

Using the Command Back E1: Since there is no quick control dial, its function is replaced by pressing the exposure compensation button and turning the main electronic dial.

(8) Bulb

CF–No.6–0: The setting pitch of 1), 2) and 7) is in 1/3-stop increments.

CF–No.6–1: The setting pitch of 1), 2) and 7) is in 1-stop increments.

★ CF–No.6–2: The setting pitch of 1), 2) and 7) is in 1/2-stop increments.

4–3 Metering Range

(1) Evaluative metering: EV 0 – 20 (at normal temperature, 50mm f/1.4, ISO 100).

(2) Partial metering: EV 0 – 20 (same conditions as above).

(3) Fine spot metering: EV 3–20 (same conditions as above).

4–4 Coupling-range Warning

External and viewfinder internal LCD digital display blinks at 2 Hz.

4–5 Exposure Metering

Works when the shutter button is pressed to the first step (SW-1 on).

Before release: The metering timer works for 6 seconds after finger is removed from the shutter button.

After release: The metering timer works for 2 seconds after finger is removed from the shutter button.

4–6 Film Speed Range

CF–No.3–0: ISO speeds from 25 – 5000 are automatically set in 1/3-stop steps according to the DX code. Manual setting from ISO 6 to 6400 can also be made.

When NON–DX code film is used, the previously set ISO film speed blinks in the display, indicating that manual setting is required.

CF–No.3–1: Manual setting only (ISO 6 – 6400)

4–7 Exposure Compensation

(1) AEB: Auto Exposure Bracketing

1) Presetting: Possible in all exposure modes excluding (5), (6), and (8) of the AE modes listed above in 4–2.

2) Operation: Press the battery check button + the film winding mode select button and turn the main electronic dial. CF–No.9–1, –3: Can also be set by holding the AF mode select button + shooting mode select button pressed ON and turning the main electronic dial.

3) Bracketing range

CF–No.6–0, –1: 1/3-stop steps ± 3stops

★ CF–No.6–2: 1/2-stop steps ± 3 stops

4) Number of exposures: Three frames are exposed in accordance with the film transport mode as given below:

CF–No.9–0, –1: 3 frames in the order of – ' 0 ' +

★ CF–No.9–2, –3: 3 frames in the order of 0 ' – ' +

5) The affected camera setting(s) for the various shooting modes are as follows:

Exposure Control Modes		TV	AV
1. Shutter-priority AE		-	•
2. Aperture-priority AE		•	-
3. Depth-of-field AE		•	-
4. Program AE		•	•
7. Manual Exposure	CF-No. 5-0	•	-
	CF-No. 5-1	-	•

6) Cancellation

CF–No.9–0, –2: CLEAR, flash charge completion, bulb, main switch "L", lens exchange, film loading, AL or REW.

★ CF–No.9–1, –3: AEB operation is canceled when one of the following occurs: CLEAR, flash charge completion and bulb.

(2) Manual setting

1) Range and precision

CF–No.6–0, –1: 1/3-stop steps ± 3 stops

★ CF–No. 6–2: 1/2-stop steps ± 3 stops

2) Operation

CF–No.11–0: Quick control dial, exposure compensation button + main electronic dial.

★ CF–No.11–1: Quick control dial, focusing point select button + main electronic dial.

★ CF–No.11–2: Focusing point select button + main electronic dial

(3) Combinations of the above (1) and (2) are also valid.

4–8 AE Lock

(1) Auto AE lock : The AE reading is locked at the instant focusing is completed in one–shot AF mode when using evaluative metering.

(2) Manual AE lock CF–No.4–0: Effective in any metering mode by pressing the AE lock button.

CF–No.4–1: Effective in any metering mode by pressing SW–1 ON.

When the metering timer is working, AE lock is maintained and can be renewed by pressing the shutter button again.

To cancel, wait for the metering timer to go OFF, turn the main SW to "L", or press one of the respective mode buttons, BC, CLEAR, REW or CF button.

* The AE lock button does not function while an EZ series flash is being used after charging is completed.

4–9 Multiple Exposures

Possible. Automatic resetting continuous multiple exposures are possible. (Film drift: 0.1mm or less)
Designation of the number of multiple exposures is also possible (up to 9 exposures, maximum). (Intermediate cancellation or resetting is also possible.)

5. Shutter

5–1 Type

★ Focal plane type, all speeds electronically controlled, using vertical–travel carbon blades. Electromagnetic control independently releases the first curtain and second curtain, respectively. (Curtain speed 2.7 ms/24 mm)

5–2 Speed Range

1/8000 sec. to 30 sec. 1/3-stop digital indications on the LCD X = 1/250 sec. in shutter-priority AE and manual exposure modes.

CF–No. 6–0: 1/3-stop setting

CF–No. 6–1: 1-stop setting

★ CF–No. 6–2: 1/2-stop setting

Elapsed time indication is provided in bulb mode. (Advances 3 bar marks every 30 seconds, indicates up to 120 seconds.)

5–3 Release System

Soft touch electromagnetic release system (without cable release socket)

5–4 Release Time Lag

Release time lag (excluding AF operation)

(1) SW–1 ON, pause SW–2 ON to start of exposure, —55ms

(2) Simultaneous SW–1 and SW–2 ON to start of exposure ——200ms

5–5 Self–timer

Electronically timed 2 or 10 second delay self-timer.

★ The self–timer starts when AF operation is finished in any AF mode (the AE reading is locked at this time) **and** the shutter button is pressed to the second step. (The timer will not start even if the shutter button is pressed until the AF operation is finished.)

The self–timer operation is indicated by an LED (Initial 8 sec.: 2Hz, final 2 seconds: 8Hz flashing) and the external LCD counts down the seconds with a digital display.

To cancel the timer after activation, set the main switch to the "L" position. Timer operation will be interrupted.

5–6 Camera–shake Warning — Not provided.

6. Film transport

6–1 Film Loading — Automatic loading using a sprocket and toothed spool. Blank film advance starts automatically when the back cover is closed after loading the film (only the film advance mechanism operates) and winds the film until the film counter reaches "1" (time required: 3 sec.) before stopping automatically. Loading is not possible when the main SW is at "L".

6–2 Winding System — Automatic winding by a dedicated coreless miniature motor.

6–3 Winding Modes

(1) EOS-1N alone: Continuous exposure (C) mode or single exposure (S) mode.

★ (2) EOS-1N + type AA BP–E1: Continuous exposure (C) mode or single exposure (S) mode.

(3) EOS 830 + PDB–E1: High–speed continuous exposure (CH) mode, low–speed continuous exposure (CL) mode or single exposure (S) mode.

6–4 Film Winding Start — Film winding starts when the exposure completion signal is detected.

6–5 Film Winding Check — By moving bar mark on the LCD display panel.

6–6 Winding Speed

(1) The winding speed [f/s] is as follows in continuous exposure mode at shutter speeds of Tv=1/250 sec. or faster.

Configuration	Power	Winding	One Shot / Manual	AI Servo AF
EOS-1N + PDB-E1	8x LR6 or 8x FR6	CH	Approx. 6f/s	Approx. 5f/s
		CL	Approx. 3f/s	Approx. 2.5f/s
EOS-1N	2CR5	C	Approx. 3f/s	Approx. 2f/s
EOS-1N + BP-E1	4x LR6	C	Approx. 3f/s	Approx. 2f/s

(2) Single exposure: When the camera alone is used, single frame winding is completed at the same speed as during continuous exposure (C) mode; when the PDB–E1 is attached, single frame winding is completed at the same speed as during CH mode.

6–7 Shooting Capacity — Number of 24EX/(36EX) film rolls .

Configuration	Power	Ambient Temperature	
		+20°C	-20°C
EOS-1N + PDB-E1	8x LR6	100/(65)	6/(4)
EOS-1N + PDB-E1	8x KR15/51	45/(30)	30/(20)
EOS-1N	2CR5	75/(50)	12/(8)
EOS-1N + BP-E1	2CR5	75/(50)	12/(8)
EOS-1N + BP-E1	4x LR6	45/(30	0(NR)

6–8 Film rewinding System — Automatic rewinding by a coreless miniature motor.

6–9 Start of Rewinding

(1) Automatic

CF–No.1–0, –2: Auto–rewind starts under the following conditions (–0 high speed and –2 silent)

1) When the DX designated number of exposures are completed.

2) When the film end is sensed (by tension).

CF–No.1–1,–3: Automatic rewinding starts when the film rewind button is pressed after the film roll is completed. (–1 high speed and –3 silent)

(2) Mid-roll rewind: Mid-roll rewinding is possible at all times by pressing the film rewind button.

6–10 Rewinding Confirmation — By moving bar mark and count-down of the frame counter display.

6–11 Rewinding Time — Time required for rewinding a 24EX/(36EX) roll, using new batteries at normal temperature
(Times in this chart are all approximate in seconds.)

Configuration	Power	Rewind Time	24exp/(36exp)
		CF-No.1-0,1	CF-No.1-2,3
EOS-1N + PDB-E1	8x LR6	5/(8)	13/(20)
EOS-1N + PDB-E1	8x KR15/51	5/(8)	13/(20)
EOS-1N	2CR5	5/(8)	13/(20)
EOS-1N + BP-E1	2CR5	5/(8)	13/(20)
EOS-1N + BP-E1	4x LR6	5/(8)	13/(20)

6–12 Rewind Completion

CF–No.2–0: Stops automatically after the film leader is wound completely into the cartridge.

CF–No.2–1: Stops automatically leaving just the film leader section protruding from the cartridge. Under CF–No.2–1, when the shutter is released with the back cover open, the shutter is activated at 1/8000, regardless of settings, to protect the shutter mechanism.)

6–13 Completion Indication — Cartridge symbol blinks at 2Hz in LCD panel.

6–14 Film Loaded Check

(1) Indicated by a film cartridge symbol on the top-deck LCD regardless of switch setting.

(2) By visual check using the standard back cover's film check window.

6–15 Frame Counter

(1) Additive (counts down during rewinding) digital indication by the electronic counter on the LCD panel.

(2) The number of frames remaining is shown by a single 7–segment LCD on the right side of the viewfinder. When more than nine frames remain, an "*F*" is displayed (The display disappears during rewinding)

6–16 Film Rewind Noise — 48dB at 15 cm behind the camera.

7. Camera Body

7–1 Back Cover — Can be opened or removed by operation of the back cover open latch (with safety lock). Provided with a film check window, but no memo–holder.

7–2 Flash Contacts

(1) At the accessory shoe: X – Direct connection contacts

(2) At the lower section of the right side of the camera body: JIS type–B PC socket (with lock screw and shock prevention function provided on the accessory shoe side).

Simultaneous use of the hot shoe and PC terminal for simultaneous flash is also possible.

7–3 Accessory Shoe — Provided. Equipped with a lock pin hole to secure Speedlites equipped with a locking pin.

7–4 Automatic Flash — Using EOS type EZ series flash units with the camera set to program AE mode.

(1) A–TTL flash exposure: The shutter speed is automatically set to a synchronizing speed (1/250 – 1/60 sec.) when charging is complete and the optimum flash aperture value is automatically set in compliance with the distance determined by IR pre–flash and the subject conditions (brightness) by the A–TTL program stored in the camera and the flash. ★ No pre-exposure out-of-coupling-range warning. TTL automatic flash exposure control by off-the-film reflection metering. (★ Three-zone flash exposure metering, linked to the selected focusing point). Automatic fill-in flash is also possible.

(2) TTL automatic flash exposure: The shutter speed is automatically set to a synchronizing speed (1/250 – 1/60 sec.) and the flash aperture value is automatically set by the TTL program of the camera body. TTL flash exposure control by off-the-film reflection metering. (★ Three-zone flash metering, linked to the selected focusing point) Automatic fill-in flash is also possible.

In either (1) or (2) above, a manual synchronizing shutter speed of less than 1/250 sec. can be selected in shutter-priority AE mode and a manual aperture value can be selected in aperture-priority AE.

(3) Other

1) T or A series flash units can be used in manual exposure mode.

* Shutter speed: Set manually to a shutter speed within 1/250 – 30 sec.
* Aperture: Set the same aperture value on the camera body and flash unit.

2) General–use flash units: General–use small–sized flash units: Can be used for synchronous exposure at 1/250 sec. or slower. Large studio flash units: Can be used for synchronous exposure at 1/125 sec. or slower, but tests should be carried out to confirm flash synchronization.)

★ 7–5 Flash Exposure Compensation

(1) Number of stops

CF–No.6–0, –1: 1/3-stop steps ± 3 stops.

CF–No.6–2: 1/2-stop steps ± 3 stops

(2) Operation: Metering mode button + quick control dial or Metering mode button + focusing point select button + main electronic dial.

7–6 Custom Functions

Fourteen custom functions available. ★ The active CF–No. is displayed on the external LCD panel (exposure bar indicator).

7–7 Clear Button

(1) When this button is pressed under normal state, respective items are simultaneously reset to the following status. However, when using partial metering, fine spot metering or spot metering, under the CF–No.8–1 (whereby the evaluative metering mode is changed to center-weighted average metering mode), the metering mode is not changed even if the clear button is pressed.

Item	Reset Status
Shooting Mode	Program AE
AF Mode	One-shot AF
Metering Mode	Evaluative Metering
Film Wind Mode	S (single exposure)
Multiple exposures	Default settings
Exposure Compensation	Default settings
AE Lock	Default settings
AEB	Canceled

(2) When the clear button is pressed in the custom function setting state, all the custom functions are automatically reset to their home positions (–0).

7–8 Power Source

(1) One six-volt 2CR5 lithium battery housed inside the grip.

(2) When attaching the PDB–E1, remove the grip from the body and supply power to the camera body from the PDB–E1 power source (LR6 × 8: 12V).

★(3) When the type AA battery pack BP–E1 is attached, either of the 2CR5 lithium battery at 6V inside the grip or the LR6 × 4 at 6V in the battery magazine can be used to supply power to the camera body.

7–9 Main Switch — Turns the camera OFF when set to the "L" position.

7–10 Battery Check — 3-step bar mark display (4-step display including OFF indication) is made on the LCD panel when the BC button is pressed.

7–11 External Display — Large–sized LCD panel. Built-in full-surface uniform illumination (EL) function.

7–12 Tripod Socket — CU–1/4" 20P

7–13 Remote Control — Possible. A three-pin remote control socket is provided in the lower section of the left side of the body.

7–14 Grip Exchange — Possible. (When replacing the battery or when attaching the PDB–E1 or type AA BP–E1)

7–15 Body Material — Hybrid glass–fiber reinforced polycarbonate body with diecast aluminum aperture section.

7–16 External Color Finish — Black

7–17	Dimensions	161(W) × ★112.1(H) × 71.8(D) mm [6–5/16(W) × 4–7/16(H) × 2–13/16(D) in]. body thickness: 55.8mm [2–3/16".]
7–18	Weight	855gr. [29.9oz] (excluding lithium battery. + 40 gr. [1.4oz] including the battery.)

★ 8. New Main Accessories

8–1	Battery pack BP–E1	Usable with the EOS–1 also.
8–2	Speedlite 540EZ	Clip–on system flash usable with external power supply.
8–3	Wireless Controller LC–3	Three terminal remote controller for EOS cameras.
8–4	Eye–cup Ec–II	Standard equipment with the EOS-1N and also usable with the EOS–1).
8–5	Focusing Screen Ec–CII	Standard equipment with the EOS-1N.
8–6	Semi–hard Case	Two sizes: L (small) and LL (large) are available.

3. VISUAL INDICATORS

3.1 VIEWFINDER INFORMATION.

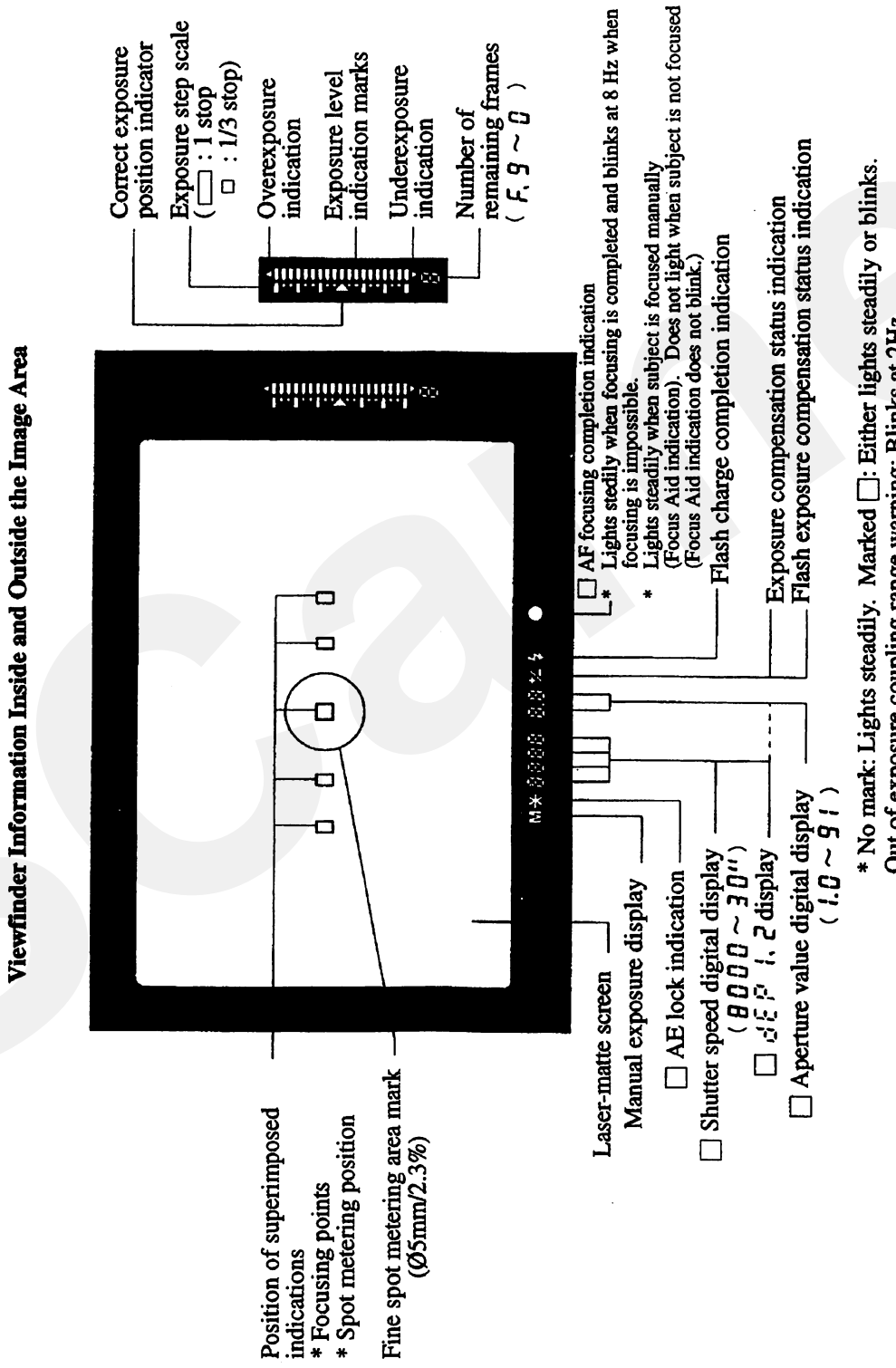


Fig 1-1 Viewfinder Information

3.2 TOP-DECK LCD INFORMATION

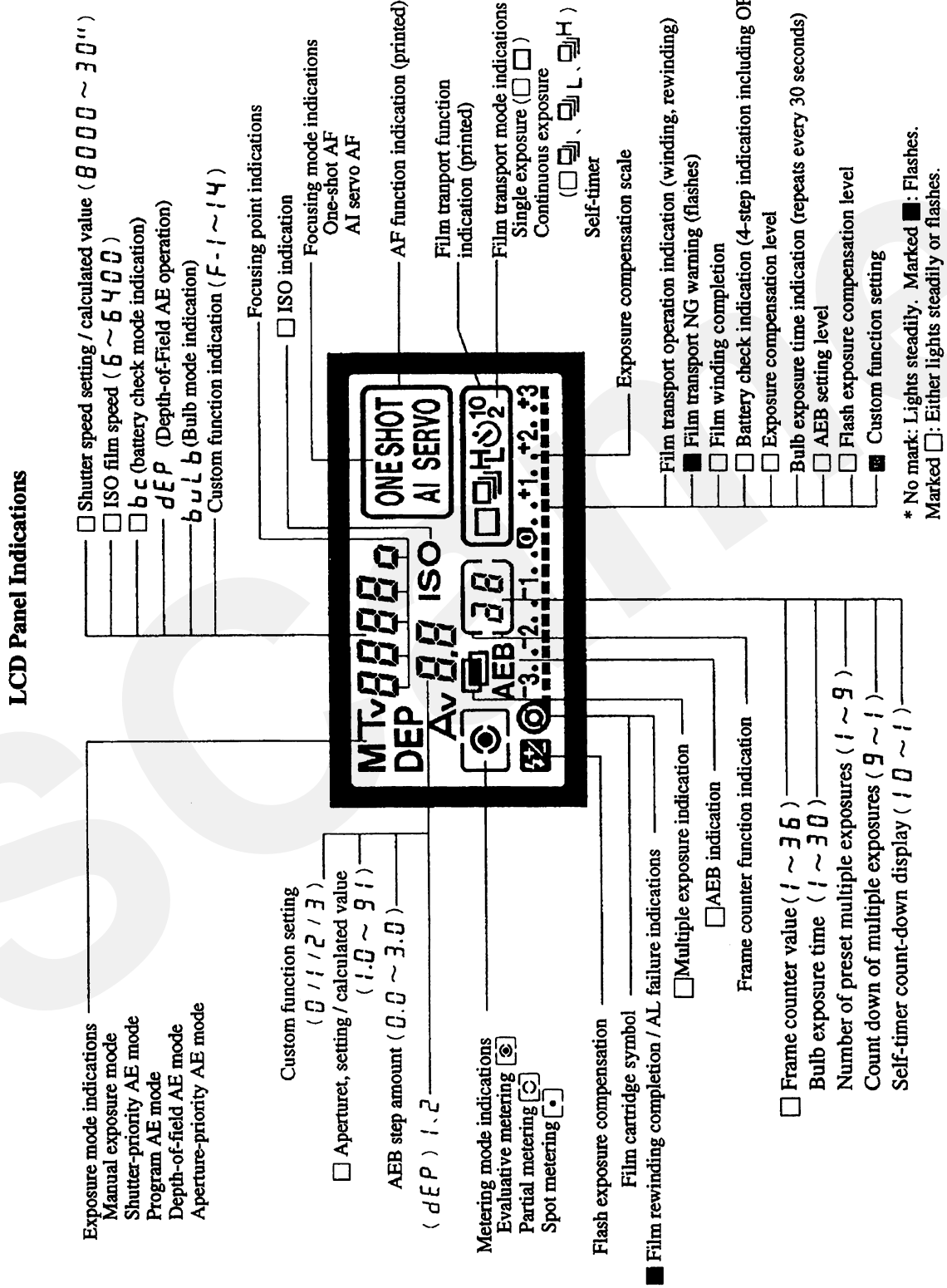


Fig 1-2 Top Deck LCD Information

Exposure Warnings in Various AE Modes

■ Using 50mm f/1.4 - ISO 100 * Numbers enclosed by a dotted line blink at 2Hz.

Shooting conditions / Exposure modes		Low brightness: Underexposure warning		Correct exposure indication (ISO100, EV12)		High brightness: Overexposure warning	
AUTO	Tv AE	TVset 125	AVauto 1.4 (+2)	TVset 125	AVauto 5.6	TVset 125 (+6)	AVauto 22
AUTO	Av AE	TVauto 30"	AVset 5.6 (+3)	TVauto 125	AVset 5.6	TVauto 8000 (+7)	AVset 5.6
AUTO	Program AE	TVauto 30"	AVauto 1.4 (+1)	TVauto 125	AVauto 5.6	TVauto 8000 (+5)	AVauto 22

■ DEPTH: Using 50mm f/1.4 - ISO 100

Shootingg conditions / Shooting mode	Low brightness: Underexposure warning		Low brightness: Depth warning		Correct exposure indication		High brightness: Overexposure warning	
DEPTH	TVauto 30"	AVauto 1.4 (+1)	TVauto 30"	AVauto 5.6 (+9)	TVauto 125	AVauto 5.6	TVauto 8000 (+5)	AVauto 22

■ METERED MANUAL: Using 50mm f/1.4 - ISO 100

	Underexposure warning	Correct exposure indication	Overexposure warning
MANUAL	TVset 125 8 (+4)	TVset 125 5.6	TVset 125 4.0 (+8)

Fig 1-3 AE Warnings

■Viewfinder Exposure Warnings in A-TTL and TTL Automatic Flash Exposure Modes (Using 50mm f/1.4)

* Numbers enclosed by a dotted line blink at 2Hz.

Subject brightness	Low brightness General flash photography	Medium brightness Daylight fill-in flash	High brightness Daylight fill-in flash
	⬚ Underexposure warning based on overall average metering	Correct exposure level based on overall average metering	⬚ Overexposure warning based on overall average metering
Exposure modes	TTL flash exposure - Correct	TTLflash exposure - Correct	TTL flash exposure - Correct
Tv AE	TVset 125 AVauto 1.4 +-2	TVset 125 AVauto 5.6	TVset 125 AVauto 22 +-6
Av AE	TVauto 1'' AVset 5.6 * Note-1	TVauto 125 AVset 5.6	TVauto 250 AVset 5.6 +-7
Program AE	TVauto 60 AVauto 1.4~22 * Note-2	TVauto 125 AVauto 5.6	TVauto 250 AVauto 22 +-5

* Note-1: Automatic slow synchro exposure state indication at EV 5. When the brightness drops to a level requiring a shutter speed of 30 sec., 30" blinks for warning.
* Note-2: General indoor shooting in program AE mode. Underexposure warning is not available in this state.
* Note: When using flash in DEPTH mode, exposure is carried out the same asin program flash mode.

Fig 1-4 A-TTL & TTL Warnings

Exposure related Warnings and Countermeasures

[1] Exposures using the functions of the basic camera, without flash.

Type of warning	Warning indications		Countermeasures for respective warnings
	TV warnings	AV warnings	
1. Underexposure warnings ①	30''	AVO	■-1 (1) Use flash or artificial lighting. (2) Use a higher speed film. (3) Give up the photograph.
②	TVset	AVO	■-2 (1) Set a slower shutter speed until the aperture value stops blinking.
③	30''	AVset	■-3 (1) Open the aperture until the shutter speed stops blinking.
④	TVset	AVset	■-4 (1) Open the aperture or (2) Set a slower shutter speed, until the ▬ mark aligns with the correct exposure mark ▷.
2. Overexposure warnings ①	8000	AVmin	■-5 (1) Use an ND filter. (2) Use a lower speed film. (3) Give up the photograph.
②	TVset	AVmin	■-6 (1) Set a fester shutter speed until the aperture value stops blinking.
③	8000	AVset	■-7 (1) Close the aperture until the shutter speed stops blinking.
④	TVset	AVset	■-8 (1) Close the aperture or (2) set a faster shutter speed, until the ▬ mark alignts with the correct exposure mark ▷.
3. DEPTH warnings	30''	AVauto	■-9 (1) Expected depth of field cannot be obtained. → Use a higher speed film or (2) give up the DEPTH mode exposure.

[2] Exposures using flash: 540EZ/430EZ The following warning is added to the above warnings in [1].

4. Flash synchronization speed high-speed-limit warning	250	AVset	■-7 (1) Close down the aperture until "250" stops blinking.

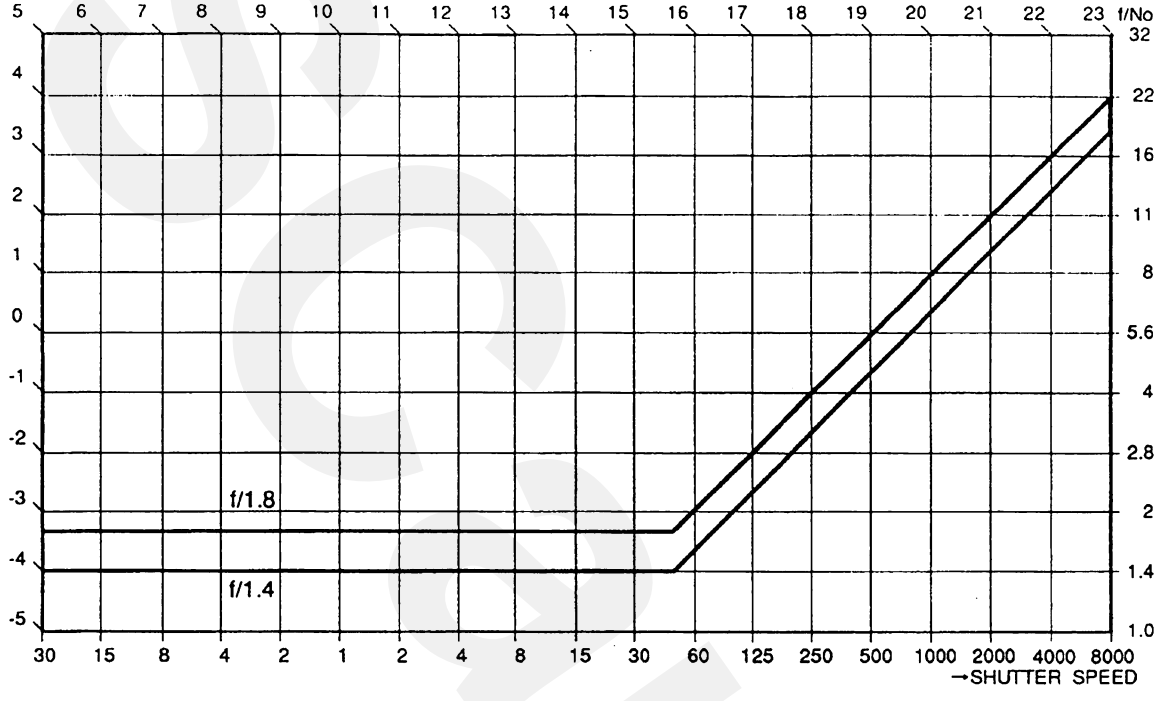
Note:1) [ ] Numbers enclosed by a dotted line blink at 2Hz.
2) AV 0 represents the maximum aperture of the lens and AVmin represents the minimum aperture of the lens.
3) TVset and AVset stand for the shutter speed and aperture value, respectively, manually set by the user.
4) TVauto and AVauto represent the shutter speed and aperture value, respectively, automatically calculated and set by the camera.

Fig 1-5 Exposure Warnings and Countermeasures

4. PROGRAM DIAGRAMS

4.1 EF 50MM F/1.4 (F/1.8) & EF 35-105MM F/3.5 - 4.5

EF 50mm f/1.4 (f/1.8)



EF 35-105mm f/3.5 - 4.5

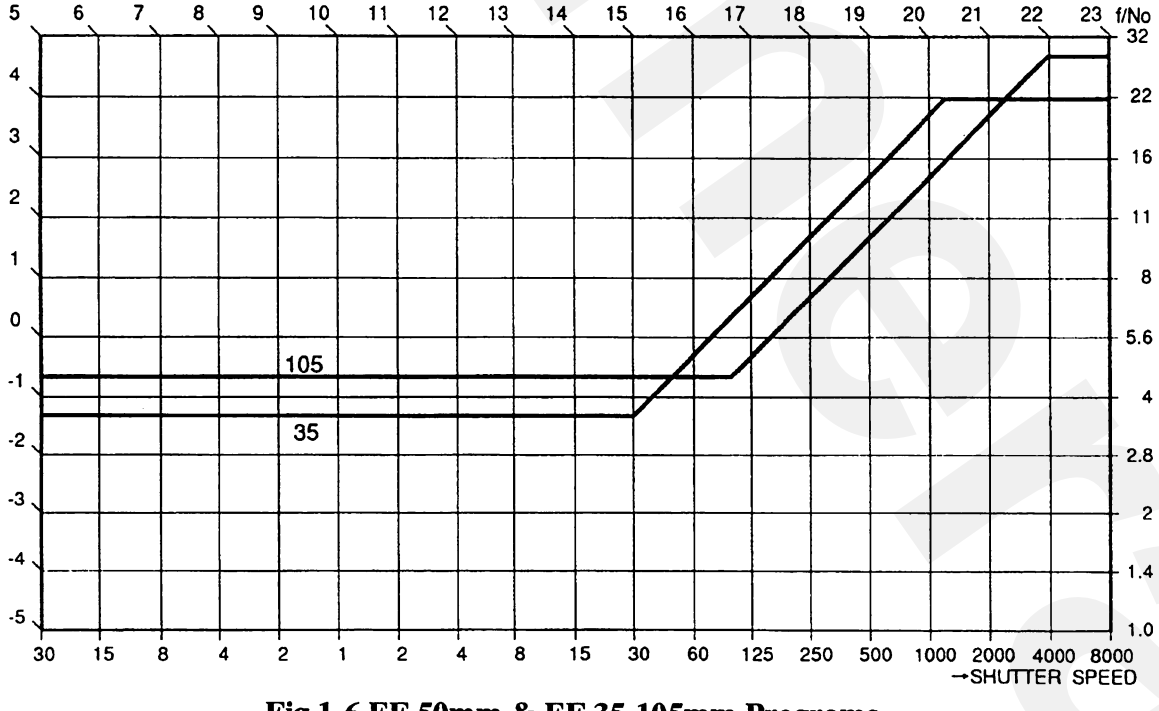


Fig 1-6 EF 50mm & EF 35-105mm Programs

4.2 EF 50MM F/1.4 PROGRAM WITH ISO RANGE

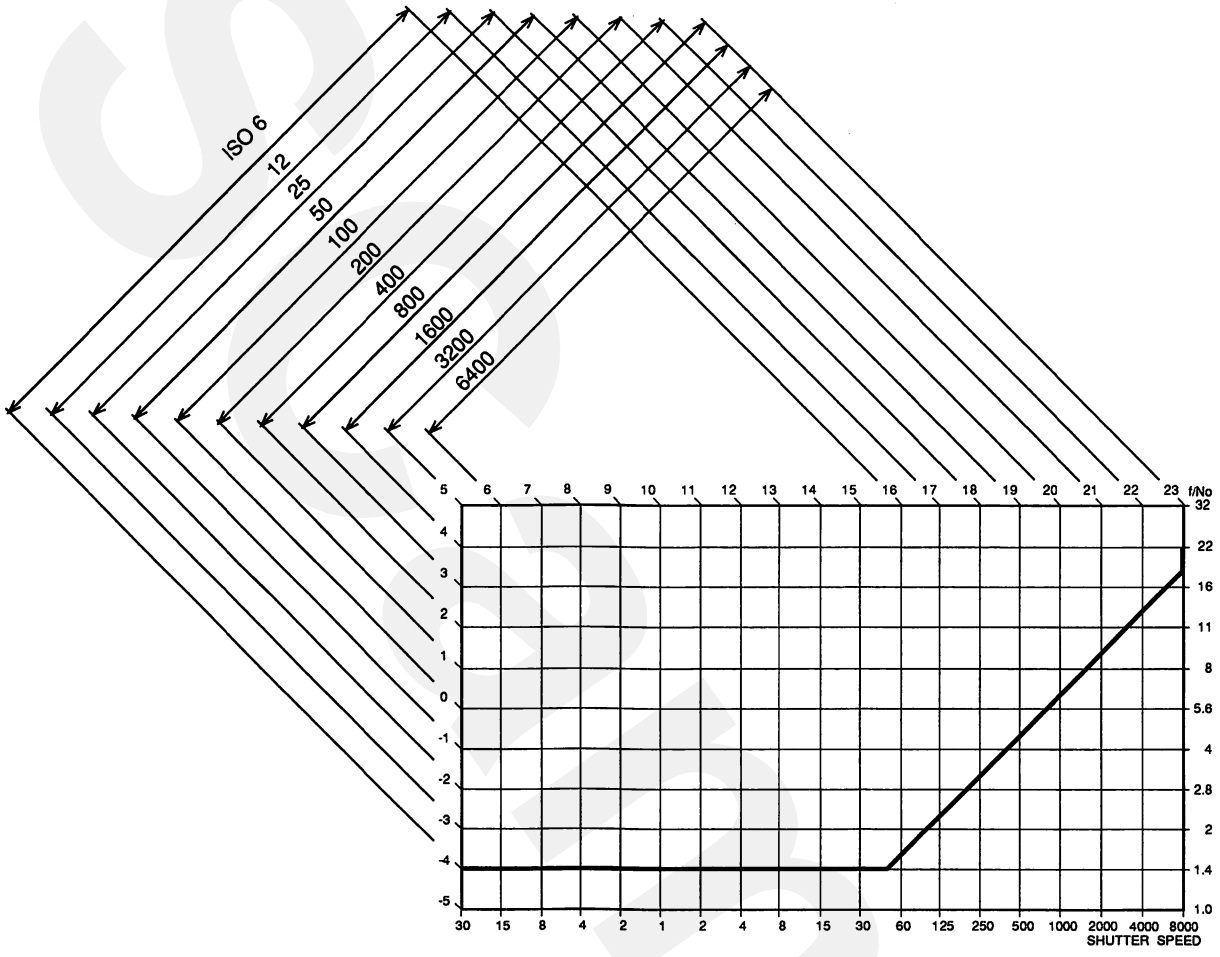


Fig 1-7 EF 50mm f/1.4 Program, with ISO Range

4.3 FLASH PROGRAMS

1. A-TTL PROGRAM

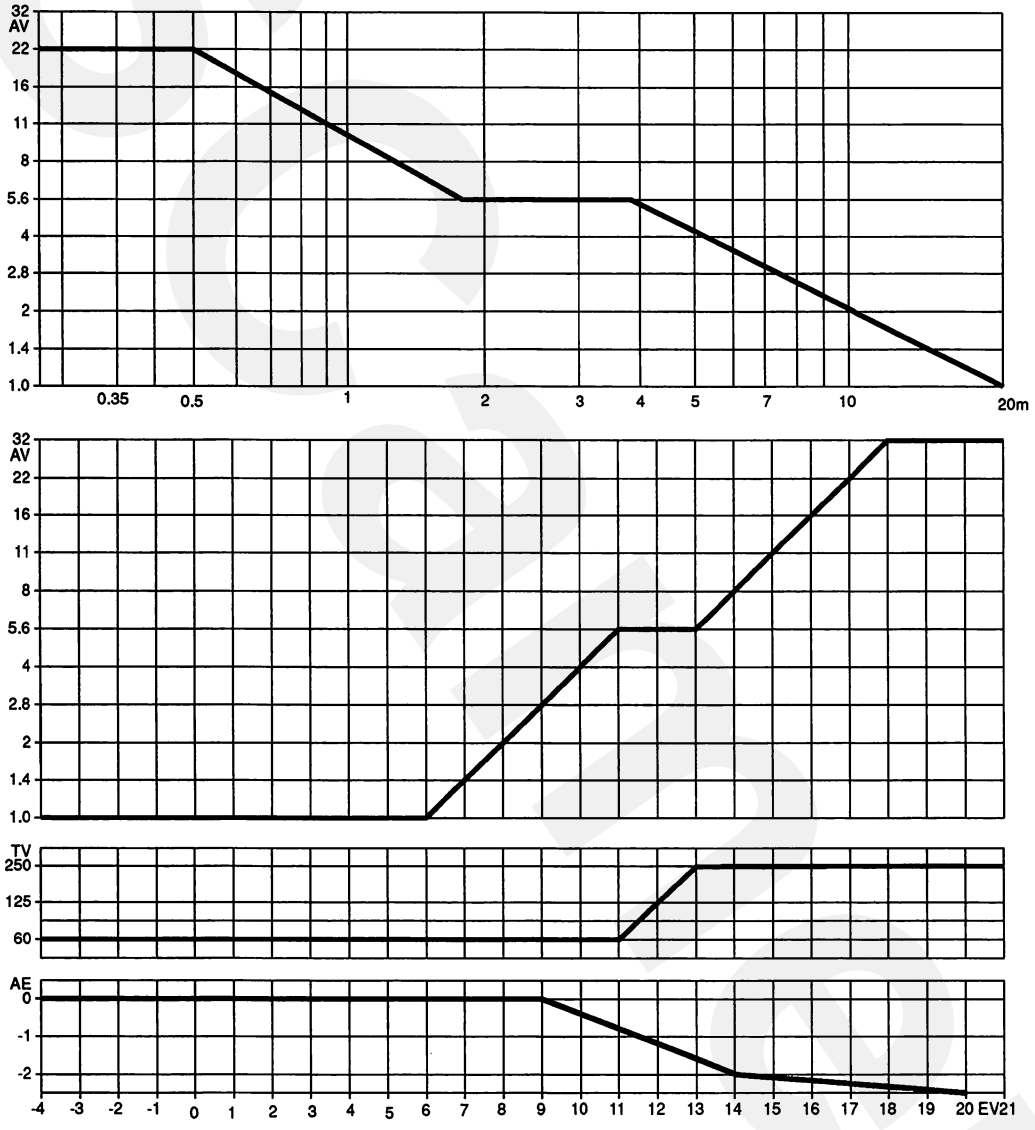


Fig 1-8 A-TTL Program

2. TTL Program Diagram

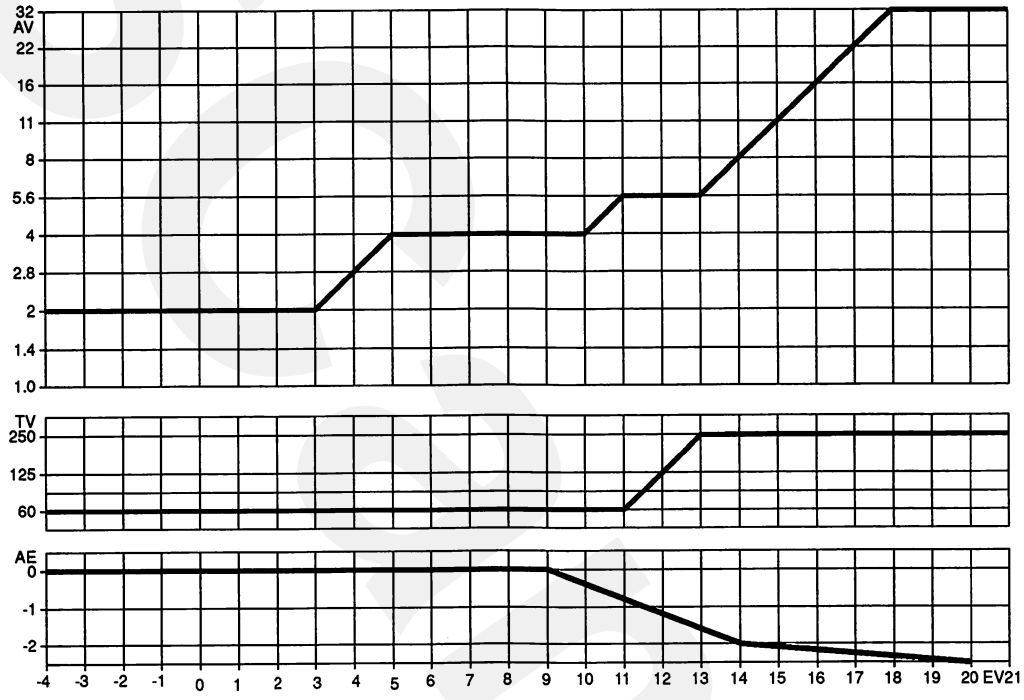


Fig 1-9 TTL Program Diagram

5. EOS SYSTEM ACCESSORIES TABLES

Compatibility: ✓: Possible ✎: Possible under certain conditions ✗: Not possible

5.1 INTERCHANGEABLE LENSES (ZOOMS)

Product name	Compatibility	Note
EF20-35mm f/2.8L	✓	
EF20-35mm f/3.5-4.5 USM	✓	
EF28-70mm f/2.8L USM	✓	
EF28-70mm f/3.5-4.5	✓	
EF28-70mm f/3.5-4.5 II	✓	
EF28-80mm f/2.8L USM	✓	
EF28-80mm f/3.5-5.6 USM	✓	
EF28-80mm f/3.5-5.6 USM II	✓	
EF28-105mm f/3.5-4.5 USM	✓	
EF35-70mm f/3.5-4.5	✓	
EF35-70mm f/3.5-4.5 A	✓	
EF35-80mm f/4.0-5.6	✓	
EF35-80mm f/4.0-5.6 PZ	✓	
EF35-80mm f/4.0-5.6 USM	✓	
EF35-105mm f/3.5-4.5	✓	
EF35-105mm f/4.5-5.6	✓	
EF35-105mm f/4.5-5.6 USM	✓	
EF35-135mm f/4.5-5.6	✓	
EF35-135mm f/4.5-5.6 USM	✓	
EF35-350mm f/4.5-5.6	✓	
EF35-105mm f/3.5-5.6L USM	✓	
EF50-200mm f/3.5-4.5	✓	
EF50-200mm f/3.5-4.5L	✓	
EF70-210mm f/4	✓	
EF70-210mm f/3.5-4.5 USM	✓	
EF75-300mm f/4-5.6	✓	
EF75-300mm f/4-5.6 USM	✓	
EF80-200mm f/2.8L	✓	
EF80-200mm f/4.5-5.6	✓	
EF80-200mm f/4.5-5.6 USM	✓	
EF100-200mm f/4.5 A	✓	
EF100-300mm f/5.6	✓	
EF100-300mm f/5.6L	✓	

5.2 INTERCHANGEABLE LENS

Product name	Compatibility	Note
EF14mm f/2.8L USM	✓	
EF15mm f/2.8 FE	✓	
EF20mm f/2.8 USM	✓	
EF24mm f/2.8	✓	
EF28mm f/2.8	✓	
EF35mm f/2.0	✓	
EF50mm f/1.0L USM	✓	
EF50mm f/1.4 USM	✓	
EF50mm f/1.8	✓	
EF50mm f/1.8 II	✓	

EF50mm f/2.5 MACRO	✓
EF85mm f/1.2L USM	✓
EF85mm f/1.8 USM	✓
EF100mm f/2.0 USM	✓
EF100mm f/2.8 MACRO	✓
EF135mm f/2.8 SF	✓
EF200mm f/1.8L USM	✓
EF200mm f/2.8L USM	✓
EF300mm f/2.8L USM	✓
EF300mm f/4.0L USM	✓
EF400mm f/2.8L USM	✓
EF400mm f/5.6L USM	✓
EF500mm f/4.5L USM	✓
EF600mm f/4.0L USM	✓
EF1200mm f/5.6L USM	✓
TS-E24mm f/3.5L	✓
TS-E45mm f/2.8	✓
TS-E90mm f/2.8	✓
EF 2X Extender	✓
EF 1.4X Extender	✓
Life Size Convertor EF	✓
Extension Tube EF25	✓
Lens Mount Convertor FD-EOS	✓
M-Lens Mount Convertor FD-EOS	✓

5.3 SPEEDLITES

Product name	Compatibility	Note
540EZ System	✓	
480EG System	✓	
420EZ	✓	
430EZ system	✓	
300EZ	✓	
200E	✓	
160E	✓	
ML-3set	✓	
Multiple flash system	✓	

5.4 BOTTOM ACCESSORIES

Product name	Compatibility	Note
GR10 (650)	✗	
GR20 (EOS620, w/remote control) terminal	✗	
GR50 (for EOS750/850/700)	✗	
GR60 (EOS10 Grip Extension)	✗	
GR70 (EOS1000 Grip Extension)	✗	
VG10 (EOS5 Vertical Grip)	✗	
GR80TP w/tripod(EOS 500)	✗	
Power Drive Booster E-1	✓	
Battery Pack BP-E1	✓	

5.5 VIEWFINDER ACCESSORIES

Product name	Compatibility	Note
Eye Cup E (650/620)	✎	Cosmetic differences only
Eye Cup Eb (750/850)	✎	Cosmetic differences only
Eye Cup Ec (EOS-1)	✓	
Eye Cup Ec-II (EOS-1N)	✓	
Eye Cup Ed (EOS-5)	✗	
Eye Cup Ed-E (EOS-5)	✗	
Dioptric Adjustment Lens E (10 kinds)	✓	
Rubber Frame Eb	✎	Cosmetic differences only
Rubber Frame Ec (EOS-1)	✓	
Rubber Frame Ed (EOS-5)	✗	
Focusing Screen E (7 types)	✗	
Focusing Screen Ec (8 types)	✎	See Precautions (Section 7)
Focusing Screen Ec-CII	✓	
Focusing Screen Ed (6 types)	✗	
Magnifier S	✓	
Angle Finder B	✓	
Angle Finder Adaptor Ed (EOS-5)	✗	
Eyepiece Extender EP-EX-15	✎	Cosmetic differences only

5.6 REMOTE DEVICES

Product name	Compatibility	Note
Remote Switch 60T3	✓	
Remote Switch RS-60E	✗	
Remote Controller RC-1	✗	
Wireless Remote Control LC-2	✓	
Wireless Remote Control LC-3	✓	

5.7 DATA BACKS

Product name	Compatibility	Note
Quartz Date Back E	✗	
Technical Back E	✗	
Keyboard Unit TB	✗	
Interface Unit TB	✗	
Command Back E1	✓	

5.8 FILTERS

Product name	Compatibility	Note
Drop-in Circular Polarizing Filter PL-C48	✓	
Circular Polarizing Filter PL-C52	✓	
Circular Polarizing Filter PL-C58	✓	
Circular Polarizing Filter PL-C72	✓	
Circular Polarizing Filter PL-C77	✓	
Drop-in Gelatin Filter Holder II	✓	
Gelatin Filter Holder E52/58/72	✓	

5.9 EOS SERIES COVERS AND CASES

Product name	Compatibility	Note
Snap Case SA-4	✗	
Snap Case SB-4	✗	
EOS650/620 cases	✗	
EOS750/850 cases	✗	
EOS 1 cases	✗	Back half is compatible
EOS 10 cases	✗	
EOS 1000 cases	✗	
EOS 100 cases	✗	
EOS 5 cases	✗	
EOS KISS / 500 / Rebel X cases	✗	
EOS 1N cases	✓	

5.10 MISCELLANEOUS

Product name	Compatibility	Note
Panorama Adaptor PA-1000	✗	

6. EXTERIOR VIEWS

6.1 NOMENCLATURE

Note: Controls marked with a ★ are different from the original EOS-1.

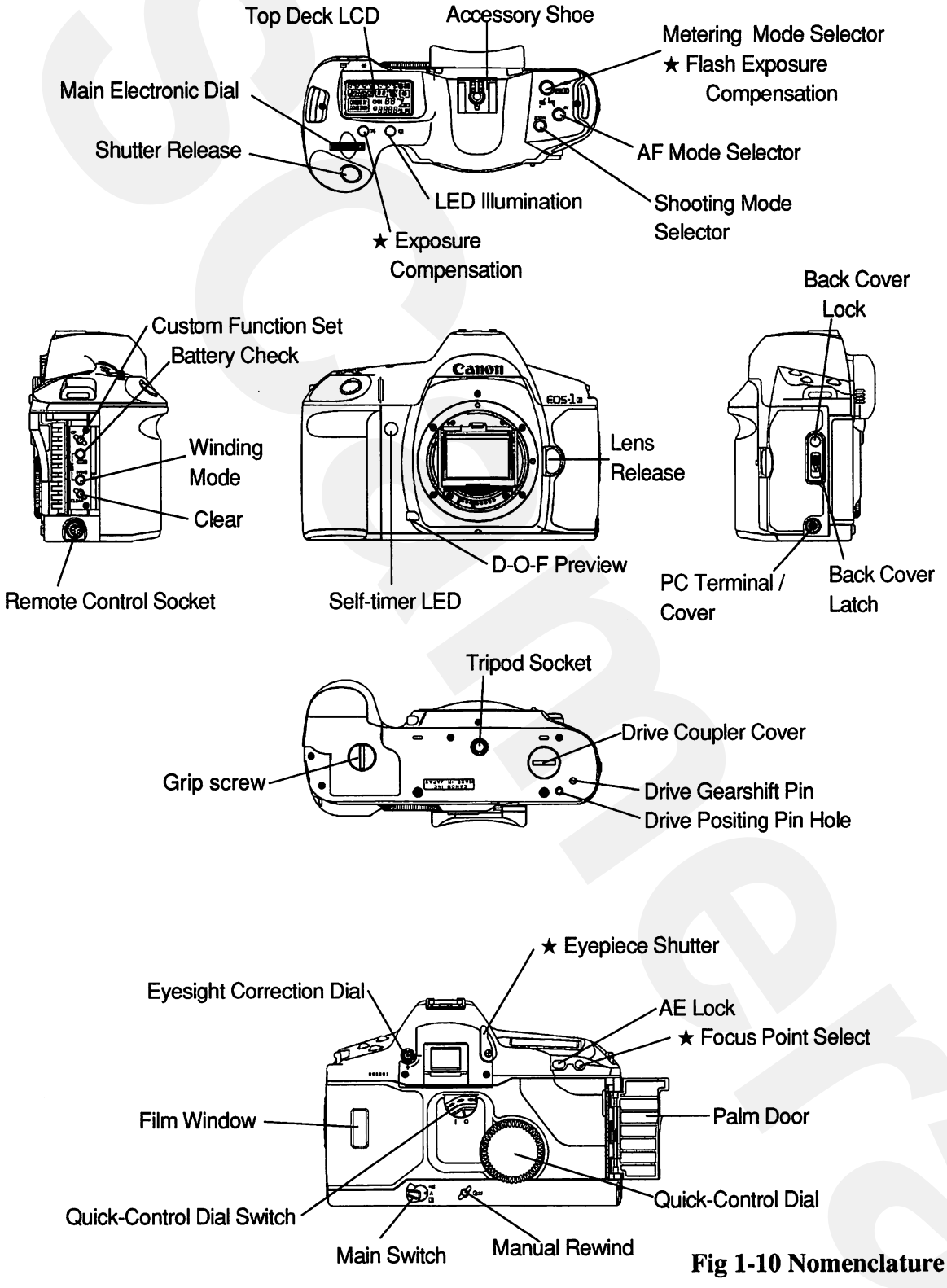


Fig 1-10 Nomenclature

6.2 DIMENSIONS

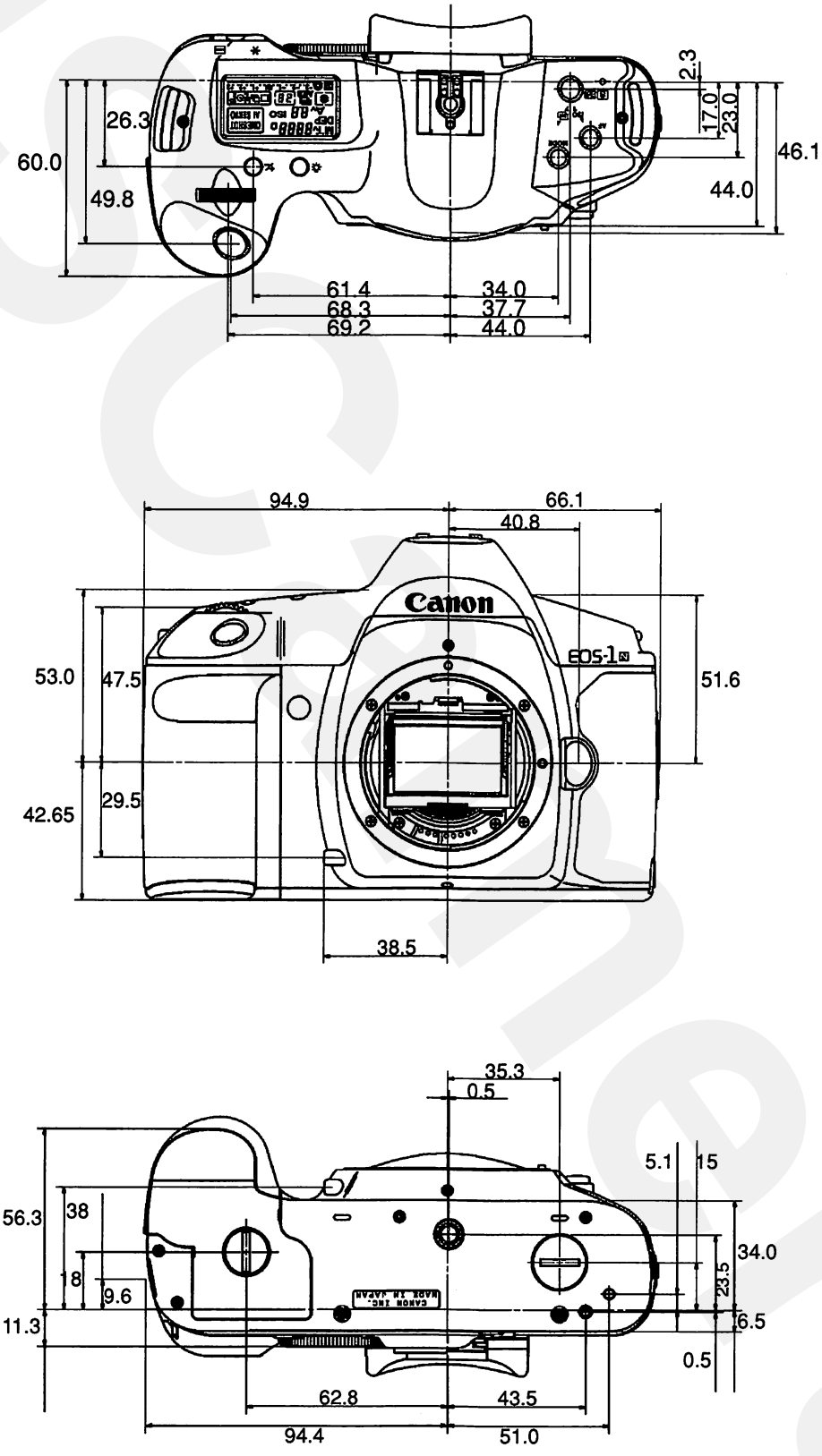


Fig 1-11 External Dimensions

7. PRECAUTIONS

Items marked with a star (★) are different from EOS–1
All other items are the same for both models.

★ 1. During mirror up exposure, do not point the camera lens toward very bright objects such as the sun.

Reason: Because shutter screen may be burn or light leaks could occur.

★ 2. When combining self–timer exposure with the CF–No.12–1 mirror up function, the mirror goes up and the self timer starts when SW–2 goes on. After the self-timer delay, the shutter is released and the mirror swings back down.

Reason:According to design.

★ 3. Clear button operation: With the EOS-1N, when exposures are being made by partial metering or fine spot metering when CF–No.8–1 is set to center-weighted average metering mode, pressing the clear button will not change the metering mode.

Reason:According to design.

★ 4. Under automatic focusing point selection + AI servo AF + continuous shooting, if the object moves to some other focusing point, the continuous shooting speed may become irregular.

Reason: If the object moves to some other focusing point during focusing, the focusing operation is interrupted momentarily and extra time is required for resumption of another metering cycle. (This is same with the EOS5 and EOS10.)

5. When making continuous exposures using spot metering, the AE reading is locked to the metering measurement for the first frame before continuous shooting starts. When making a single exposure, if SW–2 is pressed ON during the winding process after an exposure, the succeeding exposure is made with the AE locked to the preceding metering measurement.

Reason: These design specifications have been determined in accordance with practical shooting circumstances.

By design, the camera allows the next release without requiring SW-1 to be turned off.

6. When CF–No.6–1 TV and AV input pitch is set to 1F and flash is used, aperture value indications on the camera body and flash may become different.

Reason: Although data communication between the camera and flash is carried out at a precision of 1/8F, there can occur discrepancies when rounding to the 1F indication.

7. When removing the focusing screen from the camera body to exchange it, direct the mount surface up before disconnecting the screen frame lock.

Reason: If the lock is disconnected while the camera is placed forward (on its base) on a table, the screen frame may bounce when it descends to the removable position and the screen may be thrown out by the shock.

8. When attaching the PDB–E1 to the camera body, align the positioning guide pin and the attachment screws at the same time, keeping the bottom surface of the camera body and the mounting face of the PDB–E1 parallel, before tightening the attachment knob.

   Reason: If the positioning guide pin is inserted before aligning the attachment screw, the PDB-E1 will hot engage properly with the camera and the directly-coupled contacts will not align properly, thus causing an open circuit and preventing operation.

9. Do not touch the directly-coupled contacts of the PDB–E1 and EOS-1N camera body.

   Reason: Touching these contacts may cause an imperfect connection, resulting in operational failure.

10. When using flash in AI servo AF mode, the auxiliary AF light built into the flash will not operate. (When the AF mode is one–shot AF, the auxiliary AF light emits whenever necessary.)

    Reason: Since use of flash is not compatible with the Prediction AutoFocus, these design specifications were decided upon. Therefore, when using flash, One–shot AF is recommended.

★ 11. Among Ec series interchangeable focusing screens, Ec–A, Ec–B, Ec–I and Ec–L are applicable only to fine spot metering and center-weighted average metering.

Since the microprism section in the center of these focusing screens is transparent, an error occurs in the metering system under evaluative metering. Partial metering and spot metering linked with the focusing point A0 (the central point) is used.

★ 12. Since the interchangeable focusing screen Ec–K (bright laser matte) has the EOS–1 AF frame printed in the center, it overlaps with the five AF frames of the EOS-1N.

Reason: This screen, designed for the EOS-1, has the AF frame etched on the focusing screen. The EOS-1N focusing frames are etched on a separate screen, so both are visible when the Ec-K screen is combined with the EOS-1N.

★ 13. When combining the self–timer with a bulb exposure and with the CF–No.12–1 mirror up function, the mirror goes up and the self timer starts when SW–2 goes on. After the self-timer delay, the shutter is released and remains open until pressure is removed from the shutter button (SW-2 off), the the shutter closes and the mirror swings back down. However, if pressure is removed from the shutter button during the self-timer operation, the shutter will run without opening and the mirror returns, but the film is not advanced.

Reason: According to design. Removing pressure from the shutter button during a self-timer bulb exposure is an incorrect operational procedure.

★ 14. The timer function of the Command Back E-1 cannot be combined with the mirror-up function using CF-No. 12-1.

Reason: This function did not exist at the time the Command Back was designed.

<MEMO>

Part 2

Technical Information

1. AUTOFOCUS SYSTEM

1.1 Introduction

The EOS-1N features a high-speed, high-performance five-point AF system with real time control of the focusing points using the back-cover mounted "Quick-control Dial". The optical system is basically the same as the EOS 5 (A2) but the center vertical (CV) BASIS sensor is optimize for use with large aperture, reading in the f/2.8 zone as the vertical sensor of the original EOS-1 did. The other sensors read at f/5.6 as the other EOS cameras do. The EOS autofocus principle is acronymed TTL-SIR, which stands for Through The Lens Secondary Image Registration.

1.2 Multi-basis Sensor

The multi-basis is an amalgamation of the original EOS-1 cross basis and the wide area five point sensor developed for the EOS 5 (A2). As with the original EOS-1, the EOS-1N has a spot metering sensor incorporated into the BASIS sensor chip.

Glossary Note: Metering with this sensor will be called "Fine-spot Metering" to distinguish it from the focusing spot coupled spot metering of the main 16-segment exposure sensor).

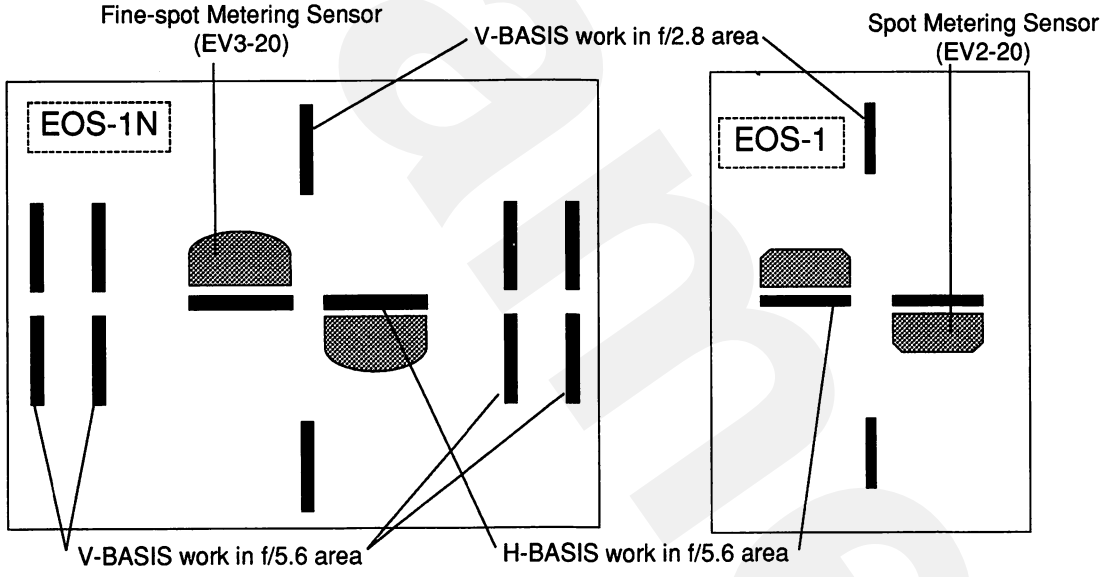


Fig 2-1 BASIS Sensor Differences

1.3 Real Time Focus Point Selection

By activating custom function 11-2, any of the five focusing points can be selected "on the fly". When CF11-2 is set, and SW-1 is on, the metering timer is on, or during continuous shooting (in AI Servo mode), the focusing point can be set by turning the Quick Control Dial. AF and Ae are recalculated each time the point is changed enabling real-time operation with the selected focus point. Unlike the standard setting, in this mode, the selection stops when it reaches either extreme point and does not switch back to automatic focus point selection if the dial is turned past that point.

1.4 Ranging Calculations and Increased AF Speed

1. Data Calculation

In automatic focus point selection mode, operation is the same as the EOS5 with calculations carried out simultaneously for the H-BASIS and the five V-BASIS sensors. Calculation order is determined speed with which each sensor detects its signal rather than in a set order. This eliminates wasting time waiting on a slow sensor. In One-shot AF mode, the focusing point measuring the shortest distance is usually chosen, if it is a reliable and logical point.(It may be disregarded if it is very low contrast, or too close to focus.

2. Increased AF Speed

An AF dedicated super microprocessor running on a 12MHz clock allows the camera to focus as fast as the EOS-1 even though it is receiving data from five focusing points.

1.5 Focus Prediction Control

The focus predictive control of the EOS-1N is almost identical to the original EOS-1, except for minor changes when combining with the Power Drive Booster E-1. In automatic focusing point selection mode, priority is given to the center, as it is in the EOS5, so it is necessary to put the center spot on the subject initially. However, the other focusing sensors are ready with data accumulated so the AI servo AF will hold focus when the subject moves to another point.

In theory, the EOS-1N with an EF 300mm f/2.8 will track a object moving directly toward the camera at 40kph to as close as seven meters.

2. FOCUS MARK SUPERIMPOSITION

2.1 Introduction

The EOS5 and 10 have their focusing marks engraved directly on the focusing screen. The EOS-1N instead uses a separate superimposing (SI) screen sandwiched between the focusing screen and the viewfinder condenser lens. This screen in made of acrylic and coated to reduce reflections.

2.2 Optical Path Comparison

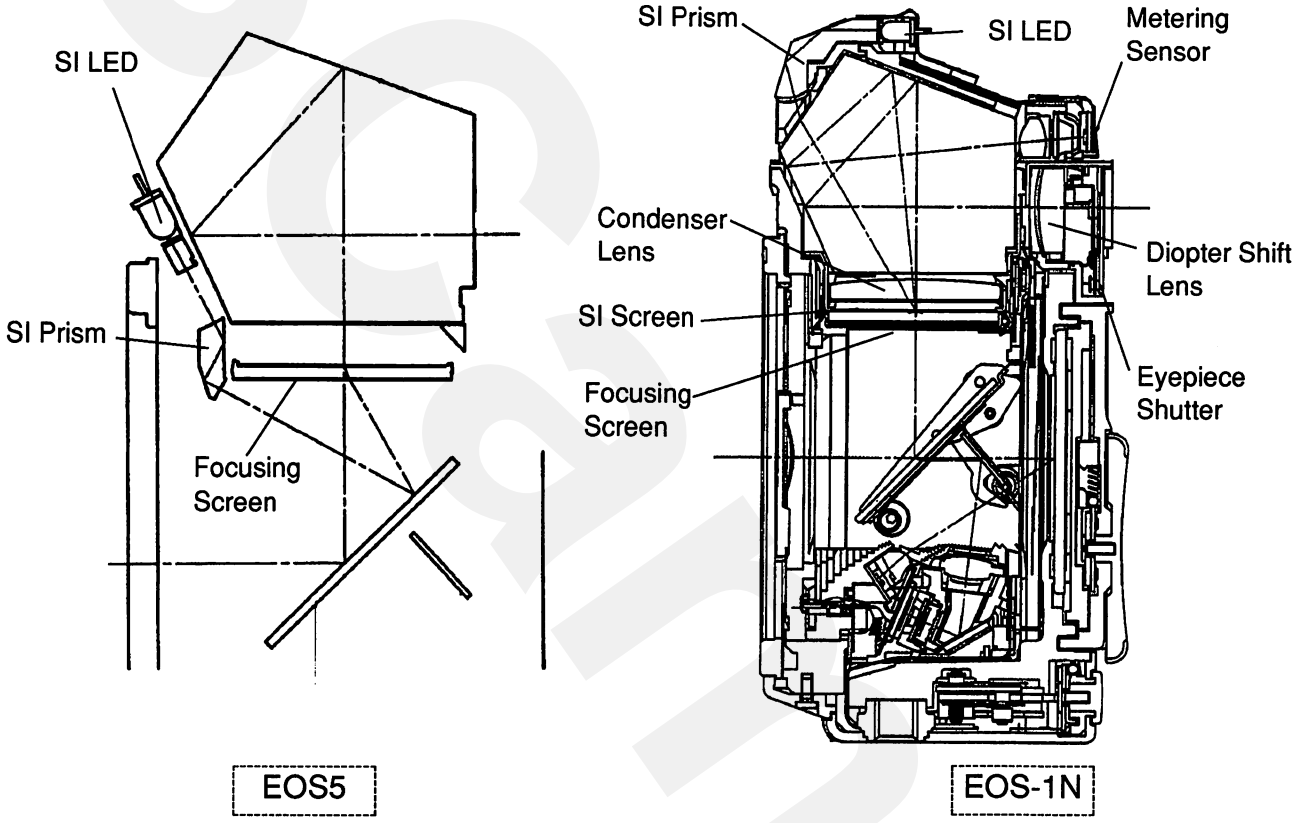


Fig 2-Optical Path Differences

2.3 Details

As mentioned above, the EOS5 and 10 have their focusing marks engraved directly on the focusing screen. This requires that the light from the SI LEDS is directed down onto the main mirror and reflect back up to the focusing screen. In the EOS-1N the light path is from the five SI LEDs through a window into and through the main prism and and condenser lens to illuminate the SI screen from the top so the main mirror is not involved. This has several advantages. The focusing point mark can be displayed during continuous shooting in the AI Servo AF mode, and interchangeable focusing screens designed for the original can be used without loosing the superimposing function.

Note: In certain applications with EOS-1 interchangeable screens, the user may prefer not to use the SI screen. This presents no problem as far as operation is concerned, but adjustment of the eyesight correction may be necessary due to the differences in the optical characteristics of acrylic and air.

3. EXPOSURE MANAGEMENT SYSTEM

3.1 Light Metering

1. Metering Optics and AE Sensor

The EOS-1N has a total of six exposure metering sub-systems using three different sensors.

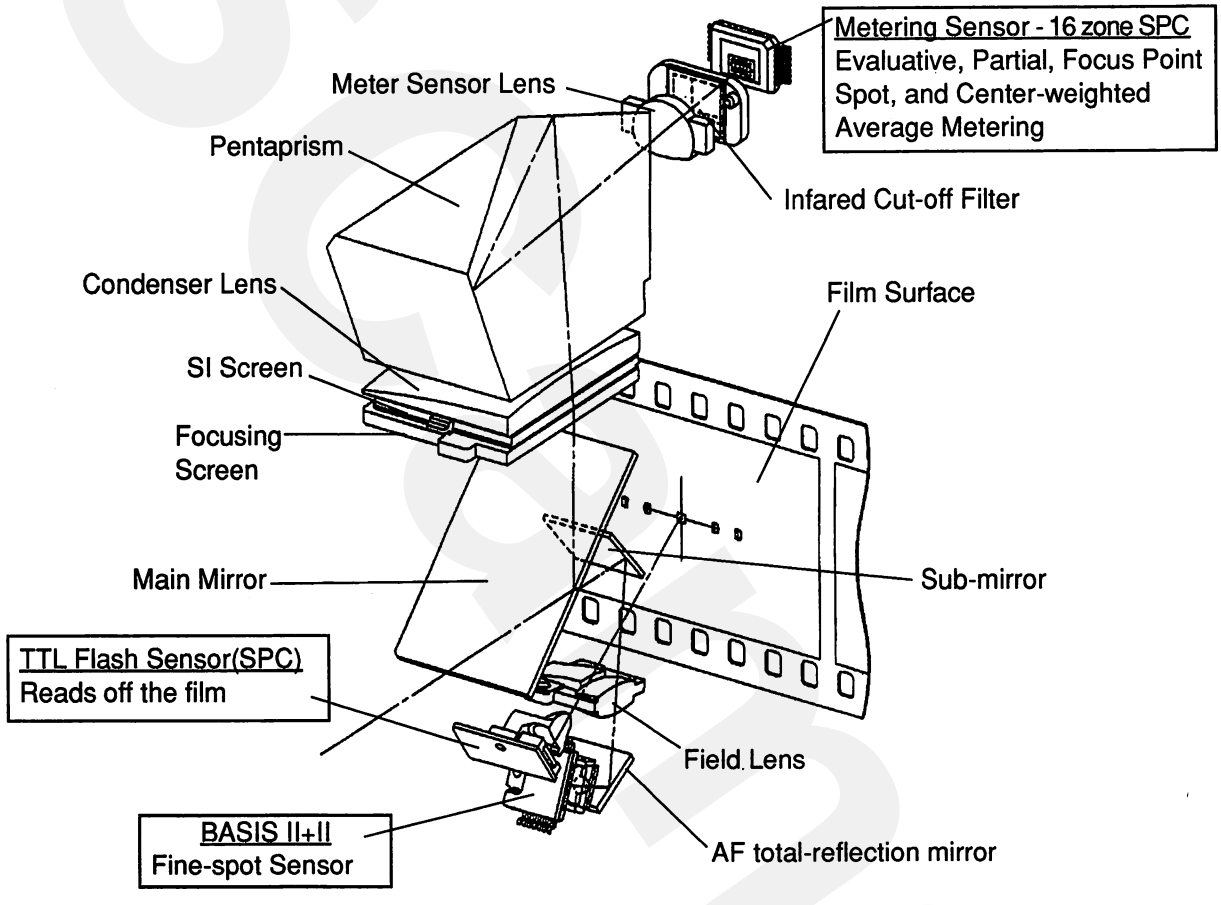


Fig 2-EOS-1N Optical Paths

1) 16-Zone Metering Sensor: This is the same sensor as used in the EOS5. It provides evaluative metering and focusing point spot metering.
2) Basis (II+II): As in the EOS-1 the fine-spot sensor is incorporated into the BASIS chip.
3) TTL Flash Sensor: This is the same three-zone TTL sensor used in the EOS5 and 10. It provides focus-point weighted flash metering.

2. Metering Systems and Sensitivity Distribution.

1) Evaluative Metering

The EOS-1N uses the same 16-zone sensor as used in the EOS5, giving evaluative metering weighted to the selected focusing point. Metering areas A0 thru A5 correspond to the five AF focusing sensor positions, enabling weighting the evaluative algorithm independently for each focusing point. As shown by the three examples below, the metering is weighted in three steps giving the most weight to the focus point area, somewhat less to the adjacent areas and least to the outlying areas. When manual focusing is used, the center pattern is used.

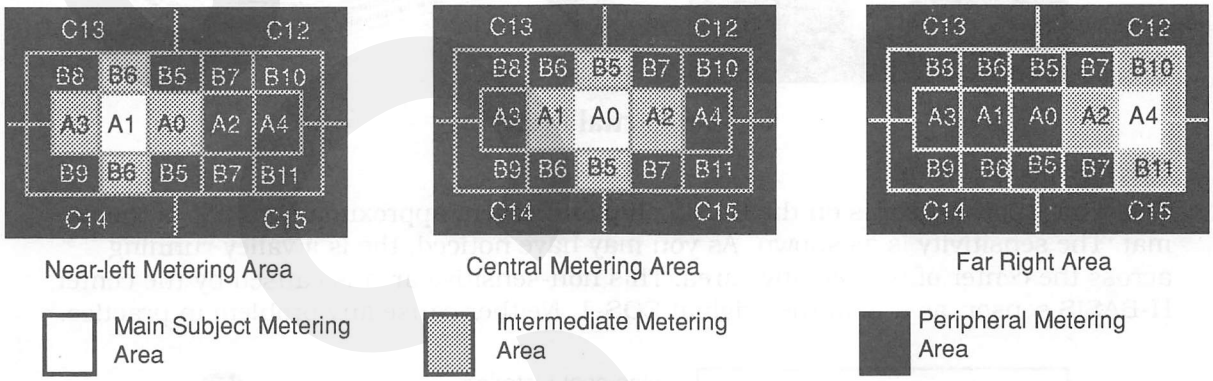


Fig 2-4 Metering Area Examples

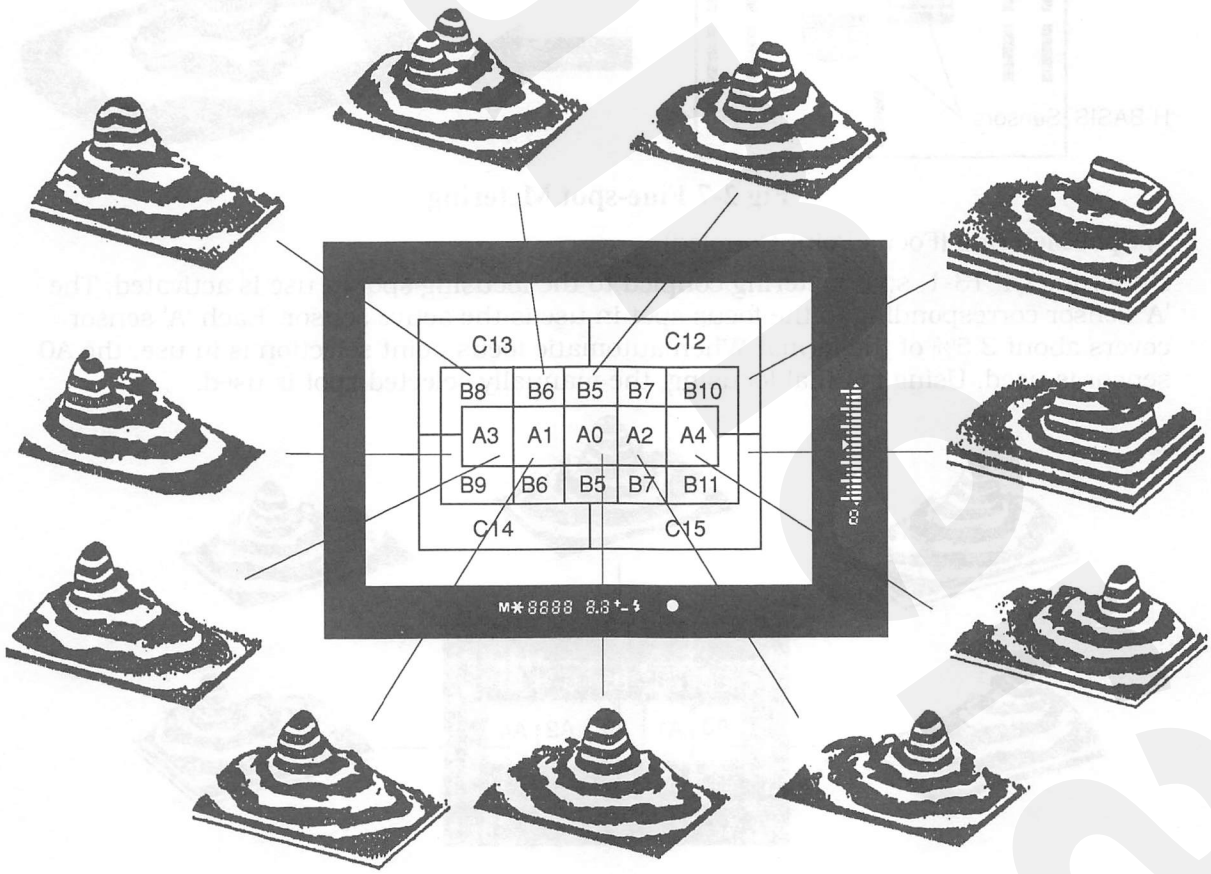


Fig 2-5 Metering Area Sensitivity

2) Partial Metering

Partial metering is based on the outputs of A0,A1, A2 and the two B5 segments. It covers approximately 9% of the format. (Long time Canon people will recognize this as similar to the F-series Central Area Metering.)

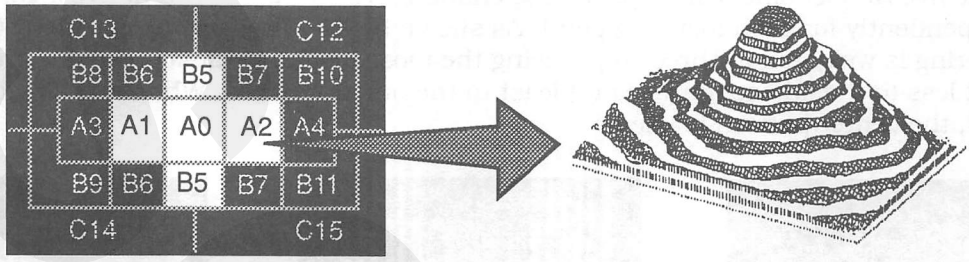


Fig 2-6 Partial Metering

3) Fine-spot Metering

The "Fine-spot" sensor is on the BASIS chip and covers approximately 2.3% of the format. The sensitivity is as shown. As you may have noticed, the is a valley running across the center of the sensitive area. This non-sensitive area is caused by the center H-BASIS sensor, as it is in the original EOS-1. Neither cause any problem in practice.

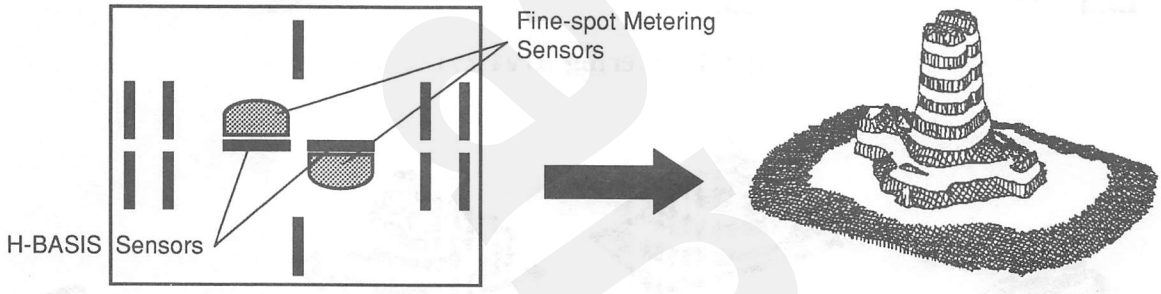


Fig 2-7 Fine-spot Metering

4) Spot Metering (Focus Point Coupled)

By setting CF 13-1, spot metering coupled to the focusing spot in use is activated. The 'A' sensor corresponding to the focus spot in use is the active sensor. Each 'A' sensor covers about 3.5% of the format.When automatic focus point selection is in use, the A0 sensor is used. Using manual focusing, the manually selected spot is used.

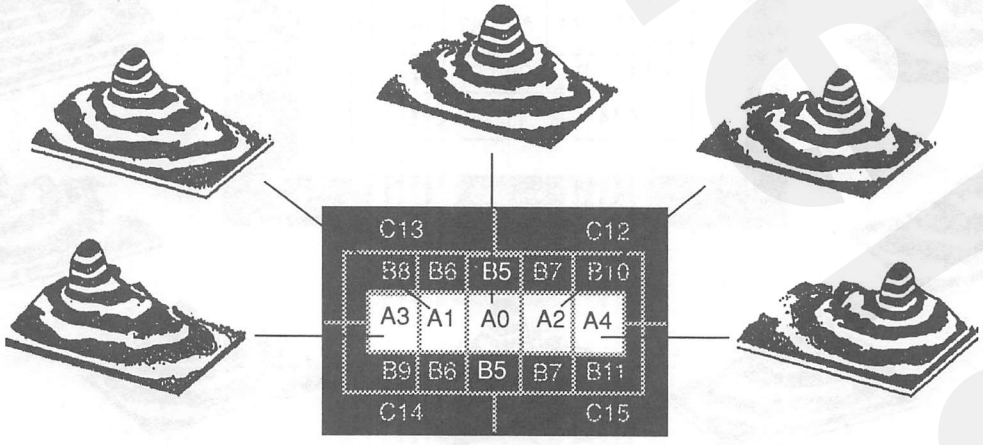


Fig 2-8 Spot Metering (Focus Point Coupled)

5) Center-weighted Average Metering (CF 8-1)

Center-weighted average metering uses inputs from all 16 areas without any evaluative algorithm and is weighted to the center regardless of focus point selection. This is similar to the metering in A- and T-series Canons. (Each contour line represents one EV.)

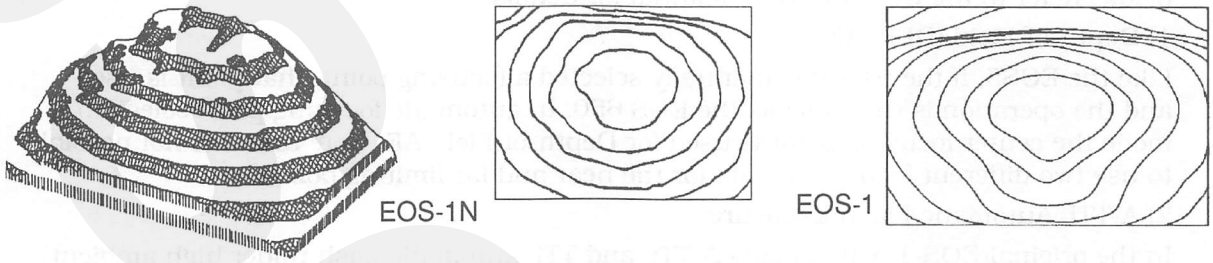


Fig 2-9 Center-weighted Average Metering (CF 8-1)

6) TTL Flash Metering

TTL Flash Metering uses the 3-zone EOS5 OTF sensor. The output is weighted by the selected focusing point, with the center zone coupled to the center HV-BASIS and the outer sensors coupled to the pair of V-BASIS on their side. In operation, light from the flash reflected off of the film is detected by the sensors with the sensitivity of the idle sensors reduced one stop. In this way, the active sensor will normally reach cut-off first and terminate the flash, but if one of the other sensors receives more that twice as much light as the active sensor, it will terminate the flash. With manual focus, all three sensors are equal and the flash is terminated by whichever reaches threshold first.

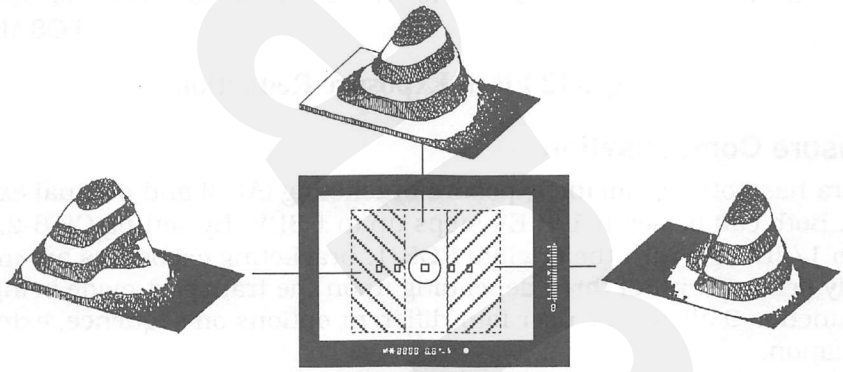


Fig 2-10 TTL Flash Metering

7) "Body Metering" during A-TTL and TTL Flash Metering

Body metering, previously called peripheral metering, is used to establish the background exposure with A-TTL or TTL flash. Previous systems ignored the central sensors where the flash-lit subject most likely was. With the 16 segment sensor used in the EOS5, body metering became quite weighted toward the periphery. For EOS-1N users, it was decided that a flat overall reading of the entire area would be more appropriate.

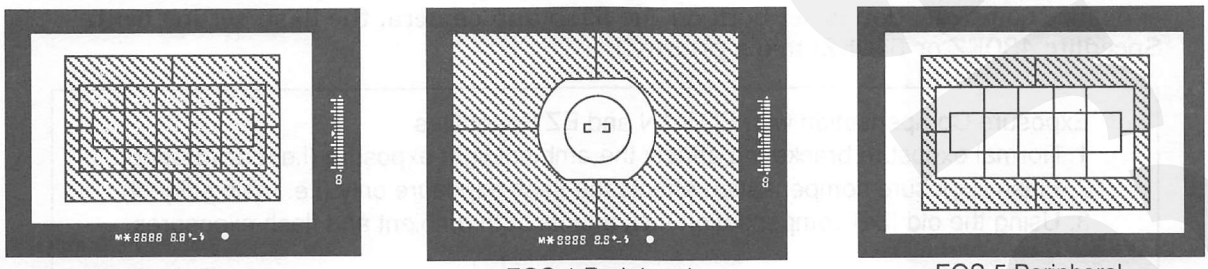


Fig 2-11 Body Metering

3.2 Exposure Control Methods

1. Automatic Exposure (AE) Control

The EOS-1N AE modes are virtually identical to the EOS-1 with the exceptions listed below. Refer to the EOS-1 Service Manual for details.

1) Depth-of-Field (DEP) AE

Like the EOS5, if the user has manually selected a focusing point, that point is used and the operation is the same as the EOS 650. In automatic focusing point selection mode the center focusing point is used for Depth-of-Field AE. Note that it is not possible to use two different focusing points for the near and far limiting points.

2) A-TTL Automatic Flash Exposure

In the original EOS-1, when using A-TTL and TTL automatic flash under high ambient light conditions, the flash reduction was a constant -1.5Ev at all brightness levels above Ev 13, but this has been changed as shown below.

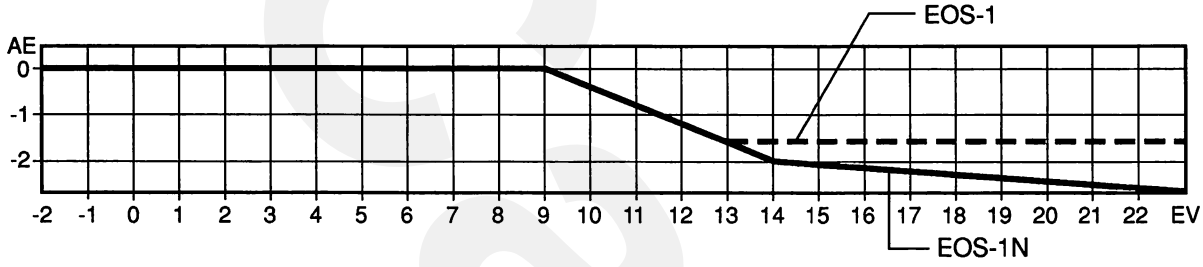


Fig 2-12 Flash Exposure Reduction

2. Exposure Compensation

This camera has both automatic exposure bracketing (AEB) and manual exposure compensation. Both can be set in 1/3 EV steps up to ± 3EV. By setting CF 6-2, the steps are changed to 1/2EV. As with the original EOS-1, bracketing exposures are made either individually or in a burst of three depending upon the transport mode being used. Custom Function 9 allows the user four different options on sequence, external settings, and cancelation.

1) Manual Exposure Compensation

As in the original EOS-1, Custom Function 6 allows the user to set either the shutter speed or aperture in 1/3 (CF6-0), one (CF6-1), or 1/2 stop (CF 6-2) increments.

2) TTL Flash Exposure Compensation

With the original EOS-1, flash exposure compensation is only possible with the 430EZ. The EOS-1N has flash exposure compensation built into the camera body so ±3 stops of compensation in 1/3 stop increments (1/2 stop with CF 6-2) is possible with any EZ Speedlite, whether mounted directly on the hot shoe or via multiple flash accessories. (If exposure compensation is set both on the flash and camera, the flash setting (with Speedlite 430EZ or 540EZ) takes priority.)

Exposure Compensation with EOS-1N and EZ Speedlites
1. Normal exposure bracketing affects the ambient light exposure (i.e. background).
2. Flash Exposure compensation affects the flash exposure only (i.e. main subject).
3. Using the old ISO compensation trick affects both ambient and flash exposures.

4. FILM TRANSPORT (SILENT FILM REWIND)

4.1 Introduction

The Film transport system of the EOS-1N is identical to the original EOS-1 in principal. That is it is normally a two-motor system and converts to a three-motor system when the Power Drive Booster E-1 is mounted. The new Battery Pack E-1 uses the two-motor system. Changes in the drive system and electronic control reduce the rewind noise level to approximately half of the original EOS-1's level.

4.2 Details

The irritating rewind noise of the original EOS-1 has been greatly reduced, allowing rewinding in situations where the original EOS-1's noise would have been disruptive. The changes are:

1) The rewind motor's (M2) output gear has been changed from the pinion gear used in the original EOS-1to a worm gear which reduce first stage noise and especially suppresses the high-frequency component which can be very irritating.

2) The rigidity of the M2 motor base has been increased, and six rubber mounts are used to insulate the motor base from the body and mirror box.

3) Additional quieting is achieved with the "silent rewind" custom function (CF 1-2 or 1-3), by using pulse width modulation (PWM) to reduce motor speed.

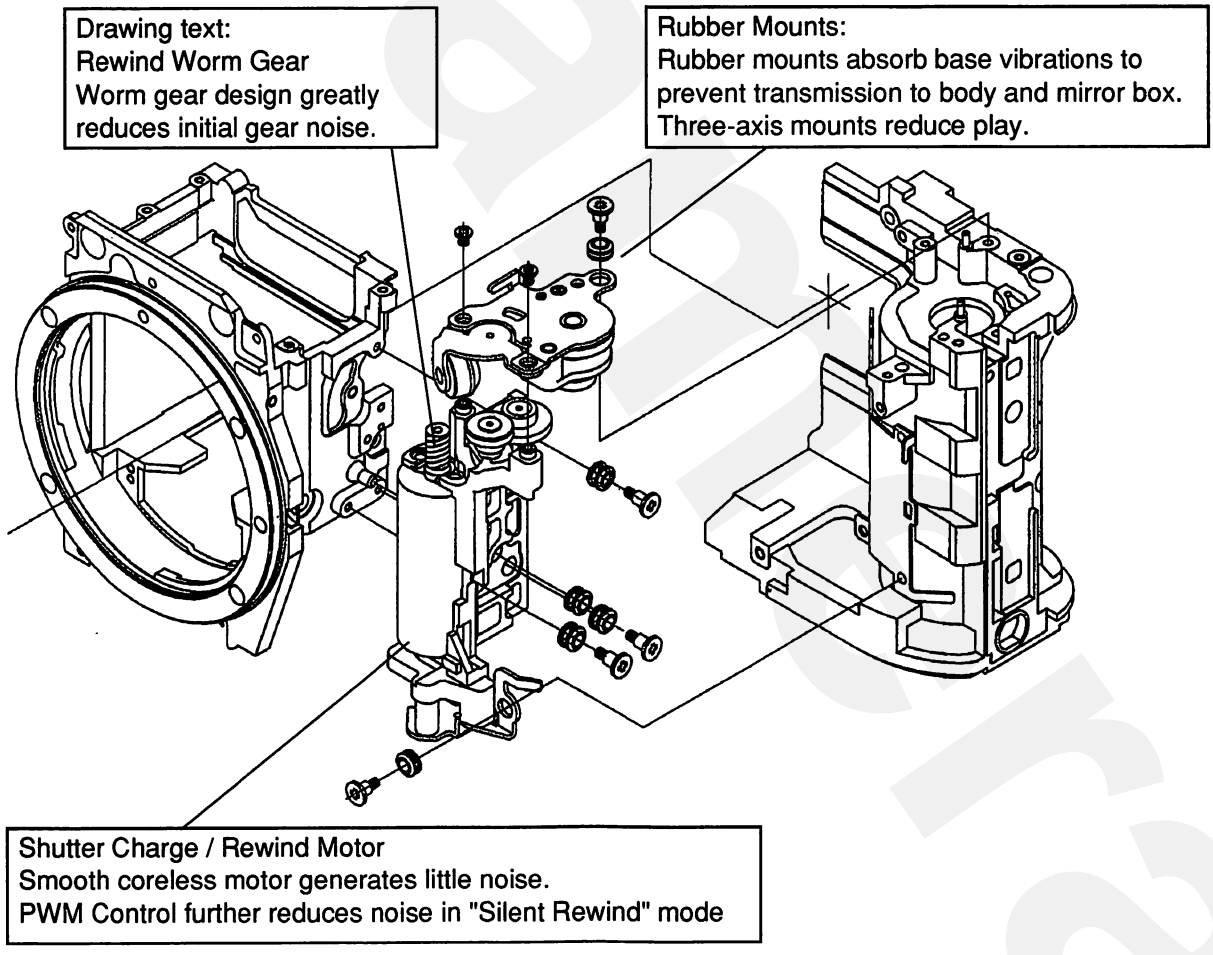


Fig 2-13 Silent Film Rewind

5. CUSTOM FUNCTIONS

The EOS-1N has the eight EOS-1 custom functions, three of which are improved, plus six new custom functions. Function

CF#	Custom Function	Set No. & Function
1	Auto reverse	0: Yes (High speed)rewind) 1: No (High speed rewind) 2: Yes (Silent rewind) 3: No (Silent rewind)
2	Film leader after rewind	0: Wound into cartridge 1: Protruding from cartridge
3.	Film Speed Setting	0: Automatic with manual override 1: Manual setting only
4	AF operation / AE Lock:	0: AF operates on SW-1; AE locked by AE Lock 1: AF starts by AE Lock; AE locked by SW-1 2: AF start by SW-1; AF locked by AE Lock (No AE lock)
5	Manual Tv and Av setting	0: TV set by Main Dial / TV by Quick Control Dial or by pressing exposure compensation (±) button, then using main dial (with CF 11-0) 1: AV set by Main Dial / TV by Quick Control Dial or by pressing exposure compensation (±) button, then using main dial (with CF 11-0)
6.	Tv, Av and exposure correction pitch	0: Input and Correction at 1/3 stop pitch 1: Input at 1 stop, correction at 1/3 stop pitch 2: Input and Correction at 1/2 stop pitch
7	Electronic manual focusing with Ring-type USM lens	0: Manual focusing is possible without switching from AF to M 1: Manual focusing is possible only by switching from AF to M
8	Full Area Metering	0: Evaluative Metering 1: Center-weighted averaging Metering
9	AEB exposure order and cancellation	0: Under - Correct - Overexposure 1: Under - Correct - Overexposure (Not cancelled) 2: Correct - Under - Overexposure 3: Correct - Under - Overexposure (Not cancelled)
10	AF point superimposing	0: Yes 1: No
11	Focusing point selection	0: Focusing Point Selector and Main Dial 1: Exposure Comp. (±) then Main Dial 2: Quick Control Dial or Exposure Comp. (±) then Main Dial
12	Mirror-up Lock	0: Normal - no mirror lock 1: Pressing Release button (SW-2) once raises mirror. Releasing and re-pressing button releases shutter (Time limit: 30 seconds).
13	Spot Metering	0: Fine-spot Metering (Basis sensor) 1: AF Focus Point Spot metering (A0 - A4 segments)
14	Flash Reduction at high EV	0: Automatic 1: None

Additional Details and Suggestions

CF# 1

Detail: CF1-1,3 LED indicates "36" and cartridge mark flashes.Frames remaining in viewfinder indicates "0"

CF#2

Detail: CF2-1 Shutter speed with back cover open is always 1/8000 second, even at "buLb".

CF#3

Detail: CF3-1 The previous ISO setting is set when a new film is loaded.

CF#4

Detail: CF4-2 AE lock is not possible. This function is designed for sports where the photographer may want to hold the focus at a particular point.

CF#5

Suggestion: This function allows the photographer to select the dial for aperture and shutter speed selection. For example, when using a fixed shutter speed with flash it the studio, the aperture can be set with the main dial.

CF#9

Detail: CF9-0,2 AEB is cancelled when the lens is changed, main switch set to "L", or film is rewound, as well as when the CLEAR button is pressed, the flash is charged, or "buLb" is set.

Detail: CF9-1,3 AEB is cancelled only when the CLEAR button is pressed, the flash is charged, or "buLb" is set.. Also, it is not necessary to open the palm door to enter AEB.

Suggestion: These settings are for photographers who use AEB a lot and don't want AEB to cancel just because they change the lens or film. AEB mode can be entered by pushing the AF and Shooting mode buttons and operating the main dial.

CF#11

Detail: CF#11-0,1 Focusing point selection is in a continuous loop automatic --far left -- inner left -- center -- inner right -- far right --- automatic, etc.

CF#11-2 This allows use of Quick Control dial whenever metering or continuous shooting is in progress. In this mode, there is no continuous loop. The point stops at either extreme and returns when the dial is reversed.

Suggestion: CF11-0 and 1 allow the photographer to use the same button combination on the EOS-1N as his previous EOS-1 or EOS5. CF11-2 allows utilization of the full potential of real-time focusing point selection in combination with AI Servo AF.

CF#12

Detail: CF#12-1 Pressing Release button (SW-2) once raises mirror. Releasing and re-pressing button releases shutter. Winding mode with be single even if continuous is set. (Time limit: 30 seconds).

CF#14

Suggestion: When using TTL Flash in daylight, the camera automatically reduces the flash output to prevent overly obvious flash effects. This is best for most situations, but can cause underexposure of the main subject in some situations, like strong backlighting. CF14-1 allows the photographer to cancel the automatic reduction and make the compensation his/herself as necessary.

6. ERROR CODES

If an error occurs, the camera will go into the inhibit mode and the bc mark will flash. In this condition, it is possible to determine the source of the error by simultaneously pushing the Battery Check and Clear buttons. An error number will be displayed in the frame counter frame. As with the original EOS-1, only the most recent error is displayed.

Error #	System Error	Probable Cause
None	Unspecified error	1. Low battery(or improper Inhibit voltage adjustment) 2. System connector VCHK line, open, short, poor contact 3. MPU, FPU failure
1	Failed battery check immediately after mirror up	1. Exhausted battery 2. System connector contact failure
2	Failed battery check after exposure, before winding start.	1. Exhausted battery 2. System connector contact failure
3	No E1 when batt. installed, or an operating switch pressed	1. Failed DC/Dc Convertor 2. Failed LCD Driver, Reset IC
4	Lens/Body Communications Error	1. Lens' Diaphragm Open switch failure 2. Lens' Diaphragm Open switch chattering. 3. Lens power circuit defective. 4. Body's "Lens Switch" or wiring defective, 5. T-MOS-IC defective
5	Battery Check Load error	1. RBAT1, 2, or 3 open 2. FPU defective.
6	Mirror doesn't rise completely	1. Mirror-up Switch defective 2. Defective mirror mechanism 3. Mg2 sticking or coil open.
7	Mirror doesn't return	1. Mirror-up Switch defective 2. Defective mirror mechanism 3. Mg2 sticking or coil open Notes: If mirror is manually held up and shutter released, "7" will not be displayed. With mirror mechanism defects, "6" may be displayed and "bc" may not flash.
8	Shutter Operation Trouble	1. CN2 Switch shorted. 2. CN2 Switch doesn't turn on. 3. Shutter won't hold charge 4. Damaged shutter blades.
9	Mirror/Shutter Charge Mechanism won't charge	1. Shutter unit defective 2. Defective mirror mechanism 3. When grip is installed, System connector VM2 line makes poor contact . 4.When Power Drive Booster is installed, System connector VM2 line makes poor contact .
10	Shutter Magnet Defective	1. Magnet defective 2. FPU defective. 3. MgMON(itor) line from Shutter to FPU open.
11	MPU-BASIS Comm. Error-1	MPU,FPU,I/O, or BASIS defective
12	MPU-BASIS Comm. Error-2	MPU,FPU,I/O, or BASIS defective

7. MISCELLANEOUS

7.1 Shutter

The EOS-1N's shutter is based on the original EOS-1 shutter with improvements to improve durability. Carbon is used in blades #1,2,and 3 in each blade set instead of "Super-duralumin 2". to lighten them and thus reduce inertia in the long opening and closing stroke. Energy dissipation required for braking is also reduced decreasing the load on the blades and mechanism.

As in the EOS-1, current flows through the 2nd curtain magnet during bulb operation. The limit for very long time exposures is approximately 60 hours for the EOS-1N with a new 2CR5, and about 50 hours for the EOS-1N with the Power Drive Booster with eight LR6 batteries.

7.2 Speedlite 540EZ

The original specifications for the EZ series flash units in the A-TTL mode provided pre-flash (Normal head position: IR preflash; bounce position: main flash preflash) operation for two reasons: a) setting the flash control aperture in "Program" mode, and b) triggering the out-of-coupling range (far) warning when flash range was exceeded. This second function was discontinued from the EOS10 so when the EOS-1N is used in shutter- or aperture-priority (Tv-AE or Av-AE) modes with, say, a 430EZ the preflash fires for no purpose.

To avoid this unnecessary use of energy, the new Speedlite 540EZ is designed to switch to normal TTL mode whenever the camera is in Tv-AE or Av-AE mode and the bounce is raised above the normal position This is a function of the flash, not the camera, so it also affects other EOS models.

7.3 Clear Button Operation

When the clear button is pressed with the camera in a normal operating mode:

1. The following functions are reset to the default settings:

Mode	**Default Setting**
Shooting	P
AF	One Shot
Exposure	Evaluative Metering if CF8-0 is set.
	(If CF8-1 is set, there is no change.)
Transport	Single Frame
Exposure Compensation	0

2. The following functions remain as set:

   Focusing Point Selection

   ISO

3. Resetting during operation of Multiple Exposure (ME) or Auto Exposure Bracketing (AEB) is also possible by pressing the clear button, but this resets all the defaults listed in '1.' also.

4. If the camera is set to the Custom Function Control mode, pressing the Clear button resets all custom functions to "0".

8. BLOCK DIAGRAM

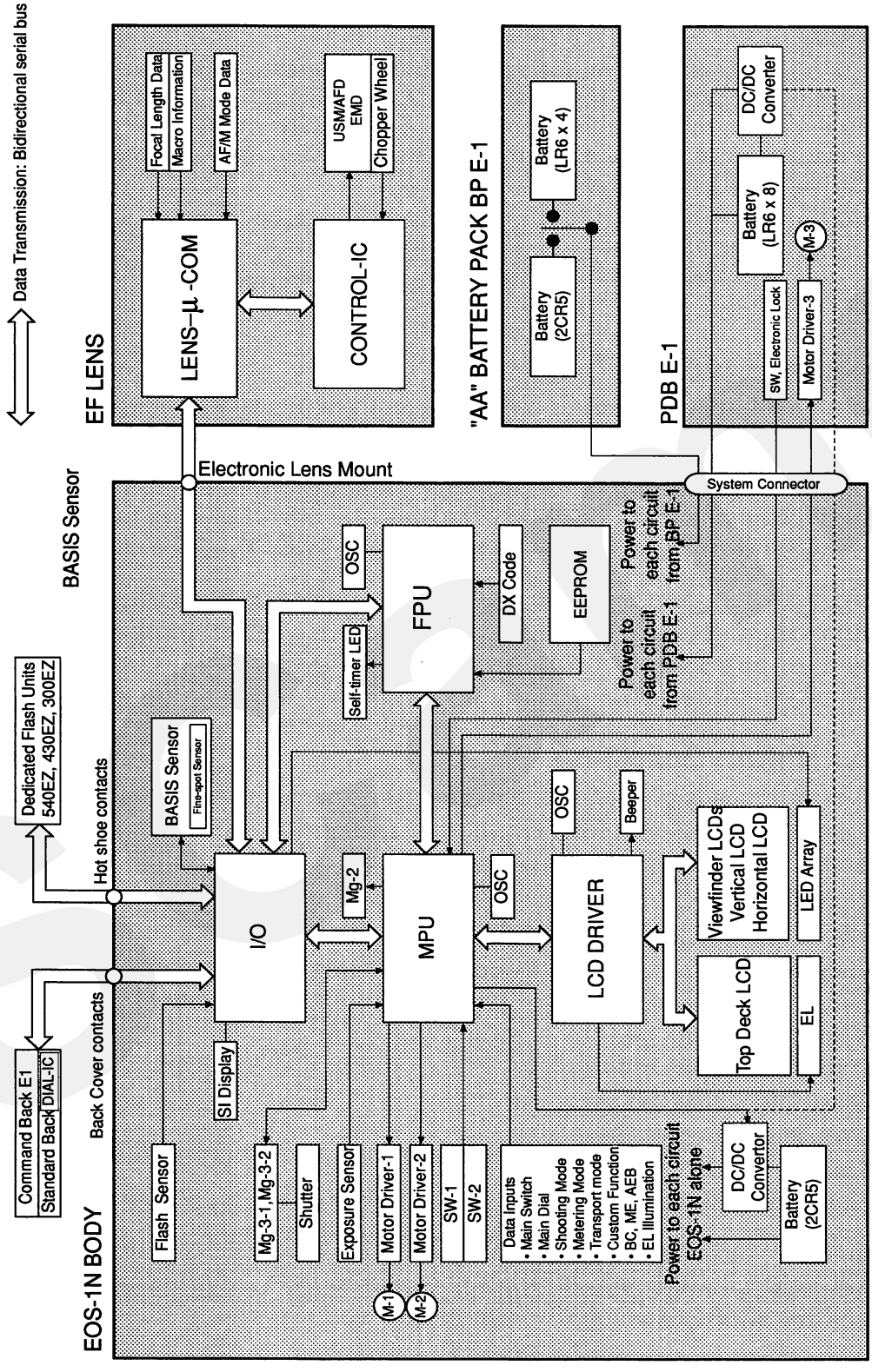


Fig 2-14 Block Diagram

9. OPERATIONAL FLOW CHARTS

9.1 EOS-1N Operational Flow Chart

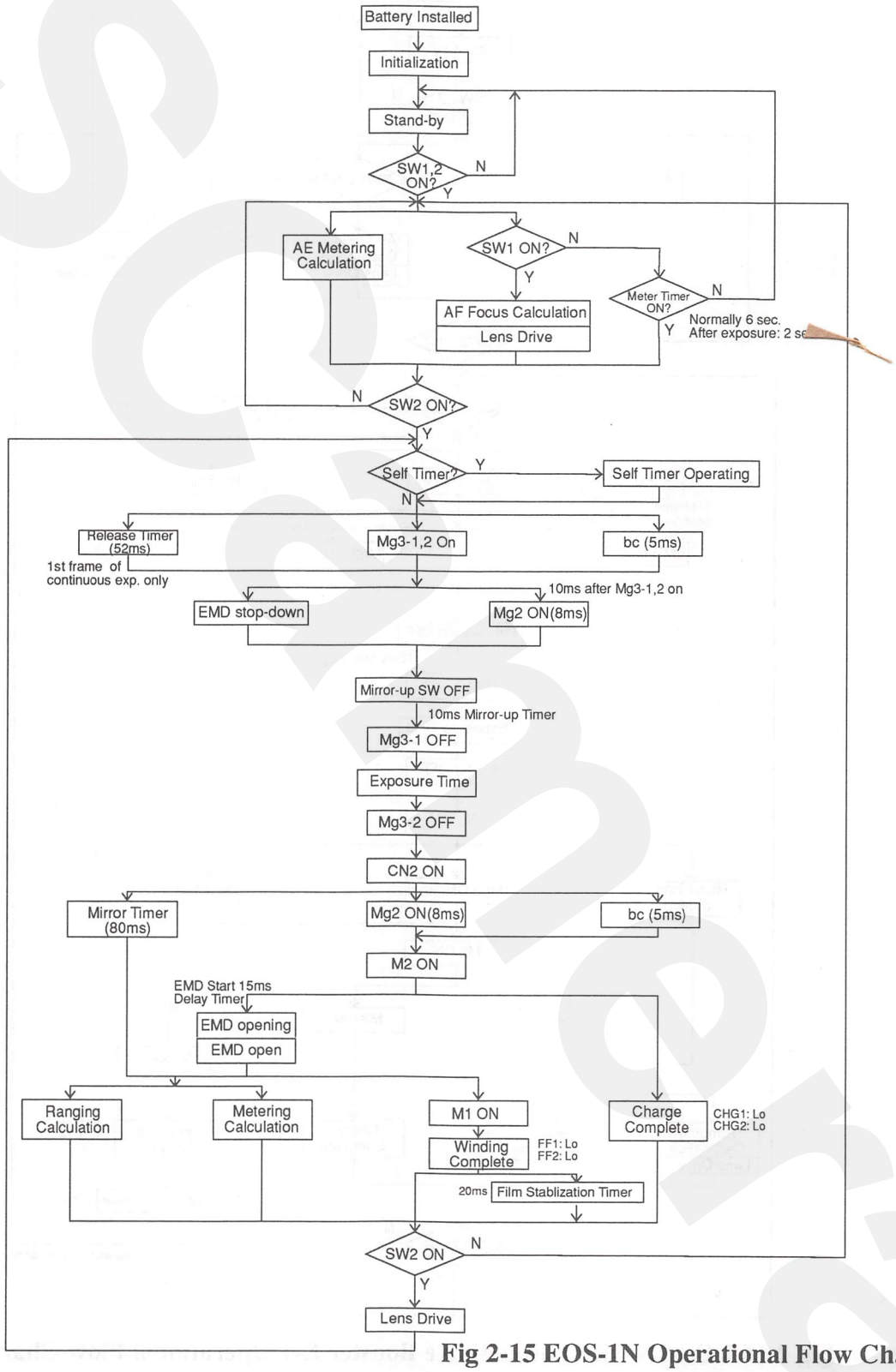


Fig 2-15 EOS-1N Operational Flow Chart

9.2 EOS-1N with PDB E-1 Operational Flow Chart

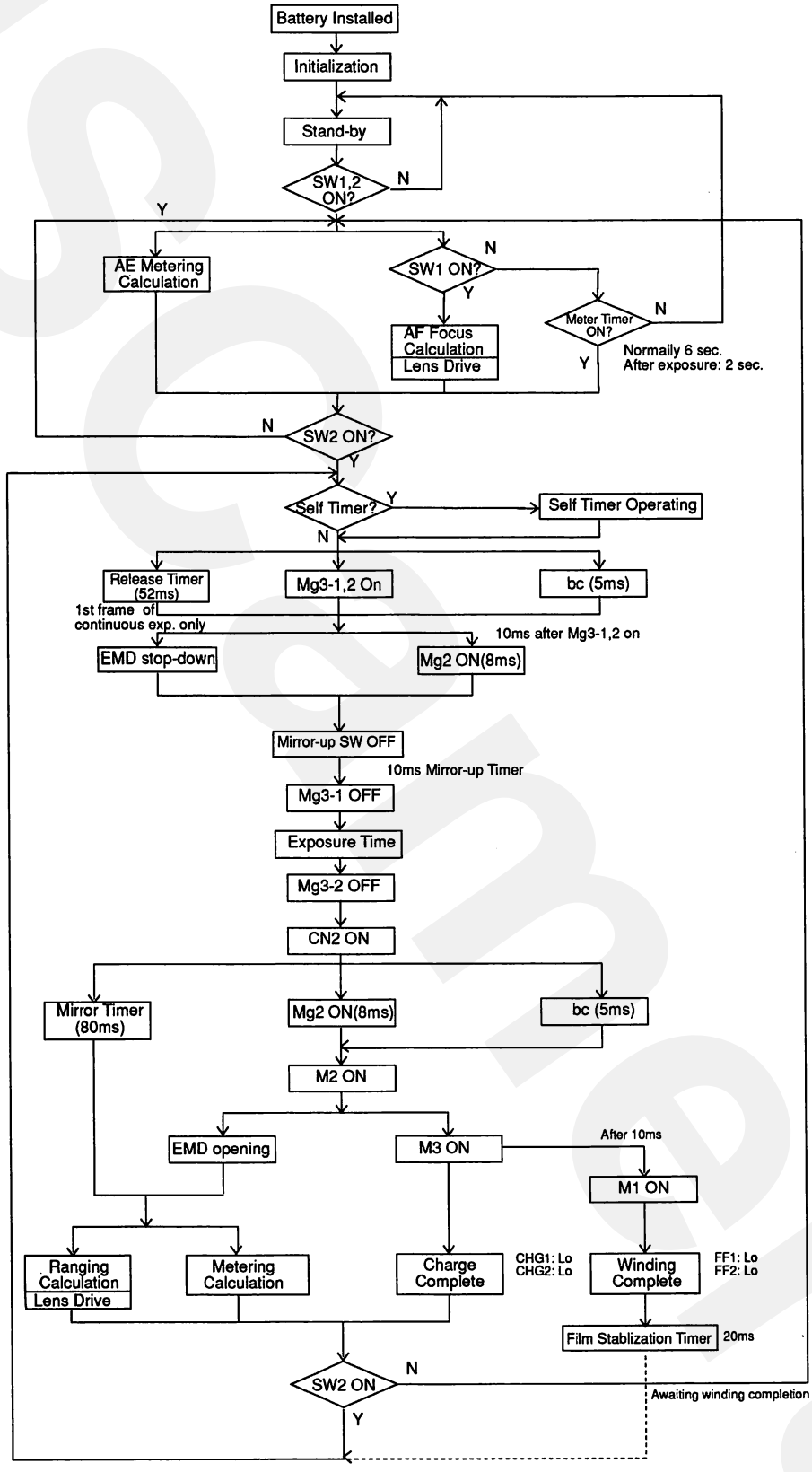


Fig 2-16 EOS-1N with Power Drive Booster E-1 Operational Flow Chart

10. TIMING CHART

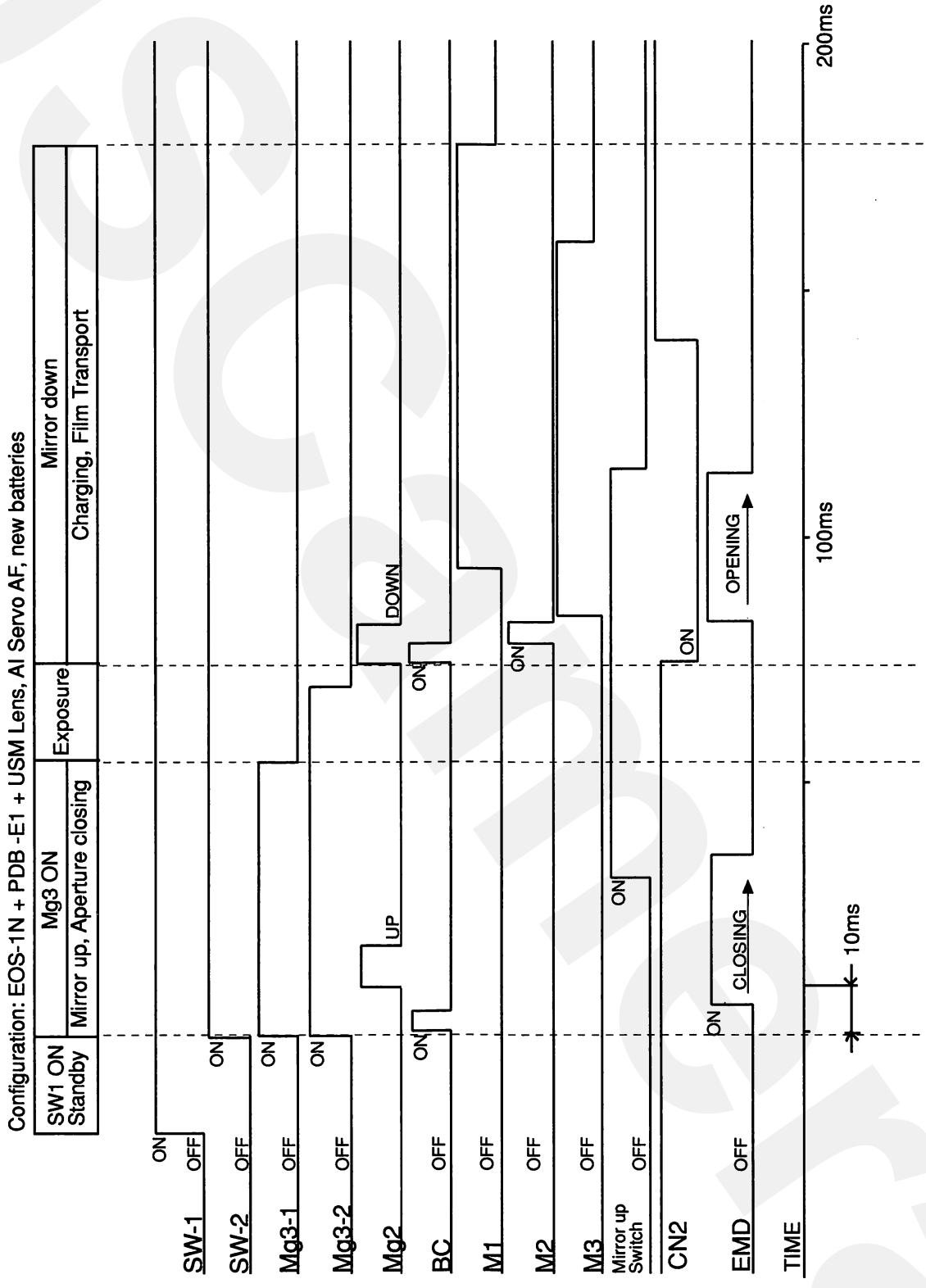


Fig 2-17 Timing Chart

11. SWITCH POSITIONS AND FUNCTIONS

11.1 Switch Positions

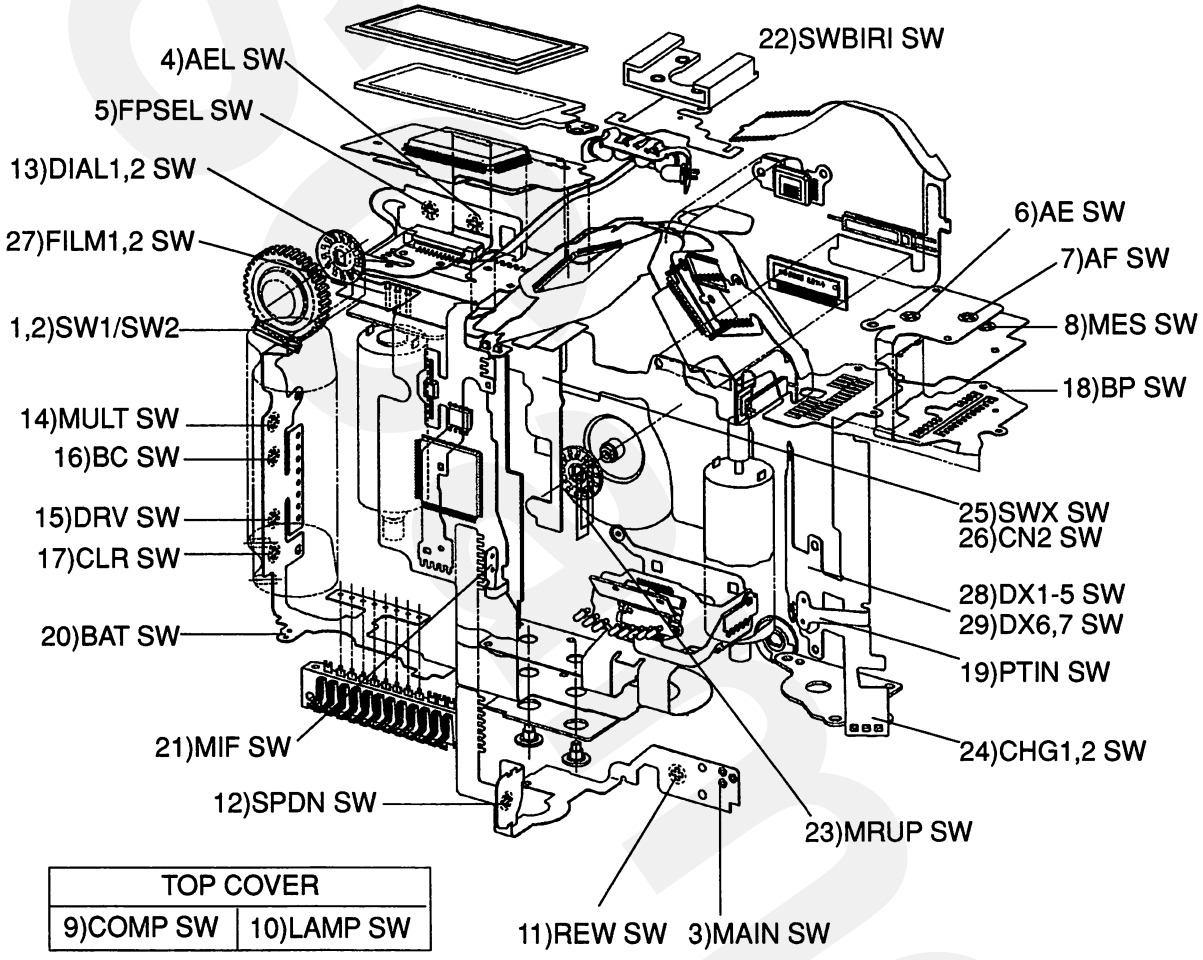


Fig 2-18 Switch Positions

11.2 Switch Functions

SWITCH FUNCTIONS

#No.	Symbol	Switch Name	Function
	Operator Switches		
1	SW1	Ranging & Metering	Exposure metering & automatic focusing
2	SW2	Release	Shutter Release
3	LOCK SW	Main	3 position main switch , Lock (off), A and Beeper
4	AEL SW	AE Lock	AE lock is *activated for six seconds when pushed.*
5	FPSEL SW	Focus Point Select	Enables Focus Point selection by main dial
6	AE SW	Shooting Mode	Enables shooting mode selection with main dial
7	AF Mode SW	AF Mode	Enables AF mode selection with main dial.
8	MES SW	Exp. metering	Enables metering area mode selection with main dial.
9	COMP SW	Exp. Compensation	Enables AE compensation value to be set with main dial.
10	LAMP SW	LCD EL	Illuminates top deck LCD, goes off when metering timer does.
11	REW SW	Manual Rewind	Film is rewound when pushed.
12	SPDN SW	Depth-Of-Field	Closes down the aperture when pushed for working aperture metering and D-o-F check.
13	DIAL 1,2 SW	Main Dial	Selects setting of function activated by pushing other switches.
14	MULTI(CF) SW	Custom Function	Custom Function can be set with the main dial when pressed.
15	DRV SW	Winding Mode	The winding mode can be set with the main dial
16	BC SW	Battery Check	Battery power is checked, and indicated on the LCD display.
17	Clear SW	Clear	All functions are canceled at once when pushed.
	Condition Switches		
18	BP SW	Back Cover	Closed (grounded) when back cover is open, open when cover is closed.
19	PTIN SW	Cartridge	Turns off when the cartridge is in.
20	BAT SW	Reset	Opens to reset circuit when battery installed.
21	MIF SW	Lens	Turns on when lens is attached.
	Mechanical	Switches	
22	SWBIRI SW	Shock Prevention	Prevents shock at empty hot shoe.
23	MRUP SW	Mirror Up	Detect Mirror up & down
24	CHG1, 2 SW	Charge Phase	Senses shutter charge
25	SWX SW	X Sync	Flash synchronization switch
26	CN2 SW	Second Curtain	Turns on when shutter second curtain run is completed.
27	FILM1, 2 SW	Film Phase	Senses film winding condition
28	DX1 -5 SW	Film speed	Reads film speed by DX code
28	DX6,7 SW	Exp. #	Detects the number of the frames by DX code.

12. IC PIN TABLES

MPU (MC68HC11S6)

Pin #	Symbol	Function
1-8	-	Not Used
9	VCHKON	Determines the input voltage (6 or 12V)
10	PTIN	Senses whether film cartridge is installed or not
11	BSEL2	With BSEL1, switches communications mode
12	BSEL1	With BSEL2, switches communications mode
13	BCONT	Communications Clock
14	FILM2	Film transport sensor
15	PULD2	Switch input terminal
16	PULD1	Switch input terminal
17	RLY	PDB E-1 RLY operation.
18	M3F	Control terminal for M3 motor in PDB E-1.
19	/RESFPU	FPU reset signal
20	CHG1	Charge brake signal input
21	MREQ2	FPU Comm. line (emergency communication request)
22	MREQ1	FPU Comm. line (communication request)
23	AFREQ	FPU Comm. line
24	SRDY	FPU Comm. line
25	DGND	Digital Ground (Earth)
26	VDD	Digital Power Supply
27	BP	Back cover switch input
28	MIF	Mount interface switch output
29	REW/MULT	Sensor for Manual Rewind and Custom Function set switches
30	SPDN/DRY	Sensor for D-o-F and film transport mode switches
31	AF	AF Mode Switch
32	MES/FPSEL	Sensor for Metering Mode and AF Frame Selection switches
33	LAMP/BC	Sensor for LCD illumination and Battery Check switches
34	AE/CLR	Sensor for Shooting Mode and Clear switches
35	- - -	Not used
36	32KIN	32KHz input from LCD Driver
37	/RESMPU	MPU reset signal output
38	XTAL	8.38MHz crystal oscillator connection
39	EXTAL	8.38MHz crystal oscillator connection
40	/RESIO	I/O reset signal output
41	MODB	MPU Mode switching (Tool use only)
42	DGND	Digital Ground (Earth)
43	/E1ON	Turn-on signal for DC/Dc Convertor
44	/CSLCD	LCD Driver select signal
45	RXD	Not used
46	TXD	Not used
47	MISO	MPU input signal from other ICs
48	MOSI	MPU output signal to other ICs
49	SCLK	System clock for MPU, ICs
50	- - -	Not used

Pin #	Symbol	Function
51	FILM1	Film Transport Chopper Wheel Signal input
52	SMG3-1	First curtain magnet control
53	SMG3-2	Second curtain magnet control
54	SMG2	First Release Magnet control
55	S3	Metering area selection signal
56	S2	Metering area selection signal
57	S1	Metering area selection signal
58	S0	Metering area selection signal
59	VDD	Digital power supply
60	DGND	Digital ground (Earth)
61	MODEA	Not used
62	-.-.-	Not used
63	-.-.-	Not used
64	VDD	Digital ground (Earth)
65	MRUP	Mirror-up Switch output
66	CN2	Second curtain run completion signal
67	LOCK	Main Switch monitor
68	VCHK	Voltage check A/D convertor output monitor
69	SRLY	Voltage check A/D convertor output monitor
70	SPAD	Input from Op-Amp for Spot metering
71	IOAD2	Input from Op-Amp
72	AEAD	Metering signal input
73	VRHAD	Reference voltage (3.22V) for convertor
74	AGND	Analog ground (Earth)
75	AGND	Analog ground (Earth)
76	PULUP	Pull-up pin
77	/DIAL	Dial communications request
78	- - -	Not used
79	MCLK	Communications clock
80	MOUT	Communications signal output
81	MIN	Communications signal input
82	COMP	Exposure Compensation switch input
83	LIN	Communications signal request from lens
84	CHG2	Charge Chopper Wheel signal input
85	SW2	Input from Release Switch
86	SW1	Input from ranging and metering switch
87	AEL	Input from AE Lock switch
88	M2R	M2 Motor Drive control
89	M2F	M2 Motor Drive control
90	M1R	M1 Motor Drive control
91	M1F	M1 Motor Drive control
92 -100	- - -	Not used.

FPU (H8/3041)

Pin #	Symbol	Function
1	E1	Reference Voltage
2	IOCLK	Communications clock output for I/O
3	- - -	Not used
4	BZCNT	Beeper Oscillator control output
5 - 7	- - -	Not used
8	FLBUSY	Flash or Lens communications "Busy" signal
9	BAS0	BASIS drive control signal (A/D Start Trigger input)
10	--	N/C
11	DGND	Digital Ground (Earth)
12	MISO	Output communications signal to MPU
13	TXIO	Output communications signal to MPU
14	MOSI	Input communications signal from MPU
15	RXIO	Input signal from I/O
16	SCLK	System clock for MPU, ICs
17	SCKIO	Communications clock output for I/O
18-21	- - -	Not used
22	DGND	Digital Ground (Earth)
23	- - -	Not used
24	EDI	Output communications signal to EEPROM
25	EDO	Input communications signal from EEPROM
26	ECK	EEPROM Communications clock output
27	CSIOA	Communications Item Selection with I/O
28	CSIOB	Communications Item Selection with I/O
29	CSIOC	Communications Item Selection with I/O
30	CSIOD	Communications Item Selection with I/O
31	READ	Read BASIS start signal
32	BAS0	BASIS drive control signal
33	BAS1	BASIS drive control signal
34	BAS2	BASIS drive control signal
35	E1	Reference Voltage
36	/DXON	Read DX code start signal
37	DX1	DX code reading signal (ISO)
38	DX2	DX code reading signal (ISO)
39	DX3	DX code reading signal (ISO)
40	DX4	DX code reading signal (ISO)
41	DX5	DX code reading signal (ISO)
42	DX6	DX code reading signal (Exposures)
43	DX7	DX code reading signal (Exposures)
44	DGND	Digital ground (Earth)
45-52	-.-.-	Not used

Pin #	Symbol	Function
53	CSEE	EEPROM communications start signal
54-56	-.-.-	Not used
57	DGND	Digital ground (Earth)
58	/AFREQ	Communications request to MPU
59	/MREQ1	Communications request to MPU1
60	/SRDY	Communications authorization from MPU
61	-.-.-	Not used
62	E1	Reference Voltage
63	/RESFPU	Operation authorization to FPU (Reset)
64	E1	Reference Voltage
65	DGND	Digital ground (Earth)
66	EXTAL	12MHz crystal oscillator connection
67	XTAL	12MHz crystal oscillator connection
68	E1	Reference Voltage
69	WAGC	AGC signal output
70	SLED	Self-timer LED operation start signal
71	BCON	Loaded battery check start signal
72	/TMOSON	VBAT2 On/Off signal
73	DGND	Digital ground (Earth)
74	E1	Reference Voltage
75	E1	Reference Voltage
76	E2	Reference Voltage
77	VRH	Reference voltage (3.22V) for A/D conversion
78	IOAD1	Input for A/D convertor (op amp)
79	IOAD2	Input for A/D convertor (op amp)
80	BCMON	Battery check load monitor signal
81	MIF	Input from mount interface "Lens" switch
82-84	-.-.-	Not used
85	MGM	Open shutter coil monitor signal input
86	AGND	Analog ground (Earth)
87	/TINT	BASIS accumulation signal
88	/MREQ2	Communications request to MPU2
89, 90	-.-.-	Not used
91	MGM_ON	Open shutter coil control
92	DGND	Digital ground (Earth)
93,4	-.-.-	Not used
95	SPLMD	Superimpose brightness control output
96	TCLKD	Communications clock input
97	AFBLK	AFLED lighting control signal output
98 -100	- - -	Not used.

I/O (TB1052)

Pin #	#Symbol	Function
1	BSEL2	With BSEL1, switches back cover communications mode
2	HLED	Viewfinder LED drive output
3	- - -	Not used
4	VLED	Viewfinder LED drive output
5	DGND	Digital Ground (Earth)
6	SPLED1	Superimposed focus mark drive signal
7	SPLED2	Superimposed focus mark drive signal
8	SPLED3	Superimposed focus mark drivel signal
9	SPLED4	Superimposed focus mark drive signal
10	SPLED5	Superimposed focus mark drive signal
11	AFLED	AFLED lighting drive output
12	AFBLK	AFLED flashing drive output
13	CCC	Charge completion signal (flash)
14	AVEF	Flash information input
15	EFID	Flash mode input or information output
16	STSP	Flash output start and stop signal
17	/PWR2	Reset signal output
18	VCHK	Voltage check A/D convertor output monitor
19	BCONT	Communications Clock input from MPU
20	MIN	Communications signal with MPU
21	MCLK	Communications clock with MPU
22	E3	Power supply Voltage (E1)
23	DCOM	Back cover data input/output
24	DATE	Back cover data input/output
25	DCLK	Back cover communications clock
26	LEDMD	Viewfinder LED brightness control signal input
27	SPLMD	Superimpose brightness control signal input
28	E1	Power supply Voltage
29	IOCLK	Communications clock for I/O (input)
30	DGND	Digital ground
31	SCLK	System clock for MPU, ICs
32	MOSI	Input communications signal from FPU
33	MISO	Output communications signal to FPU
34	CSIOD	Communications Item Selection
35	CSIOC	Communications Item Selection
36	CSIOB	Communications Item Selection
37	CSIOA	Communications Item Selection
38	/TINT	BASIS accumulation end signal
39, 40	- - -	Not used

Pin #	#Symbol	Function
41	LOUT	Lens communications signal (output)
42	LIN	Lens communications signal (input)
43	LOUT	Lens communications clock
44	BAS2	BASIS drive control signal
45	BAS1	BASIS drive control signal
46	BAS0	BASIS drive control signal
47	READ	BASIS drive control signal
48	READB	BASIC drive reference clock
49	CLK0	BASIC drive reference clock
50	CLK1	BASIC drive reference clock
51	CLK2	BASIC drive reference clock
52	RESIO	Operations authorization to I/O
53	PB	BASIC AGC control
54	PB4	BASIC AGC control
55	PB1	BASIC AGC control
55	PB3	BASIC AGC control
56	PB2	BASIC AGC control
56	PB5	BASIC AGC control
59	VC	BASIC reference voltage (1.22V)
60	IOAD1	A/D convertor analog signal output
61	-.-.-	Not used
62	VIDEO	BASIC focus signal input
63	/PWR1	Inhibit signal output
64	VBAT	Power supply voltage
65	E2	Reference Voltage
66	VCCA	Reference voltage output (not affected by temperature fluctuations)
67	ANODC	OTF Flash sensor connection (Center)
68	ANODL	OTF Flash sensor connection (Left)
69	ANODR	OTF Flash sensor connection (Right)
70	AGND	Analog ground (Earth)
71	CTR	OTF Flash sensor integrating capacitor connection (Right)
72	CTL	OTF Flash sensor integrating capacitor connection ((Left))
73	CTC	OTF Flash sensor integrating capacitor connection ((Center)
74	VRH	A/D conversion reference voltage output for MPU & FPU
75	IOAD2	A/D convertor analog signal output
76	TEMP	Temperature compensation diode connection
77	IREF	Stable current output
78, 9	- - -	Not used
80	BSEL1	With BSEL2, switches back cover communications mode

LCD DRIVER (SN28899)

Pin #	#Symbol	Function
1	GND	Device Ground (Earth)
2	- - -	Not used
3	CSLCD	Selects communication item between MPU and LCD Driver
4	MCLK	Communications clock
5	MIN	Communications signal input
6	MOUT	Communications signal output
7	ELON	EL panel illumination control signal
8	LEDON	LED brightness control signal
9	DIALON	Quick control dial communications request output
10	DIAL1	Electronic dial 1 change amount input
11	DIAL2	Electronic dial 2 change amount input
12	BZCNT	Beeper control input
13	SWBZ	Beeper switch input
14	BEEP	Beeper connection
15	BATSW	Battery check switch monitor
16	- - -	Not used
17	FILM	Film Transport Chopper Wheel Signal input
18	- - -	Not used
19	CLK32K	32KHz clock output to MPU
20	RES1	MPU reset signal output
21	PUC	LCD Driver reset signal (Power Up Clear)
22, 3	- - -	Not used
24	XTAL1	32KHz crystal oscillator connection
25	XTAL2	32KHz crystal oscillator connection
26	- - -	Not used
27	CAP1	Voltage booster circuit capacitor connection
28	CAP2	Voltage booster circuit capacitor connection
29	CAP3	Voltage booster circuit capacitor connection
30	3VREG	3X booster capacitor output
31	2VREG	2X booster capacitor output
32	VRG	Voltage booster circuit capacitor output
33	VDD	Power supply voltage
34	COM3	Common element drive
35	COM2	Common element drive
36	COM1	Common element drive
37-70	SEG34-SEG1	Segment element drive
71-80	SEG35-SEG44	Segment element drive

13. CIRCUIT DIAGRAMS

13.1 Power Supply

1. Clocks

The EOS-1N uses three main clocks which are activated when the battery is installed, and when the main switch is turned on. The LCD Driver clock is on whenever a battery is installed.

MPU Drive Clock: **8.38MHz**
FPU Drive Clock: **12.00MHz**
LCD & MPU Drive Clock: **32.768KHz**

2. Power Sources

The EOS-1N are derived from three main sources.

1. Unregulated output from the battery:
   VBAT: Direct from battery, used for first release magnet (Mg2), T-MOS
   VM1 & VM2: Direct from battery, used for motor drive.
2. Unregulated outputs from the DC/DC Convertor
   E1: abt. 5.5V (Digital circuit power)
   E2: abt. 5.5V (Analog circuit power)
   VDD: abt. 5.5V (Digital circuit power)
3. Regulated output from the DC/DC Convertor
   VDD: 4.7V (Digital circuit power) (Standby)(LCD driver and switch input)
4. REGgulator output:
   SVDD: abt. 3V (Shutter Unit)

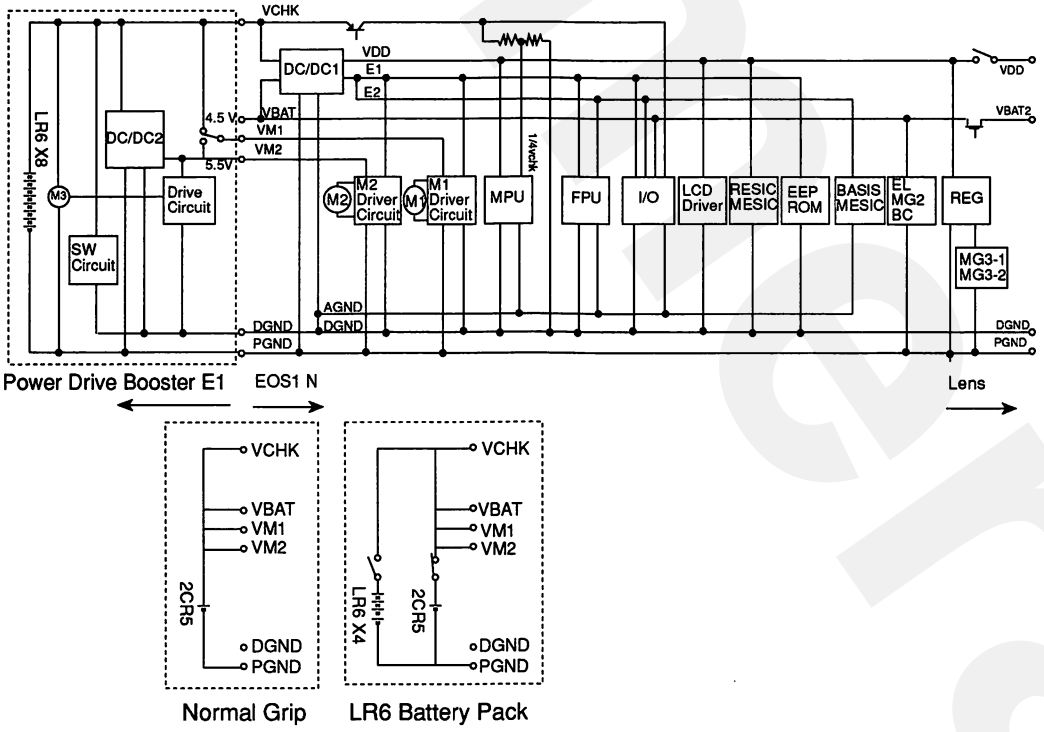


Fig.2-19 Power Supply

13.2 Battery Installation

Camera Operation Power Generation

1. When the grip with the battery is installed, battery voltage VBAT is input to the DC/DC Convertor(DC/DC1) at VIN2 and battery voltage VCHK is input at VIN1. Inside, the VIN1 feeds a regulator which outputs a regulated 4.7V VDD for the LCD Driver (LCD Dr.). MPU, and reset IC (RECIC). The LCD Dr. generates the 32KHz clock.
2. If the BAT SW is off (open) the REC IC operates awaking the LCD Dr.
3. The LCD Dr. in turn awakens the Main Microprocessor (MPU) through RES1.
4. The MPU sends E1ON low turning TRDCON on, starting up DE/DC1.
5. E1, E2, and VDD are output and sent to the appropriate circuits.
6. When E1 reaches a predetermined level, the RESIO pin goes high.The MPU feels this change and starts operation.
7. The MPU also wakes up the other microprocessor (FPU) through the RESFPU line. all the circuits are now ready for operation.

Low Battery Action

The E1ON IC monitors VDD and if it drops below about three volts TRE1ON turns on putting a high on the base of TRDCON, killing DC/DC1.

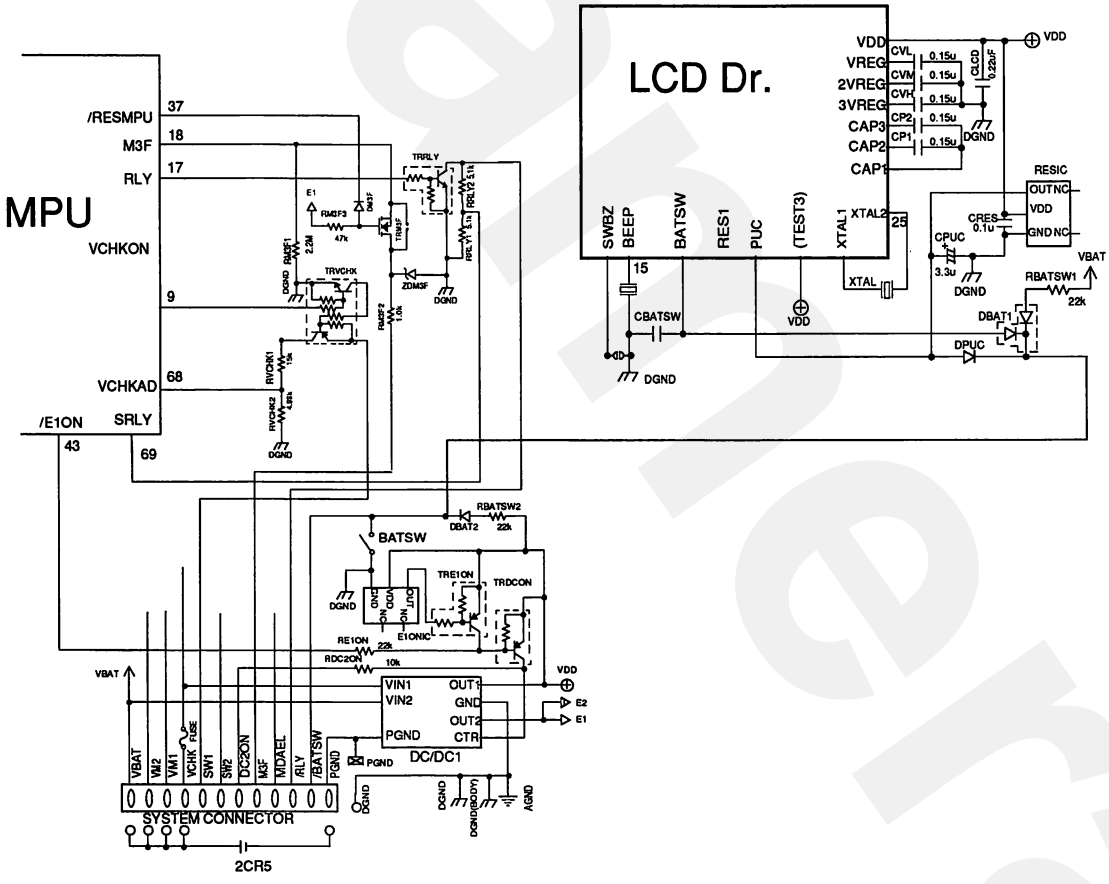


Fig.2-20 Battery Installation

13.3 Battery Check

EOS-1N (Normal configuration) Battery Check

In principle, the battery check is the same as the EOS-1, but as the EOS-1 pulls about 1A during battery check,to improve reliability, transistor TRBAT2 has been added. The FPU voltage is monitored.

1. When the battery is installed and E1 applied, TRBAT2 is turned on.
2. BCMON of the FPU goes low. This is the normal condition. If a malfunction causes excessive current damaging TRBAT1 or 2, BCMON will go high. This causes the "bc" mark to flash and the camera to go into inhibit mode. (Open circuit battery check.)
3. For a normal system battery check, the MPU commands, through SCLK and MOSI, the FBU to check the battery. The FPU sets BCON to high causing current flow through the dummy load.
4. The FPU, through SCLK , MOSI, and CSIOA - D, request I/O IC to place a $\frac{1}{2}$VBAT potential on IOAD2.
5. The I/O IC monitors VBAT on its VBAT pin and supplies $\frac{1}{2}$VBAT to the MPU and FPU.
6. The FPU converts the voltage to a digital signal. If it is not within limtis, the FPU informs the MPU.
7. The $\frac{1}{2}$VBAT applied to the MPU is applied to an A/D convertor to check the voltage.
8. The MPU tell the FPU to stop current through the dummy load. FPU sends BCON low. The MPU flashes the "bc" mark. (Battery check with dummy load).

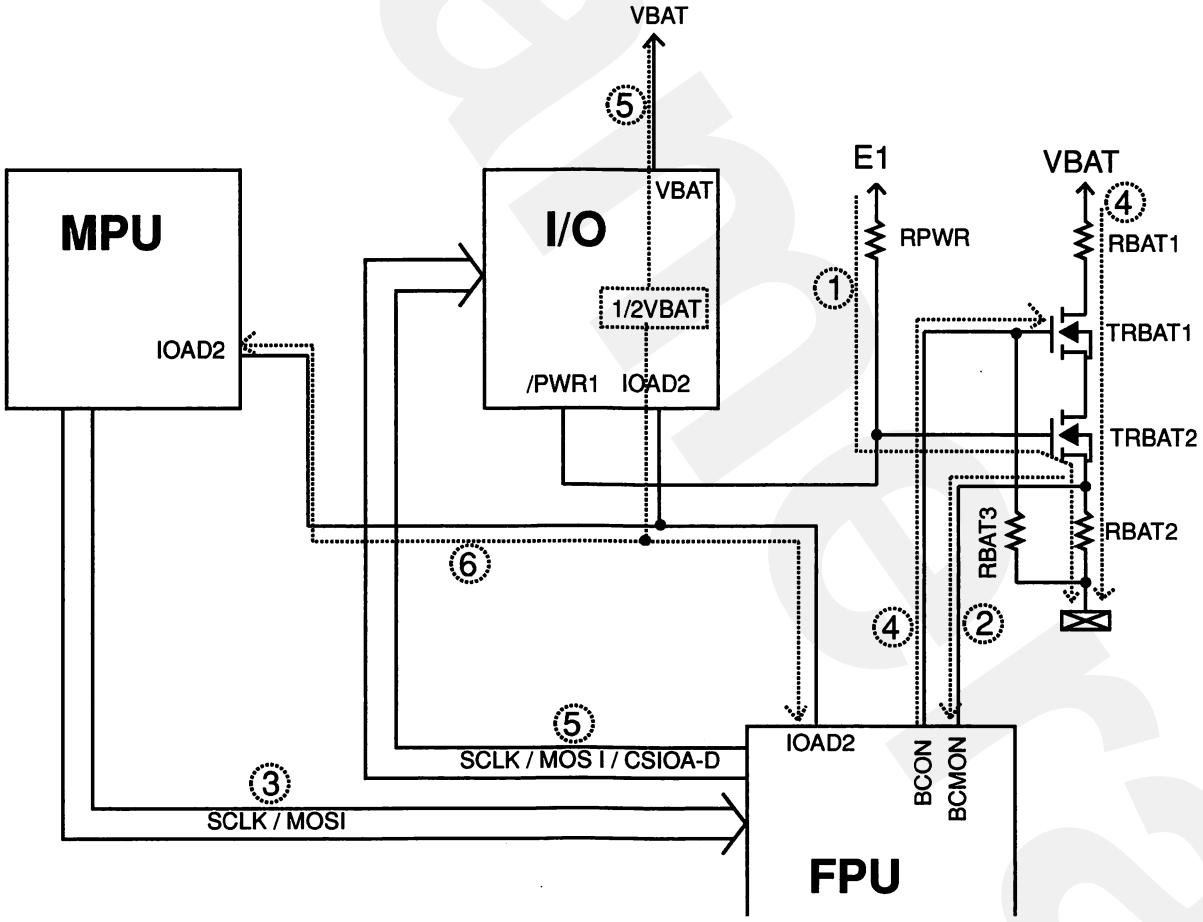


Fig.2-21 Battery Check

13.4 Autoloading

1. When power is applied and film installed, the MPU notices the changes in the Cartridge switch (PTIN SW) and the Back cover switch (BP SW) and awakens the DC/DC Convertor.
2. The condition of the front panel mechanisms (Mirror, shutter) is checked and if not charged, they are charged.
3. The FPU sets DXON to low sending a microcurrent through the DX contacts reading DX1 - 7 to determine the film speed.
4. The MPU sets M1F to high and M1R to low commanding the motor driver MTDR1 to drive the film motor (M1) in the forward direction for approximately 100ms to switch the planetary gearset to low speed operation.
5. The MPU sets M1F to low and M1R to high commanding the motor driver MTDR1 to drive (M1) in the reverse direction, setting the gear train to low speed and starting autoloading.
6. Next the MPU sets M1F to high and M1R to low commanding the motor driver MTDR1 to drive (M1) in the forward direction, setting the gear train to high speed and continuing the autoloading.
7. The MPU monitors FILM1&2 (Film Phase Switches) to determine the amount of film loaded, and orders the LCD Dr. to display "1" on the top deck LCD (OLC).

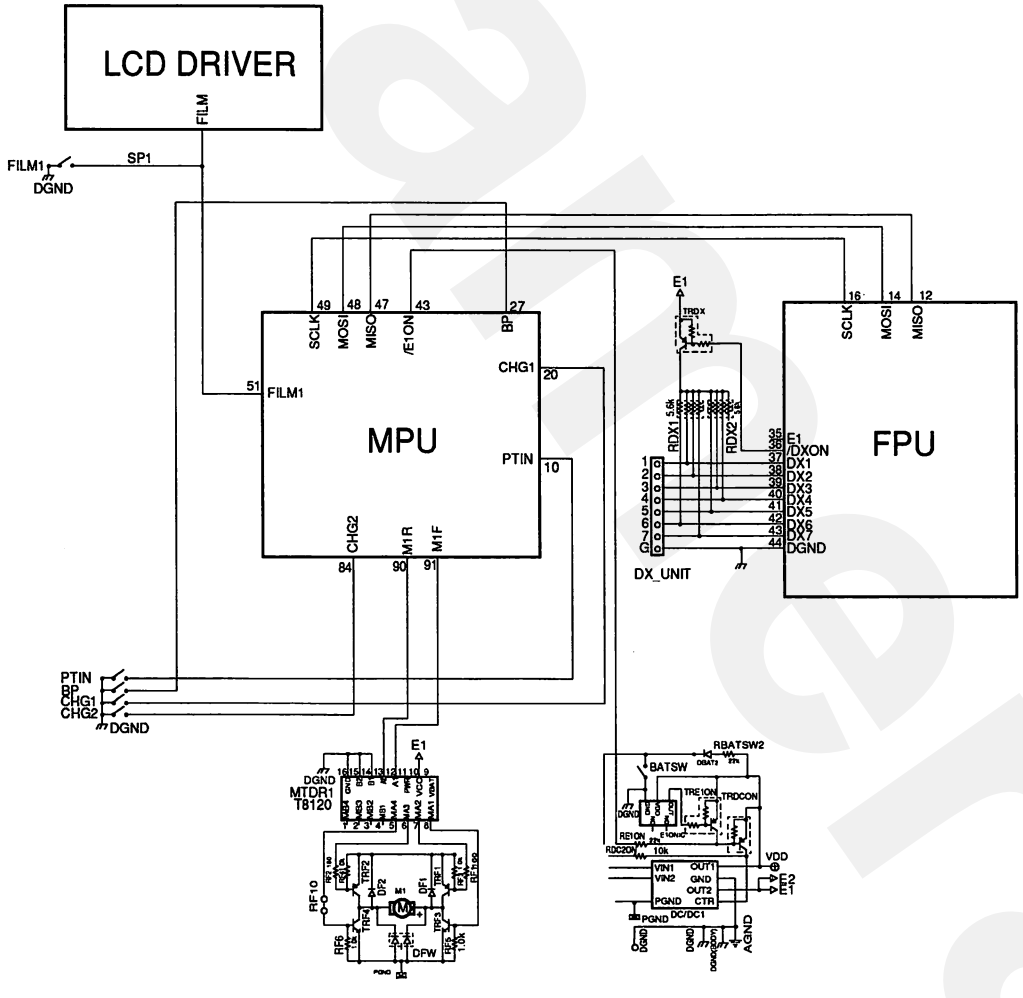


Fig.2-22 Autoloading

13.5 Light Metering

This details only the light metering portion of the sequence, leaving the common portions out.

1. SW1 ON is input to the MPU.
2. The MPU, through s0 - S3 selects the metering area.
3. The AE IC outputs the information from each selected area in sequence through AEAD to the MPU.
4. Within the MPU the data is processed and the selected shutter speed and aperture is output to the LCD Dr.
5. The MPU relays this information to the LCD Dr. and commands it to display the information.
6. The LCD Dr. them displays the data.

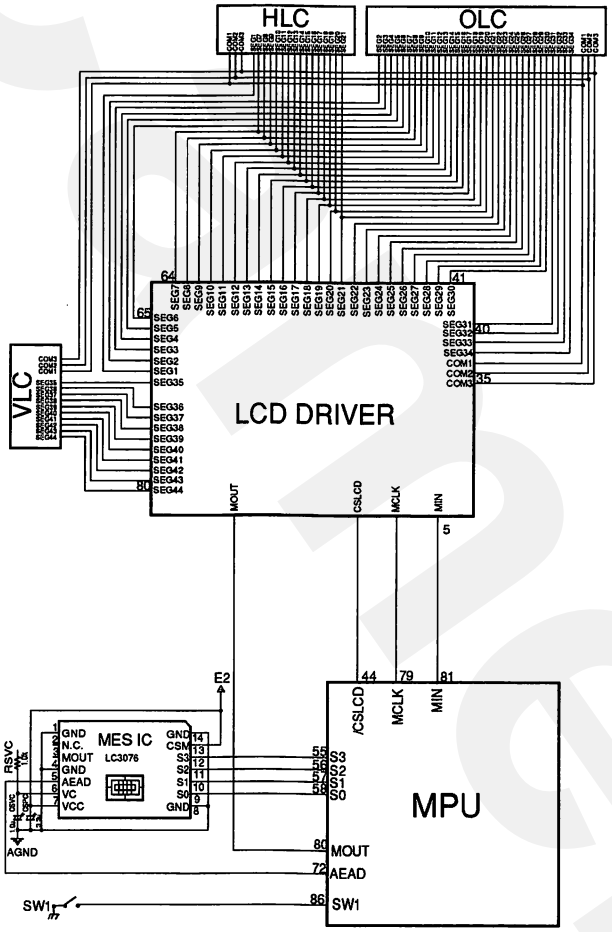


Fig.2-23 Light Metering

13.6 Autofocus Ranging

This details only the focus ranging, sequence, leaving the common parts out.

1. SW1 ON is input to the MPU.
2. The MPU request the FPU to start ranging through MREQ1&2 and AFREQ.
3. The FPU, through Chip Select (CSIO A - D), SCLK, and MOSI, request the I/O IC to switch I/OAD1 to ranging.
4. The FPU generates the BASIC drive clock on BAS 0 - 2 and outputs the Basic Drive start signal on READ.
5. The I/O IC sends the READB signal to start the BASIS operation BASIC drive signals CLK0 - 2 are sent to the BASIS to accumulate the focus data.
6. The I/O IC checks PB1 - 6 AGC signal determins data accumulation is complete and puts a low signal on the /TINT line.
7. The FPU feels the low on /TINT and outputs READB and CLK0-2 and reads the focus data from the VIDEO signal.
8. The FPU converts the focus data, to determine the main subject.f
9. The I/O IC communicates with the lens on LCLK and DCL and informs the lens how much to drive the lens.
10. When the lens is in focus, theFPU tells the I/O IC to send AFLED low to light the in-focus indicator, and sends a signal over SPLED1 - 5 to light the correct superimpose LED sensor.

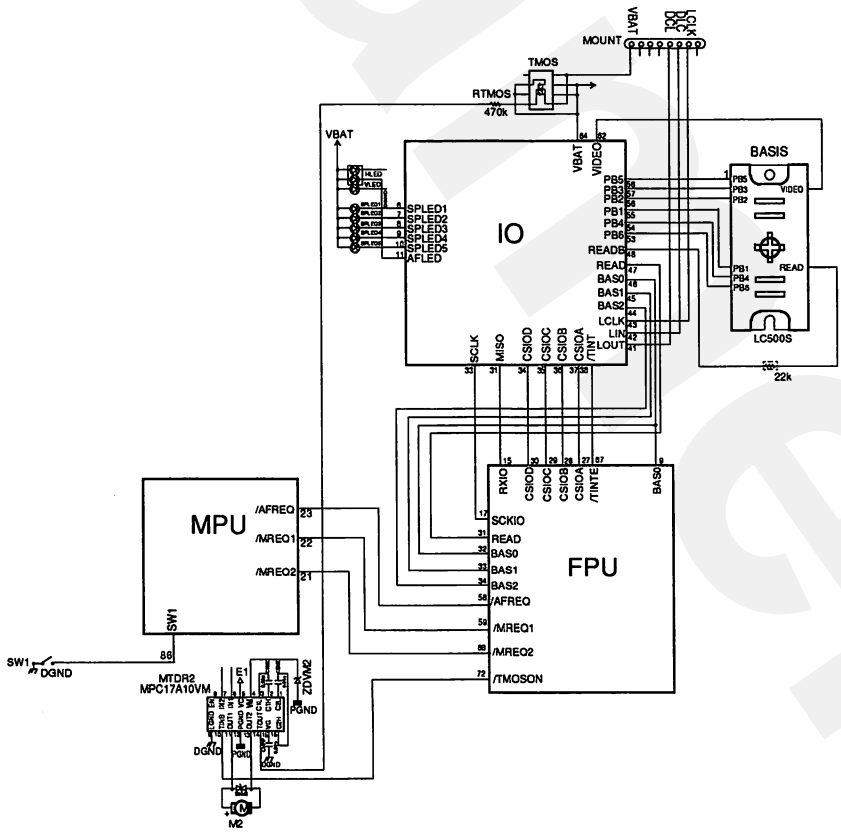


Fig.2-24 Autofocus Ranging

13.7 Release

This details only release portion of the sequence, leaving the common portions out.

1. SW2 ON is input to the MPU.
2. The MPU, through SCLK and MOSI, instructs the FPU to turn off the In-focus mark.
3. The FPU, through SCLK, MOSI and CSIO A - D, instructs the I/O IC to turn off the In-focus mark.
4. The MPU applies highs to SMG3-1 & 3-2 to charge shutter magnets Mg3-1 & 3-2.
5. The MPU applies a high to SMG2 to trip the first release so the mirror rises and releases the shutter's mechanical latch.
6. The mirror up signal (MRUP Sw goes off) is input to the MPU.
7. The MPU sets SMG3-1 low, turning off Mg3-1 so the first shutter curtain runs.
8. After the predetermined exposure time, Mg3-2 goes off releasing the second curtain and the shutter closes turning CN2 on.
9. When CN2 goes on which sends SMG2 low deactivating the magnet and allowing the mirror to descend. The mirror up switch IMRUP) is now on (closed)
10. The MPU sends M2F high and M2R low activating Motor Driver 2 turning M2 in the forward direction opening the EMD.
11. The mirror and shutter mechanisms are checked through CHG1 and CHG2 to insure they are in the correct initial position.
12. The MPU sets M1F high and M1R low activating Motor Driver 1 turning M1 in the forward direction
13. As the motor turns the film phase switches (FF1&2 SW) check its progress and stop the motor when one frame has been advanced.

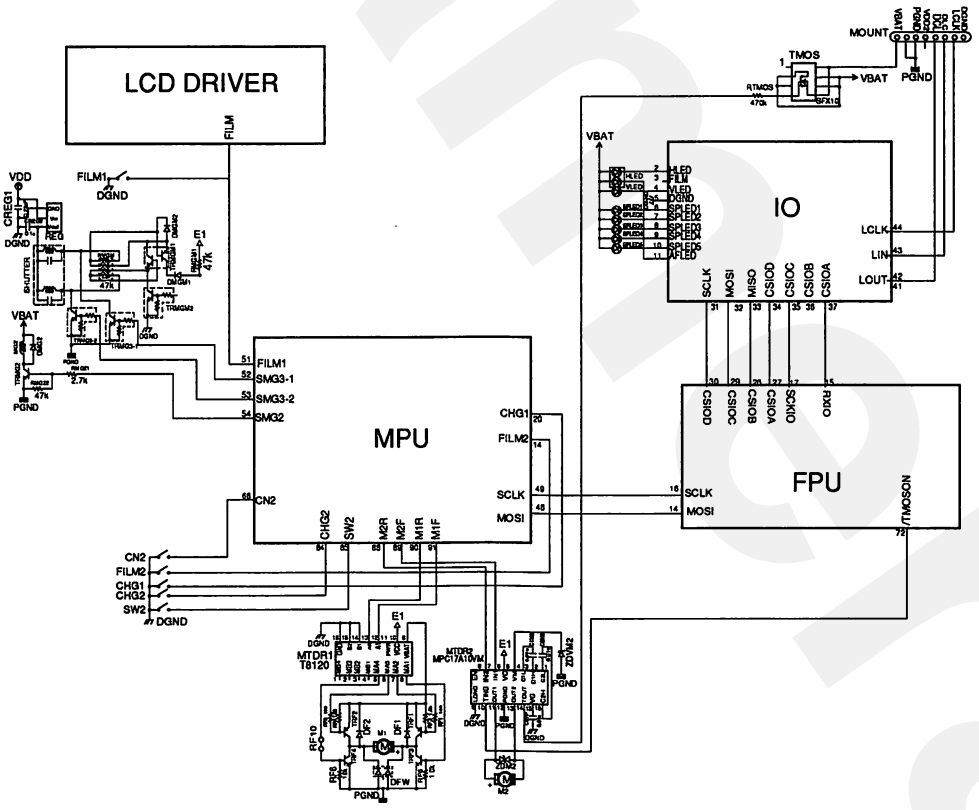


Fig.2-25 Release

<MEMO>

Part 3

Repair Information

1. PREPARATION FOR REPAIR

1.1 Early Production Variations - Classification Numbers

Two different circuit configurations were used in early production cameras. They are shown below.

1.Classification Number OI0600

This earliest variation includes a temporary sub-flex with several components.It is wired to the main flex and held by tape. If the main flex is replaced, the sub-flex is not

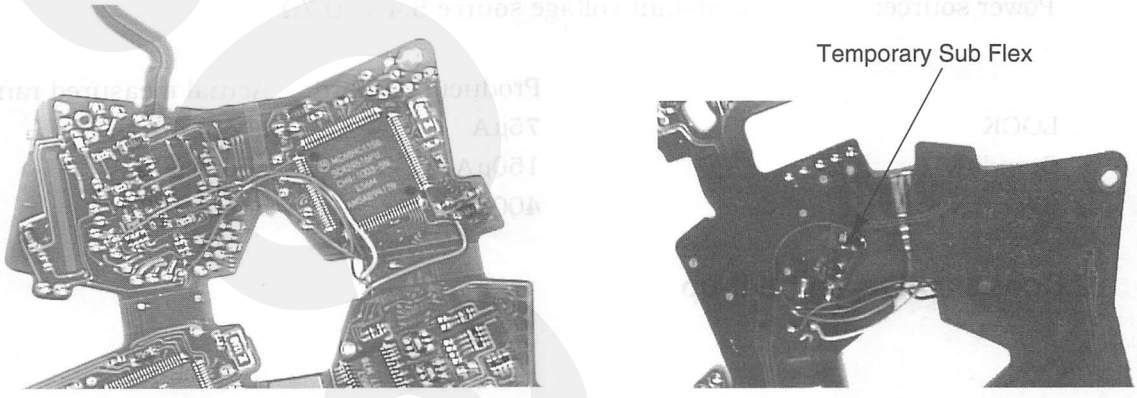


Fig 3-1 Main Flex, First Type

necessary.

2. Classification Number OI0601, OI0602

In this version, there is no sub-flex. A lead wire has been added from Dial 1,2 to the bottom cover unit flex "LOCK" pad. One additional component has been added in the back cover unit, and two have different ratings. If the main flex is replaced, these changes are redundant.

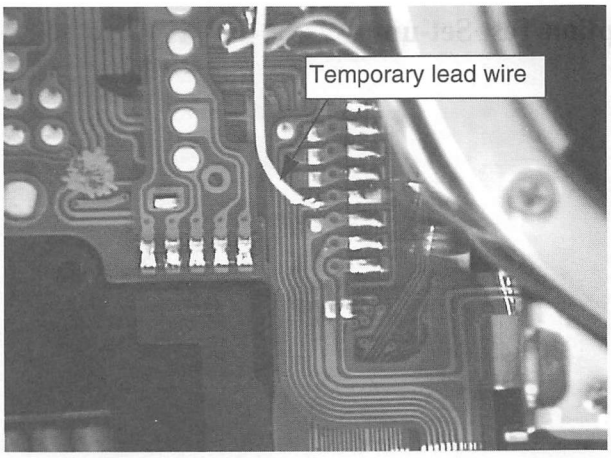


Fig 3-2 Main Flex, Second Type

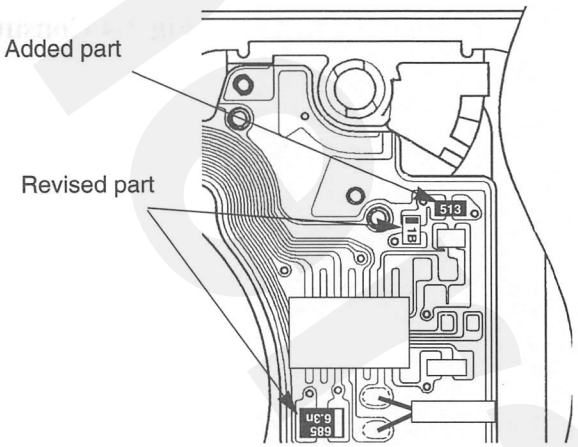


Fig 3-3 Back Flex

1.2 Release Stroke Adjustment

The standard shutter release button of the EOS-1N is a non-adjustable one-piece part. If shutter stroke adjustment is requested, use the EOS-1 parts, including the special service part CY1-1338-000-XXX.

1.3 Current Consumption

1. Current Consumption Standard

The current consumption product standards and actual values are listed below.

Lens: EF50mm/1.8

Power source: Constant voltage source 5.4 V, 0.7Ω

	Product standard	Actual measured range
LOCK	75μA	about 40 μA
Standby	150μA	about 50 μA
SW1 ON	400mA	about 100mA

2.Consumption Test Set-up

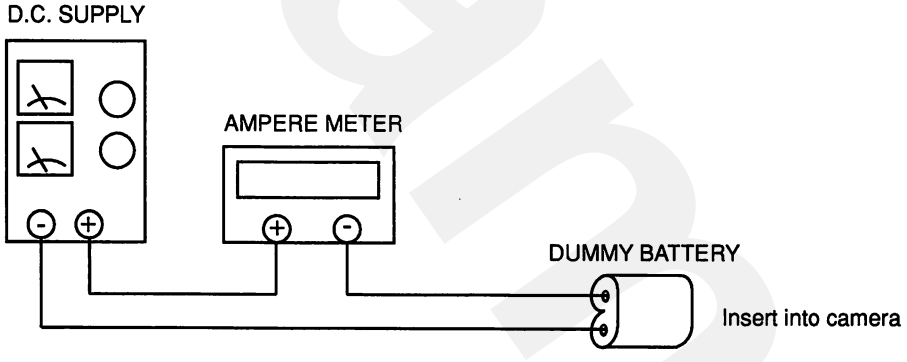


Fig 3-4 Consumption Test Set-up

1.4 TOOLS AND EXPENDABLES

1. Tools

New	Test Equipment	Part No.	Adjustment
	HS-I/F	CY9-7082-000	Electrical adjustment
	EF-8000 Multi-camera tester	CY9-7073-000	Shutter, AE adjustment
	Universal 90° collimator-3	CY9-7077-000	Sub-Mirror adjustment
	Sub-mirror gage (41.5°)	CY9-7077-004	Sub-Mirror adjustment
	DC power supply (model 532C)	CY9-7038-000	Electrical adjustment
•	EOS-1N Dummy battery	CY9-1101-000	Inhibit Voltage adjustment
•	SPD Positioning Mask	CY9-1102-000	SPD Positioning adjustment
•	AF Frame Mask Tool	CY9-1103-000	Removing AF Frame Mask
•	PDB Tool Battery Kit	CY9-1104-000	Inhibit Voltage Adjustment
•	Focusing Screen Ec-H (Scale)	Product	AF Frame position check
	Dial gage (0.01mm scale)	CY9-1001-006	FFD adjustment
•	Dial gage (0.001mm scale)	CY9-7094-000	FFD adjustment
	Block gage (44.14 mm)	CY9-1001-007	FFD adjustment
	Auxiliary ring (2mm)	CY9-1001-008	FFD adjustment
	Optical flat	CY9-1001-003	FFD adjustment
	EF50mm f/1.8 lens (not type II)	Product	Exposure & AF adjustments
	18% gray paper		Exposure adjustment
	Reflectance paper 2%	CY9-1066-000	AF Chart material
	Reflectance paper 32%	CY9-1043-000	AF Chart material
	Reflectance paper64%	CY9-1067-000	AF Chart material
	Reflectance paper 90%	CY9-7076-000	AF Chart material

2. Expendables

New	Expendable	Part No.	Use
	Insulation tape (No.315)	CY4-9205-000	Main flex
	Bond G103	CY9-8002-000	Front panel light shield, etc.
	Aron Alpha 201	CY9-8007-000	Fixing of SPC
	Arontite L	CY9-8008-000	Staking screws
	Arontite R	CY9-8009-000	Staking screws
	Three Bond 1401C	CY9-8011-000	Staking screws
	UTLM-10	CY9-8031-000	Latches, pawls
	LT-SH	CY9-8033-000	Back cover latch pawl
	Electrolube 2GX	CY9-8039-000	Contacts, prevent leaks
	Silicone Bond KE347B	CY9-8064-000	Pentaprism fixing
	PL015JG	CY9-8073-000	Spool, rewind base
	H-26	CY9-8079-000	Gear shaft, collars, levers
	IF-10	CY9-8088-000	Mount spring section
	Electoil 190	CY9-8089-000	Switch patterns
	MM-010	CY9-8101-000	Oil-spread retardant
	Longenest Lambda A-74	CY9-8102-000	Back cover shaft spindles

1.5 LOCALLY FABRICATED TOOLS

Make the following charts from paper of the reflectance indicated.

1. AF Charts

- **AF reference chart**

  Note that the AF reference chart is different from other EOS cameras.

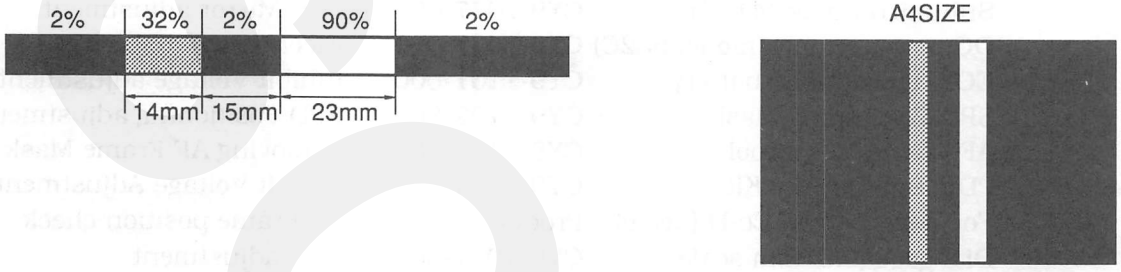


Fig 3-5 AF reference chart

- **16mm bar chart (AF accuracy check)**

  Attach 16mm 90% paper vertically to 2% A4 paper as shown below..

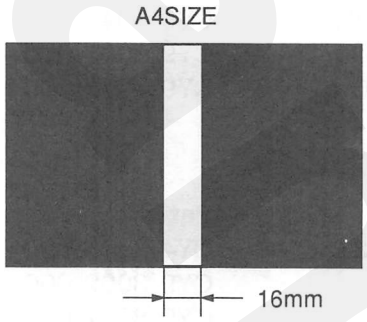


Fig 3-6 16mm bar chart

- **45° bar chart (AF accuracy check)**

  Attach 16mm 90% paper diagonally to 2% A4 sheet as shown below.

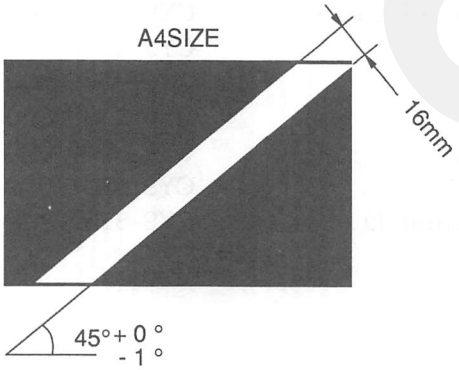


Fig 3-7 45° bar chart

- **Low-contrast chart (AF accuracy check)**
  Make chart a center 15mm wide 90% white over a 64% light gray background.

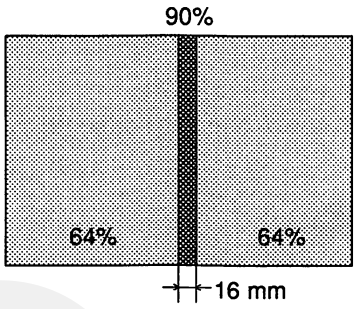


Fig 3-8 Low-contrast chart

2. Parallax Chart

This chart is necessary when adjusting the finder parallax.
Cut strips of 2% black paper 3cm wide and paste on a 90% white background as shown

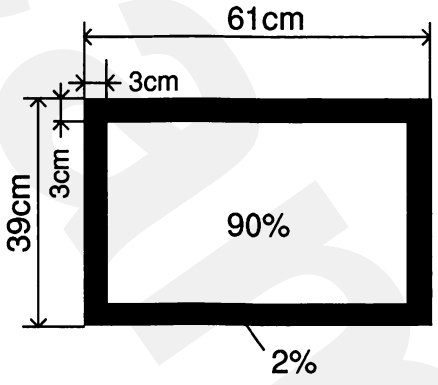


Fig 3-9 Parallax Chart

3. X-Sync Time Lag Check Tool

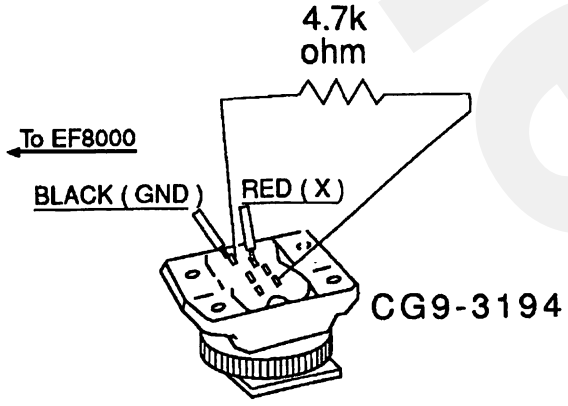


Fig 3-10 X sync Lag Tool

4. Inhibit Voltage Tool Battery Fabrication

This tool is necessary when adjusting the inhibit voltage. Use the tool kit (CY9-1101-000) and the production Grip Unit (CG1-0502-090) to build.it. Do not substitute different lead wires or resistor as the total resistance is important.

1. Remove the grip rubber.
2. Remove three screws **(A)** and remove (1).
3. Remove four screws **(B)** and remove the grip base (2).

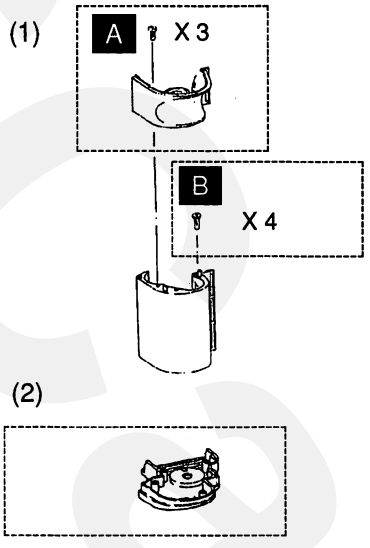


Fig 3-10A Grip Disassembly

4. From the base of **(C)** remove the two screws holding the battery contacts and remove the contacts.
5. Run the red and black leads through the + and - holes and solder to the battery contacts on the system connector.
6. Reinstall grip base and assemble the rest of the parts as shown.

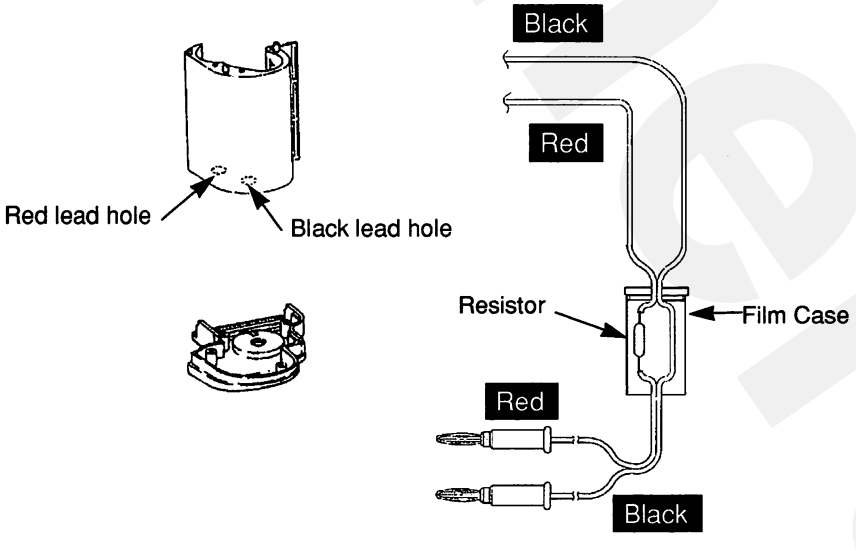


Fig 3-10B Inhibit Voltage Tool

5. PDB Inhibit Voltage Tool Battery Fabrication

This tool is necessary when adjusting the inhibit voltage.
Use the PDB tool kit (CY9-1104-000) and the production Battery Holder Unit (CG1-2766-000) to build.it.Do not substitute different lead wires or resistor as the total resistance is important.

1. Remove screw (A) and remove the intermediate battery contact parts (B).
2. Remove screw (C) and separate the skeleton battery case from the battery compartment cover assembly.
3. Make two holes in the the cover for the leads to the battery contacts.

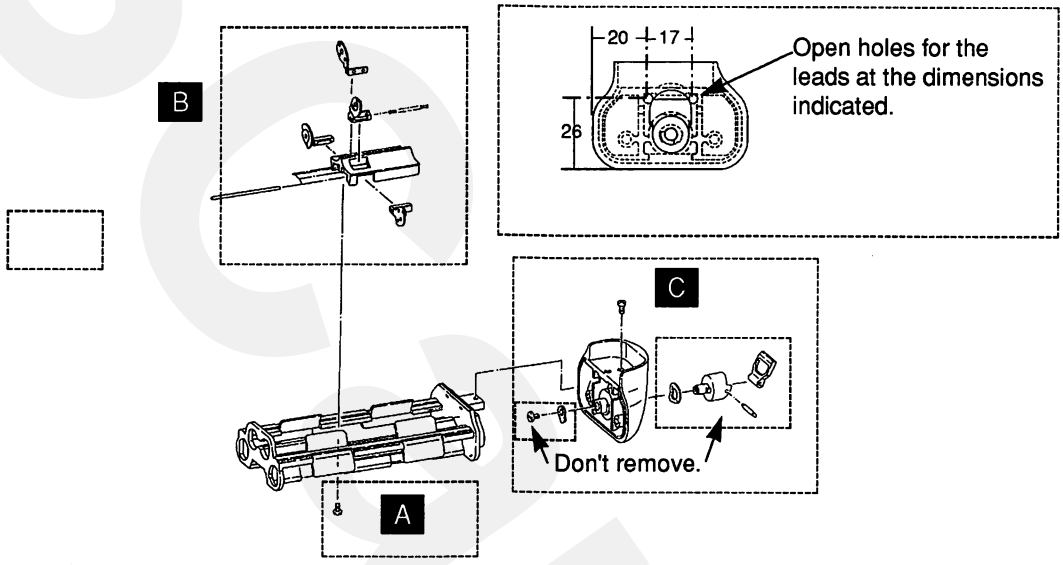


Fig 3-10C Battery Holder Disassembly

4. Assemble these parts and the kit parts as shown.

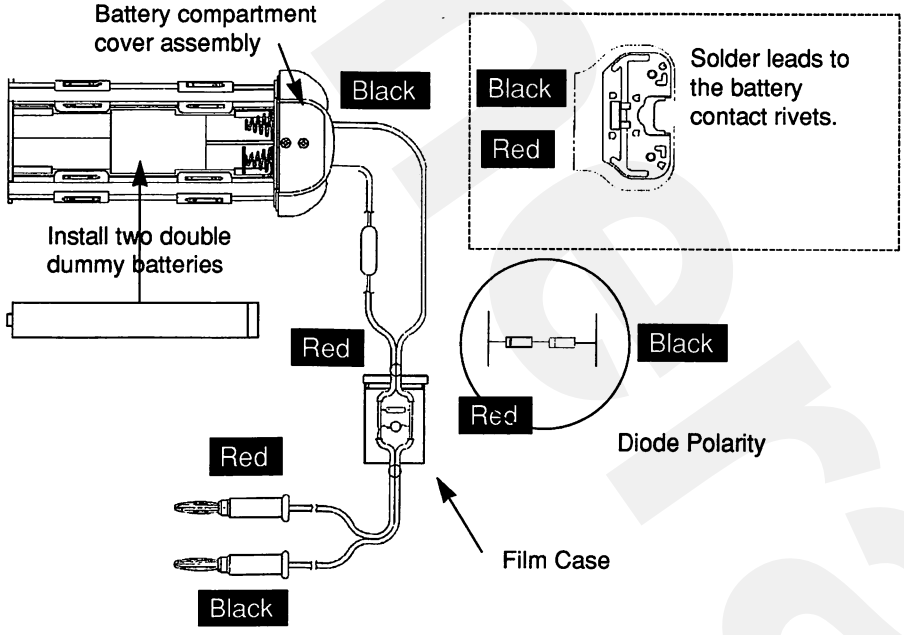


Fig 3-10D PDB Inhibit Voltage Tool

2. ASSEMBLY AND DISASSEMBLY

2.1 External Covers Removal

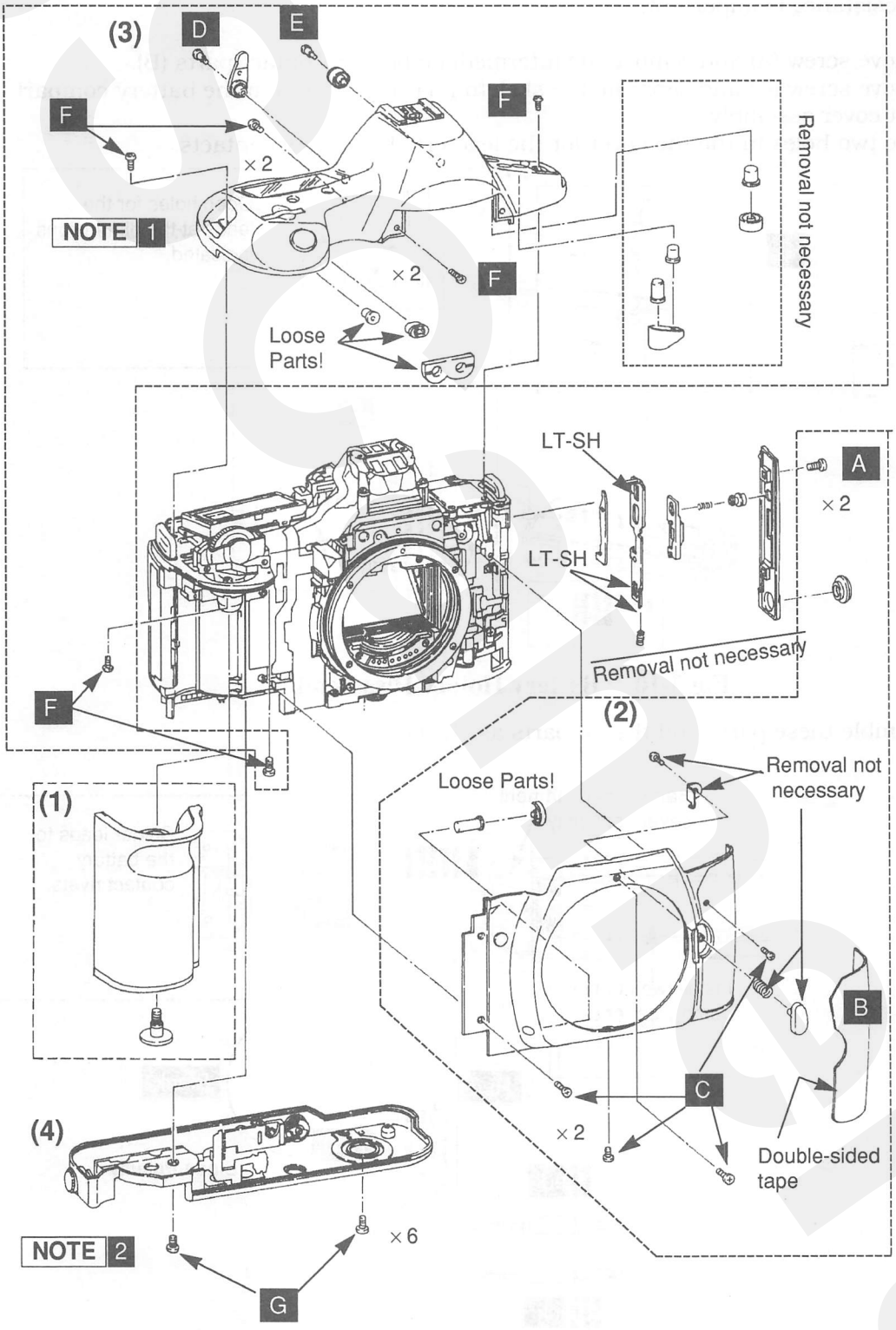


Fig 3-11 External Covers Removal

Disassembly Procedure

1. Grip
   Loosen the grip screw and remove the grip.
2. Apron (Front Cover) Unit
   1) Loosen the two latch cover screws (A).
   2) Remove the "leather" (B), five screws (C), and remove the apron.
3. Top Cover Unit
   1. Remove the eyepiece shutter lever screw (D), and remove the lever.
   2. Remove the eyesight correction dial screw (E), and remove the lever.
   3. Remove the eight screws (F), unsolder the connecting flex and four leads. The top cover can now be removed.

NOTE 1

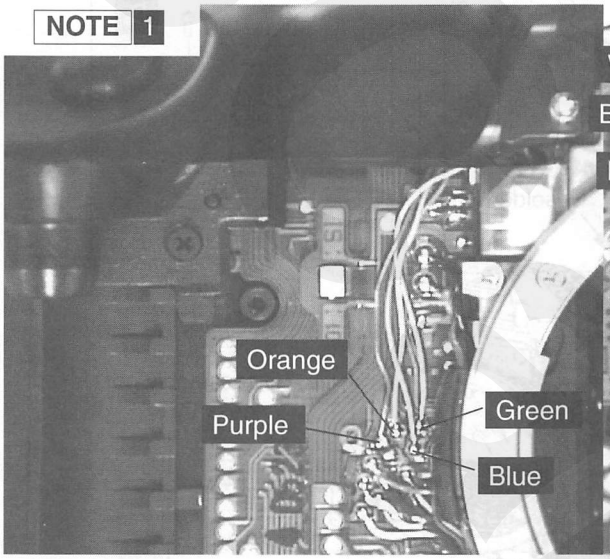


Fig 3-12 Top Cover Leads - 1

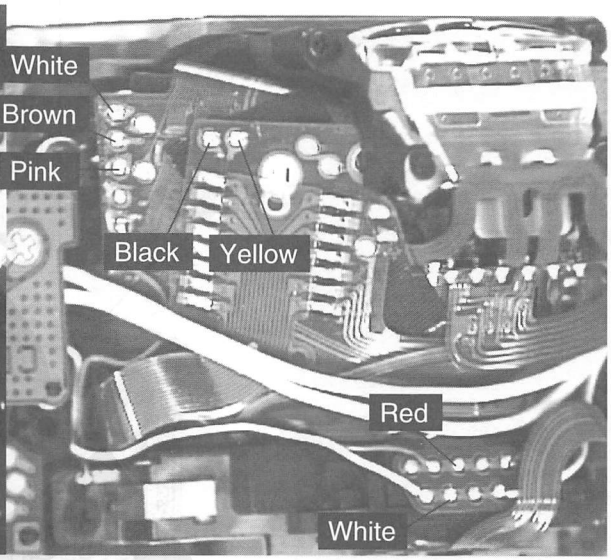


Fig 3-13 Top Cover Leads - 2

4. Bottom Cover Unit
   1. Unsolder the comb connector.
   2. Remove the seven screws (G) holding the bottom cover.

NOTE 2

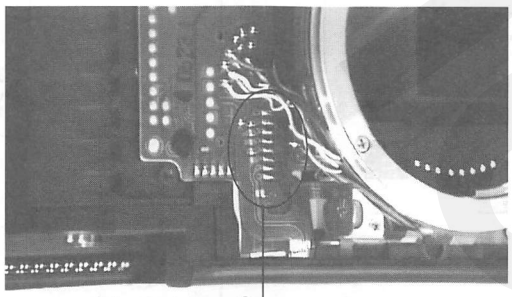


Fig 3-14 Bottom Cover Soldering

Assembly Procedure

Check grounding between body and bottom cover.

2.2 Charge Unit Removal

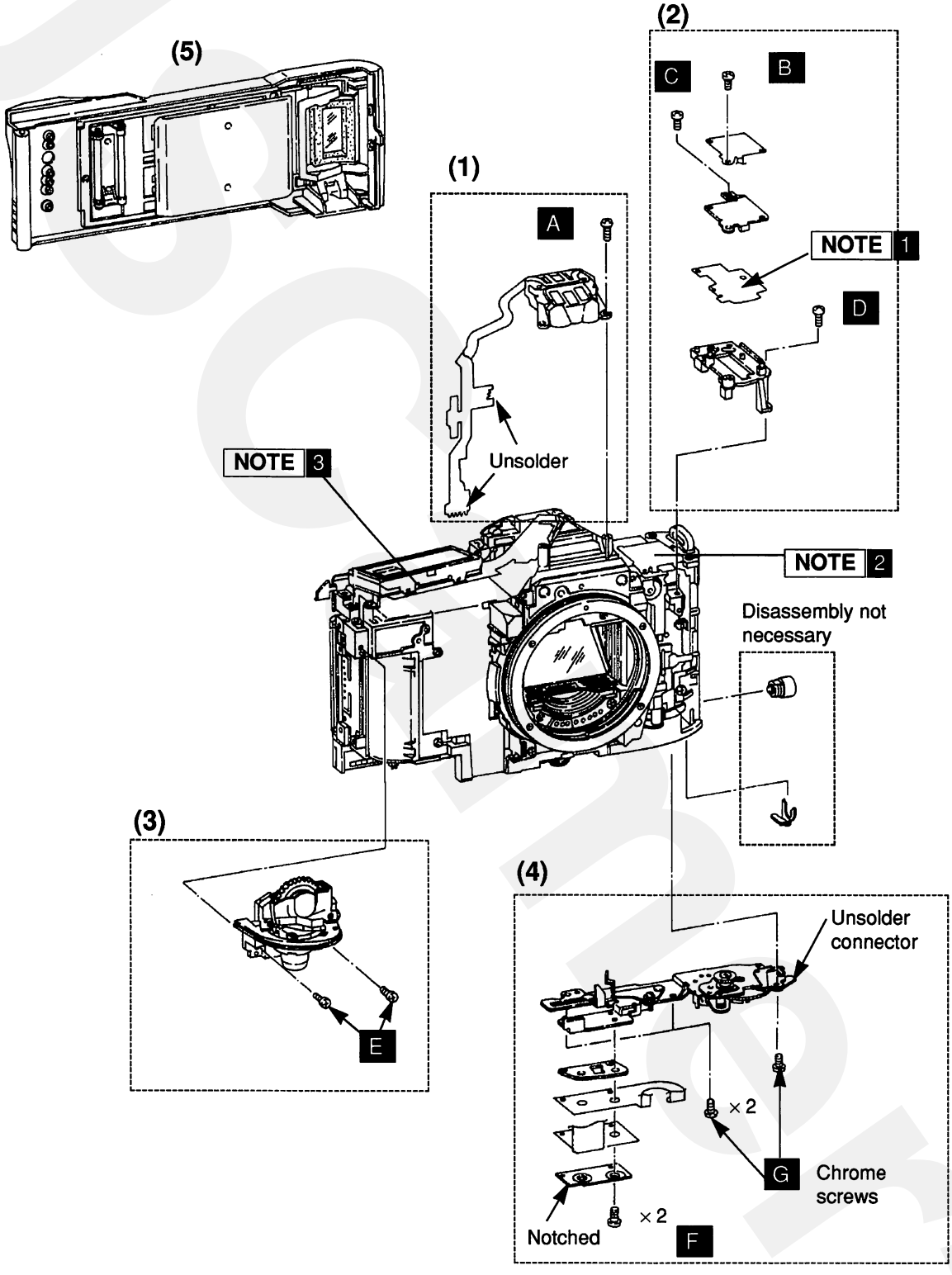


Fig 3-15 Charge Unit Removal

Disassembly Procedure

1. Superimpose Unit

Unsolder comb connectors at two positions shown, remove the two screws (A) holding the Superimpose Unit and remove the unit.

2. Mode Base

1) Remove the screw (B) holding the CD Flex.
2) Remove the screw (C) from the Mode Switch Base 1 and remove the base.
3) Unsolder four leads from the CD Flex and the PC terminal twin-lead.
4) Remove the screw (D) from the Mode Switch Base2 and remove the base.
5) Unsolder the CD Flex comb connector and the BACK Switch thru-hole pins

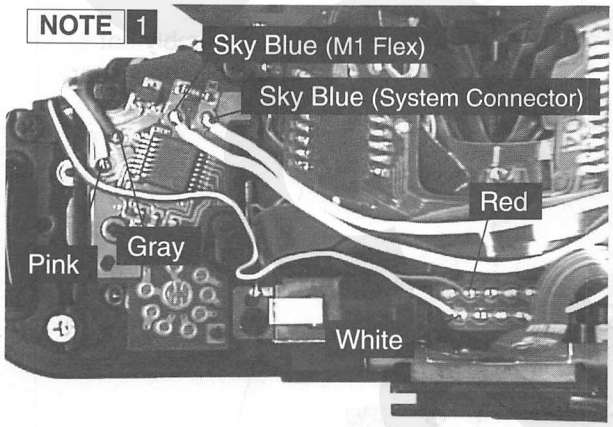


Fig 3-16 Mode Switch Leads

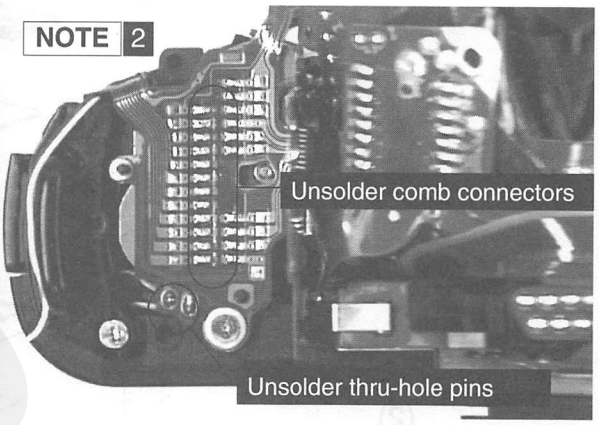


Fig 3-17 Mode Switch Soldering

3. Electronic Dial Unit

Remove the two screws (E) from the Electronic Dial Unit. Unsolder five lead wires and one shield and remove the Electronic Dial Unit.

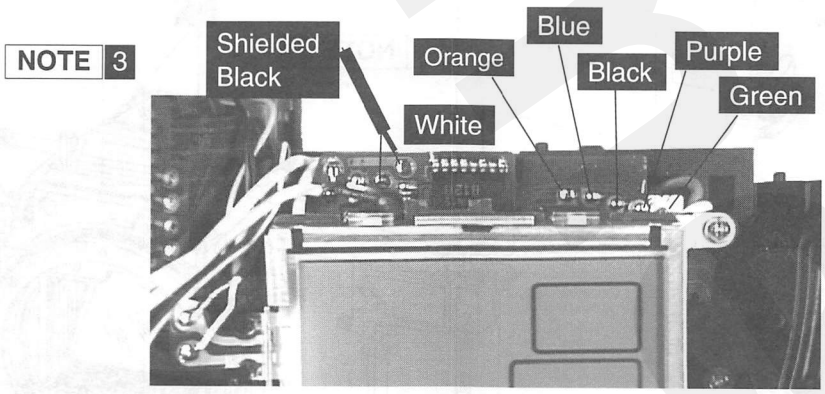


Fig 3-18 Dial Leads

4. Charge Unit

1) Remove the two connecting screws (F) between the Main Flex and the AF Unit.
2) Unsolder the Charge Unit comb connector.
3) Remove three screws (G) and remove the Charge Unit.

5. Back Cover Unit

Remove the back cover unit.

2.3 Top-deck LCD (OLC) Removal

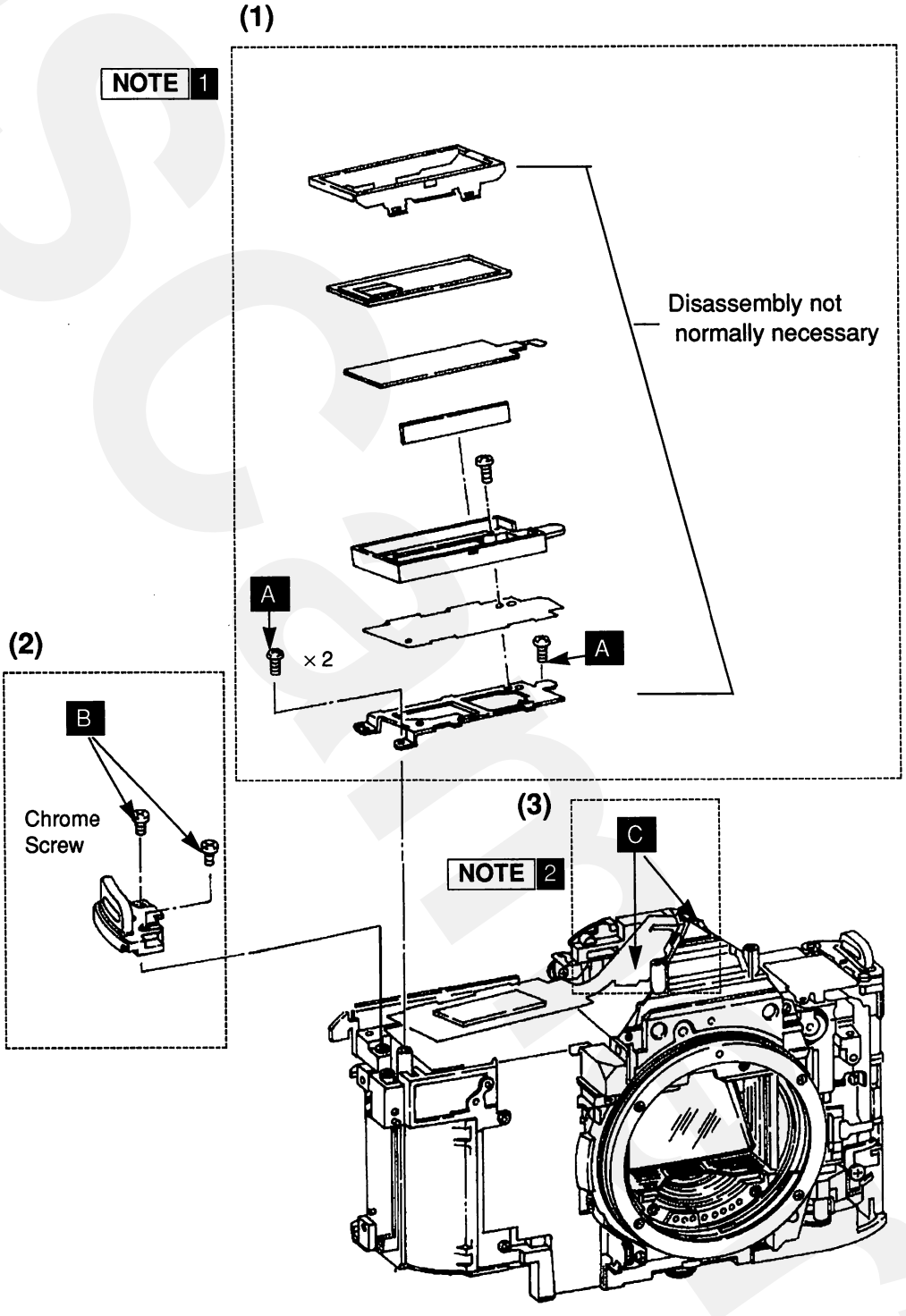


Fig 3-19 Top-deck LCD (OLC) Removal

Disassembly Procedure

1. Top-deck LCD (OLC) Unit Removal (Disassembly not normally necessary)
   1) Remove the shielded lead to the illumination panel (EL).
   2) Remove the three screws (A) holding the OLC and lift it up.

NOTE 1

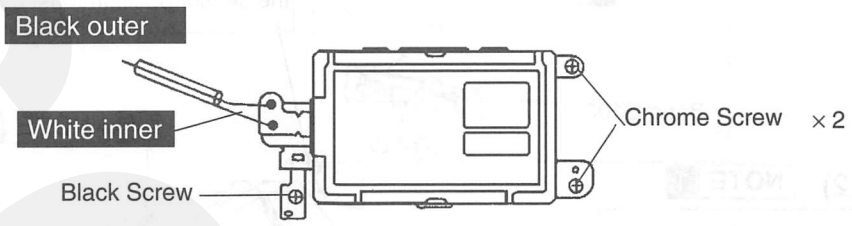


Fig 3-20 Illumination Panel (EL) Lead Removal

2. Strap Lug, Right)
   Remove the two screws (B) holding the strap lug and remove it.
3. Viewfinder V-LED and H-LED Soldering
   Unsolder the four comb connectors (C) and the twin-lead from the shutter unit.

NOTE 2

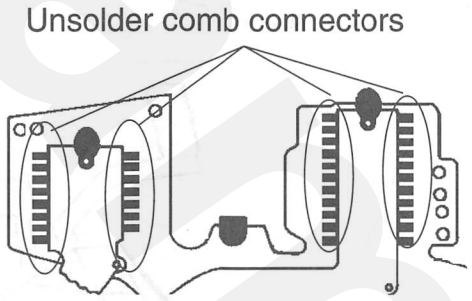


Fig 3-21 H & V-LED Solder Removal

NOTE 2

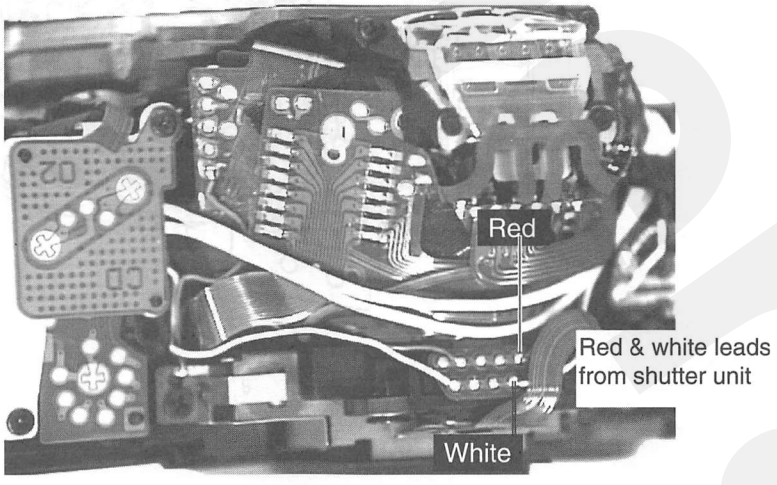


Fig 3-22 Top Cover Leads - 2

2.4 Main Flex Removal

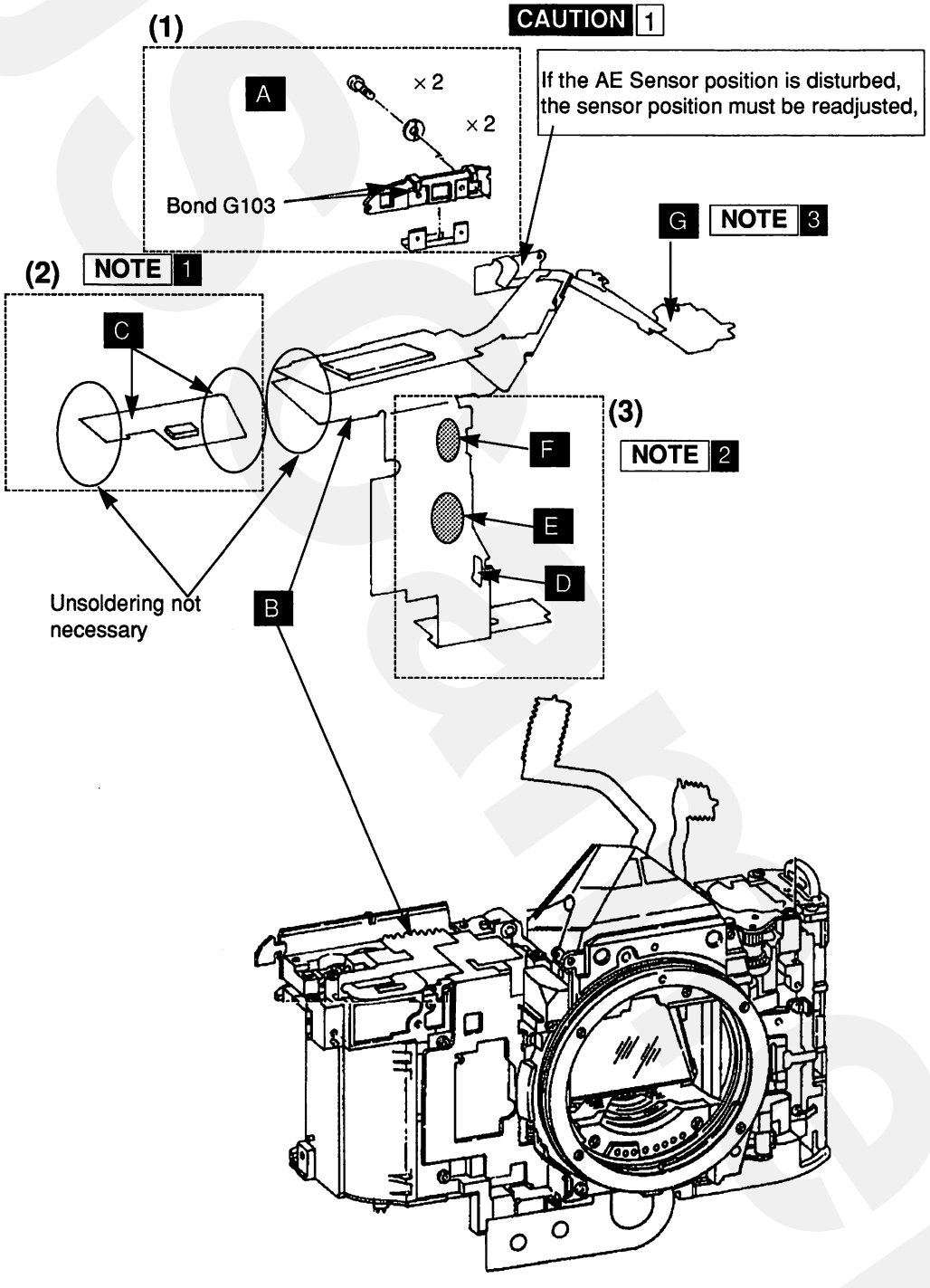


Fig 3-23 Main Flex Removal

Disassembly Procedure

1. Metering Sensor

Remove the two screws (A) , carefully place a flat blade screwdriver between the sensor holder and the body and pry the holder off.

2. M1 Flex leads, Shutter/DC-DC Convertor (SDC) L Flex and G Flex Connections

1) Unsolder the connection between the SDC Flex and the Main Flex (B), and between the G Flex and Main Flex (also B) .

2) Unsolder the seven leads on the M1 Flex (C) and and one lead from the SDC Flex.

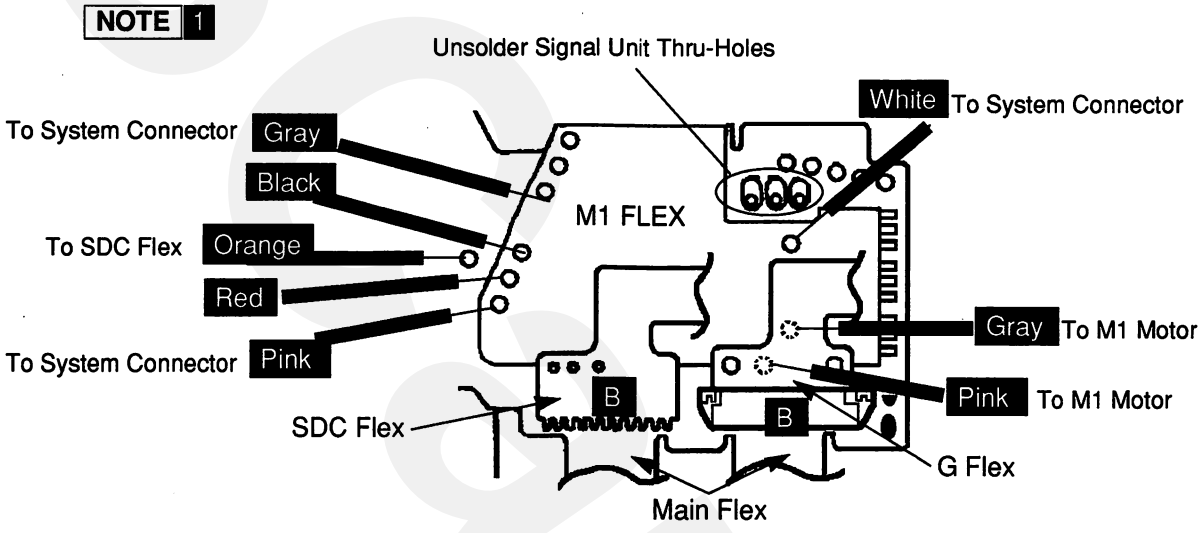


Fig 3-24 M1 Flex Connections

3. Main Flex

1) Unsolder comb connector (D) to Lens sensor switch.

2) Remove four leads from the Main Flex (E), and three leads at (F), and one gray lead to the Eyepiece Unit (G). Remove the Main Flex.

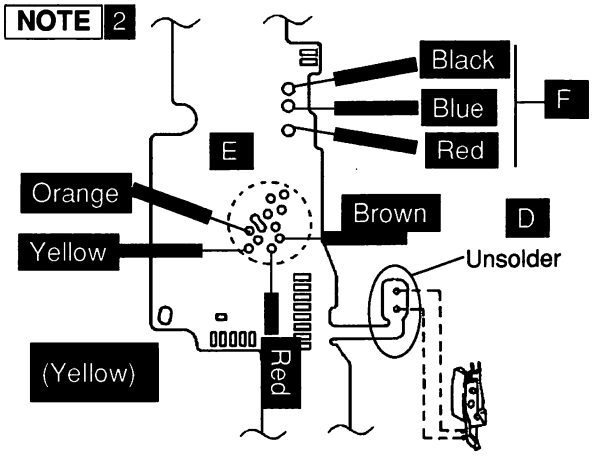


Fig 3-25 Main Flex Soldering

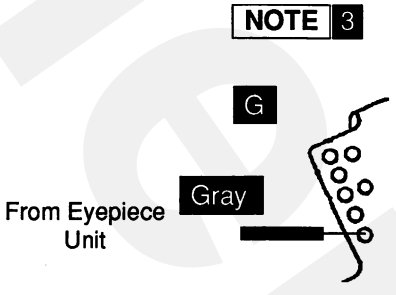


Fig 3-26 Eyepiece Leads

2.5 Mirror Box Removal

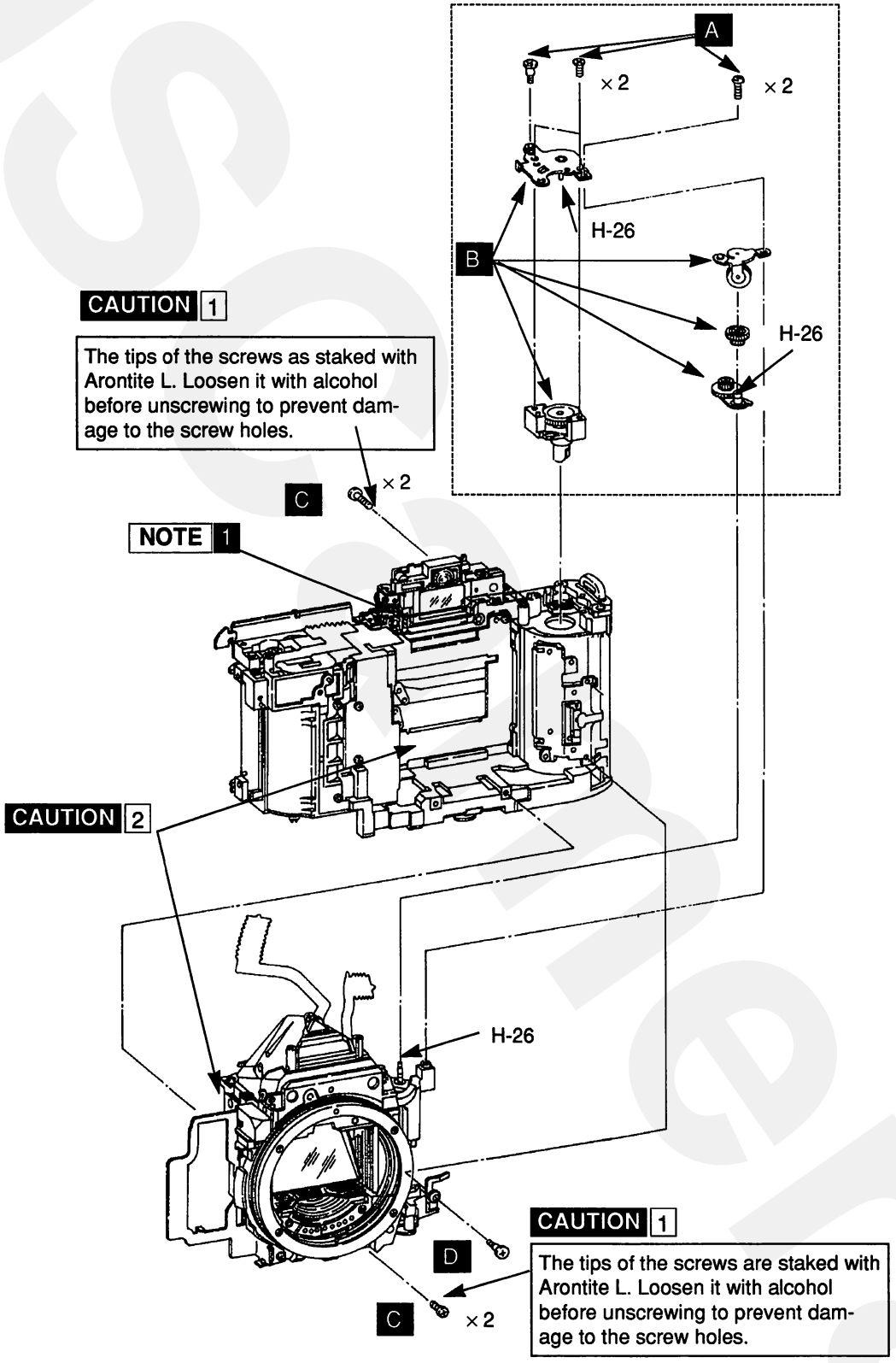


Fig 3-27 Mirror Box Removal

Disassembly Procedure

1. Rewind Gear Train
   Remove the five fork holder screws (A) and the gear train parts (B).
2. Mirror Box
   Remove the four screws (C) and one (D) and remove the mirror box.

Assembly Procedure

Mirror Box
When reinstalling the four screws (C), apply Arontite L to the tips just before tightening them.

CAUTION 1 **If the screws (C) have loosened**, replace the screws with new screws.

NOTE 1 After installing the mirror box, apply Silicone Bond KE347B to the joint between the mirror box and body.

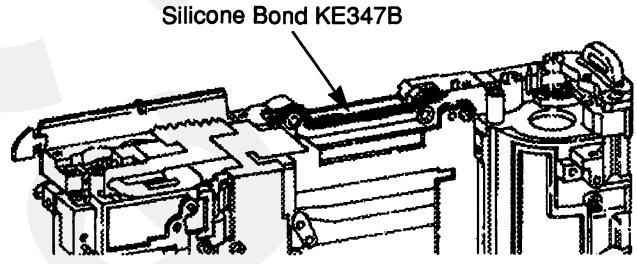


Fig 3-28 Body/Mirror Box Seal

CAUTION 2 Both the shutter unit and mirror mechanism must be charged before they are installed.

2.6 Shutter Unit Removal

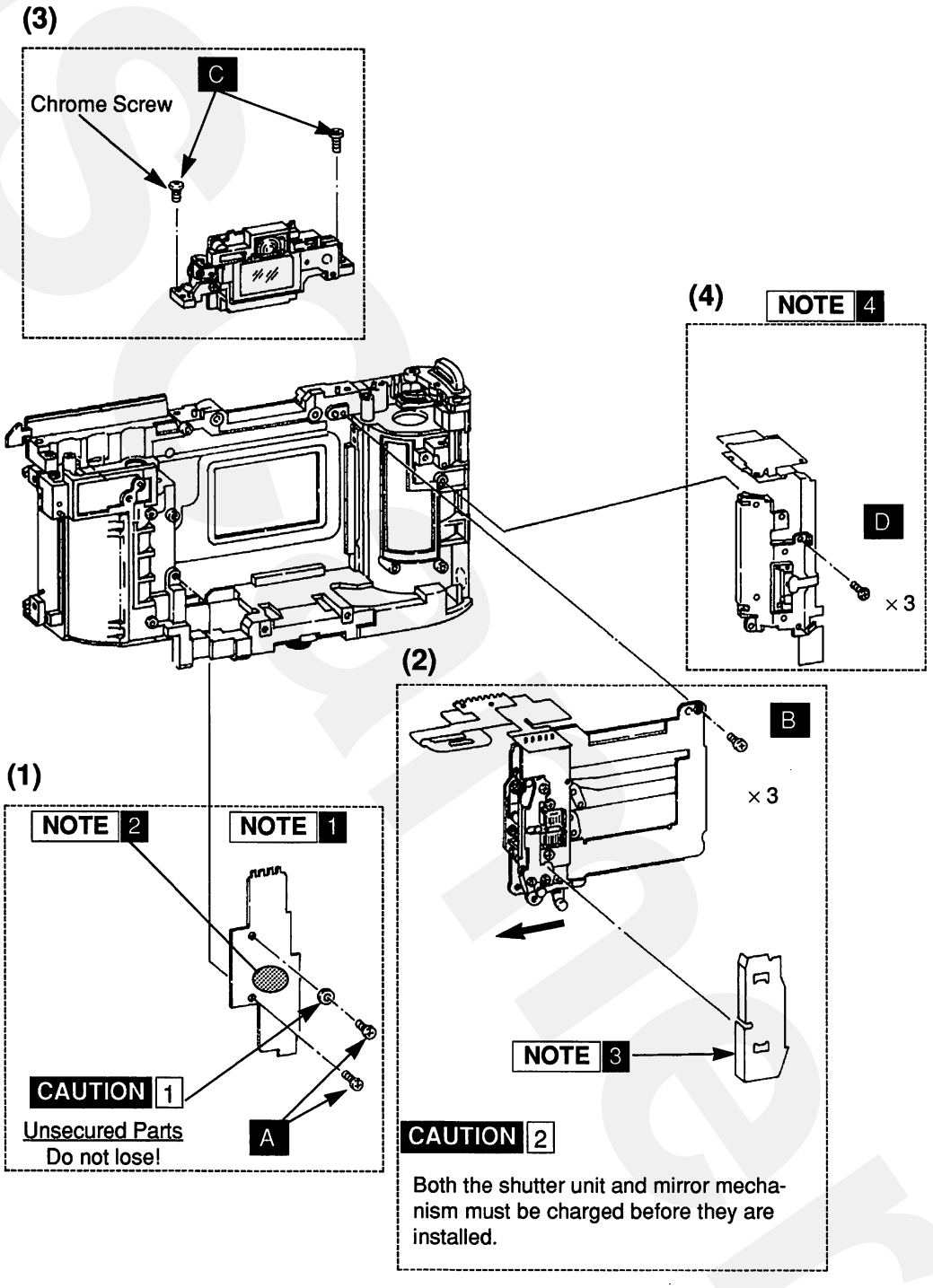


Fig 3-29 Shutter Removal

Removal Procedure

1. DC/DC Connector
   Unsolder three leads from the DC/DC Convertor, and the SDC Flex connection.
   Remove two screws (A) and remove the DC/DC Convertor.

NOTE 1

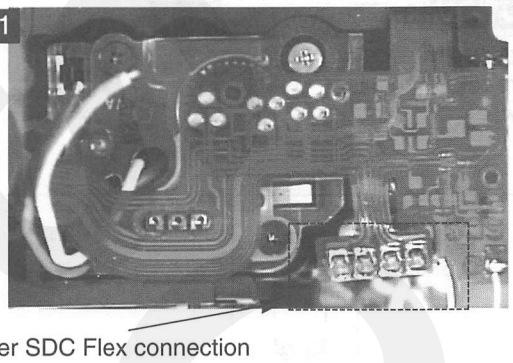


Fig 3-30 SDC Flex Soldering

NOTE 2

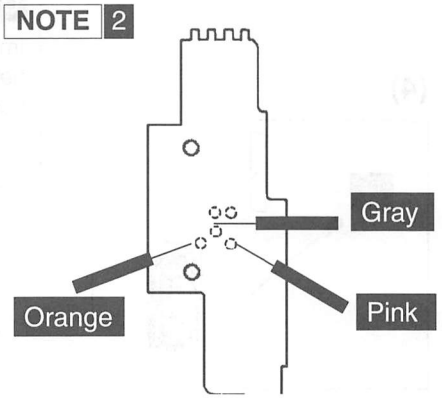


Fig 3-31 DC/DC Leads

2. Shutter Unit
   Remove three screws (B) and remove the shutter unit.
3. Eyepiece Unit
   Remove two screws (C) and remove the eyepiece unit.
4. DX Unit
   Remove two screws (d) and remove the DX unit.

Reassembly Cautions

Insulating Tape Placement

NOTE 3

Install insulating tape as shown to prevent breaking the X sync lead and dust entry.

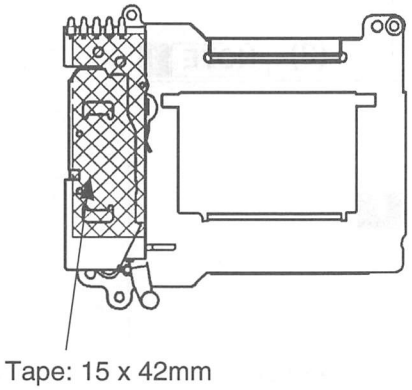


Fig 3-32 Shutter Tape

NOTE 4

To prevent shorting of the M2 lead, apply insulating tape as shown below (8 x 12mm).

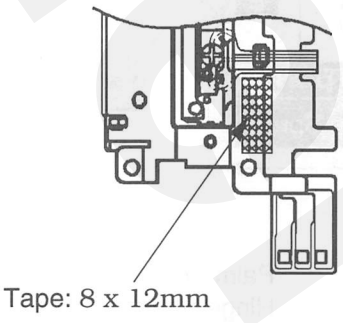


Fig 3-33 DX Tape

2.7 Film Transport Parts Removal

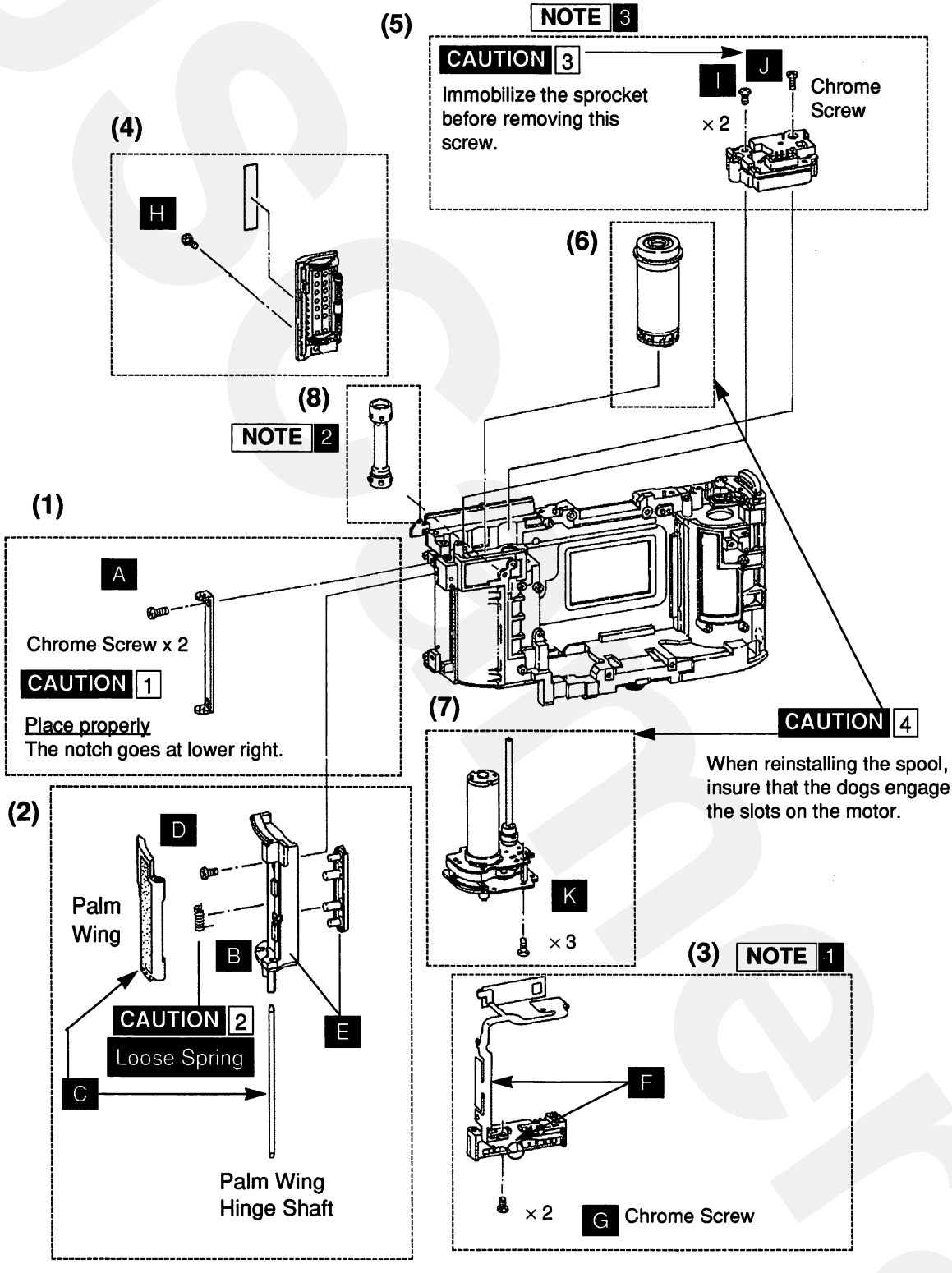


Fig 3-34 Film Transport Parts Removal

Removal Procedure

1. Back Cover Hinge Bracket
   Remove two screws (A) and remove the back cover hinge bracket.
2. Palm Wing
   1) Unhook the spring (B) and remove the shaft, spring and palm wing (C).
   2) Remove two screws (D) and remove the switch panel and switch rubber (E).
3. System Connector Unit
   Unsolder the Thru-hole pins at two positions (F), remove two screws (G) and remove the system connector unit.
4. Roller Holder Unit
   Remove the two screws (H), and remove the roller holder unit.
5. Signal Unit
   Remove the two screws (I) and the sprocket screw (J), and remove the signal unit.
6. Spool
   Move the AL guide holder out of the way and remove the spool.
7. Film Advance Unit
   Remove the three screws (K) and remove the film advance unit (winding motor).
8. Sprocket
   The sprocket is now free. Remove it.

Reassembly Cautions

1. Tape Installation

To prevent possible shorting to the base cover, cover the Reset switch connections with insulating tape after soldering them.

NOTE 1

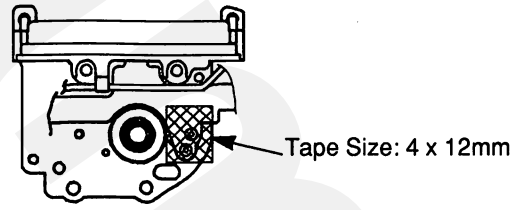


Fig 3-35 Reset Switch Tape

2. Lubrication

NOTE 2 Apply H-26 to the inside upper part of the sprocket as shown.

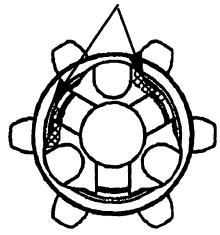


Fig 3-36 Sprocket Lube (H-26)

NOTE 3 Apply H-26 to the Spool mating surfaces on the underside of the signal base.

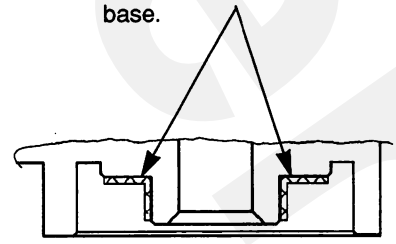


Fig 3-37 Signal Base Lube (H-26)

2.8 Mirror Box Disassembly - 1

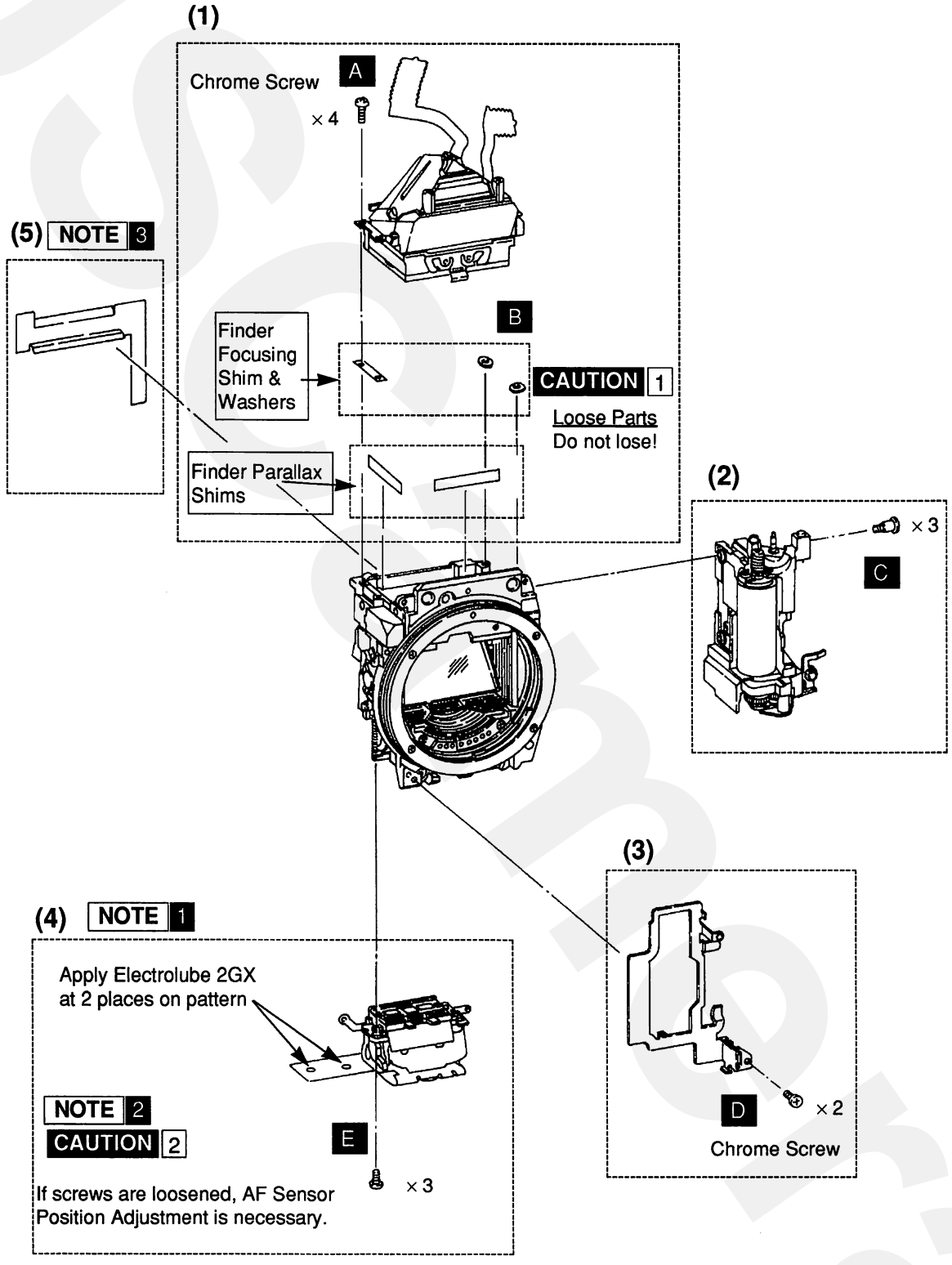


Fig 3-38 Mirror Box Disassembly - 1

Removal Procedure

1. Pentaprism Unit
   1) Remove four screws (A) and remove the pentaprism.
   2) Remove the finder focus shim and washers and the finder parallax shims. (B).
2. M2 Motor Unit
   Remove the three shoulder screws (C) and remove the motor unit.
3. Flex Base
   Remove the two screws (D) and remove the flex base.
4. AF Unit
   Unsolder connections at the two positions indicated below, remove three screws (E) and remove the AF unit.

NOTE 1

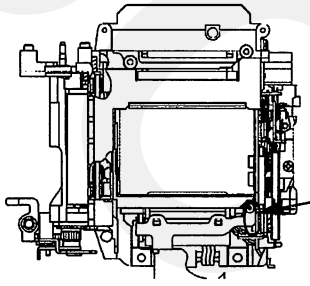


Fig 3-39 AF Unit Desoldering -1

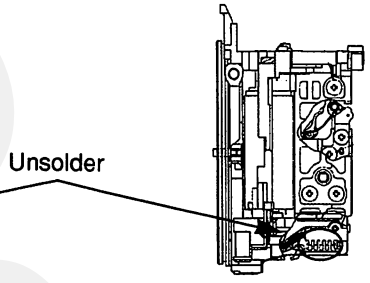


Fig 3-40 AF Unit Desoldering -2

5. Light Shield
   The light shield is bonded in place. Loosen it with alcohol before removing.

Assembly Cautions

Adhesives Application

NOTE 2 AF Unit Mounting Screws

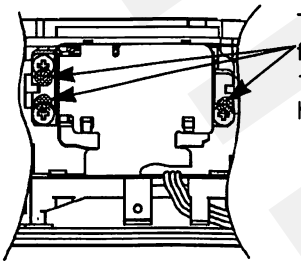


Fig 3-41 AF Unit Bonding

NOTE 3 Mirror Box Light Shield

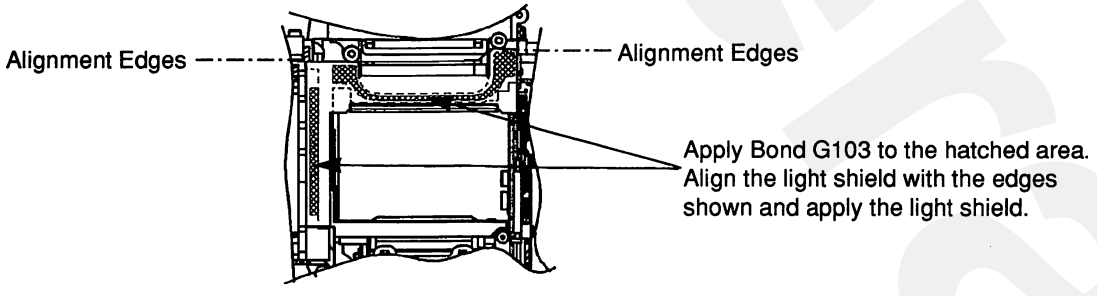


Fig 3-42 Light Shield Bonding

2.9 Mirror Box Disassembly-2

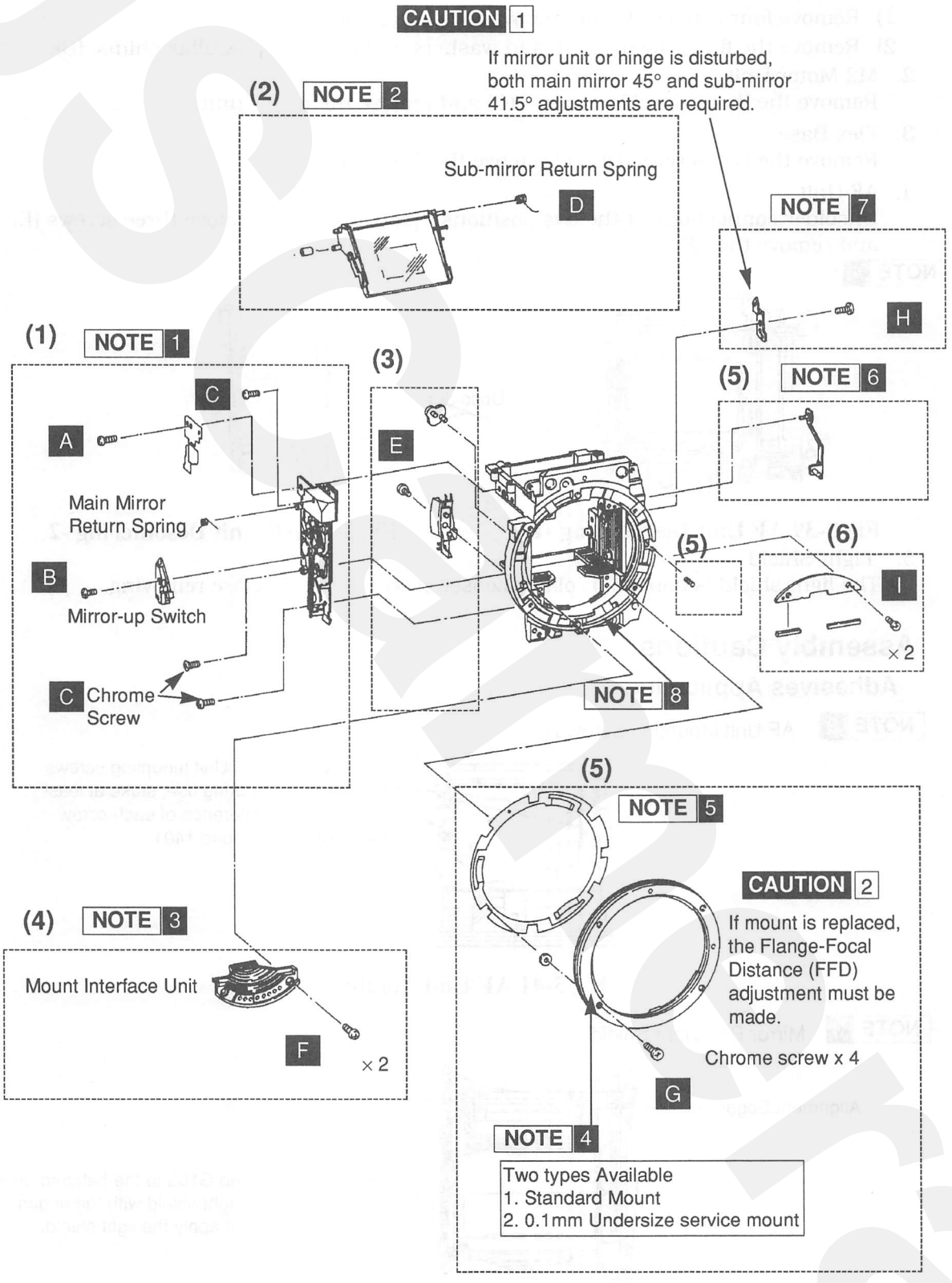


Fig. 3-43 Mirror Box Disassembly-2

Removal Procedure

1. Mirror Mechanism
   1) Remove the light shield screw (A) and remove the light shield and the main mirror return spring.
   2) Remove the mirror-up switch screw (B), and remove the switch.
   3) Remove the two chrome screws (C) holding the mirror mechanism and remove it.
2. Mirror Unit
   Disengage and remove the sub-mirror return spring (D), and remove the mirror unit.
3. MIF Switch (Lens switch)
   Remove screw (E) and remove the mount interface switch (called *Lens Switch* in the original EOS-1).
4. Mount Contact Unit
   Remove the two screws (F) holding it, and remove the contact unit.
5. Lens Mount
   1) Remove four screws (G) and remove the mount and spacer.
   2) Remove the lock pin unit and spring.
6. Light Shield Plate
   Remove two screws (I) and remove the plate.

Assembly Cautions

1. Adhesive and Lubricant Application (Apply to hatched areas)

NOTE 1 Main Mirror Return Spring

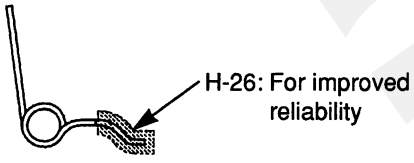


Fig 3-44 M-Spring H-26

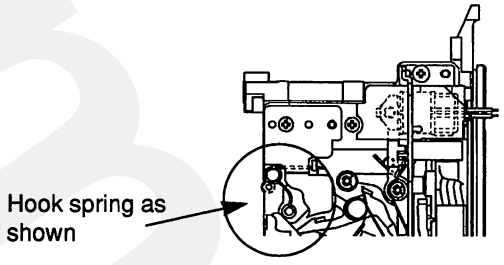


Fig 3-45 M-Spring Layout

NOTE 2 Torque Spring Shaft

Main Mirror Hinge

Drive Pin Collar

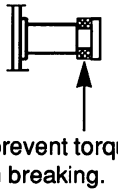


Fig 3-46 M-Mirror Pin

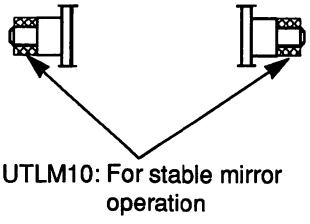


Fig 3-47 M-Mirror Hinge

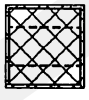
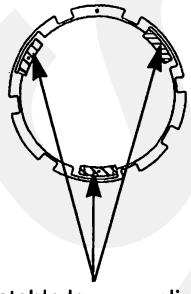


Fig 3-48 M-Mirror Collar

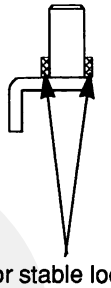
NOTE 5



IF10: For stable lens coupling torque

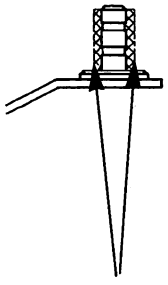
Fig 3-49 MIF Spring

NOTE 6 Lock Pin



H-26: For stable lock pin operation

Fig 3-50 Lock Pin

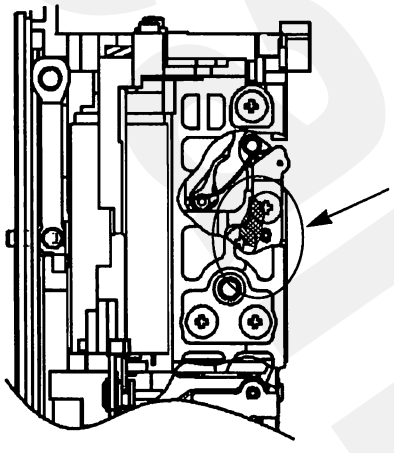


H-26: For stable lock pin lever operation

Fig 3-51 Lock Pin Shaft

2. Lead Dressing

NOTE 7



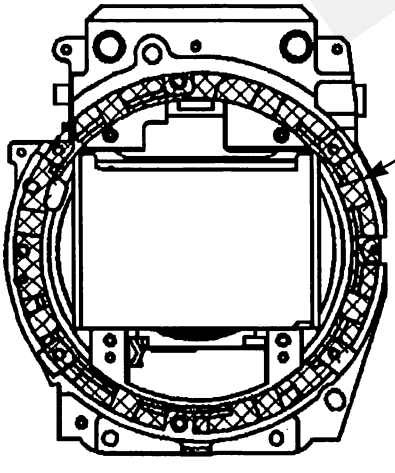
Hinge Screw

3-Bond 1401; Stake heads to prevent loosening. Bond should be applied to screw heads, hinge plate, and mirror box.

Fig 3-52 Hinge Screw Staking

NOTE 8

Lens Mount



MM-10: For water proofing

Fig 3-53 Mount Oil Retardant MM-10

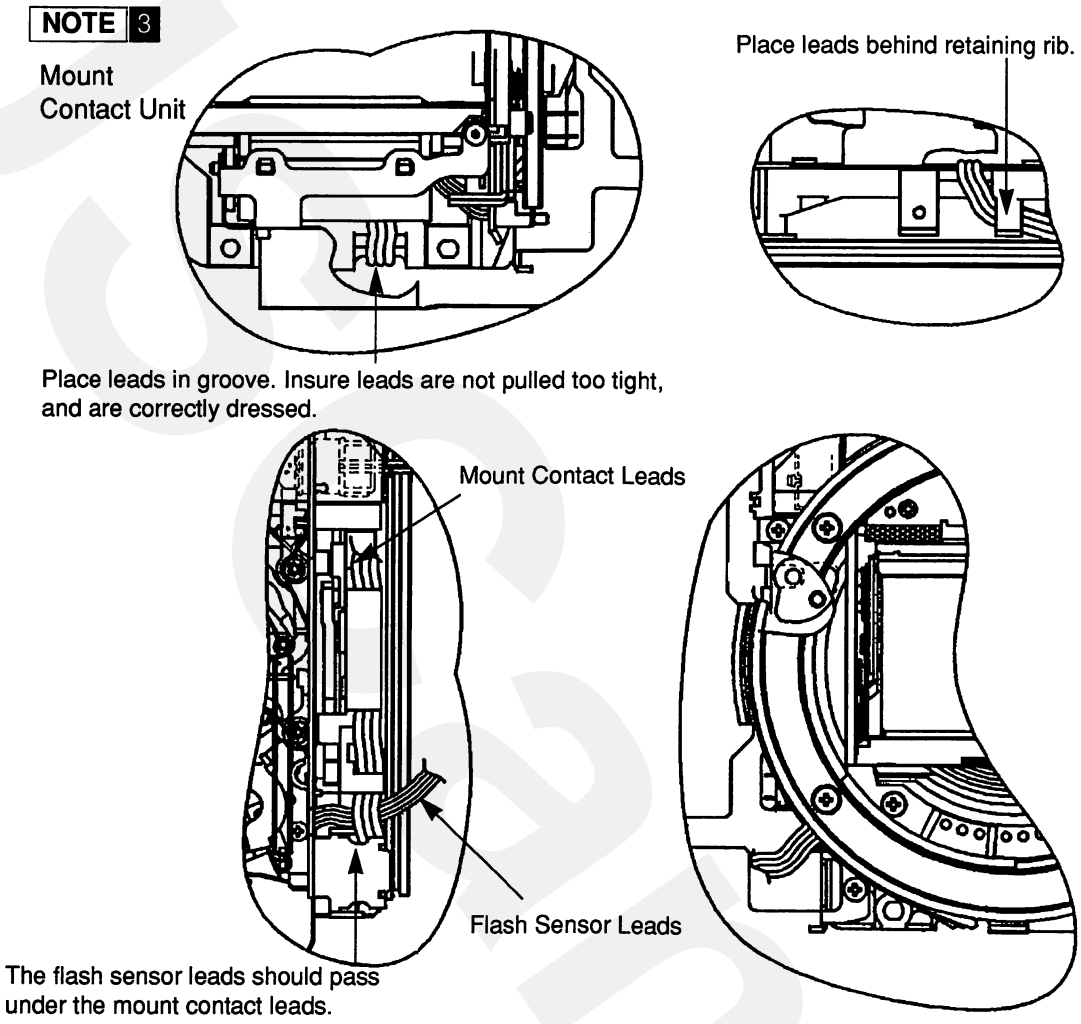


Fig 3-54 Lead Dress

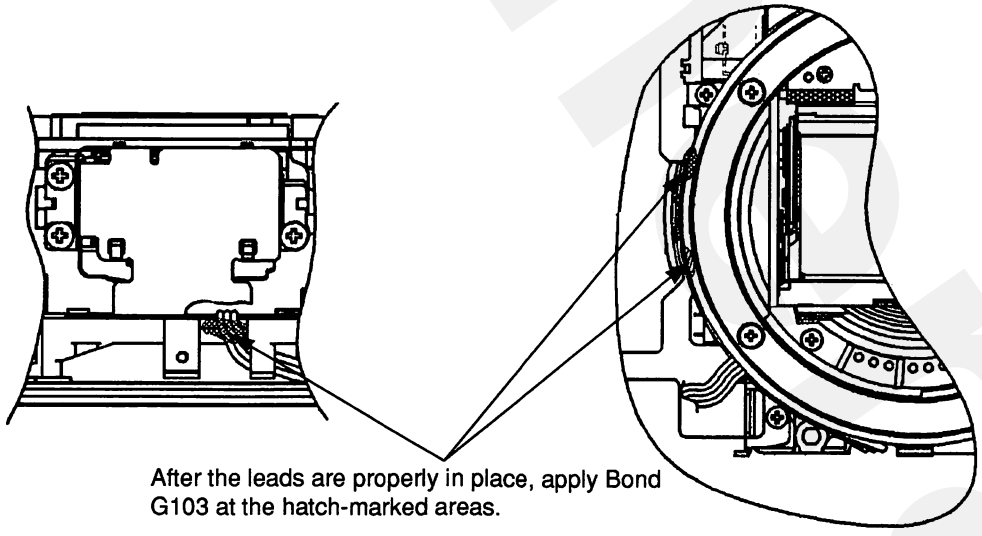


Fig 3-55 Lead Staking

2.10 Bottom Cover Unit Disassembly

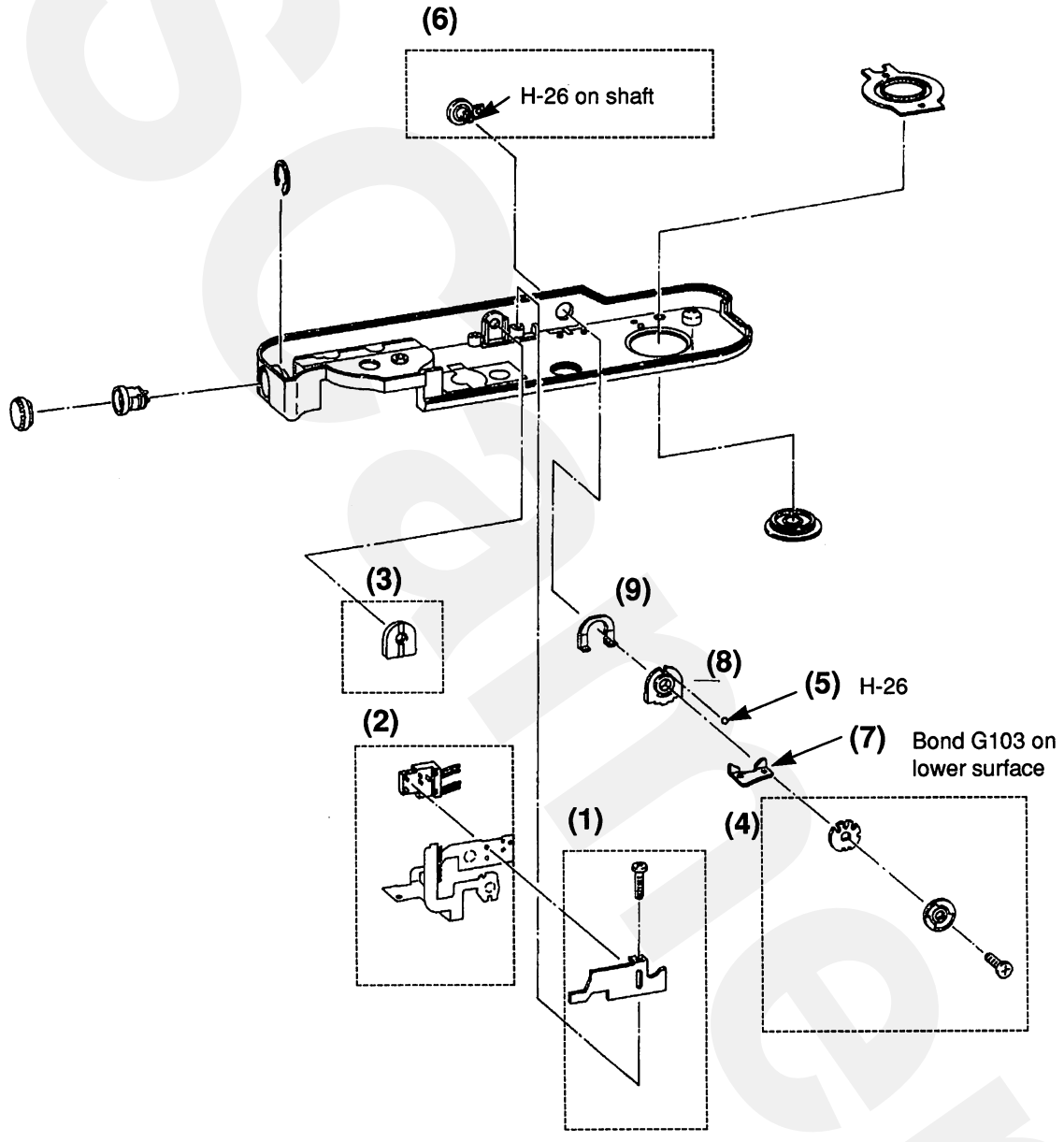
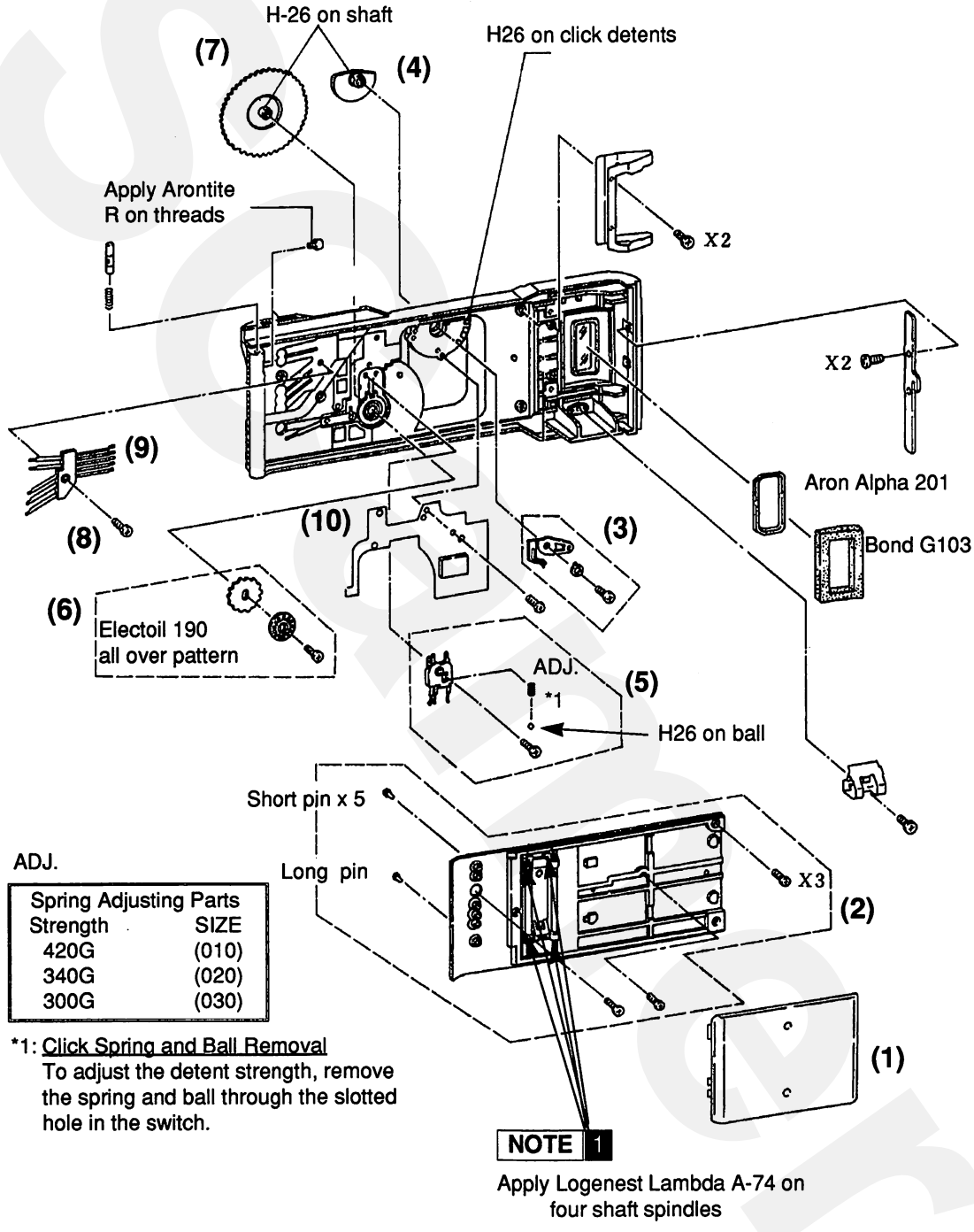


Fig 3-56 Bottom Cover Unit Disassembly

2.11 Back Cover Disassembly



ADJ.

Spring Adjusting Parts	
Strength	SIZE
420G	(010)
340G	(020)
300G	(030)

*1: Click Spring and Ball Removal
To adjust the detent strength, remove the spring and ball through the slotted hole in the switch.

Fig 3-57 Back Cover Disassembly

2.12 Charge Unit Disassembly

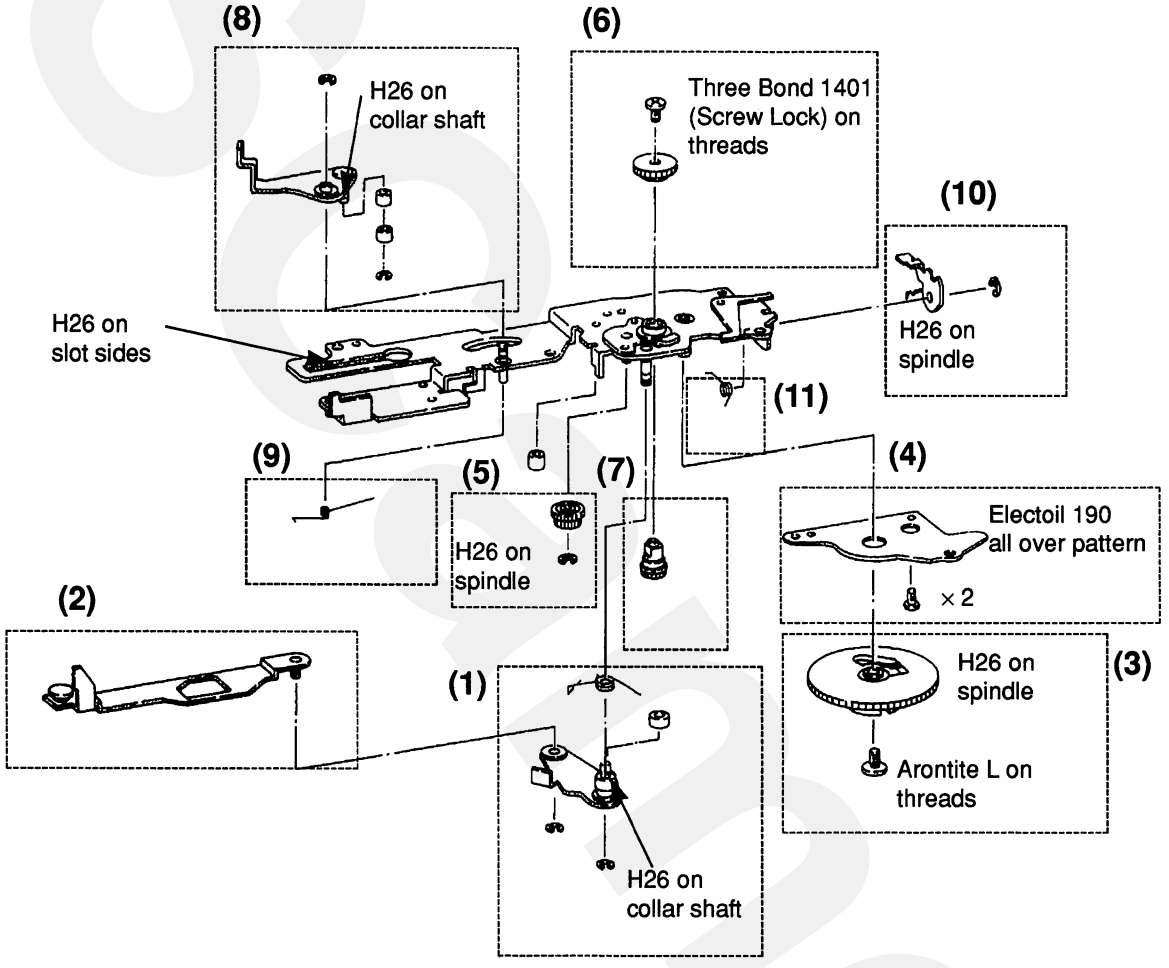
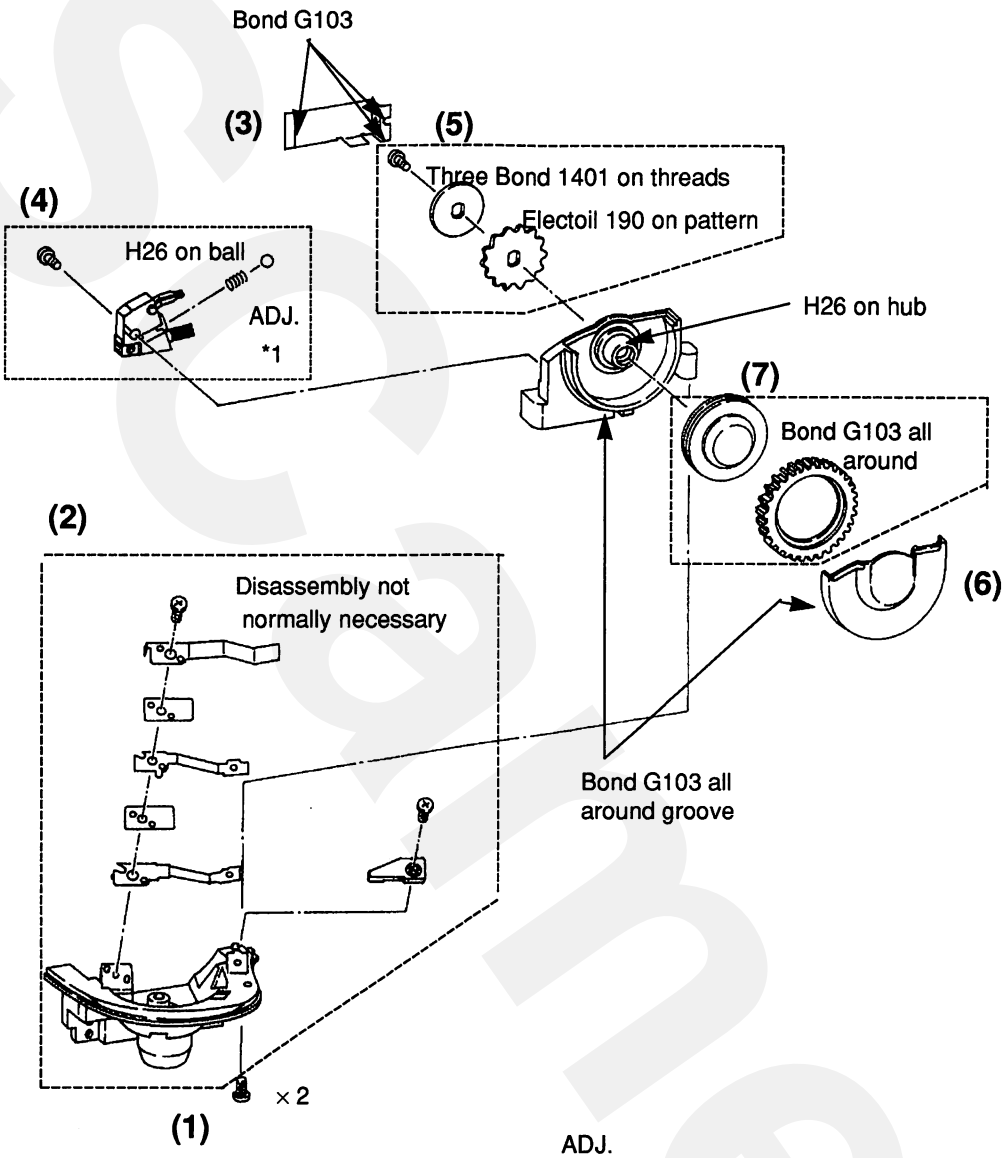


Fig 3-58 Charge Unit Disassembly

2.13 Electronic Dial Unit Disassembly



ADJ.

Spring Adjusting Parts	
Strength	SIZE
420G	(010)
340G	(020)
300G	(030)

*1: Click Spring and Ball Removal
To adjust the detent strength, remove the spring and ball through the slotted hole in the switch.

Fig 3-59 Electronic Dial Unit Disassembly

2.14 Shutter Unit Disassembly

CAUTION 1 Disassembly and Assembly must be performed in the charged state.

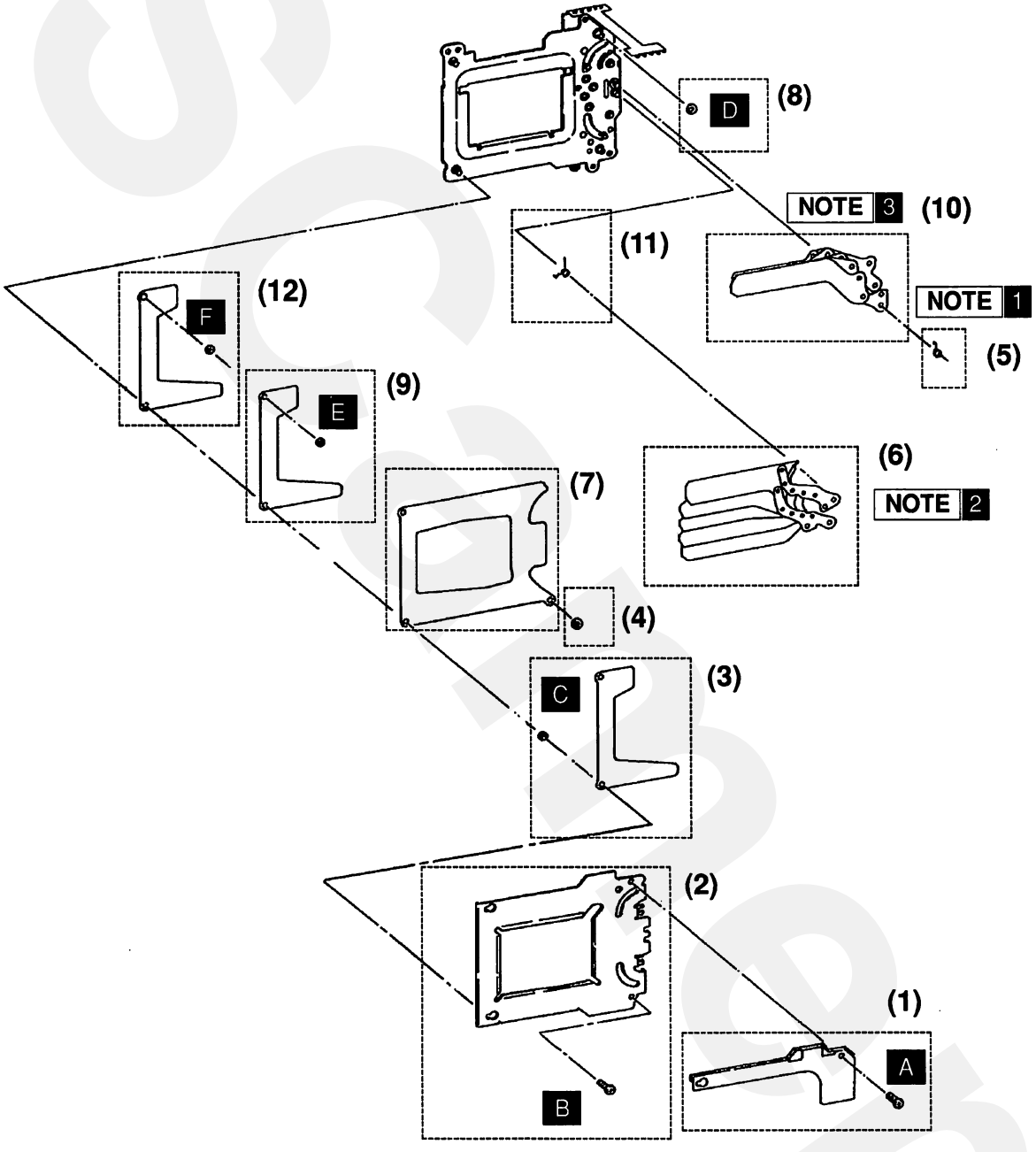


Fig 3-60 Shutter Unit Disassembly

Removal Procedure

1. Light Shield
   Remove screw (A) and remove the light shield.
2. Front Cover
   Remove screw (B) and remove the front cover plate
3. Follow the number sequence to complete disassembly.

CAUTION 2 Most of the shutter parts are quite thin and they are not stocked as spare parts. Be careful.

Assembly Cautions

NOTE 1 1st Curtain Arm Spring Installation

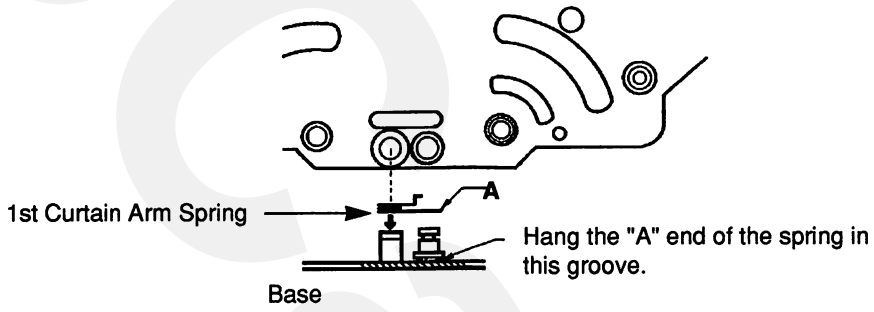


Fig 3-61 1st Curtain Arm Spring

NOTE 2 1st Curtain Installation

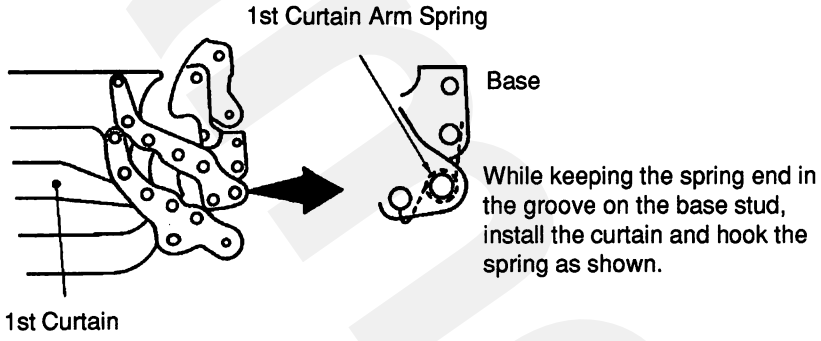


Fig 3-62 1st Curtain

NOTE 3 2nd Curtain Arm Spring Installation

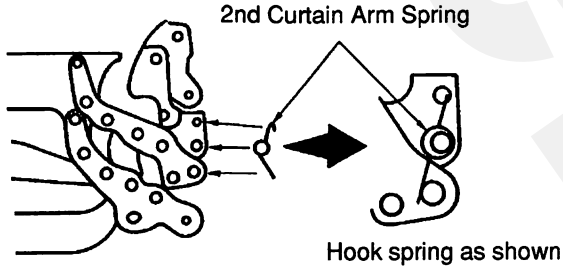


Fig 3-63 2nd Curtain Arm Spring

3. ADJUSTMENTS

3.1 Release Stroke Adjustment

CAUTION The production release button for the EOS-1N is a single part combining the button, shaft and adjusting shaft. Replace it with the separate parts when adjustment is necessary. The production release button is equivalent to the standard (005) size adjusting part.

PURPOSE:

The release button's initial position and stroke can be adjusted, within limits, to suit the individual user. *Adjustment is possible without removing the top cover.*

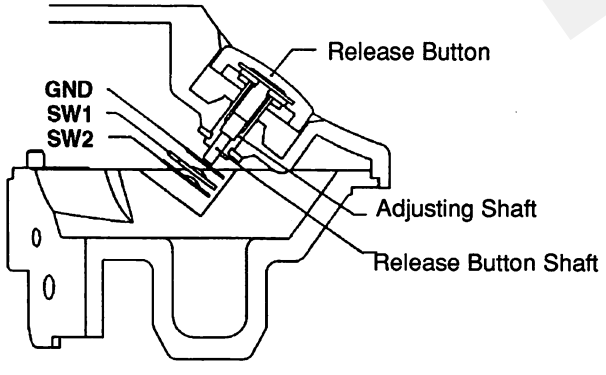
RELEASE STROKE ADJUSTMENT:

Item	Standard	Adj. Limits
Initial Position	1.0mm/-	0.5to 2.0mm
Initial Position > SW1 On	0.6mm/80g	0.1 to 1.1mm
SW1 > SW2	0.3mm/350g	Not adjustable
SW2 overstroke	0.2mm/-	Not adjustable

ADJUSTMENT:

1. Remove the release button.
2. Install the release button (CY1-1709) release button shaft (CY1-1710) and appropriate adjusting shaft (CY1-1338-000-XXX).
2. Separate the release button from the release button shaft, remove the adjusting shaft and install one to give the required stroke.
3. Turn the release button clockwise so it is firmly attached to the shaft.
4. Install the assembly in the top cover.

Release Shaft Replacement



Adjusting Shaft(CY1-1338)

A	B	SIZE	
1.0mm	2.8mm	(001)	
	3.0mm	(002)	
	3.2mm	(003)	
1.5mm	2.8mm	(004)	
	3.0mm	(005)	Std.
	3.2mm	(006)	
2.0mm	2.8mm	(007)	
	3.0mm	(008)	
	3.2mm	(009)	
2.5mm	2.8mm	(010)	
	3.0mm	(011)	
	3.2mm	(012)	

To increase the button height, install a shaft with a longer [A] dimension. To increase the SW1 stroke length, install a shaft with a longer [B] dimension.

Fig 3-64 Release Stroke Adjustment

3.2 Mirror Angle Adjustments

Main Mirror: 45° & Sub Mirror: 41.5°

CAUTION This adjustment is necessary whenever the Mirror Mechanism, hinge plate or mirror unit has been disturbed.

PURPOSE:

To adjust the vertical and horizontal positions of the main mirror and sub mirror.

STANDARDS:

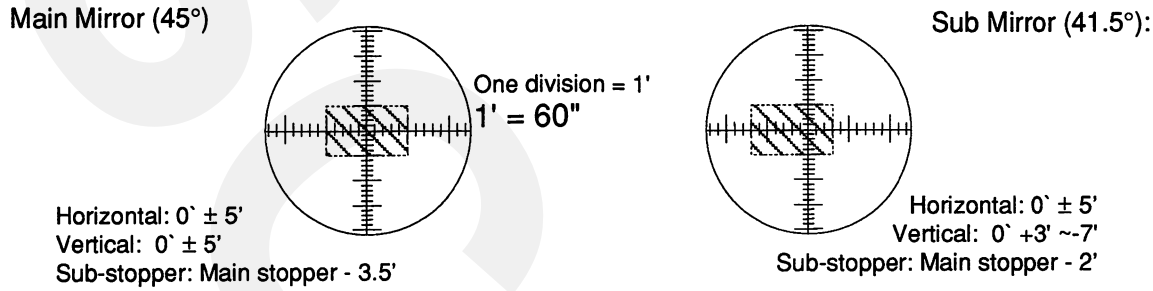


Fig 3-65 MIRROR ADJUSTMENT STANDARDS

TOOLS:

Universal Type 90° Collimator -3 Sub-mirror Gage (41.5°) (EOS-5, 10) Main Mirror Gage (all EOS Cameras) 1.3mm Hex Key

PREPARATION:

Set the zero positions with the main and sub mirror standard gages prior to making the adjustments.

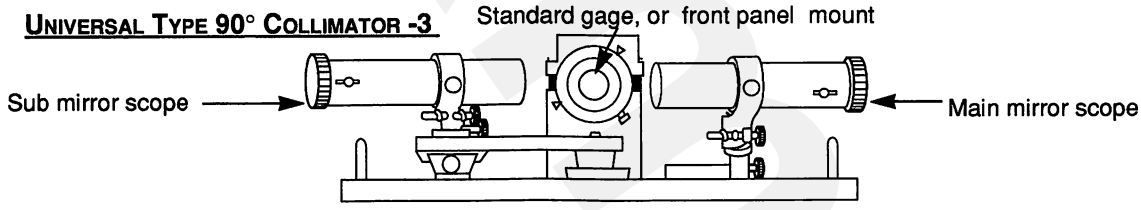


Fig 3-66 90° Collimator Adjustment

Each reference gage is marked with compensation data, since it is impossible to make gages which are exact. Be sure to include the correction when aligning the gages. (Note: Vertical and horizontal adjustments are reversed in the 1991 tool manual.)

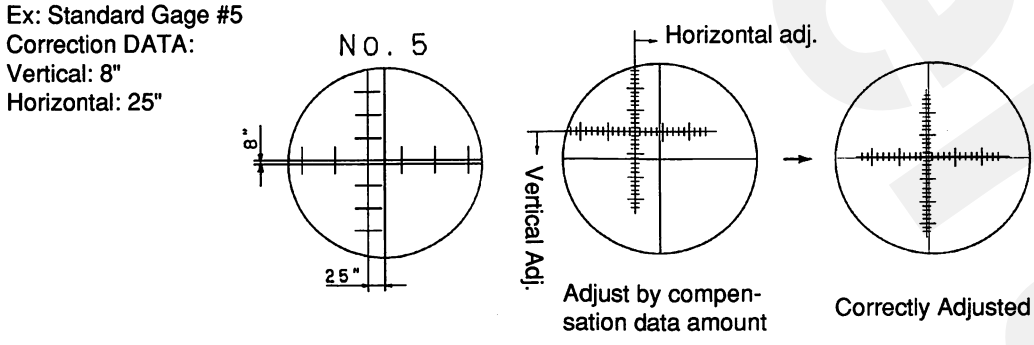


Fig 3-67 Collimator Chart Adjustment

ADJUSTMENT:

ADJUSTING POINTS:

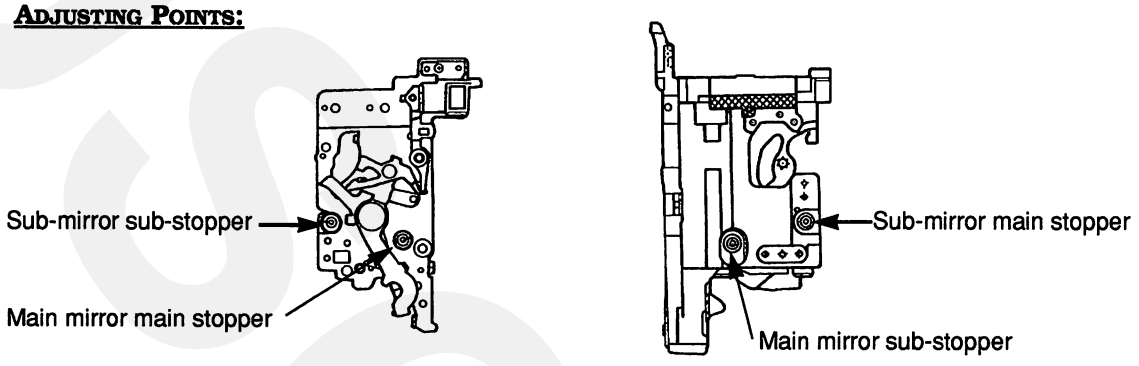


Fig 3-68 Mirror Angle Adjustments

ADJUSTMENT METHOD:

1. Horizontal Adjustment (Both mirrors)
   Slightly loosen and move the hinge plate as necessary to adjust both the main and sub mirrors into the limits.

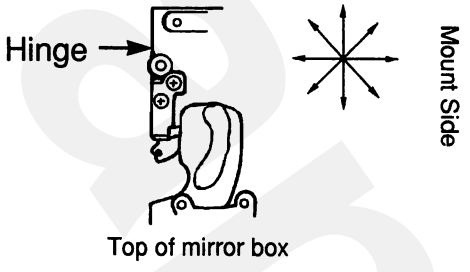


Fig 3-69 Hinge Adjustment

2. Main Mirror (45°) Vertical Adjustment
   1) Adjust the sub-stopper to 45° ± 0', then reset to - 3' on the collimator scale.
   2) Adjust the main stopper to 45° ± 0'.
3. Sub Mirror (41.5°) Vertical Adjustment
   1) Adjust the sub-stopper to 41.5° ± 0', then reset to - 3' on the collimator scale.
   2) Adjust the main stopper to 41.5° ± 0'.

Note: By adjusting the sub-stoppers first and then the main stoppers to -3', the mirror bounce can be reduced to an absolute minimum.

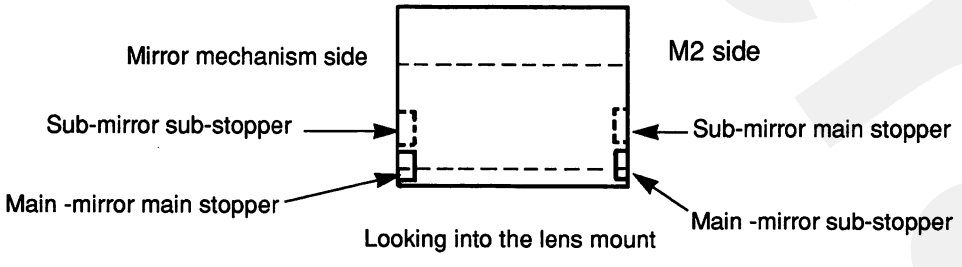


Fig 3-70 Stopper Positions

3.3 AF Sensor Vertical Position

CAUTION This adjustment is required if the AF Sensor Unit is disturbed. (The horizontal adjustment is electrical.) Do after mirror angle adjustment.

PURPOSE:

This adjustment aligns the center of the AF sensor with the optical axis.

STANDARD:

The image of the H-BASIS sensor must fall within the AF Frame, and should be as close as possible to being exactly centered.

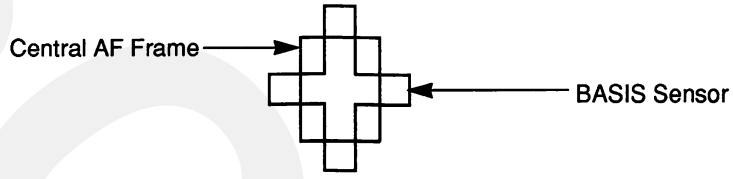


Fig 3-71 BASIS Standard Position

TOOLS:

EF 50mm f/1.8 lens (production lens); Strong penlight or illuminator

PREPARATION:

To eliminate adjustment errors, place the 50/1.8 on another EOS-1. Set the lens to infinity. Set the camera in manual and set the aperture to f/8 with the electronic input dial. Push the D-o-F button and remove the lens while holding the button in.

ADJUSTMENT:

1. Install the AF sensor unit in the front panel unit with the pentaprism and focusing screen installed. Strong, point light source
2. Install the stopped-down lens, set to infinity (∞).
3. Shine a small, powerful, spot of light into the bottom of the AF sensor unit. Looking into the lens the outline of the sensor should be superimposed on the focus mark as shown. Adjust the sensor so it is centered in the AF Frame.
4. After adjustment, tighten the screws just enough to hold the position and stake with Three Bond 1401C. (Tightening too much may break the sensor base.)

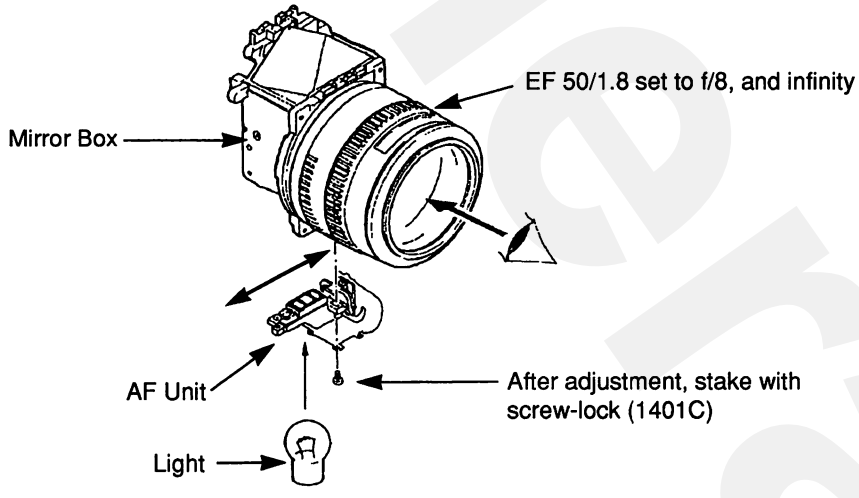


Fig 3-72 BASIS Positioning

3.4 VIEWFINDER PARALLAX ADJUSTMENT

CAUTION Do after Mirror Angle Adjustment.

PURPOSE:

To insure 100% viewfinder coverage, adjust the center of the viewfinder image to correspond with the center of the film aperture.

STANDARD:

Center deviation: 0±0.1mm

The viewfinder image must be completely within the film aperture, and should be centered.

TOOLS:

Ground glass Parallax Chart (Local Fabrication) EF 50mm f/1.8 Tool lens

PREPARATION:

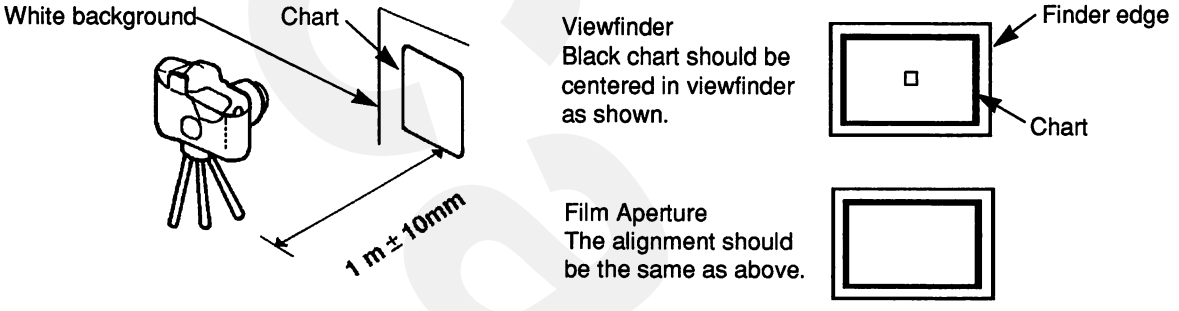


Fig 3-73 Finder Parallax Set-up

ADJUSTMENT:

1. Remove the focusing shims from the front panel being replaced and install them in the new front panel using Three Bond 1401C (CY9-8011-000).
2. Install the pentaprism unit and push it forward and to the right. Tighten the screws.
3. Install the front panel in the camera body. Attach the lens and align so the black chart falls just within the viewfinder. and align check finder parallax as shown above. Open the shutter at "bulb" and check that the entire black chart is within the film aperture. Install different shims if necessary.
4. Bond the washers in place with G103.

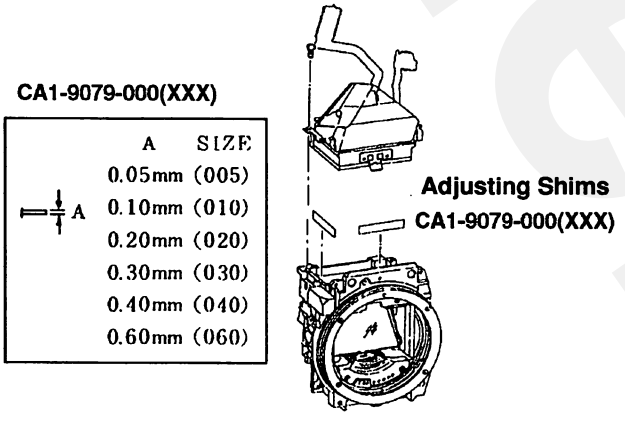


Fig 3-74 Finder Parallax Shims

3.5 SHUTTER CURTAIN TRAVEL TIME ADJUSTMENT

CAUTION If the 2nd Curtain Travel Time standard cannot be met, change the unit. There is no 1st curtain adjustment. If the standard is not met, change the unit.

PURPOSE:

This adjustment fine tunes the 2nd curtain travel time to insure proper operation of the 1/8000s shutter speed.

STANDARD:

Item	Curtain Travel Time	Remarks
1st Curtain	2.2 ± 0.2ms	Replace if limits cannot be met.
2nd Curtain	2.2 ± 0.2ms	Adjustable
1st /2nd Difference	0 ± 0.02ms	

<!!> Due to the very fine tolerances necessary to insure 1/8000s shutter accuracy, test equipment accuracy is very important. Take an average of several units from stock to establish your shop standard.

TOOLS:

FS-5300 Shutter Tester or EF-500 AE Tester, Power Supply, 2nd Curtain Spanner (CY9-6147-000).

(Note: EF-8000 is not suitable because it cannot measure curtain travel time unless a lens is installed).

PREPARATION:

1. Charge the shutter.
2. Install the shutter under test in a dummy body and attach a 3 volt power supply as shown.
3. Place the test body on the tester.

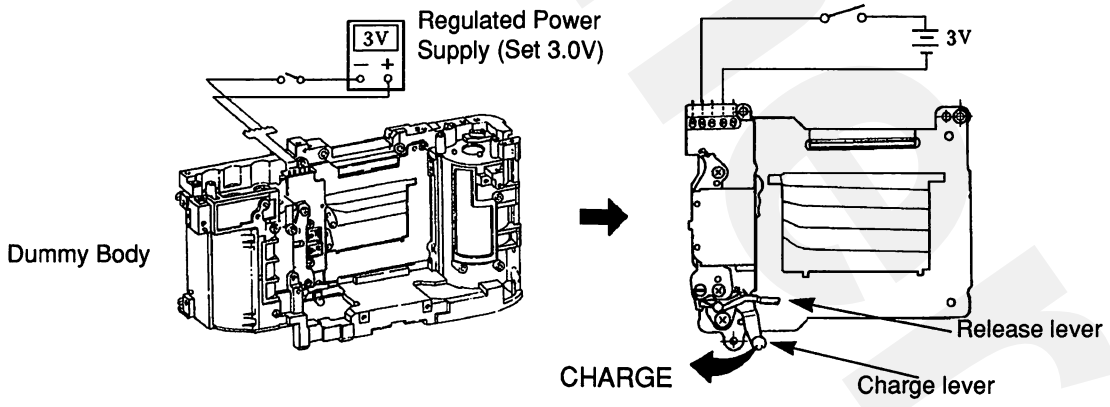


Fig 3-75 Shutter Preparation

ADJUSTMENT:

1. Release the 1st curtain with the release lever, and check the travel time. (Change the unit if not within tolerance.)

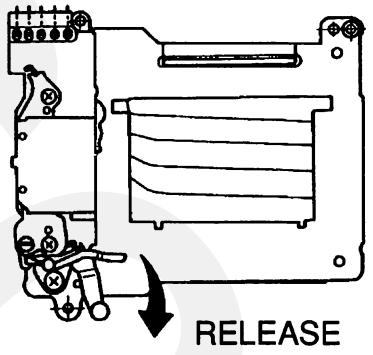


Fig 3-76 Shutter Release

2. Turn the power off to let the 2nd curtain run. Check the travel time.Repeat (1) and (2) as necessary.
3. Remove the shutter from the body. If necessary, adjust the 2nd curtain gear a small amount with the special spanner, reinstall and recheck the curtain travel time. Repeat as necessary.

<!!> The gear shaft is eccentric so direction of rotation is not directly related to time change.

<!!> If the curtain travel time cannot be brought within tolerances, change the shutter unit.

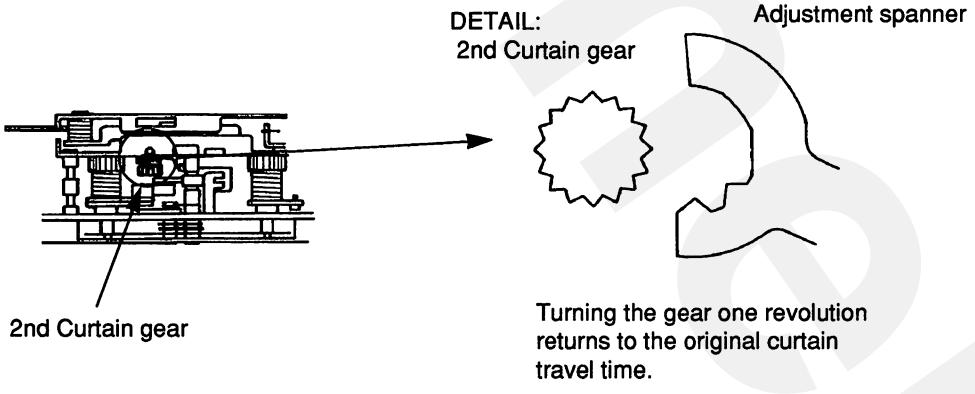


Fig 3-77 Shutter Spanner

3.6 FLANGE to FOCAL PLANE DISTANCE ADJUSTMENT

CAUTION Necessary if mount is changed, - use as few shims as possible.

PURPOSE:

To adjust the flange to pressure plate distance to the standard, 44.14mm.

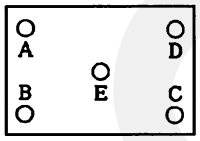
STANDARD:

44.14 + 0.02mm to Outer Rails (with optical flat)

44.17 + 0.02mm to center of pressure plate

0.030 ± 0.015mm Pressure Plate center depression

(Record reading for electronic AF adj.)



Aperture (& Pressure Plate) Measurement Points

When measured off of the pressure plate with the back cover closed, E should be 0 to 5µm greater than A,B, C, or D. (It is permissible for one corner to be up to 5µm greater than E.)

Fig 3-78 Pressure Plate Measurements

TOOLS:

Dial Gage w/ 2mm adaptor ring Optical flat (for Block gage)

Block gage (44.14mm or 42.14mm) Optical flat (for camera aperture)

Note: A new 0.001mm Dial Gage is now available (CY9-7094-000) for very accurate FFD.

PREPARATION:

Install the 2mm adaptor ring between the gage body and tip to compensate for the EOS system's longer FFD.

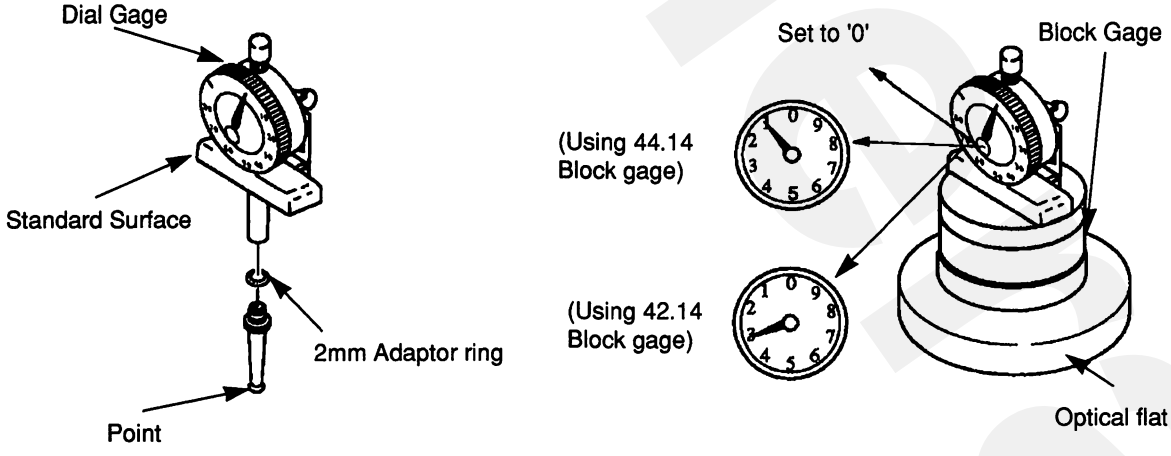


Fig 3-79 Dial Gages

ADJUSTMENT:

1. Flange to Focal Plane Distance (FFD)
   1) Open (or remove) back cover, set the camera outer rails down on the aperture optical flat, and open the shutter at "B".
   2) Place the dial gage on the mount and measure the FFD at the center and all four corners.
   3) If not within limits, adjust with the undercut service mount(CY1-1366) and as few focusing shims as possible.
2. Pressure Plate Center
   1) Remove the optical flat, close the back cover and open the shutter at "B".
   2) Place the dial gage on the mount and measure the FFD at the center and all four corners of the pressure plate.
   3) If center FFD is not within limits, change the pressure plate.
3. Pressure Plate Center Depression.
   1) Calculate center depression (Step 2 - Step 1)from above and if not within limits, change the pressure plate.
   2) Check also the difference in the four corner readings from the pressure plate and the center reading from the pressure plate. The center should be concave with respect to the corners, i.e. the reading should be up to 5μm greater at the center than at the corners.

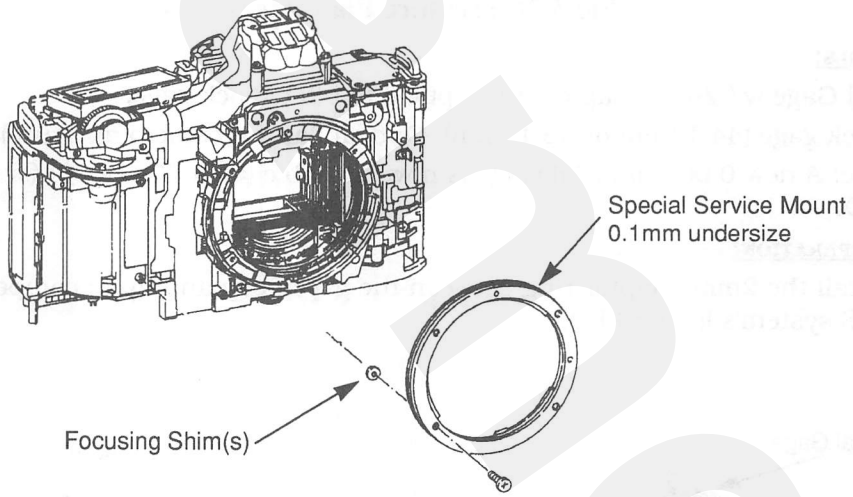


Fig 3-80 FFD Mount & Shims

3.7 FLANGE to FOCUSING SCREEN ADJUSTMENT

CAUTION Necessary if viewfinder unit is replaced, or FFD is Adjusted.

To insure that the flange to focusing screen distance corresponds to the flange to film plane distance.

STANDARD:

44.00 + 0.02mm

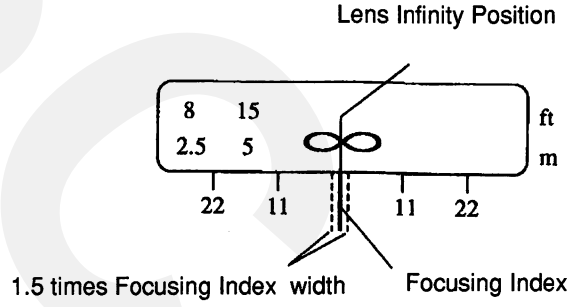


Fig 3-81 1.5 Line Width

TOOLS:

Universal 500mm Collimator

EF50mm f/1.8 lens Magnifier AD-S

Focusing Screen B (Split-image)

ADJUSTMENT:

1. Install the 'B' focusing screen, and set the lens on manual and at infinity. Use the magnifier on the viewfinder to view the collimator infinity target.
2. Adjust with washers so the center of the infinity mark is centered on the index (± 1.5 lines).

   If a collimator is not available and there is good visibility, use a straight-edged target at least 250 meters away.

CA1-5077-000
CA1-9078-000 detail

A	SIZE
	0.03mm (003)
⟷ A	0.05mm (005)
	0.10mm (010)
	0.20mm (020)
	0.30mm (030)
	0.40mm (040)
	0.60mm (060)

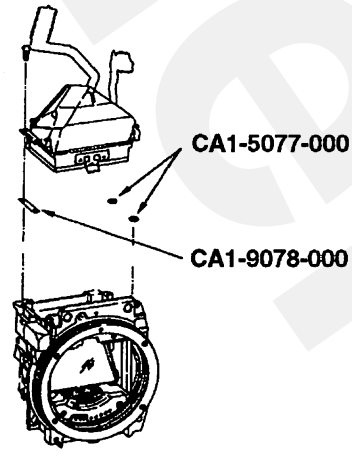


Fig 3-82 Focusing Shims

3.8 Focusing Screen Positioning Adjustment

PURPOSE:

To align the positions of the focusing screen with the position of the Superimpose Marks screen.

STANDARD:

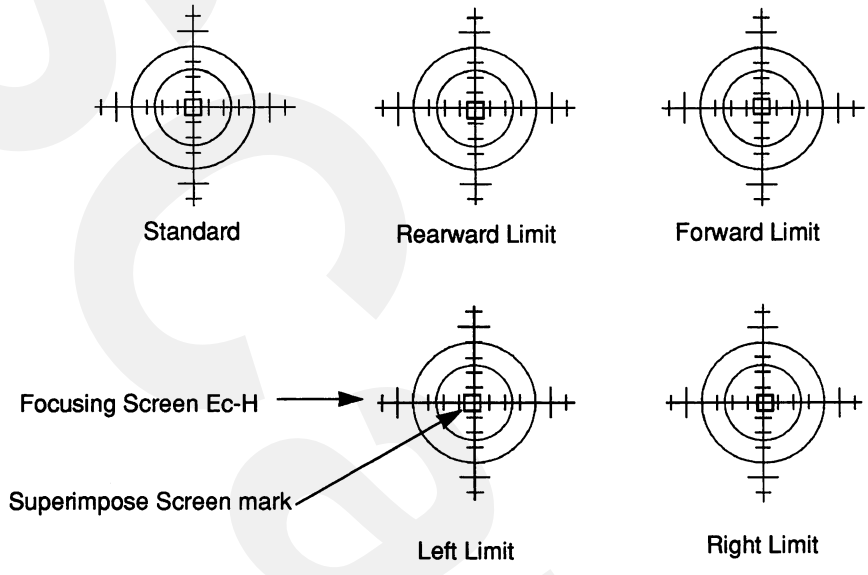


Fig 3-83 Superimpose Standard

LATERAL AND LONGITUDINAL LIMITS: 0.13MM

TOOLS:

Ec-H Focusing Screen

ADJUSTMENT:

Remove the pentaprism unit and turn the adjusting screw to move the screen to meet the lateral standard illustrated above.

Note: There is no longitudinal adjustment. If not within tolerances, replace the pentaprism unit.

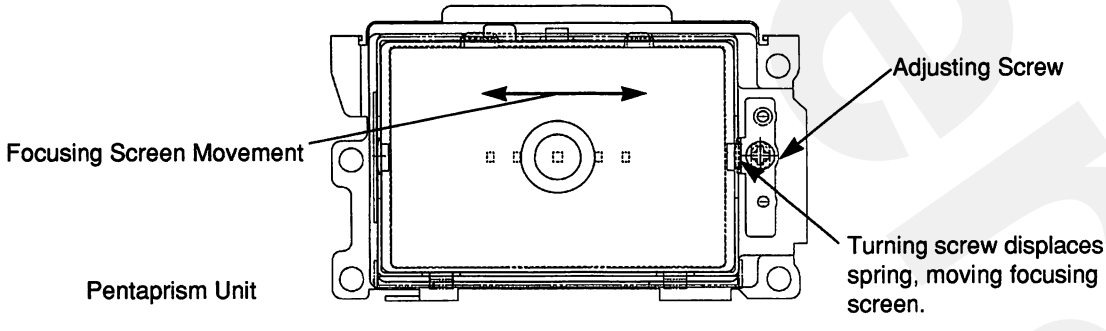


Fig 3-Superimpose Position Adjustment.

4. ELECTRICAL ADJUSTMENTS

4.1 INTRODUCTION

Shutter adjustment:	Adjusting shutter speeds.
SPD positioning:	Positioning IC1 (AE IC).
AE accuracy adjustment:	Adjusting data output of IC1 (AE IC).
AF basic adjustment:	Adjusting data output of BASIS.
AF focus adjustment:	Adjusting focus data from data output of BASIS.
Flash adjustment:	Adjusting the data output of the flash sensor.
Inhibit voltage adjustment:	Adjusting inhibit voltage for the camera.
Temperature correction:	Correcting data output of the temperature sensor.
AE shift:	Shifting automatic exposure level at user request.
Sensor data output:	Displays data output from BASIS to check AF accuracy.
Focus data output:	Displays focus data to check AF accuracy.
AF focus shift:	Correcting rare slight AF focus errors resulting from use of a lens with shallow depth of focus (EF50 mm f/1.0L or EF 85 mm f/1.2 L).
Self check:	Checking the switches and LCDs.
Data transfer:	Initializing, storing, or transferring camera data, and resetting counter when necessary..

4.2 ADJUSTMENTS after PARTS REPLACEMENT

Table 3-1 ADJUSTMENTS after PARTS REPLACEMENT-

Adjustment / Replaced Parts	Initia-lization	Temperature correction	Inhibit voltage	Shutter	AE			AF			Flash OTF	SI Align
					SPD	Accuracy	Shift	Accuracy	Focus	Focus shift		
AE					①	②	▲					
Main flex (Data not readable)	①	②	③	④	⑤	⑥	▲	⑦	⑧		⑨	⑩
Main flex (Data readable)		①	②		③	④					⑤	
AF unit								①	②			
Shutter unit				①								
Mirror unit								①	②			

NOTES:
- The numbers indicate the order of adjustment.
- The items marked ▲ in the above table are optional.
- Inhibit voltage and temperature compensation adjustments must be performed immediately after initialization.

4.3 Adjustment Software for this Camera

1. Adjustment Software Loading

The file name of this software is EOS1N.EXE. After a work disk is made the software will run automatically by the AUTOEXE.EXE file

2. Adjustment Software Operation

This software only requires operation of the RETURN (ENTER) key, SPACE Bar and Cursor keys. Follow the instructions on the screen to adjust the camera.

3. CONNECTING THE CAMERA TO THE COMPUTER

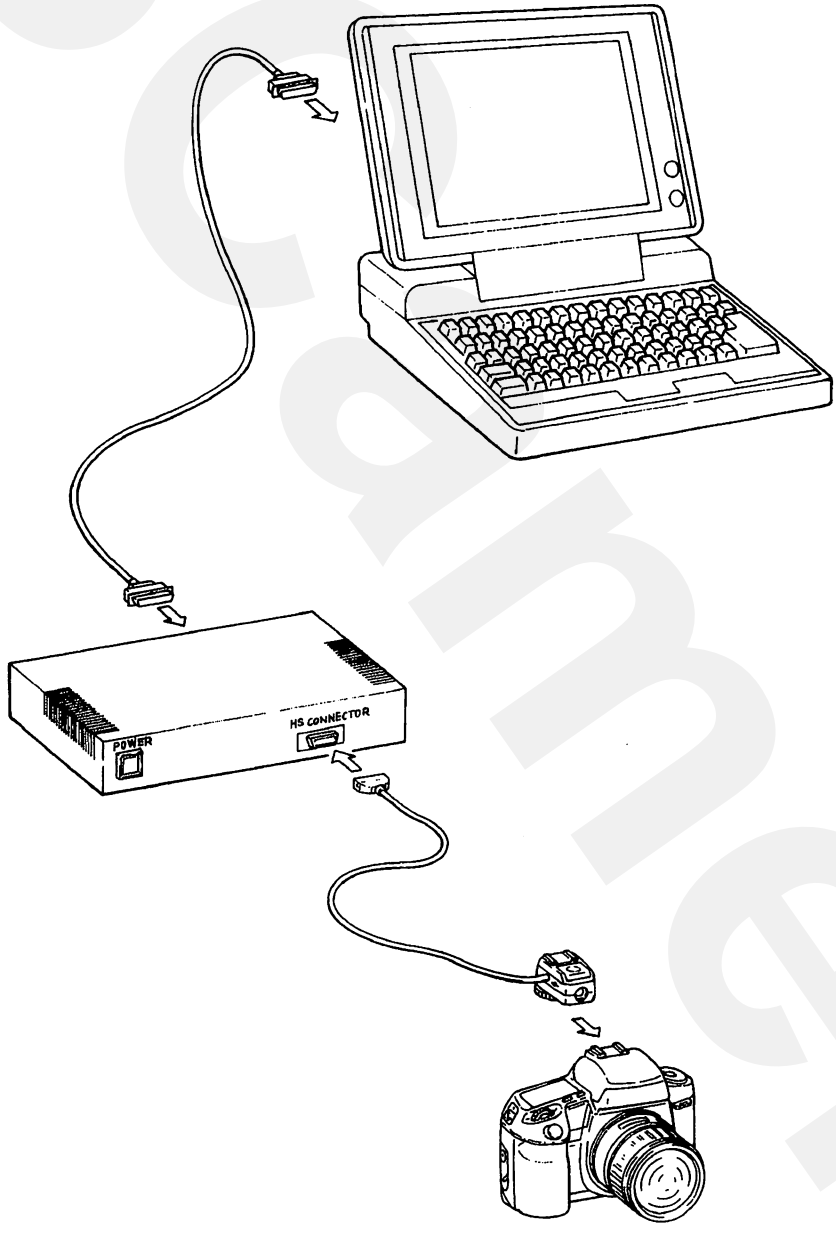


Fig 3-85 Camera Connection

4. ADJUSTMENT START-UP PROCEDURES

Load the work disk in the computer then turn it on. After a while, the title screen appears as shown at the right.

POWON

Ver.1.0

EOS-1N

Turn the HS-I/F power ON.
If on already, press RESET switch.

Copyright Canon Inc. 1994.10

Turn on the HS-I/F in accordance with the directions displayed on the screen. If HS-I/F has already been turned on, turn it off once and then turn it on.

Upon establishment of communications between the computer and HS-I/F, the screen shown at the right appears. Connect the camera to HS-I/F as indicated and turn on the main switch on the camera. After communications are established, press the Return key.

SET

Connect Contact Adaptor from camera
to the HS-I/F and turn the
camera's main switch on.
Press RETURN."

At times it is necessary to switch the camera's SW1 on to establish communications. Follow the screen instructions. If more than a minute passes before SW1 is pressed, an error will occur.

WakeUP

SW1ON

Upon establishment of communications between the computer and the camera, The camera ROM version number and number of releases.

POWON2

EOS-1N

ROM VERSION:
FILM :
ERROR :

Press RETURN key to go to MAIN MENU screen.

The EOS-1N requires an HS-I/F with uprated Ver. 1.2 ROM for adjustments. If the HS-I/F does not have Ver. 1.2 ROM, this message will appear.

ERRHSVER

HS-I/F ROM is not Ver. 1.2.

This software does not operate with HS-I/F ROM Versions earlier than 1.2.

Press a key to exit software program.

If a camera other than an EOS-1N is attached, this message will appear.

ERRCAM

The camera is not an EOS-1N.

This software is for the EOS-1N only.

Press a key to exit software program.

Press the Return key to display the main menu screen.

ERRCVER

The ROM in the connected EOS-1N is the wrong Version.

This software cannot be used to adjust a camera with this ROM version.

Press a key to exit software program.

5. Adjustment Items Table

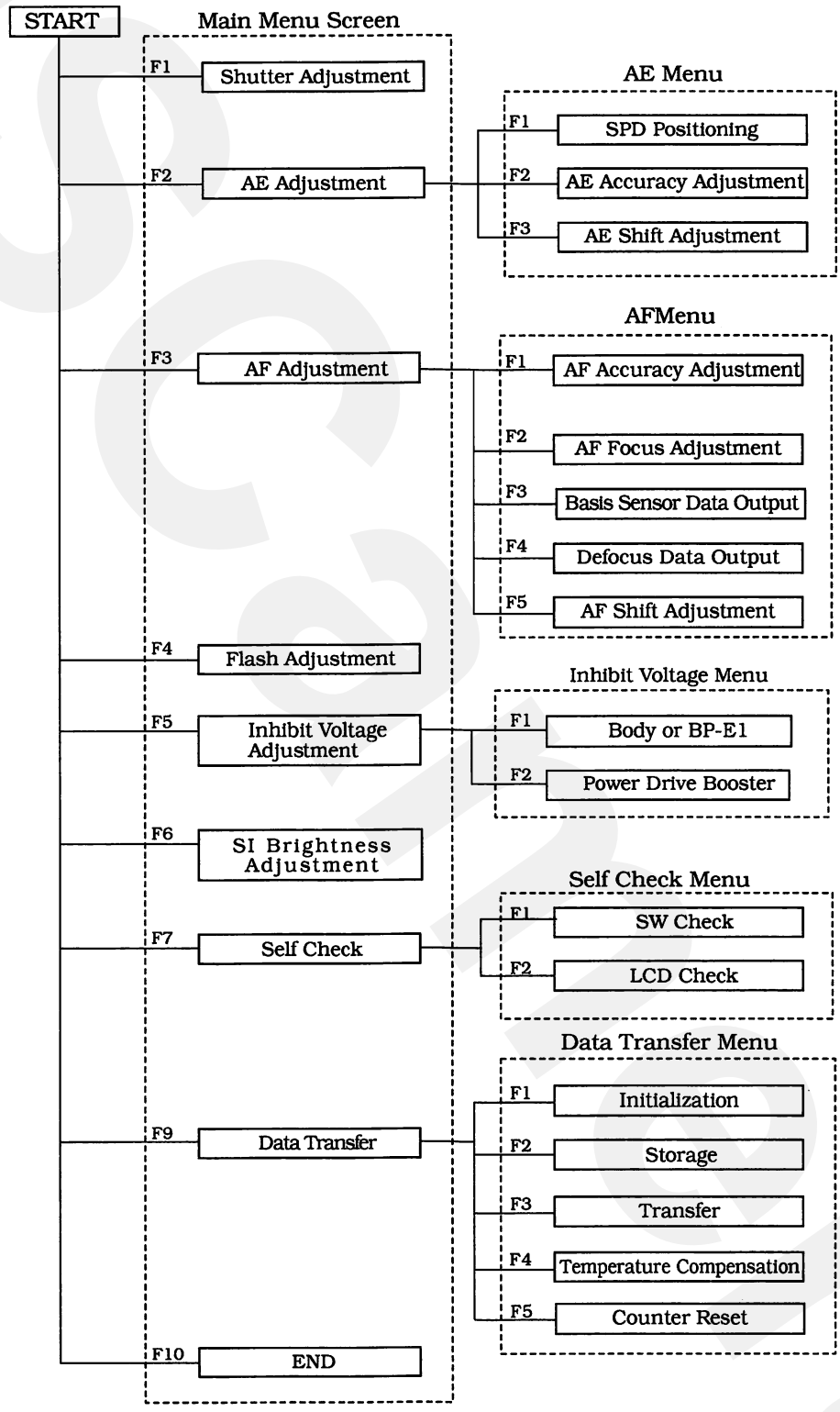


Fig 3-86 Adjustment Items

4.4 SHUTTER ADJUSTMENT

PURPOSE:

To adjust shutter speeds. If the maximum shutter speed (1/8000sec) is within the limits all shutter speeds have been adjusted.

STANDARD:

Shutter speed standard

Marked shutter speed:	1/8000
Exposure time:	0.122ms
Limits:	0.086 - 0.173ms

CAUTION Check that the shutter curtain travel times conforms to the standard. If not,adjust the 2nd curtain travel time.If the 1st curtain is not within limits, replace the shutter unit.

Shutter curtain travel time standard

First curtain travel time: 5.5 ± 0.2ms

Second curtain travel time: 5.5 ± 0.2ms

TOOLS:

Personal computer
RS-232C cable
HS-I/F
Regulated DC powers supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000
EF50mm f/1.8 production lens

PREPARATION:

1) Start adjustment program, connect the camera to the computer through the HS-I/F , and select (F1) Shutter Adjustment on the menu screen.
2) Attach the EF50mm f/1.8 production lens to the camera, set TV and AV to 8000 and f/1.8 respectively in the manual mode, and set the camera on the EF-8000. Set the EF-8000 to shutter speed mode.

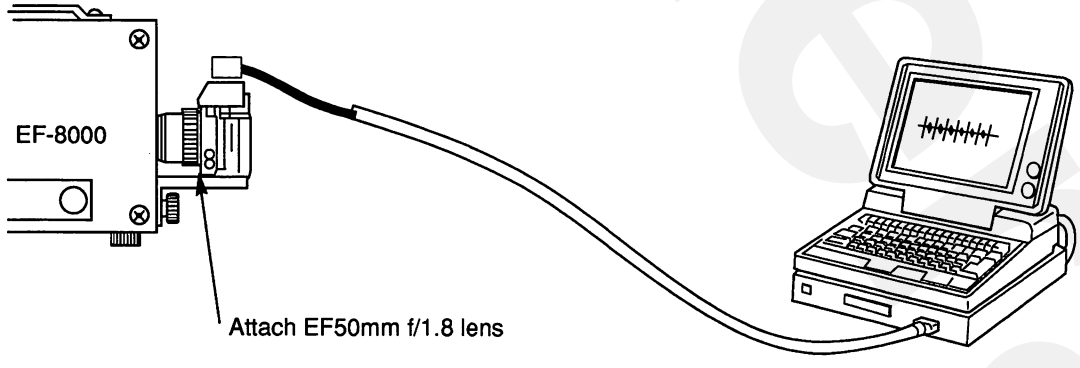
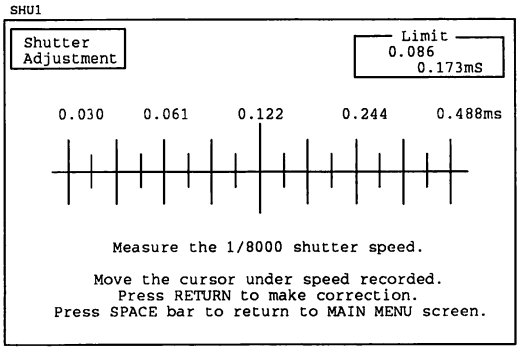


Fig 3-87 Shutter Speed Adjustment

ADJUSTMENT:

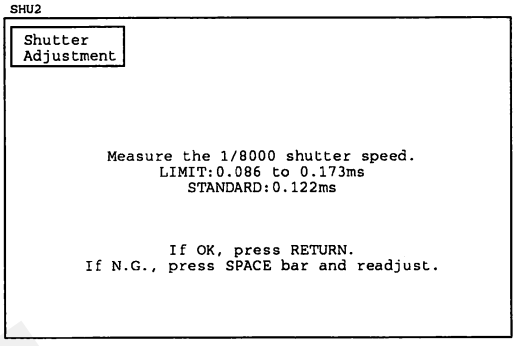
1) Measure the shutter speed and press the cursor keys to move the cursor to enter the measured value.

   Press the Return key and then SW1 on the camera to establish communications between the two to change camera data.



2) After completion of the communications, measure the shutter speed again to check whether it conforms to the standard.

   If not, press the Space bar and return to step 1).



4.5 X Time Lag Check

TOOL:

EF-8000

STANDARD:

Shutter speed:	1/250
Line A:	0.18ms or more
Line B:	1.50ms or more

ADJUSTMENT:

1) Set a shutter flash speed of 1/250 in the TV mode or manual mode.
2) Mount a compatible flash or a hot shoe unit (CG9-3194-000) with a 4.7K ohm resistor from the CCC terminal to ground.
3) Test with EF-8000 in DELAY mode, and checks lines A and B.

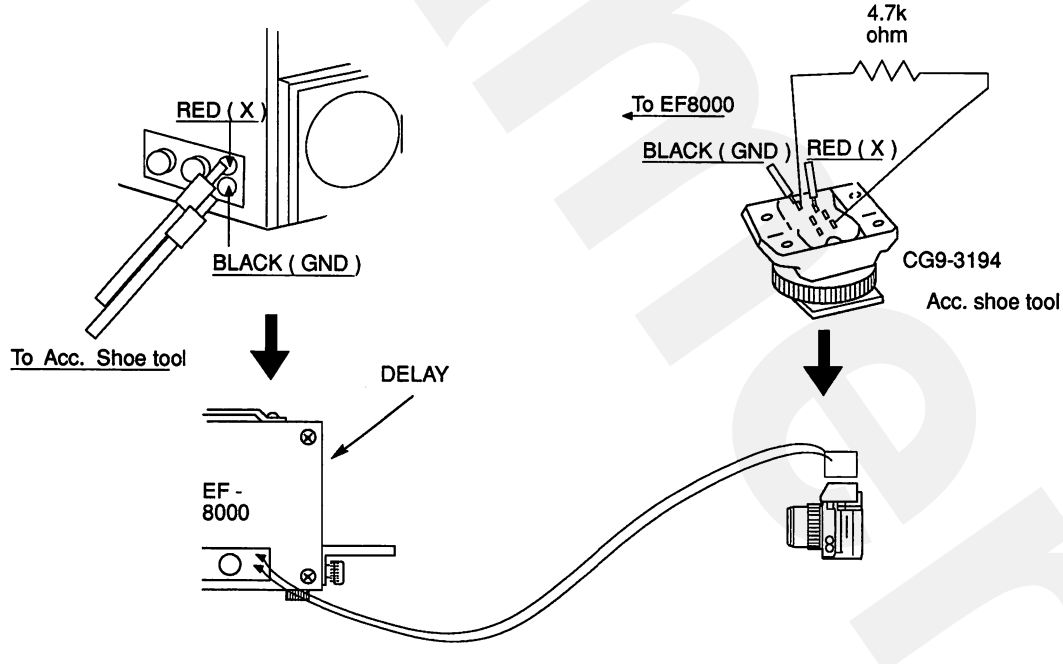


Fig 3-88 X Time Lag Check

<MEMO>

4.6 SPD Positioning

PURPOSE:

To align the center of SPD with the optical axis of the camera.

CAUTION	Prior to doing this adjustment, do the AE Accuracy Adjustment (F2 on the AE Menu). After finishing this adjustment. Repeat the AE Accuracy Adjustment

TOOLS:

Personal computer
RS-232C cable
HS-I/F
Regulated DC power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000
EF50 mm f/1.8 production lens
Tripod
SPD positioning mask (CY9-1102-000)
Focusing Screen Ec-H

PREPARATION:

1) Start adjustment program, connect the camera to the computer through the HS-I/F , and select (F2) AE Adjustment menu screen.
2) Attach the EF50 mm f/1.8 production lens to the camera and fix the camera on the tripod toward the light source.
3) Attach the SPD positioning mask to the light source of EF-8000 and set the brightness to LV 15.
4) Set the camera 45 cm away from the SPD positioning mask and align the center of the SPD positioning mask with that of the center SI focus frame in the finder. Set the lens manually at the closest distance (45 cm).

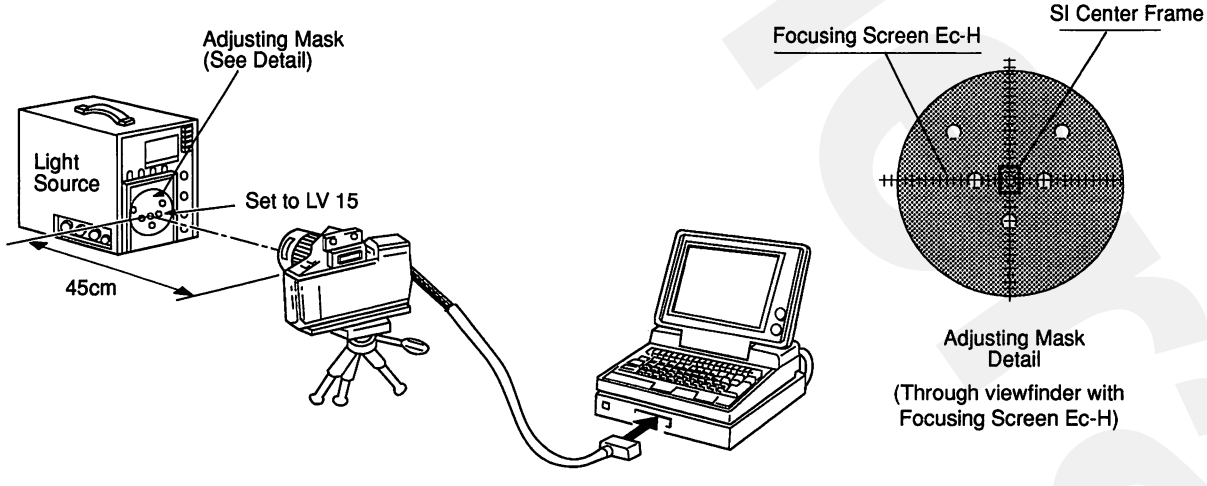


Fig 3-89 SPC Positioning

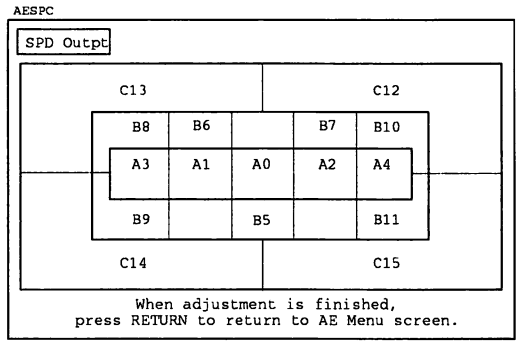
ADJUSTMENT:

1) Select F1 SPD Positioning on the AE menu screen. The EV values of individual photometric sensors of the SPD will be displayed.

2) Move the mask and confirm that the values change.

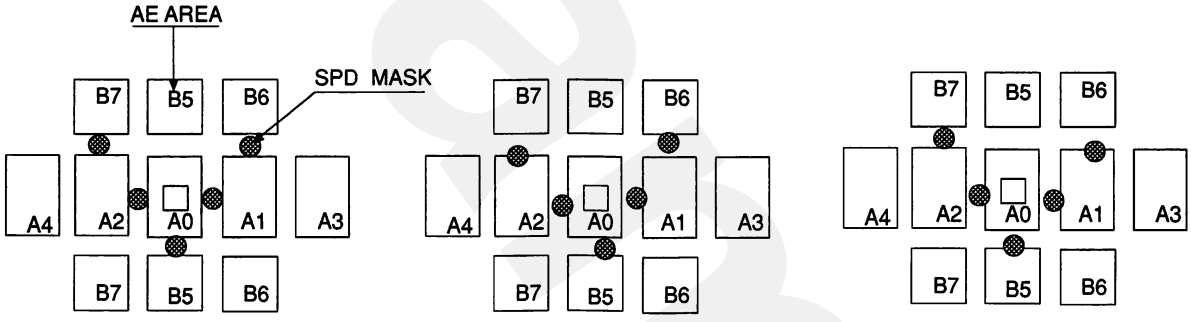
3) Position the SPD so that the EV values on A1 and A2 and B6 and B7, fall within ± 1 EV.

5) After positioning the SPD, fix the SPD holder with instant adhesive agent.



Correct Placement

Incorrect Placement



Position the SPD so that the EV values on A1 and A2 and B6 and B7, fall within ± 1 EV.

Fig 3-90 SPC Positioning

4.7 AE Accuracy Adjustment

PURPOSE:

To adjust the output level, and gain, of SPD.

STANDARD:

Light source	Film Plane Illumination
EV9	0 ± 0.5 EV
EV12	0 ± 0.5 EV
EV15	0 ± 0.5 EV

TOOLS:

Personal computer
RS-232C cable
HS-I/F
Regulated DC power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000
EF50 mm f/1.8 production lens

PREPARATION:

1) Start adjustment program, connect the camera to the computer through the HS-I/F , and select (F2) AE Menu screen.

2) Attach the EF50 mm f/1.8 production lens to the camera and direct it toward the light source of the EF-8000 with the camera's eyepiece shielded from light so that it will not be affected by external light.

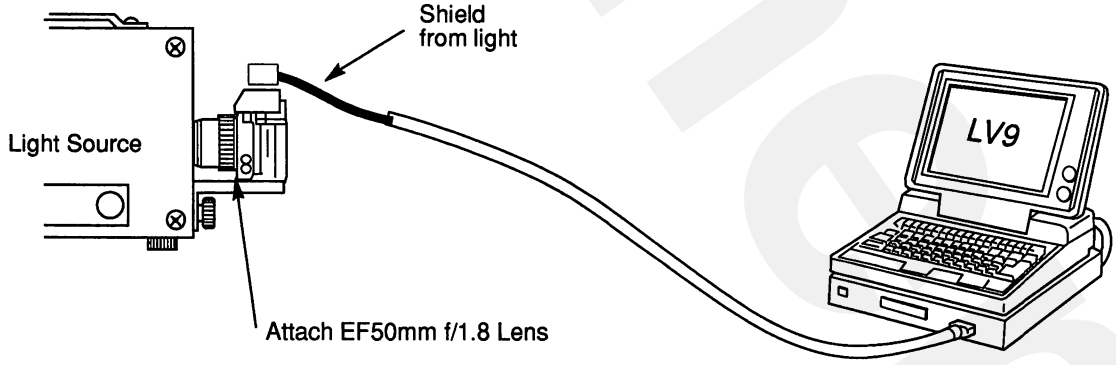


Fig 3-91 AE Accuracy Adjustment

ADJUSTMENT:

1) Select F2 AE Accuracy Adjustment on the AE menu screen.
2) Expose the camera to a brightness of LV9 and press the Return key.

AEM1

AE Accuracy Adjustment

Set EV Tester as follows:

LV9

K : 12.5"
ISO : 100"

After setting, press RETURN.
Press SPACE bar to return to AE MENU screen.

3) Expose the camera to a brightness of LV15 and press the Return key.

AEM2

AE Accuracy Adjustment

Set EV Tester as follows:

LV15

K : 12.5
ISO : 100

After setting, press RETURN.

4) After completion of the communications, check whether AE accuracy conforms to the standard at LV9, LV12, and LV15 in the AE Program mode with evaluative metering.
If not, press the Space bar and do the adjustment again.

AEM3

AE Accuracy Adjustment

Limit +/-0.5EV

Set Evaluative metering and measure film plane illumination.

If OK, press RETURN.
If N.G., press SPACE bar and readjust.

4.8 AE Shift

PURPOSE:

AE shift is intended to shift the center exposure according to the users preference. Whereas AE accuracy adjustment adjusts the output level, and gain, of the SPD, AE shift adjusts only the level. AE accuracy adjustment clears and previously set AE shift.

TOOLS:

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000
EF50 mm f/1.8 production lens

PREPARATION:

1) Start adjustment program, connect the camera to the computer through the HS-I/F , and select (F2) AE Menu screen.
2) Attach the EF50 mm f/1.8 production lens to the camera and direct it toward the light source of the EF-8000 with the camera's eyepiece shielded from light so that it will not be affected by external light.

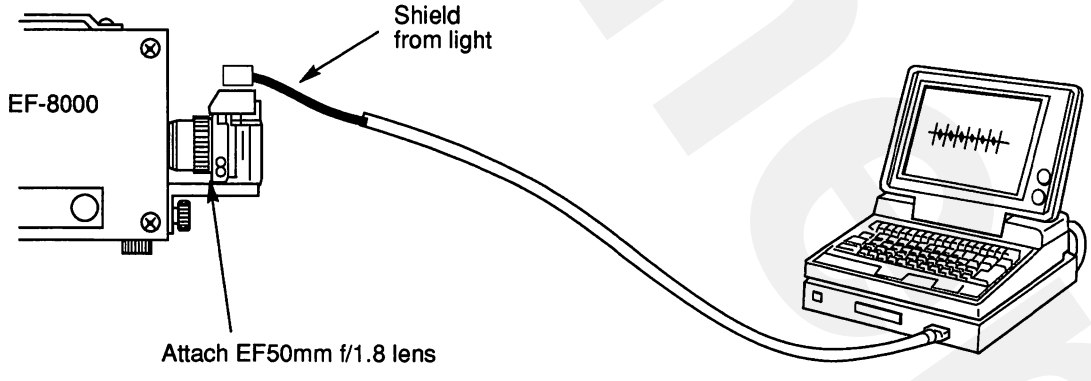
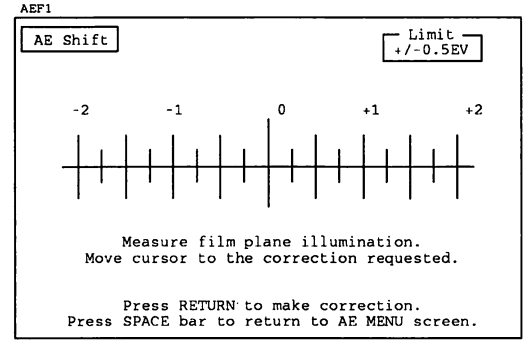


Fig 3-92 AE Shift

ADJUSTMENT:

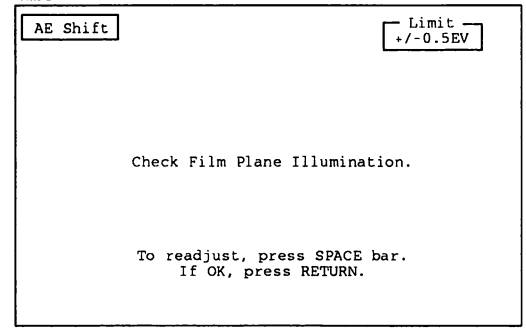
1) Select F3 AE Shift on the AE menu screen.
2) Move the cursor to select the desired amount of shift.Exposure can be incremented in about 0.25 stops. For example, to shift exposure by +1 stop, press the cursor keys to move the cursor to the position of +1.

AEF1



3) After completion of the communications, check exposure at LV9, LV12, and LV15

AEF2



4.9 AF Accuracy Adjustment

AF Accuracy adjustment must always be made when replacing the AF unit.

AF Accuracy adjustment is necessary if it is impossible to store or transfer camera data before replacing the main flex.Otherwise, this adjustment is unnecessary.

PURPOSE:

AGC adjustment:	Adjusting the gain to insure that the BASIS output waveform is sufficient but does not saturate.
DARK adjustment:	Correcting minute electric current that BASIS (AF sensor) will generate even in the absence of light (dark current).
Shading adjustment:	Compensates for bit-by-bit variations in the sensor output.

CAUTION AF Accuracy adjustment must always be preceded by AF sensor positioning. There must also be no dirt adhering to the main mirror, sub mirror, or light receiving section of the AF sensor.

TOOLS:

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000
EF50 mm f/1.8 production lens
Light
Tripod
Dark bag
Charts (The EOS5 AGC chart is used

PREPARATION:

1) Set the camera and AGC Chart as indicated.
2) Start adjustment program, connect the camera to the computer through the HS-I/F , and select (F3) AF Menu screen.

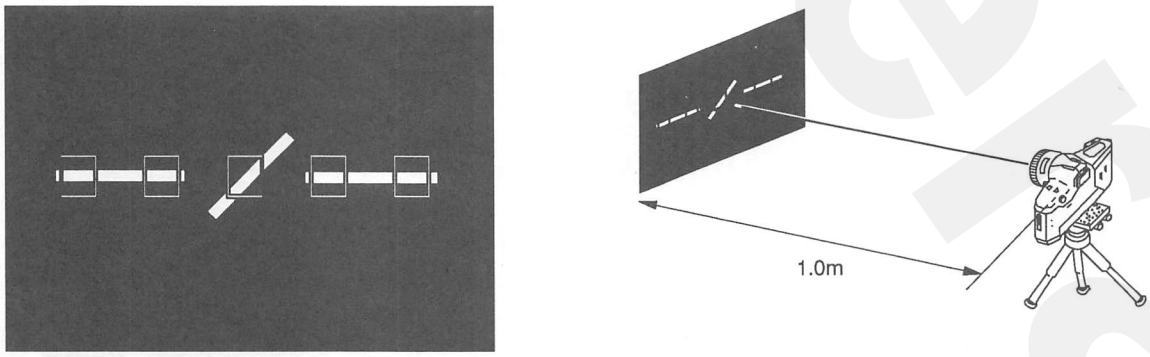
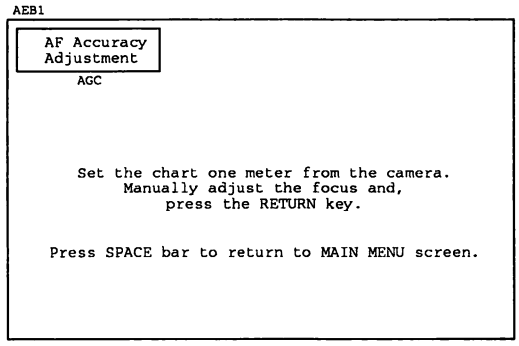
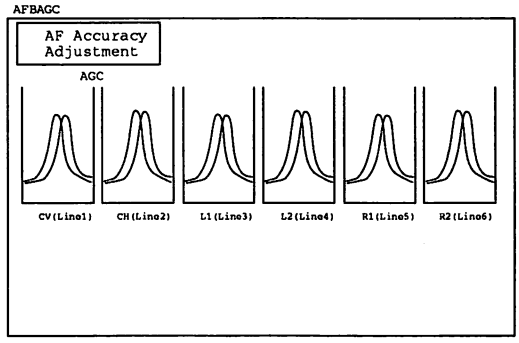


Fig 3-93 AGC Adjustment

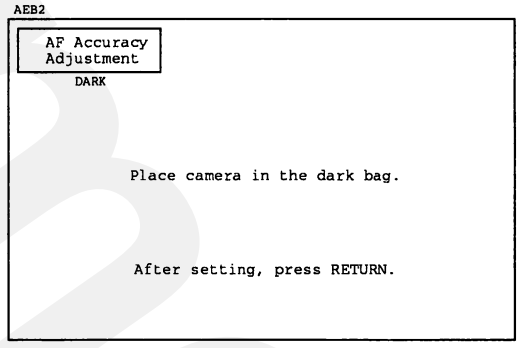
ADJUSTMENT:

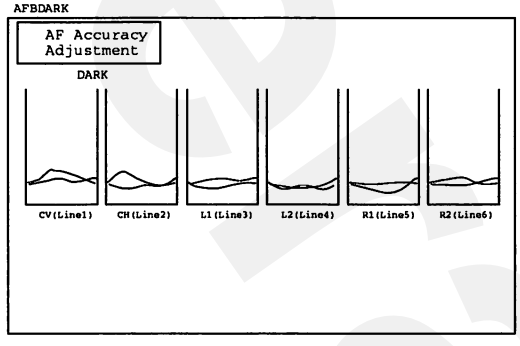
1) Call up the AF Accuracy Adjustment. The screen at the right appears. Insure setting is correct and press Return. The AGC will be adjusted.





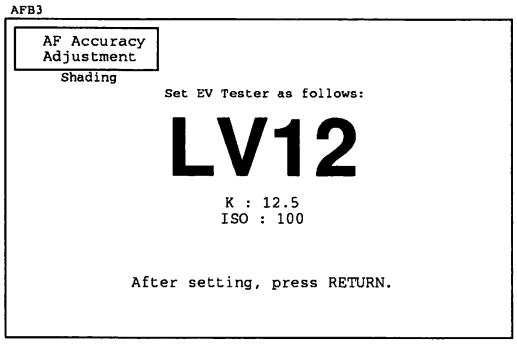
2) When AGC adjustment is complete this screen will appear. Place the camera in a dark bag and press Return.The dark adjustment will be completed.





3) After communications are complete, the screen at the right appears.Place the camera on the light source set to LV12 and press RETURN again.

This completes this adjustment.The AF MENU screen will reappear.



4.10. AF Focus Adjustment

PURPOSE:

The purpose of the AF focus adjustment is to match the AF sensor focus with the film focus. Before this adjustment is made, the flange to focal plane distance (FFD) at the center of the pressure plate must be measured.

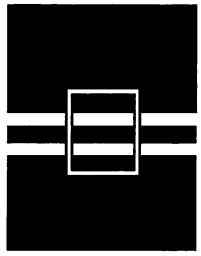
CAUTION The main mirror, sub mirror, and light receiving section of the AF sensor must be clean when making this adjustment.

TOOLS:

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000
EF50 mm f/1.8 tool lens
Light
Tripod
Dial gage set (44.14 mm gage or 42.14+2 mm adapter)

PREPARATION:

1) If the FFD was not recorded during the mechanical adjustments, set the camera at bulb and measure the FFD at the center of the pressure plate with a 44.14 mm gage (or 42.14+2 mm adapter).Record the reading.
2) Select the AF Adjustment Menu.
3) Set the camera and chart as indicated for AF Focus adjustment.



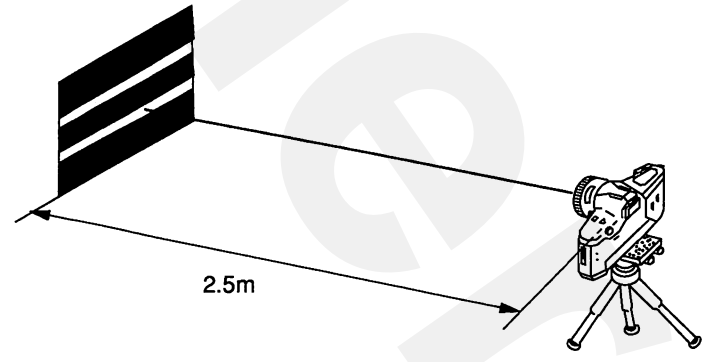
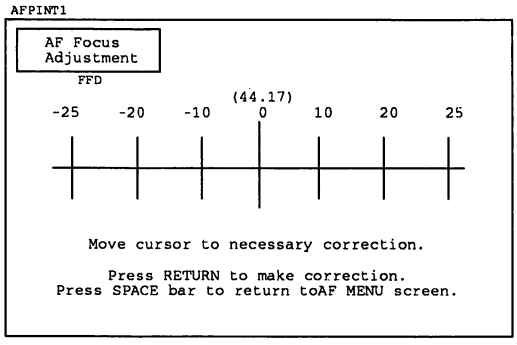


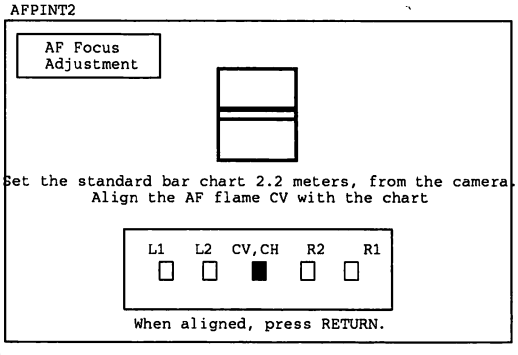
Fig 3-94 AF Focus Adjustment

ADJUSTMENT:

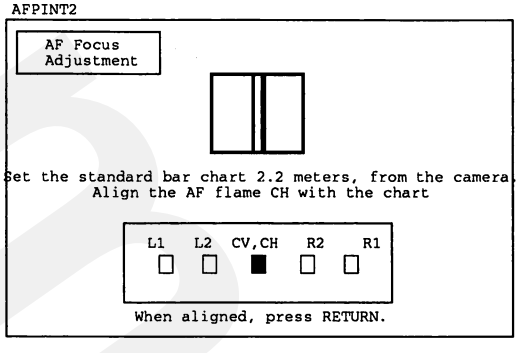
1) Select F2 AF Focus Adjustment on the AF menu screen to display the screen shown on the right. Move the cursor to the flange to focal plane distance (FFD) measured earlier.



2) Press the Return key to display the screen shown at the right. Place the camera 2.5m ±10 mm away from the AF reference chart, set the lens to infinity, and then manually focus it to the scribed 2.5m line. Align the center autofocus frame (CVCH) of the finder with the bars of the AF reference chart and press the Return key.

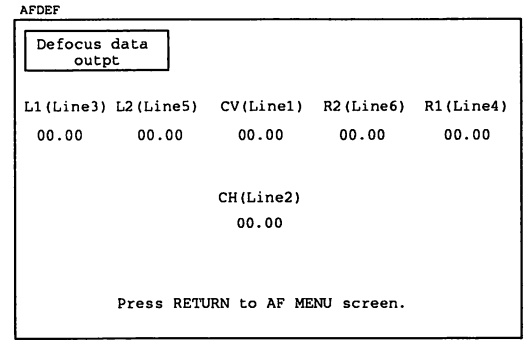


3) Repeat for the other focus areas L1 - R1. When adjustment is complete, return to the AF Menu.



When using a tool lens with a focus variation label reading other than 0.00 proceed as follows.

Select F4 Defocus Data Output on the AF menu screen to display the screen shown at the right. Turn the focusing ring of the lens from the infinity end while observing the DEFOCUS indication. Stop the focusing ring when the DEFOCUS indication reaches a value which is equal to and which has an opposite sign to the variation marked on the tool lens. (See that GAIN is set to L.)



When the focusing ring is overturned, be sure to set it back to the infinity end and then turn it again.

(Example) When the defocus is +0.03, stop the focusing ring when the DEFOCUS indication reaches -0.03.

4) Press the Return key to return to the AF menu screen.

5) Press the F2 AF Focus Adjustment and repeat steps 1) through 3) to make AF focus adjustment again.

4.11 AF Sensor Dirt Check

PURPOSE:

To check the BASIS data output which can show if the sensor is dirty.

TOOLS:

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
EF-8000

PREPARATION:

Set the camera at the light source without a lens attached to the camera and the brightness of the light source set to LV12. (Be sure to shield the eyepiece from external light.)

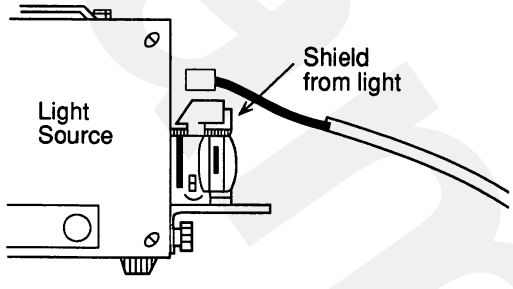
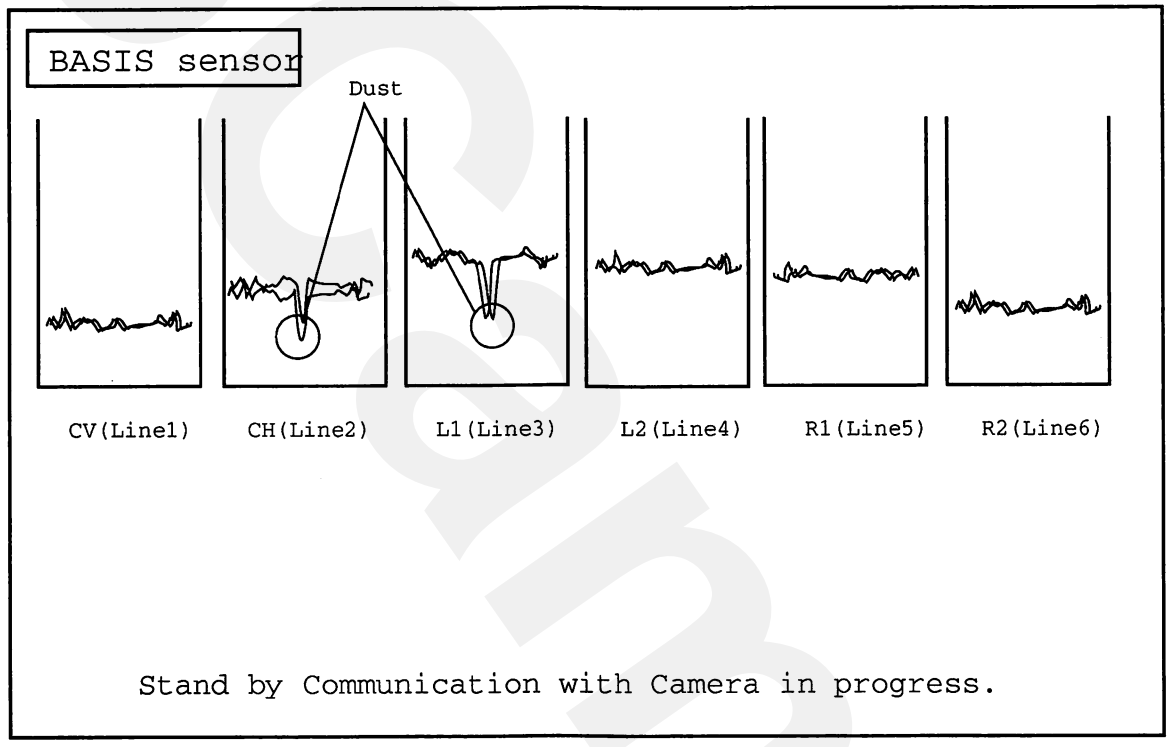


Fig 3-95 AF Sensor Dust Check

Select F3 Basis Sensor Data Output on the AF menu screen to display the image data.

Check whether the output waveform is linear. If not, dust may be on the AF sensor.

AFBASIS



4.12 Defocus Data Check

PURPOSE:

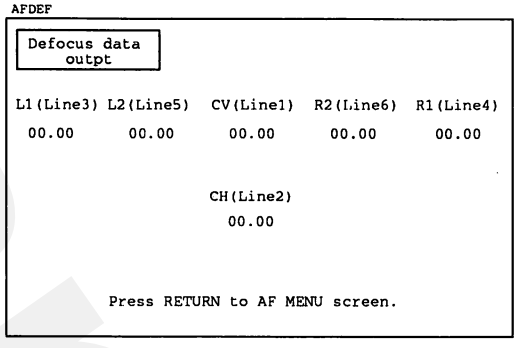
This procedure is used to check the AF focus adjustment.

TOOLS:

Personal computer
RS-232C cable
HS-I/F
Regulated DC power supply
Tool battery
Adjustment software (stored on a work disk)
Light
Tripod
AF reference chart, 16 mm bar chart, and 45° chart

CONFIRMATION PROCEDURE:

1) Set the charts and camera as indicated in AF Focus Adjustment (Section 4.10)
2) Select the F3 AF Adjustment Menu.
3) Focus with AF on the chart, and then switch the lens to manual.
4) Select F4 Defocus Data Output. Switch to the various charts .Focus with AF on each chart, and check that the results are within the listed limits.



	AF Reference Chart			16mm Bar Chart			45 Bar Chart		
	CV	CH	L&R	CV	CH	L&R	CV	CH	L&R
50mm f/1.8 Tool Lens	± 0.030	± 0.030	± 0.039	± 0.030	± 0.060	± 0.080	± 0.070	± 0.090	± 0.130

Cumulative Releases	Defocus Standard
Below 10,000 releases	As above
10,001 to 40,000 releases	1.2 times above tolerances
40,001 to 70,000 releases	1.4 times above tolerances
70,001 to 100,000 releases	1.6 times above tolerances

Table 3-2 Defocus Standards

4.13 AF Focus Shift

PURPOSE:

To correct minute AF defocus that many result from use of a lens with very shallow depth of focus, such as EF 50 f/1.0 L and EF 86 f/1.2 L.

AF focus shift must never be used to correct defocus caused by any lenses other than EF 50 f/1.0 L or EF 85 f/1.2 L.

MINUTE DEFOCUS:

EOS Series cameras and lenses are designed so that their defocus does not exceed standard values of 0+0.03 mm and 0+0.02 mm respectively. EF50 f/1.0 L and EF85 f/1.2 L also conform to these standards. However, both these lenses have very shallow depth of focus. Therefore, when used together with a camera whose defocus has the same sign, the lenses may exceed the acceptable depth of focus even if the defocus of both the lenses and the camera conform to the standards. In this event, the user of the lenses may complain of unsharp focus.

Example) Unsatisfactory combination of camera and lens (Camera: 0+0.03 mm Lens: 0+0.02 mm)

AF focus shift is intended to correct total AF defocus resulting from use of a particular camera in combination with a lens with a shallow depth of focus. Therefore, AF focus shift must always be made on that camera and lens.

AF focus shift must also be made after adjusting both the camera and lens.

A lens with a shallow depth of focus may prove in focus without AF focus shift despite is user's complaint. This phenomenon can be attributed to the following:

(1) Variations in range measurement that result from shooting of an object difficult to focus.

(2) Shift of an object in the period between turning on of SW2 and exposure.

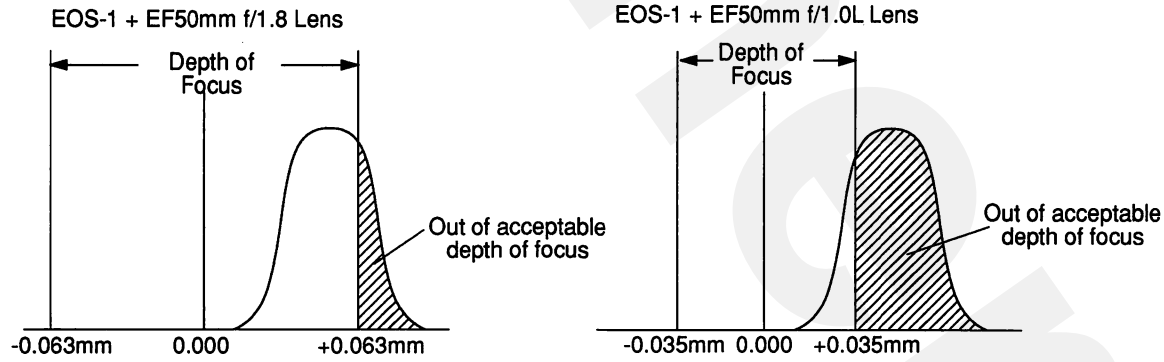


Fig 3-96 Minute Defocus

TOOLS:

Personal computer
RS-232C cable
HS-I/F
DC regulated power supply
Tool battery
Adjustment software (stored on a work disk)
Light
Tripod
AF reference chart

PREPARATION:

1) Set lighting equipment etc. for AF Focus Adjustment.
2) Select the F3 AF Adjustment Menu.
3) Set the AF reference chart 2.5m ± 10mm from the camera.

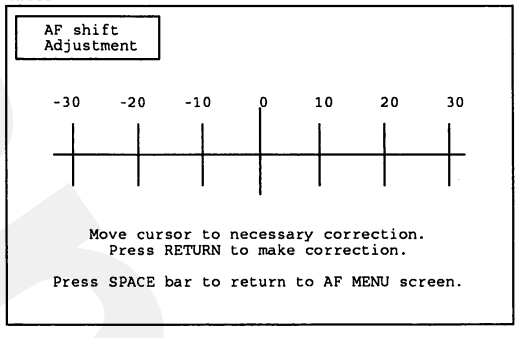
ADJUSTMENT:

1) Select AF Focus Shift on the AF menu screen to display this screen. Move the cursor to the position of -30 and press Return.
2) Attach the lens and press SW1 to focus and shoot the object ten times (with the aperture fully open).
3) After shooting, confirm that the screen shown at the right appears. Press the Space key to return to the screen displayed in step 1). Move the cursor to the position of +30 and press Return to reset the AF focus shift to zero.

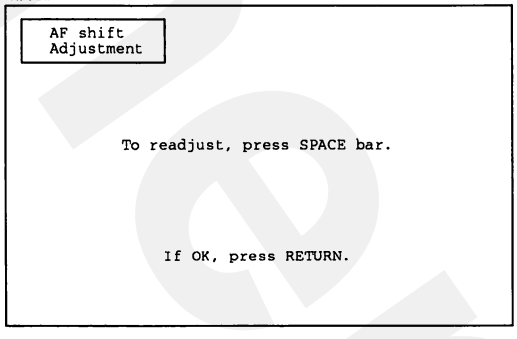
   Shoot the object ten times in the same manner as in step 2).
4) Press the Space key to return to the screen displayed in step 1). Move the cursor to the position of +30 and press the Return key. Shoot the object ten times as in step 2).
5) Press the Space key to return to the screen displayed in step 1). Move the cursor to the position of -30 and press Return to reset the AF focus shift amount to zero. Review the results obtain-ed from shooting on the screen displayed in step 1) and select the optimum one.

   Press the Return key to complete AF focus shift.

AFPS1



AFPS2



<MEMO>

4.14 FLASH ADJUSTMENT

If the main flex or TTL (OTF) sensor is replaced, this adjustment is mandatory. If this adjustment is done, the shutter adjustment must be done after it.

PURPOSE:

To adjust the output level and gain of the flash sensor for correct flash film plane exposure.

STANDARD:

Average ±1EV or less

TOOLS:

Personal computer
RS-232C cable
HS-I/F
DC stable power
Tool battery
Adjustment program (stored on a work disk)
EF-8000 (Direct flash sensor DIR201)
EF50 mm f/1.8 production lens
Speedlite (300 EZ, 420 EZ, or 430 EZ)
Tripod

Ambient light should be under EV3. If a dark room is not available, establish a test area with stable conditions and no highly reflective objects. Test about ten cameras from stock and establish an average.

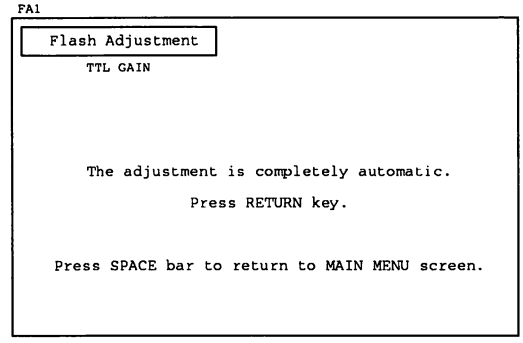
PREPARATION:

1) Run the adjustment software, and select F4 Flash Adjustment.
2) Fix the camera on the tripod and attach the EF50 mm f/1.8 production lens and speedlite to the camera.Set the camera to ISO 100, shutter to 1/250, and aperture to about f/5.6. Set the speedlite in TTL mode and position the camera 2m ± 10mm away from the reflector.

ADJUSTMENT:

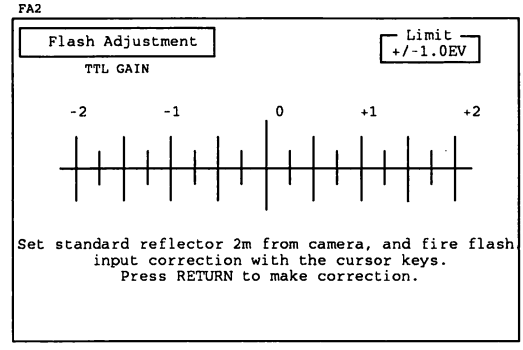
1) Gain adjustment is automatic. Press Return.

FA1



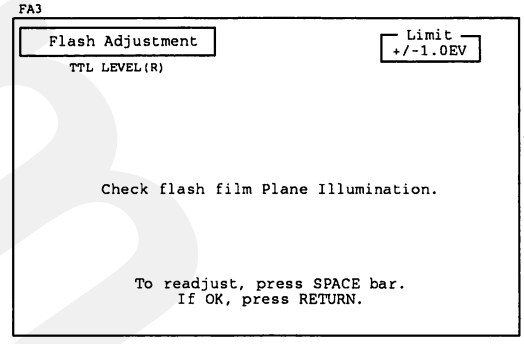
2) After the gain adjustment, the level of the right sensor is adjusted. Measure the flash accuracy of the camera several times and use the cursor keys to move the cursor to the position of a desired value for correcting the measured flash accuracy. Press the Return key.

FA2



3) Check the flash level in accordance with the directions displayed on the screen. If the flash accuracy is acceptable, press the Return key to go to the next sensor automatically. If flash level is not correct, press the Space bar and readjust.

FA3



4) Cary out the adjustment for the center and left sensor using the same method as the right sensor.

4.15 INHIBIT VOLTAGE ADJUSTMENT

Inhibit voltage check must always be made when replacing the main flex.

PURPOSE:

To insure the operating accuracy of individual parts of the camera by setting the minimum voltage for camera operation.

TOOLS:

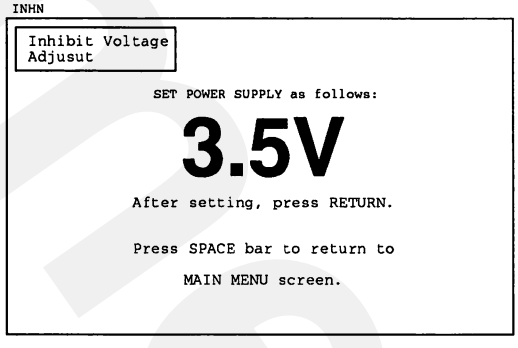
Personal computer
RS-232C cable
HS-I/F
DC stable power
Tool battery:
CY9-1101-000 Kit (Normal type)
CY9-1104-000 Kit (Power Drive Booster type)
Adjustment program (stored on a work disk)
EF50 mm f/1.8 production lens
Digital tester

PREPARATION:

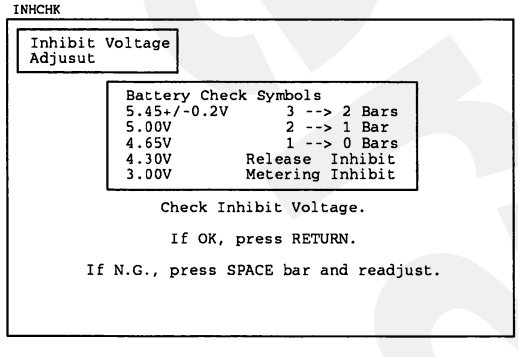
Start adjustment program, connect the camera to the personal computer, and select F5 Inhibit Voltage Adjustment on the menu screen. Set the camera as required and install the required tool battery.

ADJUSTMENT:

1) Set supply voltage as indicated on the screen and press the Return key.



2) Check the inhibit voltage as indicated on the screen starting with the highest voltage and work downward.



4.16 Superimpose Screen (SI) Brightness Adjustment

SI screen brightness must always be checked when replacing the main flex. This adjustment can only be done after the AE Accuracy adjustment is finished.

PURPOSE:

To adjust the SI screen brightness to the appropriate level.

TOOLS:

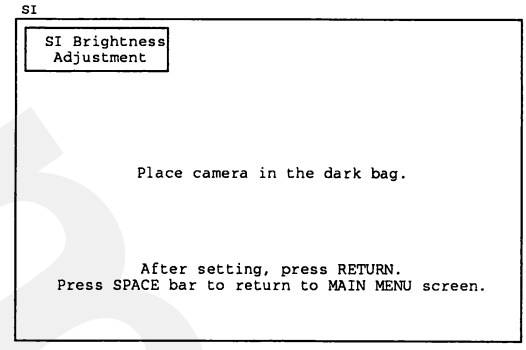
Personal computer
RS-232C cable
HS-I/F
DC stable power
Tool battery
Adjustment program (stored on a work disk)
Dark Bag

PREPARATION:

Start adjustment program, connect the camera to the personal computer, and select F6 SI Brightness Adjustment.

ADJUSTMENT:

1) As indicated on the screen, place the camera in the dark bag and press Return. The adjustment is automatic.
2) Select each focus mark and check the brightness to determine if the adjustment is correct. Select all focus marks to check for even brightness on all marks.



4.17 SELF CHECK

Self check can be classified into the following types:

PREPARATION:

Start adjustment program, connect the camera to the personal computer, and select F7Self Check on the menu screen to display the self check menu screen. Select the required screen.

F1. SW check:
S2. LCD check:

SW CHECK:

Press the F1 key to display the screen. Any switch whose state fails to coincide with that displayed on this screen is suspected of being faulty.Press the Return key to return to the self check menu screen.

SWCHK

SW Check

AE(MODE)	OFF	SW1	OFF	MULT(CF)	OFF
AF	OFF	SW2	OFF	BC	OFF
MES	OFF	AEL	OFF	DRV	OFF
		FPSEL	OFF	CLR	OFF
LOCK(MAIN)	OFF	LAMP	OFF		
REW	OFF	COMP	OFF	DX	
DLK	OFF			ISO=	
		SPDN	OFF	EXP=	
BP	CLOSE				
PTIN	YES				
MIF	NO				

Press RETURN to go to SELF CHECK MENU screen.

LCD CHECK:

Press the F2 key to display this screen. Any LCD which fails to come on at this time is suspected of being faulty.Press the Return key to return to the self check menu screen.

LCDCHK

LCD check

Check that all LCD segments are lit.Check Self-timer LED, Finder Information, beeper, etc.
If some segments are not lit, LCD elastic connector or cracks in LCD are probable causes.

Press RETURN to go to SELF CHECK MENU screen.

4.18 DATA TRANSFER

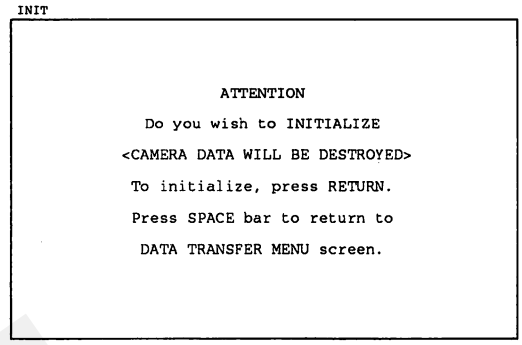
The data transfer menu consist of five operations:

1. **Initialization:** Transferring default data to the camera and setting the model designation if it was impossible to store camera data before replacing the main flex.
2. **Storage:** Storing camera data in the PC.
3. **Transfer:** Transferring stored camera data back to the camera.
4. **Temperature compensation:** Storing temperature corrections in the memory of the camera to correct measuring errors made by the internal thermometer of the camera. This data is used in the AE and AF sequences.)
5. **Counter Reset:** This resets the internal frame counter to zero.

Initialization

PROCEDURE:

Confirm that the screen shown appears. When choosing to initialize camera data, press the Return key. Otherwise, press the Space key to return to the data transfer menu screen.

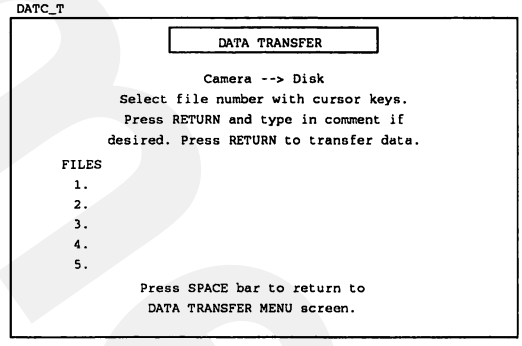


Storage

PROCEDURE:

Press the F2 key to display the screen shown at the right. Press the cursor keys to move the cursor to the file position in which camera data is to be stored. Press the Return key to move the cursor to the comment column and enter your comment. Then, press the Return key again to return to the data transfer menu screen.

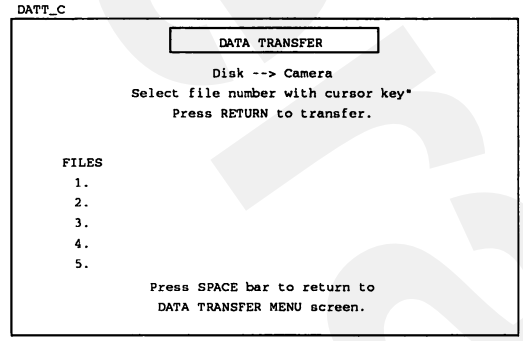
- One comment can contain a maximum of 10 alphanumeric characters.



Transfer

PROCEDURE:

Press the F3 key to display the screen shown at the right. Press the cursor keys to move the cursor to the position of a file which contains the camera data to be transferred to camera.Press the Return key to transfer the data back to the camera. After communications are completed, the data transfer menu screen will reappear.



Temperature Compensation

PROCEDURE:

Press the F4 key to display this screen, showing the room temperature measured by the HS-I/F and the temperature measured by the camera. Check whether there is a difference of more than 3°C between the two.

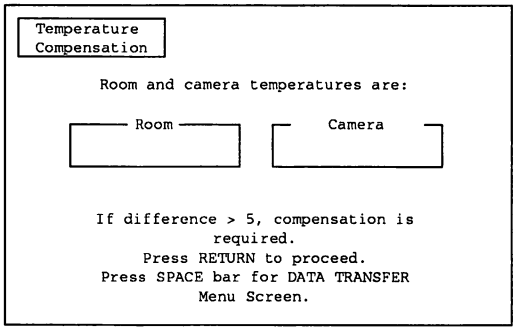
If so, press the Return key to display the next screen showing the room temperature measured by HS-I/F. Check whether the room temperature is normal. If so, press the Return key to return to the data transfer menu screen.

If not, press the Space key to move the cursor to the position of the room temperature. Then, press the numeric keys to enter actual room temperature measured with a thermometer.

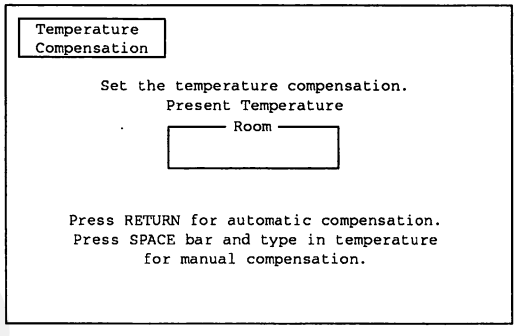
Press the Return key to display the next screen , showing the room temperature measured by HS-I/F and the temperature measured by the camera. Check whether there is a difference of more than 3°C between the two.

If so, press the Space key to correct the room temperature again. If not, press the Return key to the data transfer menu screen\

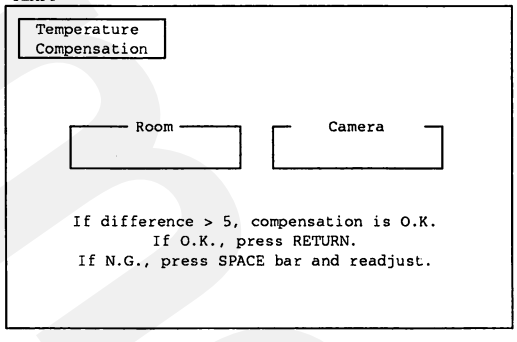
TEMP1



TEMP2



TEMP3

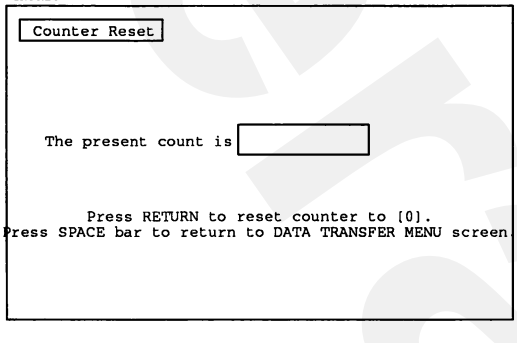


Counter Resetting

PROCEDURE:

When F5 Counter Reset is selected, this screen appears.
Press Return to reset the counter to zero.
Press the Space bar to return to the data transfer menu screen without resetting the counter.

CNTRST



Part 4

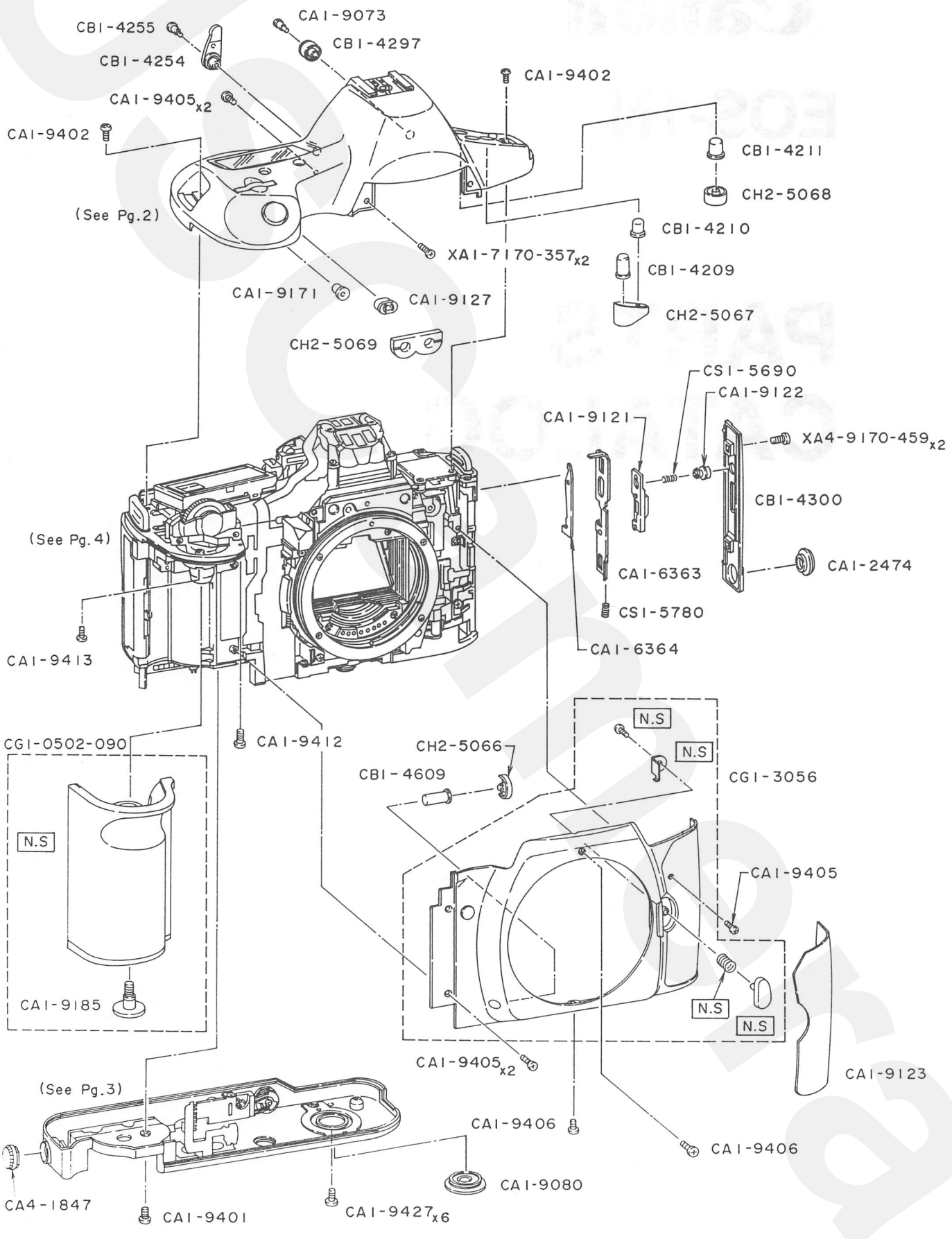
Parts Catalog

Canon

EOS-1N

PARTS CATALOG

CANON EOS-1N

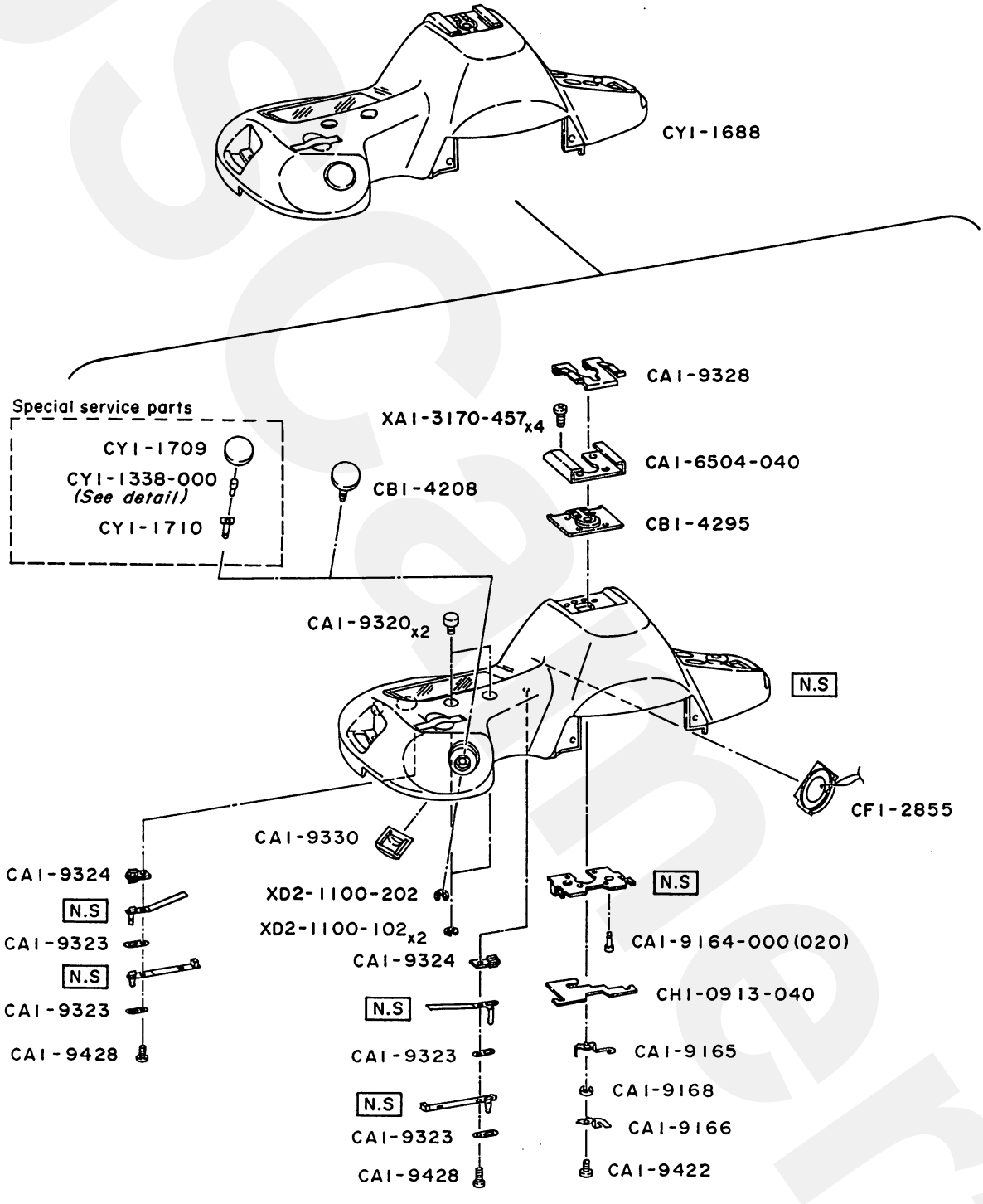

CB1-4255
CA1-9073
CB1-4297
CB1-4254
CA1-9405x2
CA1-9402
CA1-9402
CB1-4211
CH2-5068
(See Pg.2)
CB1-4210
XA1-7170-357x2
CB1-4209
CA1-9171
CA1-9127
CH2-5067
CH2-5069
CS1-5690
CA1-9122
CA1-9121
XA4-9170-459x2
CB1-4300
(See Pg.4)
CA1-6363
CA1-2474
CS1-5780
CA1-9413
CA1-6364
CA1-9412
CG1-0502-090
CH2-5066
N.S
N.S
CB1-4609
CG1-3056
N.S
CA1-9405
CA1-9185
N.S
N.S
CA1-9405x2
CA1-9123
(See Pg.3)
CA1-9406
CA1-9406
CA1-9080
CA4-1847
CA1-9401
CA1-9427x6

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-2474-000	A	1	CAP,P.C TERMINAL	P.Cターミナルキャップ
	CA1-6363-000	E	1	HOOK	フック
	CA1-6364-000	E	1	LEVER,LOCK	ロックレバー
	CA1-9073-000	D	1	SHAFT,EYEPIECE ADJUSTING	視度調ダイアル軸
	CA1-9080-000	D	1	COVER, COUPLER	カプラーカバー
	CA1-9121-000	D	1	LEVER,LATCH	ラチェットレバー
	CA1-9122-000	E	1	BUTTON,LATCH	ラッチロックボタン
	CA1-9123-000	C	1	COVER,FRONT PANEL	エプロンカバー
	CA1-9127-000	E	1	BUTTON,AE LOCK	AEロックボタン
	CA1-9171-000	E	1	BUTTON,AV	AVボタン
	CA1-9185-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9401-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9402-000	-	2	SCREW, CROSS RECESS PH	
	CA1-9405-000	-	5	SCREW, CROSS RECESS PH	
	CA1-9406-000	-	2	SCREW, CROSS RECESS PH	
	CA1-9412-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9413-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9427-000	-	6	SCREW, CROSS RECESS PH	
	CA4-1847-000	D	1	CAP, TERMINAL	リモコンキャップ
*	CB1-4209-000	C	1	BUTTON,MODE1	モード1ボタン
*	CB1-4210-000	C	1	BUTTON,MODE2	モード2ボタン
*	CB1-4211-000	C	1	BUTTON,MODE3	モード3ボタン
*	CB1-4254-000	D	1	LEVER,EYEPIECE SHUTTER	アイピースシャッターレバー
*	CB1-4255-000	-	1	SCREW, CROSS RECESS PH	
*	CB1-4297-000	C	1	DIAL,EYEPIECE ADJUSTING	視度調ダイアル
*	CB1-4300-000	D	1	COVER,LATCH	ラッチカバー
*	CB1-4609-000	D	1	BUTTON,STOP DOWN	深度確認ボタン
*	CG1-0502-090	C	1	GRIP UNIT	グリップユニット
*	CG1-3056-000	C	1	FRONT COVER UNIT	エプロンユニット
	CH2-5066-000	D	1	SWITCH,STOP-DOWN	ストップダウンスイッチ
	CH2-5067-000	D	1	SWITCH,MODE	モードスイッチ
	CH2-5068-000	D	1	SWITCH,METERING MODE	モードスイッチゴム
	CH2-5069-000	D	1	SWITCH,AE LOCK	モードスイッチゴム
	CS1-5690-000	D	1	SPRING,COIL	コイルバネ
	CS1-5780-000	D	1	SPRING,COIL	コイルバネ
	XA1-7170-357	-	2	SCREW, CROSS RECESS PH	
	XA4-9170-459	-	2	SCREW, CROSS RECESS PH	

CANON EOS-1N



CY1-1338-000 detail ⊛STANDARD

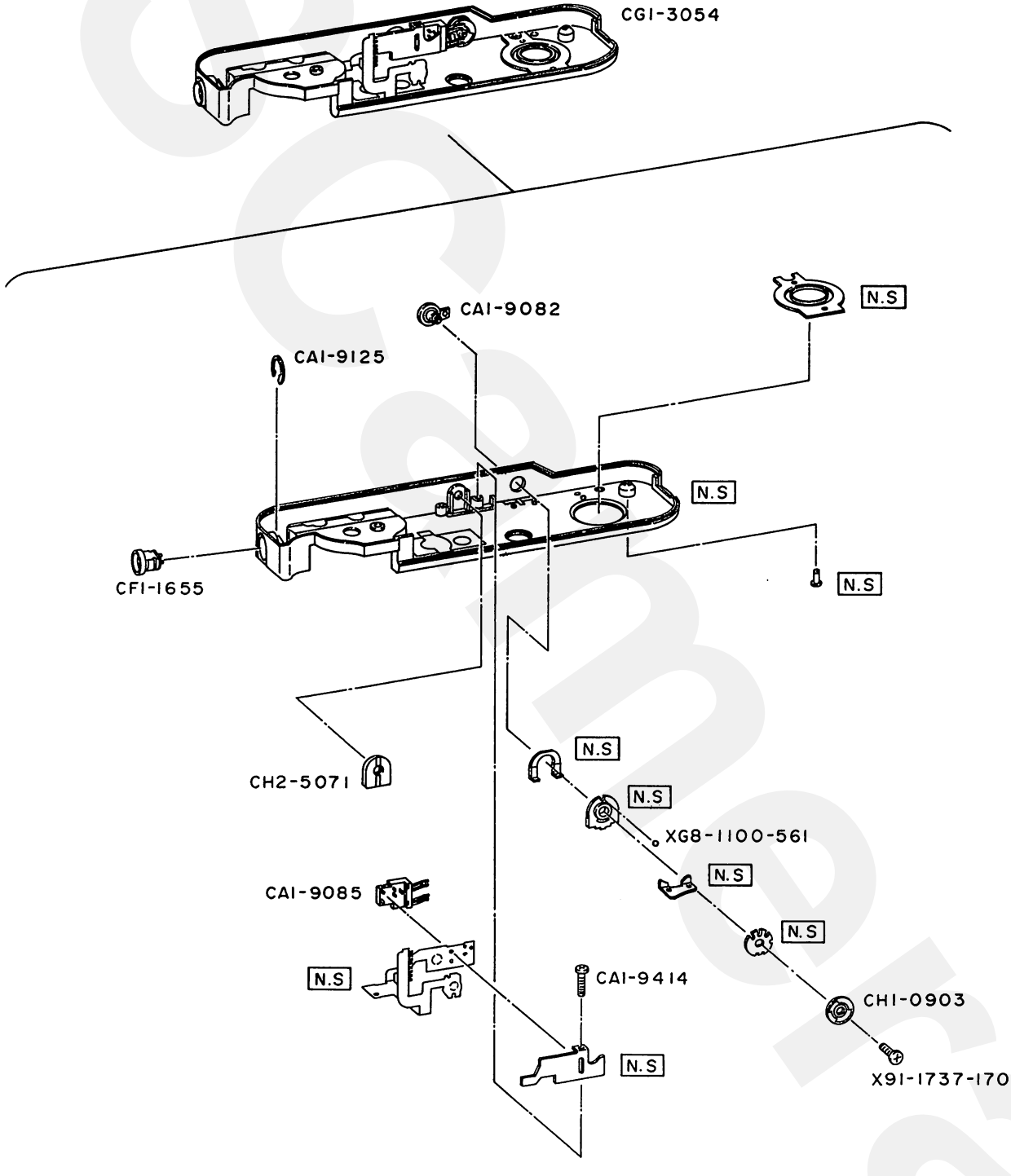
	A	B	SIZE	A	B	SIZE	A	B	SIZE	A	B	SIZE
A B	1.0mm	2.8mm	(001)	1.5mm	2.8mm	(004)	2.0mm	2.8mm	(007)	2.5mm	2.8mm	(010)
		3.0mm	(002)		3.0mm	(005)⊛		3.0mm	(008)		3.0mm	(011)
		3.2mm	(003)		3.2mm	(006)		3.2mm	(009)		3.2mm	(012)

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-6504-040	D	1	SHOE,ACCESSORY	アクセサリーシュー
	CA1-9164-000(020)	E	1	PIN,FLASH	ストロボピン
	CA1-9165-000	D	1	CONTACT,SHOCK PREVENTION	ビリ防止接片
	CA1-9166-000	D	1	CONTACT,X	X接片
	CA1-9168-000	D	1	SPACER,INSULATING	ビリ防止スペーサー
	CA1-9320-000	C	2	BUTTON,LAMP	ランプボタン
	CA1-9323-000	E	4	SPACER,L	Lスペーサー
	CA1-9324-000	E	2	BASE,CONTACT	接片台
	CA1-9328-000	C	1	SPRING,PLATE	板スプリング
	CA1-9330-000	E	1	CAP,LIGHT SHIELD	遮光キャップ
	CA1-9422-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9428-000	-	2	SCREW, CROSS RECESS PH	
*	CB1-4208-000	C	1	BUTTON,RELEASE	レリーズボタン
	CB1-4295-000	E	1	BASE,PLATE	アクシュー台
*	CF1-2855-000	E	1	BEEPER	ビーパー
*	CH1-0913-040	E	1	TOP FLEX	トップカバーフレキ
	CY1-1338-000(XXX)	D	1	SHAFT,ADJUSTING	調整軸
*	CY1-1688-000	C	1	TOP COVER UNIT	上蓋ユニット
*	CY1-1709-000	C	1	BUTTON,RELEASE	レリーズボタン
*	CY1-1710-000	D	1	SHAFT,RELEASE BUTTON	レリーズボタン軸
	XA1-3170-457	-	4	SCREW, CROSS RECESS ,FCH	
	XD2-1100-102	-	2	E RING	
	XD2-1100-202	-	1	WASHER,RETAINING	

CANON EOS-1N

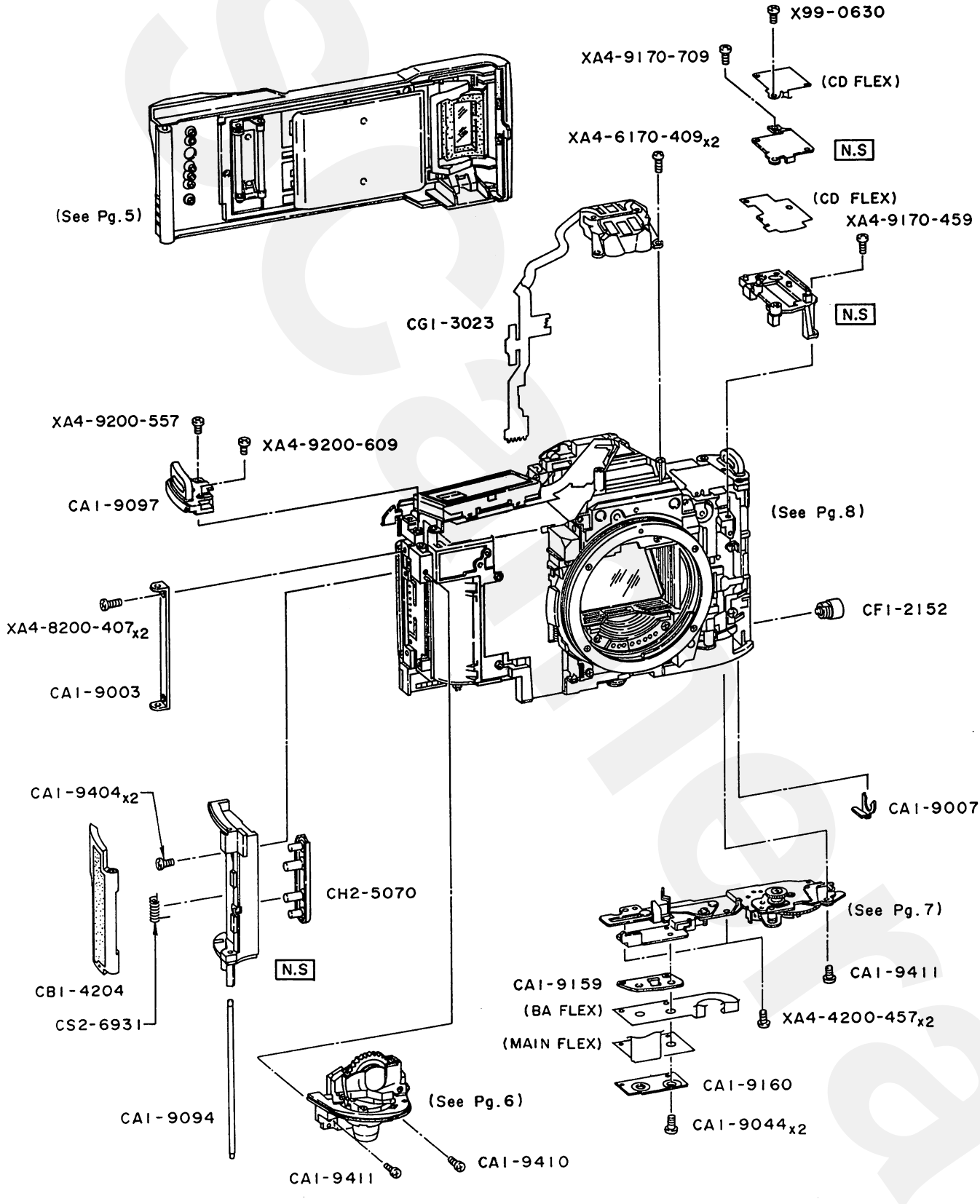


PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-9082-000	C	1	LEVER,MAIN SWITCH	メインスイッチカバー
	CA1-9085-000	D	1	CONTACT,MAIN SWITCH	メインスイッチ接点
	CA1-9125-000	C	1	RING,C	Cリング
	CA1-9414-000	-	1	SCREW, CROSS RECESS PH	
	CF1-1655-000	C	1	JACK,REMOTE CONTROL	リモコンジャック
*	CG1-3054-000	C	1	BASEPLATE UNIT	底蓋ユニット
	CH1-0903-000	D	1	BOARD,MAIN SWITCH	メインスイッチ基板
	CH2-5071-000	E	1	SWITCH , REWIND	巻き戻しスイッチゴム
	X91-1737-170	-	1	SCREW, CROSS RECESS PH	
	XG8-1100-561	-	1	BALL,STEEL	ボール

CANON EOS-1N

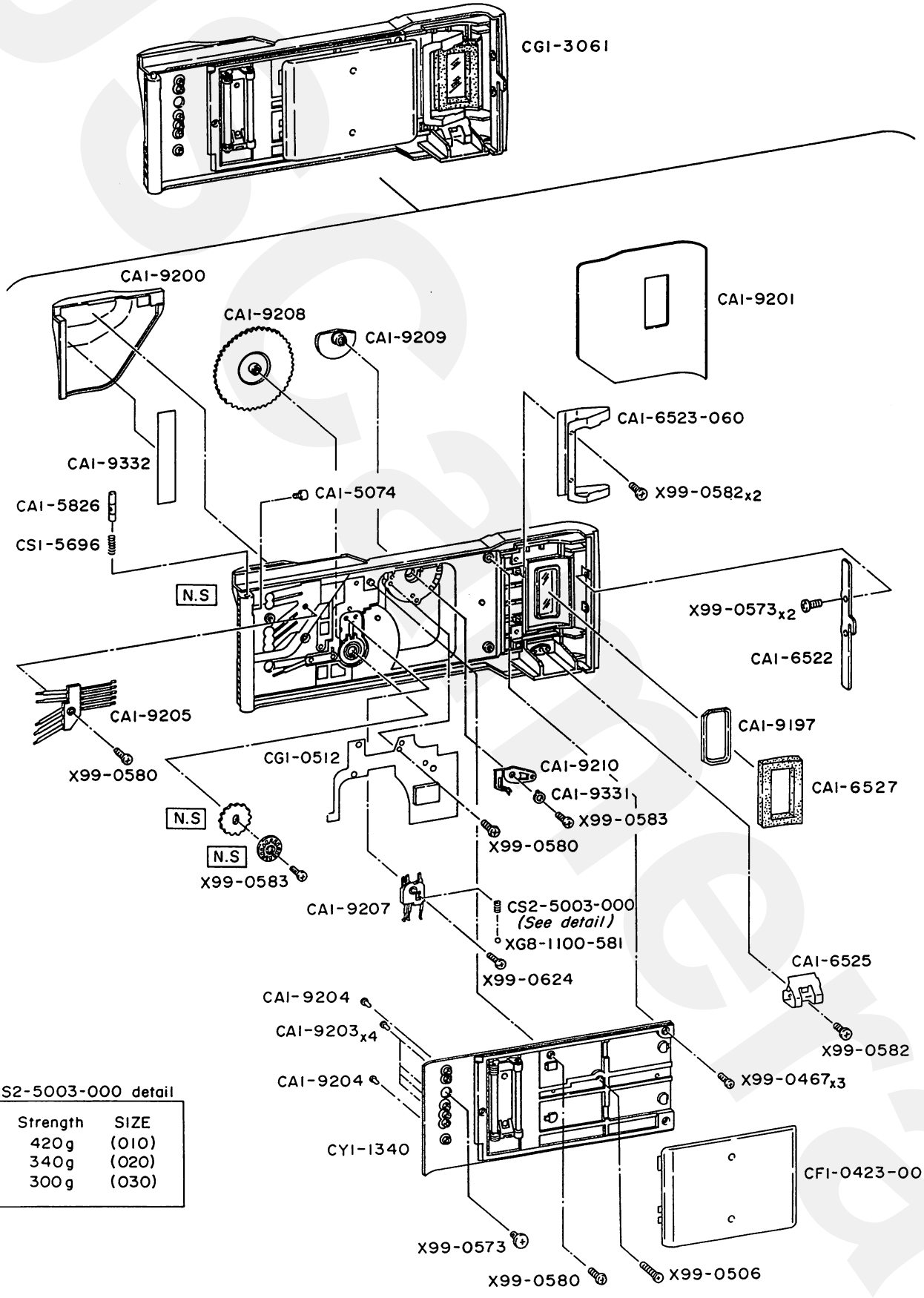

X99-0630
XA4-9170-709
(CD FLEX)
XA4-6170-409x2
N.S
(CD FLEX)
XA4-9170-459
N.S
(See Pg.5)
CG1-3023
XA4-9200-557
XA4-9200-609
CA1-9097
(See Pg.8)
XA4-8200-407x2
CA1-9003
CF1-2152
CA1-9404x2
CA1-9007
CH2-5070
(See Pg.7)
CA1-9411
CA1-9159
(BA FLEX)
XA4-4200-457x2
(MAIN FLEX)
CB1-4204
CS2-6931
N.S
CA1-9160
CA1-9094
(See Pg.6)
CA1-9044x2
CA1-9410
CA1-9411

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-9003-000	E	1	HINGE,BACK COVER	背蓋ヒンジ
	CA1-9007-000	D	1	RING,PC RETAINER	PCリティナーリング
	CA1-9044-000	-	2	SCREW, CROSS RECESS PH	
	CA1-9094-000	D	1	SHAFT,PALM WING	パームウィング軸
	CA1-9097-000	C	1	LUG,NECK STRAP(RIGHT)	耳環（右）
	CA1-9159-000	D	1	PAD,FLEX CONNECTION	フレキコネクトゴム
	CA1-9160-000	E	1	BASE,FLEX CONNECTION	フレキコネクト押さえ
	CA1-9404-000	-	2	SCREW, CROSS RECESS PH	
	CA1-9410-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9411-000	-	2	SCREW, CROSS RECESS PH	
*	CB1-4204-000	D	1	WING,PALM	パームウィング
	CF1-2152-000	D	1	TERMINAL,PC	PCターミナル
*	CG1-3023-000	D	1	SUPERIMPOSE ASS'Y	スーパーインポーズユニット
	CH2-5070-000	E	1	SWITCH,CF	隠れスイッチゴム
	CS2-6931-000	D	1	SPRING,COIL	コイルバネ
	X99-0630-000	-	1	SCREW, CROSS RECESS PH	
	XA4-4200-457	-	2	SCREW, CROSS RECESS PH	
	XA4-6170-409	-	2	SCREW, CROSS RECESS PH	
	XA4-8200-407	-	2	SCREW, CROSS RECESS PH	
	XA4-9170-459	-	1	SCREW, CROSS RECESS PH	
	XA4-9170-709	-	2	SCREW, CROSS RECESS PH	
	XA4-9200-557	-	1	SCREW, CROSS RECESS PH	
	XA4-9200-609	-	1	SCREW, CROSS RECESS PH	

CANON EOS-1N



CS2-5003-000 detail

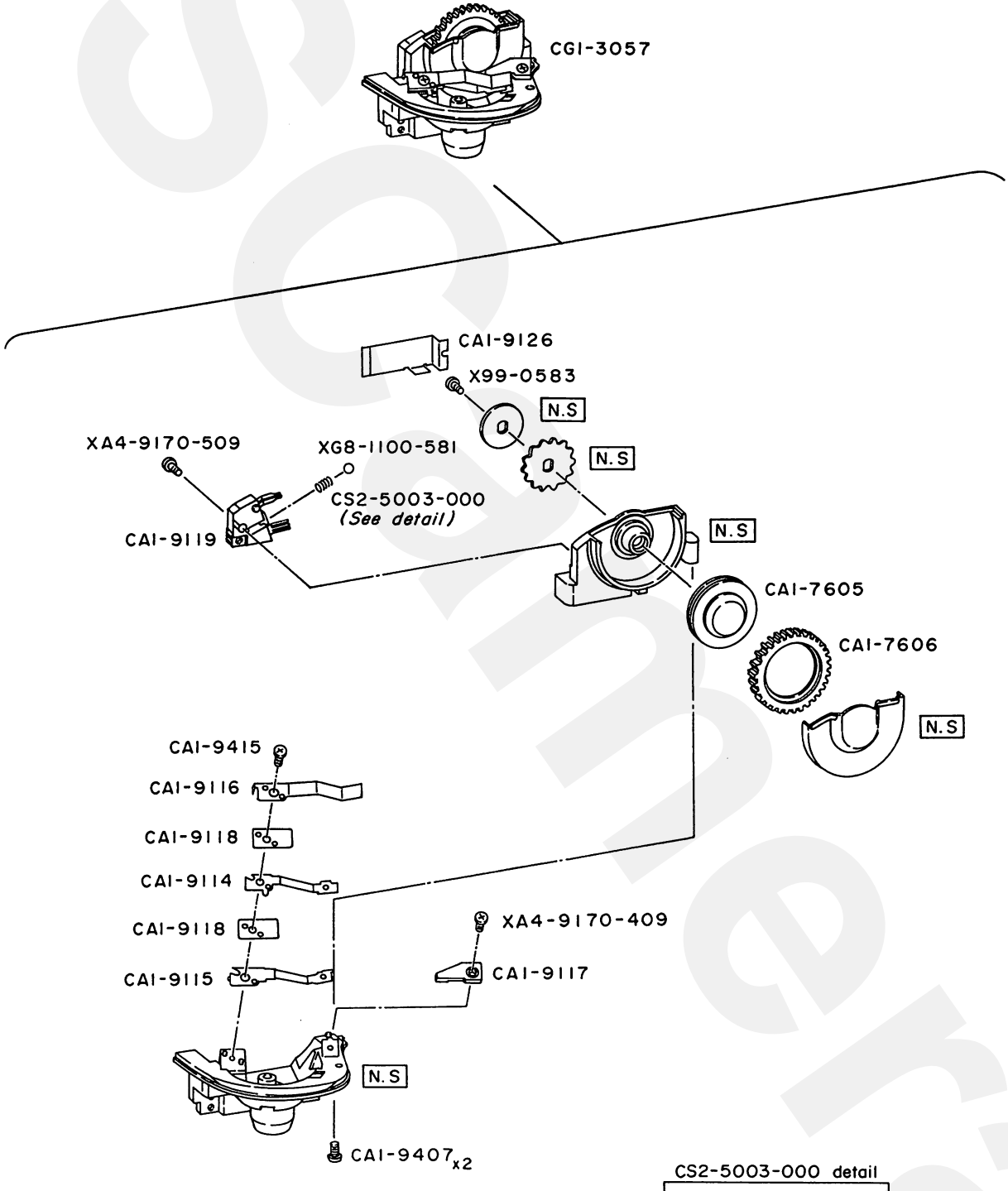
Strength	SIZE
420g	(010)
340g	(020)
300g	(030)

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-5074-000	E	1	SCREW,STOPPER	ストッパーIビス
	CA1-5826-000	D	1	SHAFT,HINGE	ヒンジ軸
	CA1-6522-000	E	1	CLAW,BACK COVER	背蓋爪
	CA1-6523-060	E	1	HOLDER,FILM MAGAZINE	フイルムマガジンホルダー
	CA1-6525-000	E	1	PLATE,SPRING	スプリング板
	CA1-6527-000	D	1	SHIELD,LIGHT	モルトプレーン
	CA1-9197-000	D	1	FILM WINDOW	フィルム窓
	CA1-9200-000	C	1	GRIP,BACK COVER	背蓋グリップ
	CA1-9201-000	C	1	COVERING,BACK COVER	背蓋カバー
	CA1-9203-000	D	4	PIN	NOB 信号ピン
	CA1-9204-000	D	2	PIN	NOB GNDピン
	CA1-9205-000	D	1	CONTACT,SIGNAL	信号接片
	CA1-9207-000	E	1	CONTACT,DIAL	NOB ダイアル接片
	CA1-9208-000	D	1	DIAL,REAR INPUT	NOB ダイアル
	CA1-9209-000	D	1	CAM,REAR INPUT DIAL	LSWレバー
	CA1-9210-000	E	1	CONTACT,DIAL LOCK SWITCH	LSW接片
	CA1-9331-000	E	1	WASHER	位置決めワッシャー
	CA1-9332-000	D	1	TAPE,DOUBLE SIDED	両面テープ
	CB1-2748-000	-	2	SCREW, CROSS RECESS PH	
	CF1-0423-001	D	1	PLATE,PRESSURE	圧着板
	CG1-0512-000	D	1	NDB FLEX ASSY	NDBフレキユニット
*	CG1-3061-000	D	1	BACK COVER UNIT	背蓋ユニット
	CS1-5696-000	D	1	SPRING,COIL	コイルバネ
	CS2-5003-000(XXX)	D	1	SPRING,COIL	コイルバネ
	CY1-1340-000	E	1	COVER,BACK(DIAL)	NDB内蓋ユニット
	X99-0467-000	-	3	SCREW, CROSS RECESS PH	
	X99-0506-000	-	1	SCREW, CROSS RECESS PH	
	X99-0573-000	-	3	SCREW, CROSS RECESS PH	
	X99-0580-000	-	3	SCREW, CROSS RECESS PH	
	X99-0582-000	-	3	SCREW, CROSS RECESS PH	
	X99-0583-000	-	2	SCREW, CROSS RECESS PH	
	X99-0624-000	-	1	SCREW, CROSS RECESS PH	
	XG8-1100-581	-	1	BALL,STTEL	

CANON EOS-1 [N]



CS2-5003-000 detail

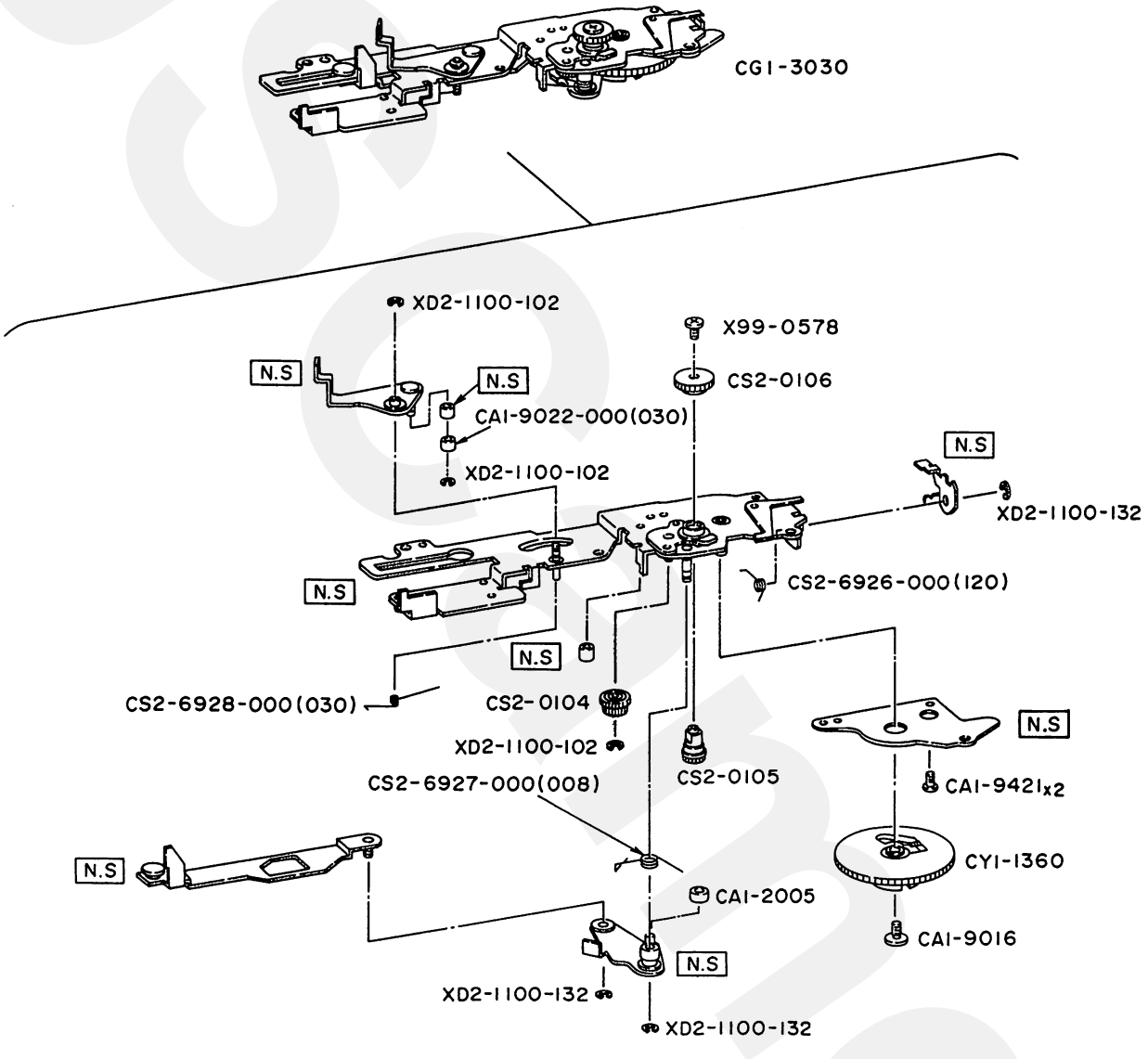
Strength	SIZE
420g	(010)
340g	(020)
300g	(030)

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-7605-000	E	1	DIAL,MODE CHANGE	モード変換ダイアル
	CA1-7606-000	D	1	RING,DIAL	ダイヤルリング
	CA1-9114-000	D	1	CONTACT,RELEASE SWITCH	レリーズ接片 SW1
	CA1-9115-000	D	1	CONTACT,RELEASE SWITCH	レリーズ接片 SW2
	CA1-9116-000	D	1	CONTACT,RELEASE GROUND	レリーズGND接片
	CA1-9117-000	E	1	PLATE,RELEASE STOPPER	レリーズ規制板
	CA1-9118-000	D	2	SPACER,CONTACT	接片スペーサー
	CA1-9119-000	E	1	CONTACT,DIAL	ダイアル接片
	CA1-9126-000	D	1	COVER,DIAL CONTACT	ダイアル接片カバー
	CA1-9407-000	-	2	SCREW, CROSS RECESS PH	
	CA1-9415-000	-	1	SCREW, CROSS RECESS PH	
*	CG1-3057-000	D	1	DIAL UNIT	ダイヤルユニット
	CS2-5003-000(XXX)	D	1	SPRING,COIL	コイルバネ
	X99-0583-000	-	1	SCREW, CROSS RECESS PH	
	XA4-9170-409	-	1	SCREW, CROSS RECESS PH	
	XA4-9170-509	-	1	SCREW, CROSS RECESS PH	
	XG8-1100-581	-	1	BALL,STTEL	

CANON EOS-1N

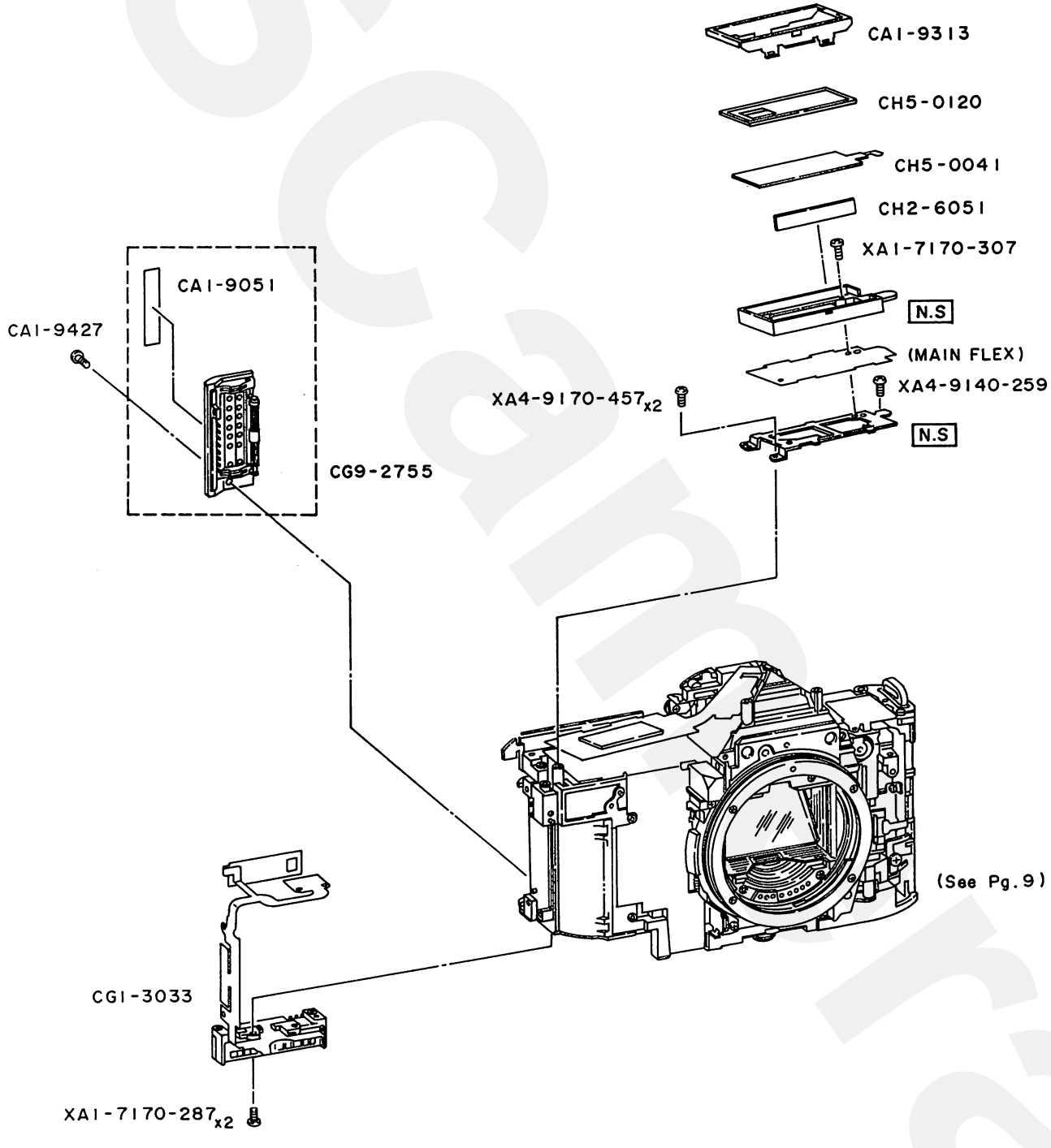

CG1-3030
XD2-1100-102
X99-0578
N.S
N.S
CS2-0106
CA1-9022-000(030)
XD2-1100-102
N.S
XD2-1100-132
N.S
CS2-6926-000(120)
N.S
CS2-6928-000(030)
CS2-0104
XD2-1100-102
CS2-6927-000(008)
CS2-0105
N.S
CA1-9421x2
N.S
CY1-1360
CA1-2005
CA1-9016
N.S
XD2-1100-132
XD2-1100-132

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-2005-000	E	1	BALL BEARING	チャージコロ
	CA1-9016-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9022-000(030)	E	1	WASHER	ワッシャー
	CA1-9421-000	-	2	SCREW, CROSS RECESS PH	
*	CG1-3030-000	E	1	CHARGE UNIT	チャージユニット
	CS2-0104-000	E	1	GEAR,CHARGE-1	チャージ －1ギヤー
	CS2-0105-000	E	1	GEAR,CHARGE2-1	チャージ 2-1ギヤー
	CS2-0106-000	D	1	GEAR,CHARGE2-2	チャージ 2-2ギヤー
	CS2-6926-000(120)	E	1	SPRING,COIL	コイルバネ
	CS2-6927-000(008)	E	1	SPRING	リタンスプリング
	CS2-6928-000(030)	E	1	SPRING	MC戻しバネ
	CY1-1360-000	E	1	CAM GEAR UNIT	カムギヤーユニット
	X99-0578-000	-	1	SCREW, CROSS RECESS PH	
	XD2-1102-102	-	3	E RING(SUS)	チャージ －1ギヤー
	XD2-1100-132	-	3	WASHER,RETAINING 1.3MM	

CANON EOS-1N

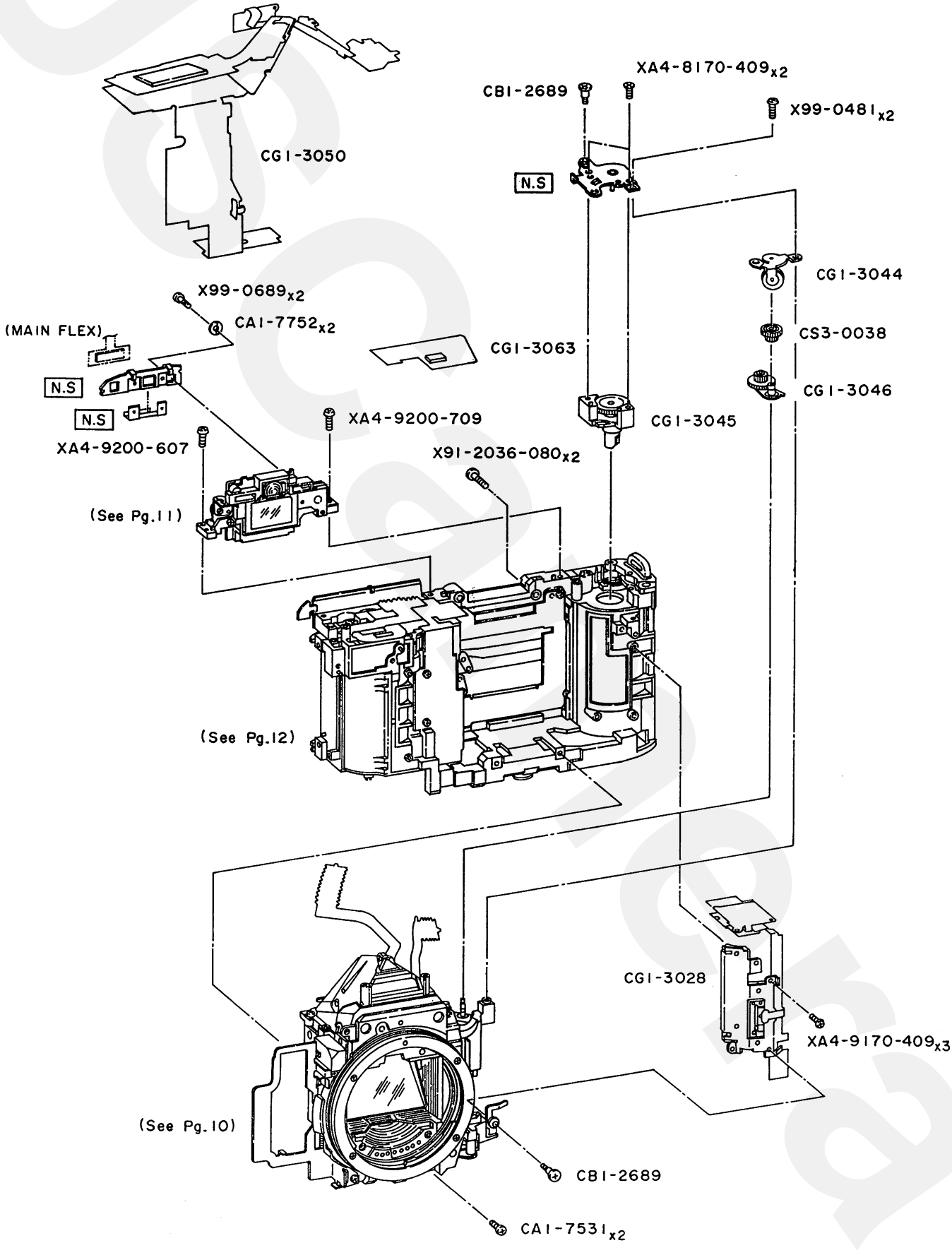


PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-9051-000	E	1	LABEL,FILM LOADING	フィルムセットシール
	CA1-9313-000	E	1	FRAME,LCD	LCD枠
	CA1-9427-000	-	1	SCREW, CROSS RECESS PH	
*	CG1-3033-000	D	1	SYSTEM CONNETOR ASS'Y	システムコネクターユニット
	CG9-2755-000	D	1	ROLLER HOLDER UNIT	ローラーホルダーユニット
	CH2-6051-000	E	1	CONNECTOR,ELASTIC	コネクター
	CH5-0041-000	E	1	ELECTRO LUMINESCENCE EL	
*	CH5-0120-000	D	1	LCD,EXTERNAL	
	XA1-7170-287	-	2	SCREW, CROSS RECESS PH	
	XA1-7170-307	-	2	SCREW, CROSS RECESS PH	
	XA4-9140-259	-	1	SCREW, CROSS RECESS PH	
	XA4-9170-457	-	2	SCREW, CROSS RECESS PH	

CANON EOS-1N

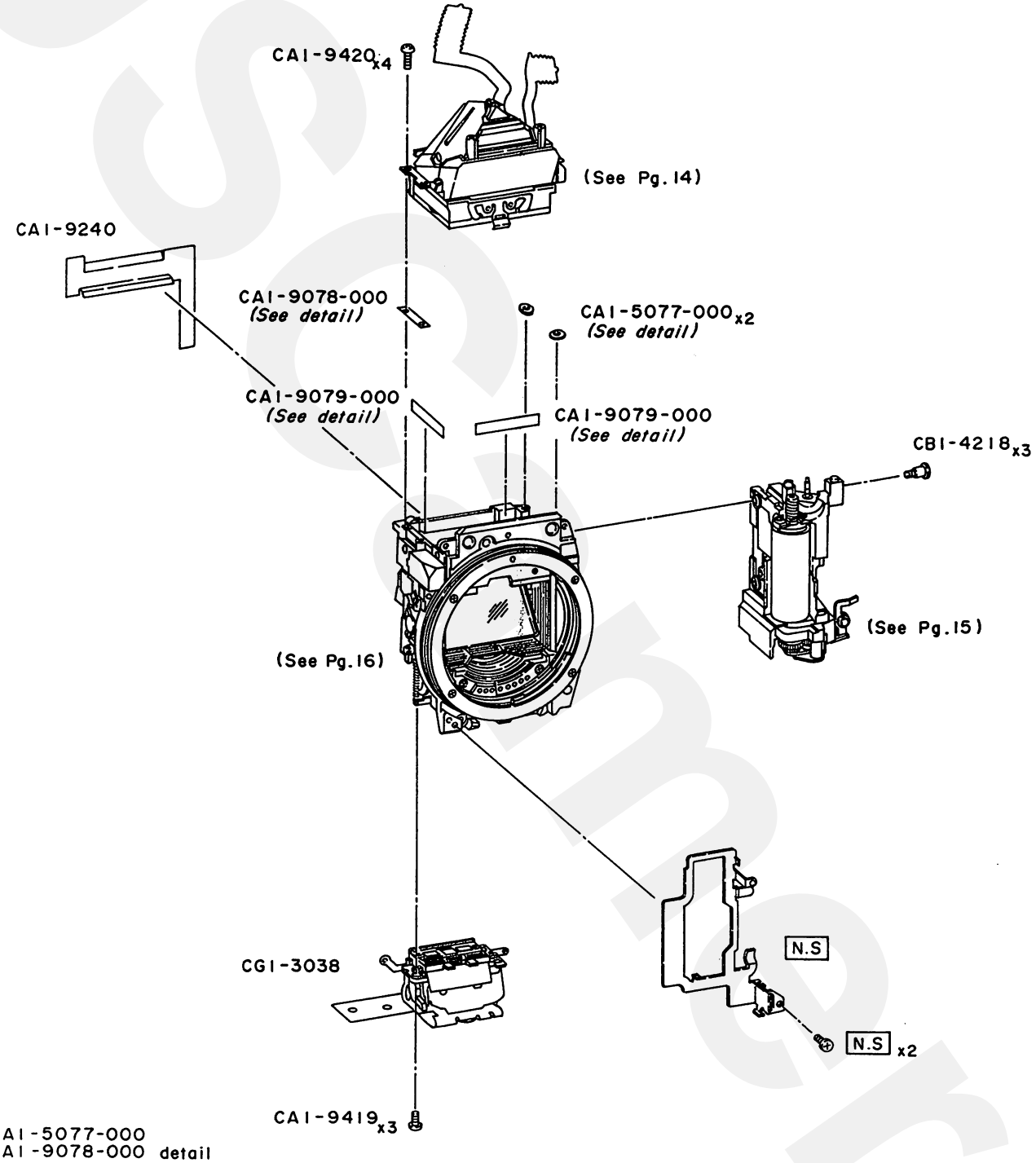

CG1-3050
XA4-8170-409x2
CB1-2689
X99-0481x2
N.S
CG1-3044
X99-0689x2
CA1-7752x2
(MAIN FLEX)
CG1-3063
CS3-0038
N.S
N.S
CG1-3046
XA4-9200-709
CG1-3045
XA4-9200-607
X91-2036-080x2
(See Pg.11)
(See Pg.12)
CG1-3028
XA4-9170-409x3
(See Pg.10)
CB1-2689
CA1-7531x2

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-7531-000	-	2	SCREW, CROSS RECESS PH	
	CA1-7752-000	E	2	WASHER,WAVE	測光ワッシャー
	CA1-9416-000	-	1	SCREW, CROSS RECESS PH	
	CB1-2689-000	-	2	SCREW, CROSS RECESS PH	
*	CG1-3028-000	D	1	DX CONTACT ASS'Y	DX接片ユニット
*	CG1-3044-000	D	1	REWIND WORM GEAR UNIT	巻き戻し伝達ギアユニット
*	CG1-3045-000	D	1	FORK UNIT	フォークユニット
*	CG1-3046-000	D	1	REWIND PLANETARY GEAR UNIT	遊星ギアユニット
*	CG1-3050-000	D	1	MAIN FLEX ASS'Y	メインフレキユニット
*	CG1-3063-000	D	1	MOTOR1 FLEX ASS'Y	M1フレキユニット
*	CS3-0038-000	D	1	GEAR,REWIND SUN	巻き戻し太陽ギア
	X91-2036-080	-	2	SCREW, CROSS RECESS PH	
	X99-0481-000		2	SCREW, CROSS RECESS PH	
	X99-0689-000	-	2	SCREW, CROSS RECESS PH	
	XA4-8170-409	-	2	SCREW, CROSS RECESS PH	
	XA4-9170-409	-	3	SCREW, CROSS RECESS PH	
	XA4-9200-607	-	1	SCREW, CROSS RECESS PH	
	XA4-9200-709	-	1	SCREW, CROSS RECESS PH	

CANON EOS-1N



CA1-5077-000
CA1-9078-000 detail

	A	SIZE
A	0.03 mm	(003)
	0.05 mm	(005)
	0.10 mm	(010)
	0.20 mm	(020)
	0.30 mm	(030)
	0.40 mm	(040)
	0.60 mm	(060)

CA1-9079-000 detail

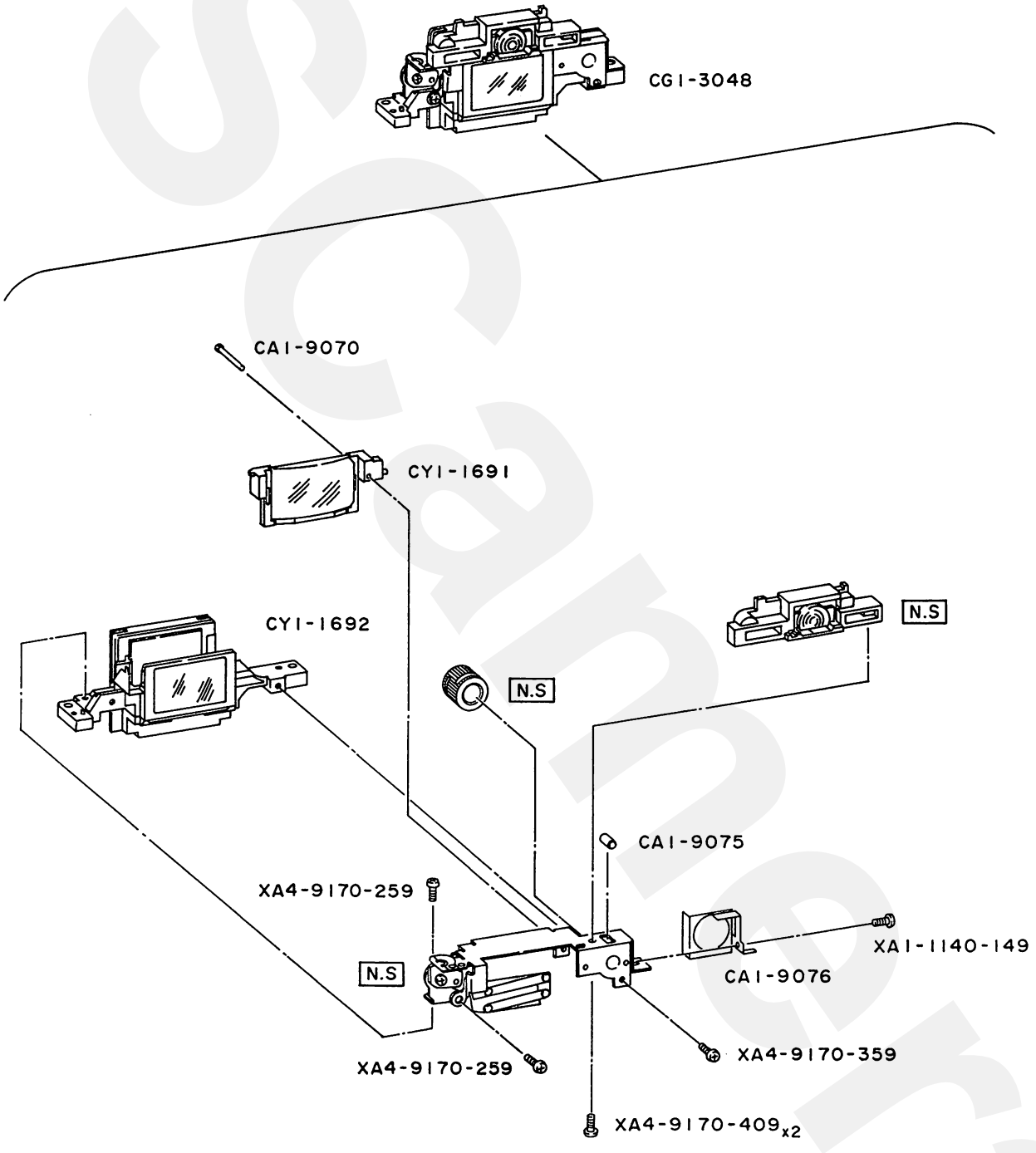
	A	SIZE
A	0.05 mm	(005)
	0.10 mm	(010)
	0.20 mm	(020)
	0.30 mm	(030)
	0.40 mm	(040)
	0.60 mm	(060)

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-5077-000(XXX)	E	1	WASHER,FINDER FOCUSING	ファインダーフォーカシングワッシャー
	CA1-9078-000(XXX)	E	1	SHIM,FINDER FOCUSING	ピント調整板
	CA1-9079-000(XXX)	E	2	PLATE,PARALLAX ADJUSTING	視野調整板
	CA1-9240-000	E	1	CURTAIN,LIGHT SHIELD	ミラーボックス遮光幕
	CA1-9419-000	-	3	SCREW, CROSS RECESS PH	
	CA1-9420-000	-	4	SCREW, CROSS RECESS PH	
	CB1-4218-000	-	3	SCREW, CROSS RECESS PH	
*	CG1-3038-000	D	1	AF UNIT	AFユニット

CANON EOS-1N

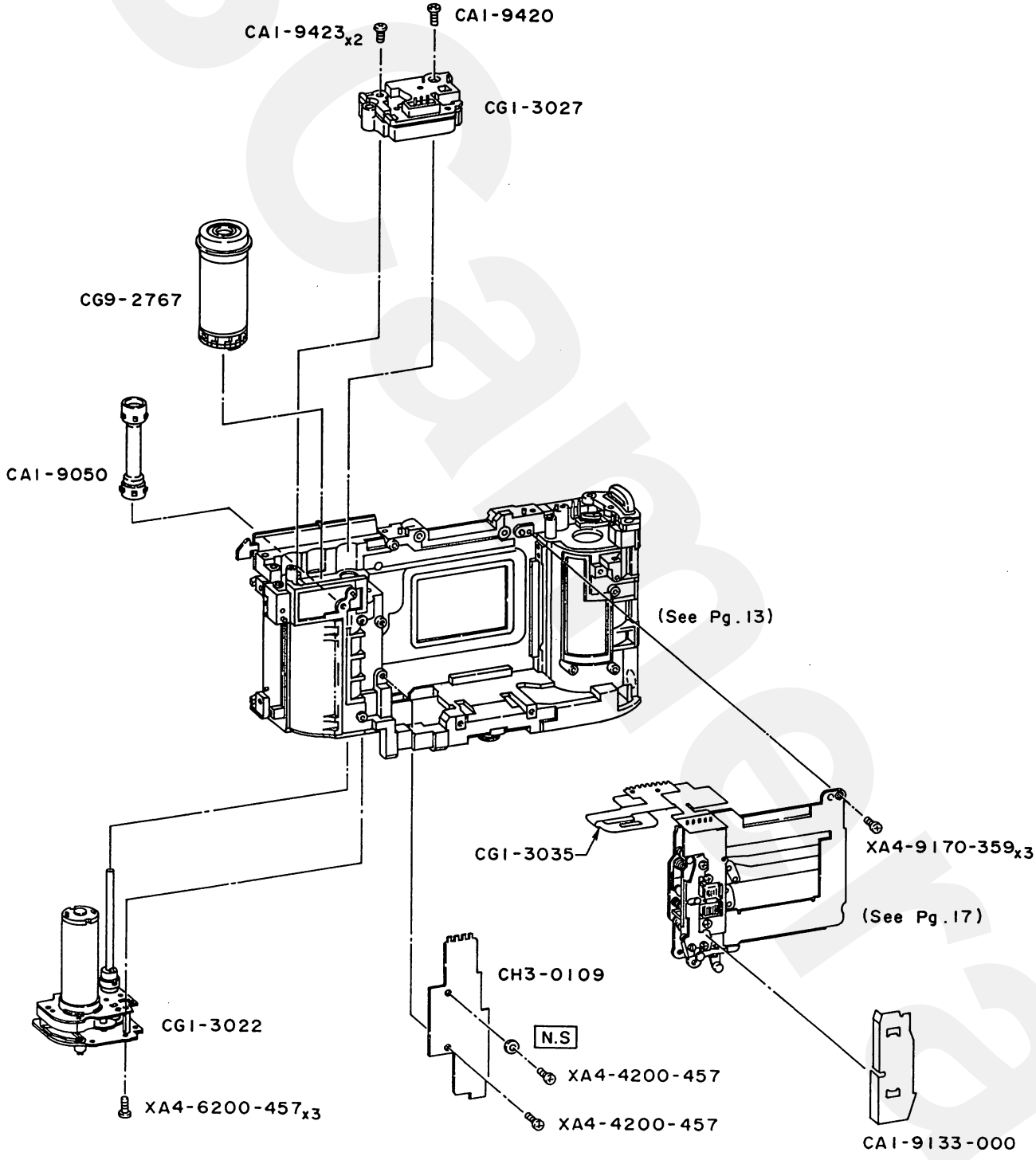


PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-9070-000	D	1	SHAFT,FRAME GUIDE	移動枠ガイド軸
	CA1-9075-000	E	1	PIN,EYEPIECE DETENT	視度調クリックピン
	CA1-9076-000	E	1	SPRING,EYEPIECE DETENT	視度調クリックバネ
*	CG1-3048-000	D	1	EYEPIECE ADJUSTMENT UNIT	視度調ユニット
*	CY1-1691-000	D	1	EYEPIECE LENS ADJUSTING UNIT	移動枠ユニット
*	CY1-1692-000	C	1	EYEPIECE UNIT	アイピースユニット
	XA1-1140-149	-	1	SCREW, CROSS RECESS PH	
	XA4-9170-259	-	2	SCREW, CROSS RECESS PH	
	XA4-9170-359	-	1	SCREW, CROSS RECESS PH	
	XA4-9170-409	-	2	SCREW, CROSS RECESS PH	

CANON EOS-1N

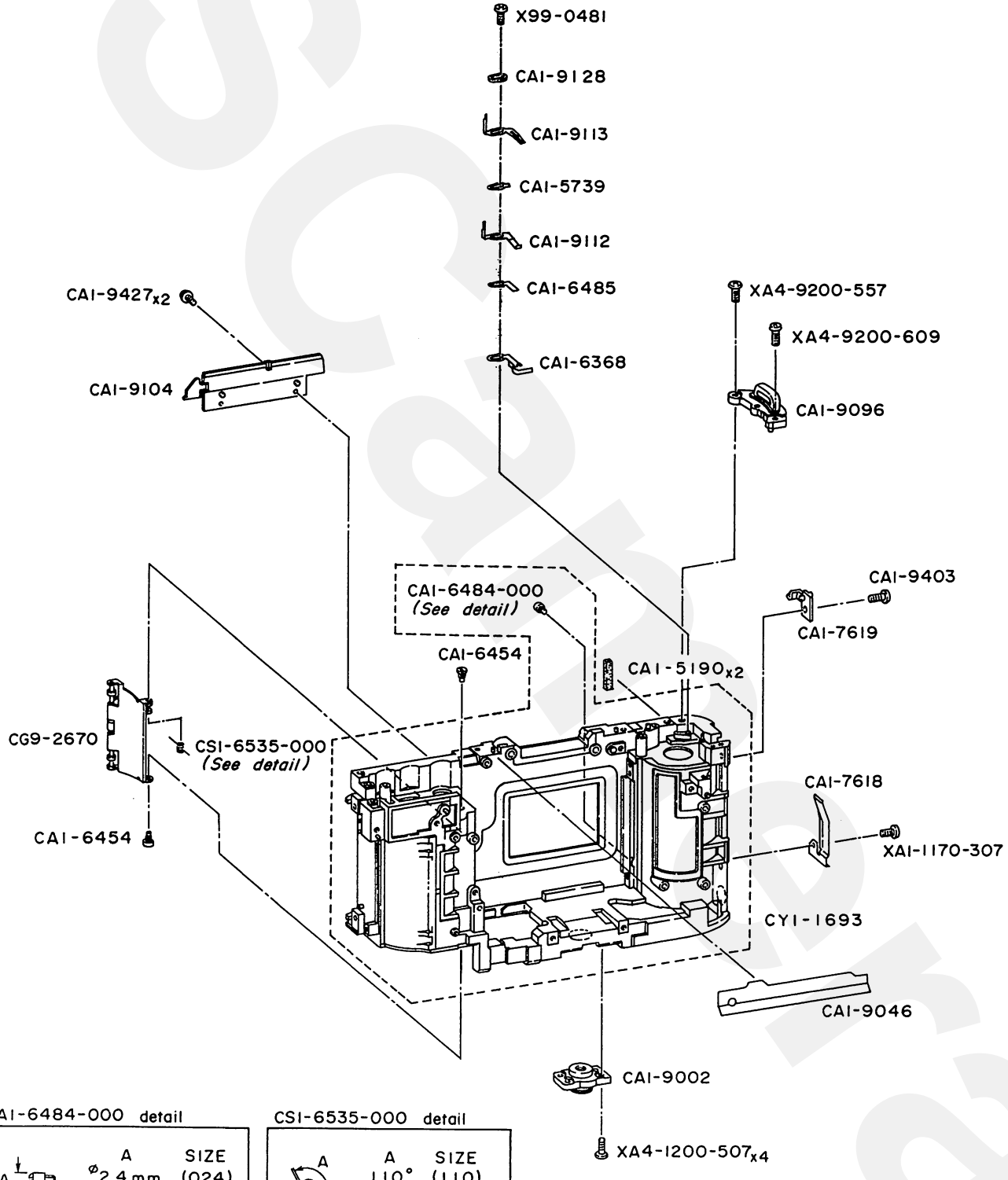


PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-9050-000	C	1	SPROKET	スプロケット
	CA1-9133-000	E	1	SHEET,DUST	防塵カバー
	CA1-9420-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9423-000	-	2	SCREW, CROSS RECESS PH	
*	CG1-3022-000	E	1	FILM ADVANCE UNIT	給送ユニット
*	CG1-3027-000	D	1	SIGNAL UNIT	信号ユニット
*	CG1-3035-000	E	1	INTERCONNECTING FLEX	連結フレキ
	CG9-2767-000	D	1	SPOOL UNIT	スプールユニット
*	CH3-0109-000	D	1	DC/DC CONVERTER1 ASS'Y	DC/DCコンバーター 1
	XA4-4200-457	-	2	SCREW, CROSS RECESS PH	
	XA4-6200-457	-	3	SCREW, CROSS RECESS PH	
	XA4-9170-359	-	3	SCREW, CROSS RECESS PH	

CANON EOS-1N



CAI-6484-000 detail

A	SIZE
ø2.4 mm	(024)
ø2.5 mm	(025)
ø2.6 mm	(026)

CSI-6535-000 detail

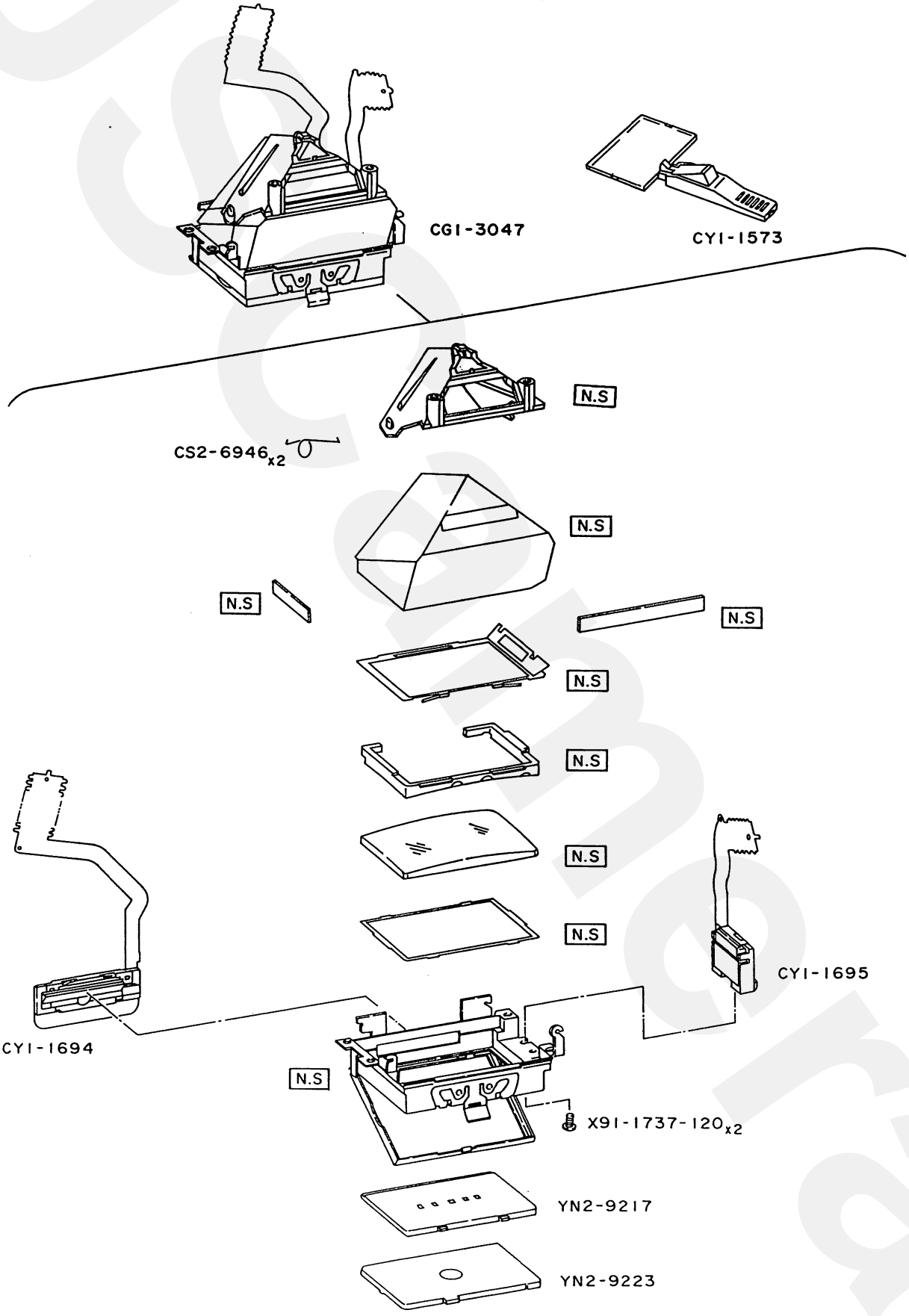
A	SIZE
110°	(110)
115°	(115)
120°	(120)

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-5190-000	E	2	SHIELD,LIGHT	モルトプレーン
	CA1-5739-000	D	1	INSULATOR	絶縁板
	CA1-6368-000	E	1	PLATE,SAFETY LOCK	安全ロック板
	CA1-6454-000	-	2	SCREW, AL COVER SHAFT	ALカバー軸ビス
	CA1-6484-000(XXX)	E	1	SHAFT,FILM GUODE	フィルムガイド軸
	CA1-6485-000	E	1	INSULATOR	絶縁板
	CA1-7618-000	E	1	SPRING,PLATE	板スプリング
	CA1-7619-000	E	1	HOLDER,CASSETTE	カセットホルダー
	CA1-9002-000	D	1	SOCKET,TRIPOD	三脚座
	CA1-9046-000	E	1	SHIELD,LIGHT	遮光板
	CA1-9096-000	D	1	HOLDER,STRAP(LEFT)	耳環（左）
	CA1-9104-000	D	1	PANEL,BLIND	スイッチ受け
	CA1-9112-000	D	1	CONTACT,BACK COVER SWITCHI	背蓋スイッチ接片
	CA1-9113-000	D	1	CONTACT,BACK COVER SW GND	背蓋SWG接片
*	CA1-9128-000	D	1	SPACER	スペーサー
	CA1-9403-000	-	1	SCREW, CROSS RECESS PH	
	CA1-9427-000	-	2	SCREW, CROSS RECESS PH	
	CG9-2670-000	D	1	AL COVER ASS'Y	ALカバーユニット
	CS1-6535-000(XXX)	E	1	SPRING	ALカバーバネ
*	CY1-1693-000	E	1	BODY ASS'Y	本体
	X99-0481-000	-	1	SCREW, CROSS RECESS PH	
	XA1-1170-307	-	1	SCREW, CROSS RECESS PH	
	XA4-1200-507	-	4	SCREW, CROSS RECESS PH	
	XA4-9200-557	-	1	SCREW, CROSS RECESS PH	
	XA4-9200-609	-	1	SCREW, CROSS RECESS PH	

CANON EOS-1N

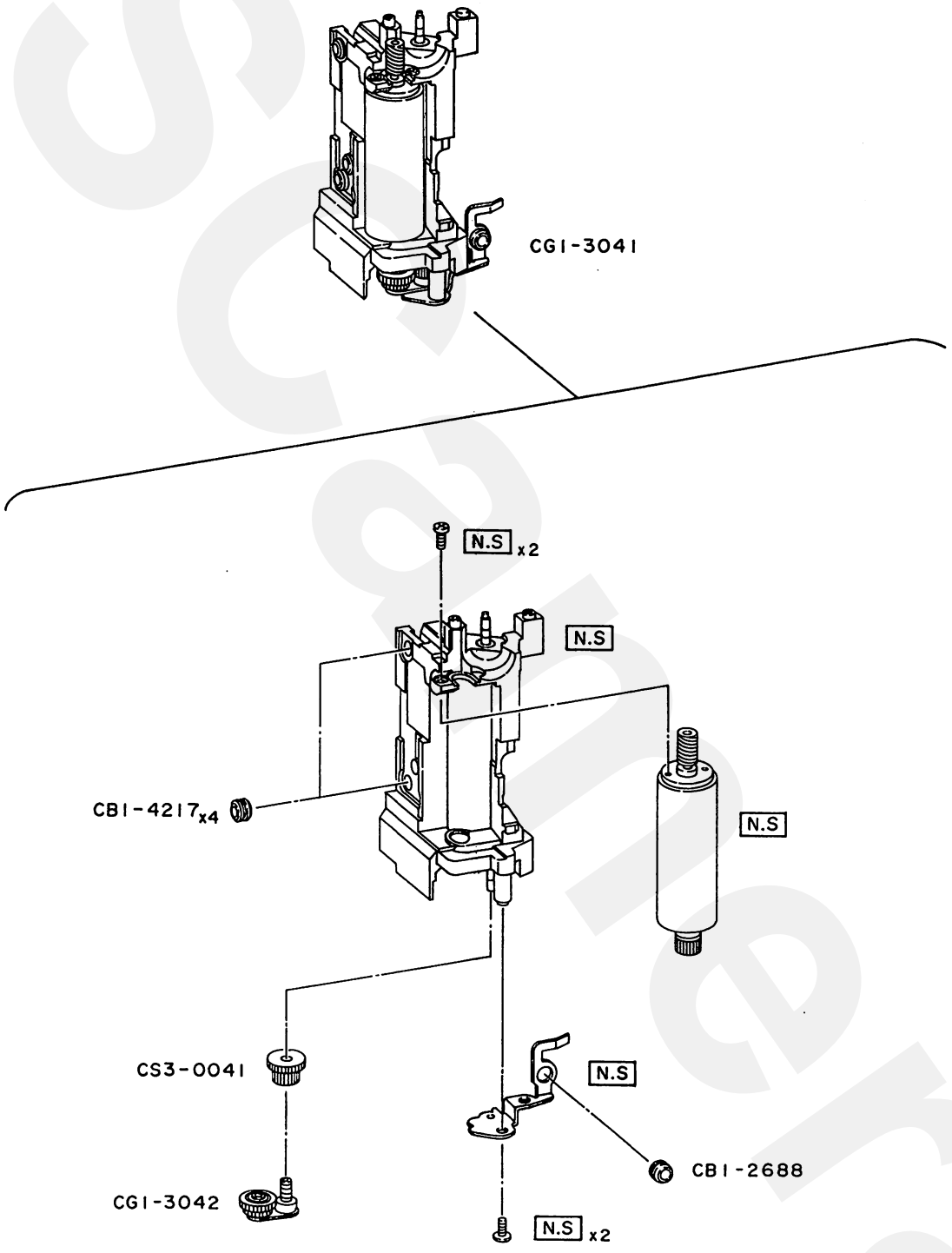

CG1-3047
CY1-1573
N.S
CS2-6946x2
N.S
N.S
N.S
N.S
N.S
N.S
N.S
CY1-1695
CY1-1694
N.S
X91-1737-120x2
YN2-9217
YN2-9223

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
*	CG1-3047-000	C	1	PENTAPRISM UNIT	ペンタプリズムユニット
	CS2-6946-000	D	2	SPRING	ペンタ押バネえ
	CY1-1573-000	D	1	TOOL,FOCSING SCREEN	
*	CY1-1694-000	D	1	LCD UNIT (HORIZONTAL)	HLCユニット
*	CY1-1695-000	D	1	LCD UNIT(VERTICAL)	VLCユニット
	X91-1737-120	-	2	SCREW, CROSS RECESS PH	
*	YN2-9217-000	C	1	MASK,AF FRAME	AFフレーム板
*	YN2-9223-000	C	1	SCREEN,FOCUSING (TYPE C)	ピント板（全面マット）

CANON EOS-1 N



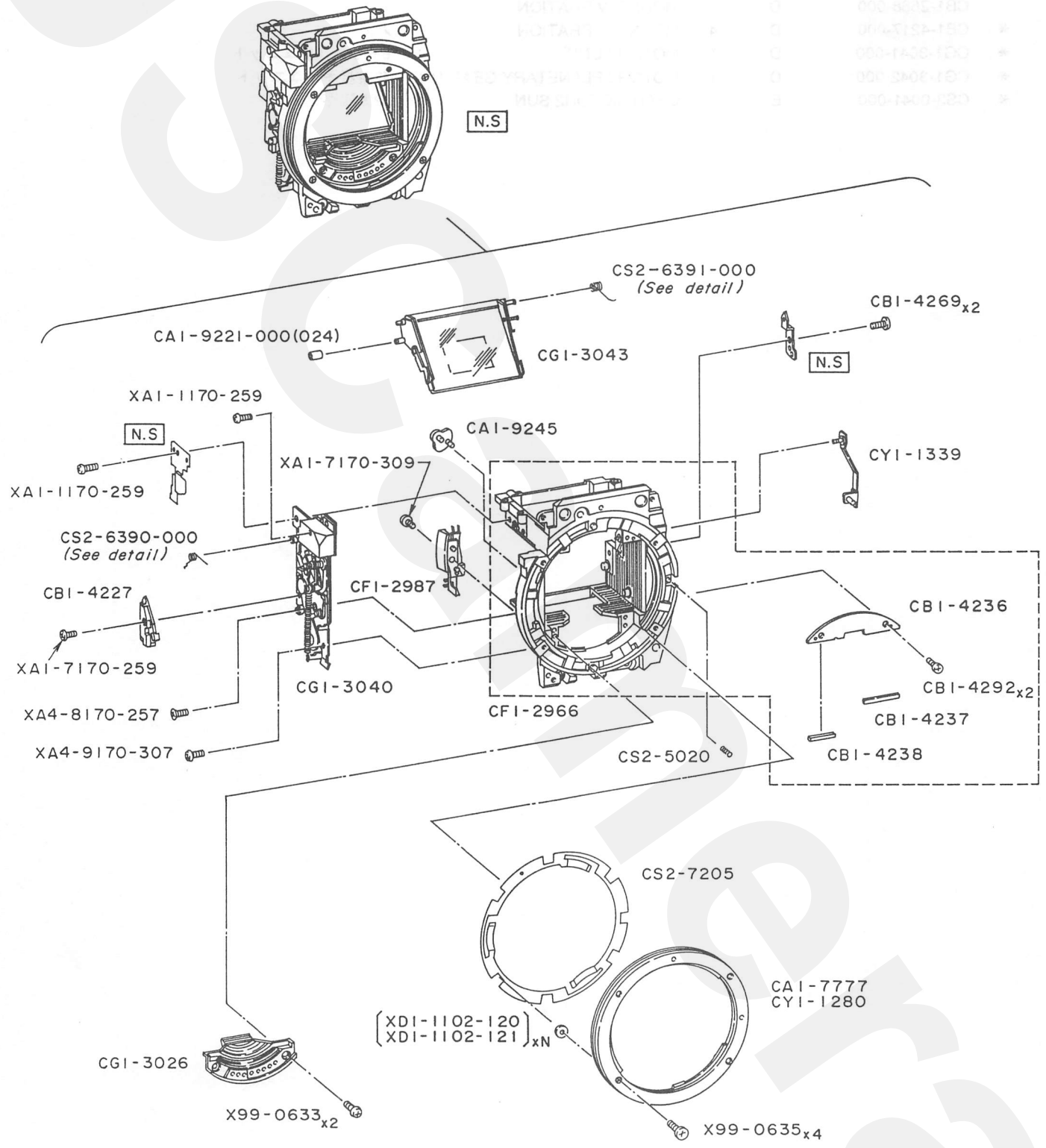
PARTS LIST

REF.NO. C12-8301

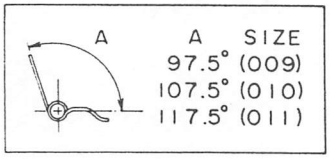
NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CB1-2688-000	D	1	MOUNT, VIBRATION	ブッシュ
*	CB1-4217-000	D	4	MOUNT, VIBRATION	ブッシュ
*	CG1-3041-000	D	1	MOTOR2 UNIT	モーター M2ユニット
*	CG1-3042-000	D	1	MOTOR2 PLANETARY GEAR UNIT	M2遊星ギヤユニット
*	CS3-0041-000	E	1	GEAR,MOTOR2 SUN	M2太陽ギヤー

REF. NO. C12-8301

CANON EOS-1[N]

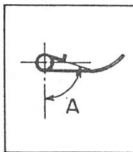


CS2-6390-000 detail



A	SIZE
97.5°	(009)
107.5°	(010)
117.5°	(011)

CS2-6391-000 detail



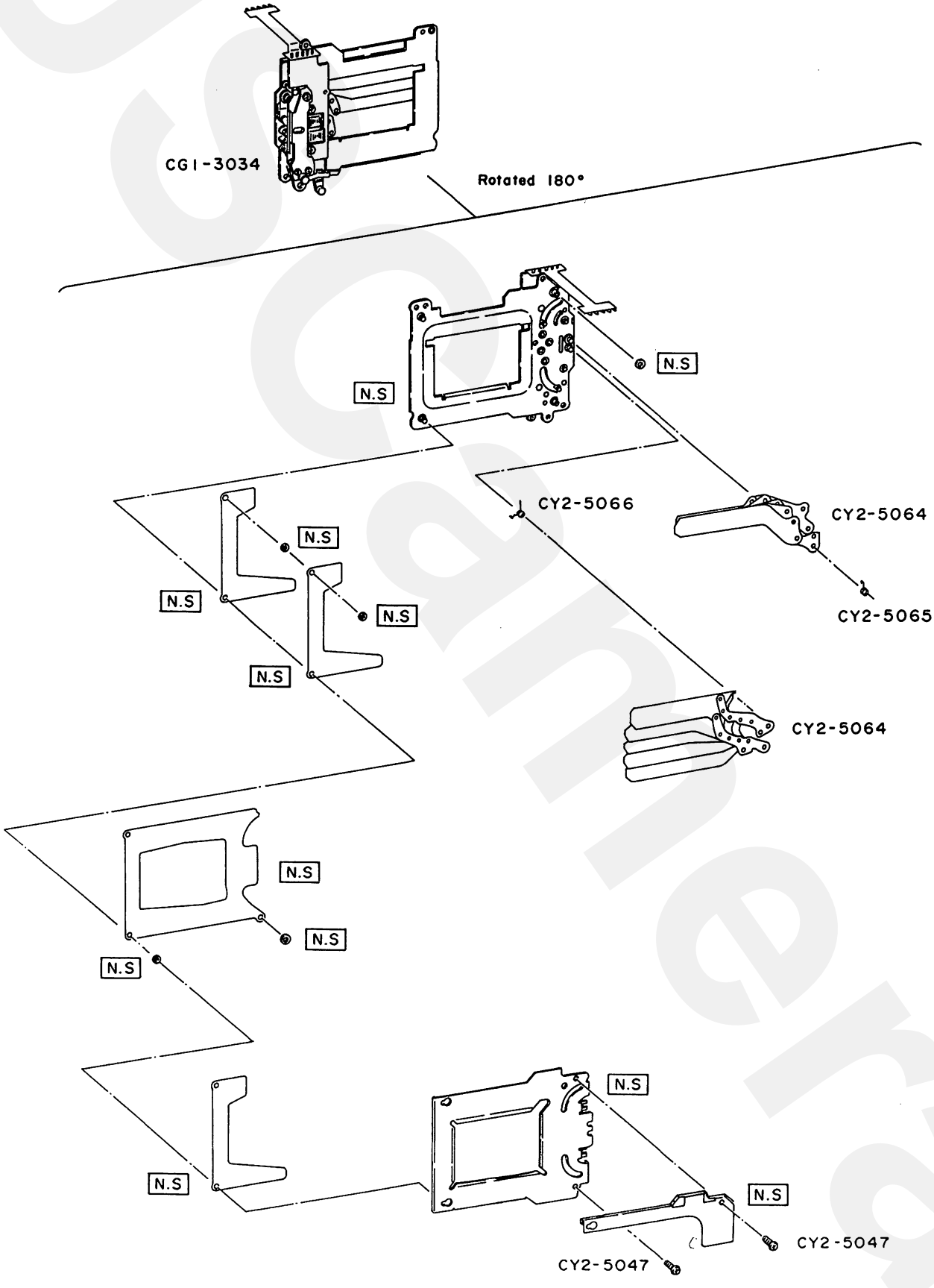
A	SIZE
55°	(010)
70°	(020)
85°	(030)

PARTS LIST

REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA1-7777-000	C	1	MOUNT,BODY	ボデーマウント
	CA1-9221-000 (024)	E	1	COLLAR,SUB MIRROR	サブミラーカラー
	CA1-9245-000	E	1	LEVER, SENSOR	検知レバー
*	CB1-4227-000	E	1	SWITCH,MIRROR UP	ミラースイッチ
*	CB1-4236-000	D	1	PLATE,LIGHT SHIELD	前板遮光板
	CB1-4292-000	-	2	SCREW, CROSS RECESS PH	
*	CB1-4237-000	D	1	CUSHION,MIRROR	ミラークッション
*	CB1-4238-000	D	1	CUSHION,MIRROR	ミラークッション
	CB1-4269-000	-	1	SCREW, CROSS RECESS PH	
*	CF1-2966-000	E	1	FRONT PANEL ASS'Y	前板ユニット
*	CF1-2987-000	D	1	SWITCH, LENS	レンズスイッチ
*	CG1-3026-000	E	1	MOUNT CONTACT ASS'Y	接点座ユニット
*	CG1-3040-000	E	1	MIRROR MECHANISM UNIT	ミラーQRユニット
*	CG1-3043-000	C	1	MIRROR UNIT	ミラーユニット
	CS2-5020-000	E	1	SPRING,COIL	コイルバネ
*	CS2-6390-000(XXX)	D	1	SPRING,MAIN MIRROR RETURN	メインミラー戻しバネ
*	CS2-6391-000(XXX)	D	1	SPRING,SUB MIRROR RETURN	サブミラー戻しバネ
*	CS2-7205-000	D	1	SPRING,MOUNT	マウントバネ
	CY1-1280-000	E	1	MOUNT,BODY	ボデーマウント
	CY1-1339-000	E	1	LOCK PIN UNIT	ロックピンユニット
	X99-0633-000	-	2	SCREW, CROSS RECESS PH	
	X99-0635-000	-	4	SCREW, CROSS RECESS PH	
	XA1-1170-259	-	2	SCREW, CROSS RECESS PH	
	XA1-7170-259	-	1	SCREW, CROSS RECESS PH	
	XA1-7170-309	-	1	SCREW, CROSS RECESS PH	
	XA4-8170-257	-	1	SCREW, CROSS RECESS PH	
	XA4-9170-307	-	1	SCREW, CROSS RECESS PH	
	XD1-1102-120	-	1	WASHER	
	XD1-1102-121	-	1	SHIM,WASHER	

CANON EOS-1N

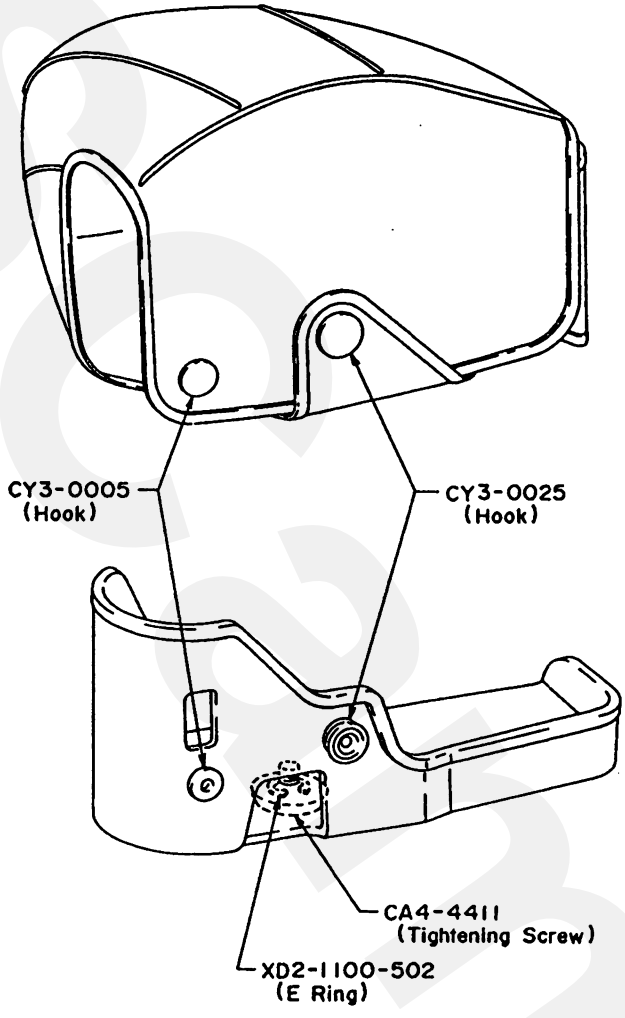


PARTS LIST

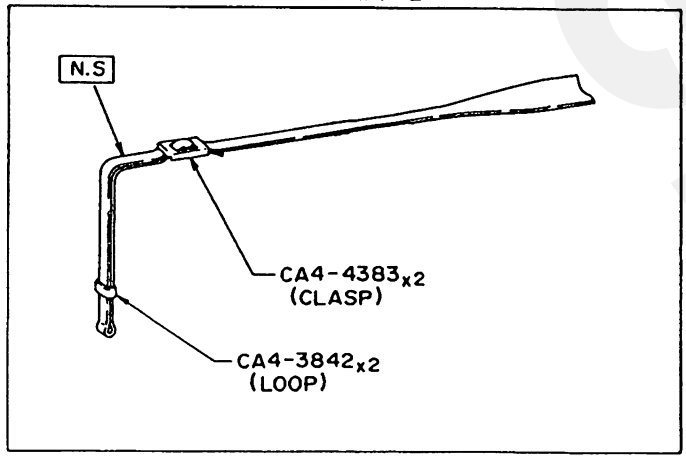
REF.NO. C12-8301

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
*	CG1-3034-000	C	1	SHUTTER UNIT	シャッターユニット
	CY2-5047-000	F	2	SCREW, CROSS RECESS PH	
*	CY2-5064-000	C	2	SHUTTER CURTAIN ASS'Y	シャッター幕
*	CY2-5065-000	E	1	SPRING	後戻しバネ
*	CY2-5066-000	E	1	SPRING	先アームバネ

CANON SEMI HARD CASE EH2N



C56-1421 NECK STRAP L3



SEMI HARD CASE EH2N

REF.NO. C46-1882 (L) / C46-1883 (LL)

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
	CA4-4411-000	-	1	SCREW, TIGHTENING	取付けビス
	CY3-0005-000	D	1	HOOK	ホック
	CY3-0025-000	D	1	HOOK	ホック
	XD2-1100-502	-	1	RETAINING RING	Eリング

NECK STRAP L3

REF.NO. C56-1421

NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
*	C56-1421-001	D	1	NECK STRAP L3	ストラップL 3 （アイピースカバー無し）
	CA4-3842-000	D	2	LOOP	環
	CA4-4383-000	D	2	CLASP	止め金

ELECTRIC PARTS LIST

REF.NO. C12-8301

NEW	SYMBOL	PARTS NO.	DESCRIPTION	REMARK	PAGE
	BXTAL	WK2-0188-000	XTAL (32.768KHz)	DS-VT200	
*	FUSE	WD8-5050-000(200)	FUSE	JAA-5002-501	
	LCD Dr.	CH4-0514-000	LCD DRIVER IC	SN28899	
	MTDR1	CH4-0159-000	MOTOR DRIVER 1	T8120	
	MTDR2	WA4-5763-000	MOTOR DRIVER 2	MPC17A10VM	
	TMOS	CH4-0213-000	TMOS	SFX10	
	XTAL	WK2-0188-000	XTAL (32.768KHz)	DS-VT200	
		CH2-2777-000	FLAT TWIN LEADS	RED / WHITE	
		CH2-2796-000	SHIELDED LEADS	BLACK / WHITE	
		CH2-4173-000	FLAT TWIN LEADS	RED / WHITE	
		CH2-4174-000	FLAT TWIN LEADS	RED / WHITE	
		CH2-4176-000	SHIELDED LEADS	BLACK / WHITE	
		Y11-3704-000	LEAD	PINK	
		Y11-3706-000	LEAD	ORANGE	
		Y11-3712-000	LEAD	PURPLE	
		Y11-3901-000	LEAD	WHITE	
		Y11-3902-000	LEAD	BLACK	
		Y11-3903-000	LEAD	RED	
		Y11-3904-000	LEAD	PINK	
		Y11-3906-000	LEAD	ORANGE	
		Y11-3907-000	LEAD	YELLOW	
		Y11-3909-000	LEAD	GREEN	
		Y11-3911-000	LEAD	BLUE	
		Y11-3912-000	LEAD	PURPLE	
		Y11-3913-000	LEAD	BROWN	
		Y11-3914-000	LEAD	GLAY	
		Y11-4402-000	LEAD	BLACK	
		Y11-4403-000	LEAD	RED	
		Y11-4506-000	LEAD	ORANGE	
		Y11-4511-000	LEAD	BLUE	
		Y11-4514-000	LEAD	GLAY	
		Y11-5002-000	LEAD	BLACK	
		Y11-5003-000	LEAD	RED	
		Y11-5006-000	LEAD	ORANGE	
		Y11-5007-000	LEAD	YELLOW	
		Y11-5012-000	LEAD	PURPLE	
		Y11-5014-000	LEAD	GLAY	

PARTS LIST INDEX

REF.NO. C12-8301

NEW	PARTS NO.	PAGE	NEW	PARTS NO.	PAGE
	CA1-2005-000	7		CA1-9073-000	1
	CA1-2474-000	1		CA1-9075-000	11
	CA1-5074-000	5		CA1-9076-000	11
	CA1-5077-000(XXX)	10		CA1-9078-000(XXX)	10
	CA1-5190-000	13		CA1-9079-000(XXX)	10
	CA1-5739-000	13		CA1-9080-000	1
	CA1-5826-000	5		CA1-9082-000	3
	CA1-6363-000	1		CA1-9085-000	3
	CA1-6364-000	1		CA1-9094-000	4
	CA1-6368-000	13		CA1-9096-000	13
	CA1-6454-000	13		CA1-9097-000	4
	CA1-6484-000(XXX)	13		CA1-9104-000	13
	CA1-6485-000	13		CA1-9112-000	13
	CA1-6504-040	2		CA1-9113-000	13
	CA1-6522-000	5		CA1-9114-000	6
	CA1-6523-060	5		CA1-9115-000	6
	CA1-6525-000	5		CA1-9116-000	6
	CA1-6527-000	5		CA1-9117-000	6
	CA1-7531-000	9		CA1-9118-000	6
	CA1-7605-000	6		CA1-9119-000	6
	CA1-7606-000	6		CA1-9121-000	1
	CA1-7618-000	13		CA1-9122-000	1
	CA1-7619-000	13		CA1-9123-000	1
	CA1-7752-000	9		CA1-9125-000	3
	CA1-7777-000	16		CA1-9126-000	6
	CA1-9002-000	13		CA1-9127-000	1
	CA1-9003-000	4	*	CA1-9128-000	13
	CA1-9007-000	4		CA1-9133-000	12
	CA1-9016-000	7		CA1-9159-000	4
	CA1-9022-000(030)	7		CA1-9160-000	4
	CA1-9044-000	4		CA1-9164-000(020)	2
	CA1-9046-000	13		CA1-9165-000	2
	CA1-9050-000	12		CA1-9166-000	2
	CA1-9051-000	8		CA1-9168-000	2
	CA1-9070-000	11		CA1-9171-000	1

PARTS LIST INDEX

REF.NO. C12-8301

PARTS LIST INDEX

REF.NO. C12-8301

PARTS LIST INDEX

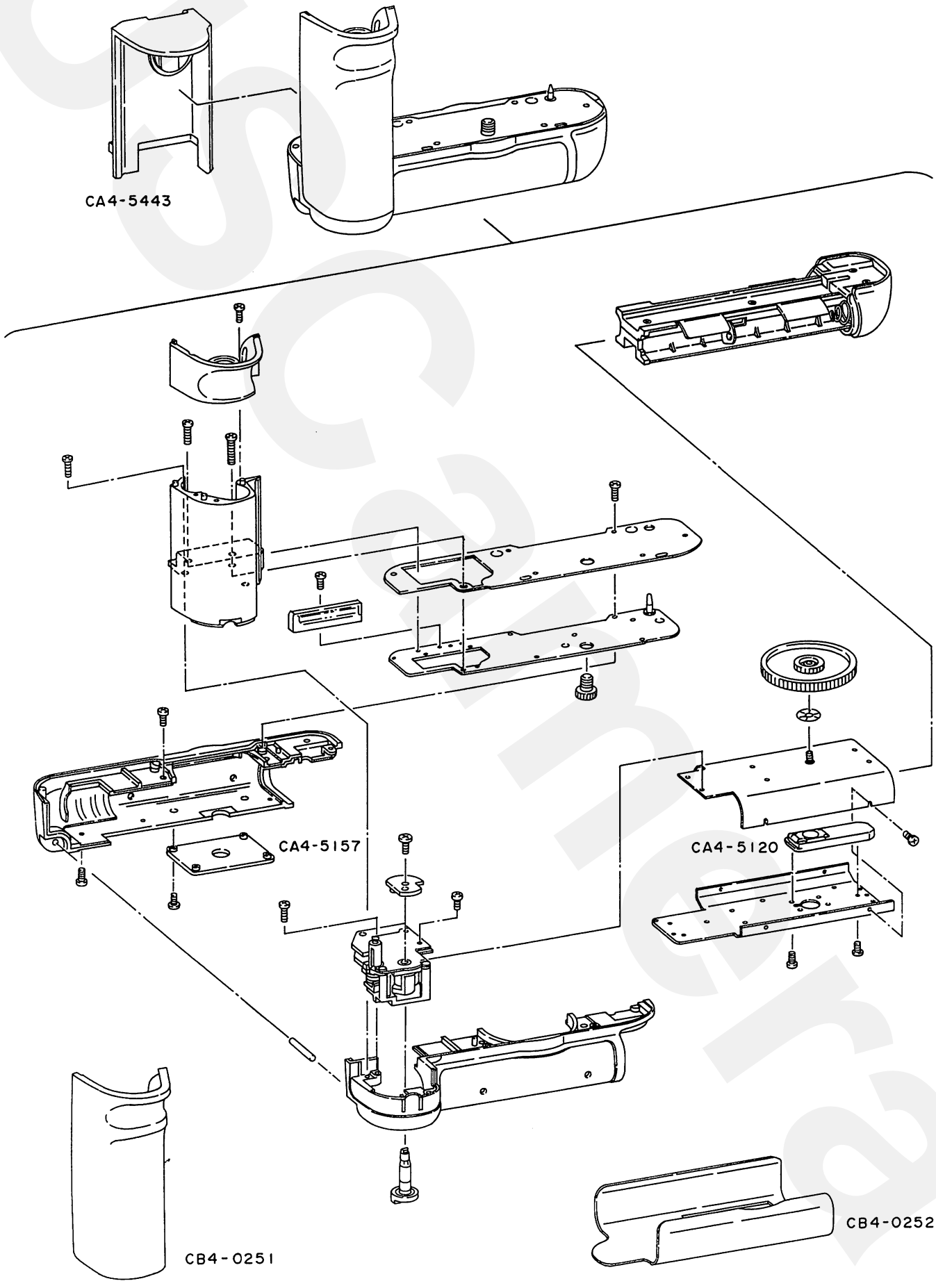
REF.NO. C12-8301

Canon

BATTERY PACK BP-E1 C50-1871

PARTS CATALOG

CANON BATTERY PACK BP-E1



PARTS LIST

REF.NO. C50-1871

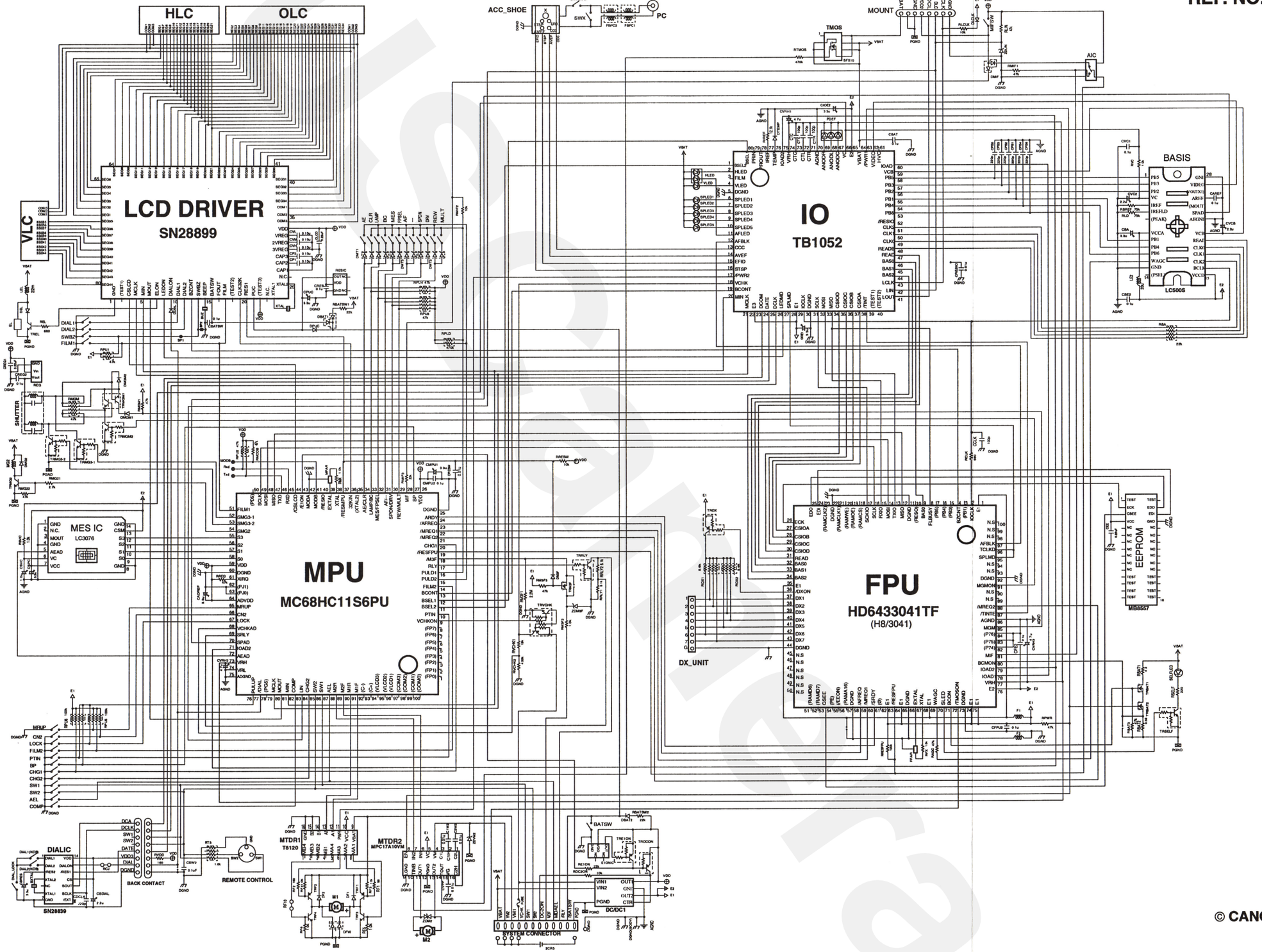
NEW	PARTS NO.	CLASS	QTY	DESCRIPTION	
*	CB4-0251-000	D	1	COVER,GRIP	グリップカバー
*	CB4-0252-000	D	1	COVER,CASE	ケースカバー
	CA4-5443-000	D	1	COVER, CONTACT PROTECTING	接点保護カバー
	CA4-5120-000	D	1	TRIPOD, MD	三脚
	CA4-5157-000	D	1	BASE, TRIOPOD	三脚座

Part 5

Electrical Diagrams

SCHEMATIC DIAGRAM

REF. NO. C12-8301

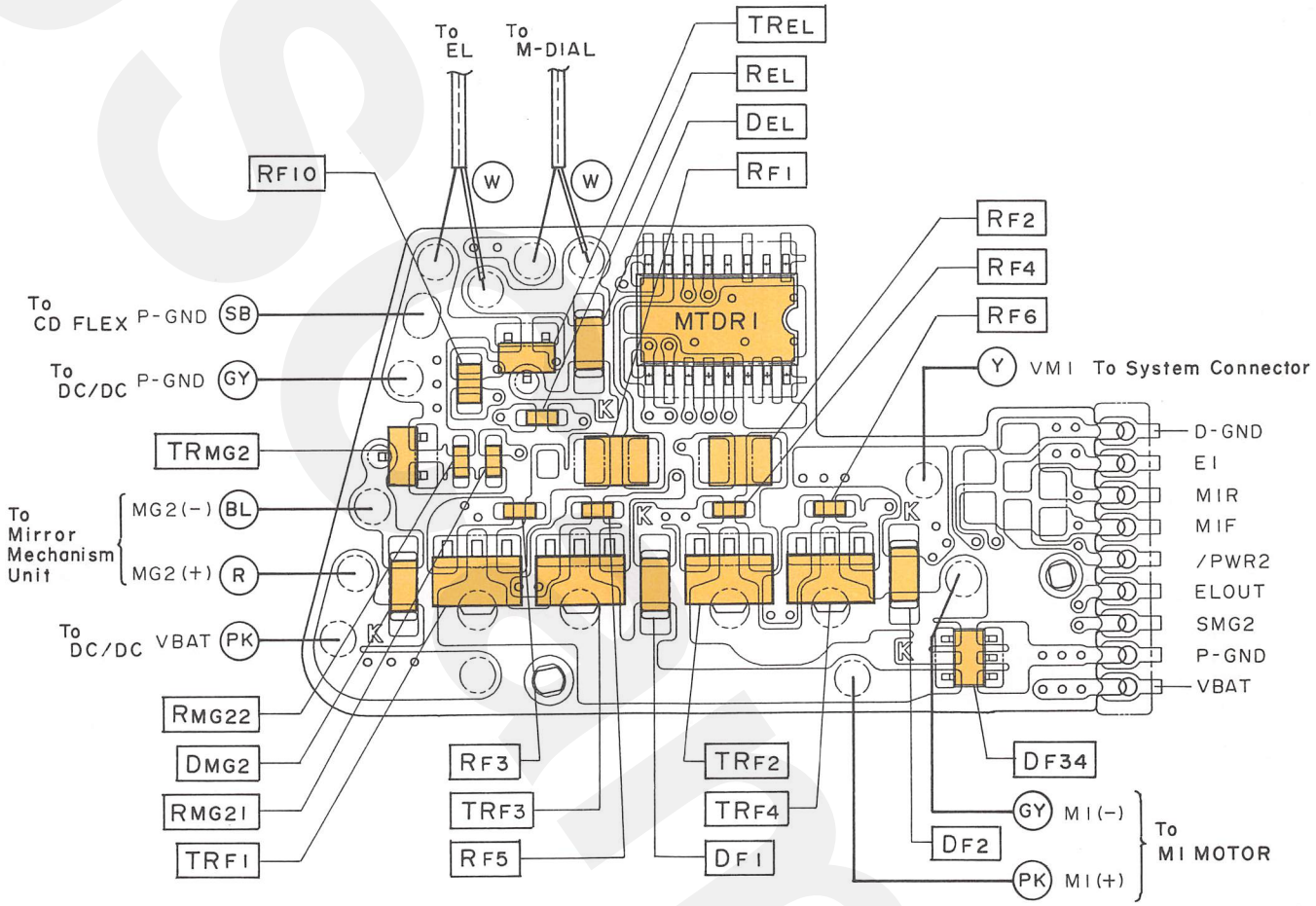


01 SEP, 1994

P.C.B. DIAGRAM

(MI FLEX)

REF. NO. C12-8301

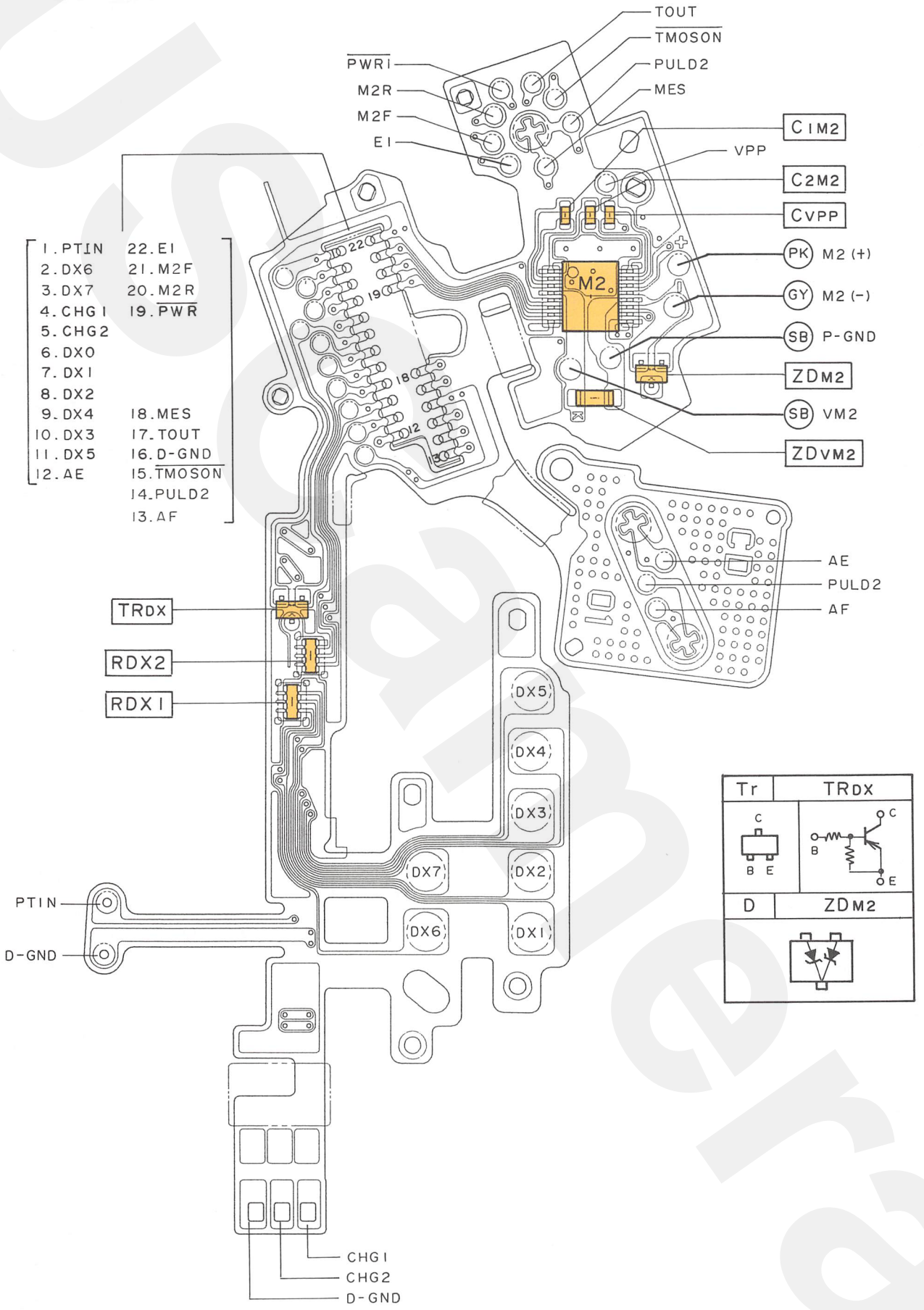


Tr	TREL, MG2
C B E	C B E
Tr	TRF1, F2
B C E	C B E
Tr	TRF3, F4
B C E	C B E

01 SEP, 1994

P.C.B. DIAGRAM
(CD FLEX)

REF. NO. C12-8301



01 SEP, 1994

P.C.B. DIAGRAM

(SDC FLEX A)

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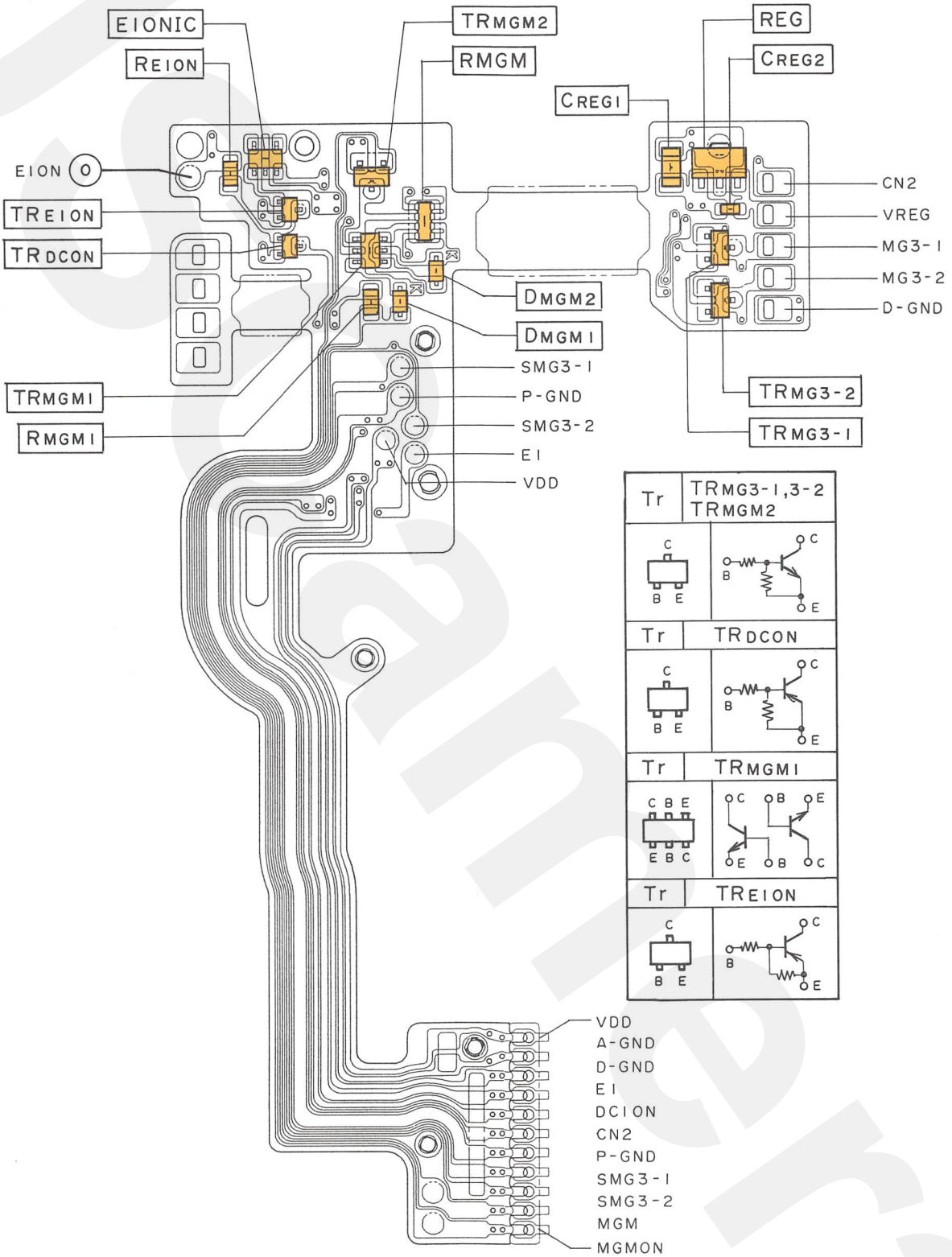

01 SEP, 1994

P.C.B. DIAGRAM

(SDC FLEX B)

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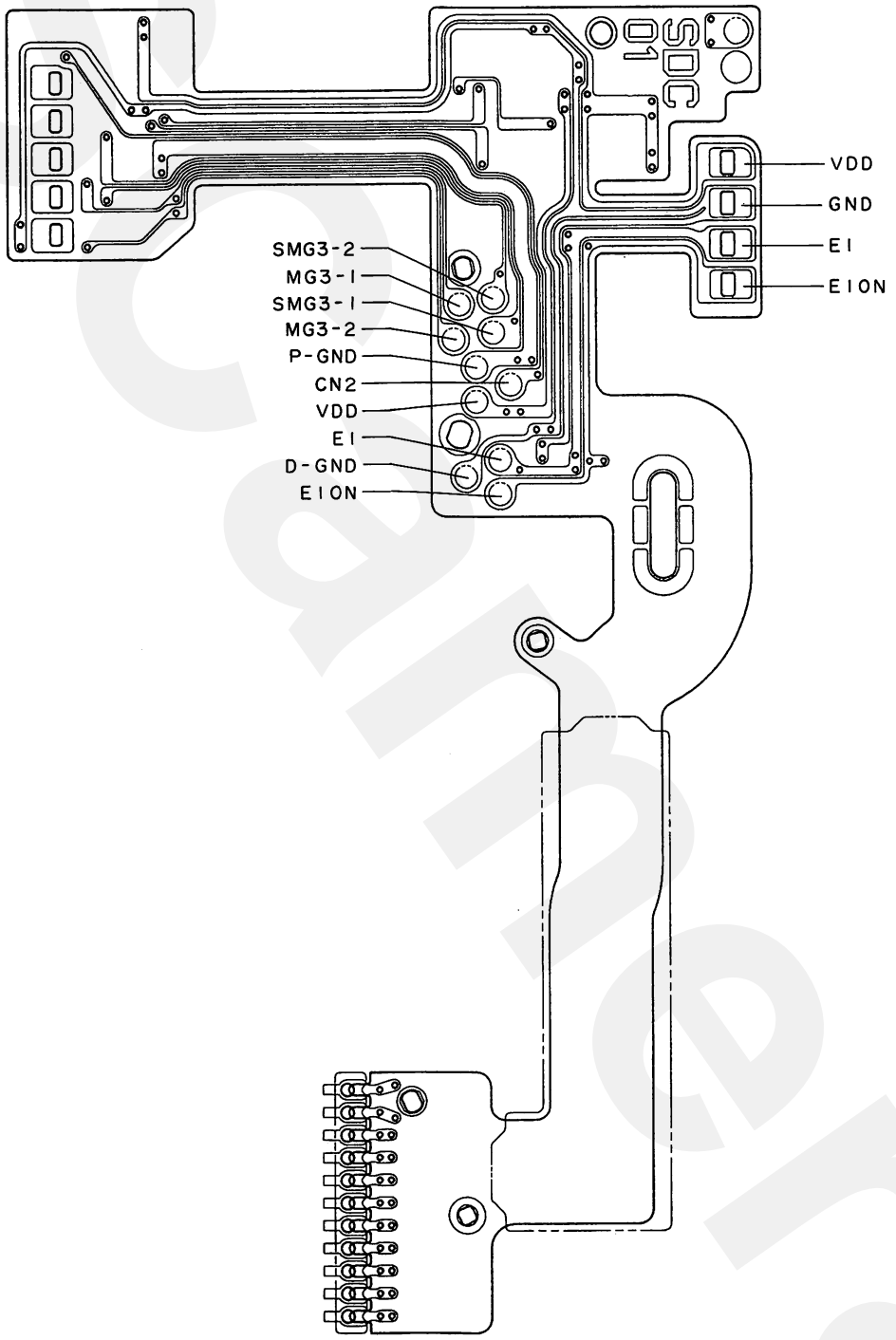
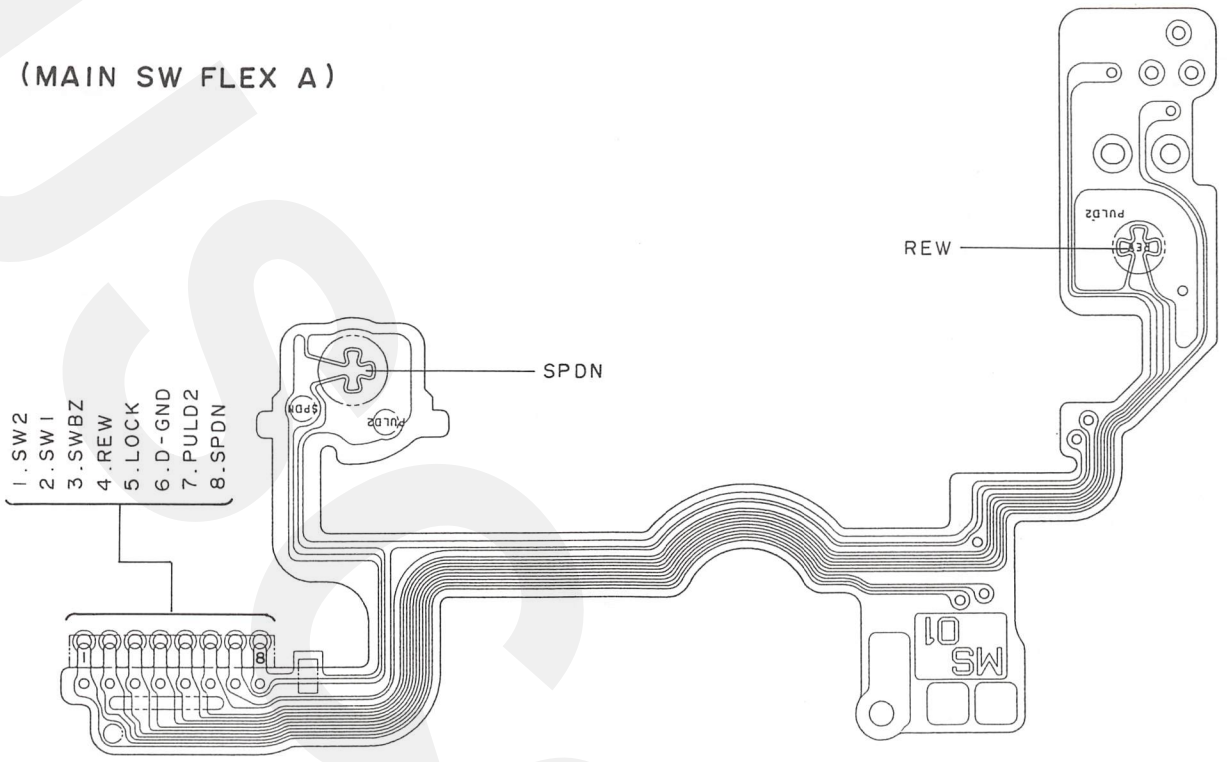


01 SEP, 1994

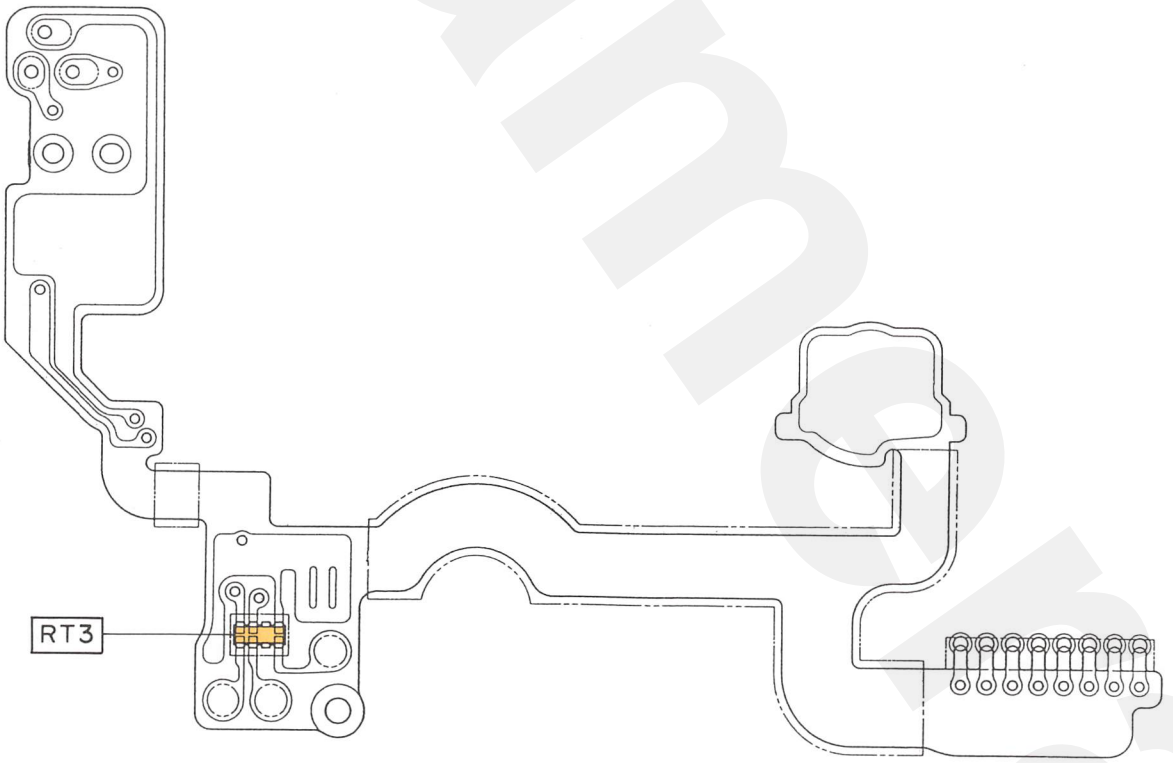
P.C.B. DIAGRAM

REF. NO. C12-8301

(MAIN SW FLEX A)



(MAIN SW FLEX B)

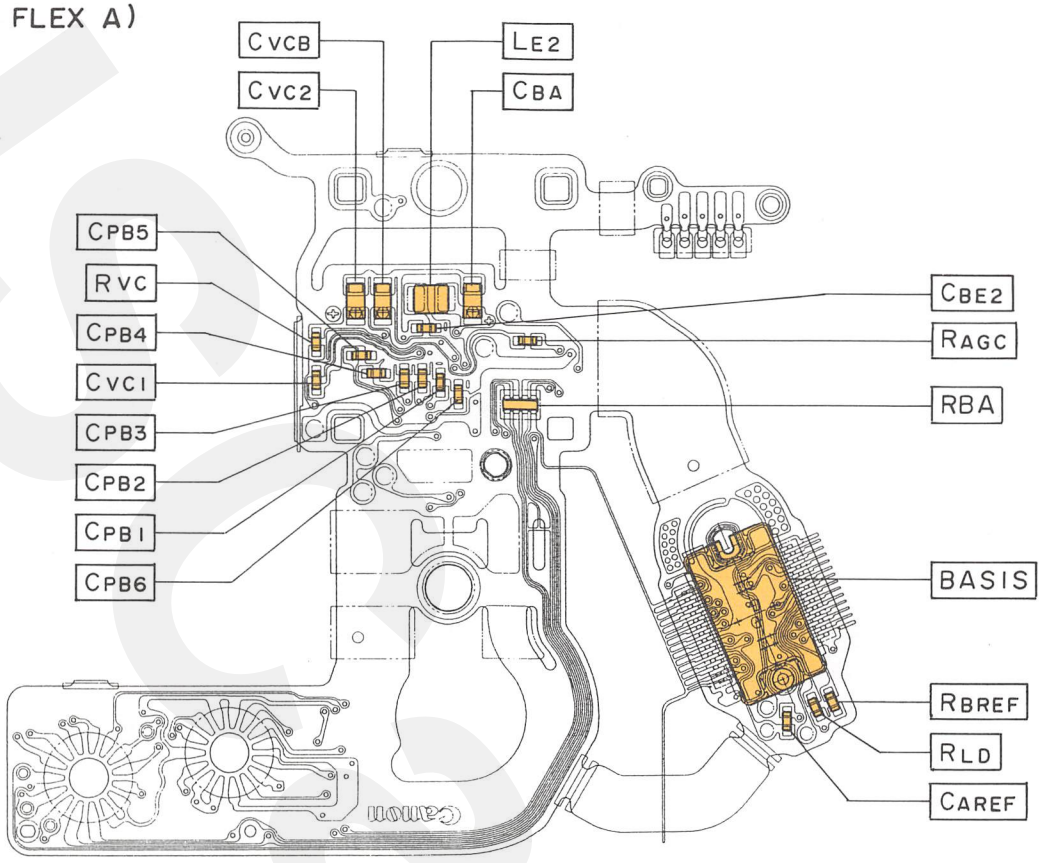


01 SEP, 1994

P.C.B. DIAGRAM

REF. NO. C12-8301

(BASIS FLEX A)



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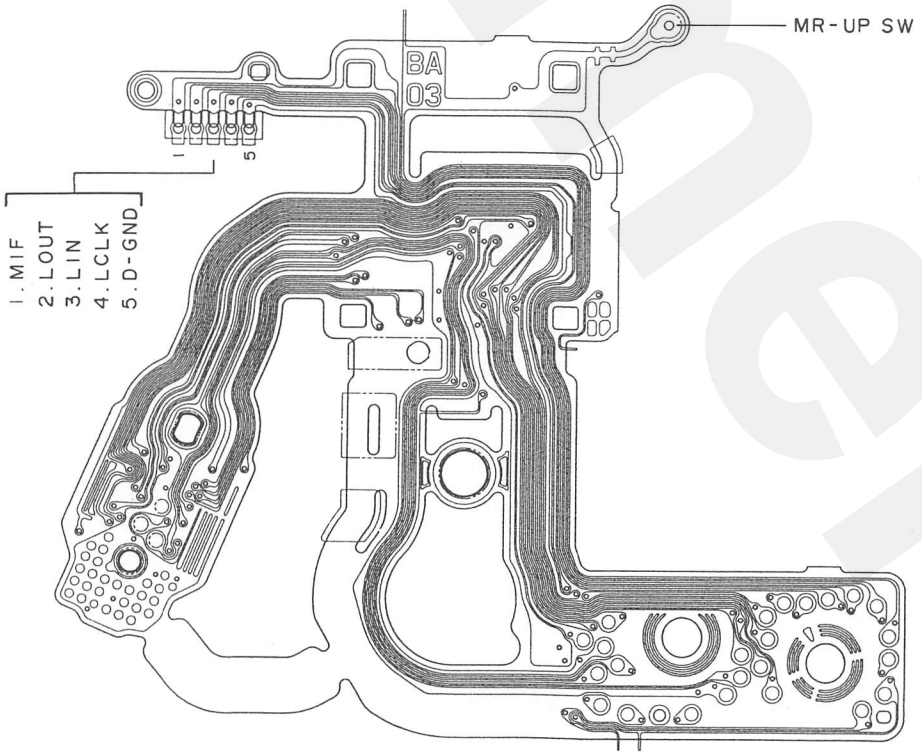
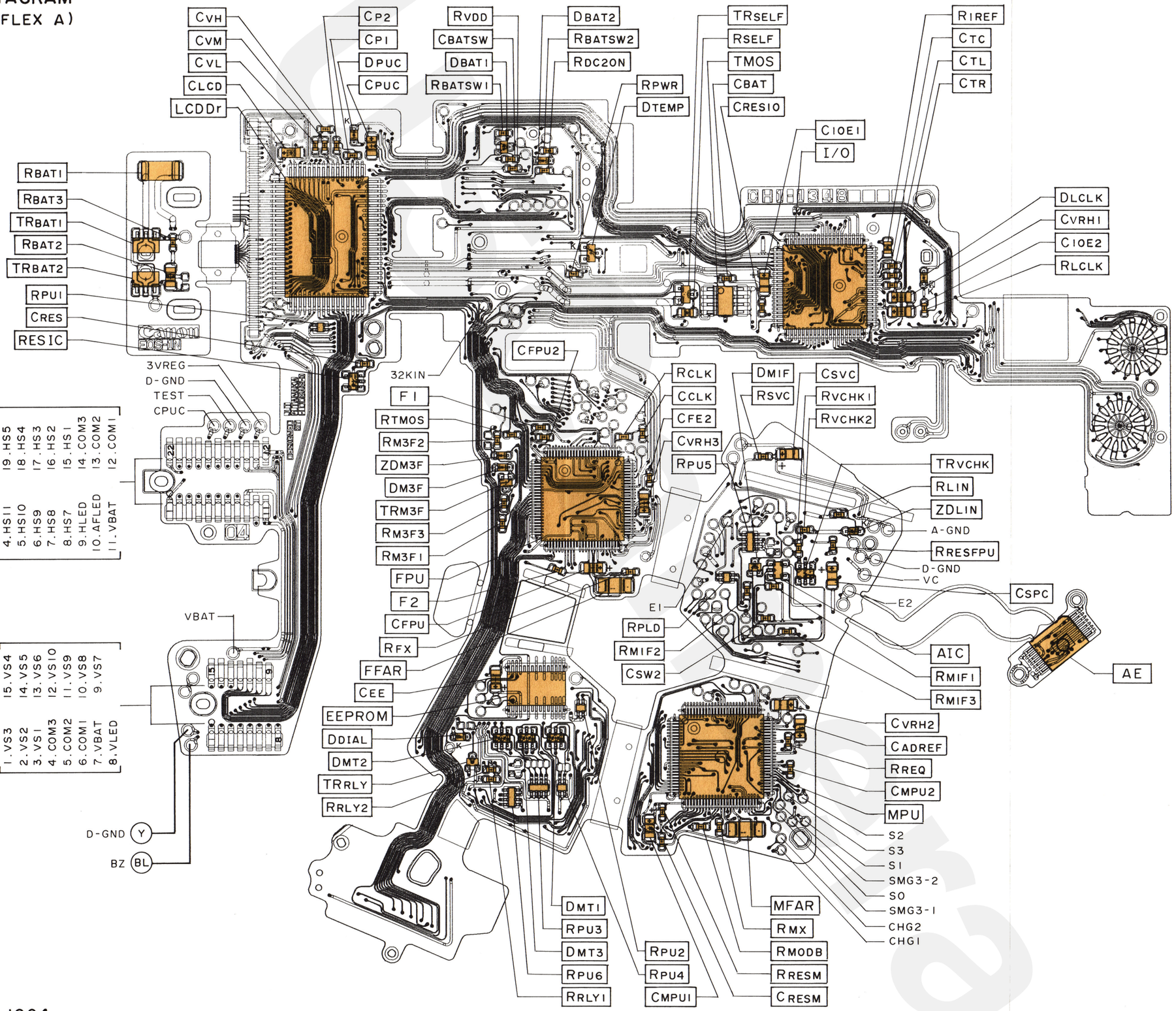


01 SEP, 1994

P.C.B. DIAGRAM
(MAIN FLEX A)

REF. NO. C12-8301



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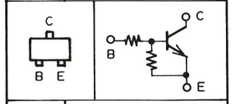
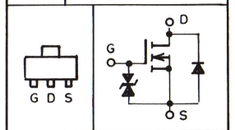
	
FET	TRBAT1,2
	
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	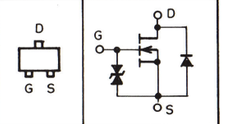
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	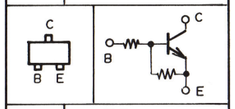
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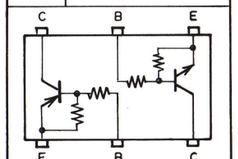
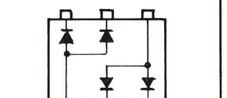
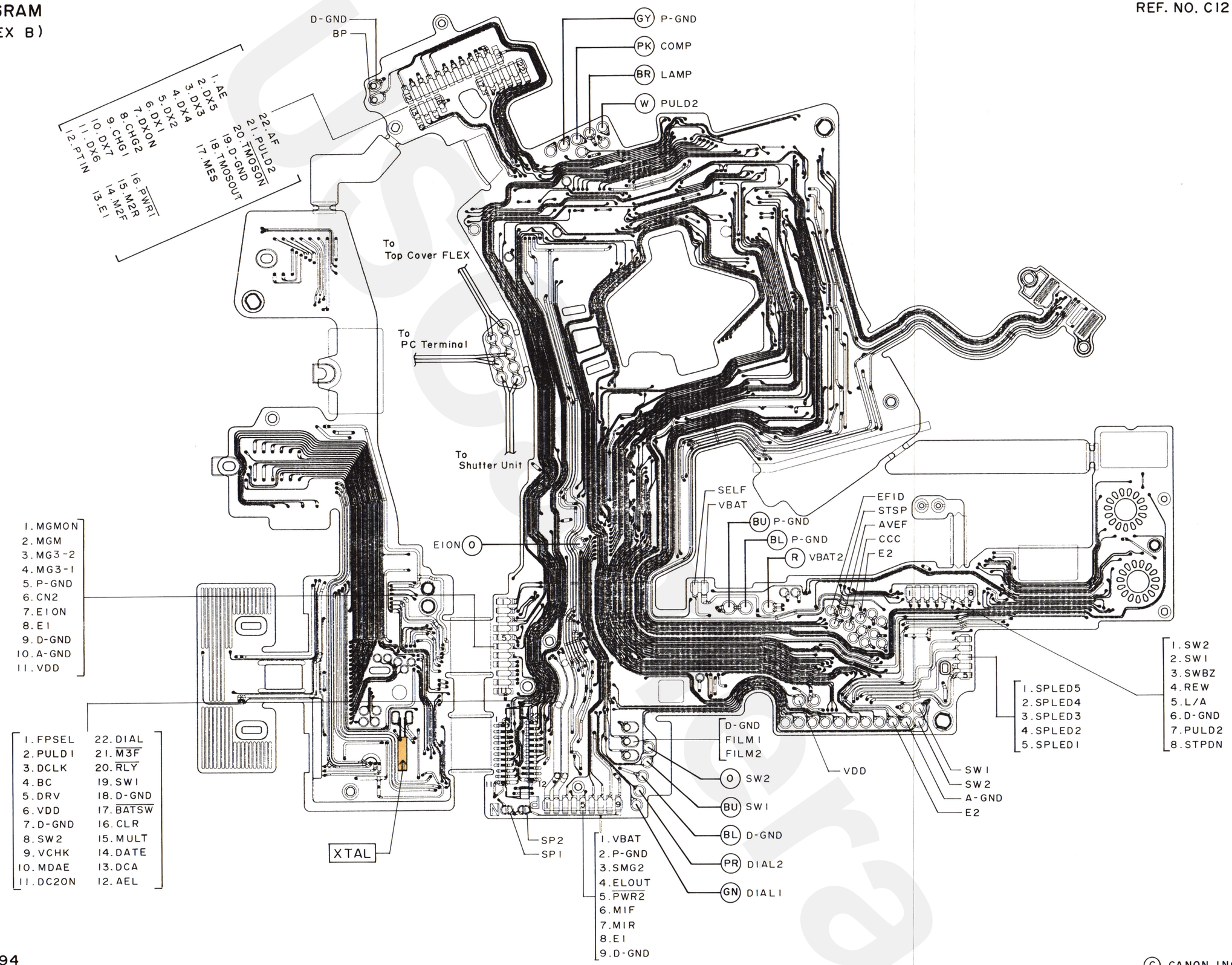
	
D	DMT1,2
	
D	DMIF,DBAT1
	

01 SEP, 1994

P.C.B. DIAGRAM
(MAIN FLEX B)

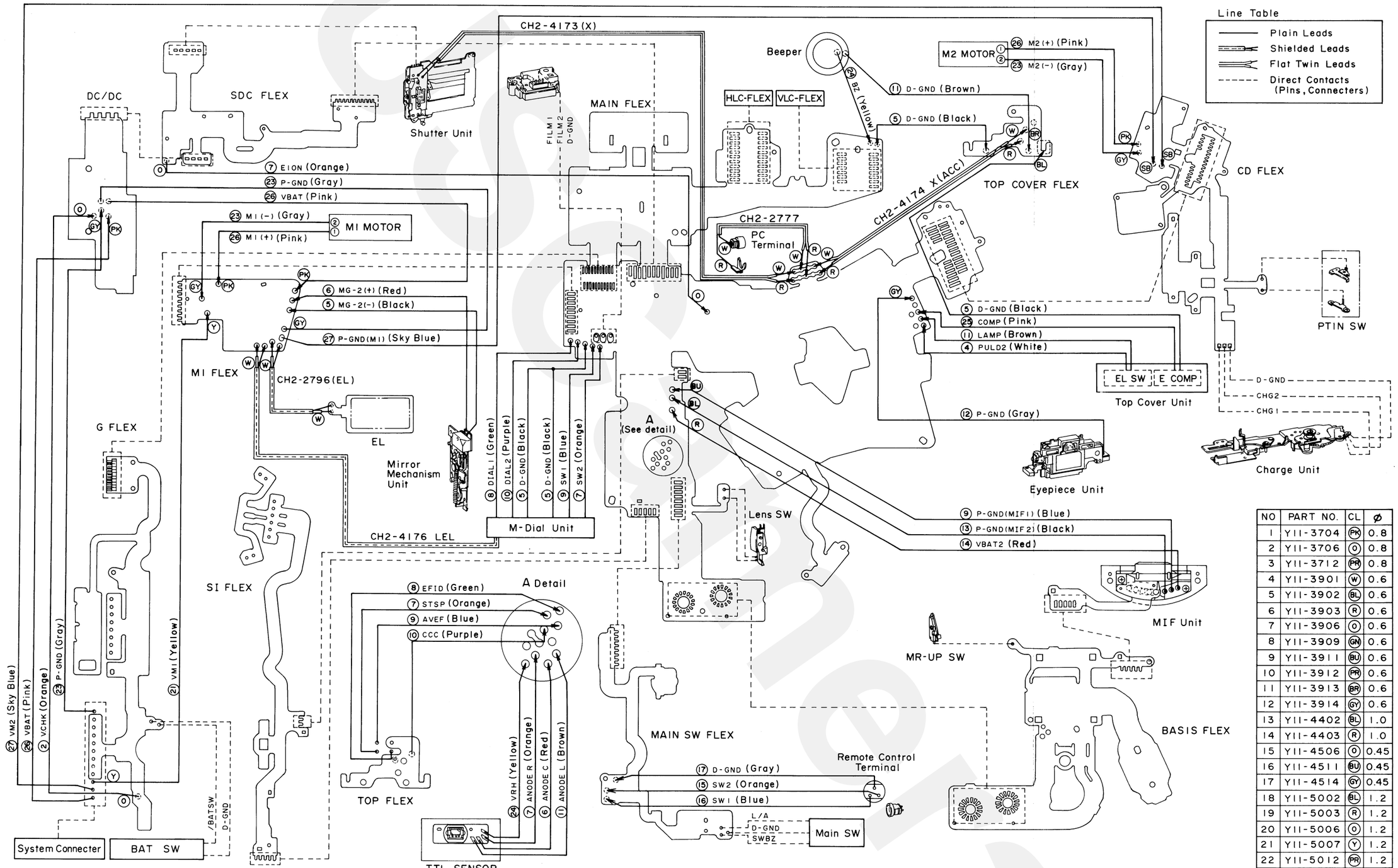
REF. NO. C12-8301



01 SEP, 1994

WIRING DIAGRAM

REF. NO. C12-8301



NO	PART NO.	CL	ø
1	Y11-3704	PK	0.8
2	Y11-3706	O	0.8
3	Y11-3712	PK	0.8
4	Y11-3901	W	0.6
5	Y11-3902	BL	0.6
6	Y11-3903	R	0.6
7	Y11-3906	O	0.6
8	Y11-3909	GN	0.6
9	Y11-3911	BU	0.6
10	Y11-3912	PR	0.6
11	Y11-3913	BR	0.6
12	Y11-3914	GY	0.6
13	Y11-4402	BL	1.0
14	Y11-4403	R	1.0
15	Y11-4506	O	0.45
16	Y11-4511	BU	0.45
17	Y11-4514	GY	0.45
18	Y11-5002	BL	1.2
19	Y11-5003	R	1.2
20	Y11-5006	O	1.2
21	Y11-5007	Y	1.2
22	Y11-5012	PR	1.2
23	Y11-5014	GY	1.2
24	Y11-3907	Y	0.6
25	Y11-3904	PK	0.6
26	Y11-4404	PK	1.0
27	Y11-4710	SB	1.25

01 SEP, 1994

Appendix

Canon **TOOLS SPECIFICATION & INSTRUCTION**

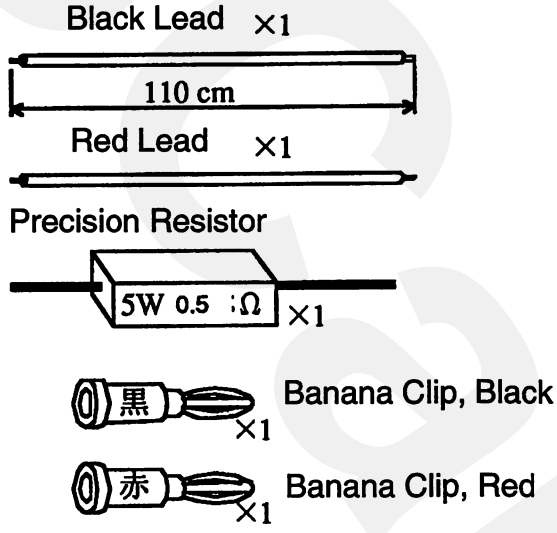
Photo Products Quality Assurance Division,Canon Inc. **Date** Sept., 1994

ORDER NO. CY9-1101-000 INST.NO. N/A

NAME Tool Battery Probe Kit (ES-1N)

Weight: 20g

Volume: 10cm (H) x 6cm (W)

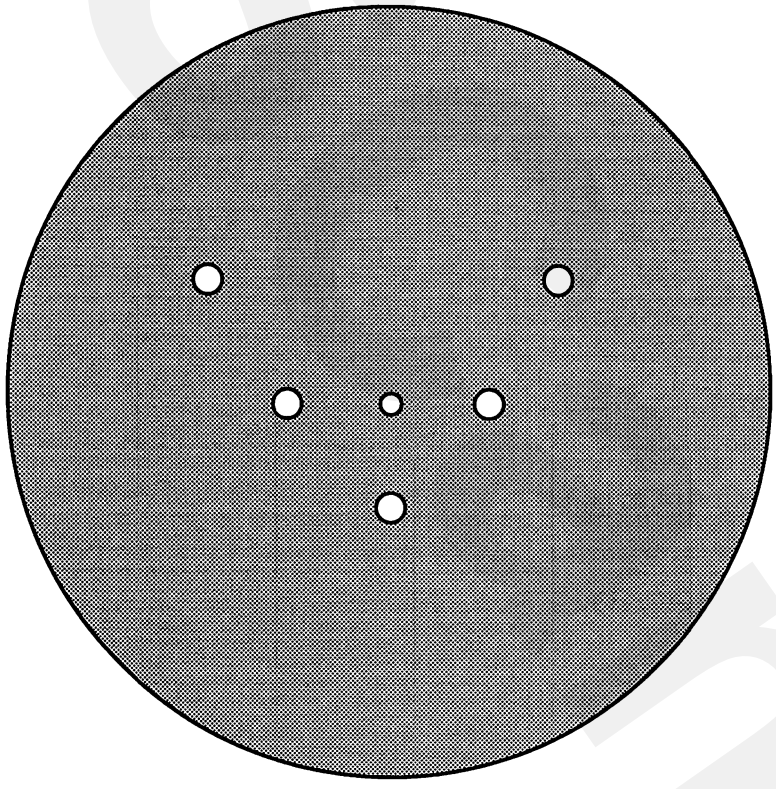


2. Use

Use the included parts and the Grip Unit (CG1-0502-090) of the EOS-1N to make a tool batter with the proper impedance for the Inhibit Voltage adjustment of the EOS-1 body. For detail instructions see the Inhibit Voltage Tool Battery Fabrication section on page 3-6 of the EOS-1N Service Manual (CY8-1200-119).

ORDER NO. CY9-1102-000 INST.NO. N/A

NAME SPD Positioning Mask (EOS-1N)



Weight: 13.6g

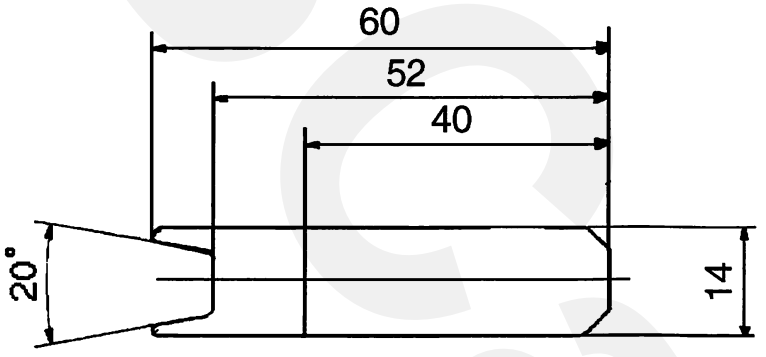
Volume: 10cm (D) x cm (t)

2. Use

Use this mask on the EF-8000 camera tester for the SPD Positioning Adjustment. For detail instructions see the SPD Positioning Adjustment section in the Repair Information part of the of the EOS-1N Service Manual (CY8-1200-119).

ORDER NO. CY9-1103-000 INST. NO. N/A

NAME Superimpose Screen Tool (EOS-1N)



Weight: 10.0g

Volume: 6.0cm (D) x 1.4 cm (W)

2. Use

Use this tool to remove the Superimpose (focus mark) screen from the EOS-1N.

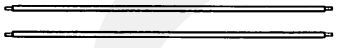
ORDER NO. CY9-1104-000 INST.NO. N/A

NAME Tool Battery Kit (Power Drive Booster E-1)

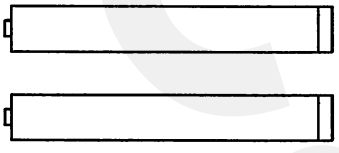
Weight: Approx. 40g

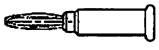
Volume: 10cm (H) x 6cm (W)

Red and Black Leads (1 ea.)

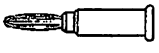


Dummy Double Battery x 2

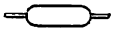




Banana Clip, Black



Banana Clip, Red



Capacitor

Diodes (2 ea.)

2. Use

Use the included parts and the Battery Holder Unit (CG9-2766-000) of Power Drive Booster E-1 to make a tool battery with the proper impedance for the Inhibit Voltage adjustment of the EOS-1 + Power Drive Booster E-1. For detail instructions see the PDB Inhibit Voltage Tool Battery Fabrication section on page 3-7 of the EOS-1N Service Manual (CY8-1200-119).

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Recycled Paper is used in this manual.

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