

NIKONOS V

ニコノス V

REPAIR MANUAL

修 理 指 針

NIPPON KOGAKU K.K.

Tokyo, Japan

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SPECIFICATIONS

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SPECIFICATIONS

Type of camera: Electronically controlled 35mm amphibious focal plane shutter camera

Usable film: Standard 35mm cartridge-type film

Standard lens: UW-Nikkor 35mm F2.5 lens

Lens mount: Nikonos bayonet mount

Shutter: SEIKO MFCE226; electronically controlled vertical-travel metal focal-plane type

A(AUTO): Electronically controlled stepless speeds from 1/30 to 1/1000 sec.;

M(MANUAL): Quartz-controlled speeds from 1/30 to 1/1000 sec.;

M90(MECHANICAL): Mechanically controlled at 1/90 sec.;

B(BULB): Mechanical setting for long exposures

Viewfinder: Inverted Galilean type Albada finder built into camera for use with standard 35mm lens;

Film frame marks show approx. 85% picture coverage at infinity (∞);

0.55X magnification

diopter -0.9;

long eyerelief allows viewing with eye 40mm away from finder

parallax correction marks provided

Viewfinder display: LED shutter speed indications 30, 60, 125, 250, 500, 1000;

LED over-and under exposure warning arrows ◀ ▶ ;

thunderbolt-shaped ready-light ⚡

Film-advance lever: Wound in single stroke or series of strokes;

144° winding angle;

hinged for compact storage

Frame counter: Additive type;

When shutter speed/mode selector dial is at "A", shutter releases at approx. 1/1500 sec. until film frame counter reaches frame "1"

Film rewind: Manual via film rewind crank after shutter speed/mode selector dial is set to "R" (Rewind);

shutter release button is automatically locked

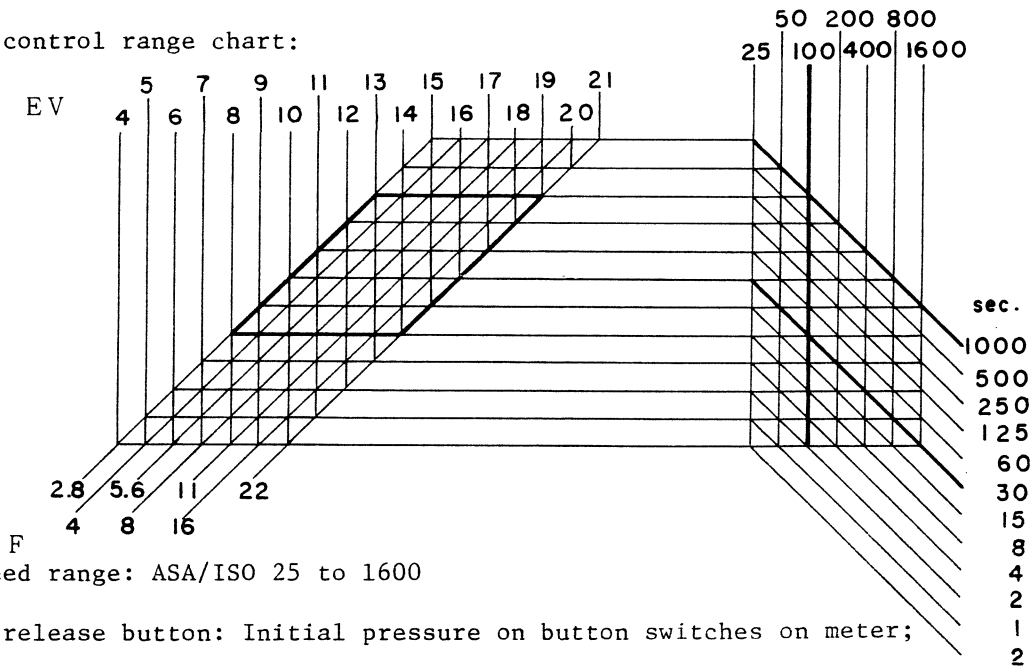
Exposure metering: Through-the-lens(TTL) light intensity feedback metering;

center-weighted metering rate 25%

Metering range: EV8 to EV19 at ASA/ISO 100 with F2.8 lens (from 1/30 sec. at f/2.8 to 1/1000 sec. at f/22)

ASA/ISO

Shutter control range chart:



Film speed range: ASA/ISO 25 to 1600

Shutter release button: Initial pressure on button switches on meter;

meter remains on for 16 sec. after finger is removed

Flash synchronization: X-sync only via five-pins flash socket in camera's base;

Synchronizes at 1/90 sec. or slower;

with Nikonos Speedlight SB-102, shutter speed automatically switches to 1/90 sec. when shutter speed/mode selector dial is at "A" or at 1/125 sec. or higher on manual mode;

at 1/60 sec. or slower on manual, shutter fires at speed set

Flash metering: TTL flash metering with SB-102

Flash ready-light: Thunderbolt-shaped LED in viewfinder lights when SB-102 and others have recycled;

blinks to warn of insufficient light output, improper shutter speed/mode selector dial setting, and film speed setting beyond ASA/ISO 400

Batteries: One 3V lithium battery (CR 1/3 type), two 1.55V silver-oxide batteries (SR-44 type) or one 1.5V alkaline-manganese battery (LR-44 type)

Battery check: Possible when shutter speed/mode selector dial is at any setting except M90, B or R, and frame counter is at or beyond "1";

viewfinder LED lights to indicate proper battery installation and sufficient battery power when shutter release button is depressed

Withstand pressures: Up to 6kg/cm^2 at a depth of 50m

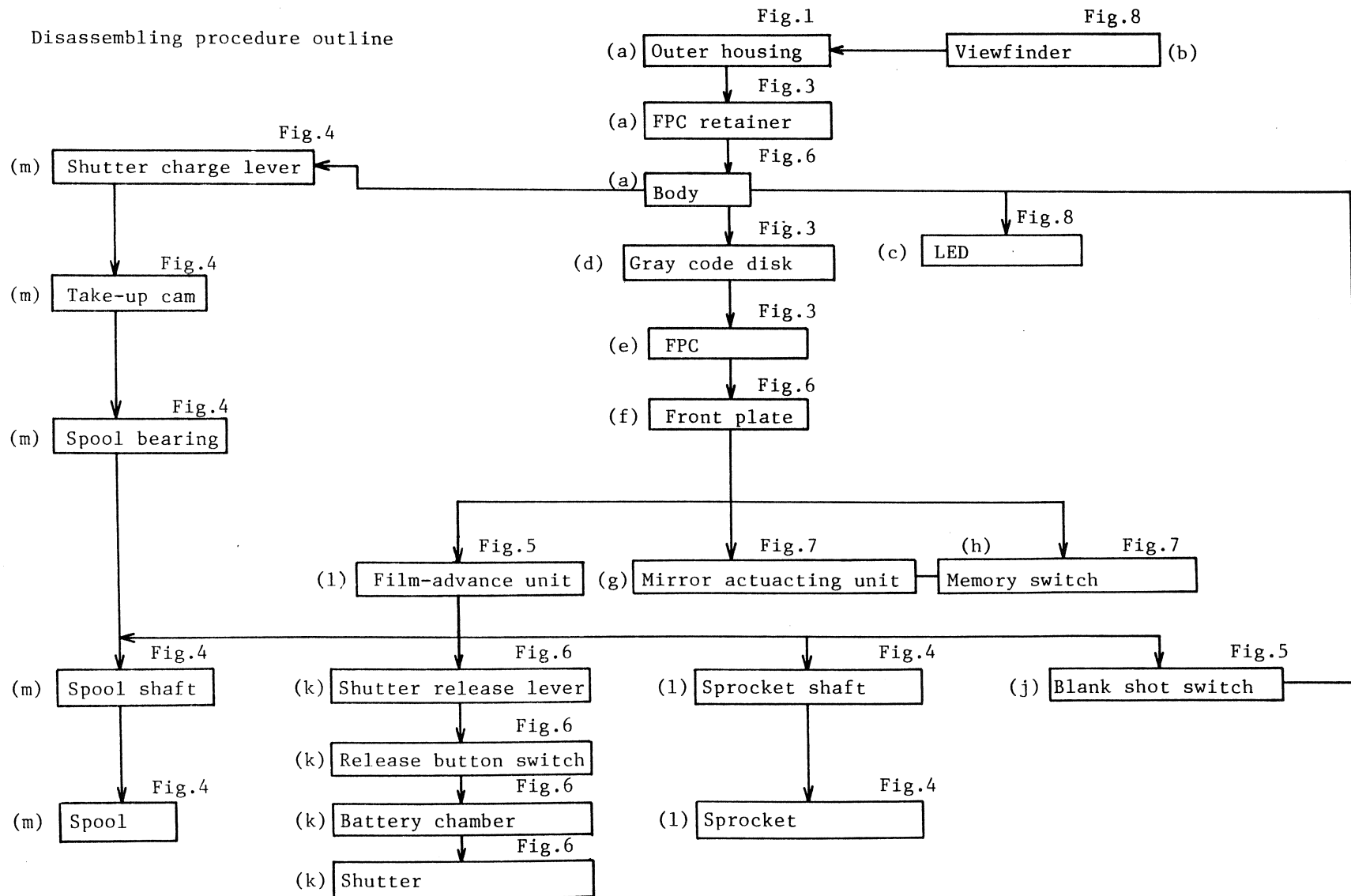
Dimensions: Approx. 146mm(W) x 99mm(H) x 58mm(D)

Weight: Approx. 695g (without lens)

DISASSEMBLING & ASSEMBLING & ADJUSTMENTS & DRAWINGS

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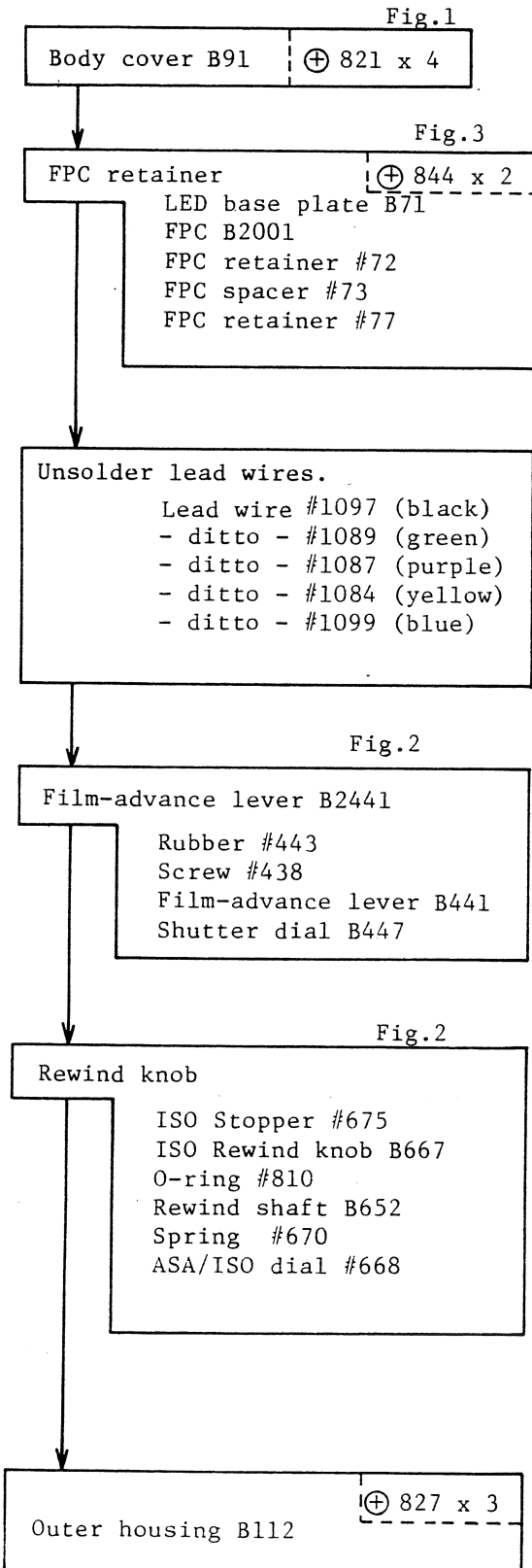
Disassembling procedure outline



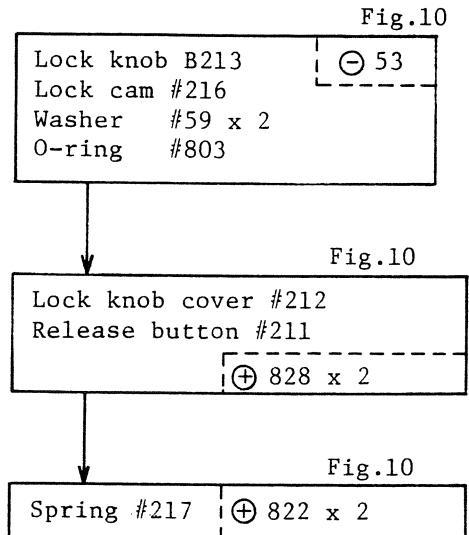
Disassembling chart

Note: Remove batteries before disassembling.

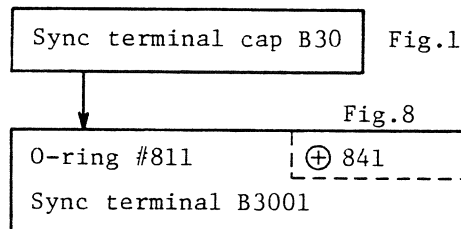
(a)-1 Outer housing



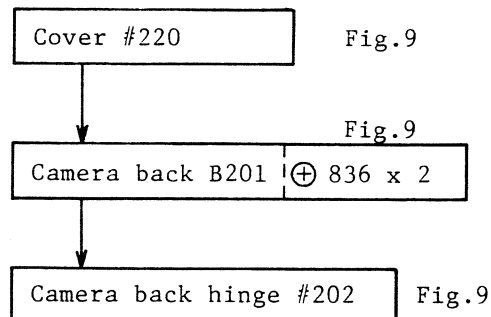
(a)-2 Camera back lock knob



(a)-3 Sync terminal



(a)-4 Camera back



Note: Be careful of battery chamber.

(a)-6 Pressure plate

Fig.1

Pressure plate B81	⊕ 833 x 2
Bearing 83 x 2	
Spring #92	
Pressure plate hinge #84	

(a)-7 Shutter release button

Leatherette #69

Fig.11

Release button
cover B51

⊕ 839

Fig.11

Lock knob plate #57

⊕ 837

Lock knob #56

Shutter release button #58

Fig.11

Release button lever B55
Washer #59

Fig.11

⊕ 53

Axle B52
O-ring #803

Fig.11

(b) Viewfinder

Fig.8

Front cover #28

O-ring #801
Lens G1

Fig.8

Retainer #17
Lens G2

Fig.8



Fig.8

Eyepiece window #16

O-ring #802
Lens G4
Retainer #20

Fig.8

Retainer #18
Lens G3
Spacer #19

Fig.8

(c) LED

Fig.8

LED light-shield #65



Fig.8

LED base plate B71-1 ⊕ 822 x 2

(d) Gray code disk

Fig.3

Gray code disk B493 ⊖ 504



Fig.3

Click plate #495

(e) FPC

Fig.3

Unsolder lead wires.

Lead wire, blank shot SW #485
 - ditto - #486
 Lead wire, M.SW #1081 (black)
 - ditto - #1082 (blue)
 Lead wire, battery chamber
 #1091 (red)
 - ditto - #1096 (black)
 Lead wire, shutter #1083 (purple)
 - ditto - #1085 (green)
 - ditto - #1086 (brown)
 - ditto - #1088 (blue)
 - ditto - #1090 (white)
 - ditto - #1098 (grey)
 - ditto - #1100 (yellow)
 Lead wire, SPD 1 #1092 (orange)
 - ditto - #1093 (purple)
 Lead wire, SPD 2 #1094 (brown)
 - ditto - #1095 (green)

⊕ 822 x 1

⊕ 831 x 3

⊕ 839 x 2

⊖ 502 x 3

Note: Use solvent on variable
 resistors.

Fig.3

Gray code base plate B491
 Spring #498
 ⊕ 822 x 2
 ⊕ 842

Note: Separate FPC and Gray code
 base plate only when
 replacing FPC.

(f) Front plate

Fig. 6

Front plate B116 ⊕ 825 x 3
 ⊕ 835 ⊕ 832 x 2

Fig.7

SPD 1 B99 ⊕ 832 x 2

Fig.7

Spring #310 ⊖ 311

Fig.7

SPD 2 B98 ⊕ 832

(g) Mirror actuating unit

Fig.7

Mirror actuating unit ⊕ 824 x 2
 B301 ⊖ 316

Fig.7

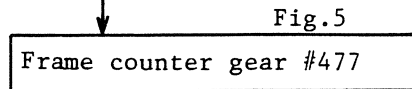
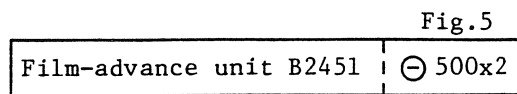
Shutter start lever #315

(h) Memory switch

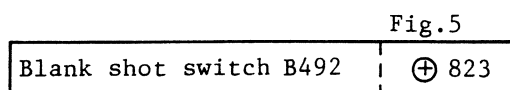
Fig.7

Memory switch B323
 ⊕ 823

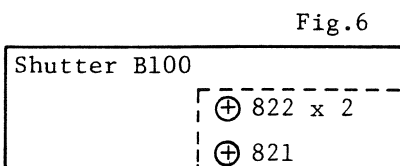
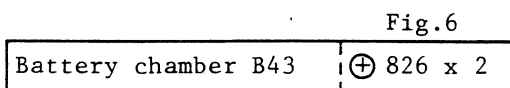
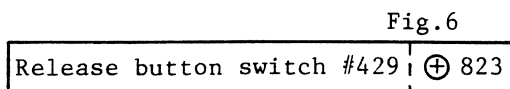
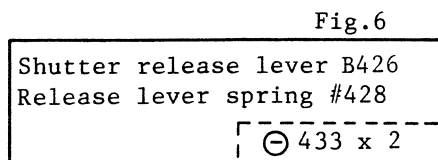
(i) Film-advance unit



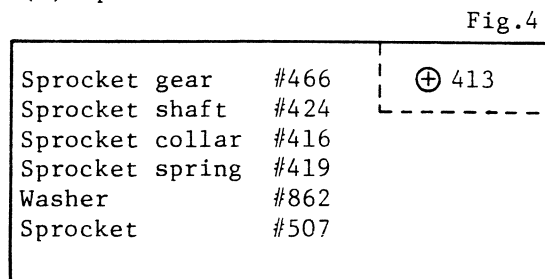
(j) Blank shot switch



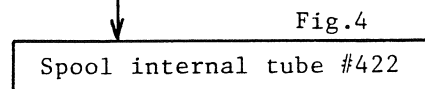
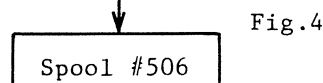
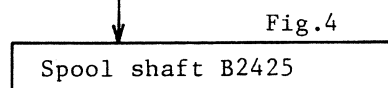
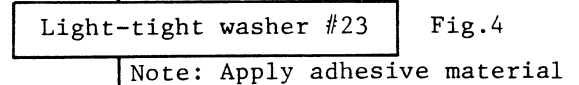
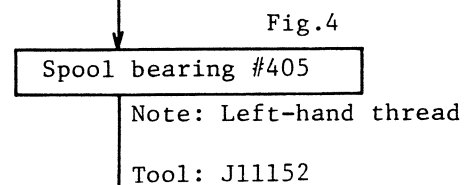
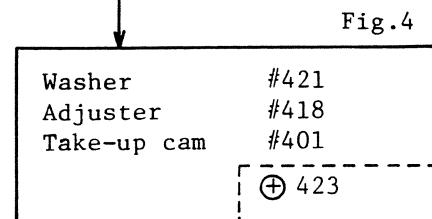
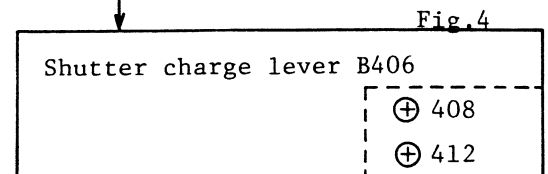
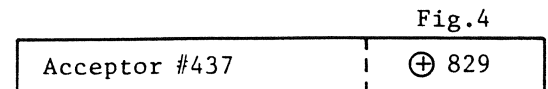
(k) Shutter



(l) Sprocket



(m) Spool



1. 圧板・バッテリーケース Pressure Plate & Battery Chamber

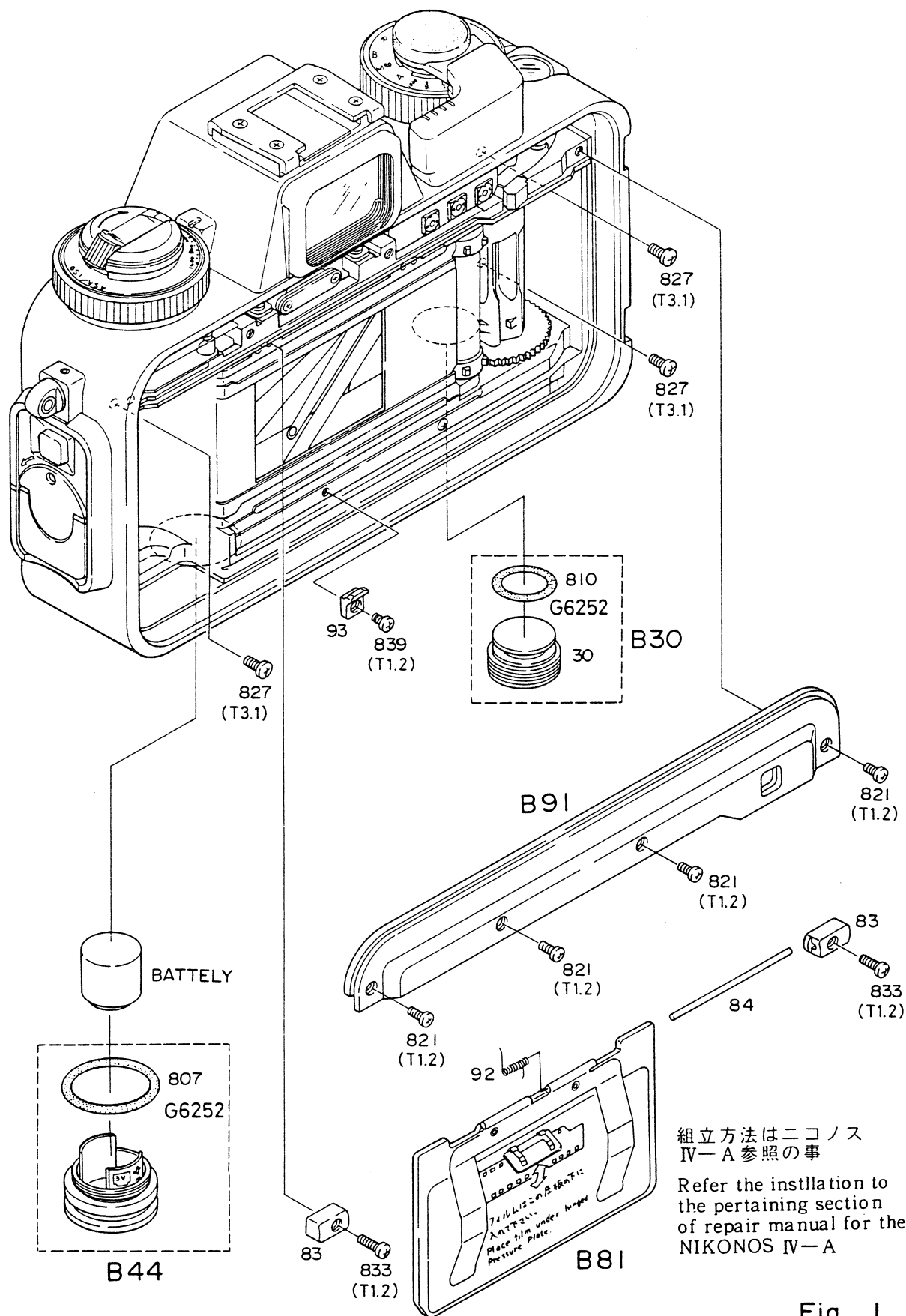


Fig. 1

Shutter Mode Selector & Rewind knob

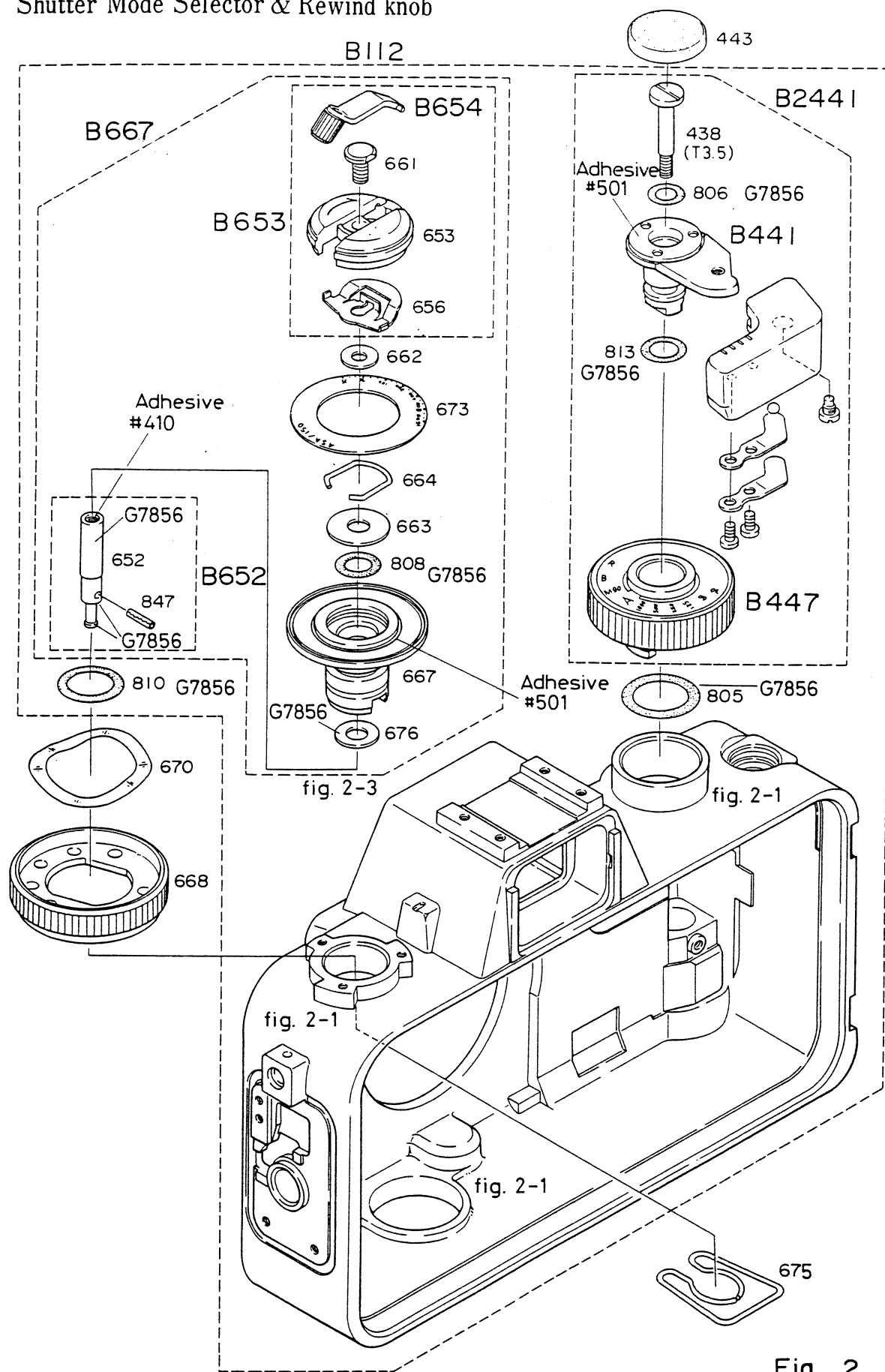


Fig. 2

Fig.2-1 Oil barrier application

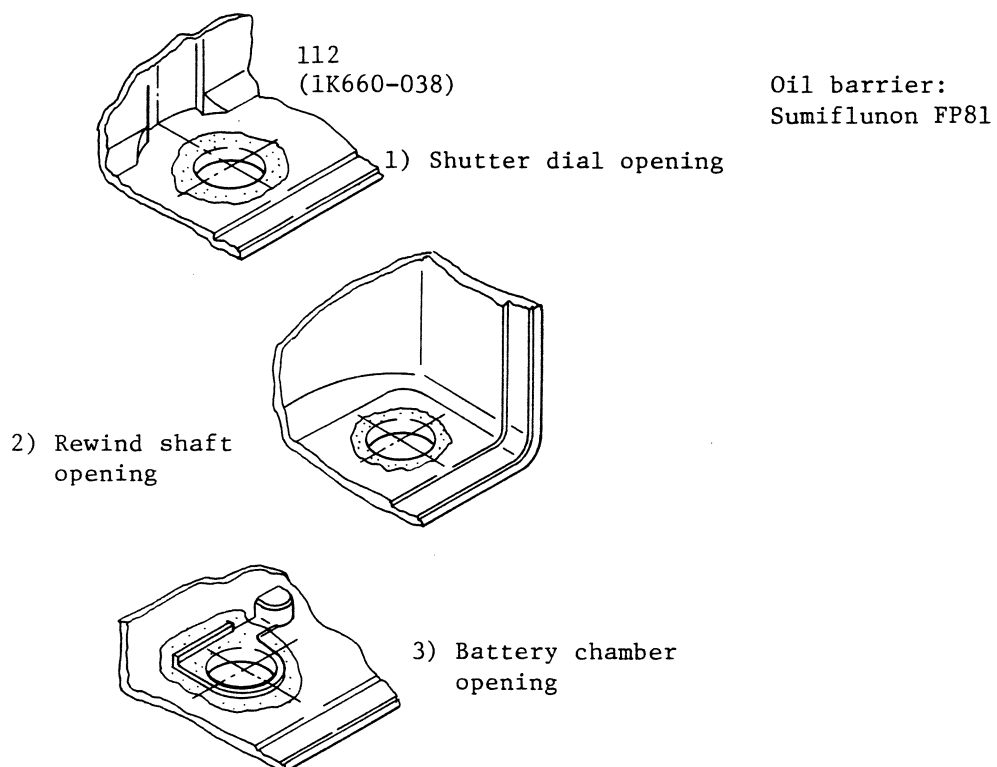


Fig.2-2 Shutter dial/film-advance lever installation

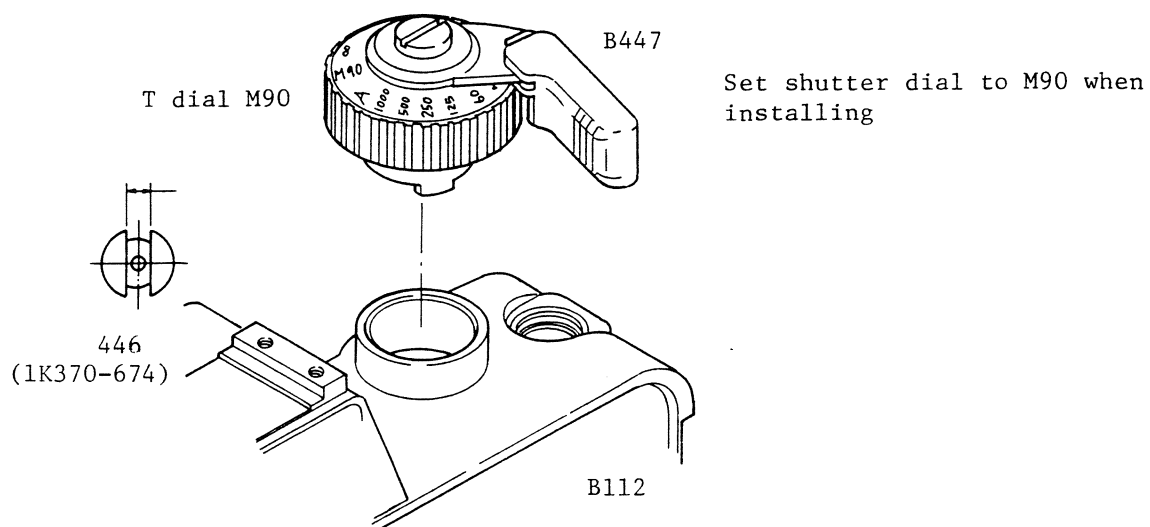
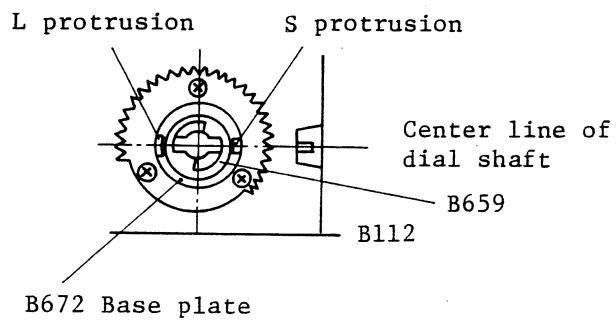
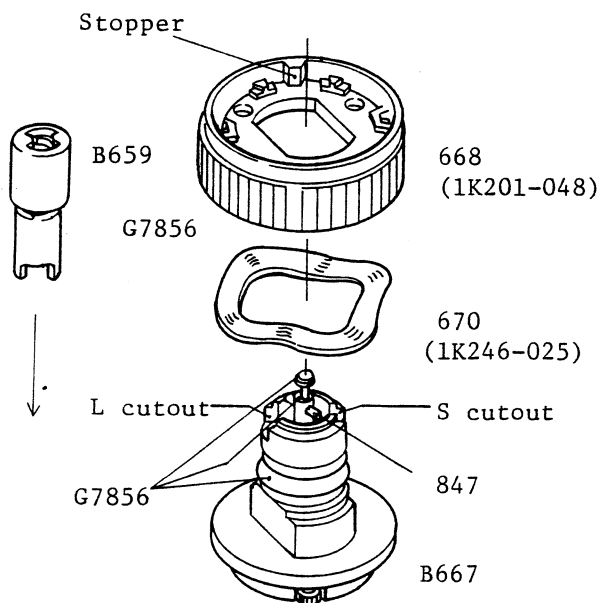


Fig.2-3 ASA/ISO dial installation



- 1) Align L protrusion and S protrusion of B672 with the center line of dial shaft.
- 2) Align forks of B659 with the center line of dial shaft.
- 3) Position stopper of #668 near L cutout of B667.
- 4) Align Spring cotter #847 with L cutout and S cutout of B667.
- 5) Fit L protrusion of B672 with L cutout of B667.



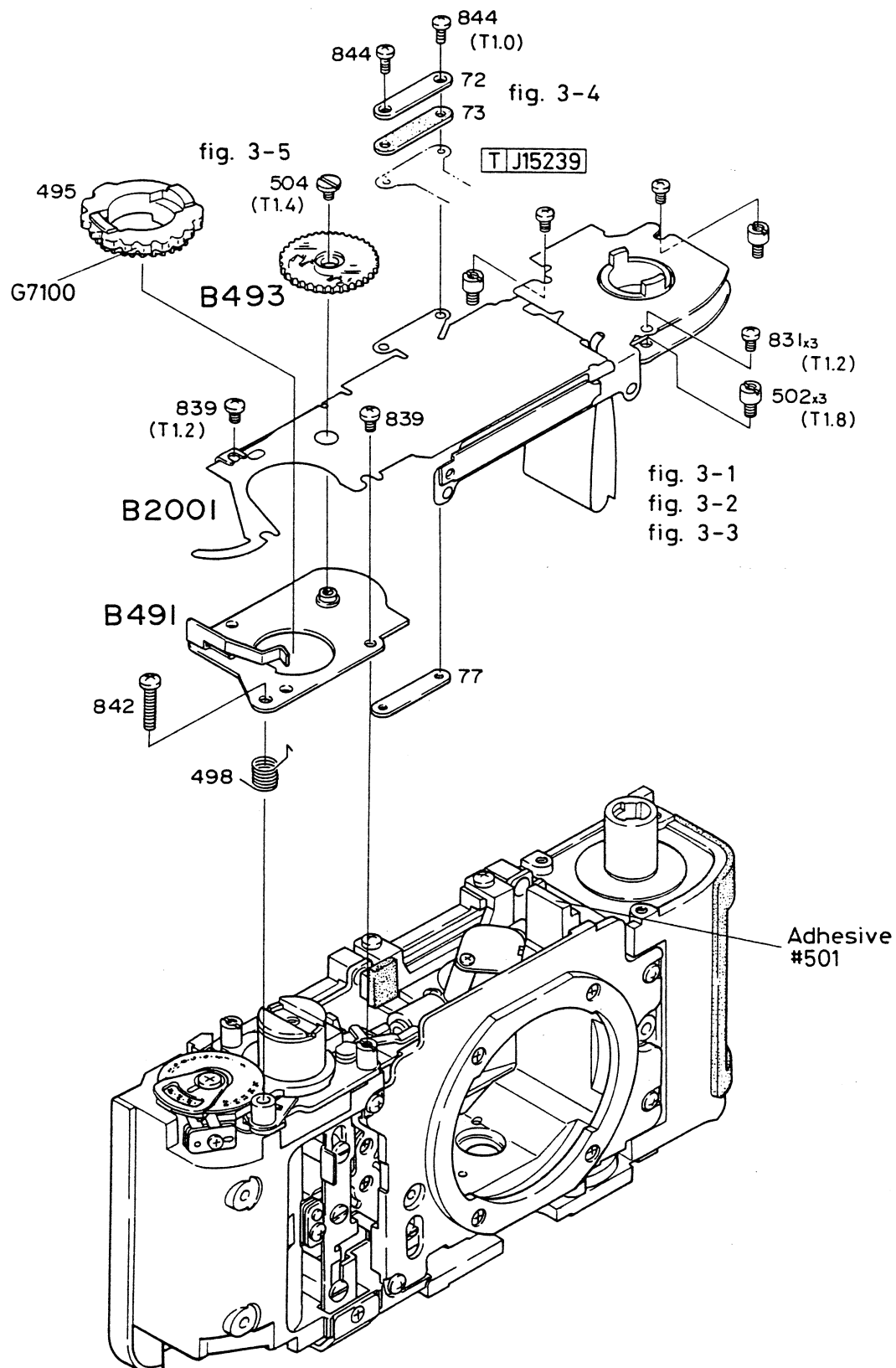
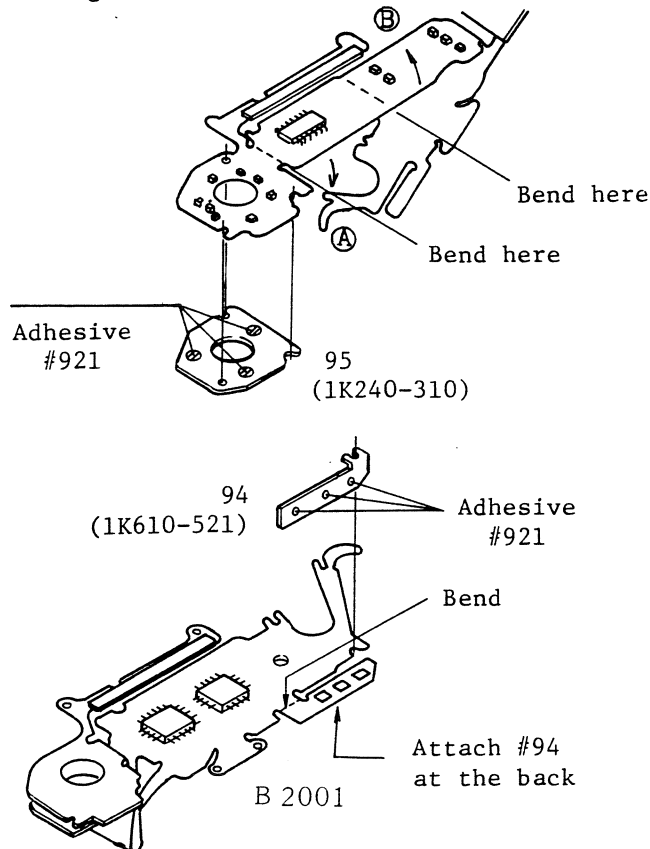


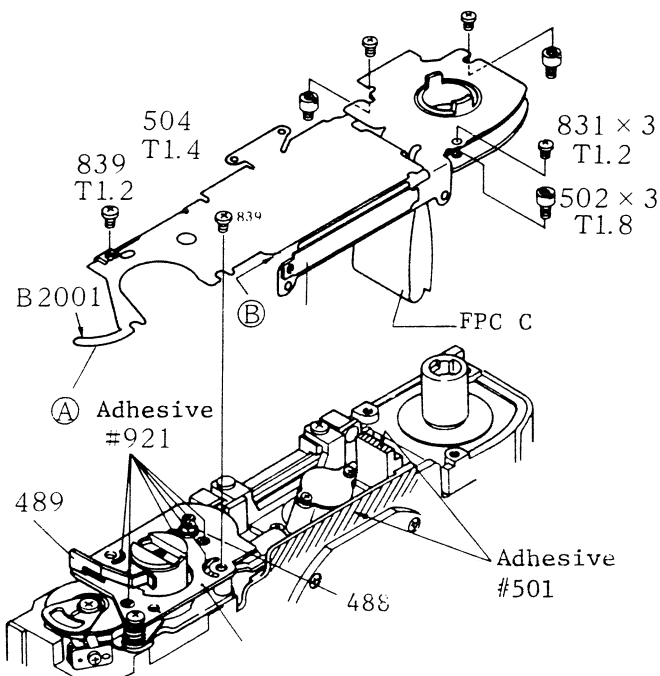
Fig. 3

Fig.3-1 FPC installation 1



Bend FPC 90° in the direction ① and 180° in the direction ②.

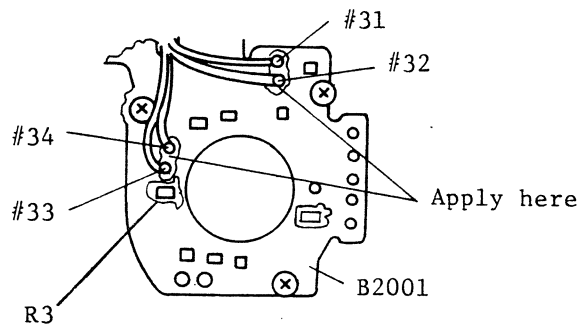
Fig.3-2 FPC installation 2



- 1) Apply #921 for six points on the top of B491 and for two points on the edge of front plate.
- 2) Insert FPC ① into the space under #489 and fit it along #488. Screw #839 to fix FPC ①.
- 3) Insert FPC ② into the space between body and front plate.

Note: Be careful not to extend FPC ② from the edge of front plate

Fig.3-3 Moisture-proof coating application



Coating material: Fumiseal 1B66

Fig.3-4 FPC retainer

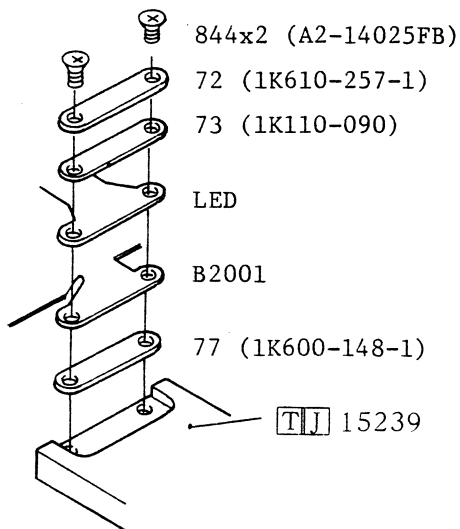
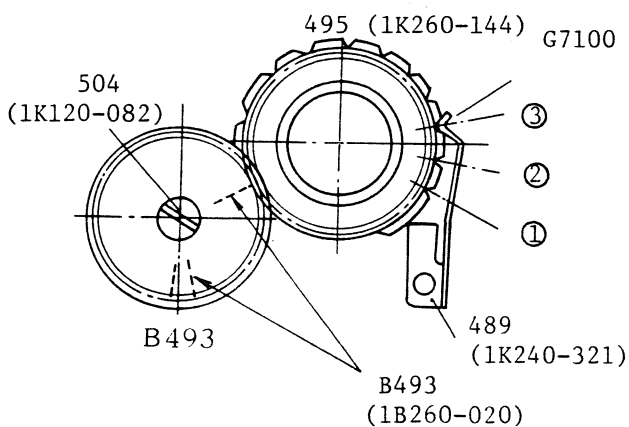


Fig.3-5 Gray code disk



- 1) Set #489 aside from #445 and fit protrusion under #495 in cutout of cam on B2451. Engage #489 with the third step of #495.
- 2) Clean gray code patterns and brushes.
- 3) Fit B493 onto #488 and engage #493 with #495.

Take-up cam, Shutter Charge lever, Spool & Sprocket

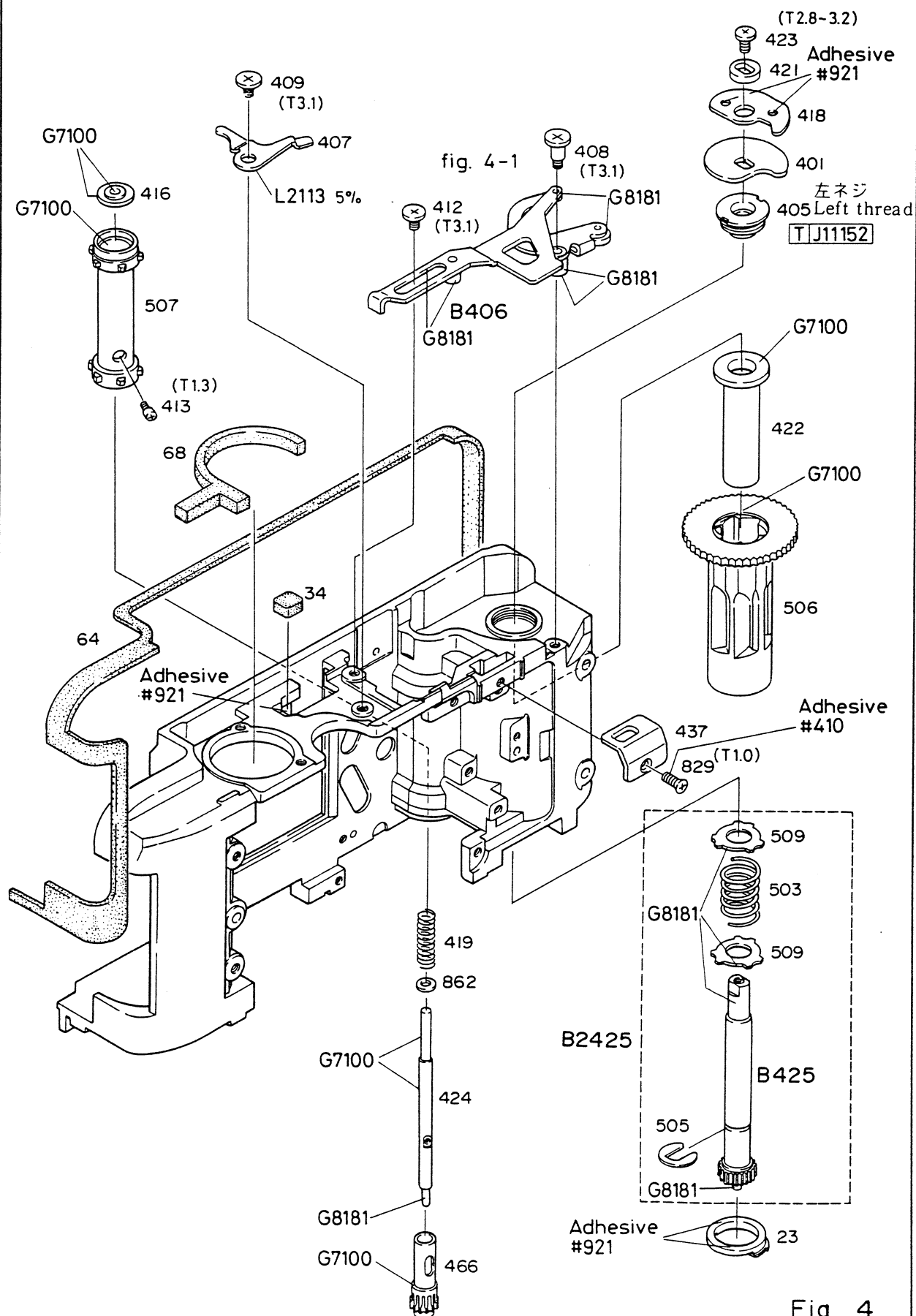
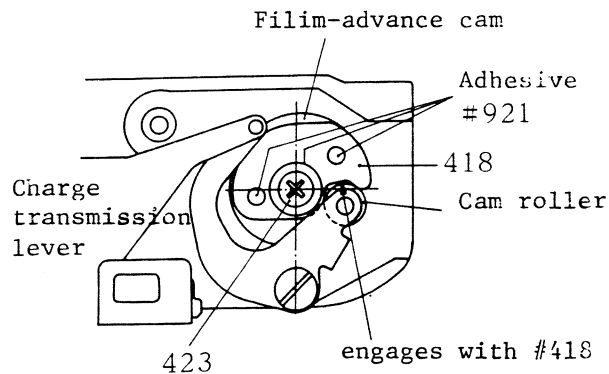


Fig 4-1 Film-advance timing adjustment



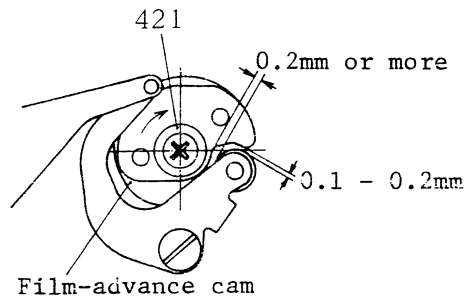
1) Use fingers to hold sprocket and spool slightly. Then stroke film-advance lever slowly.

Cam roller should engage with #418 when film-advance is completed.

2) After film-advance completion, clearance between shutter release lever and shutter charge lever should be 0.5 - 1mm.

3) Charge transmission lever should not come in contact with #421.

4) Clearance between cam roller and film-advance cam should be 0.2mm or more.



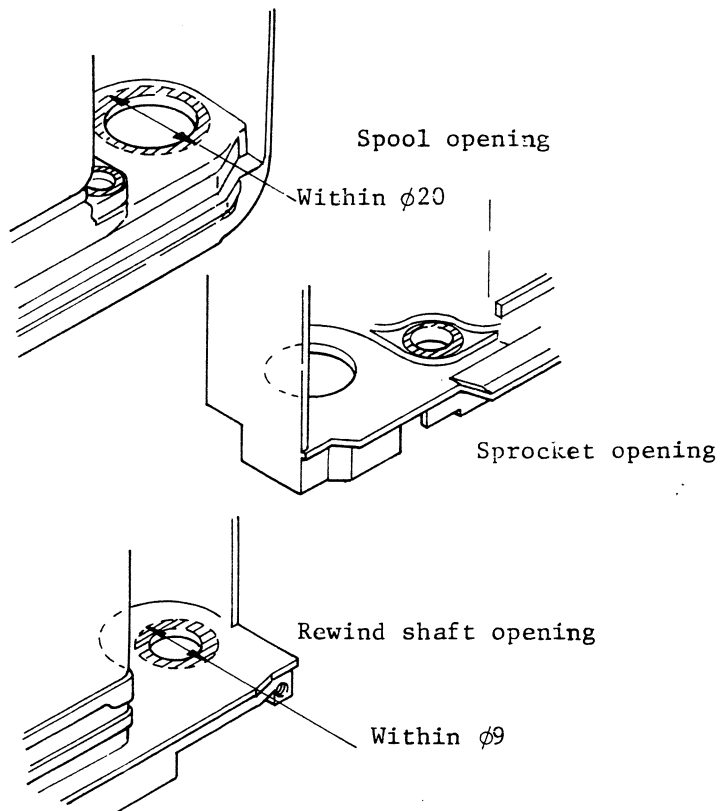
Tighten Film-advance set screw #423 temporarily.

After adjustment, apply Adhesive #921 onto the sections of #418 indicated in Figure 4-1.

Then tighten #423 securely.

Fig 4-2 Oil barrier application

Oil barrier:
Sumiflunon FP81



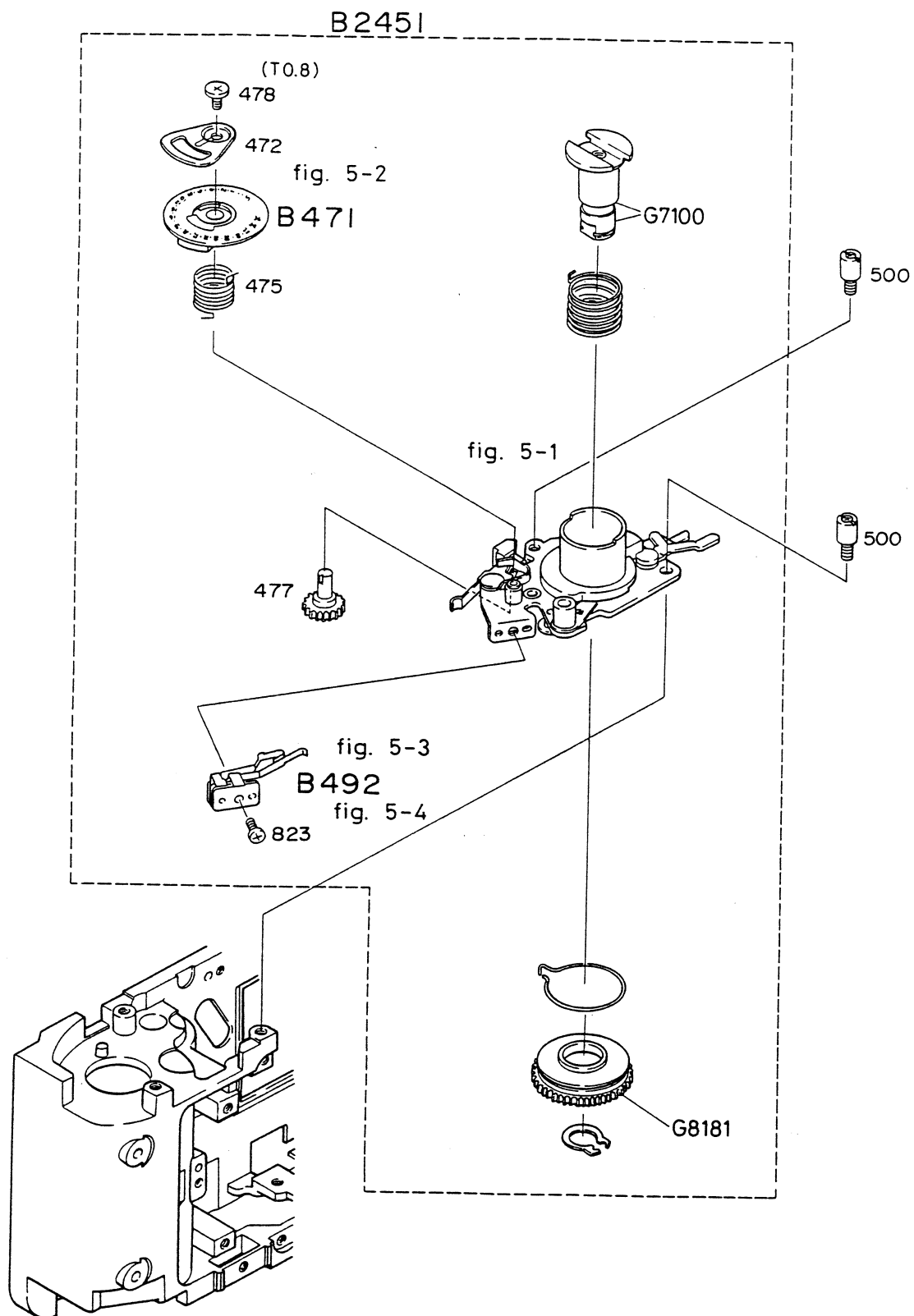
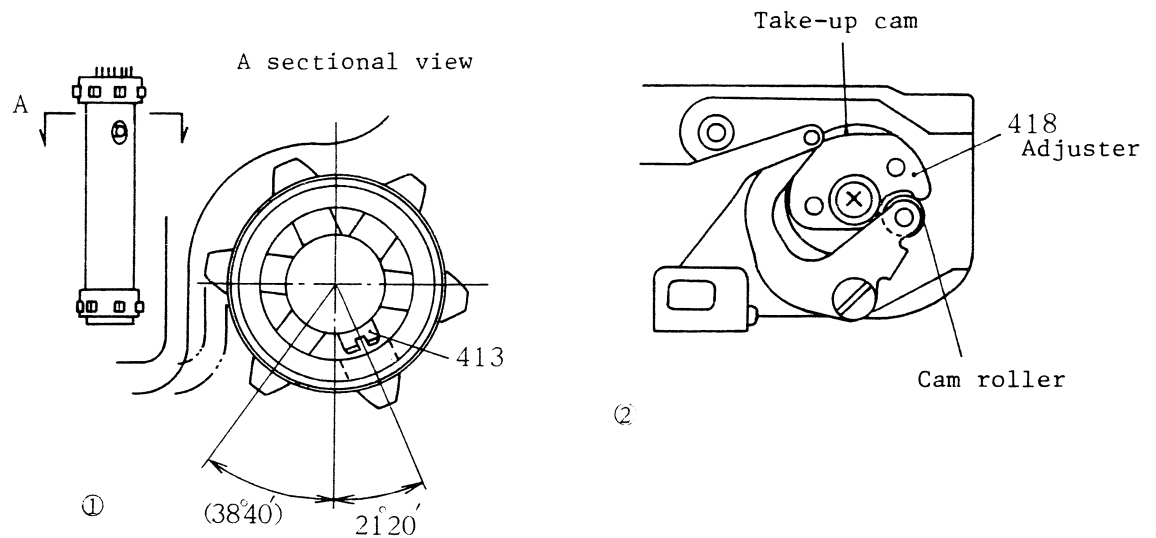


Fig. 5

Fig.5-1 Film-advance unit



- 1) Tighten #438 temporarily to fix film-advance lever.
- 2) Position sprocket and take-up cam as shown above.
- 3) Position kerf of #477 in the counter direction of frame counter.
- 4) Turn film-advance lever one and half turn counterclockwise to put sprocket stopper lever into sprocket stopper hole.
- 5) Place coupling lever against change-over shaft.
- 6) Fit spool and sprocket shafts with openings of film-advance unit and engage gears.

Check if frame counter advances during one stroke of film-advance lever.

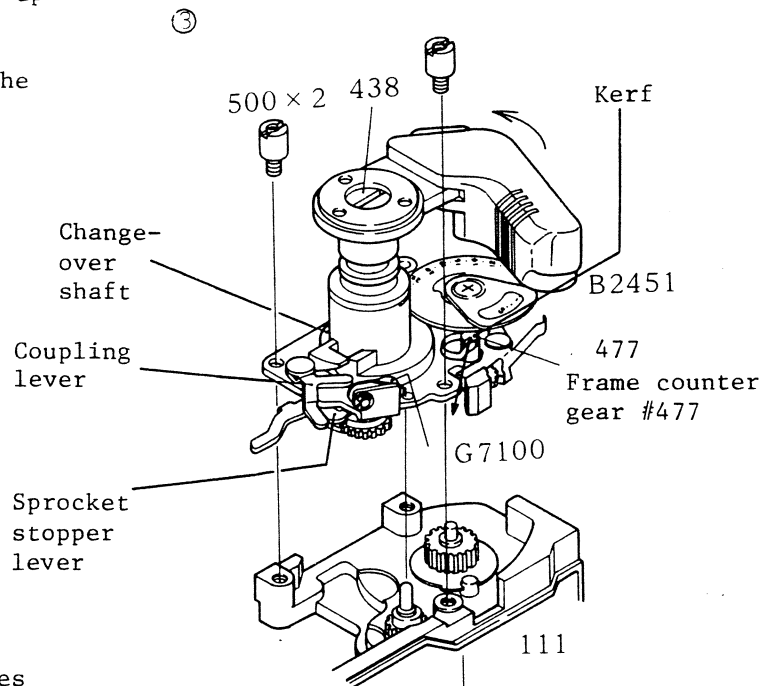


Fig.5-2 Frame counter index position

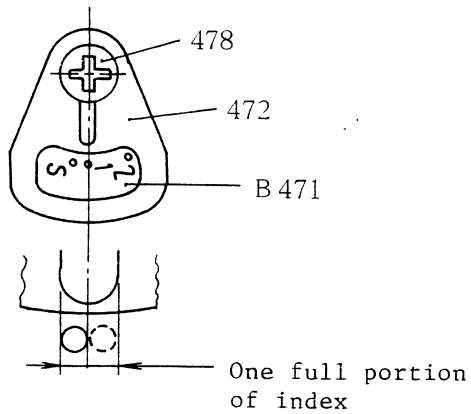


Fig.5-3 Frame counter switch 1

Switch blade clearance

0.6 - 1.0mm

1) Insurance resistance between #486
and #485: 100M or more

2) Resistance between #486 and #485:
0.2M or less

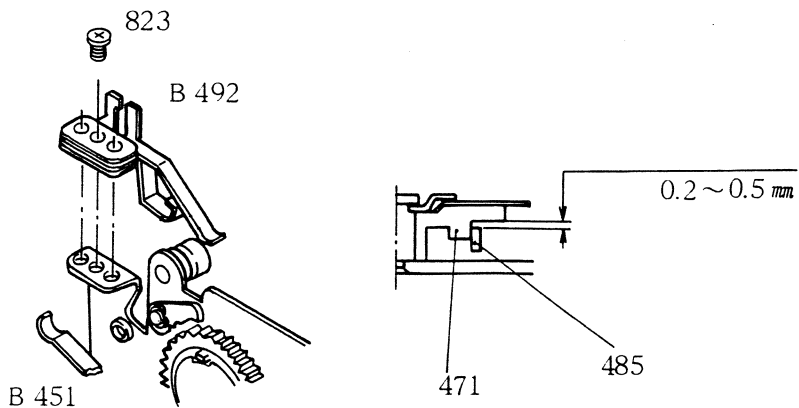
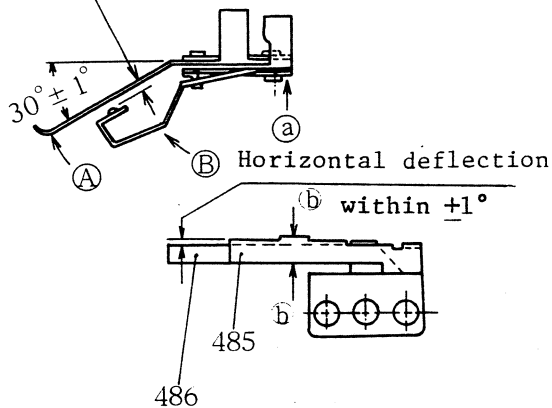
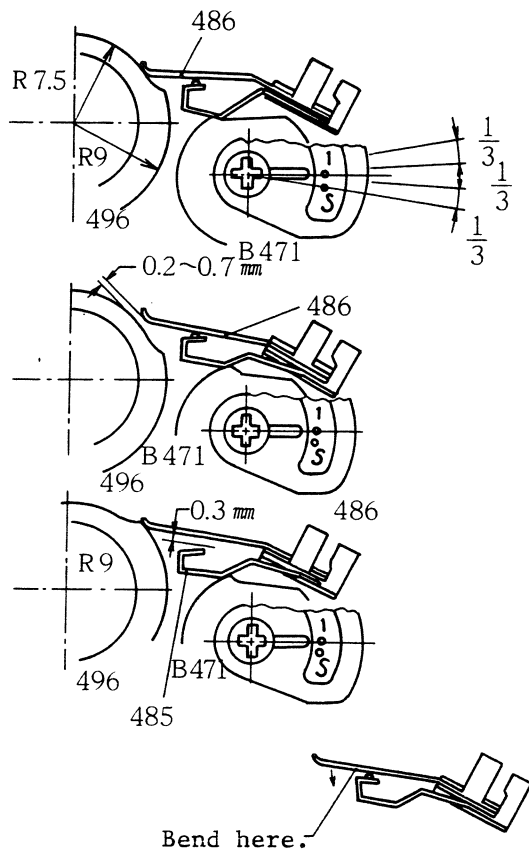


Fig.5-4 Frame counter switch 2



- 1) Set shutter dial to A.
Frame counter switch should turn on when frame counter reaches the $\frac{1}{3}$ - $\frac{2}{3}$ point between the second dot and "1".
- 2) Clearance between #486 and #496 should be 0.2 - 0.7mm when frame counter advances from "1" to "36".
- 3) Set shutter dial to B or M90.
Clearance between #485 and #486 should be 0.3mm or more when frame counter advances from "1" to "36".

Shutter, Release Button SW & Battery Chamer

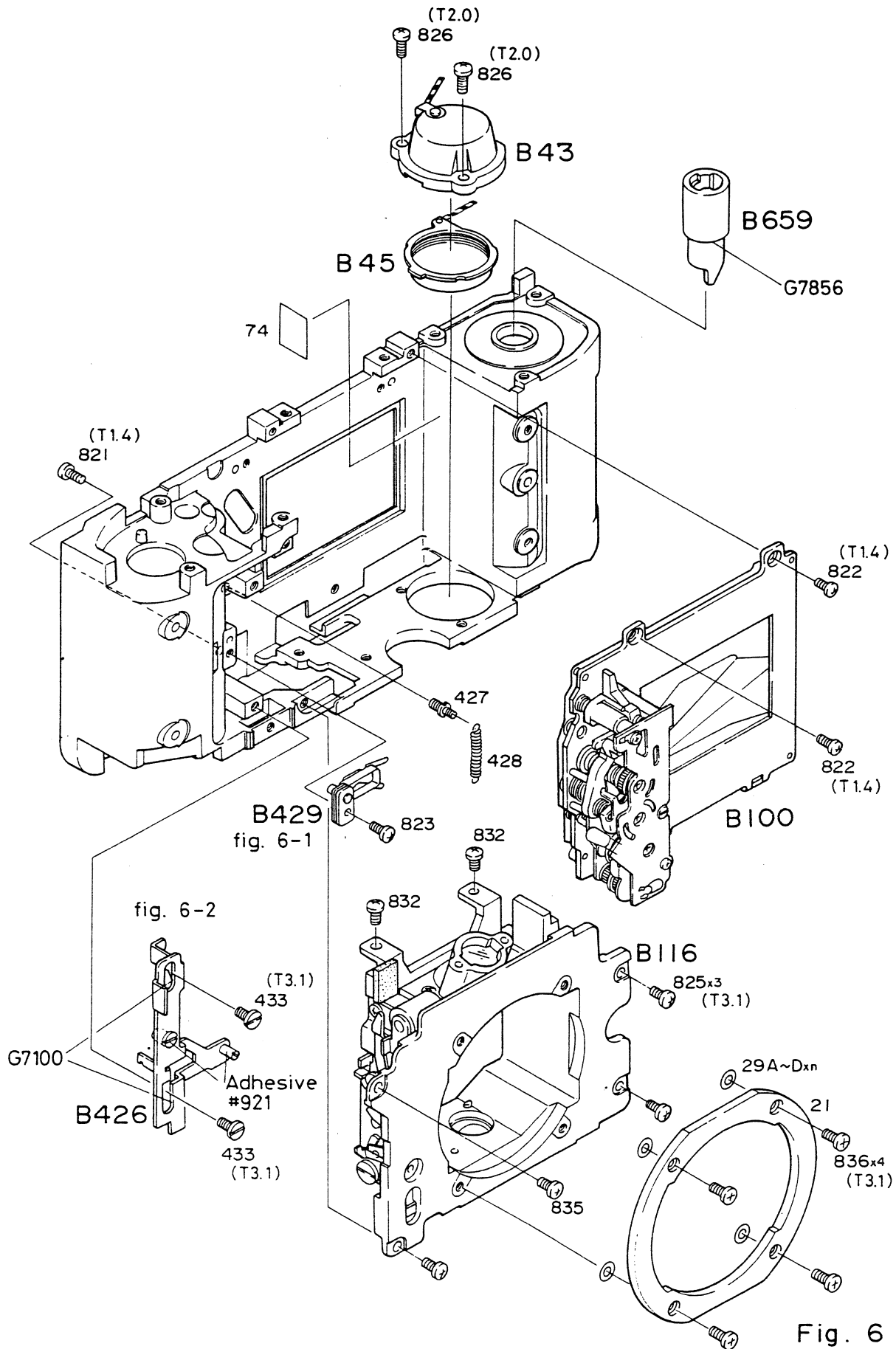


Fig. 6

Fig.6-1 Release button switch

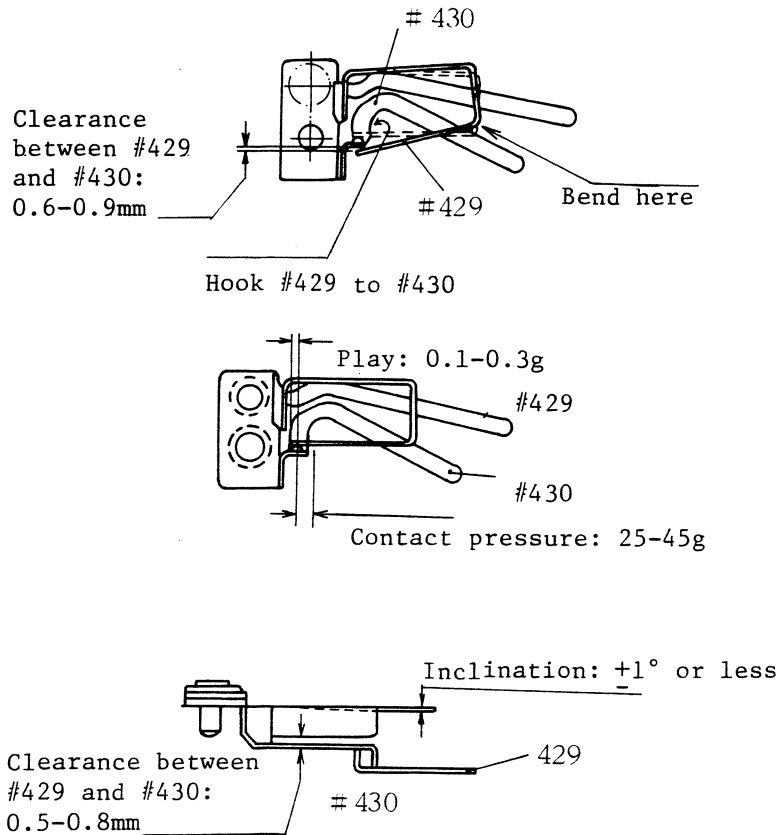
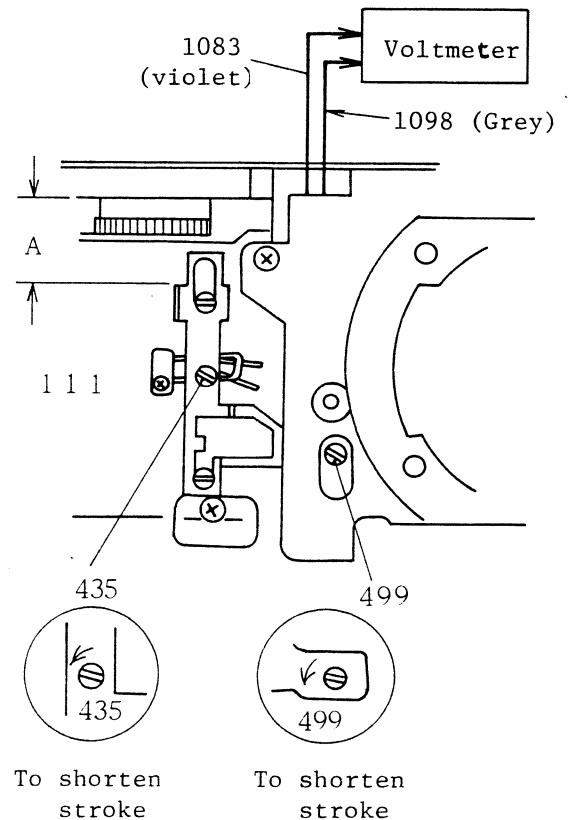


Fig.6-2 Release button stroke

- 1) Connect a voltmeter to Lead wires #1083 (violet) and #1098 (grey)
- 2) Set shutter charged condition.
- 3) Use a slide caliper to measure the distance (A) from top of body to step of B426.
- 4) Slide the caliper down to turn release switch on and move the voltmeter's needle. Measure this stroke (B).
(A) - (B): 1.0 - 1.2mm
To adjust, turn #435.
- 5) Slide the caliper down to release shutter. Measure this stroke (C).
(A) - (C): 3.1 - 3.2mm
To adjust, turn #499.



Note: (B) - (C): 2mm or more

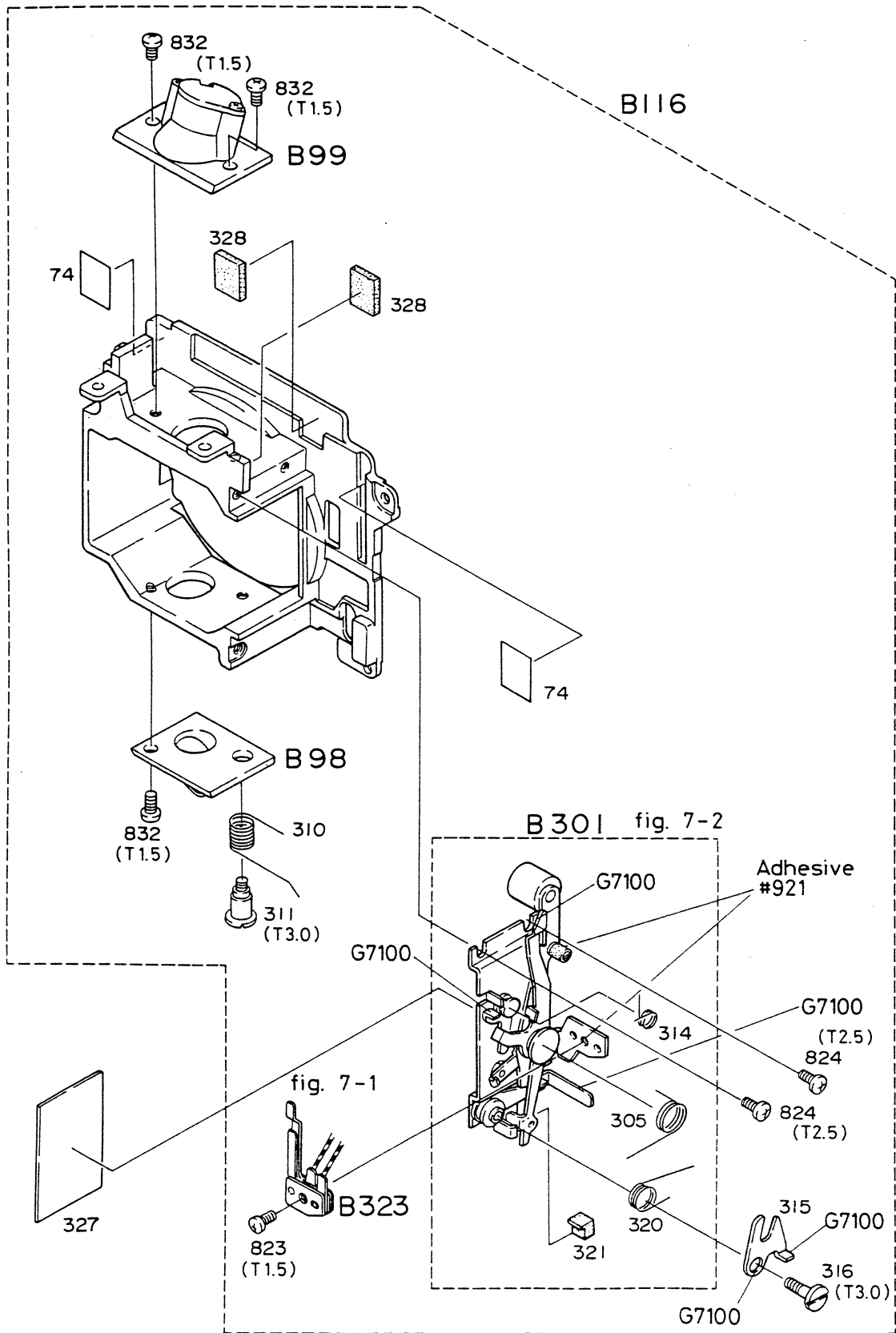


Fig. 7

Fig.7-1 Memory switch

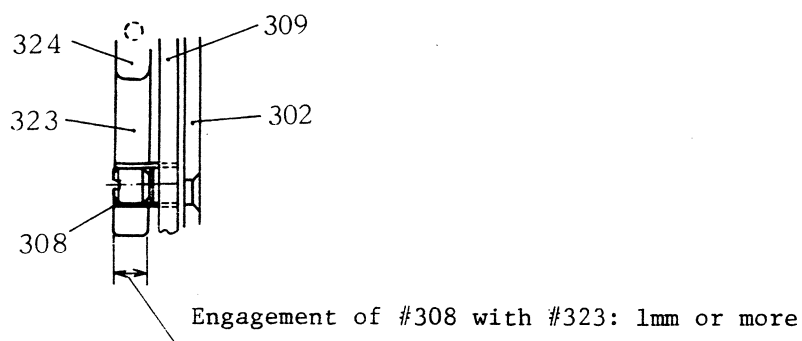
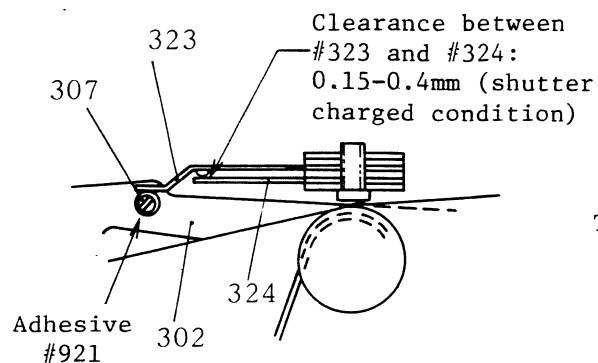
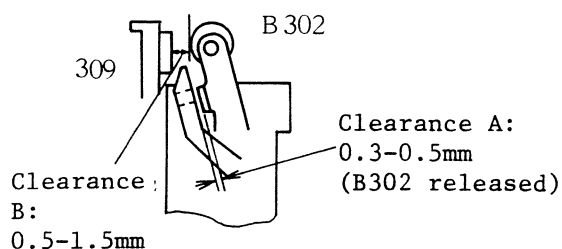
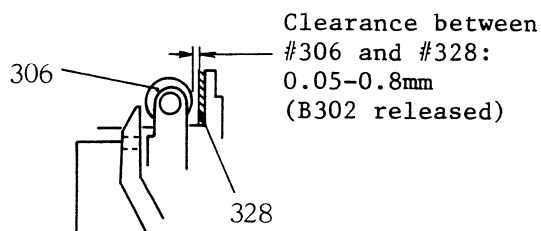


Fig.7-2 Mirror actuating lever



To adjust the clearance, change the installed position of B301.



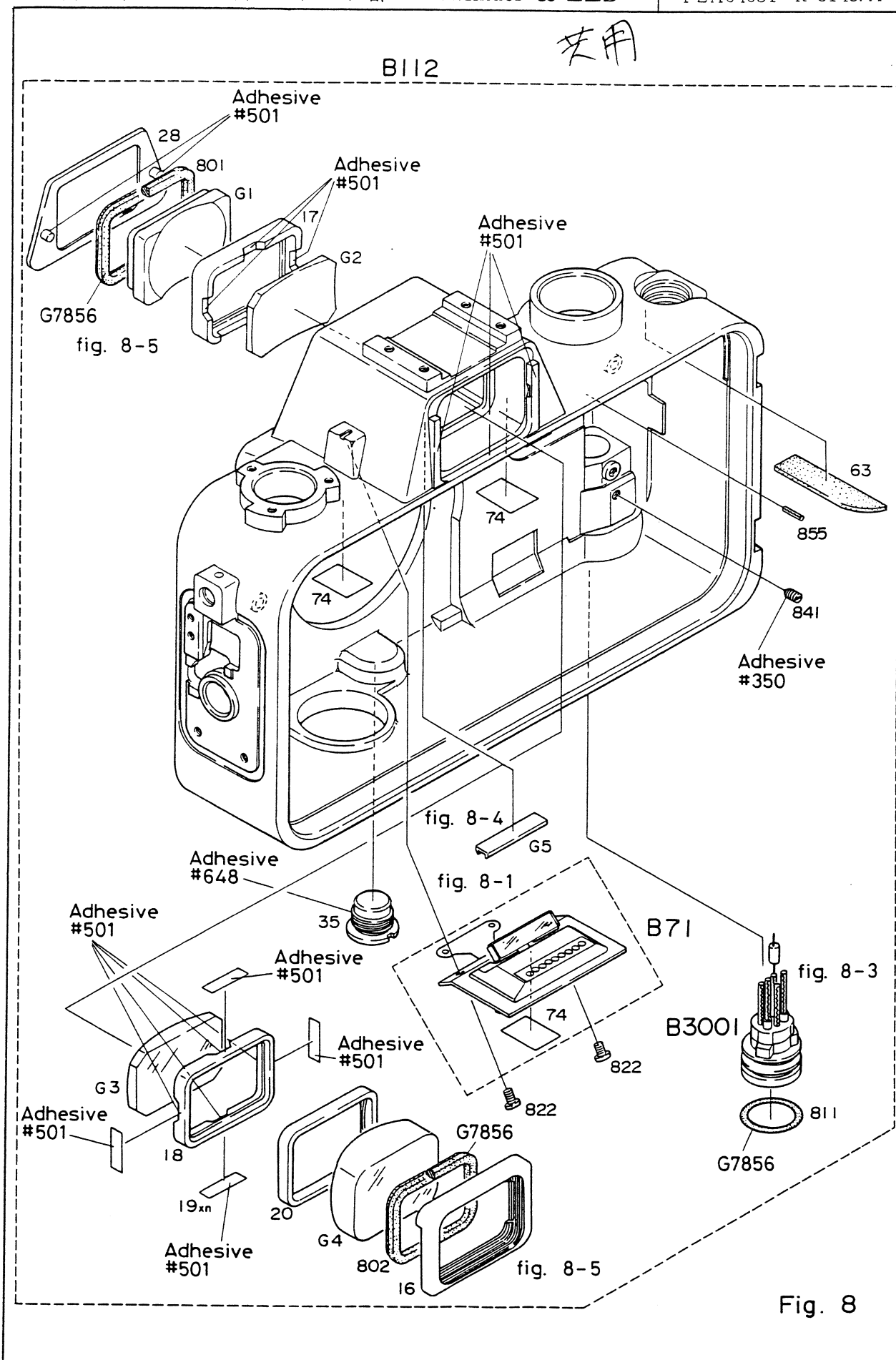
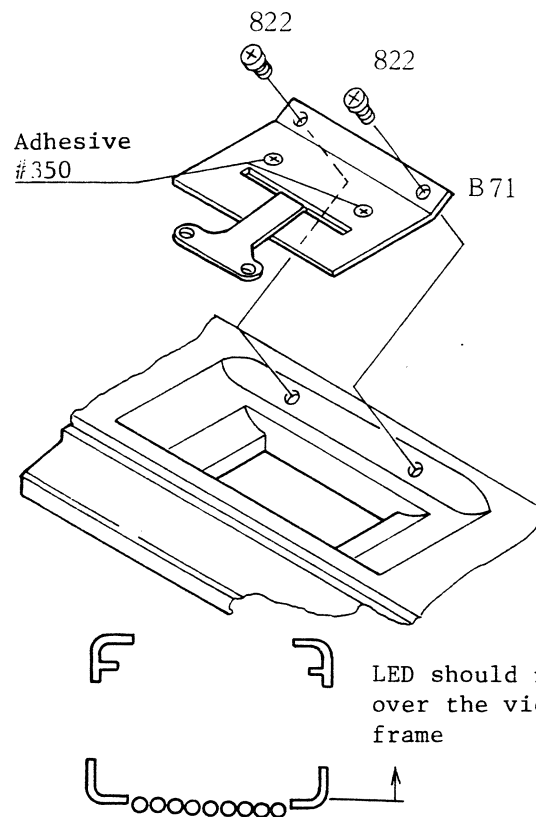


Fig.8-1 LED panel position



LED panel should be visible.
To adjust, loosen #843 x 2 and
change the installed position
of B71.

Fig.8-2 Sync terminal wires

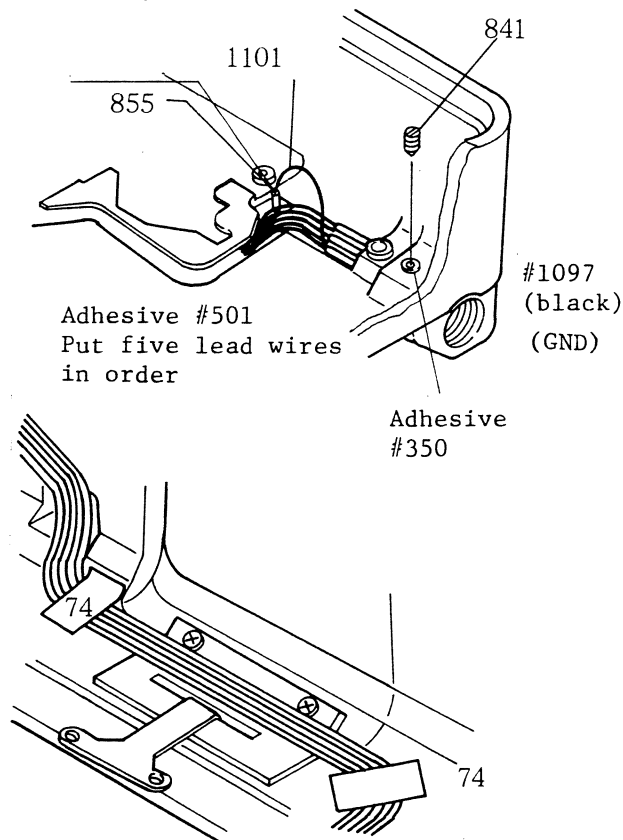


Fig.8-3 Sync terminal

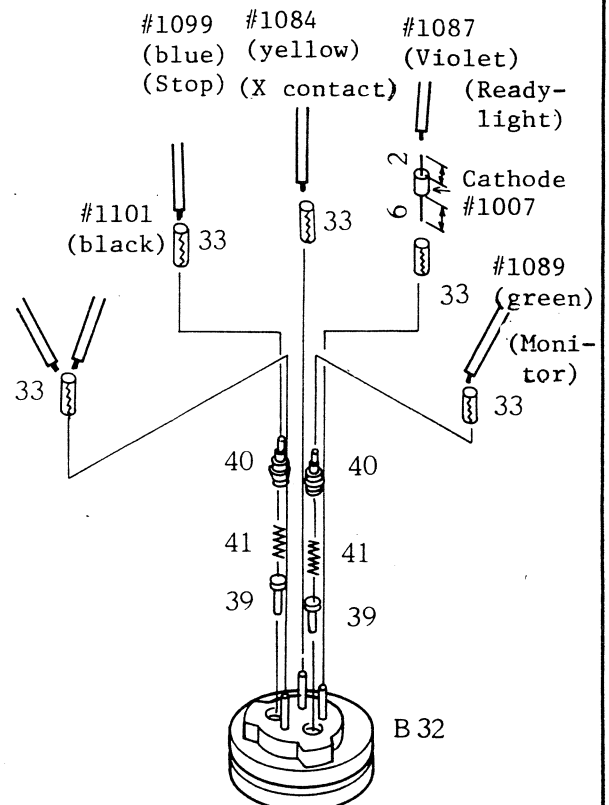
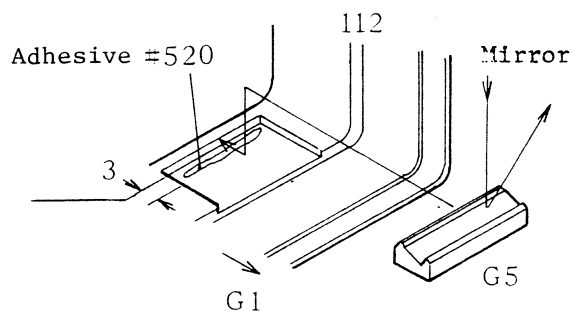


Fig.8-4 Mirror G5 installation



- 1) Apply adhesive material on the area of within 3mm from the step.
- 2) Mirror should face G1.

Fig.8-5 Viewfinder optical construction

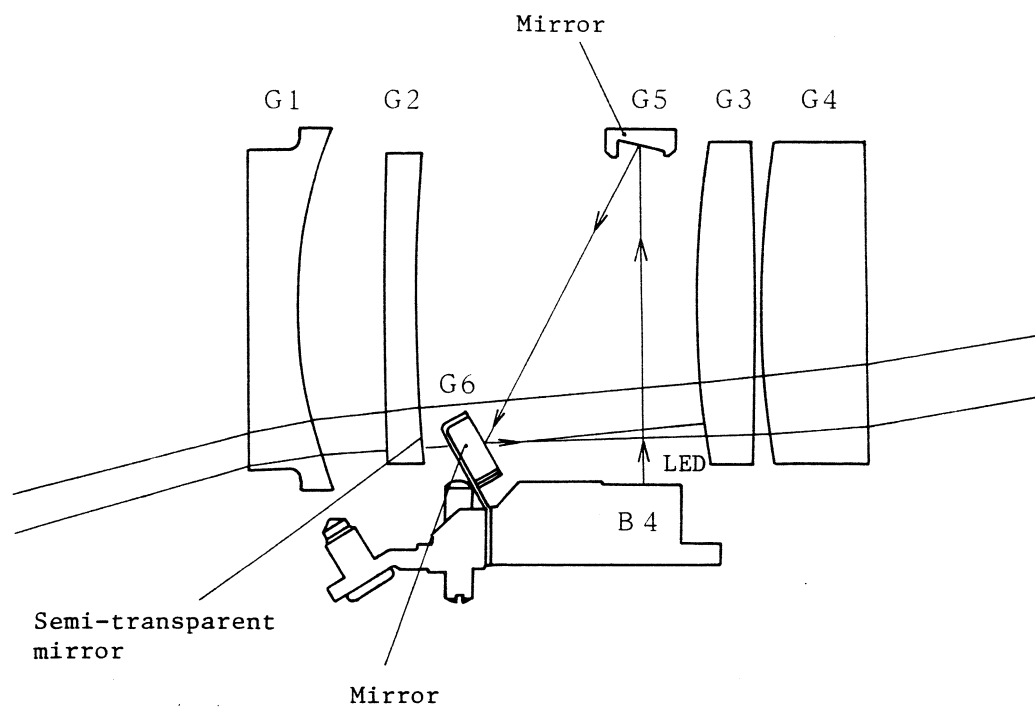
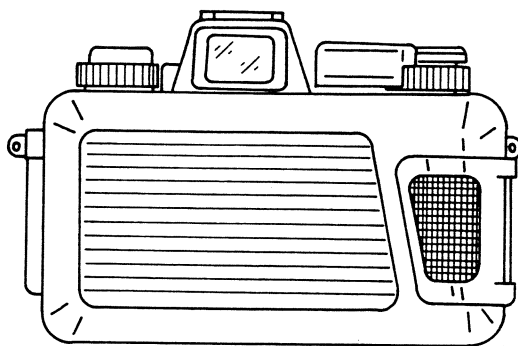
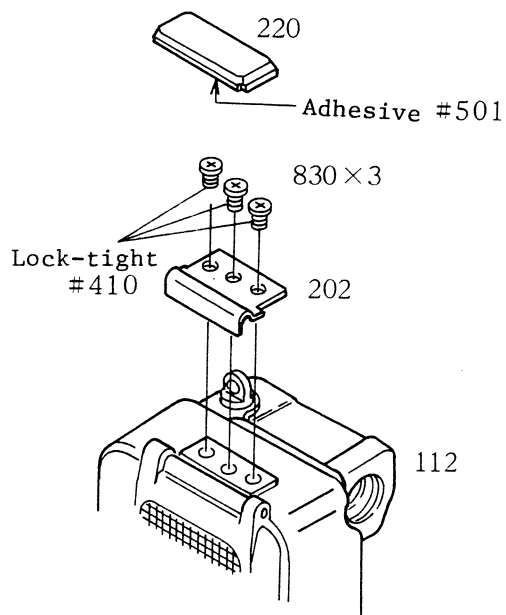


Fig.9 Camera back



- 1) Fit B201 with B112.
- 2) With #211 depressed, screw B213 clockwise.
- 3) Tighten #836 x 3 to fix #202.
- 4) Cement #202 with adhesive material #501.

Be sure to install B201 before fixing #202.



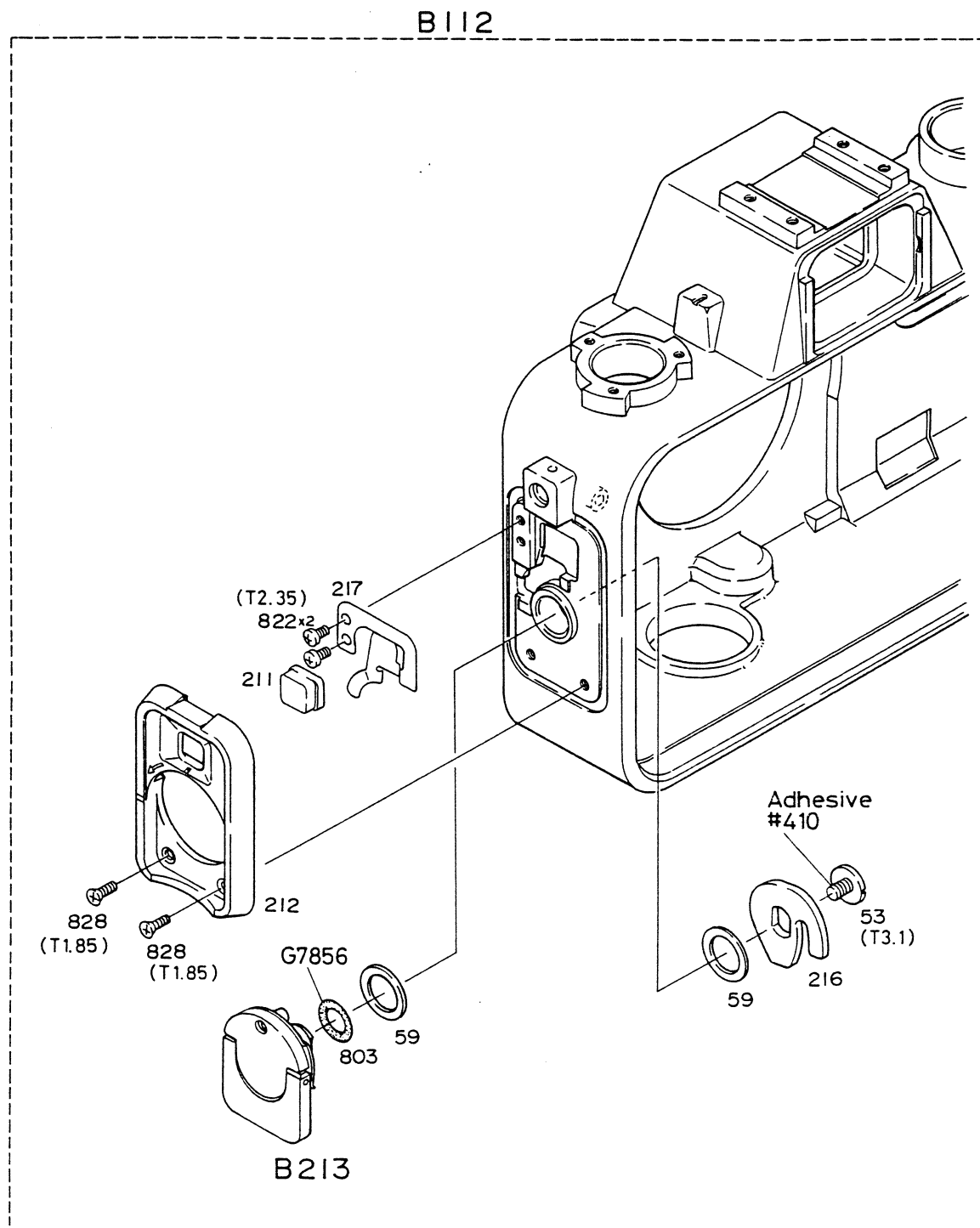


Fig. 10

11. 外箱外觀部 Outer Housing

FEA04051-R. 3145. A

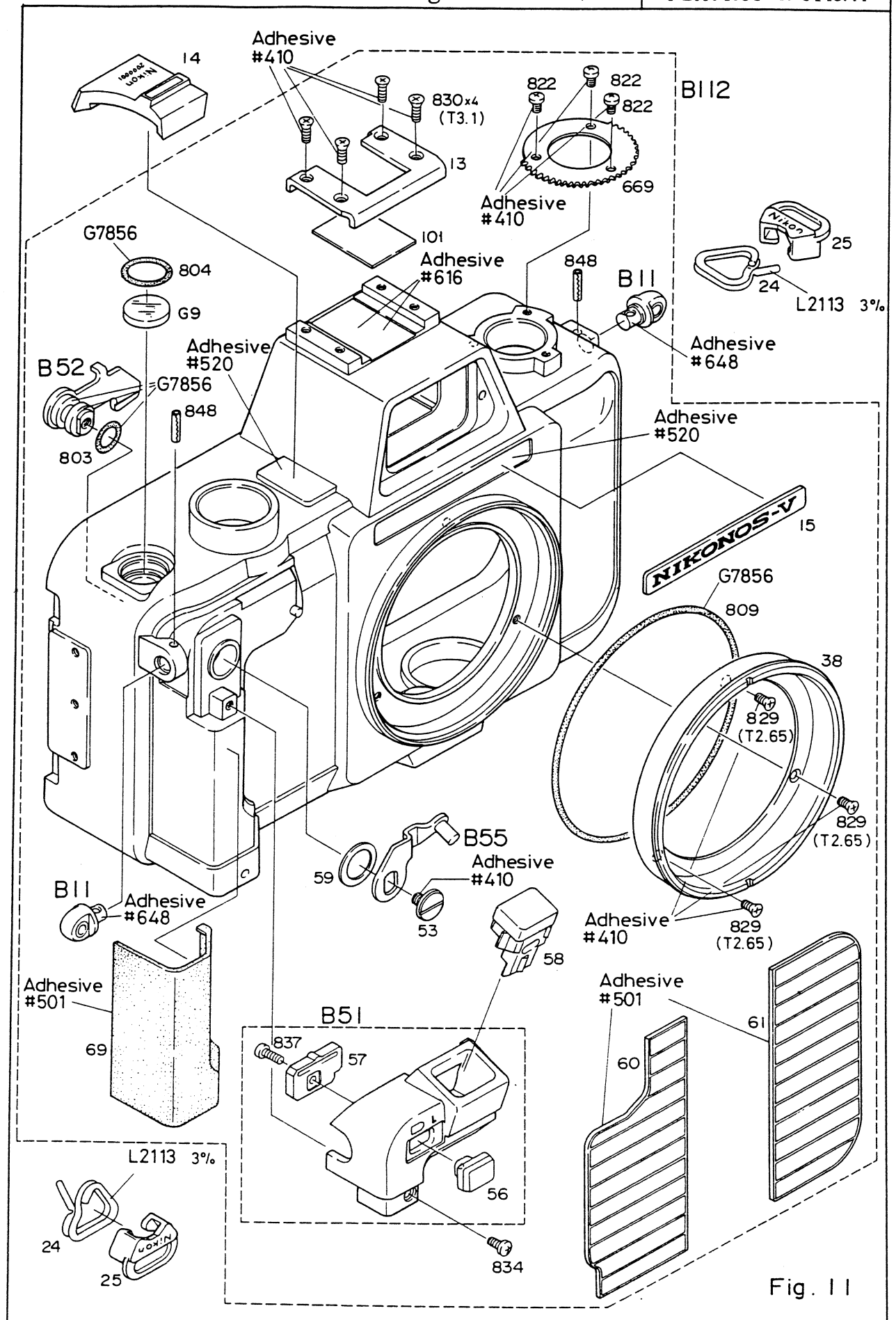
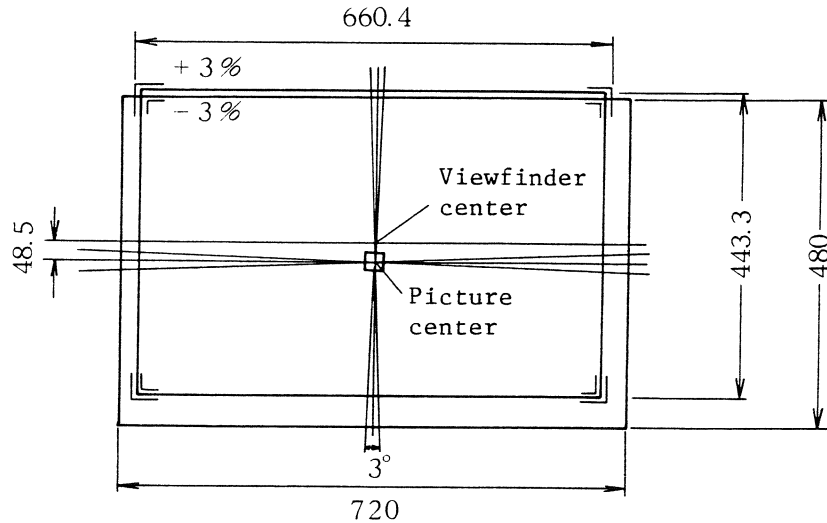


Fig. 11

[3] Adjustments

1. Parallax adjustments



Tool

- 1) Test chart J18166
- 2) Tripod
- 3) 35/2.5 lens (0.8mm focused)
- 4) Eyepoint viewer J15205
- 5) Focusing screen J18033

- 1) Mount camera in test onto tripod and hold shutter open.
- 2) Set J18033 to camera.
- 3) Use J15205 to check the alignment of viewfinder frame with test chart.
- 4) Add or remove #19 to adjust the alignment.
- 5) Apply adhesive material (#501) to fix #19.

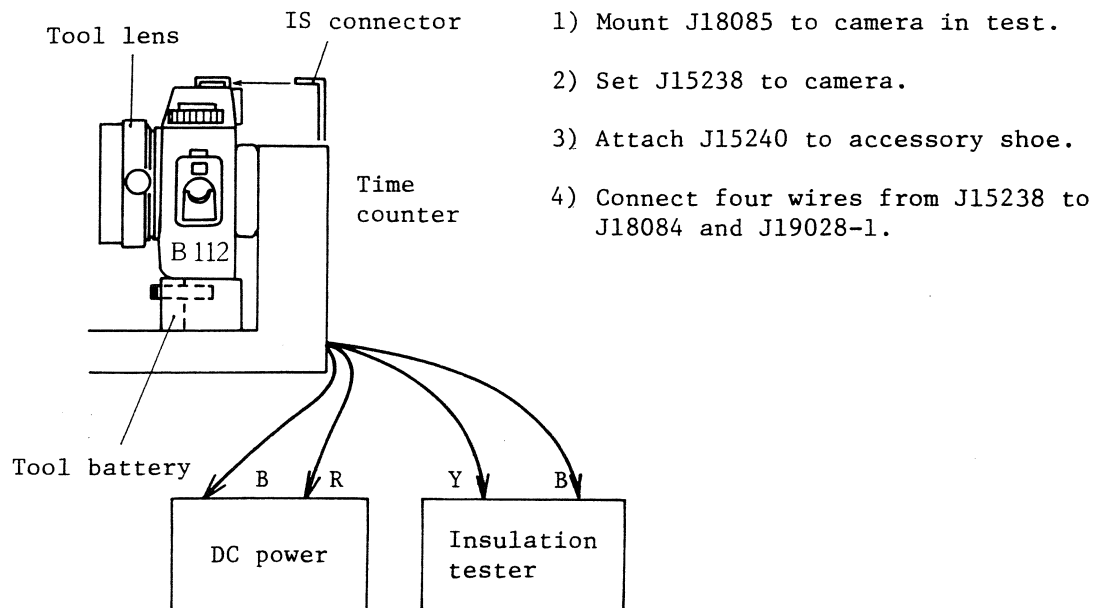
Test chart J18087 for the former IV-A camera is not usable except the alignment of viewfinder center.

2. Shutter speed adjustments

2-1. Tool

- 1) Shutter tester J19036
- 2) Time counter J18142
- 3) Tool lens (35mm/f5.6) J18085
- 4) Tool battery J15238
- 5) IS connector J15240
- 6) Screwdriver J5135
- 7) Test film (Fuji Neopan SS)
- 8) DC regulated power supply J18084 or J9001-5
- 9) Contact tester J19028-1
- 10) Digital multi-meter J9003-2

2-2. Set-up

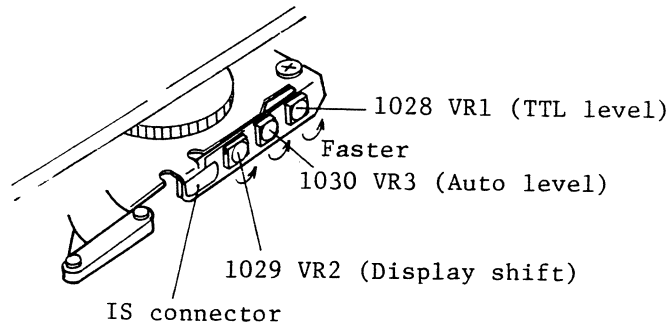


2-3. Check

- 1) Set shutter dial to A.
- 2) Set shutter tester to LV12.
- 3) Release shutter until frame counter reaches "1".
See if LED will not light up and shutter speed is fixed at 1/500 sec. during those releases.

- 4) After frame counter reaches "1", see if depressing release button halfway lights LED up.
- 5) See if shutter speeds can be delivered responding to the light.
- 6) Set DC power to 2.29V. See if depressing release button halfway lights LED up.
- 7) Set DC power to 2.56V. See if LED continue to light for 16 sec. after finger is taken off release button.

2-4. Adjustment



1) Auto level

Adjustments can be made by turning VR3. Set DC power to 3V. Turn VR3 counter clockwise to accelerate shutter speeds.

LV	ISO	Standard(ms)	Tolerance(ms)
12	100	7.81	7.05 - 8.66

Step	LV	ISO	Standard(ms)	Tolerance(ms)
1	12	25	31.25	25.4 - 38.4
2	"	800	0.98	0.74 - 1.28
3	9	1600	3.91	3.17 - 4.80
4	"	200	31.25	25.4 - 38.4
5	15	100	0.98	0.74 - 1.28
6	"	25	3.91	3.17 - 4.80

2) Manual shutter speed

Step	LV	Shutter dial	Standard(ms)	Tolerance(ms)
1	12	1/30	31.25	25.4 - 38.5
2	"	1/125	7.81	6.34 - 9.62
3	"	1/1000	0.98	0.69 - 1.39

3) Display shift

Adjustments can be made by turning VR2. Counter clockwise to increase the shift.

LV	ISO	Tolerance	
12	100 + 1/3	1/125 ON	Near to light 1/250

Step	LV	ISO	Tolerance	
1	12	400	1/500 ON	1/500, 1/250 ON
2	"	25	1/30 "	► ON
3	9	800	1/125 "	1/125, 1/60 ON
4	"	200	1/30 "	► ON
5	15	100	1/1000 "	1/1000, 1/500 ON
6	"	25	1/250 "	1/250, 1/125 ON

4) TTL level

- 1) Turn J18142 on to set automatic sync speed 1/90 sec.
- 2) Set shutter dial to A and then 1/125 - 1/1000 sec.
Standard: 11.1ms (9.02 - 13.67 ms)
- 3) See if ready-light LED lights up.

It is normal that automatic sync speed 1/90 sec. is not displayed on LED panel.

Load camera with a test film (Fuji Neopan SS or equivalent).
Adjustments can be made by turning VR1. Counter clockwise to
accelerate sync speed.

LV	ISO	Tolerance (μ s)	LED display
15	100	Standard (μ s) 820	1/1000 BLINK Ready-light ON

Notes:

- 1) Ready-light will turn on when release button switch halfway depressed.
- 2) If LED of J18142 is off, press reset button.
- 3) Standard reflector J15196 is less accurate than Fuji Neopan SS in this check.

5) M90 check

Standard: 9.0 - 14.0ms

6) Synchronization check

Time lag: 0.3 - 1.2ms

After sync on: 1.5ms or more

Contact efficiency: 50% or more

Insulation resistance: 30M Ω or more

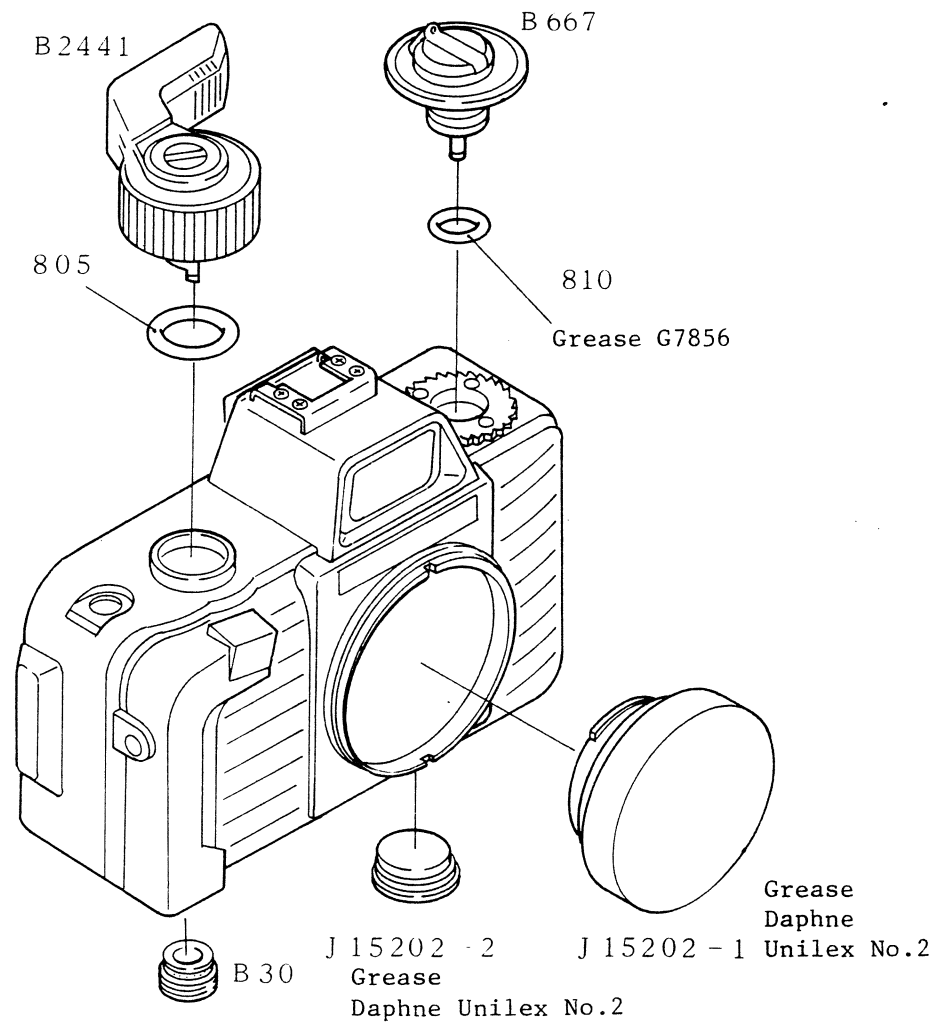
3. Outer housing waterproof test

Tool

- 1) Water tank J18026-1
- 2) Waterproof cap J15202-1
 - ditto - J15202-2
 - ditto - (J15202-4)
 - ditto - (J15241)

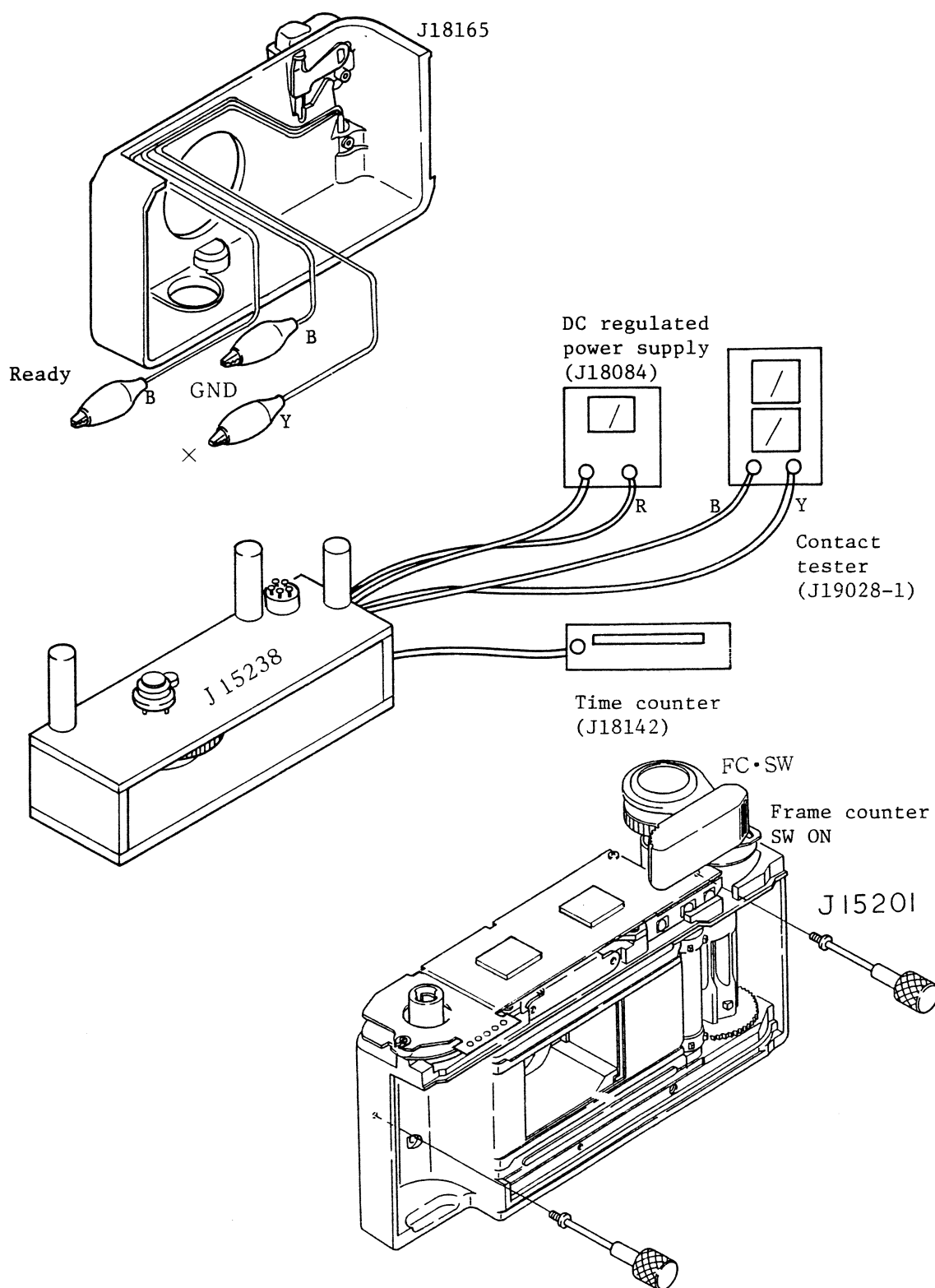
Install Film-advance lever B2441, Rewind knob B667, Sync terminal cap B30, O-ring #805, O-ring #810, Caps J15202-1 and J15202-2 to outer housing in test.

- 1) Put outer housing in water tank and apply a pressure of 5kgcm^2 gradually; it should take 30 sec. or more to apply pressure.
- 2) Leave outer housing pressured for 30 min.
- 3) Relieve pressure gradually; it should take 30 sec. or more.



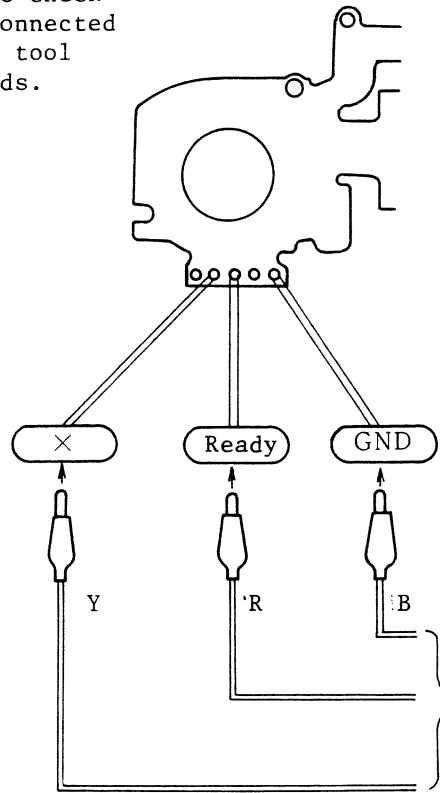
4. Tool battery and tool outer housing

4-1. Set-up



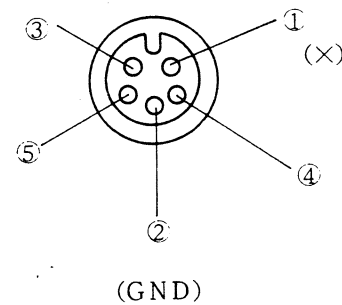
4-2. FPC check lands

Use three lead wires to be soldered to FPC check lands and to be connected with each clip of tool outer housing cords.



Sync terminal

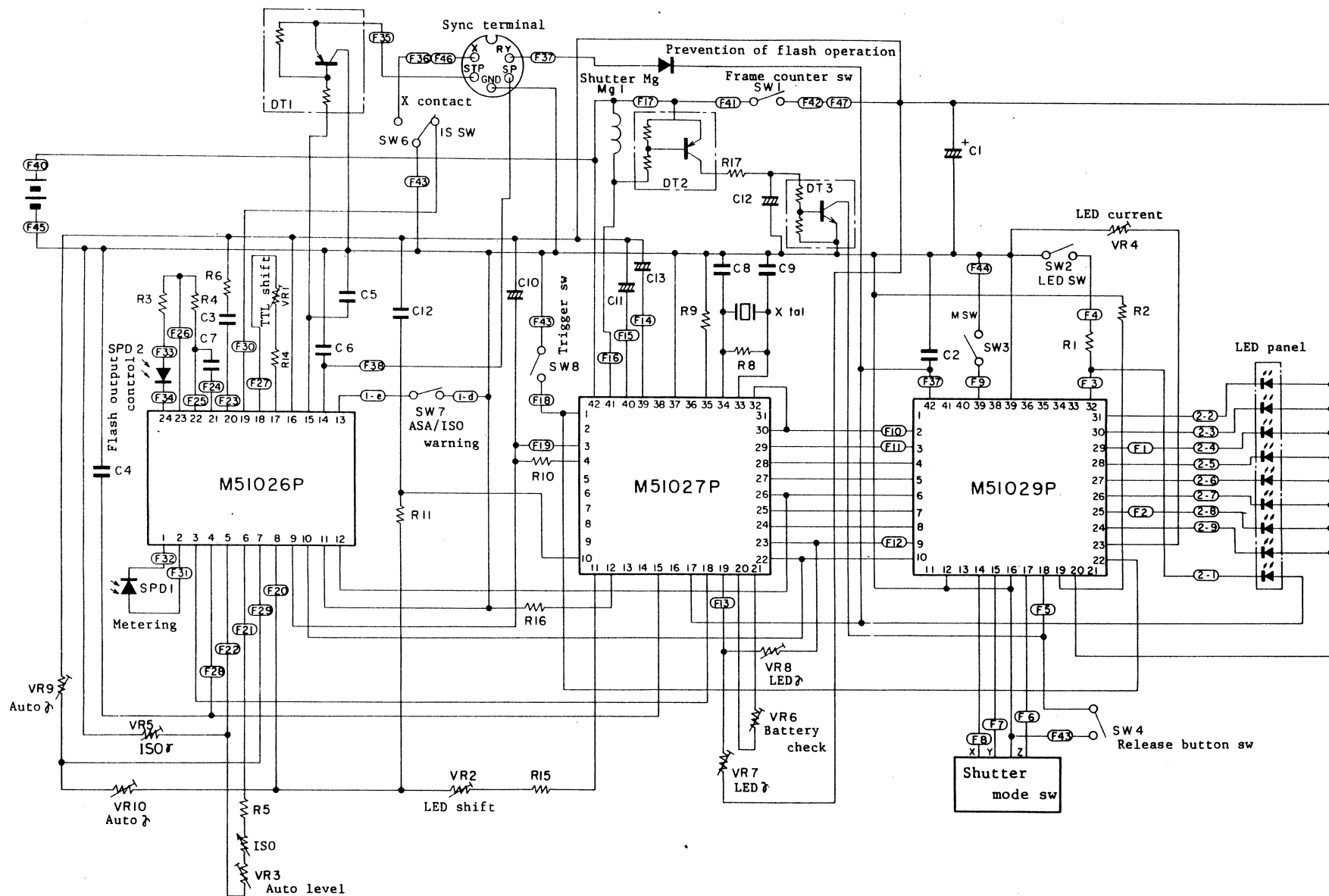
- 1) X contact
- 2) GND contact
- 3) Ready-light contact
Automatic sync speed set
- 4) TTL stop signal contact
- 5) Monitor contact

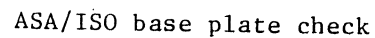


ELECTRIC CIRCUIT

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[7] TROUBLESHOOTING FLOWCHART	C1

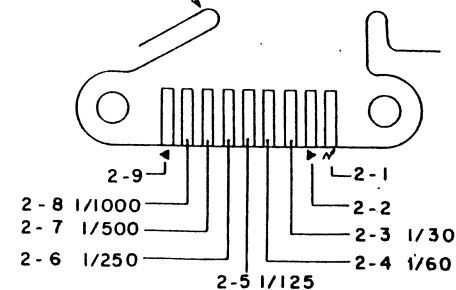
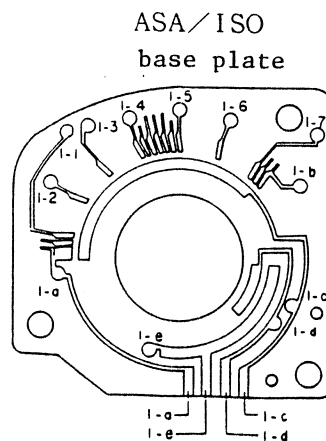






- | | | |
|----------------|-------|----------------|
| 1) Check lands | 1 - a | 1 - b = 6k Ω |
| 2) Check lands | 1 - 1 | 1 - 7 = 5.4k Ω |
| 3) Check lands | 1 - b | 1 - 7 = 0.3k Ω |
| 4) Check lands | | |

Checking Land	R (K Ω)
1 - 1	0.3
1 - 2	1.2
1 - 3	2.1
1 - 4	3.0
1 - 5	3.9
1 - 6	4.8
1 - 7	5.7



FPC check lands table

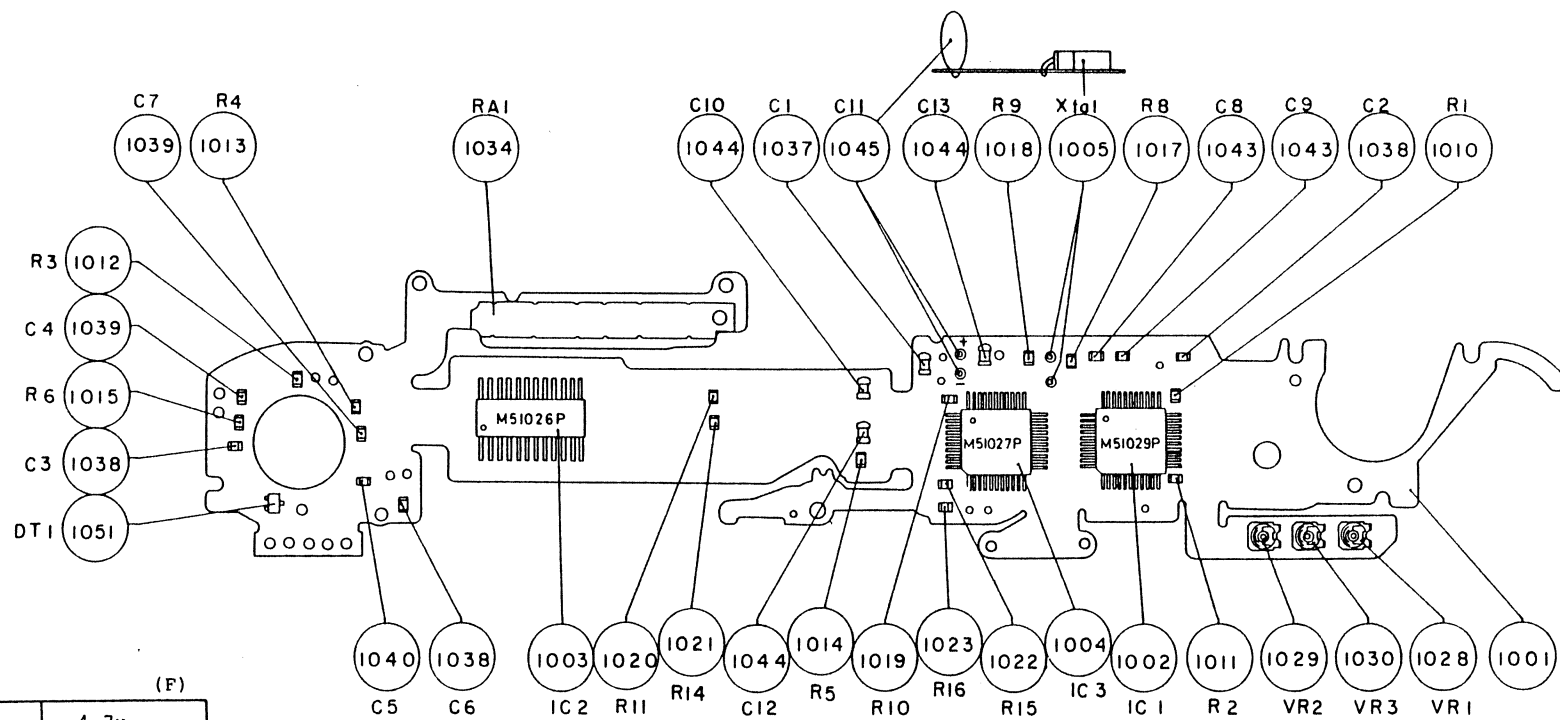
No.	Name	No.	Name
F-1	1/60 LED	F-25	Latch release
F-2	1/1000 LED	F-26	Latch release
F-3	Ready-light (cathode)	F-27	TTL shift level
F-4	LED SW	F-28	Input reference 237mv
F-5	Release button SW	F-29	Auto γ
F-6	Gray code Z	F-30	IS SW
F-7	- ditto - Y	F-31	SPD 1 Anode
F-8	- ditto - X	F-32	SPD 1 Cathode
F-9	Memory SW	F-33	SPD 2 Anode
F-10	LED TVs	F-34	SPD 2 Cathode
F-11	Clock pulse	F-35	TTL stop signal
F-12	LED A/D	F-36	X (sync terminal)
F-13	LED γ	F-37	Ready-light signal
F-14	Memory condenser	F-38	TTL monitor signal
F-15	LED filter condenser	F-39	Flash GND
F-16	Shutter Mg(-)	F-40	Vcc (battery)
F-17	Shutter Mg(+)	F-41	Vcc (frame counter SW)
F-18	Trigger SW	F-42	Vcc '
F-19	Timer condenser	F-43	Shutter GND
F-20	TVo	F-44	Memory switch GND
F-21	VISO	F-45	Battery GND
F-22	ISO γ	F-46	X (Shutter)
F-23	Integrating condenser input	F-47	Vcc '
F-24	Latch release		

ASA/ISO check lands table

No.	Name	No.	Name
1-a	ISO (a)	1-2	ISO 800
1-b	ISO (b)	1-3	ISO 400
1-c	ISO (c)	1-4	ISO 200
1-d	ISO warning (GND)	1-5	ISO 100
1-e	ISO warning	1-6	ISO 50
1-1	ISO 1600	1-7	ISO 25

LED panel check lands table

No.	Name	No.	Name
2-1	Ready-light	2-6	1/250 LED
2-2	Underexposure warning	2-7	1/500 LED
2-3	1/30 LED	2-8	1/1000 LED
2-4	1/60 LED	2-9	Overexposure warning
2-5	1/125 LED		

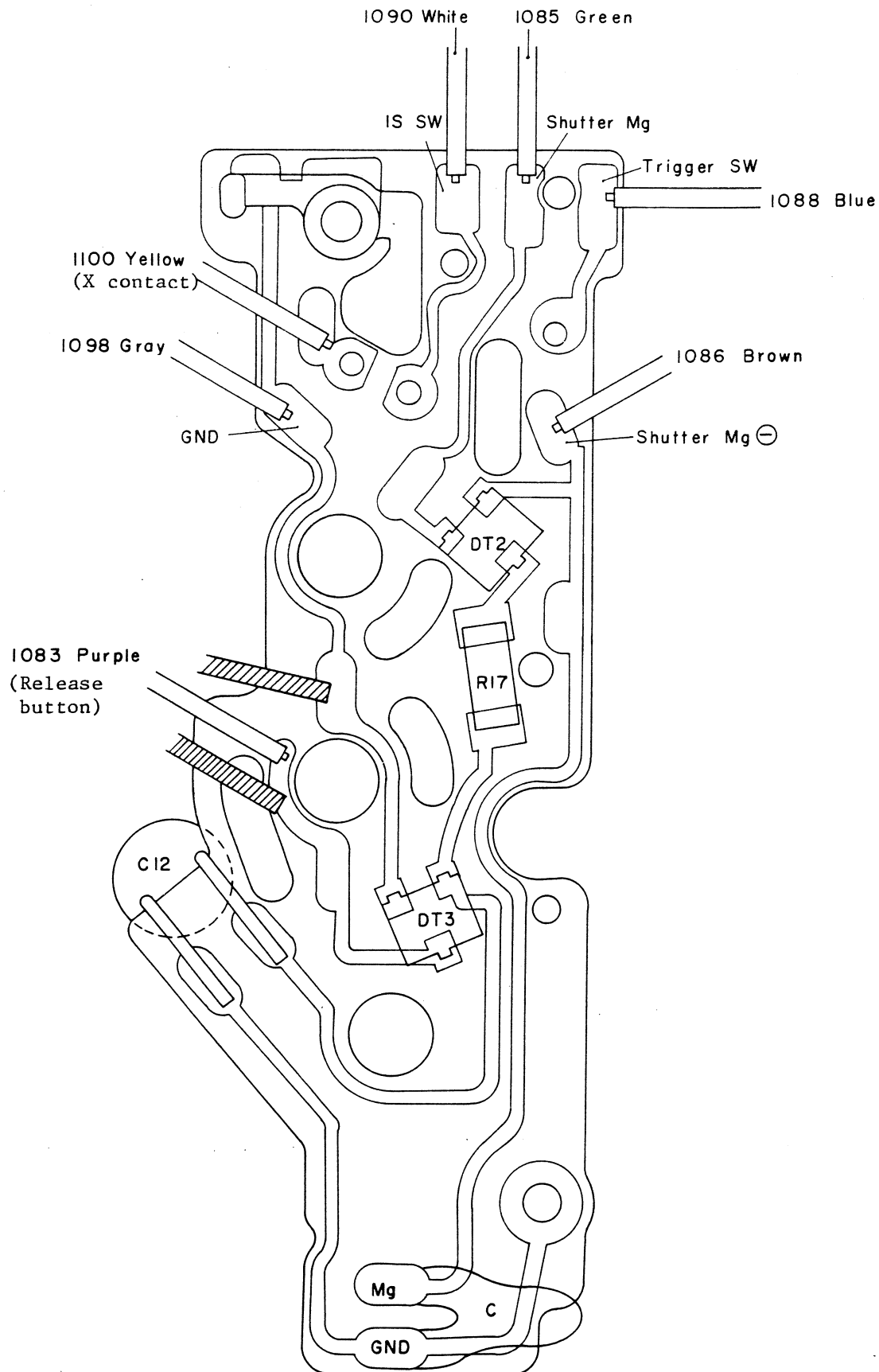


(F)

C1	4.7 μ
C2	0.01 μ
C3	0.01 μ
C4	0.022 μ
C5	2200P
C6	0.01 μ
C7	0.022 μ
C8	15P
C9	15P
C10	1 μ
C11	10 μ
C12	1 μ
C13	1 μ

(R)

R1	2K	R9	4.7M
R2	82K	R10	180
R3	4.7K	R11	1.0K
R4	150K	R14	20K
R5	10K	R15	2.4K
R6	1.5K	R16	2.7K
R8	3.3M	R17	470



[6] Circuitry outlines

1. Abbreviations

(1) Check land

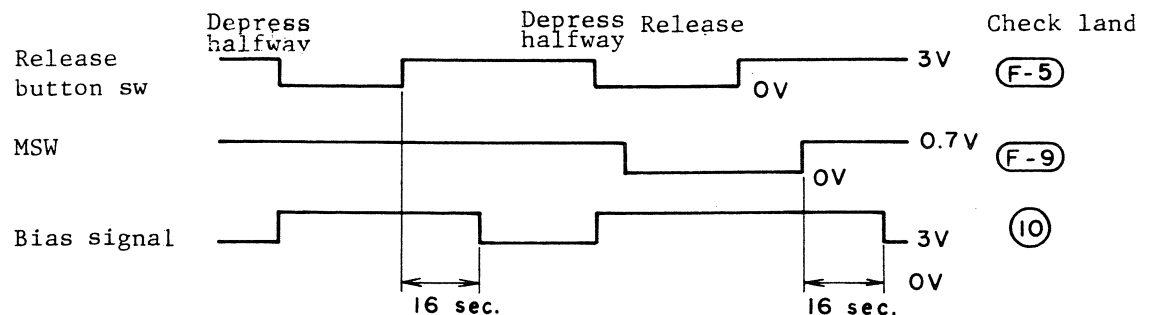
F - (No.) ----- FPC (B2001)
 A - (No.) ----- IC (1003) M51026
 B - (No.) ----- IC (1004) M51027
 ○ ----- IC (1002) M51029
 1 - (No.) ----- ASA/ISO base plate
 2 - (No.) ----- LED panel

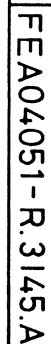
(2) Switch/signal

FC. SW ----- Frame counter switch (Auto, Manual: ON, M90, B: OFF)
 LED SW ----- Ready-light switch (Auto, Manual: OFF, M90, B: ON)
 Vcc ----- Battery voltage 3V
 Vcc' ----- Battery voltage 3V supplied when FC.SW is ON
 Mg ----- Magnet
 A. Mg ----- Auto magnet signal
 M1/90Mg ----- Manual.1/90 magnet signal
 MSW sig ----- Memory switch signal
 BC ----- Battery check
 TSW ----- Trigger switch
 IS.SW ----- Integrating switch

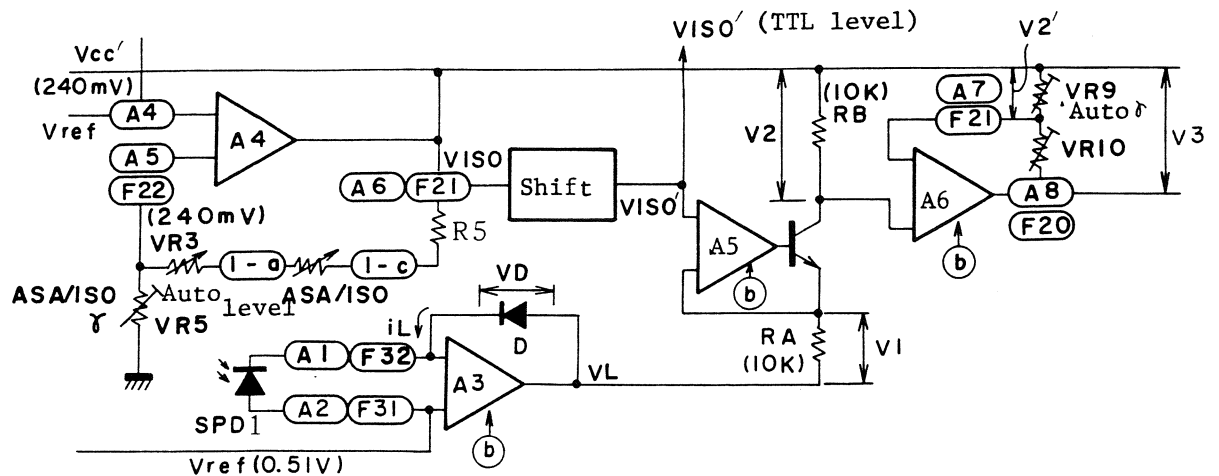
(3) Meter hold

Depressing release button halfway turns release button SW on.
 Bias signal goes high and the circuitry becomes operative.
 Bias signal remains high for 16 sec. after either release button SW or MSW turns off.





3. Metering block



(1) Metering section

The SPD generates the current i_L in response to the light available. The current i_L allows the diode D to provide the voltage V_D . Operation amplifier A3 converts the current i_L into the voltage V_L .

The voltage V_L is the sum of V_{ref} (0.51V) and V_D . The voltage V_D , as well as the voltage V_L , shifts by 18mv per 1LV.

(2) ASA/ISO section

The resistor VR5 adjusts the current for the resistor ASA/ISO so that the voltage VISO can shift by 18mv/1LV per 0.9K Ω /film speed. The shift rate of VISO is equivalent to that of V_L .

The resistor VR3 adjusts the level of VISO.

(3) Shift section

Approx. 0.6V is added to VISO and VISO becomes VISO'.

(4) Arithmetic logic

The voltage V_1 is the difference between the voltages VISO' and V_L at the resistor RA. The same voltage V_2 and V_2' are hold respectively at the resistors RB and VR9. The resistors VR9 and VR10 adjusts the voltage V_3 as twice as the voltage V_2' . The voltage V_3 is TVO for shutter speed control.

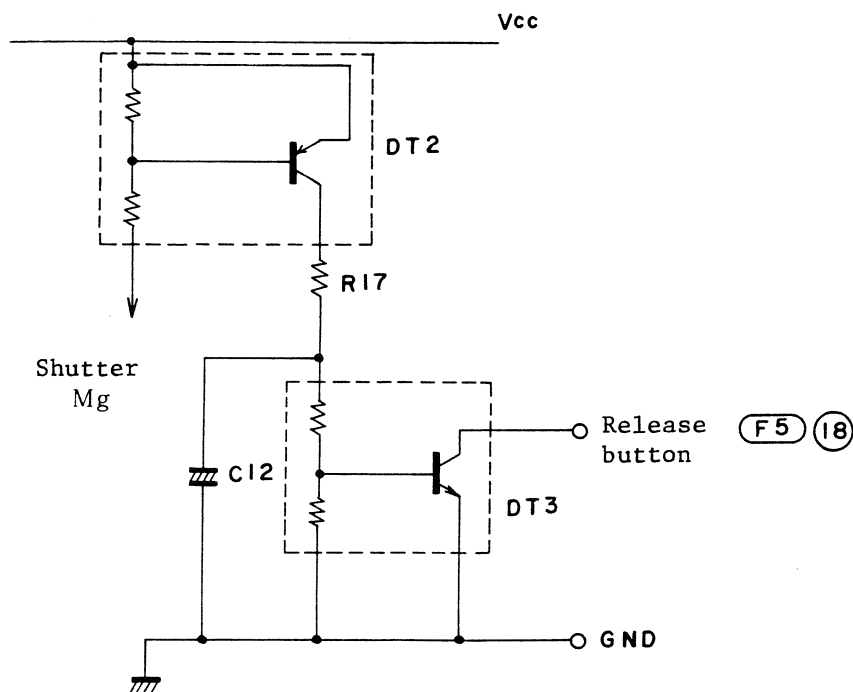
(2) Manual mode

When M.SW is ON, A.Mg sig remains L and M.1/90Mg only becomes H. So, the comparator A13 and transistor Q102 will not turn on, but the input to the diode D5 (B28) is H and the output of D5 is L. The amplifier A14 turns on and the shutter Mg is charged. The travel of opening curtain turns the trigger SW off and M1/90 Mg sig remains H as long as set in the gray code for manual shutter speed control. After this, M1/90 Mg sig turns L and the output of the diode D5 becomes H. The amplifier A14 and shutter Mg turns off to start the travel of closing curtain.

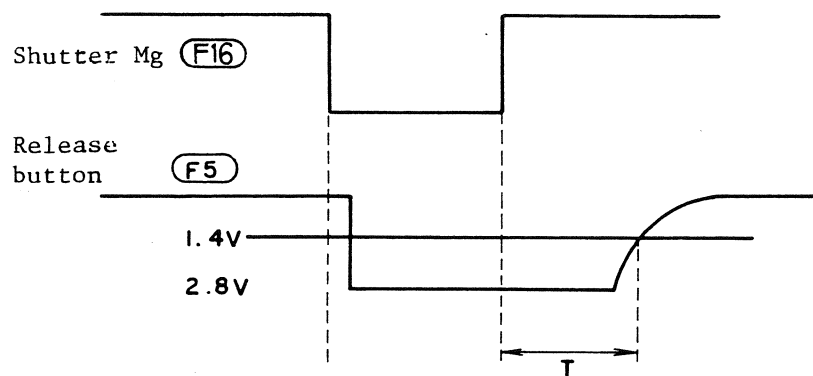
(3) b signal

On auto mode, the b signal is L while the output of the comparator A13 is L. On manual mode, the b signal is L while M1/90 Mg sig is H.

5. Release button switch delay block

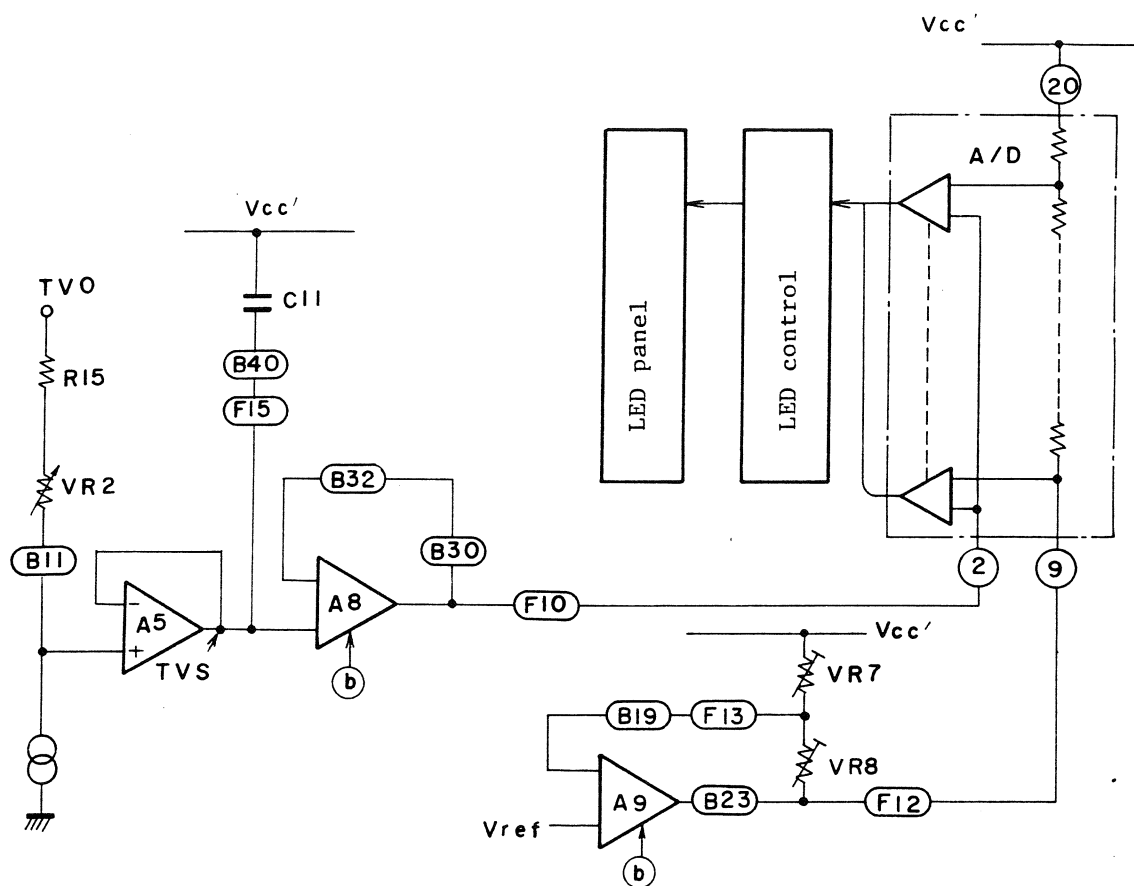


In order to ensure proper operation of slow speed shutter, this block holds release button switch on for 580ms after the shutter Mg turns off.



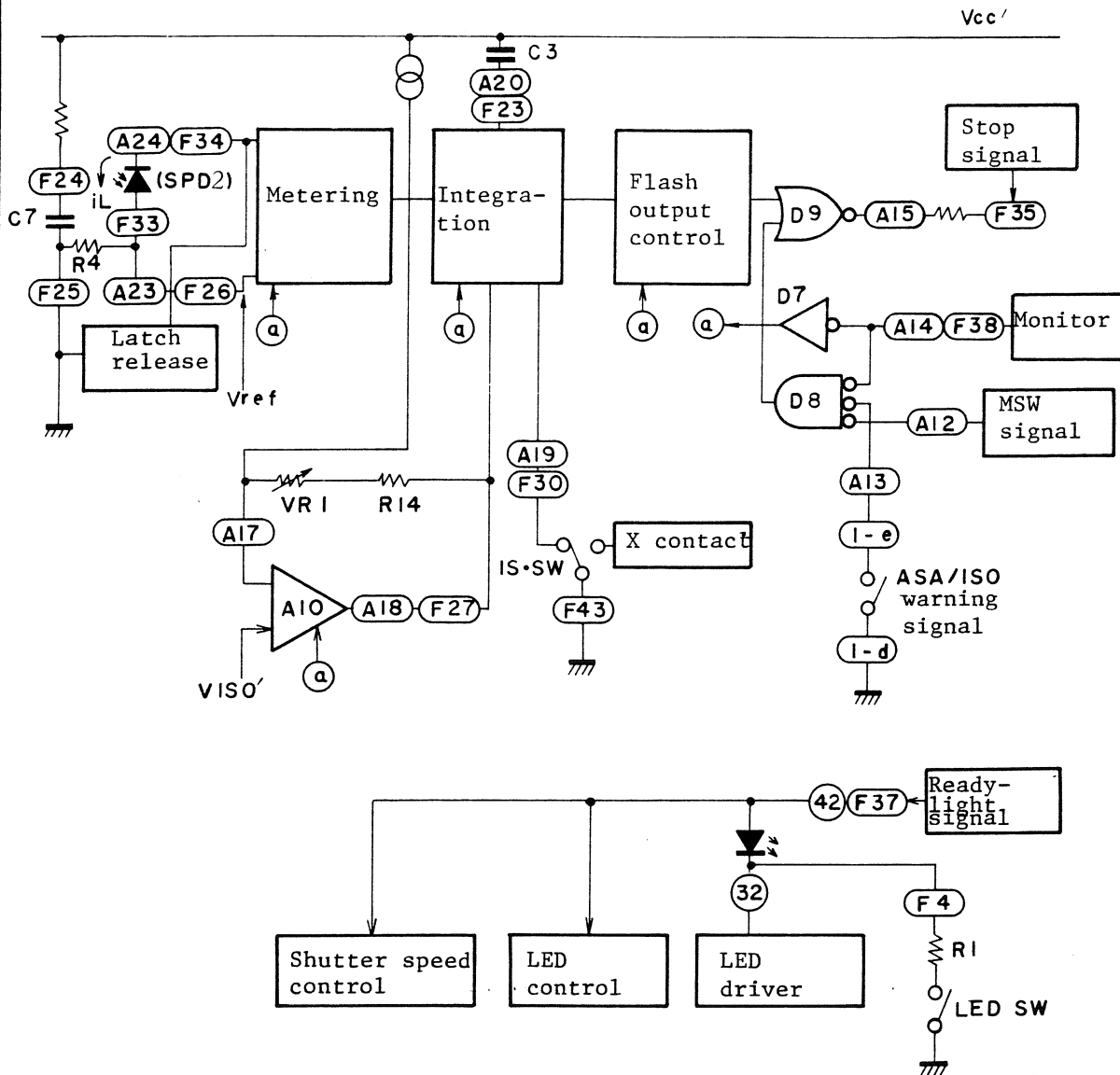
$T = 580 \text{ ms}$
Max = 900 ms
Min = 300 ms

6. LED driver block



- (1) The resistor VR2 shifts the voltage TV0 for LED drive (TVS). The resistors VR7 and VR8 adjust the voltages to the A/D converter.
- (2) After shutter release, the M.SW turns on to cancel LED lighting. But, within 62.5 - 125ms after the M.SW turns off, the LED will light up again.

7. TTL flash output control block



(1) TTL mode

- 1) When the SB-102 is switched on TTL mode, the monitor signal turns L and the signal a goes H.
- 2) The ready-light signal allows the shutter speed control and LED control to set the sync speed (1/90 sec.) on auto mode and 1/125 - 1/1000 sec. on manual mode. The LED blinks to indicate the result of metering. But the LED 60 and 125 will not light up.

- 3) The ready-lights of speedlight and camera will light up at the same time. When the shutter dial is set to M90 or B, the LED SW, coupled with the FC SW, turns on to light the ready-light.

(2) Metering

- 1) Shutter release turns the X-contact on and fires the speedlight. The light reflected back through the lens reaches the film plane and then the TTL.SPD.
- 2) The TTL.SPD generates the current iL and the metering section provides the voltage in response to iL for the integration section.

(3) Integration

- 1) Before shutter release, the IS SW turns on to increase the voltage of the integrating condenser (A20, F23) up to VCC. After shutter release, the IS SW turns off to charge the condenser and the voltage becomes lower.
- 2) The lowering rate of the voltage (A20, F23) depends on the input voltage from the metering section and TTL level section (A10). If the light is strong or the film speed is fast, the output voltage of metering section is high and the voltage of condenser goes low faster.

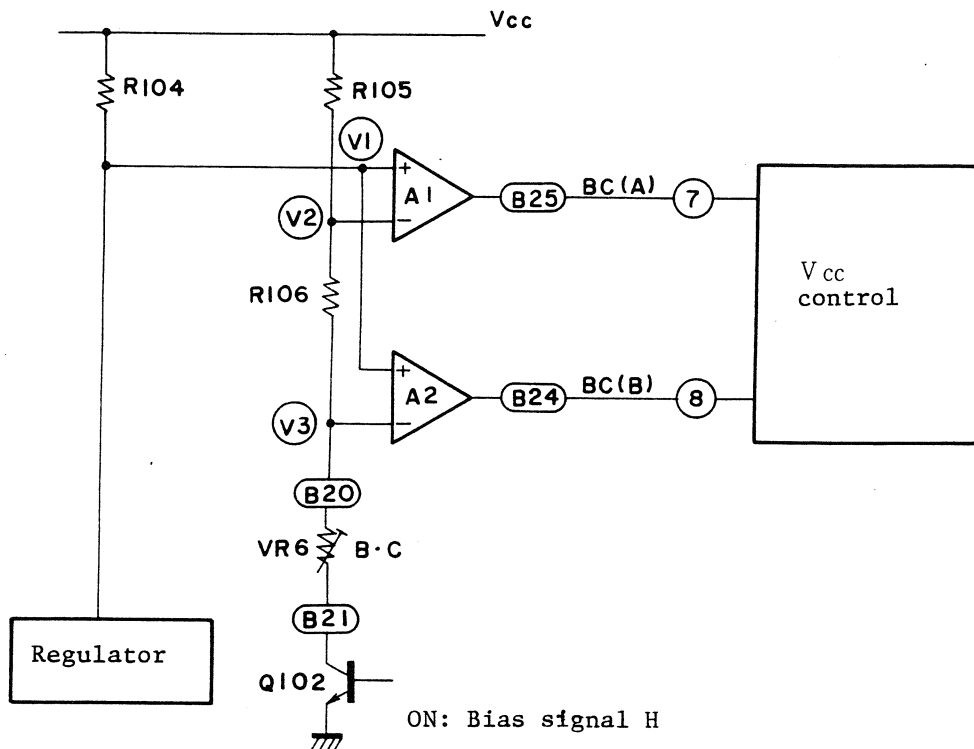
(4) Flash output control

The flash output control section holds the reference voltage to be compared with the input voltage from the integration section. When the speedlight fires, the input voltage of the integration section goes low to cross with the reference voltage. Then the output voltage of the flash output control section turns H to stop the output of the speedlight.

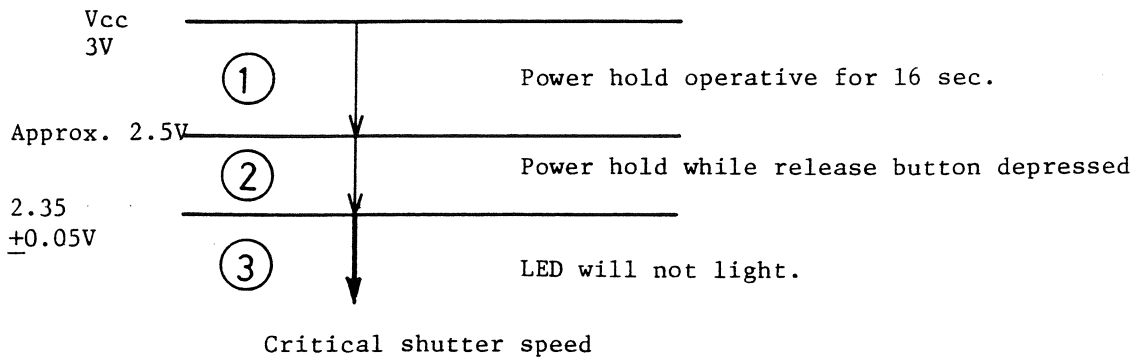
(5) ASA/ISO warning

If the film speed is set to ASA/ISO 800, the monitor, M.SW and ASA/ISO warning signals turn L and the diode D8 turns H. But the output of the diode D9 turns L to provide the stop signal. Then the ready-light LED blinks to warn the film speed set error.

8. Battery checker block

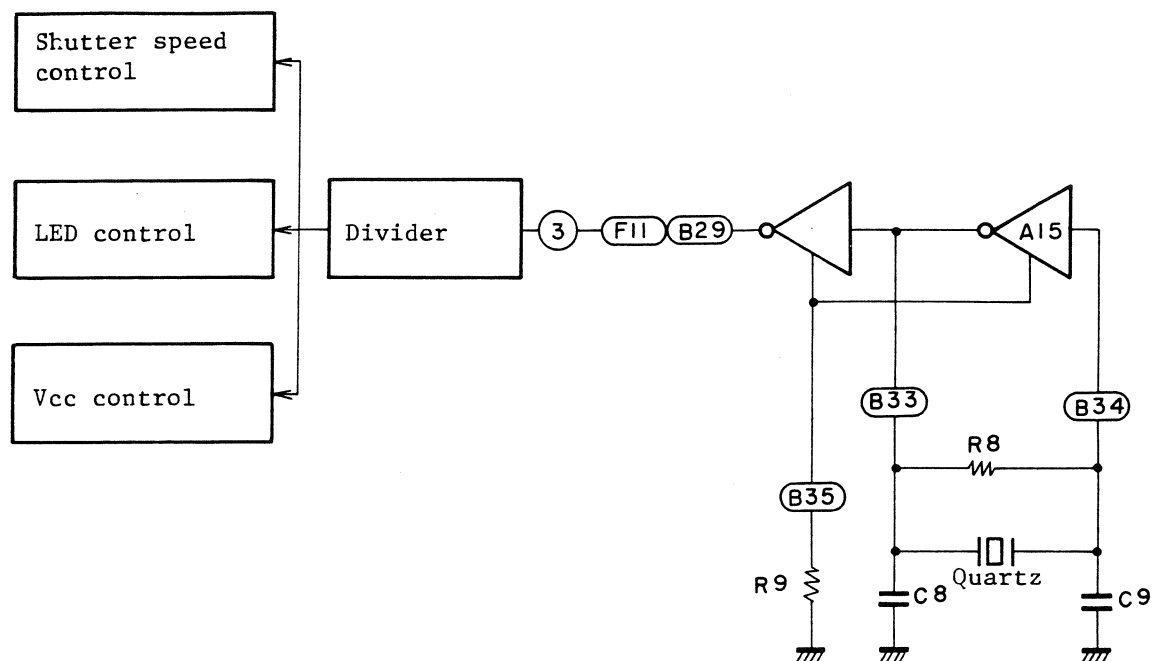


The battery power voltage VCC goes low and the voltage V1, V2 and V3 will go low accordingly. When V1 is equal to V2, the output of the amplifier A1 turns L. When V1 is equal to V3, the output of the amplifier A2 turns L.



VCC	V1, V2, V3	A1	A2
①	$V1 > V2 > V3$	H	H
②	$V2 > V1 > V3$	L	H
③	$V2 > V3 > V1$	L	L

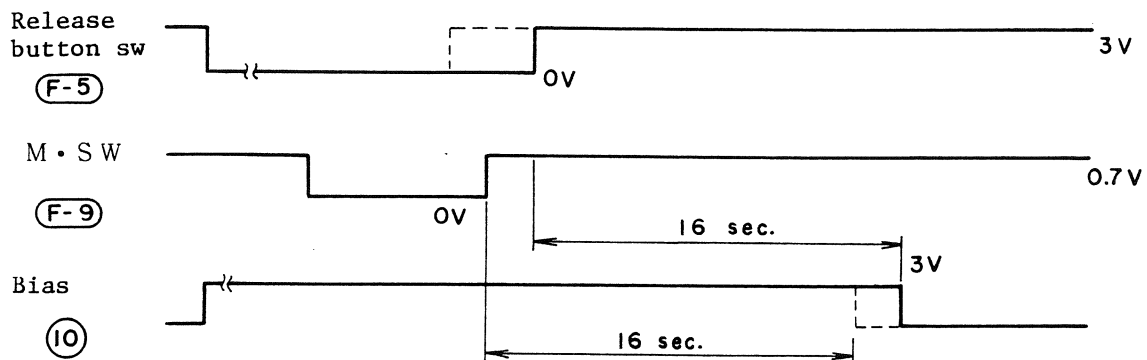
9. Oscillation block



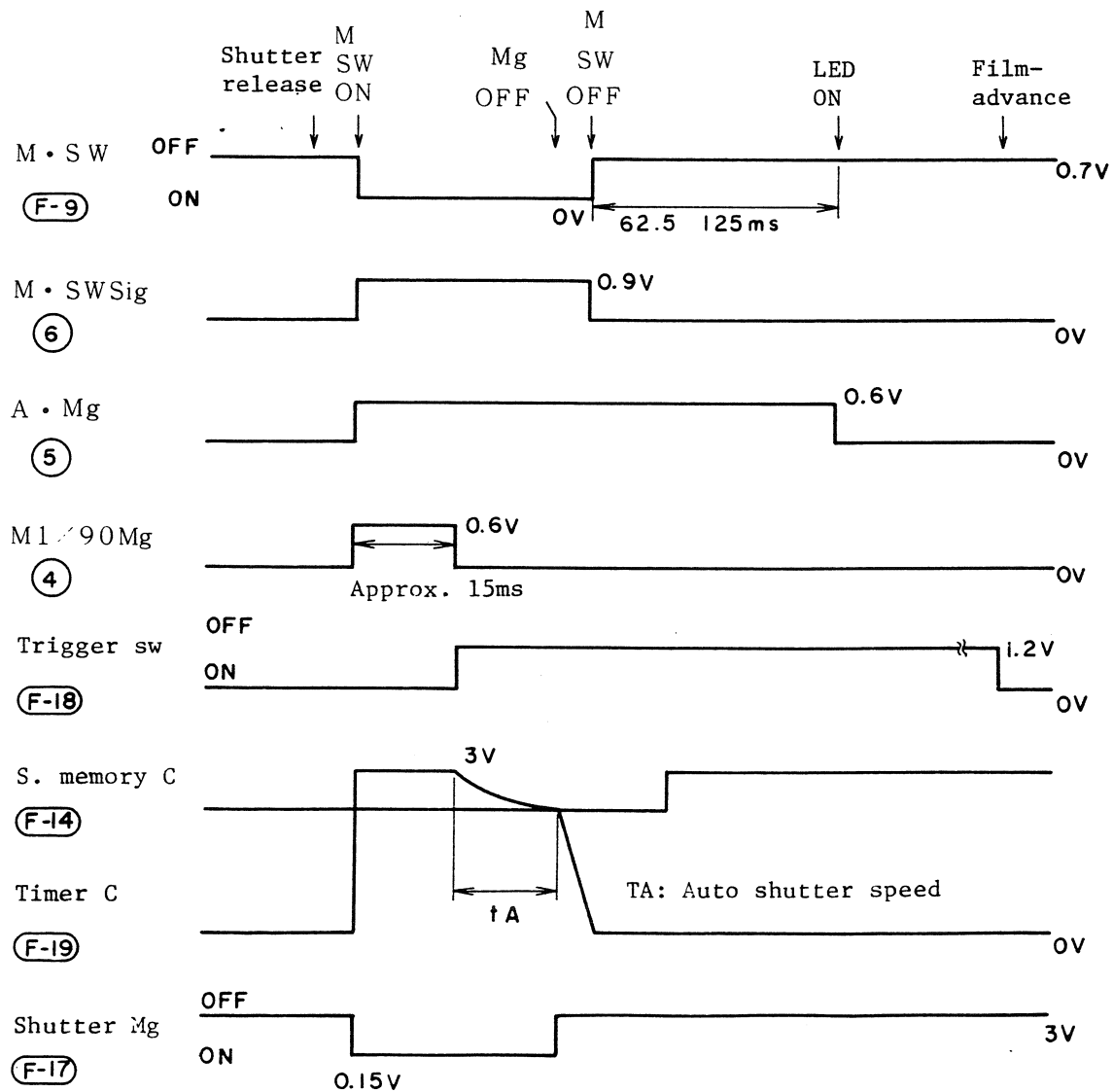
The oscillation block is in operation whenever batteries are installed. The substantially sinusoidal waveform of 32.768 KHZ can be observed at the check lands B33 and B34. The same waveform will be observed at the check land B29 while power is held for 16 sec.

10. Timing chart

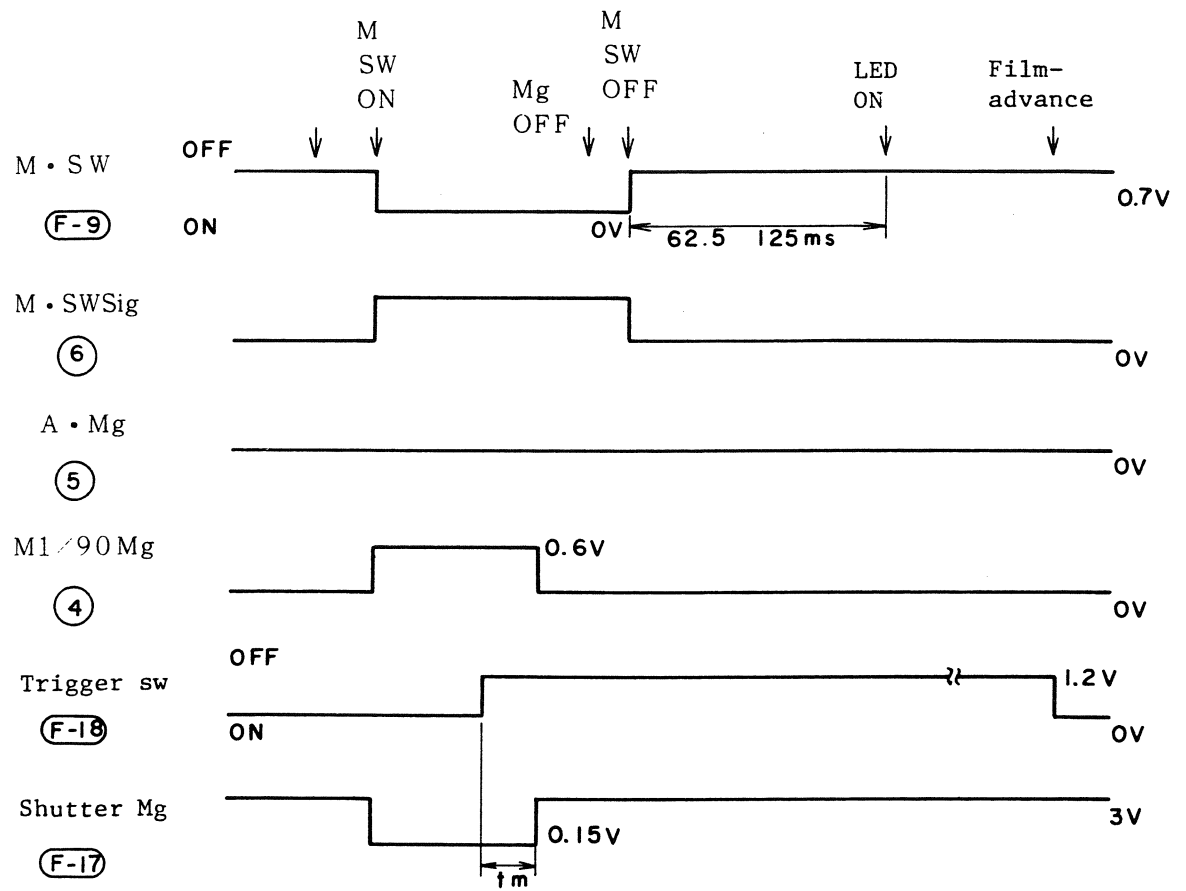
(1) Power hold



(2) Auto mode

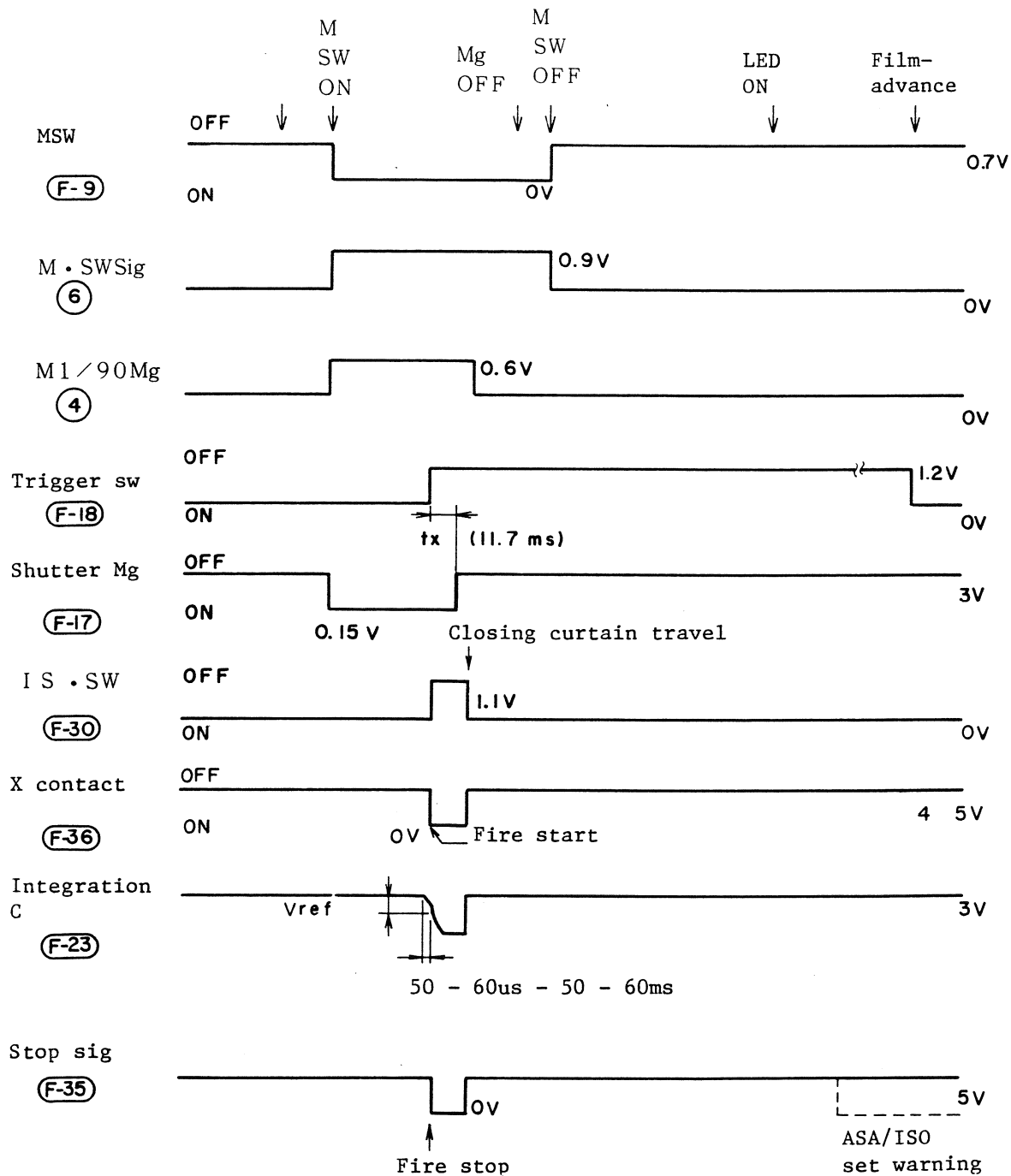


(3) Manual mode



t_m : Manual shutter speed

(4) TTL mode



11. Gray code table

Gray code		Check land	Shutter dial						
			A	1000	500	250	125	60	30
	X	F-8	1	1	1	0	0	0	0
	Y	F-7	1	0	0	0	0	1	1
	Z	F-6	0	0	1	1	0	0	1

(8) Troubleshooting

(1) Check conditions

35/2.5 lens or Tool lens J18085

ASA/ISO 100

Aperture F5.6

Shutter Auto mode

Frame counter 1 or more

Power 3V

Brightness LV12

The voltage and amperage should be checked while power is held for 16 sec., but the resistance should be checked while power is off.

(2) Check lands

F - (No.) ----- FPC B2001

A - (No.) ----- IC M51026 #1003

B - (No.) ----- IC M51027 #1004

○ ----- IC M51029 #1002

1 - (No.) ----- ASA/ISO circuit

2 - (No.) ----- LED panel circuit

(3) Test equipment

Digital multimeter J9003-3

Oscilloscope J9001-5

DC regulated power supply J9001-5

Tool battery J15238

Tool outerhousing J18165

Time counter J18142

(4) Abbreviations

FC. SW ----- Frame counter switch

M. SW ----- Memory switch

T. SW ----- Trigger switch

IS. SW ----- Integration switch

Mg ----- Magnet

IC reference voltages

1. Measuring reference: GND
2. Tolerance: $\pm 10\%$
3. OV tolerance: 50mv - 100mv
4. *(v): Time counter J18142 in operation

1. IC M51026P #1003

Pin No.	Voltage(v)	Check land	Note
A1	530m	F32	
A2	530m	F31	
A3	0 (50m)		
A4	240m	F28	
A5	240m	VR5(Down), VR3(Up)	
A6	650m	1-a	Variable by Auto level, ISO
A7	2.7	F29	Variable by Auto
A8	2.4 - 2.3	R15 Left	Variable by Auto
A9	0		
A10	2.8		
A11	0		
A12	0		
A13	1.5	1-e	
A14	* 1.5 (0.5)	F38	
A15	* 0 (5)	F35	
A16	3		
A17	* 1.1 (1.2)		Variable by TTL level
A18	* 0.7 (0.75)	F27	- ditto -
A19	0	F30	
A20	* 0 (3)	F23	
A21	3	F24	
A22	* 0 (240m)	F25	
A23	* 0 (240m)	F26	
A24	* 0 (240m)	F34	

2. IC M51027P #1004

Pin No.	Voltage(v)	Pin No.	Voltage(v)	Pin No.	Voltage(v)
B1	■ 0 → 1.5	B15	240m	B29	Clock pulse
B2	N.C	B16	N. C	B30	2.1
B3	0	B17	N. C	B31	Blank
B4	0	B18	0 (50m)	B32	△ 2.1
B5	Blank	B19	▲ 2.45	B33	0.6
B6	Blank	B20	2.3	B34	0.5
B7	Blank	B21	0	B35	2.5
B8	Blank	B22	2.8	B36	Blank
B9	Blank	B23	▲ 1.9	B37	0
B10	△ 2.35	B24	0.65	B38	Blank
B11	▲ 2.1	B25	0.65	B39	△ 2.6
B12	240m	B26	0	B40	△ 2.1
B13	Blank	B27	0	B41	3
B14	Blank	B28	0	B42	3

■ Before release → After release

▲ Variable by LED level, LED f

3. IC M51029P #1002

Pin No.	Voltage(v)	Pin No.	Voltage(v)	Pin No.	Voltage(v)
1	N. C	15	● 0.6	29	
2	△ 2.1	16	● 0	30	
3	Clock pulse	17	● 0	31	
4	0	18	2.7	32	* 0 (1.5)
5	0	19	0.6	33	N. C
6	0	20	3	34	N. C
7	0.65	21	N. C	35	N. C
8	0.65	22	0 → 1.5(=B1)	36	N. C
9	▲ 1.9	23	50 - 60mv	37	0
10	△ 2.8	24	LED ON 1.1 LED OFF 1.8	38	N. C
11	N. C	25		39	1.1
12	N. C	26		40	0
13	N. C	27		41	0
14	● 0.6	28		42	* 0 (3)

▲ Variable by LED

● Gray code: Auto

IC pin nomenclature

1) IC M51026P #1003

Pin No.	Name	Pin No.	Name
1	SPD 1 (anode)	13	ISO warning
2	SPD 1 (cathode)	14	TTL monitor
3	Bias cutter	15	TTL stop
4	Regulated voltage	16	Vcc'
5	ISO ♂	17	TTL shift input
6	VISO	18	TTL shift output
7	Auto ♂	19	IS SW input
8	TVO	20	Int. condenser
9	Timer condenser	21	Latch release
10	Bias	22	Latch release
11	GND	23	SPD 2 (anode)
12	MSW sig	24	SPD 2 (cathode)

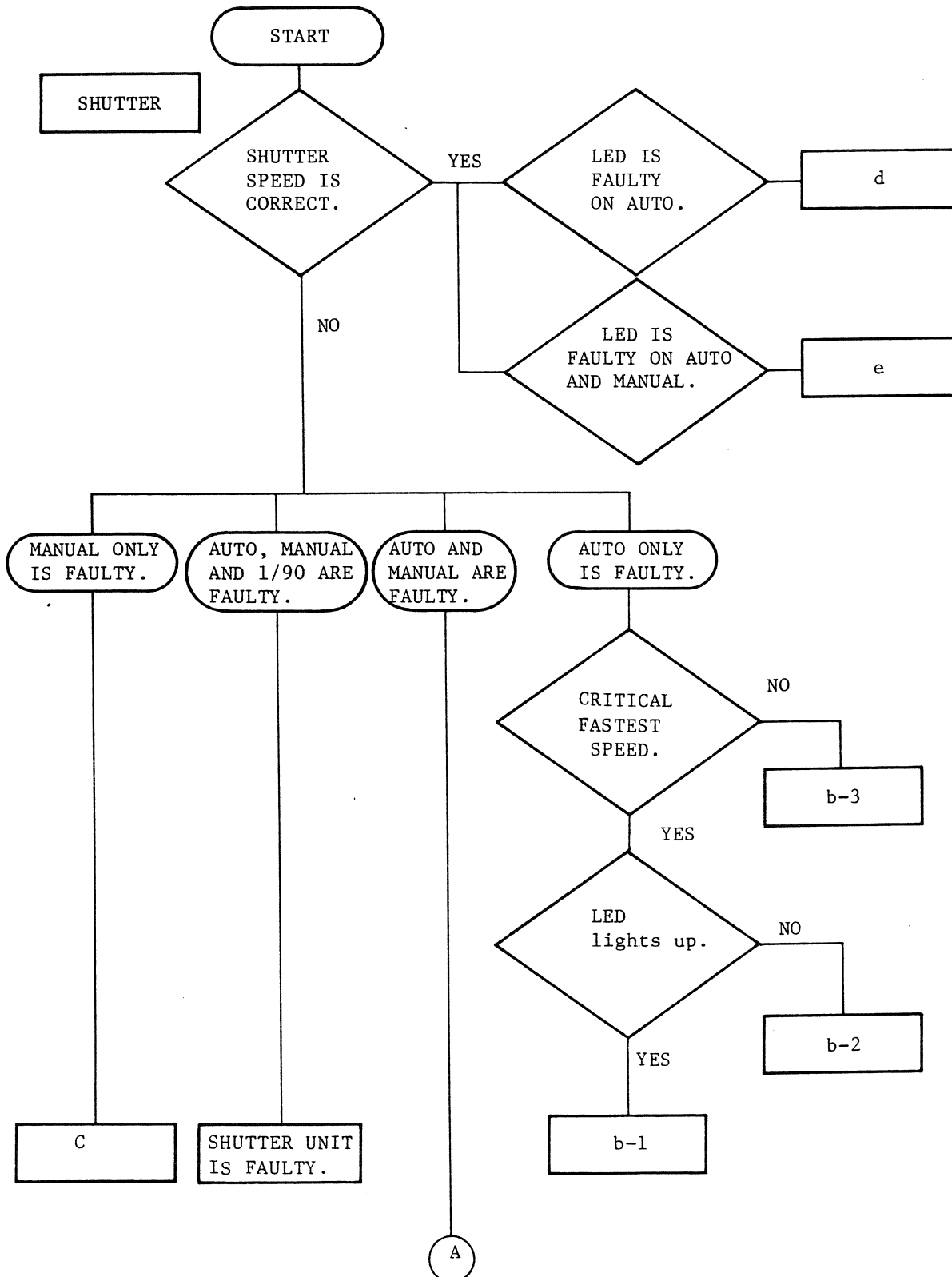
2) IC M51027P #1004

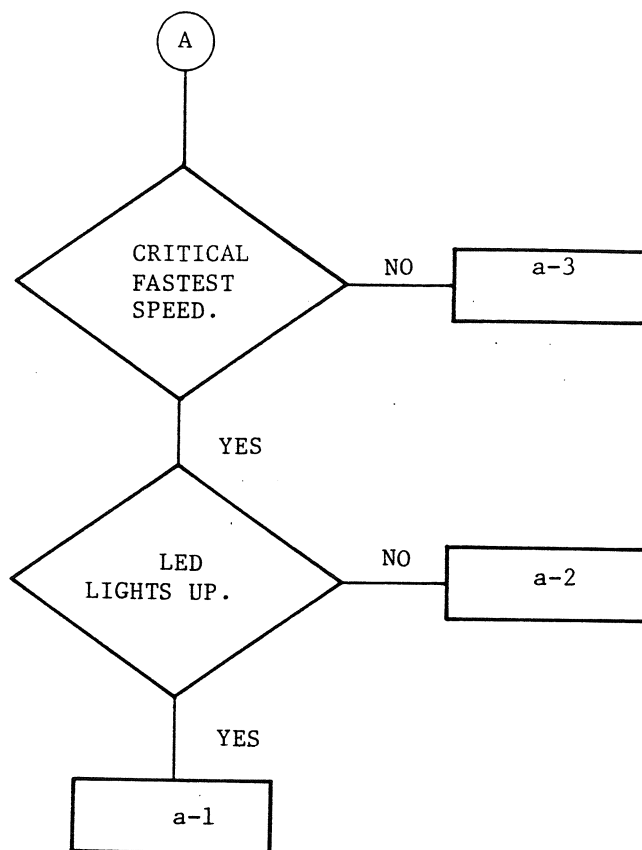
Pin No.	Name	Pin No.	Name
1	T. SW	22	Bias
2	NC	23	LED ♂ (2)
3	Timer condenser	24	BCA
4	Timer condenser	25	BCB
5	Blank	26	M.SW sig
6	Blank	27	A.Mg sig
7	Blank	28	M1/90 sig
8	Blank	29	C.P
9	Blank	30	LED output (1)
10	TVO	31	Blank
11	LED shift	32	LED output (2)
12	Regulated voltage	33	OSC (1)
13	Blank	34	OSC (2)
14	Blank	35	OSC (3)
15	T reference	36	Blank
16	NC	37	GND
17	NC	38	Blank
18	Bias cutter	39	Memory condenser
19	LED ♂ (1)	40	LED filter C
20	Battery check	41	Shutter Mg
21	Battery check	42	Vcc

3) IC M51029P #1002

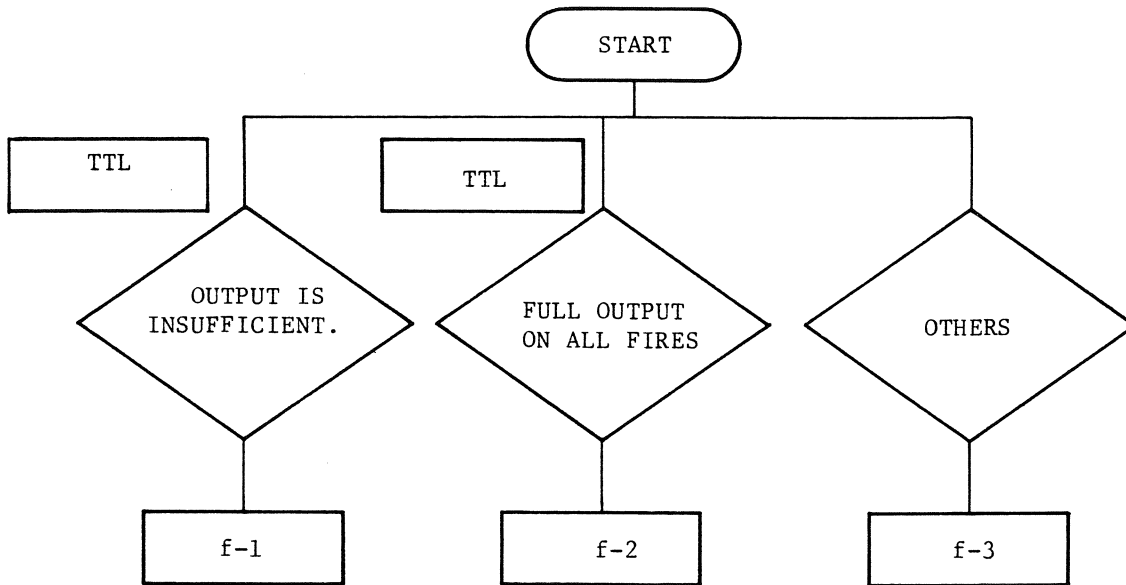
Pin No.	Name	Pin No.	Name
1	NC	22	Trigger
2	LED output	23	LED.R
3	C.P	24	▲ signal
4	M1/90 sig	25	1/1000 signal
5	A.Mg sig	26	1/500 signal
6	M.SW	27	1/250 signal
7	BCA	28	1/125 signal
8	BCB	29	1/60 signal
9	LED r	30	1/30 signal
10	Bias	31	▼ signal
11	NC	32	Ready K signal
12	NC	33	NC
13	NC	34	NC
14	Gray code X	35	NC
15	Gray code Y	36	NC
16	NC	37	GND
17	Gray code Z	38	NC
18	Power hold	39	M.SW
19	Inj	40	NC
20	Vcc'	41	NC
21	NC	42	Ready A signal

A) SHUTTER OR LED IS FAULTY

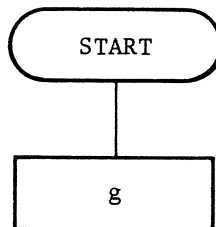




B) TTL OUTPUT CONTROL IS FAULTY

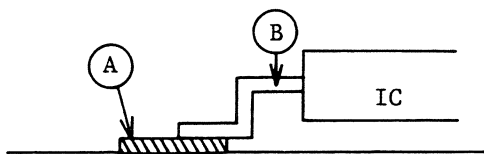


C) BATTERY DRAIN



Precautions

1) IC voltage check points

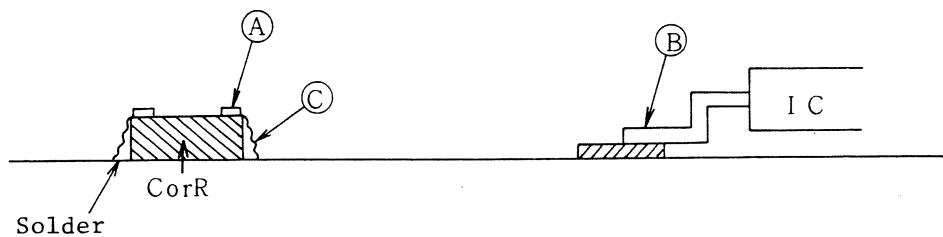


Output voltage: (A)

Input voltage : (A) and (B)

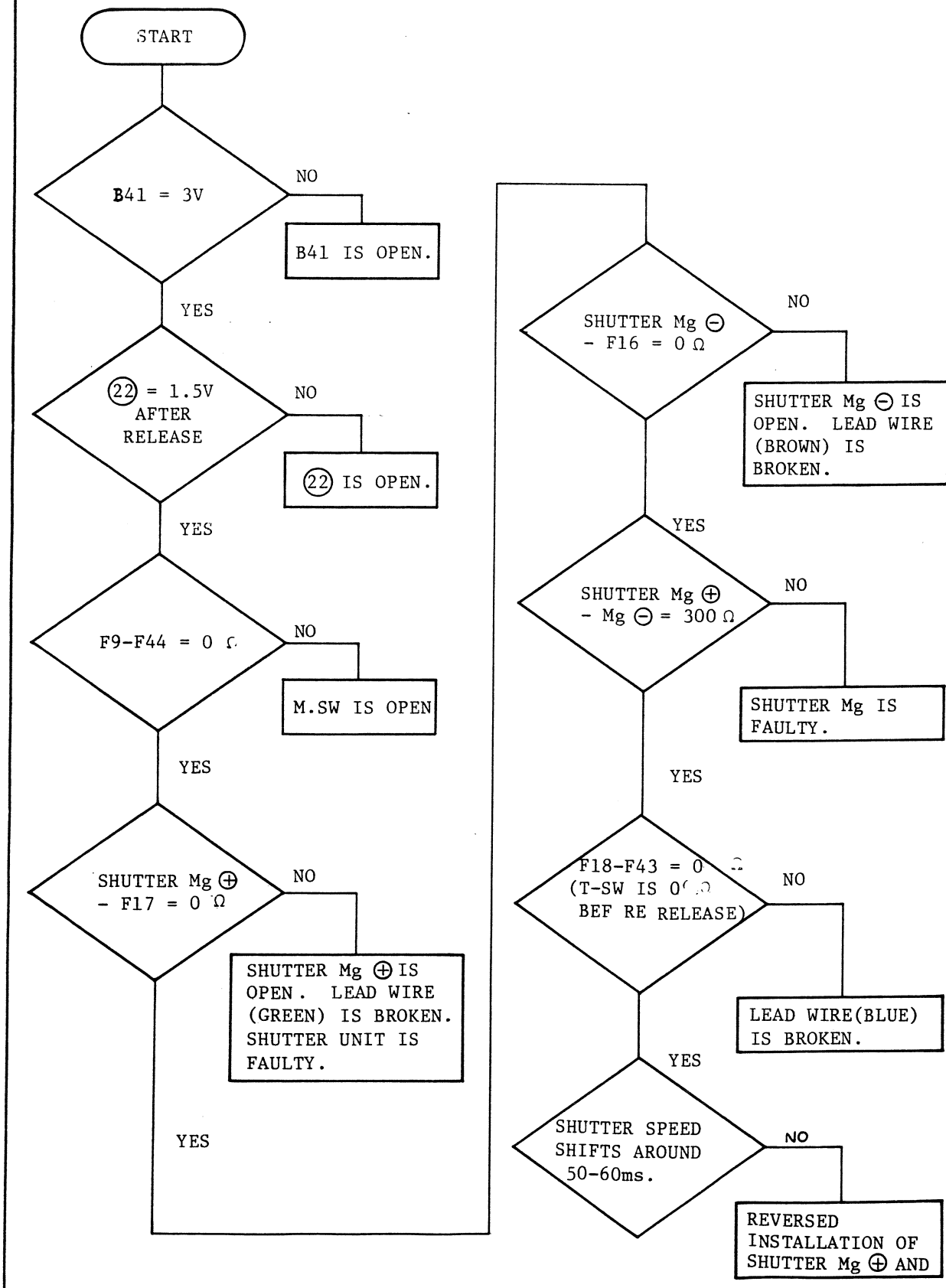
In case the voltage reading is not clear, measure the resistance.

2) Resistance check points

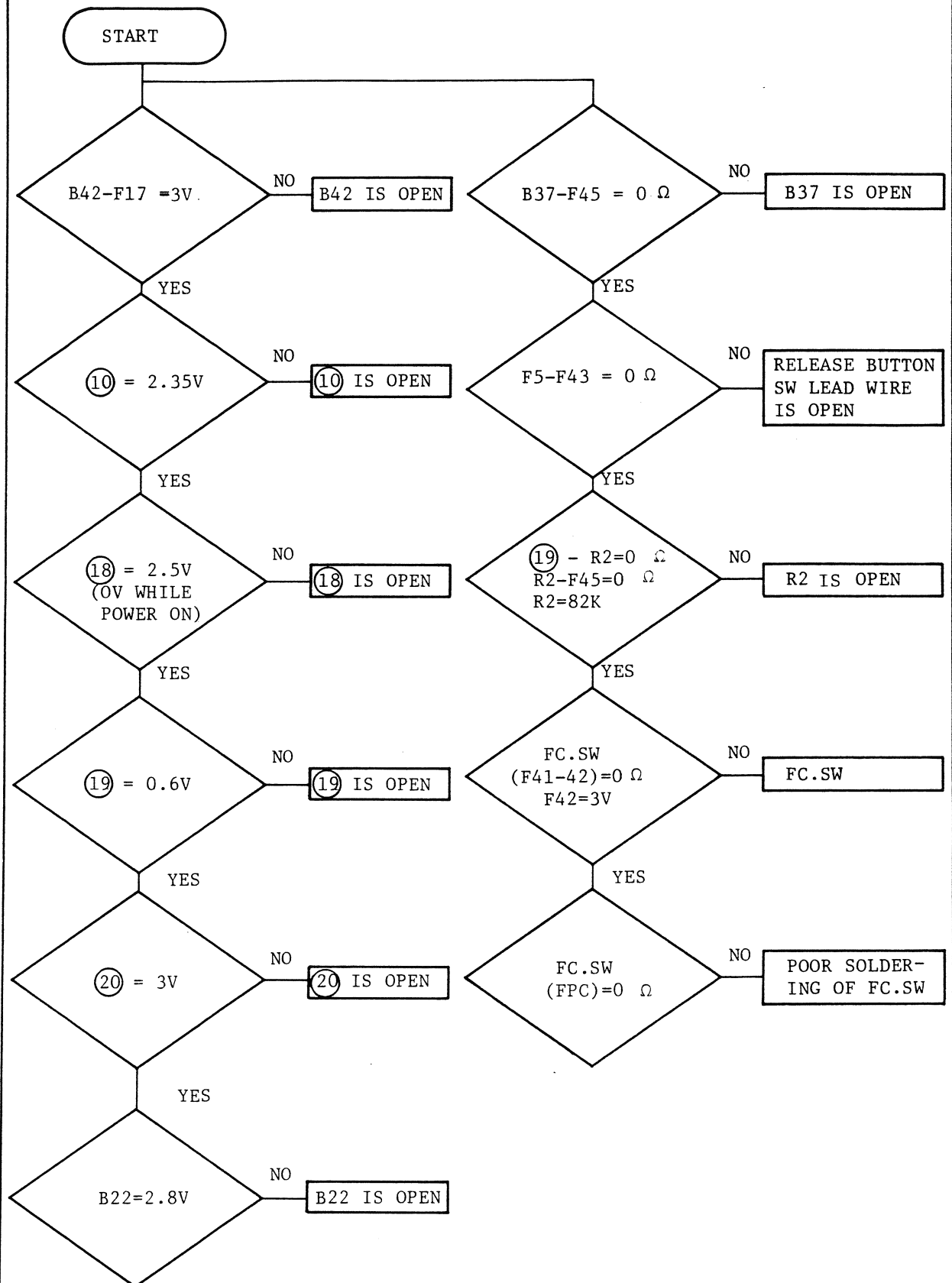


Avoid check on the point C

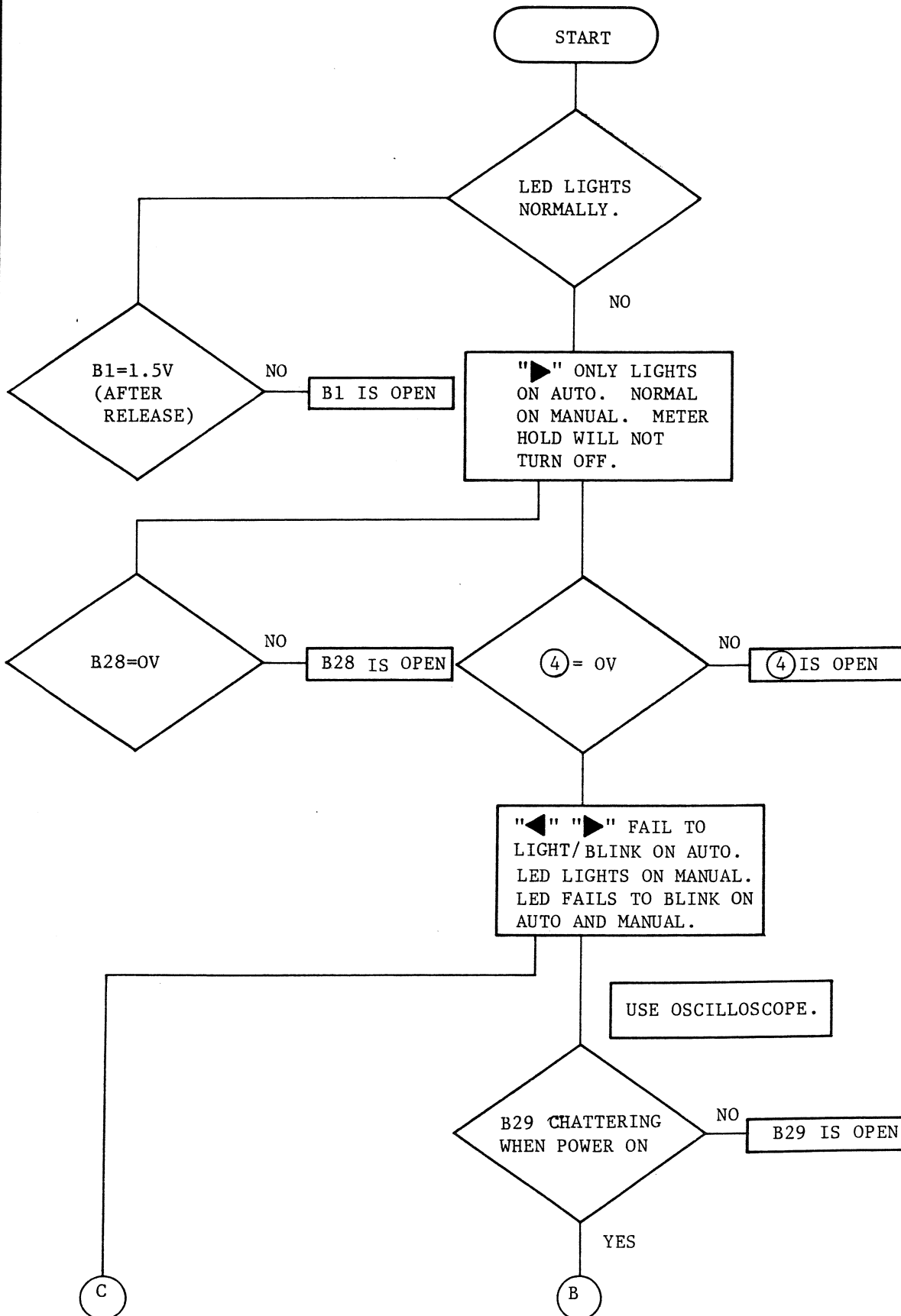
a-1 CRITICAL FASTEST SHUTTER SPEED ON AUTO AND MANUAL

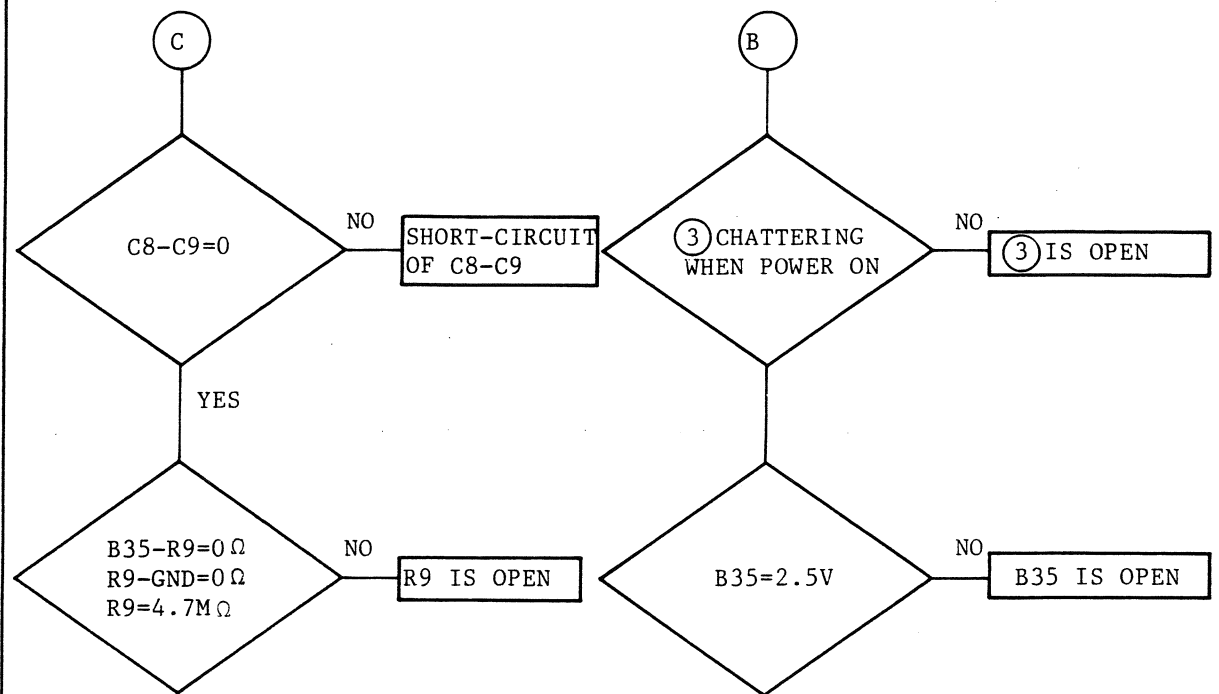


a-2 CRITICAL FASTEST SHUTTER SPEED ON AUTO AND MANUAL

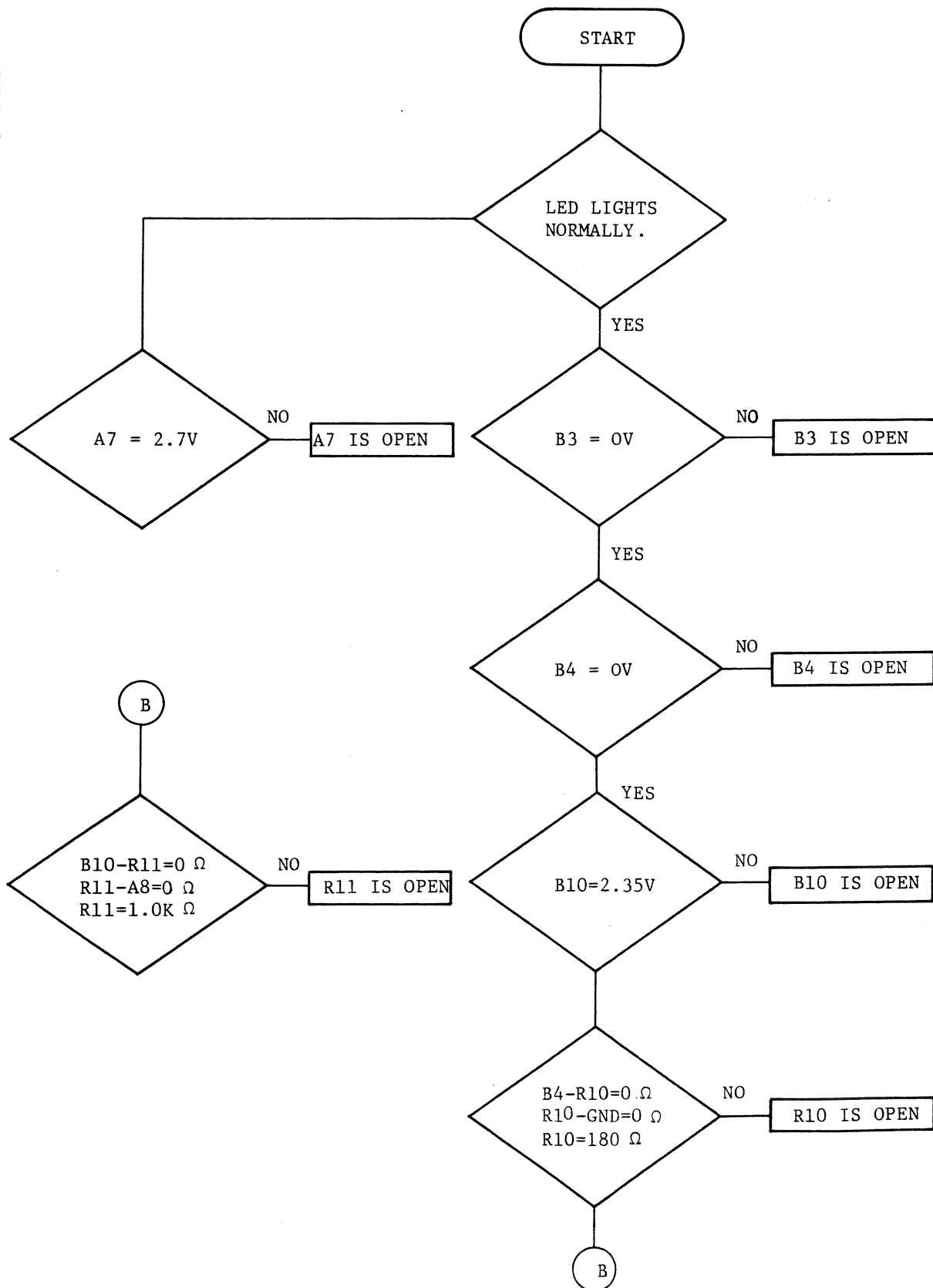


a-3 SHUTTER IS HELD OPEN ON AUTO AND MANUAL

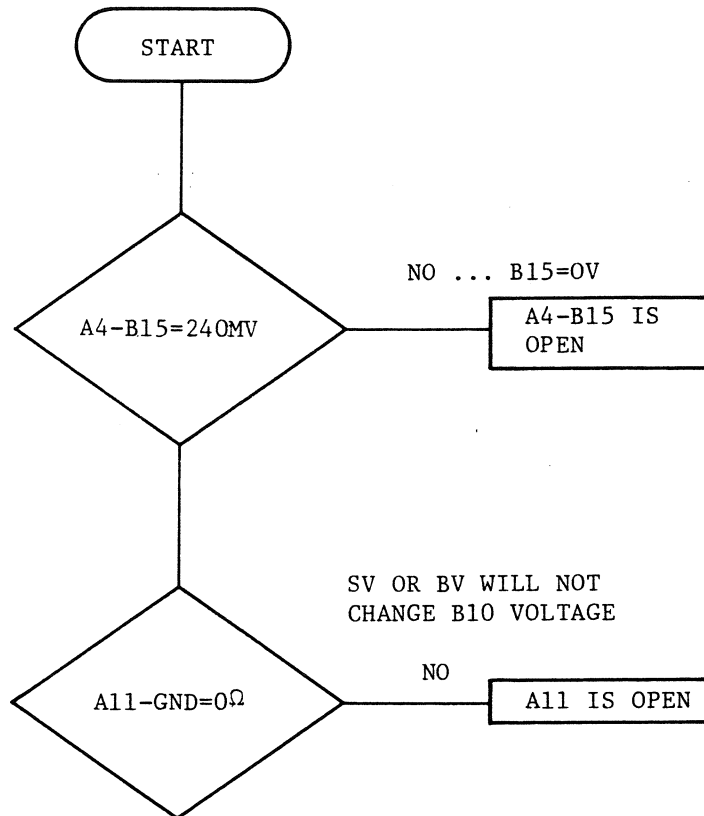




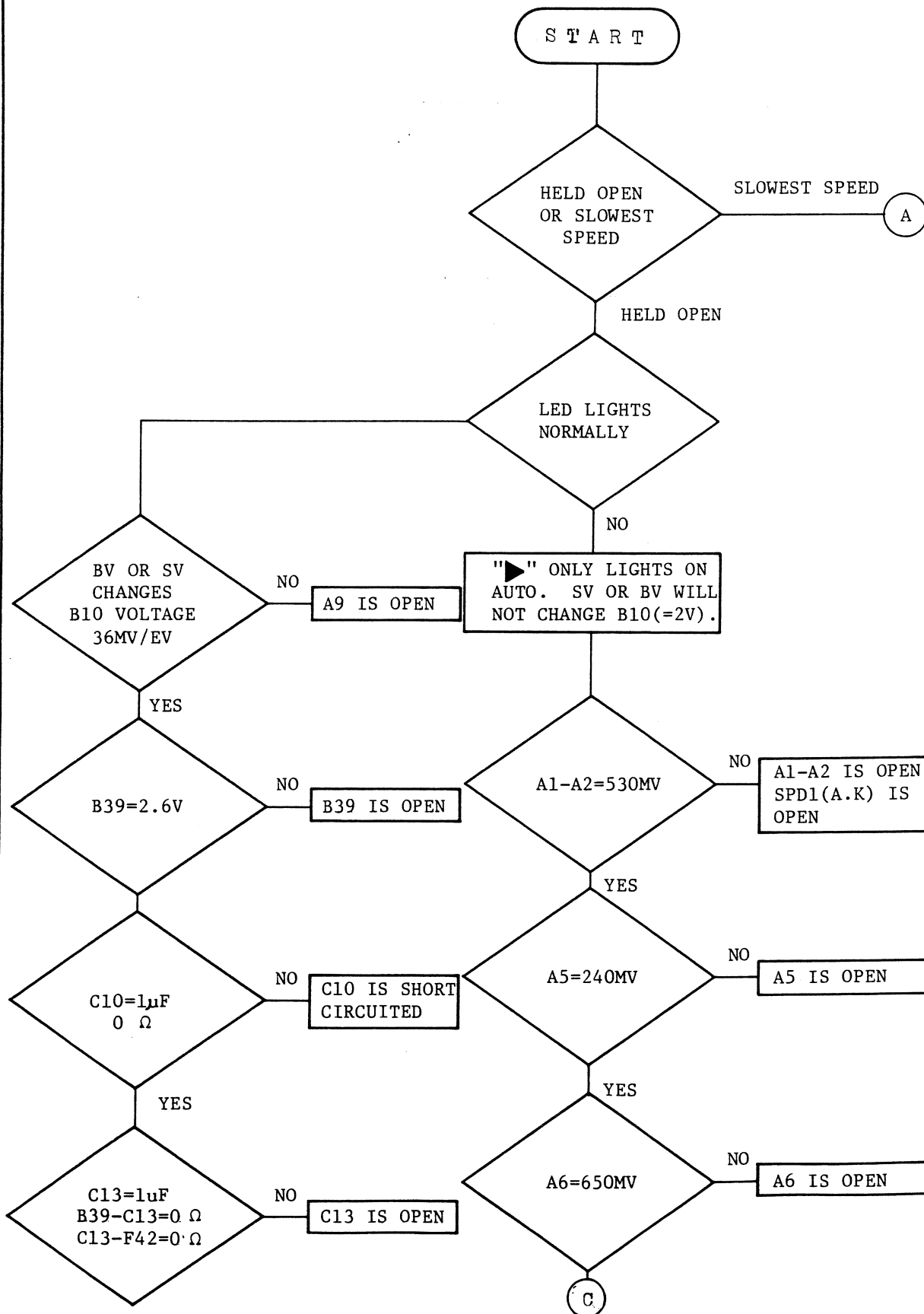
b-1 CRITICAL FASTEST SHUTTER SPEED

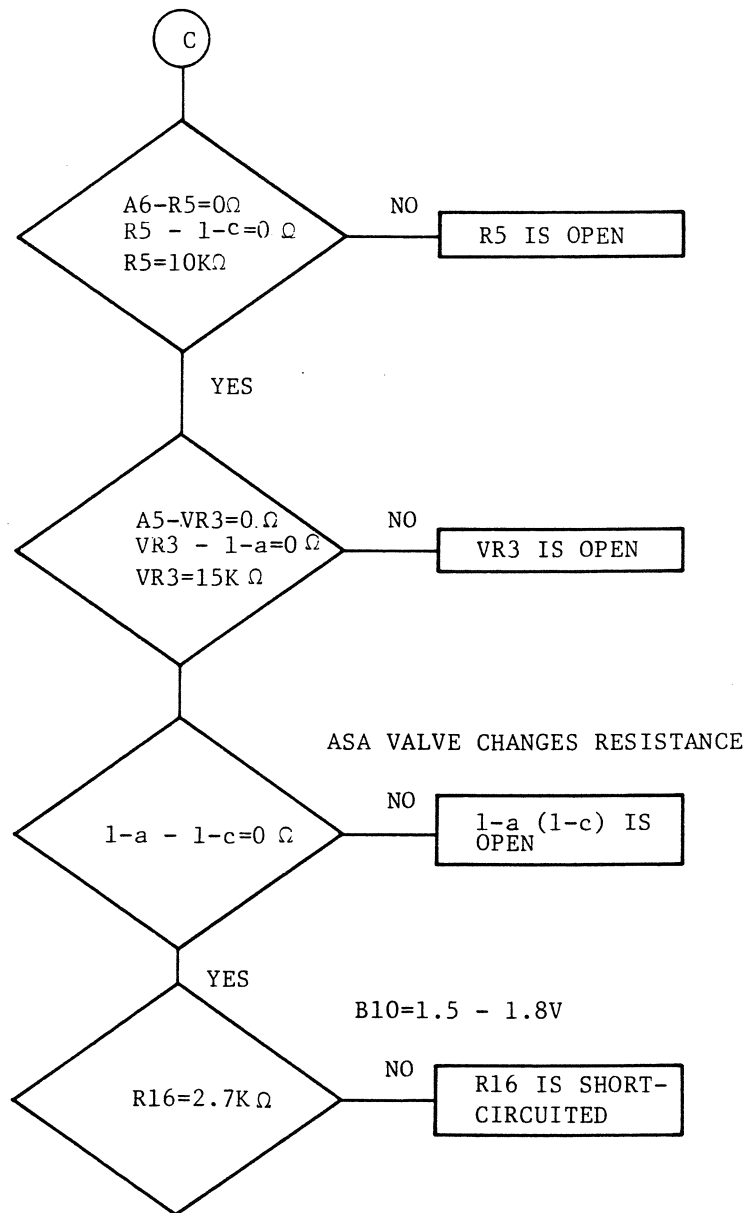


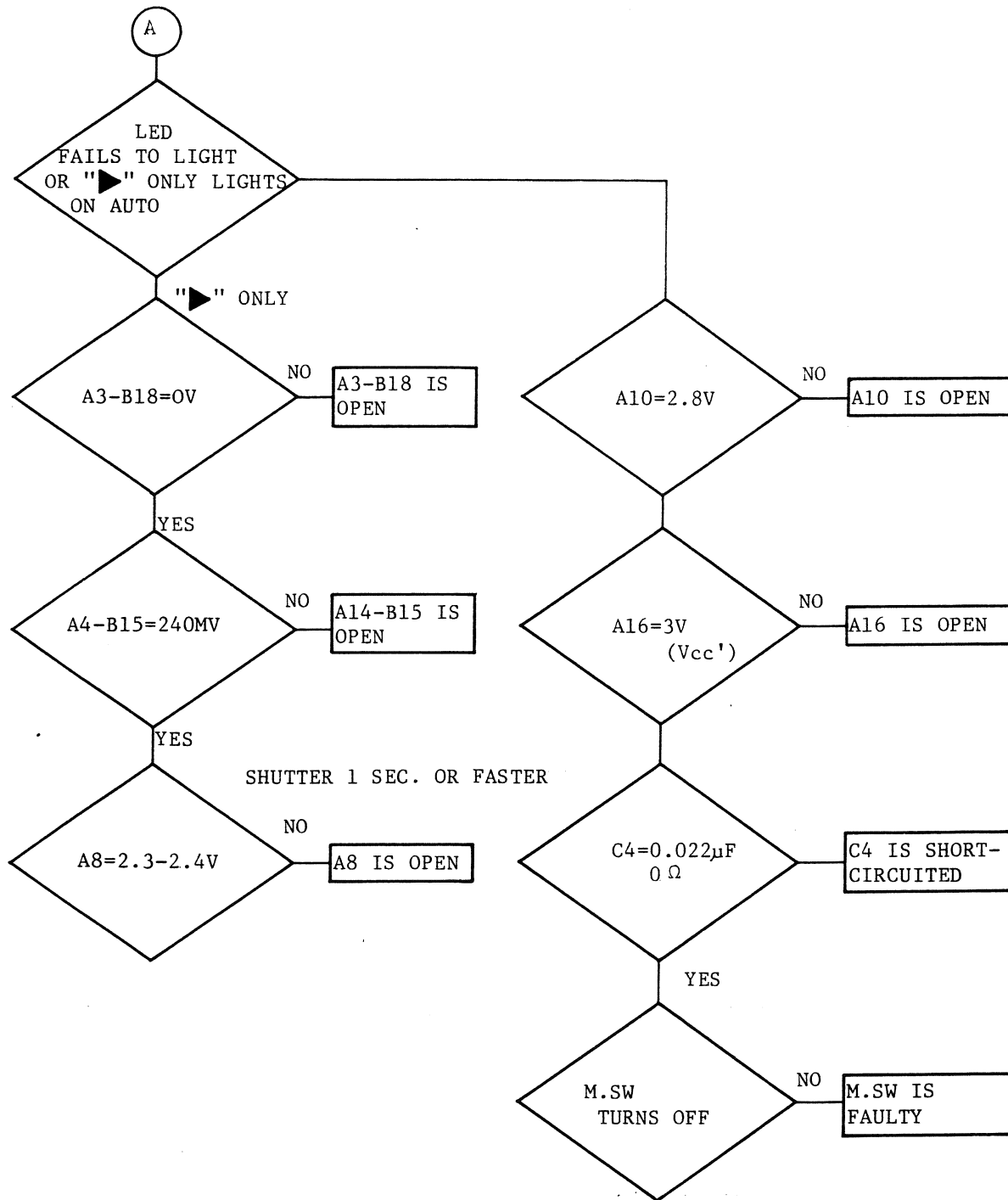
b-2 CRITICAL FASTEST SHUTTER SPEED ON AUTO



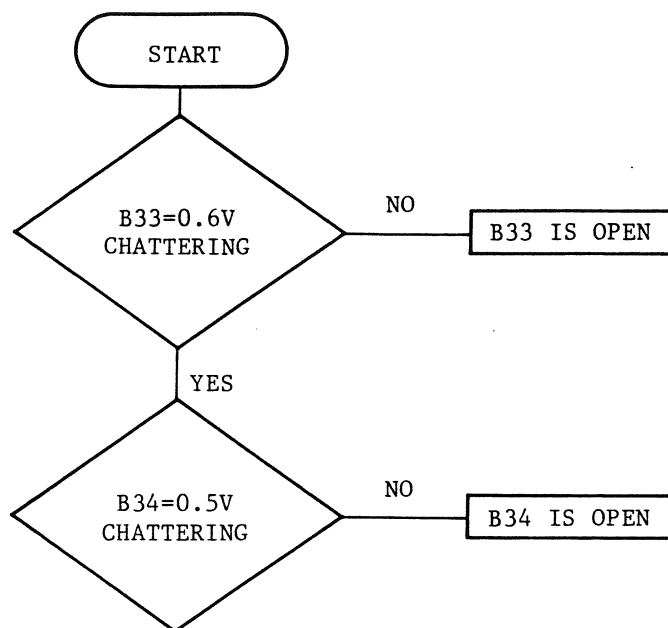
b-3 SHUTTER IS HELD OPEN OR SLOWEST SPEED ON AUTO







C. INCORRECT SHUTTER SPEED

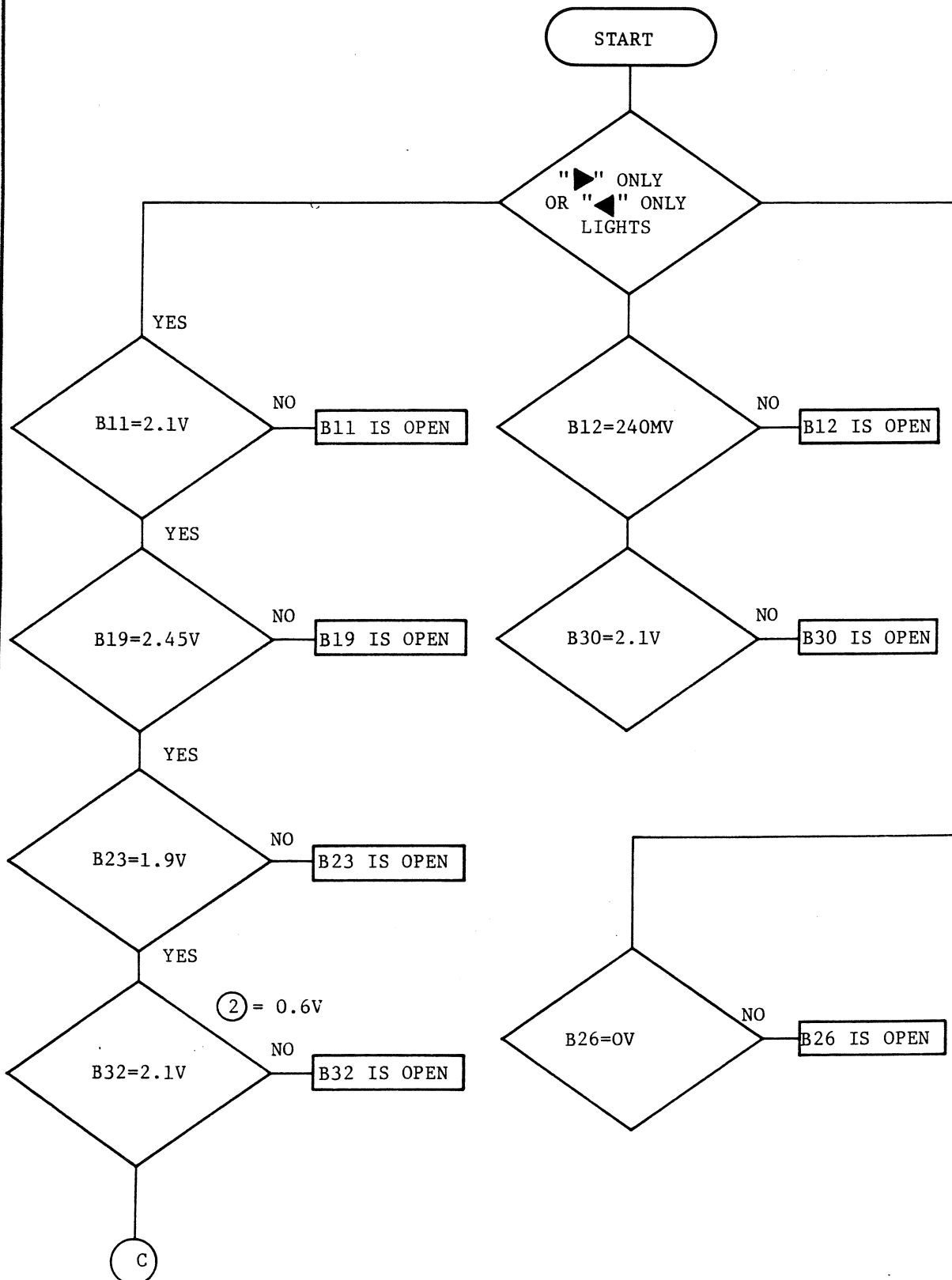


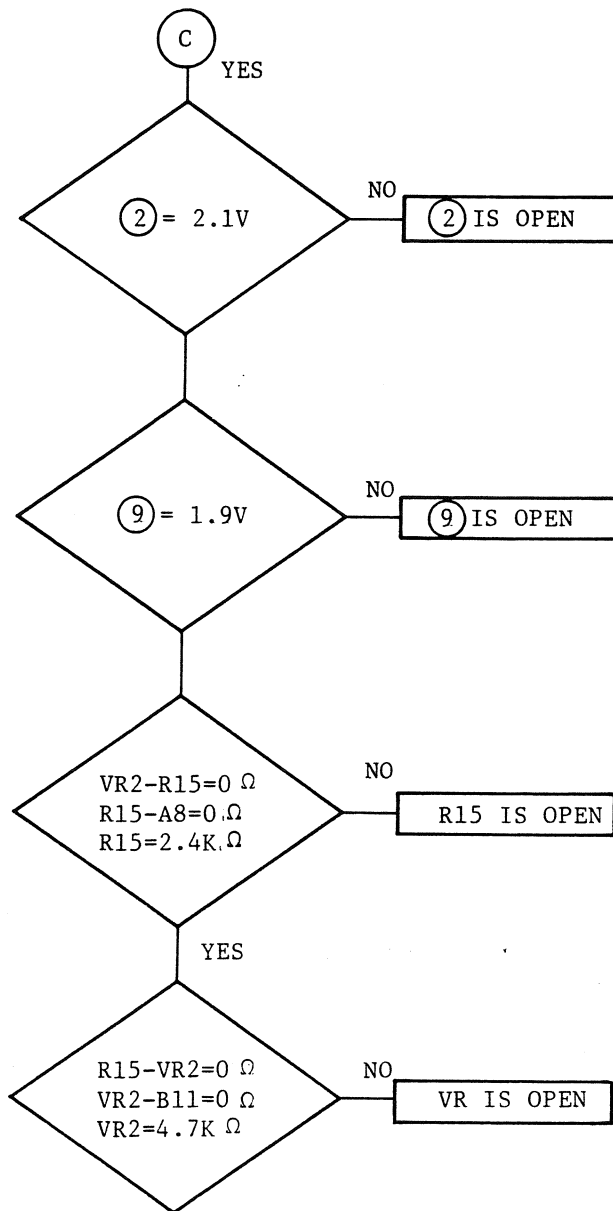
GRAY CODE

SPEED FAULT	1/1000	1/500	1/250	1/125	1/60	1/30
⑭ OPEN (X)			1/500	1/1000	A *	A
⑮ OPEN (Y)	A	A *	1/30	1/60		
⑰ OPEN (Z)	1/500			1/250	1/30	

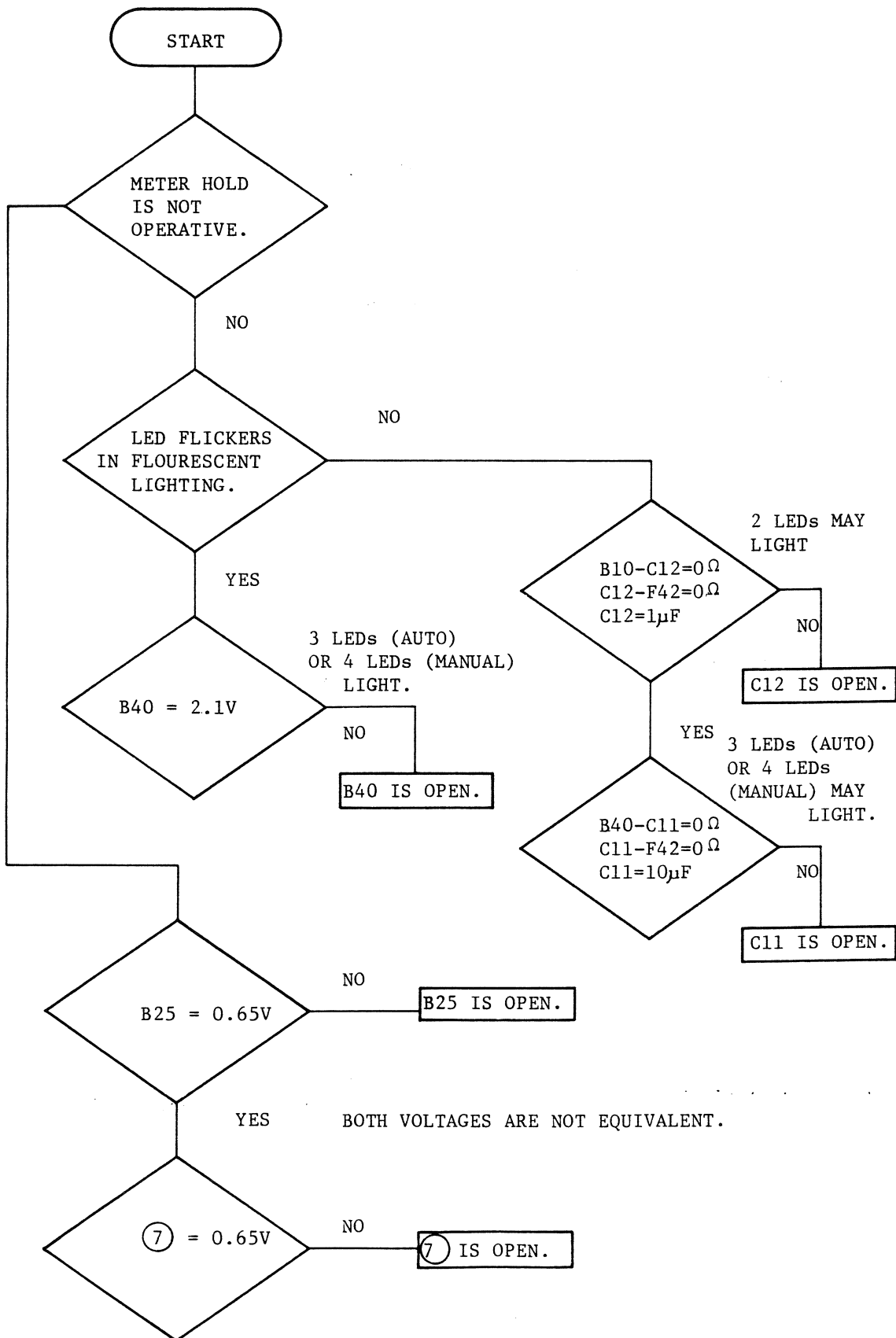
* --- VARIABLE

d. LED IS FAULTY ON AUTO

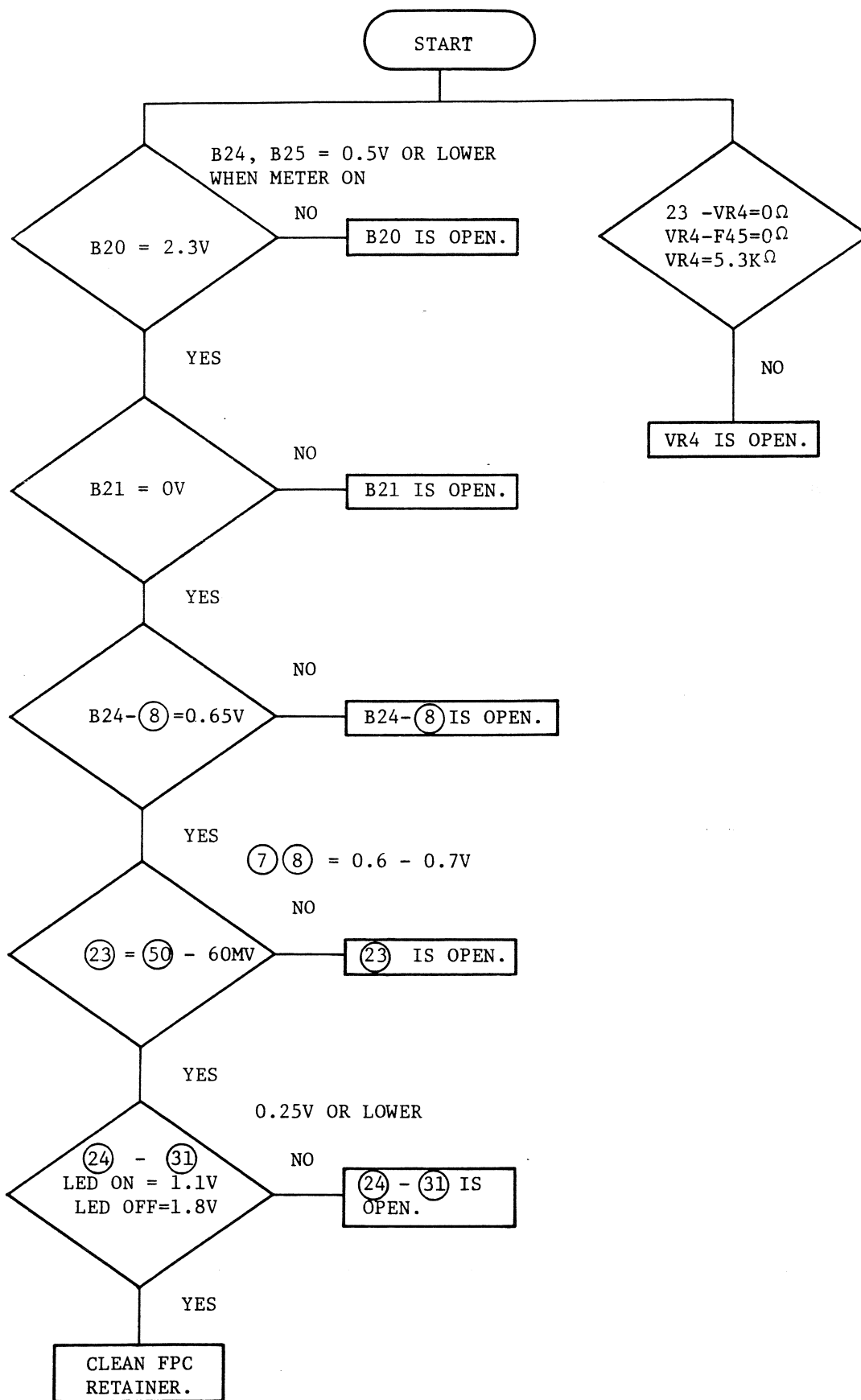




e. LED IS FAULTY ON AUTO AND MANUAL

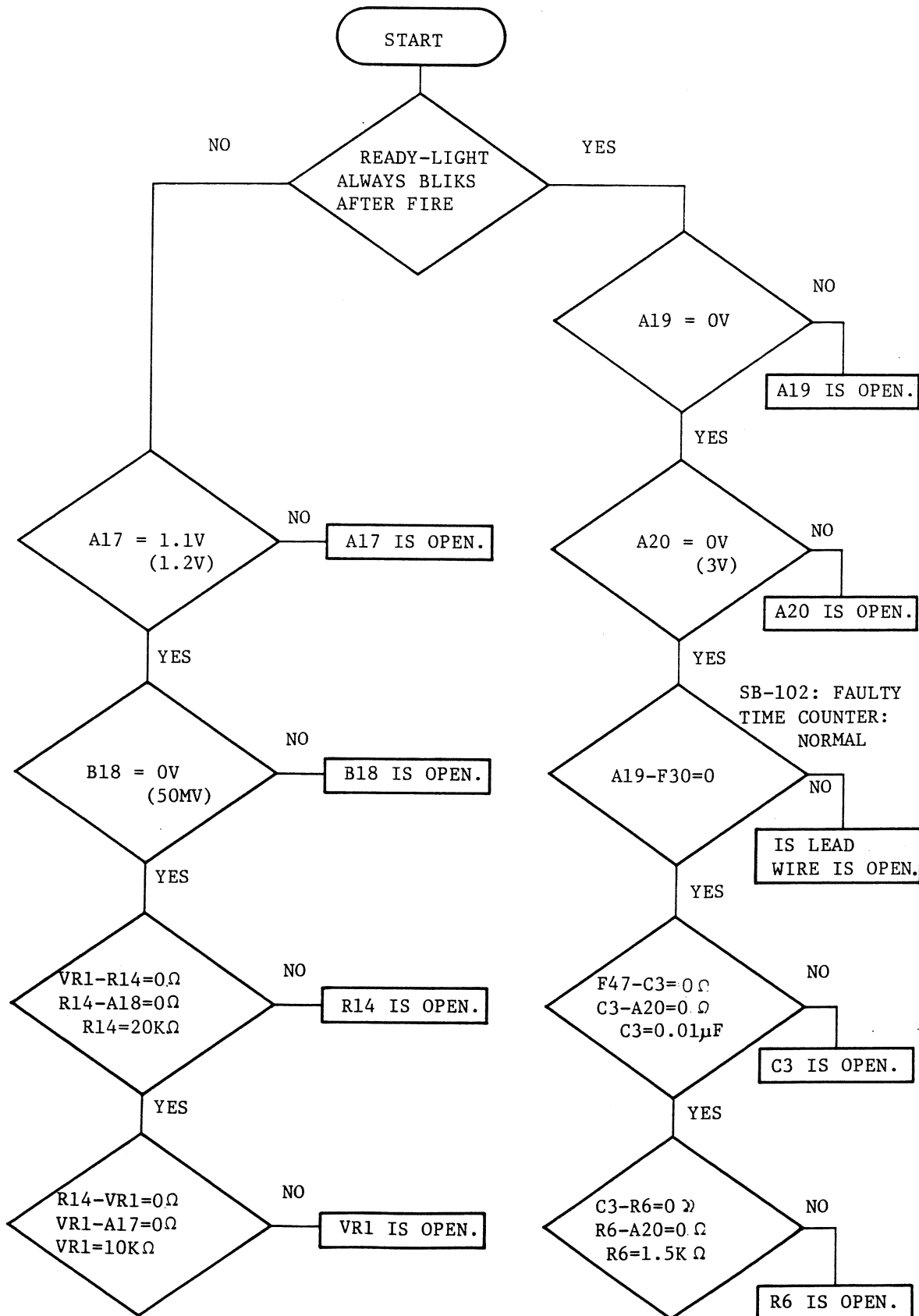


LED FAILS TO LIGHT ON AUTO AND MANUAL

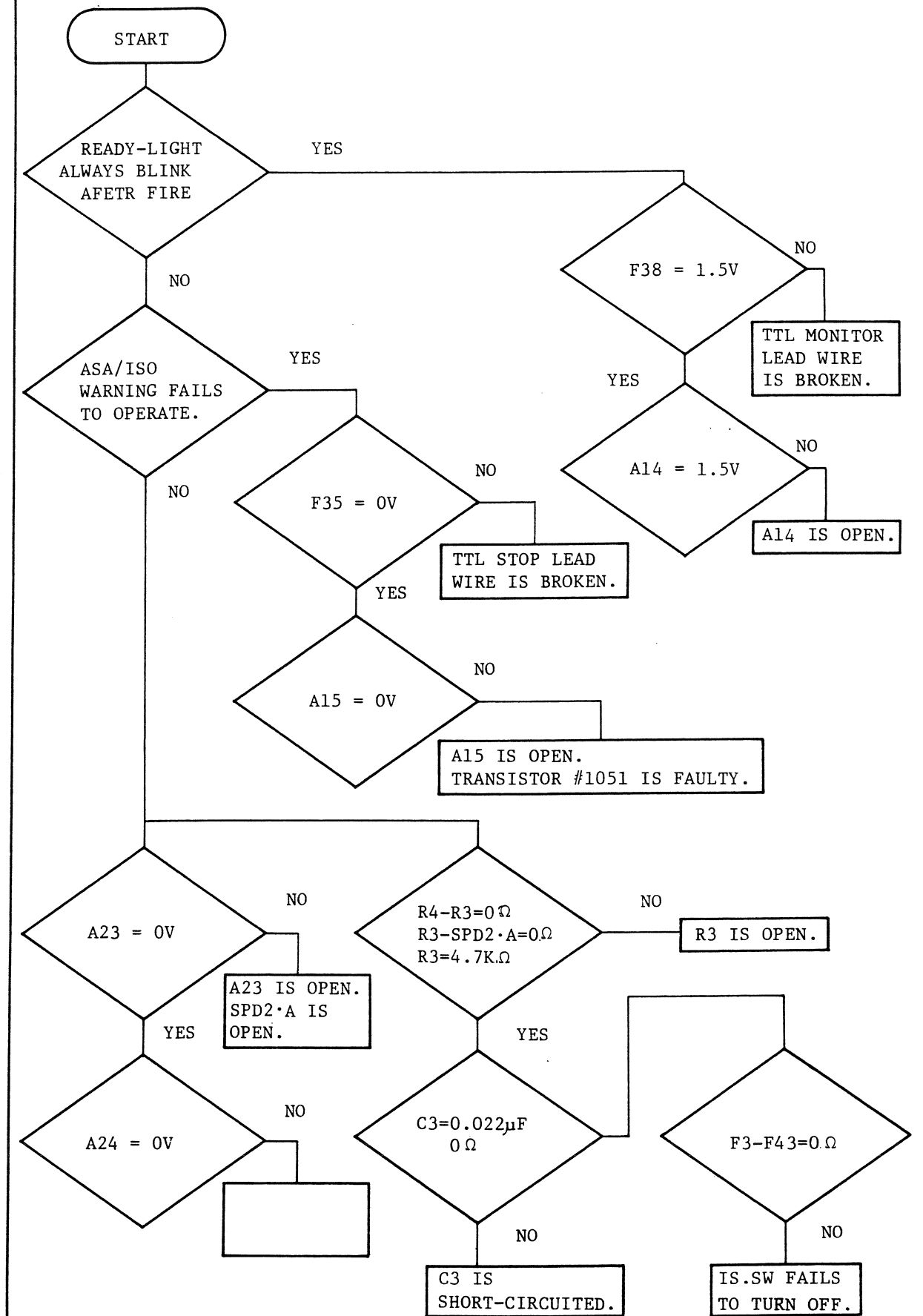


f-1. TTL OUTPUT CONTROL IS FAULTY.

() VOLTAGE WHEN TIME COUNTER IN OPERATION

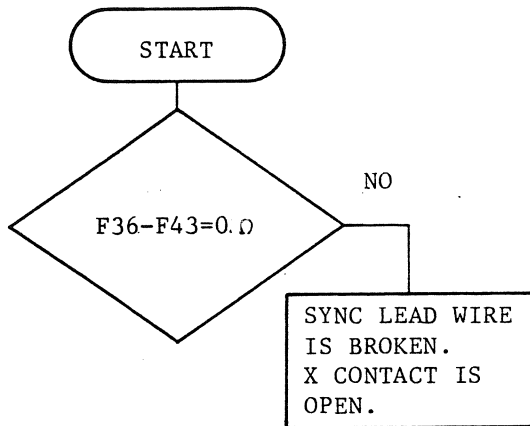


f-2. FULL OUTPUT ON ALL FIRES

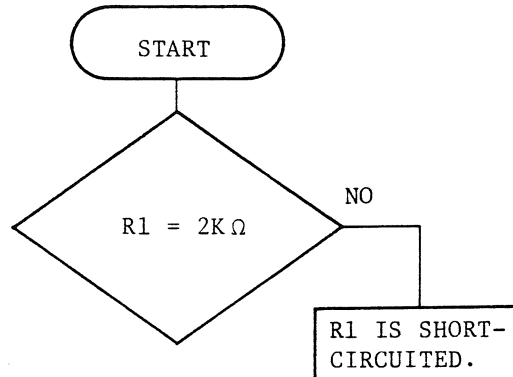


f-3. OTHERS

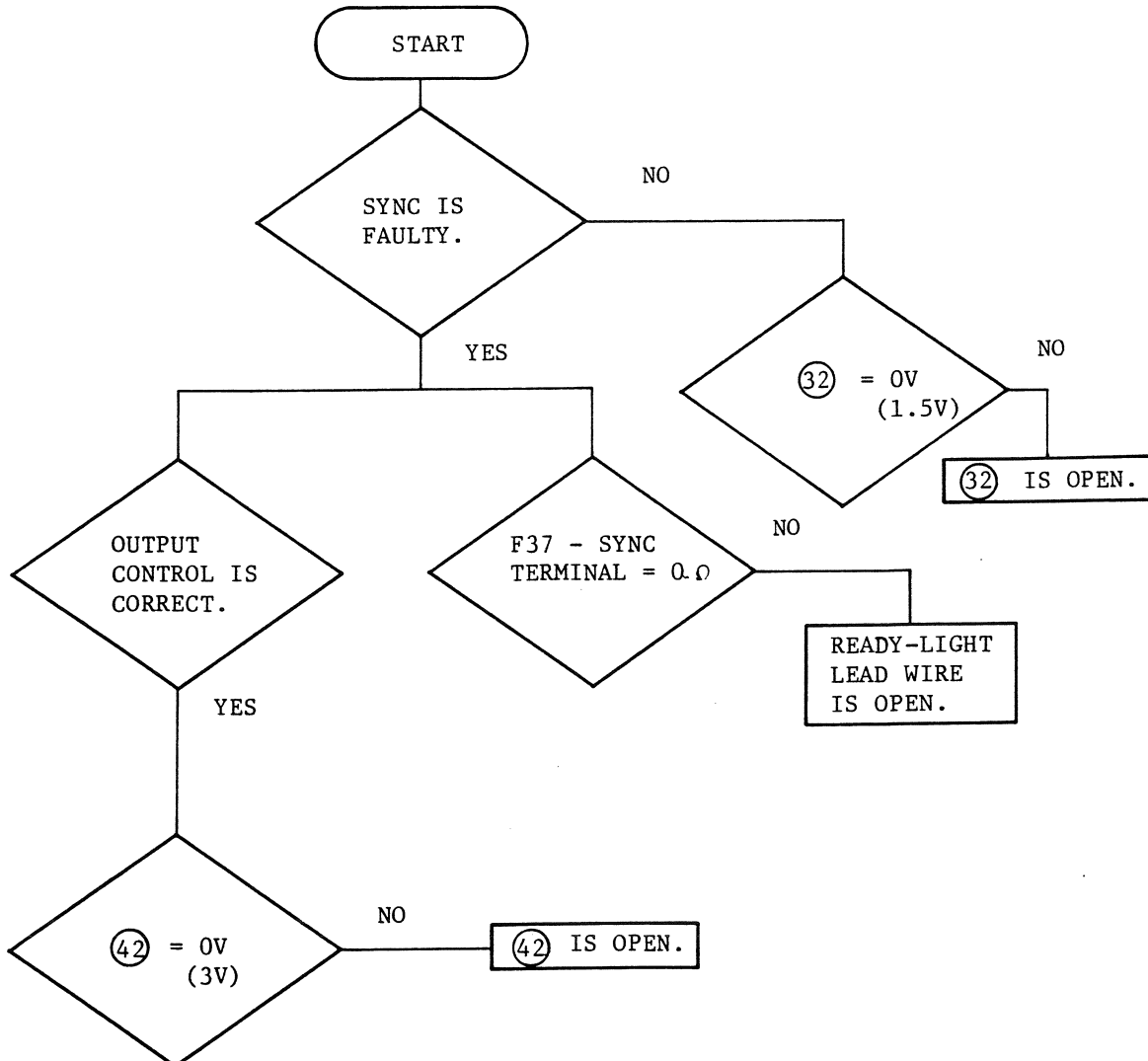
1) FAULTY FIRE



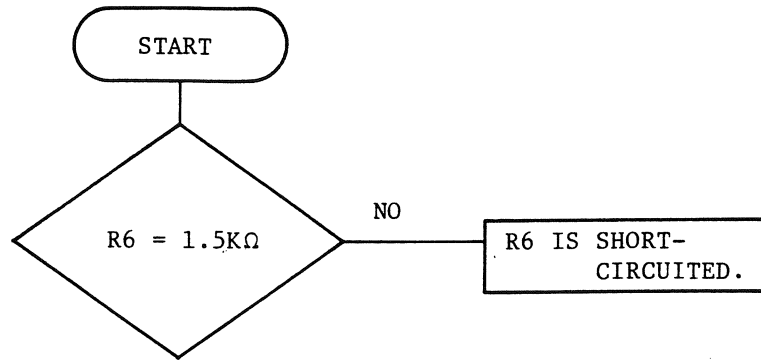
2) READY-LIGHT IS TOO BRIGHT WHEN FC.SW IS OFF.



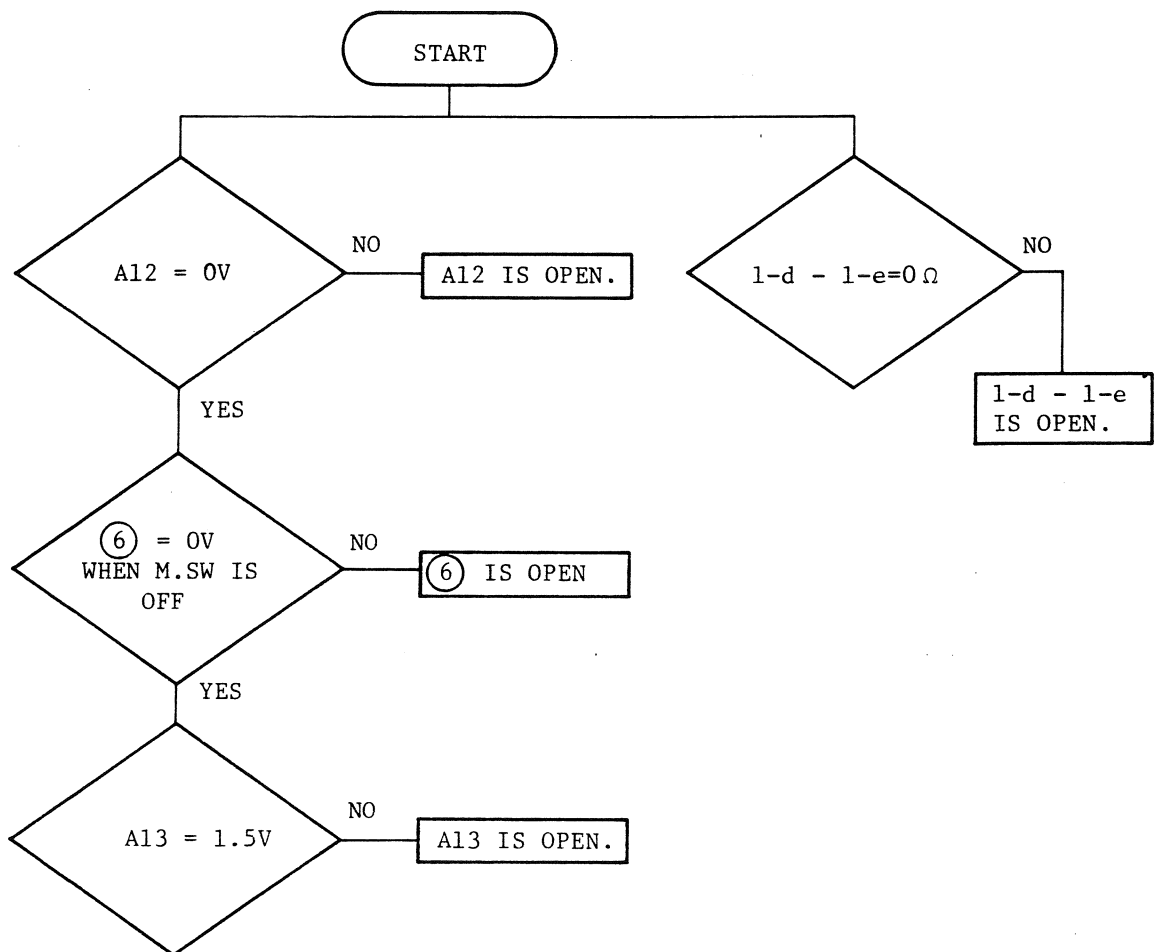
3) READY-LIGHT FAILS TO FIRE



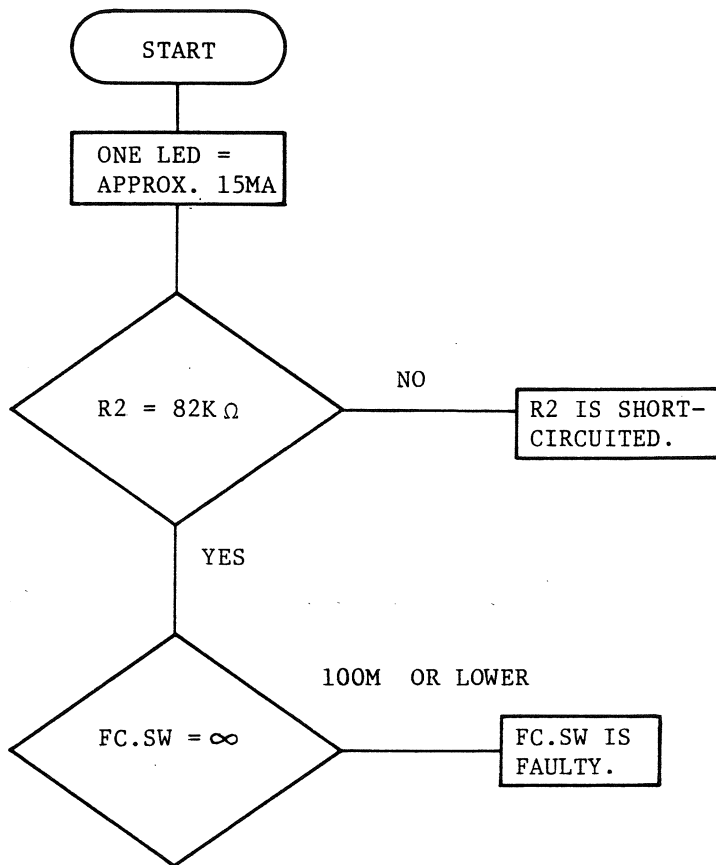
4) OVEREXPOSURE ON TTL CONTROL



5) ASA/ISO WARNING FAILS TO OPERATE

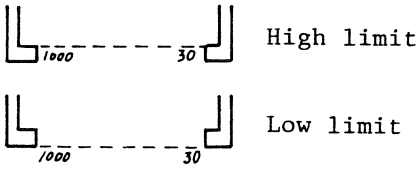
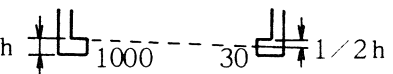
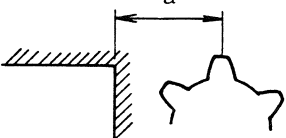


g. BATTERY DRAIN



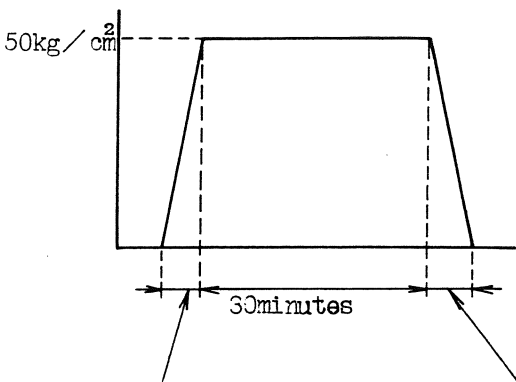
INSPECTION STANDARDS FOR REPAIR & TOOLS

Contents	Page
[1] INSPECTION STANDARDS FOR REPAIR	R1
[2] TOOLS	R5

	Item	Standard	Tool
Viewfinder/LED panel	Viewframe coverage	$85 \pm 3\%$ (∞)	J18166 J15205 J18033 Standard lens
	Parallax error	0.8mm or less vertically and horizontally on film frame	
	Inclination	Within 1.5°	
	Diopter	-0.9 ± 0.5 dpt.	Diopter scope
	Magnification	$0.55 \pm 0.05X$	
	LED panel	Position: Tops of LED figures should be aligned the bottom of viewfinder frame.  Inclination: Within the half of frame's width  Visible: At the eyepoint of 40mm	J15205
Shutter release/film advance	Winding angle	144° (Stand-off position: 30°)	
	Winding torque	Film unloaded: 3kg/cm or less Film loaded: 4kg/cm or less	Torque meter
	Shutter release button	Release power: 450 - 1200g	J5029
		Release stroke Power switch ON: 0.8 ± 0.2 mm Shutter release: 1.8 ± 0.3 mm After release: 0.5mm or more	J19004
	Rewinding torque	Film loaded: 1.5kg/cm or less	Torque meter
	Sprocket	Sprocket teeth position: $27.7^{+0.8}_{-0.4}$mm(a) 	J18064-1
		Sprocket play: 0.8mm or less (winding limit)	
		Frame-to-frame space: 2 ± 1 mm	Slide calliper

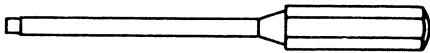
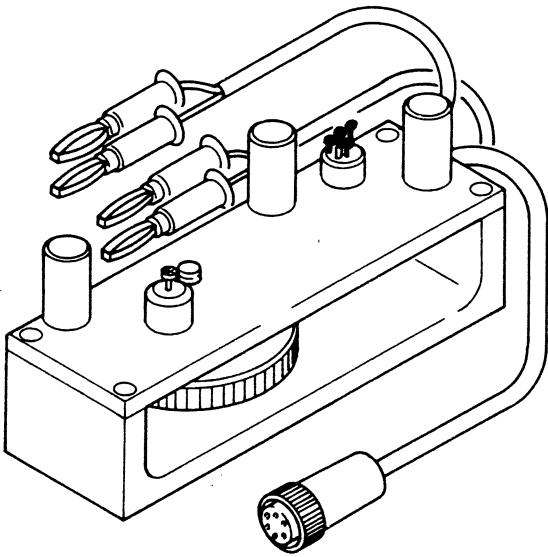
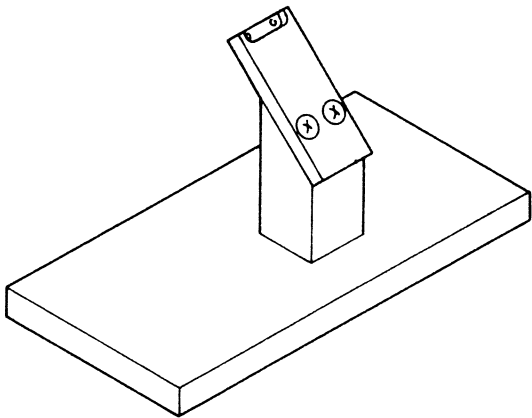
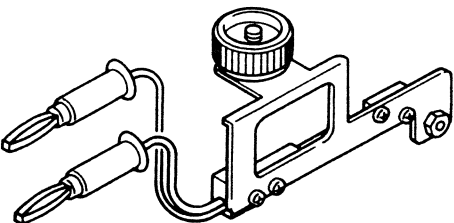
	Item	Standard			Tool
	Spool	Torque: 90 - 140g/cm Slipping load: 144 - 267g			J15003 J5019
	Aperture	Picture size: $24^{+0.8}_{-0} \times 36^{+0.8}_{-0}$ mm			Slide calliper
Flange local distance	Flange focal distance	Flange focal distance: 27.02+0.03mm Parallel: 0.04mm or less Height difference between film guide rails: 0.23+0.02mm			J18086 J19004
Power	Power duration	16+2 sec. after finger is taken off release button			Stopwatch
	Battery check	Power hold: 2.56V LED off: 2.29V			J9001-5 J9003-3 J15238
	Power	LED panel: 8.4mA or less (one LED lighting) 11.8mA or less (two LEDs lighting) Shutter release: 15.2mA or less TTL flash control: 9.5mA or less			J9001-5 J9004 J15238
	Power drain	4.2µA or less			J9003-1
Manual shutter	Exposure time	Shutter dial	Standard(ms)	Tolerance(ms)	J19036
		1000	0.98	0.69 - 1.39 (+0.5EV)	
		500	1.95	1.58 - 2.40 (+0.3EV)	
		250	3.91	3.18 - 4.81 (+0.3EV)	
		125	7.81	6.34 - 9.62 (+0.3EV)	
		60	15.63	12.7 - 19.2 (+0.3EV)	
		30	31.25	25.4 - 38.5 (+0.3EV)	
		M(90)	11.1	9.0 - 14.0($^{+0.33}_{-0.3}$ EV)	
	High limit	0.67	0.33 - 1.33 (+1EV)		
	Variation	1/1000 sec.: 0.45EV or less 1/500 - 1/30 sec.: 0.3EV or less			
Shutter curtain travel speed	6.5 - 7ms				
Synchronization	Time-lag	0.3 - 1.2ms (M90 or sync speeds) 1.5ms or more after sync-on			J19008-2
	Contact efficiency	50% or more			J19028-1
	Insulation resistance	30M Ω or more (DC500V)			

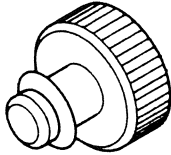
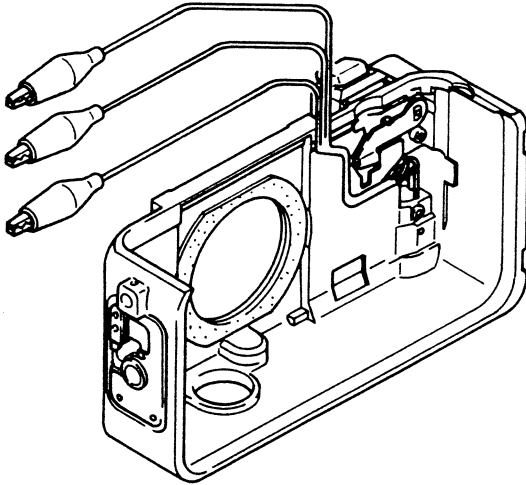
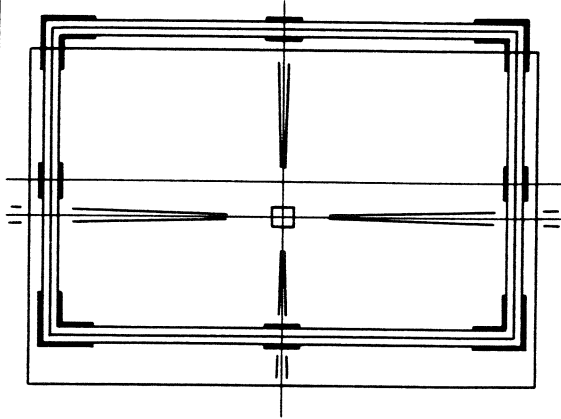
	Item	Standard					Tool			
Auto shutter	Exposure time	LV	ISO	Dial	Standard (ms)	Tolerance(ms)		Tool lens (35mm F5.6) J18085 J19036 J15238 J18084 J18142		
		9	1600	1/250	3.91	2.76 - 5.52				
		9	800	1/125	7.81	5.52 - 11.0				
		9	100	1/15	62.5	44.2 - 88.4				
		12	800	1/1000	0.98	0.64 - 1.48				
		12	100	1/125	7.81	5.52 - 11.0				
		12	25	1/30	31.3	22.1 - 44.2				
		15	100	1/1000	0.98	0.64 - 1.48				
		15	25	1/250	3.91	2.76 - 5.52				
		1/1000 sec.: ± 0.6 EV 1/500 - 1/30 sec.: ± 0.5 EV								
Speed difference between two adjacent settings	1/1000 - 1/250 sec.: ± 0.65 EV 1/125 - 1/30 sec.: ± 0.45 EV									
Variation	1/1000 sec.: 0.45EV or less 1/500 - 1/30 sec.: 0.3EV or less									
Sync speed (1/90 sec.)	Exposure time: 9 - 15.6ms Variation: 0.3EV or less									
Exposure metering on auto	LED display accuracy	Tolerance: ± 0.5 EV						Tool lens (35mm F5.6) J19036 J18085		
		Dial	LV	ISO	LED display					
		1/1000	15	100	▲	○	○		○	○
					1000					
					500					
		1/125	12	100	250	○	○		○	○
					125					
					60					
		1/30	12	25	30	○	○		○	○
					▼					
Out of metering range warning										
LV10 $^{+0.75}_{-0.75}$: LED ► blinking LV15 $^{+0.75}_{-0.25}$: LED ◀ blinking										

Item	Standard						Tool
Ready-light ⚡	Ready-light should turn on when the flash unit is fully charged						Flash unit
	Frame counter SW		ON		OFF		
	Power SW		ON	OFF	ON	OFF	
	M90, B	TTL	BLINK	BLINK	BLINK	BLINK	
		Non-TTL	ON	ON	ON	ON	
	Manual	TTL, Non-TTL	ON	ON	ON	OFF	
	Auto						
Automatic Sync speed set	Auto: A 1/90 sec. Manual 1/1000 - 1/125 sec.: A 1/90 sec. Manual 1/60 - 1/30 sec.: Same (Frame counter SW: ON, Power SW: ON, Flash unit's power: ON)						
LED display	Auto: Normal operation Manual: Normal operation M90, B: Off						
EV tolerance on TTL control	+1EV -						
Flash stop signal time	765 - 879 μ s						J19036 J18142 J15238 J15240
ASA/ISO set error warning on TTL control	ASA/ISO 400 or less: Ready-light ON ASA/ISO 800 or more: Ready-light BLINK						
Waterproof	50kg/cm ² in 30 minutes						J18026
	 30 sec. or more30 sec. or more						

(1) NIKONOS-V用工具ゲージ一覧表

Tool List

工具番号 Tool No.	名 称 Name	略 図 Illustration	区分 Class	備 考 Remarks
J5135	調整用ドライバー Screwdriver		A	FG-20 ⊕
J15238	回路点検電池 工具 Tool battery		A	
J15239	FS 圧接部組込 工具 FPC assembling stand		A	
J15240	タイムカウンター IS接続コネクタ IS connector		A	

工具番号 Tool No.	名 称 Name	略 Illustration ☒	区分 Class	備 考 Remarks
J15241	水漏れチェック 工具 Cap for water proof test		A	
J18165	工具用外箱 Tool outer housing		A	
J18166	画角出し用標板 Plate for parallax check		C	

PARTS LIST

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[3] ASSEMBLY LIST	18

部品对照表

Parts Number Reference Table

補助番号 Auxiliary Number	部 品 番 号 Part Number	補助番号 Auxiliary Number	部 品 番 号 Part Number	補助番号 Auxiliary Number	部 品 番 号 Part Number
G1	1G226-002	61	1K110-153	316	1K120-176
G2	1G234-001	61	1K110-179	320	1K230-131
G3	1G133-002	63	1K115-793	321	1K115-799
G4	1G133-003	64	1K115-794	327	1K115-800
G5	1G580-002	68	1K115-796	328	1K115-801
G9	1G122-002	69	1K115-797	401	1K300-052
13	1K610-519	72	1K610-257-1	405	1K340-082
14	1K087-124	73	1K110-090	407	1K314-204
15	1K081-003	74	1K115-233	408	1K130-088-2
16	1K646-004	77	1K600-148-1	409	1K130-089
17	1K646-005	83	1K206-030	412	1K130-090
18	1K646-006	84	1K360-020	413	1K123-044
19	1K600-306	92	1K230-128	416	1K340-080
19	1K600-307	93	1K680-383	418	1K600-313
19	1K600-308	101	1K600-311	419	1K220-143
19	1K600-309	202	1K610-527	421	1K160-406
20	1K646-007	203	1K362-040	422	1K630-105
21	1K160-405	205	1K600-327	423	1K120-077
23	1K640-442	208	1K160-416	424	1K370-661
24	1K100-035	209	1K130-202	427	1K146-022-1
25	1K080-005	210	1K110-163	428	1K225-086
28	1K680-401	211	1K208-043	433	1K130-200
29	1K050-035	212	1K480-018	437	1K610-523
29	1K050-031	216	1K310-053	438	1K130-203
29	1K050-029	217	1K240-317	443	1K208-044
29	1K050-048	219	1K110-164	464	1K233-038
30	1K467-058	219	1K110-180	466	1K260-143-1
34	1K607-002	220	1K680-393	472	1K480-016
35	1K400-078	221	1K240-318	475	1K230-136
38	1K640-426	222	1K115-807	477	1K260-147
53	1K120-175	223	1K165-066	478	1K120-078
56	1K206-028	225	1K600-328~329	495	1K260-144
57	1K680-382	305	1K230-129	498	1K230-135
58	1K206-029	310	1K230-133	500	1K146-065
59	1K165-065	311	1K130-206	502	1K146-068
60	1K110-152	314	1K230-130	503	1K220-056
60	1K110-178	315	1K314-197	504	1K120-082
				505	1K600-145

部品对照表

Parts Number Reference Table

補助番号 Auxiliary Number	部 品 番 号 Part Number	補助番号 Auxiliary Number	部 品 番 号 Part Number	補助番号 Auxiliary Number	部 品 番 号 Part Number
506	1K275-006	828	1K001-032	B201	1B990-012
507	1K275-007	829	A2-20022SX	B201	1B990-017
509	1K600-248	830	A2-20035SX	B206	1B610-018
652	1K370-662	831	A1-17020BB	B213	1B001-450
653	1K083-042	832	B1-20030BB	B301	1B001-448
656	1K240-330	833	A1-17050BS	B323	1B060-181
661	1K146-023	834	B1-20040SX	B406	1B001-438
662	1K050-173	835	A1-20040BB	B425	1B260-019
663	1K050-165	836	1K123-004	B426	1B060-177
664	1K233-038	837	G1-17040SX	B429	1B001-440
667	1K630-229	839	B1-17025BB	B441	1B206-020
668	1K201-048	841	K2-20030BB	B447	1B475-040
669	1K275-033	842	A1-20090FB	B471	1B475-039
670	1K246-025	844	A2-14025FB	B491	1B314-102
673	1K470-039	845	B1-20050SX	B492	1B240-029
675	1K233-039	846	A2-17030SX	B493	1B260-007-1
676	1K050-166	847	P3-16060SX	B652	1B001-451
801	1K110-154	848	1K044-013	B653	1B990-008
802	1K110-155	855	1K044-012	B654	1B200-004
803	1K110-156	862	1K050-167	B659	1B001-439
804	1K110-157	B11	1B001-085	B667	1B001-452-1
805	1K110-165	B30	1B001-446	B2001	1B990-010
806	1K110-166	B43	1B060-178	B2425	1B001-441
807	1K110-158	B44	1B001-445	B2441	1B990-011
808	1K110-159	B45	1B060-179	B2451	1B001-443
809	1K110-160	B51	1B670-038	B3001	1B060-182
810	1K110-161	B52	1B314-105		
811	1K110-162	B55	1B314-113		
812	1K110-167	B71	1B100-250		
813	1K110-168	B81	1B001-444		
821	A1-17030BS	B91	1B670-036		
822	A1-17025SX	B98	1B060-206		
823	A1-17035BB	B99	1B150-031		
824	A1-20025SX	B100	1B990-014		
825	A1-20030SX	B112	1B990-015		
826	A1-20045FA	B112	1B990-016		
827	1K001-027	B116	1B990-013		

部品対照表

Parts Number Reference Table

[illegible]

部 品 表 Parts list

FEA04051-R. 3145. A

部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台 分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K001-027	827	Screw	3		1	○	9F4B # 827
1K001-032	828	Screw	2	1B990-016 1B990-015	10	○△	
1K044-012	855	スプリングピン Spring cotter	1	1B990-016 1B990-015	8	○△	9F4B # 855
1K044-013	848	スプリングピン Spring cotter	2	1B990-016 1B990-015	11	○△	
1K050-029	29	Washer (t = 0.05)	0-1		6	○	9F4B # 37B
1K050-031	29	Washer (t = 0.07)	0-1		6	○	9F4B # 37C
1K050-035	29	Washer (t = 0.11)	0-1		6	○	9F4B # 37D
1K050-048	29	Washer (t = 0.03)	0-1		6	○	9F4B # 37A
1K050-165	663	巻戻リング板 Washer, rewind shaft O-ring	1	1B990-016 1B990-015 1B001-452	2	○△	9F4B # 663
1K050-166	676	巻戻クラッチ座金 Washer, rewind clutch	1	1B990-016 1B990-015 1B001-452	2	○△	9F4B # 676
1K050-167	862	スプロケットバネ座金 Washer, sprocket spring	1		4	○	
*1K050-173	662	巻戻軸座金 Washer, rewind shaft	1	1B990-016 1B990-015 1B001-452	2	○△	
*1K080-005	25	三角環保護カバー Triangular ring protector	2		11	○	9F4B # 25
1K081-003	15	銘 板 Name plate	1	1B990-016 1B990-015	11	○△	

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
* 1K083-042	653	巻戻ノブ Rewind knob	1	1B001-452 1B990-009 1B990-015 1B990-016	2	○△	
1K087-124	14	T指標板 Index, shutter dial	1		11	○	
* 1K100-035	24	三角環 Triangular ring	2		11	○	9F4B # 24
* 1K110-090	73	圧接ゴム FPC spacer	1		3	○	
1K110-152	60	右前擬革 (オレンジ) Leatherette (orange)	1	1B990-015	11	○△	
1K110-153	61	左前擬革 (オレンジ) Leatherette (orange)	1	1B990-015	11	○△	
1K110-154	801	G 1 オリング O-ring, G 1	1	1B990-016 1B990-015	8	○△	9F4B # 801
1K110-155	802	G 3 オリング O-ring, G 3	1	1B990-016 1B990-015	8	○△	9F4B # 802
1K110-156	803	巻上軸オリング O-ring, film-advance shaft	2	1B990-016 1B990-015	10, 11	○△	9F4B # 803
1K110-157	804	枚数計窓オリング O-ring, frame counter window	1	1B990-016 1B990-015	11	○△	9F4B # 804
1K110-158	807	電池キャップオリング O-ring, battery chamber	1	1B001-445	1	○△	9F4B # 807
1K110-159	808	巻戻軸オリング O-ring, rewind shaft	1	1B990-016 1B990-015 1B001-452	2	○△	9F4B # 808
1K110-160	809	マウントオリング O-ring, lens mount	1	1B990-016 1B990-015	11	○△	9F4B # 809
1K110-161	810	シンクロソケットオリング O-ring, sync socket	2	1B001-446 1B990-016 1B990-015	1	○△	9F4B # 810

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台 分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K110-162	811	シンクロコネクタOリング O-ring, sync terminal	1	1B990-016 1B990-015	8	○△	9F4B # 811
1K110-163	210	裏蓋指当ゴム Rubber pad	1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
1K110-164	219	裏蓋擬革 (オレンジ) Leatherette (orange)	1	1B990-015 1B990-012	9	○△	
1K110-165	805	TダイヤルOリング O-ring, shutter dial	1	1B990-016 1B990-015	2	○△	
1K110-166	806	巻上軸Oリング O-ring, film-advance shaft	1	1B990-016 1B990-015 1B990-011	2	○△	
1K110-167	812	裏蓋Oリング O-ring, camera back	1	1B990-016 1B990-015	9	○△	
1K110-168	813	巻上軸Oリング O-ring, film-advance shaft	1	1B990-016 1B990-015 1B990-011	2	○△	
1K110-178	60	右前擬革 (グリーン) Leatherette (green)	1	1B990-016		○△	
1K110-179	61	左前擬革 (グリーン) Leatherette (green)	1	1B990-016		○△	
1K110-180	219	裏蓋擬革 (グリーン) Leatherette (green)	1	1B990-016 1B990-017		○△	
1K115-233	74	コード押えテープ Tape	7	1B990-013 1B990-015 1B990-016	6, 7, 8	○△	
1K115-793	63	枚数計窓遮光モルト Light-shield sponge	1	1B990-016 1B990-015	8	○△	
1K115-794	64	外箱遮光モルト Light-shield sponge	1		4	○	
1K115-796	68	電池室遮光モルト Light-shield sponge	1		4	○	9F4B # 68

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K115-797	69	グリップ擬革 Leatherette, grip	1	1B990-016 1B990-015	11	○△	
1K115-799	321	復元レバーゴム Cushion, mirror down lever	1	1B990-013 1B001-448	7	○△	9F4B # 321
1K115-800	327	遮光シート Light-shield seal	1		7	○	9F4B # 327
1K115-801	328	カン衝ゴム Shock absorber	2	1B990-013	7	○△	9F4B # 328
1K115-807	222	ヒンジガタ取ゴム Spacer	1	1B990-016 1B990-015	9	○△	
* 1K120-077	423	巻上カム止めネジ Set screw, film advance cam	1		4	○	9F4B # 423
* 1K120-078	478	枚数計軸ネジ Screw, frame counter shaft	1	1B001-443	5	○△	9F4B # 478
* 1K120-082	504	止めネジ Set screw	1		3	○	
1K120-175	53	押釦レバーネジ Screw, shutter release button	2	1B990-016 1B990-015	10, 11	○△	9F4B # 53
1K120-176	316	シャッタースタートレバー軸 Axle, shutter release lever	1	1B990-013	7	○△	9F4B # 316
* 1K123-004	836	バヨネット止めネジ Screw, bayonet mount	7	1B990-016 x3 1B990-015 x3	6, 9	○△	9F4B # 836
* 1K123-044	413	スプロケットネジ Sprocket screw	1		4	○	
* 1K130-088-2 (1K130-088)	408	チャージ伝達レバー軸 Shaft, charge transmission lever	1		4	○	9F4B # 408
* 1K130-089	409	チャージレバー軸 Charge lever shaft	1		4	○	9F4B # 409

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 期 間 Term of Delivery	備 考 Remarks
1K130-090	412	シャッターチャージレバー軸 Shaft, shutter charge lever	1		4	○	9F4B # 412
1K130-200	433	リリースレバーネジ Release lever screw	2		6	○	9F4B # 433
1K130-202	209	枚数計リセットピン Pin, frame counter reset	1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
1K130-203	438	巻上レバーネジ Screw, film-advance lever	1	1B990-016 1B990-015 1B990-011	2	○△	
1K130-206	311	復元バネネジ Screw, mirror down spring	1	1B990-013	7	○△	
* 1K146-022-1 (1K146-022)	427	リリースレバーバネ掛け Spring stud, release lever	1		6	○	9F4B # 427
* 1K146-023	661	巻戻ノブ取付ネジ Set screw, rewind knob	1	1B001-452 1B990-009 1B990-015 1B990-016	2	○△	
1K146-065	500	グレイコード支柱 Axle, printed circuid board	2		5	○	
1K146-068	502	プリント板支柱 Axle, printed circuit board	3		3	○	
1K160-405	21	内側バヨネット Bayonet mount (inner)	1		6	○	9F4B # 21
1K160-406	421	巻上軸止め座金 Washer, film-advance shaft	1		4	○	9F4B # 421
1K160-416	208	枚数計リセットピン調整座 Spacer, frame counter reset	0-1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
1K165-065	59	裏蓋カギ座金 Washer, lock knob	3	1B990-016 1B990-015	10, 11	○△	
1K165-066	223	蝶番軸座金 Washer, hinge shaft	2	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	9F4B # 223

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K201-048	668	ASA/ ISO 目盛環 ASA/ ISO dial	1		2	○	
1K206-028	56	押釦ロック Lock knob, shutter release button	1	1B670-038	11	○△	
1K206-029	58	押釦指当 Shutter release button	1	1B990-016 1B990-015	11	○△	
1K206-030	83	圧板蝶番軸受 Bearing, pressure plate hinge	2		1	○	
1K208-043	211	裏蓋ノブ解除釦 Release button, lock knob	1	1B990-016 1B990-015	10	○△	
1K208-044	443	巻上レバーゴム Rubber, film-advance lever	1		2	○	
* 1K220-056	503	スプールフリクションバネ Spool friction spring	1	1B001-441	4	○△	9F4B # 503
1K220-143	419	スプロケットバネ Sprocket spring	1		4	○	
1K225-086	428	リリースレバーバネ Release lever spring	1		6	○	9F4B # 428
1K230-128	92	圧板蝶番バネ Spring, pressure plate hinge	1		1	○	9F4B # 92
1K230-129	305	駆動レバーバネ Spring, mirror actuating lever	1	1B990-013 1B001-448	7	○△	9F4B # 305
1K230-130	314	掛け外しレバーバネ Spring, quick return lever	1	1B990-013 1B001-448	7	○△	9F4B # 314
1K230-131	320	リリースカギレバーバネ Spring, shutter release hook	1	1B990-013 1B001-448	7	○△	9F4B # 320
1K230-133	310	復元バネ Spring, mirror down lever	1	1B990-013	7	○△	

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台 分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K230-135	498	レリーズロックバネ Spring, shutter release lock	1		3	○	
1K230-136	475	枚数計バネ Frame counter spring	1	1B001-443	5	○△	9F4B # 475
1K233-038	664	巻止リング板止め Stopper, rewind shaft O-ring	1	1B990-016 1B990-015 1B001-452	2	○△	9F4B # 664
1K233-039	675	ASA/ ISO 目盛軸止め Stopper, ASA/ISO dial shaft	1		2	○	
1K240-317	217	ロックバネ Spring, camera back lock knob	1	1B990-016 1B990-015	10	○△	
1K240-318	221	パトロネ押えバネ Film cartridge retainer	1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
1K240-330	656	巻戻レバー受バネ Spring, rewind knob	1	1B001-452 1B990-009 1B990-015 1B990-016	2	○△	
1K246-025	670	ASA/ ISO 目盛バネ Spring, ASA/ISO dial	1		2	○	9F4B # 670
1K260-143-1	466	スプロケットギア Sprocket gear	1		4	○	
1K260-144	495	T切換クリック板 Click plate, shutter dial	1		3	○	
1K260-147	477	枚数計ギア Frame counter gear	1	1B001-443	5	○△	9F4B # 477
* 1K275-006	506	スプール Spool	1		4	○	9F4B # 506
* 1K275-007	507	スプロケット Sprocket	1		4	○	
1K275-033	669	ASA/ ISO クリック板 Click plate, ASA/ISO dial	1	1B990-016 1B990-015	11	○△	9F4B # 669

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台 分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K300-052	401	巻上カム Take-up cam	1		4	○	9F4B # 401
1K310-053	216	裏蓋ロックカム Lock cam, camera back	1	1B990-016 1B990-015	10	○△	
1K314-197	315	シャッタースタートレバー Shutter release lever	1	1B990-013	7	○△	9F4B # 315
1K314-204	407	駆動部チャージレバー Mirror charge lever	1		4	○	9F4B # 407
1K340-080	416	スプロケットカラー Sprocket collar	1		4	○	9F4B # 416
1K340-082	405	スプール軸受 Spool bearing	1		4	○	
1K360-020	84	圧板蝶番軸 Pressure plate hinge	1		1	○	9F4B # 84
1K362-021	203	裏蓋軸 Camera back shaft	1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
1K370-661	424	スプロケット軸 Sprocket shaft	1		4	○	9F4B # 424
1K370-662	652	巻戻軸 Rewind shaft	1	1B001-451 1B001-452 1B990-015 1B990-016	2	○△	
1K400-078	35	三脚ネジ Tripod screw	1	1B990-016 1B990-015	8	○△	
1K467-058	30	シンクロキャップ Sync terminal cap	1	1B001-446	1	○△	
1K470-039	673	ASA/ISO 目盛板 ASA/ISO scale ring	1	1B990-016 1B990-015 1B001-452	2	○△	
* 1K480-016	472	枚数計指標 Index plate, frame counter	1	1B001-443	5	○△	

部 品 表 Parts list

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K480-018	212	裏蓋ロック軸カバー Lock knob cover, camera back	1	1B990-016 1B990-015	10	○△	
1K600-145	505	スプールフリクションパネ受 Acceptor, spool friction spring	1	1B001-441	4	○△	9F4B # 505
* 1K600-148-1 (1K600-148)	77	圧接板 FPC retainer	1		3	○	
* 1K600-248	509	フリクション板 Friction plate	2	1B001-441	4	○△	9F4B # 504A
1K600-306	19	フレーム調整座 (t = 0.2) Viewfinder spacer	0-1	1B990-016 1B990-015	8	○△	9F4B # 19A
1K600-307	19	フレーム調整座 (t = 0.15) Viewfinder spacer	0-1	1B990-016 1B990-015	8	○△	9F4B # 19B
1K600-308	19	フレーム調整座 (t = 0.1) Viewfinder spacer	0-1	1B990-016 1B990-015	8	○△	9F4B # 19C
1K600-309	19	フレーム調整座 (t = 0.05) Viewfinder spacer	0-1	1B990-016 1B990-015	8	○△	9F4B # 19D
1K600-311	101	シュー補助板 Shoe mount spacer	1	1B990-016 1B990-015	11	○△	9F4B # 101
1K600-313	418	巻上カム調整板 Adjuster, film-advance cam	1		4	○	9F4B # 418
1K600-327	205	裏蓋リング押え板 Retainer, camera back	1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
1K600-328	225	裏蓋ロックピン調整座(t=0.1) Spacer, camera back lock	0-1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
1K600-329	225	裏蓋ロックピン調整座(t=0.2) Spacer, camera back lock	0-1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
* 1K607-002	34	消音ゴム Shock absorber	1		4	○	

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台分 個 数 Pcs.per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
* 1K610-257-1 (1K610-257)	72	圧接板 FPC retainer	1		3	○	
1K610-519	13	シュー Accessory shoe	1	1B990-016 1B990-015	11	○△	9F4B # 13
1K610-523	437	レリーズレバー受け Acceptor, shutter release lever	1		4	○	9F4B # 437
1K610-527	202	裏蓋ヒンジ板 Camera back hinge	1	1B990-016 1B990-015	9	○△	
* 1K630-105	422	スプール内筒 Spool internal tube	1		4	○	9F4B # 422
1K630-229	667	ASA/ISO 目盛軸 ASA/ISO dial shaft	1	1B990-016 1B990-015 1B001-452	2	○△	9F4B # 667
1K640-426	38	外箱マウント Lens mount, outer housing	1	1B990-016 1B990-015	11	○△	9F4B # 38
1K640-442	23	遮光板 Light-tight washer	1		4	○	
1K646-004	16	接眼窓 Eyepiece window	1	1B990-016 1B990-015	8	○△	
1K646-005	17	G 2 受け Retainer, G 2	1	1B990-016 1B990-015	8	○△	
1K646-006	18	G 3 受け Retainer, G 3	1	1B990-016 1B990-015	8	○△	
1K646-007	20	G 4 受け Retainer, G 4	1	1B990-016 1B990-015		○△	
1K680-382	57	押釦ロック板 Lock knob plate, relese button	1	1B680-382	11	○△	
1K680-383	93	圧板押え Retainer, pressure plate	1		1	○	

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台 分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1K680-393	220	裏蓋ヒンジカバー Cover, camera back hinge	1	1B990-016 1B990-015	9	○△	
1K680-401	28	ファインダー前枠 Front cover, finder	1	1B990-016 1B990-015	8	○△	
1G226-002	G1	Lens	1	1B990-016 1B990-015	8	○△	9F4B # G1
1G234-001	G2	Lens	1	1B990-016 1B990-015	8	○△	
1G133-002	G3	Lens	1	1B990-016 1B990-015	8	○△	
1G133-003	G4	Lens	1	1B990-016 1B990-015	8	○△	
1G580-002	G5	Mirror	1	1B990-016 1B990-015	8	○△	
1G122-002	G9	駒数計窓 Frame counter window	1	1B990-016 1B990-015	11	○△	
1S810-440	1081	リード線 Lead wire	1	1B060-181		△	W-0056BK
1S810-441	1082	リード線 Lead wire	1	1B060-181		△	W-0056BE
1S810-442	1083	リード線 Lead wire	1	1B990-014		△	W-0056PU
1S810-443	1084	リード線 Lead wire	1	1B060-182		△	W-0056YE
1S810-444	1085	リード線 Lead wire	1	1B990-014		△	W-0056GN
1S810-445	1086	リード線 Lead wire	1	1B990-014		△	W-0056BN

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1S810-446	1087	リード線 Lead wire	1	1B060-182		△	W-0056PU
1S810-447	1088	リード線 Lead wire	1	1B990-014		△	W-0056BE
1S810-448	1089	リード線 Lead wire	1	1B060-182		△	W-0056GN
1S810-449	1090	リード線 Lead wire	1	1B990-014		△	W-0056WH
1S810-450	1091	リード線 Lead wire	1	1B060-178		△	W-0056RE
1S810-451	1092	リード線 Lead wire	1	1B150-031		△	W-0056OR
1S810-452	1093	リード線 Lead wire	1	1B150-031		△	W-0056PU
1S810-453	1094	リード線 Lead wire	1	1B060-206		△	W-0056BN
1S810-454	1095	リード線 Lead wire	1	1B060-206		△	W-0056GN
1S810-455	1096	リード線 Lead wire	1	1B060-179		△	W-0056BK
1S810-456	1097	リード線 Lead wire	1	1B060-182		△	W-0056BK
1S810-457	1098	リード線 Lead wire	1	1B990-014		△	W-0056GY
1S810-458	1099	リード線 Lead wire	1	1B060-182		△	W-0056BE
1S810-459	1100	リード線 Lead wire	1	1B990-014		△	W-0056YE

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs.per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
1S810-483	1101	リード線 Lead wire	1	1B060-182		△	W-0056BK
A1-17020BB	831	Screw	3		3	○	
A1-17025SX	822	Screw	11	1B990-016 x 7 1B990-015 x 7	5.8. 10	○△	
A1-17030BS	821	Screw	5		1.5	○	9F4B # 821
A1-17035BB	823	Screw	3	1B990-013 1B001-443 x 1	5.6.7	○△	
A1-17050BS	833	Screw	2		1	○	9F4B # 833
A1-20025SX	824	Screw	4	1B990-012 1B990-013 x 2 1B990-015 1B990-016 1B990-017	7.9	○△	9F4B # 824
A1-20030SX	825	Screw	3		6	○	9F4B # 825
A1-20040BB	835	Screw	1		6	○	
A1-20045FA	826	Screw	2		6	○	
A1-20090FB	842	Screw	1		3	○	
A2-14025FB	844	Screw	2		3	○	
A2-17030SX	846	Screw	9	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
A2-20022SX	829	Screw	4	1B990-016 x 3 1B990-015 x 3	4.11	○△	9F4B # 829

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部 品 番 号 Part No.	補助番号 Ckt. No.	名 称 Name	1 台分 個 数 Pcs. per Unit	部 組 品 番 号 Assembly	参照図番 Figure	販 売 区 分 Term of Delivery	備 考 Remarks
A2-20035SX	830	Screw	4	1B990-016 1B990-015	11	○△	
B1-17025BB	839	Screw	1		3, 1	○	
B1-20030BB	832	Screw	5	1B990-013 x 3	6, 7	○	9F4B # 832
B1-20040SX	834	Screw	1	1B990-016 1B990-015	11	○△	
B1-20050SX	845	Screw	1	1B990-012 1B990-015 1B990-016 1B990-017	9	○△	
G1-17040SX	837	Screw	4	1B990-013 1B150-031 1B670-038 1B060-206	11	○△	
K2-20030BB	841	Screw	1	1B990-016 1B990-015	8	○△	9F4B # 841
P3-16060SX	847	スプリングピン Spring cotter	1	1B001-451 1B001-452 1B990-015 1B990-016	2	○△	9F4B # 847

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部組品番号 Assembly No.	補助番号 Ckt. No.	名 称 Name	1台分 個数 Pcs. per Unit	構 成 部 品 番 品 Constituent Parts	参照図番 Figure	備 考 Remarks
* 1B001-085	B 11	つり環 Eyelet	2	1K044-001 1K100-034	11	
1B001-438	B406	シャッターチャージレバー Shutter charge lever	1	1K314-199 . 1K314-206 1K340-037 . 1K370-321 1K370-322 . 1K370-323 1K640-436	4	
1B001-439	B659	巻戻フォーク軸 Rewind fork axle	1	1K370-675 1K630-231	6	
1B001-440	B429	半押スイッチ Release button switch	1	1K240-324 . 1K240-325 1K600-142 . 1K680-149 1K680-150 .	6	
1B001-441	B2425	スプール軸 Spool shaft	1	1K220-056 . 1K600-145 1K600-248 x2 1B260-019	4	9F4B FA2- 425
1B001-443	B2451	巻上基板部 Film-advance unit	1	1K060-030 . 1K120-078 1K220-139 x3 1K230-132 . 1K230-134 1K230-136 . 1K233-036 1K240-320 . 1K260-038 1K260-132 . 1K260-147 1K275-034 . 1K310-050 1K314-189 . 1K314-200 1K314-203 . 1K340-072 1K340-083 . 1K340-086 1K340-088 . 1K340-089 1K362-012 x3 1K370-326 . 1K370-673 1K370-674 . 1K370-678 1K370-679 . 1K370-680 1K370-681 . 1K370-682 1K480-016 . 1K600-146 1K610-529 . 1K610-530 1K640-437 . 1B240-028 1B240-029 . 1B475-039 A1-17035BB S1-01200SX x2	5	
1B001-444	B81	圧 板 Pressure plate	1	1K083-040 . 1K240-309 1K340-077 x2 1K600-310	1	
1B001-445	B44	電池キャップ Battery cap	1	1K110-158 . 1K467-059 1K630-082	1	

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部 組 品 番 号 Assembly No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs. per Unit	構 成 部 品 番 品 Constituent Parts	参照図番 Figure	備 考 Remarks
1B001-448	B301	駆動基板部 Mirror actuating unit	1	1K115-799 , 1K230-129 1K230-130 , 1K230-131 1K314-194 , 1K314-195 1K314-196 , 1K314-198 1K340-078 , 1K340-079 1K366-045 , 1K366-046 1K370-658 , 1K370-659 1K370-660 , 1K610-522 1S720-036 ,	7	
1B001-450	B213	裏蓋ロック軸 Lock knob, camera back	1	1K044-014 x2 1K206-031 , 1K240-319 1K370-670 , 1K370-671	10	
1B001-451	B652	巻戻軸 Rewind shaft	1	1K370-662 P3-16060SX	2	
1B001-452-1	B667	巻戻ノブ Rewind knob	1	1K050-165 , 1K050-166 1K050-173 , 1K083-042 1K110-159 , 1K146-023 1K233-038 , 1K240-330 1K470-039 , 1K630-229 1B001-451 , 1K200-004	2	
1B001-446	B30	シンクロキャップ Sync terminal cap	1	1K110-161 1K467-058	1	
1B060-177	B426	レリーズレバー Shutter release lever	1	1K314-202 , 1K366-047 1K366-048 , 1S720-037	6	
1B060-178	B43	電池ケース Battery chamber	1	1K048-068 , 1K240-050-2 1K610-174 , 1K680-381 1S810-450	6	
1B060-179	B45	電池アース 接片 Battery earth contact	1	1K156-040 1S810-455	6	
1B060-181	B323	記憶スイッチ Memory switch	1	1K240-311 , 1K240-312 1K600-312 x2 1K680-386 , 1S810-440 1S810-441	7	
1B060-182	B3001	シンクロガイド環 Sync terminal	1	1K044-011 x5 1K220-142 x2 1K370-653 x3 1K370-654 x2 1K370-655 x2 1S110-007 , 1S810-443 1S810-446 , 1S810-448 1S810-456 , 1S810-458 1S810-483	8	

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部組品番号 Assembly No.	補助番号 Ckt. No.	名 称 Name	1台分 個数 Pcs.per Unit	構 成 部 品 番 品 Constituent Parts	参照図書 Figure	備 考 Remarks
1B060-206	B98	T T L 調光用受光素子 SPD 2	1	1K680-384 .1S250-004 1S700-071 .1S810-453 1S810-454 G1-17040SX	7	
1B100-250	B71	LED 基板 LED base plate	1	1K008-001 x2 1K115-795 .1K240-308 1K340-077 .1K610-520 1G550-019	8	
1B150-031	B99	測光用受光素子 SPD 1	1	1K680-385 .1S250-004 1S700-071 .1S810-451 1S810-452 .1G120-001 G1-17040SX	7	
* 1B200-004	B654	巻戻レバー Rewind lever	1	1K370-340 .1K610-250 1K630-233	2	
1B206-020	B441	巻上レバー Film-advance lever	1	1K048-069 x3 1K340-085 .1K625-032	2	
1B240-029	B492	空撮スイッチ Blank shot switch	1	1K240-327 .1K240-328 1K600-143 x2 1K680-148	5	
* 1B260-007-1 (1B260-007)	B493	グレーコード板 Gray code disk	1	1K240-105 1K260-047-1	3	
1B260-019	B425	スプール軸 Spool shaft	1	1K260-146 1K370-677	4	9F4B FA1- 425
1B314-102	B491	グレーコード基板 Gray code base plate	1	1K156-045 .1K240-321 1K625-033	3	
1B314-105	B52	押釦レバー軸 Axle, shutter release button	1	1K314-192 1K370-657	11	
1B314-113	B55	押釦外レバー Release button lever	1	1K314-193 1K370-656	11	
1B475-039	B471	枚数計ラチェット Frame counter ratchet	1	1K275-035 1K470-042	5	
1B475-040	B447	T 切換ダイヤル Shutter dial	1	1K201-047 .1K340-084 1K470-040	2	
1B610-018	B206	裏蓋ロックピン Lock pin, camera back	1	1K370-669 1K610-528	9	

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部組品番号 Assembly No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs.per Unit	構 成 部 品 番 品 Constituent Parts	参照図番 Figure	備 考 Remarks
1B670-036	B91	本体カバー Body cover	1	1K115-812 1K670-040	1	
1B670-038	B51	押釦カバー Shutter release button cover	1	1K206-028 , 1K670-039 1K680-382 , G1-17040SX	11	
1B990-008	B653	巻戻ノブ Rewind knob	1	1K083-042 , 1K146-023 1K240-330 , 1B200-004	2	
1B990-010	B2001	FPC	1	1K050-169 , 1K240-110-2 1K240-310 , 1K240-323 1K610-521 , 1K640-438 1S120-013 , 1S210-007 1S237-038 , 1S237-042 1S310-057 , 1S310-058 1S310-059 , 1S310-060 1S310-061 , 1S310-062 1S310-064 , 1S310-065 1S310-066 , 1S310-067 1S310-068 , 1S310-069 1S310-070 , 1S322-031 1S322-034 , 1S322-037 1S335-006 x3 1S335-008 x2 1S335-011 , 1S340-051 1S335-042 x2 1S340-052 x3 1S340-053 , 1S382-004 1S705-038 , 1S708-006 1S730-002 x2 1S700-072	3	
1B990-011	B2441	巻上レバー Film-advance lever	1	1K110-166 , 1K110-168 1K130-203 , 1K136-030 1K206-032 , 1K607-017 1K240-322 x2 G1-20030SX x2 1B206-020 , 1B475-040	2	
1B990-012	B201	裏蓋 (オレンジ) Camera back (orange)	1	1K110-163 , 1K110-164 1K130-202 , 1K160-416 1K165-066 x2 1K240-318 , 1K362-021 1K600-327 , 1K600-328 1K600-329 , 1K670-042 A1-20025SX x2 A2-17030SX x9 B1-20050SX , 1B610-018	9	

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部組品番号 Assembly No.	補助番号 Ckt. No.	名 称 Name	1台分 個 数 Pcs.per Unit	構 成 部 品 番 号 Constituent Parts	参照図番 Figure	備 考 Remarks
1B990-013	B116	前 板 Front plate	1	1K115-801 x2 1K120-176 .1K130-206 1K230-133 .1K314-197 1K670-043 .A1-17035BB 1K115-233 A1-20025SX x2 B1-20030BB x3 1B001-448 .1B060-181 1B060-206 .1B150-031	6, 7	
1B990-014	B100	シャッター Shutter	1	1S810-442 .1S810-444 1S810-445 .1S810-447 1S810-449 .1S810-457 1S810-459	6	
1B990-015	B112	外 箱 (オレンジ) Outer housing (orange)	1	1K001-032 x2 1K044-012 .1K081-003 1K044-013 x2 1K110-152 .1K110-153 1K110-154 .1K110-155 1K110-156 x2 1K110-157 .1K110-160 1K110-161 .1K110-162 1K110-165 .1K110-167 1K115-792 .1K115-793 1K115-797 .1K115-807 1K120-175 x2 1K123-004 x3 1K165-065 x3 1K206-029 .1K208-043 1K240-317 .1K275-033 1K310-053 .1K400-078 1K480-018 .1K600-306 1K600-307 .1K600-308 1K600-309 .1K600-311 1K600-328 .1K600-329 1K610-519 .1K610-527 1K640-426 .1K646-004 1K646-005 .1K646-006 1K646-007 .1K660-038 1K680-393 .1K680-401 1K115-233 1G122-002 .1S133-002 1G133-003 .1G226-002 1G234-001 .1G580-002 A1-17025SX x7 A2-20022SX x3 A2-20035SX x4 B1-20040SX .K2-20030BB 1B001-085 x2 1B001-450 .1B100-250 1B314-105 .1B314-113 1B670-038 .1B990-011 1B990-012	2, 8 9, 10 11	